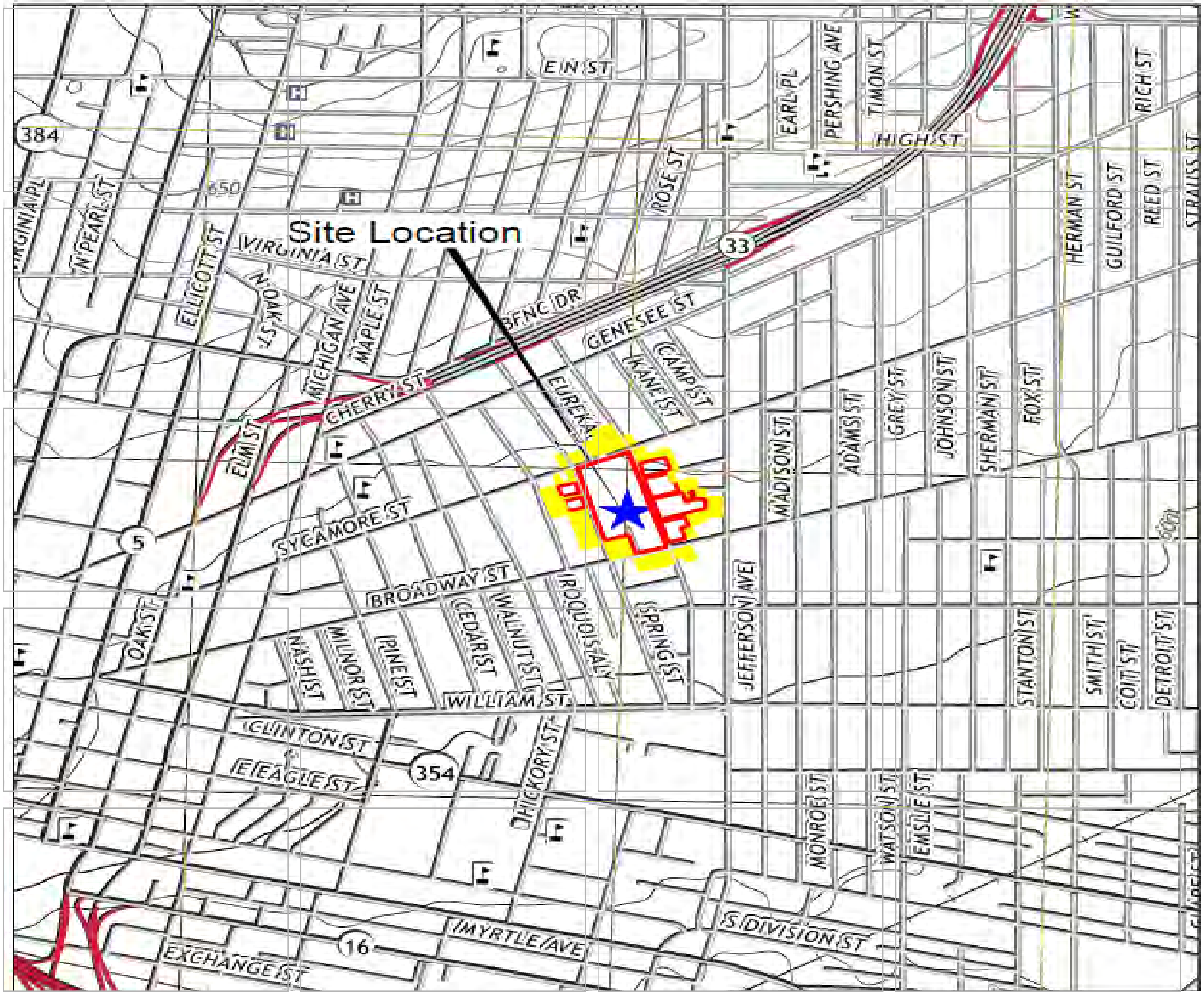


Howden North America Inc.
SAAKC Buffalo Forge, LLC

Final Remedial Investigation/ Alternatives Analysis Report

Former Buffalo Forge Property

City of Buffalo, Erie County, New York

NYSDEC BCP Site Number C915280

May 2018

Prepared By:

ERM Consulting & Engineering, Inc.
5788 Widewaters Parkway
Syracuse, New York 13214

Howden North America Inc.
SAAKC Buffalo Forge, LLC

Final Remedial Investigation/ Alternatives Analysis Report

Former Buffalo Forge Property

City of Buffalo, Erie County, New York
NYSDEC BCP Site Number C915280

May 2018

Prepared By:

ERM Consulting & Engineering, Inc.
5788 Widewaters Parkway
Syracuse, New York 13214

REMEDIAL INVESTIGATION/ALTERNATIVES ANALYSIS REPORT
FORMER BUFFALO FORGE PROPERTY
CITY OF BUFFALO, ERIE COUNTY, NEW YORK
NYSDEC BCP SITE NUMBER C915280

I, Jon S. Fox, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375 and that this Remedial Investigation Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER's Technical Guidance for Site Investigation and Remediation (DER-10).

Jon S. Fox, P.G.
ERM Consulting & Engineering, Inc.

Date: 31 August 2018

I, Stephen A. Mirabello, certify that I am currently a New York State registered Professional Engineer and that this Remedial Alternatives Analysis Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER's Technical Guidance for Site Investigation and Remediation (DER-10).

STEPHEN ANTHONY MIRABELLO
089550

Stephen A. Mirabello, P.E.
ERM Consulting & Engineering, Inc.

Date: 31 August 2018

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

ACRONYMS AND ABBREVIATIONS

AA	Alternatives Analysis
AMSL	Above Mean Sea Level
ASTM	American Society for Testing and Materials
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
bgs	below ground surface
°C	Degrees Celsius
CAMP	Community Air Monitoring Program
COPC	Chemical of Potential Concern
cpm	Counts per Minute
DER	Division of Environmental Remediation
DO	Dissolved Oxygen
DSNY	Dig Safely New York
DTW	Depth to Water
DUSR	Data Usability Summary Report
EDD	Electronic Data Deliverable
EDS	Environmental Data Services, Inc.
EE	Environmental Easement
EIMS	Electronic Information Management System
ELAP	Environmental Laboratory Approval Program
ERM	ERM Consulting & Engineering, Inc.
ESA	Environmental Site Assessment
ft	feet
FWRIA	Fish and Wildlife Resources Impact Analysis
GPS	Global Positioning System
HASP	Health and Safety Plan
IDW	Investigation Derived Wastes
mg/kg	Milligrams per kilogram
mg/L	Milligrams per liter
ND	Not Detected
NYCRR	New York Codes, Rules, and Regulations
NYLD	New York Leak Detection, Inc.
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSGS	New York State Geological Survey
ORP	Oxidation-Reduction Potential
OSHA	Occupational Safety and Health Administration
PAH	Polynuclear Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photoionization Detector
PPE	Personal Protective Equipment
ppm	Parts per million
PVC	Polyvinyl Chloride

QA/QC	Quality Assurance / Quality Control
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
QHHEA	Qualitative Human Health Exposure Assessment
RCRA	Resource Conservation and Recovery Act
RI	Remedial Investigation
SCGs	Standards, Criteria, and Guidance
SCOs	Soil Cleanup Objectives
SMP	Site Management Plan
SpC	Specific Conductivity
SSALs	Site-Specific Action Levels
SVOCs	Semivolatile Organic Compounds
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TENORM	Technologically-Enhanced Naturally Occurring Radioactive Material
TICs	Tentatively Identified Compounds
TOGS	Technical Operations and Guidance Series
μg/kg	Micrograms per kilogram
μg/l	Micrograms per liter
VOCs	Volatile Organic Compounds
WSA	William Schutt and Associates

EXECUTIVE SUMMARY

ERM Consulting & Engineering, Inc. (ERM) prepared this Remedial Investigation (RI)/Alternative Analysis (AA) Report on behalf of Howden North America Inc. (Howden) and SAAKC Buffalo Forge, LLC (SAAKC) to summarize the results of environmental investigations performed at the Former Buffalo Forge Properties located in the City of Buffalo, Erie County, New York (the Site). Howden entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) to address the significant environmental, legal, and financial barriers that hinder redevelopment of the Site. SAAKC subsequently entered into a BCA with NYSDEC as a contract vendee with Howden for purchase and future redevelopment of the Site.

The RI was performed to evaluate environmental conditions at the Site in consideration of the results of previous subsurface investigations as required in the BCA. Consistent with NYSDEC requirements described in DER-10 (NYSDEC, 2010a), this RI was developed and implemented to meet the following goals:

- identify contaminant source areas;
- define the nature and extent of contamination;
- produce data of sufficient quantity and quality to support the development of a remedial AA Report and an acceptable RAWP; and
- generate sufficient data to evaluate the actual and potential threats to human health and the environment.

The RI evaluated soil and groundwater in conformance with the NYSDEC-approved RI Work Plan. RI activities included soil boring and monitoring well installations and associated soil and groundwater sampling for laboratory analysis. Samples were transported under chain of custody procedures to a New York State Department of Health (NYSDOH)-approved environmental laboratory for analysis of compounds of potential concern (COPCs) as described in the approved RI Work Plan. RI project data were found to be valid and usable with the qualifications noted.

Soil borings and monitoring wells were installed at locations proposed in the approved RI Work Plans. A total of 74 boreholes were advanced for the collection of soil samples and installation of groundwater monitoring wells. Seven boreholes were completed as groundwater monitoring wells; six in overburden and one in bedrock. All work was conducted in substantial conformance with procedures contained in the approved RI Work Plan.

The currently-contemplated future use of the Site is commercial and/or restricted residential. Chemical analytical results for soil were compared to the NYSDEC's applicable Soil Cleanup Objectives (SCOs). Groundwater analytical results were compared to the NYSDEC's ambient groundwater quality standards and guidance values.

A geophysical electromagnetic (EM) induction survey was conducted over the entire 490 Broadway parcel to search for two possible underground storage tanks (USTs) that were reportedly abandoned in place. The survey resulted in in one EM anomaly that was evaluated and subsequently discovered to consist of buried concrete debris containing steel reinforcement bar. USTs or other subsurface structures that may have been potential contaminant source areas were not identified.

A gamma radiation survey was conducted by ERM to evaluate background radioactivity levels near parcel boundaries at the surface and to evaluate for the potential presence of elevated radiation in subsurface materials during the RI. Readings from subsurface soil samples were consistent with measured background radiation levels.

Review and evaluation of laboratory analytical data for soil samples collected during the RI and comparison with applicable standards, criteria, and guidance (SCGs) resulted in the following COPCs at concentrations above the Restricted Residential SCOs:

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Chrysene

Metals

- Cadmium
- Chromium
- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Zinc

PCBs

- Aroclor 1254

Metals and SVOCs exceedances in soil were typically found in black sand material apparently derived from spent foundry sand historically used as fill at the Site. Low-level PCBs detected in a few soil samples at the Site are attributed to residuals from the historical use of PCBs in electrical equipment at the Site.

Shallow groundwater is perched on top of bedrock with the exception of some eastern portions of the Site. The overall flow direction of shallow perched groundwater is generally towards the south-southwest. Groundwater samples from monitoring wells were analyzed for background fluorescence to evaluate potential hydraulic connections between monitoring wells. Results of the background fluorescence analysis suggest that perched groundwater flow appears to be dominated by matrix flow and that preferential groundwater flow paths may not be of environmental significance in overburden at the Site. Groundwater samples were also analyzed for COPCs as outlined in the approved RI Work Plan.

The following compounds or elements were detected in one or more overburden groundwater samples collected at the Site at concentrations above the NYSDEC's ambient groundwater quality standards or guidance values:

VOCs

- 1,2,4-Trimethylbenzene

Metals (mg/kg)

- Antimony
- Iron
- Lead
- Magnesium
- Manganese
- Selenium
- Sodium

Laboratory analytical results indicate that the following metals associated with black sand material had exceedances of SCOs in soil and a few isolated exceedances of the ambient groundwater quality standards and guidance values:

- Lead;
- Manganese; and
- Selenium.

Therefore, the black sand material may represent a source of metals in Site groundwater. However, the following metals were detected in Site groundwater at concentrations above their ambient groundwater quality standards or guidance values that are interpreted to be derived from natural sources:

- Iron;
- Magnesium; and
- Sodium.

The one isolated detection of VOCs in groundwater may be associated with petroleum residuals. While historical use of petroleum products on the Site did occur, the general lack of VOC detections and the proximity of this one isolated detection to Sycamore Street suggest that historic use of the street by vehicle or some other off-Site source cannot be ruled out.

Review of laboratory analytical results indicates that COPCs were not detected in the bedrock groundwater sample.

The Site and the surrounding community are serviced by a municipal water supply and contain no public or private drinking water wells. In addition, groundwater use for drinking water will be restricted by an Environmental Easement (EE) approved by the NYSDEC. Therefore, additional investigation or active remediation of groundwater at the Site appears unwarranted.

Direct contact with soil and inhalation of soil represent the greatest risk with regards to frequency and duration of potential exposures for on-Site commercial workers and on-Site construction and utility workers. The risk is greatest during intrusive activities (e.g., disturbance of surface soil or subsurface soil excavation and associated dewatering). Control measures such as proper implementation and compliance with an approved Site Management Plan (SMP), the Site-specific Health and Safety Plan (HASP), use of appropriate personnel protective equipment (PPE), dust suppression techniques, and the use of institutional controls (ICs) will reduce the risk of potential exposures.

Two potential exposure pathways involving groundwater may exist for on-Site construction/utility workers in the future: 1) direct contact with groundwater during subsurface disturbances (i.e., excavation and dewatering) in areas of remaining contamination (if any); and 2) incidental ingestion of groundwater.

Environmental investigations performed at the Site to date have met all RI goals; therefore further remedial investigation appears unwarranted. Remedial action performed under the NYSDEC's BCP is predicated on future Site use. The Site is currently vacant and the contemplated future use of the Site is commercial and/or restricted residential.

An analysis of the possible remedial approaches using NYSDEC remedy selection evaluation criteria was performed. Two alternatives for Site soil and one remedial approach to groundwater were evaluated.

In addition to No Further Action (Alternative 1), the remedies evaluated included remediating the Site to Track 1 (unrestricted use) conditions (Alternative 2) and performing a Track 4 cleanup by removing grossly-contaminated media (GCM) and remediating the Identified Areas of the Site to Site-Specific Actions Levels (SSALs) and emplacement of a cover system (Alternative 3). Alternative 1 was excluded because it would not achieve RAOs. Alternatives 2 and 3 are equally protective of human health and the environment, both would permanently address soils above the SSALs such that the soil RAOs would be met, and both would allow for redevelopment of the property. The proposed groundwater remedy (institutional control) is the same for both alternatives.

The significant additional efforts required to implement Alternative 2 would not provide greater protection to human health and the environment, especially given the intended commercial and restricted residential use of the property. A Site-wide unrestricted use cleanup (Alternative 2) also would be significantly less cost effective. For these reasons, Alternative 3 is the recommended remedial alternative for the Site.

1.0 INTRODUCTION

As required by Brownfield Site Cleanup Agreement (BCA) Index Number C915280-09-13 by and among Howden, SAAKC, and NYSDEC, this report presents the results a Remedial Investigation (RI) and Alternatives Analysis (AA) at the Former Buffalo Forge Property located in the City of Buffalo, Erie County, New York (the Site). The location of the various parcels that comprise the Site is shown in Figure 1.

This report addresses required elements established within the NYSDEC's Division of Environmental Remediation (DER) technical guidance manual DER-10 entitled "Technical Guidance for Site Investigation and Remediation" (NYSDEC, 2010a). Previous investigations and remedial action performed at the Site have been considered and incorporated into this RI.

Consistent with NYSDEC requirements described in DER-10, this RI was developed and implemented to meet the following goals:

- identify contaminant source areas;
- define the nature and extent of contamination;
- produce data of sufficient quantity and quality to support the development of a Remedial AA Report and an acceptable Remedial Action Work Plan (RAWP); and
- generate sufficient data to evaluate the actual and potential threats to human health and the environment.

The currently-contemplated future use of the Site is mixed commercial and/or restricted residential. The contemplated use may vary by parcel based on the redevelopment goals of prospective purchasers and/or future tenants. As required by the NYSDEC in the approved RI Work Plan (ERM, 2013), data generated during the RI was sufficient to support an evaluation of the potential residential use for all parcels.

1.1 SITE DESCRIPTION AND HISTORY

The Former Buffalo Forge Property is located in the City of Buffalo, Erie County, New York. Figure 1 shows the location of the Site. The Site includes seven parcels:

- 490 Broadway, Buffalo, New York
- 498 Broadway, Buffalo, New York
- 187 Mortimer Street, Buffalo, New York
- 213 Mortimer Street, Buffalo, New York
- 233 Mortimer Street, Buffalo, New York
- 498 Spring Street, Buffalo, New York
- 516 Spring Street, Buffalo, New York

Figure 2 shows the layout of the Site including the BCP Site boundary, specific parcels, and surrounding areas. The Former Buffalo Forge Property encompasses seven parcels which together comprise approximately 12.482 acres. The Site is located within a residential and commercial urban area. This area has been developed since the mid-1800s and has experienced various transformations in land use. The main portion of the Site which housed primary manufacturing and associated operations is the 490 Broadway parcel. Parcels west of Spring Street were used primarily for storage and parcels east of Mortimer Street were used primarily for parking and garage operations.

490 Broadway Parcel

The 490 Broadway parcel has been previously referred to as the former Buffalo Forge Plant No. 1. The facility reportedly began operations in 1877 (Brown and Caldwell, 2007). This area historically consisted of two city blocks centered along a former city roadway known as Champlin Street, which ran parallel between Mortimer and Spring Streets. Champlin Street was a mixture of residential and commercial properties. In the late 1800s, the primary land use of the portion of the property located south of Champlin Street consisted of Buffalo Forge Company operations, which included a foundry, machine shop, blacksmith, carpentry shops, and associated warehousing. A portion of this area also contained a separate alcohol distillery, which included a malt house and associated warehousing and storage. The portion of the property located to the north of Champlin Street originally consisted primarily of residential dwellings.

From the 1920s to the 1950s, Champlin Street no longer appears on Sanborn maps of the Site and essentially the entire parcel consisted of Buffalo Forge Company operations. The northern portion of the Site included a gasoline filling station, an apparent residential gasoline tank, a furniture repair structure, several dwellings and a garage. After several expansions up into the 1960s, the entire 490 Broadway parcel was utilized by Buffalo Forge Company operations until the mid-1990s.

Most of the manufacturing equipment and materials were removed after closure and the Buffalo Forge Company buildings in this parcel remained idle and unused until their demolition in 2006 and 2007. The area is currently vacant and is not in productive use.

Parcels East of Mortimer Street

The primary land use in this area since the late 1800s and early 1900s was residential. Some commercial or industrial land uses within this area have included a filling station and produce market at 498 Broadway which by 1934 apparently was limited to fish and produce marketing. A fiber and fabrics distributor was located at 223-227 Mortimer Street from 1940-1955. A trucking firm was located at 213 Mortimer Street in 1934. Additionally, Buffalo Forge Company maintenance garage (Building 14) and parking lots along Rey Street were operational from approximately 1960 through the mid-1990s. The maintenance garage was demolished in 2006. The area is currently vacant and not in productive use.

Parcels West of Spring Street

The primary land use from the late 1800s and early 1900s until the present has been for residential purposes. Commercial or industrial land uses in this area have included Buffalo Forge Company storage operations (including the storage of some foundry sand) from approximately 1960 through the early 1990s. The property between the 498 and 516 Spring Street parcels is currently owned and operated by National Grid and is used for electrical distribution purposes. The 498 and 516 Spring Street parcels are currently vacant and are not in productive use.

1.2 REGIONAL GEOLOGY

The Site is located within the Erie-Ontario Lowlands physiographic province (Bloom, 1978) and is generally flat with very little topographic relief. Native soil in the area is relatively thin and is derived predominantly from reddish-brown glacial silt and clay deposited in an ancient lake (Caldwell, 1988). Native soil thickness in the area is generally less than 25 feet and is often less than 10 feet.

The Site is underlain by the Middle Devonian Onondaga Limestone, which generally consists of gray, micritic limestone that is locally cherty

(Rickard and Fisher, 1970). Depth to bedrock in the vicinity of the Site is typically 2 to 12 feet below ground surface (bgs).

LaSala, Jr. (1968) indicated that Onondaga Limestone bedrock is characterized by water-bearing openings at bedding plane joints that are connected with solution-widened vertical joints. The area along the shore of Lake Erie is considered a discharge area, as groundwater recharge within the Erie-Niagara Basin occurs predominantly in higher elevations located south and east of the City of Buffalo. Under these conditions, as groundwater moves toward discharge within the Lake Erie basin, it tends to move upward through the vertical joints when nearing the lake shore. As a result, shallow groundwater which exists within the unconsolidated material at the Site may tend to move laterally to the west. These flow conditions may minimize the potential for vertical contaminant migration into underlying bedrock.

Contours of the Site's underlying bedrock are inferred from the shallow perched groundwater contours developed during a limited groundwater investigation conducted at the Site in 2012 (ERM, 2012). That study concluded that the predominant direction of perched groundwater flow at the Site is generally towards the southeast because local bedrock contours are influencing perched groundwater flow. In the case of the 490 Broadway parcel, the perched groundwater tends to move towards the south (the Broadway) side of the parcel. This localized perched groundwater flow pattern may be a result of the backfilling of the basements that formerly existed beneath the offices in the southern portion of the Site with permeable gravel fill during Site demolition activities in 2006-2007.

The natural chemical constituents in groundwater are obtained primarily from the solution of rock materials. The major constituent of limestone is calcite ($CaCO_3$), but other dissolved minerals are also picked up as groundwater passes through the bedrock of the basin, including halite (NaCl), dolomite [$CaMg(CO_3)_2$] and gypsum ($CaSO_4.2H_2O$). Due to the likelihood that groundwater will encounter these various minerals as it passes through the basin, significant concentrations of these minerals are typically present in the groundwater in the area. Therefore, groundwater quality within the City of Buffalo is naturally hard to brackish.

1.3 *PREVIOUS INVESTIGATION AND REMEDIAL ACTION*

The following environmental assessments or investigations were previously conducted at the Site and documented in the following reports.

- Phase I Environmental Site Assessment, Buffalo Forge Plan No. 1, 490 Broadway Avenue, Buffalo, New York (Dames and Moore, 1993).
- Site Evaluation Report, Former Buffalo Forge Plant No. 1 (Conestoga-Rover & Associates, 2000).
- Phase I Environmental Site Assessment, Former Buffalo Forge Site, Buffalo, New York (Benchmark, 2009a).
- Phase II Environmental Site Investigation Report, Former Buffalo Forge Site, Buffalo, New York (Benchmark, 2009b).
- Limited Groundwater Investigation Report, Former Buffalo Forge Facility, Buffalo, New York (ERM, 2012).

These reports describe several former underground storage tanks (USTs) in various portions of the Site that were formerly present. All of the USTs identified in the reports listed above were evaluated in previous investigations and/or were removed and addressed during the demolition of Site buildings in 2006 with the possible exception of two USTs that were reported in Dames and Moore (1993) based on the statements of Buffalo Forge employees to have been abandoned in-place by filling with concrete. The locations of these two possible USTs were previously unknown but they were evaluated during the RI.

ERM has identified one former UST that reportedly existed at the Site that was not identified or addressed during previous environmental investigations. An insurance map of the Site dated 8 April 1960 (revised 5 December 1972) obtained from Howden shows a 1000-gallon gasoline UST in the northern portion of the 490 Broadway parcel. This reported UST was investigated during the RI.

Some soil remediation was performed on the 490 Broadway parcel of the Site in association with the decommissioning and demolition of the Site buildings in 2006 and 2007. Soil remediation activities were documented in the following report.

- Decommissioning and Demolition Report, Buffalo Forge Facility, 490 Broadway Street, Buffalo, New York (Brown and Caldwell, 2007).

Soil remediation activities generally consisted of the excavation, transport, and disposal of contaminated soil off-Site at permitted disposal facilities. Soil remediation was performed to address the following sources on the 490 Broadway parcel:

- polychlorinated biphenyls (PCBs) in underlying soil in areas where former building concrete slabs contained PCBs at concentrations greater than 1.0 milligram-per-kilogram (mg/kg);
- two single-walled steel underground storage tanks (USTs) that were discovered and removed during the removal of building foundations as documented in NYSDEC Spill File Number 06-51725 (closed by the NYSDEC on 31 July 2007);
- removal of black sand material from the former foundry discovered beneath brick sidewalks on Site;
- removal of a former foundry sand pit measuring 155 feet long by 15 feet wide by 6 feet deep located beneath the sidewalk on the east side of Spring Street;
- an area of oily soil near the northwest corner of the parcel; and
- a pit in the former foundry which contained greasy material.

Areas of prior remedial soil excavation are shown in Figures 5 and 6. Environmental conditions at the Site based on the results of previous investigation and remedial action are summarized below for various matrices.

Soil

The following soil, fill or bedrock materials have been encountered at the Site. Thicknesses presented below are typical and are averages based on review of soil boring logs from previous investigations. These units are listed in descending stratigraphic order (from the surface downward).

Unit	Generalized Description	Average Thickness When Present (feet)	Origin
Clayey Silt Cap or Topsoil	Brown clayey silt or brown silt	0.9	Fill – can be “clean cap” in previously demolished or excavated areas, or brown topsoil in non-excavated areas
Black Sand Fill(where present)	Black sand	1.7	Fill – foundry sand
Other Fill	Brown to gray silt and sand, localized clay, gravel, and debris (brick, wood)	2.9	Fill - locally including re-worked native soil
Clayey Silt	Reddish-brown to brown clayey silt;	4.6	Native

	changing to gray and locally gravelly close to bedrock		
Bedrock	Gray limestone	Unknown (not fully penetrated)	Native

The clayey silt cap unit was typically encountered in areas that were previously excavated and backfilled during Site demolition activities. Topsoil was typically encountered in areas that were undisturbed during Site demolition activities. Both fill units were encountered in most (but not all) soil borings. Black sand fill is widely but sporadically distributed on the 490 Broadway parcel and can be present as a distinct layer or as numerous, discontinuous layers interbedded with other fill deposits or soil. The black sand fill typically contains one or more semivolatile organic compounds (SVOCs) and/or metals at concentrations above NYSDEC Part 375 Soil Cleanup Objectives (SCOs) for unrestricted use, and often contains SVOCs and/or metals at concentrations above Part 375 Commercial or Industrial SCOs. All other units encountered during previous investigations typically do not appear to be contaminated based on visual, olfactory, and photoionization detector (PID) field screening observations. Petroleum-like sheen and odors were observed in soil at locations TMW-04, TMW-08, and TMW-09. VOCs were not detected during field screening of soil cores with the calibrated PID at these locations.

The native clayey silt unit is consistent with a widespread glacial silt and clay deposit that is commonly encountered in the area. Glacial deposits in this area typically contain relatively low organic matter content.

Analytical results for soil samples previously collected at the Site are summarized in Table 1. Previous investigations have shown that exceedances of NYSDEC Part 375 SCOs typically are associated with the presence of black sand fill materials. The RI has assessed and further delineated the extent of black sand fill material. Potential contaminants in black sand fill materials typically include metals and SVOCs. The RI also provides vertical delineation by evaluating concentrations of potential contaminants from black sand fill in underlying native soil.

Soil Vapor

As approved by the NYSDEC, soil vapor was not sampled at the Site given that VOCs typically have not been detected at significant concentrations in soil or groundwater. Also, the Site is currently vacant and no buildings are currently present at the Site. However, potential exposure pathways involving soil vapor are evaluated in the Qualitative Human Health Exposure Assessment (QHHEA) portion of this report (Section 3.5) as required by the NYSDEC given the planned redevelopment of the Site.

Groundwater

Prior to the RI, groundwater investigation performed at the Site included:

- collection and analysis of representative shallow (perched) groundwater samples at several locations including former ASTs, former USTs, chemical or waste storage areas, and along the boundary of the former industrial property; and
- an assessment of potential risk associated with the perched groundwater exposure pathway.

Ten temporary monitoring wells were installed at the Site in 2012 (ERM, 2012). Bedrock was encountered at depths ranging from 2.0- to 11.5-feet bgs. The perched groundwater table is typically encountered within and near the top of native soil at the Site. Mapping of groundwater levels suggests that the predominant direction of perched groundwater flow at the Site is towards the southeast (towards basements previously excavated into bedrock beneath former buildings) and that local groundwater flow direction is variable and is primarily influenced by the local slope of the top of the underlying bedrock surface (ERM, 2012).

Three areas of light to moderate petroleum-like sheen and odor were encountered during the groundwater investigation in 2012:

- in the vicinity of well TMW-04;
- in the vicinity of well TMW-08; and
- in the vicinity of well TMW-09.

Howden and ERM promptly notified NYSDEC Region 9 staff of these observations and also called the NYSDEC Spill Hotline. The NYSDEC assigned Spill Number 11-13734 to the observation of residual petroleum constituents in groundwater at the Site.

Groundwater samples were collected and submitted for analysis of VOCs, SVOCs, PCBs, metals, and cyanide. The samples with petroleum-like sheen and odor were also analyzed for petroleum identification. Analytical results for previous groundwater samples are summarized in

Table 2. Exceedances of NYSDEC ambient groundwater quality standards and guidance values (NYSDEC, 1998) were limited to one VOC (1,2,4-Trimethylbenzene) in one well, the SVOC Bis(2-ethylhexyl)phthalate, (also reported present in the laboratory method blank) in two wells, and the following metals in several wells:

- iron;
- lead;
- magnesium;
- manganese; and
- sodium.

The VOC exceedance is slight and localized and the metal concentrations are considered to be predominantly naturally occurring and raising aesthetic but not environmental concerns.

Analysis for petroleum identification resulted in no definitive matches to common petroleum products. These results suggest that the released petroleum encountered in these areas is relatively old and weathered and that the observed sheen and odor are not associated with a recent petroleum release. The NYSDEC closed the file for Spill Number 11-13734 on 6 August 2012. All of the temporary wells installed at the Site in 2012 were abandoned after sampling for security purposes.

At the request of the NYSDEC, groundwater sampling and analysis was performed during the RI to provide additional data on groundwater flow and quality. Based on discussions with the NYSDEC, seven new temporary wells were installed: six in overburden and one in bedrock. The results of the groundwater evaluation were used to evaluate whether or not the Protection of Groundwater SCOs may be applicable at the Site. The Site and surrounding areas are serviced by municipal water. A reasonable groundwater remedial action objective for the Site may include the IC of the prevention of ingestion of groundwater with contaminant levels exceeding drinking water standards.

1.4 CONCEPTUAL SITE MODEL

A conceptual Site model is used to develop a general understanding of the Site and potential human exposure pathways to potential contaminants and impacts to the environment.

Based on sampling and analysis performed to date, the primary potential contaminants at the Site are typically found in those areas of the Site containing black sand material that is reportedly associated with the former foundry at the Site. These potential contaminants include several metals and polynuclear aromatic hydrocarbons (PAHs). After the foundry sand could no longer be used in the manufacturing process, the foundry sand historically may have been selectively deposited in portions of the Site wherever sandy fill materials were needed (e.g., to raise low areas, to backfill excavations for building additions or other new construction, etc.). Therefore, further identification and delineation of the extent of black sand material was an important goal of the RI. Other sources of potential contaminants include several areas of GCM consisting of residual petroleum constituents and one area of low-level PCBs in soil in an area that was previously remediated for PCBs during the decommissioning and demolition of the Site in 2006. GCM does not include black sand fill material for the purposes of this RI/AA Report and for the Site redevelopment project. Black sand fill material was mapped separately.

Potential human exposure pathways at the Site appear to be linked predominantly to the distribution of the black sand fill material and areas of petroleum residuals and PCBs in fill or soil. Relevant details surrounding these potential exposure pathways include: 1) contaminant source (environmental media), 2) contaminant release and transport mechanisms, 3) actual or potential point of exposure, 4) route of exposure, and 5) receptor populations.

The following potential exposure pathways were initially identified for on-Site soil (ERM, 2013):

- current and future direct contact (dermal absorption) with soil;
- current and future incidental ingestion of soil; and
- current and future fugitive dust emissions (inhalation) of soil.

The following potential exposure pathways were initially identified for on-Site groundwater (ERM, 2013):

- current and future direct contact (dermal absorption) with groundwater;
- current and future incidental ingestion of groundwater; and
- current and future inhalation of vapors indoors and outdoors from underlying groundwater.

1.5 *STANDARDS, CRITERIA, AND GUIDANCE*

The following standards and criteria were applied to the RI and remedial Alternatives Analysis (AA) of this Site.

- 6 NYCRR Part 257 - Air Quality Standards
- 6 NYCRR Part 371 - Identification and Listing of Hazardous Wastes
- 6 NYCRR Part 375 - Environmental Remediation Programs (December 2006)
- 6 NYCRR Part 376 – Land Disposal Restrictions
- 6 NYCRR Part 608 - Use and Protection of Waters
- 6 NYCRR Part 612 – Registration of Petroleum Storage Facilities
- 6 NYCRR Part 613 – Handling and Storage of Petroleum
- 6 NYCRR Parts 700-706 - Water Quality Standards
- 29 CFR Part 1910.120 - Hazardous Waste Operations and Emergency Response
- 40 CFR Part 280 - Technical Standards and Corrective Action Requirements for Owners and Operators of Underground Storage Tanks

The following guidance documents were applied to the RI and AA of this Site.

- DER-10 – Technical Guidance for Site Investigation and Remediation (May 2010)
- DER-15 - Presumptive/Proven Remedial Technologies (February 2007)
- TOGS 1.1.1 - Ambient Water Quality Standards & Guidance Values and Groundwater Effluent Limitations
- TAGM 3028 - "Contained In" Criteria for Environmental Media: Soil Action Levels (August 1997)

- TAGM 4051 - Early Design Strategy (August 1993)
- CP-43 - Groundwater Monitoring Well Decommissioning Policy (November 2009)
- STARS #1 - Petroleum-Contaminated Soil Guidance Policy
- Permanent Closure of Petroleum Storage Tanks (July 1988)
- Air Guide 1 - Guidelines for the Control of Toxic Ambient Air Contaminants
- USEPA Office of Solid Waste and Emergency Response Directive 9355.047FS Presumptive Remedies: Policy and Procedures (September 1993)

1.6 AREAS OF POTENTIAL CONCERN

Review of available data and information and consideration of the contemplated use for the Site indicates several areas of potential concern (APOCs) are present at the Site that warrant further evaluation during the RI. Areas of potential concern are listed and described below by parcel and are shown in Figure 2. All sample locations referenced below are shown in Figure 3.

490 Broadway Parcel

AOPC-01	Black Sand
AOPC-02	Soil Borings SB-3/SB-4
AOPC-03	Test Pit TP-34
AOPC-04	Former 1000-gallon Gasoline UST
AOPC-05	2 Possible Former USTs Abandoned In-Place
AOPC-09	Residual Petroleum Constituents at TMW-08
AOPC-10	Residual Petroleum Constituents at TMW-09
AOPC-11	Residual Petroleum Constituents at TMW-04

498 Broadway Parcel

AOPC-15	Black Sand

187 Mortimer Street

AOPC-06	Soil Boring SB-30 and Test Pit TP-43
AOPC-14	Black Sand

213 Mortimer Street

AOPC-13	Black Sand

233 Mortimer Street

AOPC-12	Soil Boring SB-5

498 Spring Street

AOPC-07	Black Sand
AOPC-08	Test Pit TP-46

516 Spring Street

AOPC-16	Initial Sampling

1.6.1 490 Broadway

1.6.1.1 AOPC-01: Black Sand

Black sand fill material has been identified in numerous soil borings and test pits previously installed on this parcel. Additional soil borings were installed during the RI to further delineate the extent of black sand and concentrations of potential contaminants in the black sand.

1.6.1.2 AOPC-02: Soil Borings SB-3/SB-4

Four SVOCs and PCBs were detected in soil during previous investigations at concentrations above the restricted residential, commercial, or industrial SCOs. Additional soil borings were installed during the RI to delineate the extent of these concentrations.

1.6.1.3 AOPC-03: Test Pit TP-34

Copper and lead were detected in soil during previous investigations at concentrations above the restricted residential or commercial SCOs. Additional soil borings were installed during the RI to delineate the extent of these concentrations.

1.6.1.4 *AOPC-04: Former 1000-gallon Gasoline UST*

An insurance map of the Site dated 8 April 1960 (revised 5 December 1972) obtained from Howden showed a 1000-gallon gasoline UST in the northern portion of the 490 Broadway parcel. This UST was not referenced in previous environmental reports and therefore may not have been identified or addressed during previous environmental investigations or remedial work at the Site. Additional soil borings were installed during the RI at the reported location of the former UST to evaluate environmental conditions in this area.

1.6.1.5 *AOPC-05: 2 Possible Former USTs Abandoned In-Place*

Two USTs were reported in Dames and Moore (1993) to have been abandoned in-place by filling with concrete based on statements by Buffalo Forge employees at that time. The locations of these two possible USTs were unknown and so they were evaluated during the RI through performance of a geophysical investigation on the 490 Broadway parcel using electromagnetic (EM) techniques. One EM anomaly was located in the southern portion of the parcel and therefore soil borings B-62 through B-65 were installed at and around the EM anomaly to evaluate environmental conditions in this area (Figure 3).

1.6.1.6 *AOPC-09: Residual Petroleum Constituents at TMW-08*

Petroleum-like sheen and odor were detected in soil and perched groundwater at monitoring well TWM-08 during the 2012 groundwater investigation. Monitoring well TMW-08 was abandoned after sampling. Additional soil borings were installed during the RI around TMW-08 to delineate the extent of petroleum residuals in this area.

1.6.1.7 *AOPC-10: Residual Petroleum Constituents at TMW-09*

Petroleum-like sheen and odor were detected in soil and perched groundwater at monitoring well TWM-09 during the 2012 groundwater investigation. Monitoring well TMW-09 was abandoned after sampling. Additional soil borings were installed during the RI around TMW-09 to delineate the extent of residual petroleum constituents in this area.

1.6.1.8 AOPC-11: Residual Petroleum Constituents at TMW-04

Petroleum-like sheen and odor were detected in soil and perched groundwater at monitoring well TWM-04 during the 2012 groundwater investigation. Monitoring well TMW-04 was abandoned after sampling. Additional soil borings were installed during the RI around TMW-04 to delineate the extent of residual petroleum constituents in this area.

1.6.2 498 Broadway

1.6.2.1 AOPC-15: Black Sand

Black sand fill material was identified in one soil boring (SB-29) previously installed on this parcel (see Figure 3). Additional soil borings were installed in previously un-sampled portions of this parcel during the RI to further evaluate the extent of black sand and concentrations of potential contaminants in the black sand.

1.6.3 187 Mortimer Street

1.6.3.1 AOPC-06: Soil Boring SB-30 and Test Pit TP-43

Arsenic, lead, or mercury was detected in fill during previous investigations at concentrations above the restricted residential or industrial SCOs. Additional soil borings were installed during the RI to delineate the extent of these concentrations.

1.6.3.2 AOPC-14: Black Sand

Black sand fill material was identified in two soil borings and two test pits previously installed on this parcel. Additional soil borings were installed during the RI to further delineate the extent of black sand and concentrations of potential contaminants in the black sand on this parcel.

1.6.4 213 Mortimer Street

1.6.4.1 AOPC-13: Black Sand

Black sand fill material was identified in three soil borings previously installed on this parcel. Additional soil borings were installed during the RI to further delineate the extent of black sand and concentrations of potential contaminants in the black sand.

1.6.5 233 Mortimer Street

1.6.5.1 AOPC-12: Soil Boring SB-5

Manganese was detected in fill during a previous investigation at concentrations above the restricted residential SCO (Figure 3). Additional soil borings were installed during the RI to delineate the extent of this exceedance.

1.6.6 498 Spring Street

1.6.6.1 AOPC-07: Black Sand

Black sand fill material was identified in one test pit (TP-46) previously installed on this parcel (Figure 3). Additional soil borings were installed during the RI to further delineate the extent of black sand and concentrations of potential contaminants in the black sand.

1.6.6.2 AOPC-08: Test Pit TP-46

Five SVOCs and one metal were detected during previous investigations at concentrations above the restricted residential or industrial SCOs. Additional soil borings were installed during the RI to delineate the extent of these concentrations.

1.6.7 516 Spring Street

1.6.7.1 AOPC-16: Initial Sampling

Samples were not collected from this parcel during previous environmental investigations. Four soil borings were installed during the RI to evaluate environmental conditions on this parcel. Also, a groundwater sample was collected from this parcel.

2.0 TECHNICAL OVERVIEW

Data and results from previous environmental investigations at the Site have been incorporated into this RI/AA Report to facilitate a comprehensive evaluation of environmental conditions at the Site. Where applicable, data, and information from the previous investigations are incorporated into the figures, tables, and appendices of this report. Sections 2.1 through 2.7 of this report provide descriptions of Site work and methods utilized by ERM during the RI. Descriptions of Site work and methods utilized by others during previous environmental investigations are contained in the various reports from those efforts. A list of the relevant reports prepared by others is provided with other referenced cited in Section 7.0. To facilitate ease of review, soil boring logs from previous investigations performed by others are presented in Appendix A and monitoring well construction logs from the 2012 groundwater investigation are presented in Appendix B.

2.1 PRE-INVESTIGATION WORK

2.1.1 Mobilization

ERM mobilized personnel, equipment, and supplies to the Site on 10 November 2014 to initiate RI Site work. Equipment staging areas and a decontamination pad and cleaning area were set up to facilitate performance of the Site work.

2.1.2 Subsurface Clearance Activities

Dig Safely New York (DSNY) was notified prior to the initiation of intrusive activities at the Site and requested to identify, locate, and mark member company utilities. Howden personnel provided information on possible remaining underground utilities formerly associated with plant operations. ERM's geophysical subcontractor New York Leak Detection (NYLD) of Jamesville, New York provided utility location services to evaluate and clear proposed soil boring locations prior to the commencement of subsurface intrusive activities. A minimum 10-foot diameter around each planned drilling location was scanned and cleared of subsurface utilities prior to the initiation of drilling.

2.1.3 *Geophysical Survey*

An EM induction survey was conducted by NYLD over the entire 490 Broadway parcel to search for two possible USTs that were reportedly abandoned in place somewhere on the parcel (Dames and Moore, 1993). The survey was conducted with a GSSI Profiler Model EMP400 EM induction sensor using a Noggin 500 mHz antennae.

2.1.4 *Radioactivity Survey*

A radiation survey was conducted by ERM to evaluate background radioactivity levels near the surface of the Site and to evaluate for the potential presence of technically-enhanced naturally occurring radioactive materials (TENORM) in the subsurface. The boundaries of each parcel were walked and background radiation levels at the surface were measured using a Ludlum Model 2241 radioactivity meter with a 44-10 probe. Soil cores and drill cuttings were scanned to measure radioactivity levels in the subsurface. Overall radiological screening activities included:

1. visual examination for slag-like materials;
2. scanning of material surfaces using field instruments;
3. comparison of screening data against background measurements to evaluate whether the materials may have elevated radioactivity; and
4. evaluation of survey results provided by Site instruments.

2.1.5 *Community Air Monitoring*

The Community Air Monitoring Plan (CAMP) for the Site contained in Appendix B of the approved RI Work Plan (ERM, 2013) was implemented during all subsurface intrusive activities at the Site. The CAMP describes monitoring requirements and response action levels associated with monitoring of VOCs and particulates (i.e., dust) upwind and downwind of RI activities.

Relevant weather conditions including wind direction, speed, humidity, temperature, and precipitation were evaluated and recorded at the Site on a daily basis prior to the initiation of subsurface intrusive activities. Background readings of VOCs and particulate matter were collected, evaluated, and recorded on a daily basis prior to the initiation of field work. Background readings were used to set action levels for VOCs and particulates for each day that subsurface intrusive activities occurred. Additional background measurements were collected and used to modify

VOC and particulate action levels if warranted based on changing weather conditions.

VOC concentrations in air at upwind and downwind stations were measured using calibrated PIDs. Particulate matter concentrations were also simultaneously measured using calibrated electronic aerosol monitors. The PID and aerosol monitors were calibrated at the start of each work day and were placed within a weather-proof enclosure to provide protection from the elements. A data logger was used to record measurements every minute. A 15-minute time-weighted average (TWA) was used to evaluate VOC and particulate readings. System readings were accessible via a Netronix telemetry system that allowed near real-time access to VOC and particulate readings. Data were downloaded on a daily basis and are available for review upon request.

2.2 *SOIL INVESTIGATION*

Soil borings were initiated at the Site on 17 November 2014 using direct-push drilling techniques. A total of 74 soil borings were installed by ERM during the RI. All soil boring locations were physically cleared using a hand auger or vacuum extraction techniques to a depth of 5-feet bgs for safety purposes. An ERM geologist inspected and recorded relevant physical properties including soil color, texture (grain size), moisture content, field-screening results, odor, percent recovery, and other pertinent observations on ERM soil boring logs (Appendix C). Soil boring locations were recorded using global positioning system (GPS) equipment and software and are presented in Figure 3. A calibrated PID equipped with an 11.7 eV lamp was used to perform VOC screening of soil cores. Soil samples were collected across different depth intervals as appropriate based on the ERM Geologist's inspection and evaluation of soil cores. Sample collection was biased towards areas of suspected highest contamination based on visual, olfactory, and/or PID field screening data. A summary of field observations and data from the installation of soil borings at the Site is presented in Table 1.

Soil samples collected during the RI were generally analyzed for one or more of the following parameters as outlined in the NYSDEC-approved RI Work Plan (ERM, 2013):

- Target Compound List (TCL) and Spill Technology Remediation Series Memorandum Number One (STARS-#1) VOCs+10 tentatively identified compounds (TICs) by United States Environmental Protection Agency (USEPA) Method 8260;

- TCL and STARS-#1 semivolatile organic compounds (SVOCs)+20 TICs by USEPA Method 8270;
- Polychlorinated biphenyls (PCBs) by USEPA Method 8082;
- Target Analyte List (TAL) Metals by USEPA Method 6010; and
- Mercury by USEPA Method 7471.

Table 2 presents a list of all soil samples collected at the Site and indicates specific analytical parameters for each sample. Selected soil samples were also analyzed for metals via the Toxicity Characteristic Leaching Procedure (TCLP) metals and/or TCLP SVOCs to provide data that may be useful for waste characterization and waste determination purposes.

2.3 GROUNDWATER INVESTIGATION

2.3.1 Monitoring Well Installations

Monitoring well installations were initiated at the Site on 25 November 2014 in overburden using direct-push drilling methods. All monitoring well locations were physically cleared using a hand auger or vacuum extraction techniques to a depth of 5-feet bgs for safety purposes. A total of seven monitoring wells were installed during the RI; six overburden wells (TMW-12 through TMW-14, TMW-15S, TMW-16, and TMW-17) and one bedrock well (TMW-15D). Monitoring wells TMW-15S and TMW-15D were installed as an overburden/bedrock well couplet to provide information on the vertical hydraulic gradient of groundwater at the Site. Monitoring well TMW-15D was drilled into bedrock using air hammer drilling techniques.

Soil and bedrock was described by an ERM geologist for relevant physical characteristics and observations were recorded on boring logs (Appendix C). Well construction details were recorded on monitoring well construction logs (Appendix D). Each monitoring well was constructed with 1-inch diameter, threaded flush joint, Schedule 40 polyvinyl chloride (PVC) well casing and 0.010-inch slotted PVC well screens, except the bedrock well was constructed using 2-inch diameter PVC well rising and screen. Morie #0 sand or equivalent was utilized to install a sand filter pack around the screened interval. The sand filter pack was installed to an approximate height of 1-foot above the top of each well screen. During installation of the sand filter pack, the sand was tamped down using a weighted tape measure to minimize the potential for bridging in the well annulus. Hydrated bentonite chips were installed over the sand filter pack and cement-bentonite grout was used to fill and seal the remaining annular space to a depth of approximately 1.0- to 1.5-feet bgs.

Flush-mounted, protective steel covers were installed over the wells. A locking expansion well cap and keyed-alike locks was provided for each well. All monitoring wells were developed by surging and bailing (overburden wells) or pumping (the bedrock well) to facilitate collection of representative ground water samples.

2.3.2 Groundwater Sampling and Analysis

2.3.2.1 Chemical Parameters

Groundwater samples were collected from all monitoring wells using low flow/minimal drawdown purging and sampling procedures (USEPA, 1996). Field parameter analyses were conducted using a calibrated YSI 566 meter with a flow cell and a water level indicator (WLI) which allowed measurement of temperature (°C), specific conductivity (SpC), dissolved oxygen (DO), pH, turbidity, oxidation-reduction potential (ORP), and depth to water (DTW) data. Groundwater sampling records are presented in Appendix E. A summary of field observations and data from the sampling of monitoring wells at the Site is presented in Table 3. A summary of groundwater samples collected for laboratory analysis, including specific chemical parameters of analysis, is presented in Table 4.

Groundwater samples were transported with chain of custody documentation to an NYSDOH-approved environmental laboratory for analysis. As indicated in the NYSDEC-approved RI Work Plan (ERM, 2013), groundwater samples were generally analyzed for the following parameters:

- TCL VOCs+10 TICs by USEPA Method 8260;
- TCL SVOCs+20 TICs by USEPA Method 8270;
- PCBs by USEPA Method 8082;

- TAL Metals by USEPA Method 6010; and
- Mercury by USEPA Method 7470.

The metals antimony and thallium were analyzed by USEPA Method 200.8 for drinking water to provide reduced analytical reporting limits relative to the standard analytical method for TAL metals (USEPA Method 6010) given that the NYSDEC's ambient groundwater quality standards and guidance values for these two metals are significantly lower than the typical reporting limits obtained by analysis using USEPA Method 6010.

2.3.2.2 *Background Fluorescence*

Groundwater samples from all monitoring wells were analyzed for background fluorescence to evaluate potential hydraulic connections between monitoring wells based on the relative fluorescence intensity and fluorescence "fingerprint" of individual samples. Additional groundwater volume was collected at the same time as samples collected for chemical parameters and was placed into two 40-ml glass vials equipped with Teflon-septum seals. Samples were transported under chain of custody to NannoTrace Technologies of Orphund, Switzerland for analysis using a calibrated spectrophotometer.

2.3.3 *Elevations Survey and Groundwater Flow*

ERM subcontracted William Schutt and Associates (WSA) of Lancaster, New York to survey the locations and elevations of soil borings and monitoring wells installed during the RI, as well as the location and elevation of other selected Site features. The elevation survey was performed under the direction of a New York-licensed land surveyor. The survey work was performed by WSA on 28 May 2015. Ground elevation and the elevation of the top of casing were measured for all monitoring wells installed during the RI. The results of the elevations survey and measurements of depth to groundwater will be used to evaluate groundwater flow at the Site.

2.4 *DATA USABILITY EVALUATION*

A data usability evaluation was conducted on RI data under the direction of ERM's Project QA/QC Officer in conformance with guidelines presented in DER-10 Appendix 2B (NYSDEC, 2010a). Data review and evaluation were conducted by third-party data validators from Environmental Data Services, Inc. (EDS) of Williamsburg, Virginia. Consistent with NYSDEC guidance contained in DER-10 Section 3.14 (b), Data Usability Summary Reports (DUSRs) are not presented as an attachment to this RI report and the results of the data usability evaluation were submitted on 3 December 2015 as a stand-alone electronic data deliverable (EDD) to the NYSDEC's Electronic Information Management System (EIMS) website.

2.5 *QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT*

A Qualitative Human Health Exposure Assessment (QHHEA) was conducted for the Site based on the findings of subsurface investigations. The QHHEA was conducted in accordance with DER-10 Appendix 3B (NYSDEC, 2010a). Exposure pathway details, along with the Site characterization data and chemicals of potential concern (COPC), are used to evaluate if an exposure pathway may be classified as complete, potentially completion, or incomplete. When the five elements of an exposure pathway are present, the exposure pathway is classified as complete. If any of the five elements do not currently exist but may exist in the future, the exposure pathway is classified as potentially complete. If any of the five elements do not currently exist and will never exist in the future, then the exposure pathway is classified as incomplete and further evaluation is not warranted. The results of the QHHEA are presented in Section 3.5.

2.6 *ECOLOGICAL RESOURCES ASSESSMENT*

Ecological resources were assessed at the Site by ERM's Qualified Environmental Professional (QEP) during the implementation of the RI. Observations were documented in field notes and in color photographs. The NYSDEC's decision key contained in Appendix 3C of DER-10 (NYSDEC, 2010a) was utilized to evaluate whether or not performance of a Fish and Wildlife Resources Impact Analysis (FWRIA) was needed. The RI demonstrated that there is evidence that COPCs were released into the environment at the Site. Therefore, the Site can be considered to have been affected by one or more discharge or spill events. This consideration is used to further evaluate ecological resources at the Site as outlined in Item 1 of DER-10 Appendix 3C.

2.7 *INVESTIGATION-DERIVED WASTES*

Soil cuttings that appeared to be clean based on visual, olfactory, and PID field screening evidence were placed back into the borehole of origin. Soil cuttings that exhibiting visual, olfactory, or PID field screening evidence of potential contamination were containerized into steel 55-gallon drums for subsequent waste characterization, waste determination by the generator, and off-Site disposal.

Disposable sampling equipment and spent personal protective equipment (PPD) were containerized into a steel 55-gallon drum for subsequent waste characterization, waste determination by the generator, and off-Site disposal.

IDW consisting of groundwater purged from monitoring wells and fluids from cleaning and decontamination of sampling equipment were also containerized into steel 55-gallon drums for subsequent waste characterization, waste determination by the generator, and off-Site disposal.

All drums of IDW were labeled with generator name, address, contents, container number, waste determination status, and accumulation start date. All drums of IDW were temporarily staged into a locked steel container until the wastes were profiled and accepted at a facility for off-Site disposal.

3.0 FINDINGS

Data and results from previous investigations are considered and interpreted with data and results produced during the RI to provide a comprehensive assessment of environmental conditions at the Site.

The contemplated future use of the Site is commercial and/or restricted residential. Findings with respect to contaminant source, fate, transport, and actual or potential threats to human health and the environment are generally similar across all seven parcels of the Site. Therefore, Sections 3.1 through 3.7 of this report are presented and discussed on a Site-wide basis except if noted below. The remedial assessment of investigation results (Section 4.0) is organized by parcel to highlight any significant differences between the parcels and to assist potential purchasers with the evaluation of various options for redevelopment of the Site.

3.1 PRE-INVESTIGATION WORK

3.1.1 Mobilization

A large, steel temporary storage container was delivered to the Site and was located on the 233 Mortimer Street parcel to provide a lockable, secure area for the temporary staging of IDW and project equipment and supplies. Additionally, large signage identifying the Site as a BCP Site was installed near the southern boundary of the 490 Broadway parcel facing Broadway.

3.1.2 Subsurface Clearance Activities

All soil borings and monitoring wells were advanced safely without injury or property damage at the locations indicated in Figure 3. Most soil borings were advanced at the locations indicated in the NYSDEC-approved RI Work Plan. ERM re-located several boring locations slightly based on the results of subsurface clearance activities and added several borings to complete the delineation of areas of GCM. Boring locations that needed to be re-located more than several feet were discussed with and verbally approved by the NYSDEC in the field.

3.1.3 Geophysical Survey

The geophysical survey resulted in one EM anomaly (Figure 3) that suggested the possible presence of one or more USTs or other buried metal object(s). This area was investigated by the installation of soil borings B-62 through B-65 which revealed the presence of buried concrete debris containing steel reinforcement bar (rebar). Therefore, additional areas of potential concern were not identified as a result of the geophysical survey.

3.1.4 *Radioactivity Survey*

Background radioactivity levels were measured at regular intervals at the ground surface on 17 November 2014 along the boundaries of each parcel using a Ludlum Model 2241 meter with a 44-10 probe. Radioactivity levels measured during the surface background survey ranged from 5590 to 13,300 counts per minute (CPM).

Radioactivity levels measured from soil-like materials encountered in soil cores installed during the RI typically ranged from 4000 to 8000 CPM. Radioactivity levels in soil-like materials ranged from a low of 1540 CPM at soil boring B-11 to a high of 12,600 CPM at soil boring B-49.

Slag-like materials were reported in soil cores from the following soil borings:

<u>490 Broadway</u>
- B-15
- B-16
- B-28
- B-31A
- TMW-10
- TMW-14

<u>498 Broadway</u>
- B-59
- B-60

<u>187 Mortimer</u>
- B-25
- B-55
- B-57

<u>213 Mortimer</u>
- SB-33
- SB-34
- B-51
- B-52
- B-54

Slag-like materials encountered at the Site were typically brown, dark brown, or black and do not resemble slag-like materials that have been associated with historic phosphorous production at some Sites in western New York State (that slag is typically light gray to gray in color). Slag associated with historic phosphorous production can contain elevated low-level radioactivity due to the presence of technically-enhanced naturally occurring radioactive material (TENORM).

Radioactivity levels measured from slag-like materials encountered in soil cores installed during the RI typically ranged from 4000 to 8000 CPM (similar to the levels measured in soil-like materials). Radioactivity levels in slag-like materials at the Site ranged from a low of 4060 CPM at soil boring B-15 to a high of 16,100 CPM at soil boring B-52. These readings are generally consistent with background survey readings measured at the Site and with the radioactivity levels measured in non-slag materials encountered in soil borings.

3.1.5 Community Air Monitoring

Site-specific VOC or particulate action levels were set on a daily basis based on evaluation of background VOC and particulate readings plus the appropriate action levels indicated in the approved CAMP. Exceedances of VOC or particulate CAMP action levels were not encountered upwind or downwind of the Site during the RI.

3.2 SOIL INVESTIGATION

3.2.1 Site Geology

Geologic cross sections were prepared to illustrate the texture of fill and geologic materials encountered at the Site. The locations of the geologic cross sections are presented in Figure 4. Geologic Cross Section A-A′ (Figure 5) runs generally south-to-north through the Site and Geologic Cross Section B-B′ runs generally west-to-east.

The stratigraphy of materials encountered in the subsurface during the RI is consistent with the stratigraphy described above in Section 1.3. Generally, various-colored fill materials consisting predominantly of silty sand or gravelly sand and generally ranging from 0- to 2-feet in thickness are present at or near the surface. In some areas, this includes black sand material from the former on-Site foundry that is the primary source of metals and SVOC exceedances at the Site. Sometimes the black sand material is capped by 0.5- to 1.0-foot of brown soft silty clay fill material. The fill materials and are typically underlain by several feet of reddish-brown native silty clay. The native silty clay is typically underlain by a relatively thin layer of silty sand or gravelly sand on top of the underlying gray limestone bedrock (Onondaga Limestone). Many surface and subsurface disturbances for expansions and other construction activities have occurred throughout the life cycle of the Site. These disturbances have locally resulted in variations from the generalized stratigraphy noted above.

Figure 7 presents the thickness of unconsolidated (overburden) materials present on top of bedrock across the Site as measured at soil boring and well locations. Overburden is generally thinnest in the northeastern portion of the Site and thickens to the west and south. Overburden thickness at the Site ranged from a minimum of 1.1 feet on the 233 Mortimer Street parcel to a maximum of 11.5 feet on the 498 Spring Street parcel. Variations in overburden thickness across the Site are also illustrated in the geologic cross sections (Figures 5 and 6).

Figure 8 presents structural contours on the top of bedrock at the Site. The contours are interpreted to show that the top of the bedrock surface generally slopes towards the southwest. As shown in Figure 8 and the geologic cross sections (Figures 5 and 6), there is a bedrock topographic high (interpreted as a generally north-south trending ridge) in the eastern portion of the Site (i.e., the parcels east of Mortimer Street).

3.2.2 Black Sand Material

Figure 9 presents the estimated lateral extent of black sand material based on review of historical documentation and its distribution in soil borings and test pits at the Site. Certain COPCs detected at concentrations above applicable SCGs typically occur in the black sand material. The black sand material is often present within 2- to 3-feet of the ground surface, but it has also been observed as sporadic veins or other irregular geometries at other depths. It generally should be considered to be sporadic in distribution both laterally and vertically within the areas shown in Figure 9. This is likely due to the black sand material being moved during historical subsurface disturbances such as previous excavations for foundations and floor slabs, utility trenches, former USTs, or other structural features at the Site. Additionally, Brown and Caldwell (2007) report that some black sand material encountered on Site during the building decommissioning and demolition work performed in 2006 was moved and consolidated in the vicinity of the former foundry, which was formerly located in the west-central portion of the 490 Broadway parcel.

While black sand material was observed within several feet of some property boundaries during the RI (Figure 9), review of historical environmental documentation summarized in the BCP Application (Howden, 2013) including Sanborn maps and aerial photographs suggests there is no reason to believe that contiguous areas of black sand material were emplaced off-Site during Site operations. . Importantly, black sand material was not observed on adjacent parcels during the RI.

3.2.3 *Soil Sampling and Analysis*

Comprehensive laboratory analytical results from all soil samples collected at the Site during the RI and previous investigations are presented in Table 5. The following compounds or elements were detected in one or more soil or fill samples collected at the Site at concentrations above the Unrestricted Use SCOs:

VOCs

- Acetone

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

PCBs

- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260

Metals (mg/kg)

- Arsenic

- Barium
- Cadmium
- Chromium
- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Selenium
- Silver
- Zinc

Figure 10 shows the estimated areas within the 0- to 2-feet depth interval that may contain one or more of these compounds or elements at concentrations above the Unrestricted Use SCOs based on the results of geostatistical mapping using the inverse distance weighting function in GIS software. Figure 11 shows the estimated areas at depths greater than 2-feet that may contain one or more of these compounds or elements at concentrations above the Unrestricted Use SCOs.

The vertical layer approach to delineating and mapping exceedances was utilized to facilitate vertical delineation of COPCs and also the evaluation of remedial options at the Site. Likewise, estimated volumes of soil exceeding the applicable SCOs are presented in these figures based on the estimated thickness of the exceedance area. The thickness is defined as 2-feet in Figure 10 and is calculated in Figure 11 using the average bottom of the sampled interval in mapped areas.

Estimated areas and volumes are provided for informational purposes and not to imply that a remedial action involving excavation, transport, and disposal off Site will be necessary to achieve a desired land use for one or more of the parcels. For example, a remedial approach involving installation of a cover system (without remedial soil excavation) may be more desirable for one or all of the parcels based on the desired land use, financial considerations (e.g., capital costs, potential tax credits, other financial assistance, etc.), or other factors relevant to Howden and SAAKC as redeveloper.

The following compounds or elements were detected in one or more soil or fill samples collected at the Site at concentrations above the Protection of Groundwater SCOs:

<u>VOCs</u>

- Acetone

<u>SVOCs</u>

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Indeno(1,2,3-cd)pyrene

<u>PCBs</u>

- Aroclor 1254

<u>Metals (mg/kg)</u>

- Arsenic
- Barium
- Cadmium
- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Selenium
- Silver
- Zinc

Figure 12 shows sample locations within the 0- to 2-feet depth interval that contain one or more of these compounds or elements at concentrations above the Protection of Groundwater SCOs. Figure 13 shows sample locations at depths greater than 2-feet that contain one or more of these compounds or elements at concentrations above the Protection of Groundwater SCOs.

The following compounds or elements were detected in one or more soil or fill samples collected at the Site at concentrations above the Residential SCOs:

VOCs

None

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

PCBs

- Aroclor 1254

Metals (mg/kg)

- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Zinc

Figure 14 shows sample locations within the 0- to 2-feet depth interval that contain one or more of these compounds or elements at concentrations above the Residential SCOs. Figure 15 shows sample locations at depths greater than 2-feet that contain one or more of these compounds or elements at concentrations above the Residential SCOs.

The following compounds or elements were detected in one or more soil or fill samples collected at the Site at concentrations above the Restricted Residential SCOs:

VOCs

None

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

PCBs

- Aroclor 1254

Metals (mg/kg)

- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Lead
- Manganese
- Mercury

- Nickel
- Zinc

Figure 16 sample locations within the 0- to 2-feet depth interval that contain one or more of these compounds or elements at concentrations above the Restricted Residential SCOs. Figure 17 shows sample locations at depths greater than 2-feet that contain one or more of these compounds or elements at concentrations above the Restricted Residential SCOs.

The following compounds or elements were detected in one or more soil or fill samples collected at the Site at concentrations above the Commercial SCOs:

VOCs

None

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

PCBs

- Aroclor 1254

Metals (mg/kg)

- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Lead
- Manganese
- Mercury

- Nickel
- Zinc

Figure 18 shows sample locations within the 0- to 2-feet depth interval that contain one or more of these compounds or elements at concentrations above the Commercial SCOs. Figure 19 shows sample locations at depths greater than 2-feet that contain one or more of these compounds or elements at concentrations above the Commercial SCOs.

The following compounds or elements were detected in one or more soil or fill samples collected at the Site at concentrations above the Industrial SCOs:

VOCs

None

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Dibenz(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

PCBs

None

Metals (mg/kg)

- Arsenic
- Cadmium
- Lead
- Manganese
- Mercury
- Zinc

Figure 20 shows sample locations within the 0- to 2-feet depth interval that contain one or more of these compounds or elements at concentrations above the Industrial SCOs. Figure 21 shows sample locations at depths greater than 2-feet that contain one or more of these compounds or elements at concentrations above the Industrial SCOs.

Figure 22 presents estimated areas of GCM based on observations of visual, olfactory, or PID screening evidence of potential contamination in environmental samples. GCM observed at the Site consists of residual petroleum constituents and was typically observed through slight to moderate petroleum-like sheen or odor in soil and groundwater in the areas shown in Figure 22.

3.2.4 Soil Contaminant Sources

Review of soil boring logs and laboratory analytical results indicates that exceedances of metals and SVOCs in soil are typically observed in samples with black sand material. This material is spent foundry sand that may have been generated at the foundry that formerly operated on Site. Review of available historical environmental documentation and observations during the RI indicate there is no reason to believe that contiguous black sand material was emplaced off-Site.

Based on the historical use of PCBs in electrical equipment at the Site, it is assumed that detections of PCBs in soil at the Site are associated with releases of dielectric fluids from former electrical equipment used at the Site.

Petroleum products including lubricating oil, cutting oils, fuel oil, and gasoline were formerly used at the Site. Typically low levels of residual petroleum constituents are present in several areas of the Site based on observations of generally light to moderate petroleum-like sheen, odor, and/or staining in soil. These areas have been mapped as GCM in Figure 22. Petroleum products may be a source of VOCs, SVOCs, PCBs, and/or metals in soil depending on the type of petroleum product.

The only VOC that was detected at concentrations above the Unrestricted SCOs in soil at the Site is acetone, and acetone is not typically associated with standard petroleum products. Additionally, acetone was only detected at low concentrations below the analytical reporting limit (i.e., "J"-flagged data) and only in a relatively few soil samples (SB-18, B-33, B-42A, B-57, B-58, and B-59). The few isolated, low-level Unrestricted SCO exceedances of acetone do not appear to be associated with an identifiable former Site activity and may be artifacts of sampling handling in the laboratory and/or elevated detection limits.

3.3 GROUND WATER INVESTIGATION

3.3.1 Monitoring Well Installations

The thickness of the screened interval in overburden wells was variable based on the generally shallow and variable depth to the top of bedrock at each well location. Screened intervals for monitoring wells are summarized below (depths are indicated in feet bgs).

Monitoring Well	Screened	Dry During Sampling?
TMW-12	5.5′-10.5′	No
TMW-13	1.7′-4.7′	Yes
TMW-14	3.5′-9.5′	No
TMW-15S	4.0′-8.0′	No
TMW-15D (bedrock)	10.5′-20.5′	No
TMW-16	2.5′-6.5′	Yes
TMW-17	1.8′-3.8′	Yes

Overburden groundwater at the Site is generally perched (contained) on top of the bedrock surface. In order to further facilitate isolation of the bedrock monitoring well (TMW-15D) from the overburden monitoring well (TMW-15S), well TMW-15D was constructed by cementing a 4-inch diameter outer steel casing approximately 2-feet into competent bedrock using quick-setting cement hydrated with potable water. The top of bedrock was encountered at a depth of approximately 8.2-feet bgs. The outer steel well casing was allowed to set overnight. Air-hammer drilling methods were then used to advance the borehole further into bedrock. A significant water-bearing fracture was encountered at a depth of approximately 14-feet bgs (approximately 5.8-feet into bedrock). Drilling was terminated at TMW-15D at a depth of approximately 20.5-feet bgs (approximately 12.3-feet into bedrock).

Figures 23 and 24 present overburden groundwater contour maps based on groundwater level data collected in 2012 and 2015, respectively.

3.3.2 Groundwater Sampling and Analysis

3.3.2.1 Chemical Parameters

Review of groundwater field parameter data in Table 3 indicates that Site groundwater generally has DO levels that are intermediate between oxygenated (values around 7-8 mg/L) and anaerobic or non-oxygenated conditions (values < 1 mg/L). ORP data including both positive (oxidizing) and negative (reducing) values suggest a geochemically mixed groundwater environment that is locally variable. Data are comparable for both shallow (overburden) and deeper (bedrock) groundwater.

Comprehensive laboratory analytical results from all groundwater samples collected at the Site during the RI and previous investigations are presented in Table 6 and in Figure 25. Review of laboratory analytical results indicates that COPCs were not detected in the bedrock groundwater sample (TMW-15D). The following compounds or elements were detected in one or more overburden groundwater samples collected at the Site at concentrations above the NYSDEC's ambient groundwater quality standards or guidance values:

VOCs

1,2,4-Trimethylbenzene

SVOCs

None

PCBs

None

Metals (mg/kg)

- Antimony
- Iron
- Lead
- Magnesium
- Manganese
- Selenium
- Sodium

3.3.2.2 *Background Fluorescence*

The details and results of the BFA evaluation are presented in Appendix F. Similarities in groundwater fluorescence "fingerprints" can identify hydraulic connections between groundwater samples collected in different portions of a site. However, significant similarities in fluorescence "fingerprints" of groundwater samples collected at the Site during the RI were not observed, suggesting that groundwater flow in overburden is dominated by matrix flow and that preferential groundwater flow paths (i.e., fractures, utility conduits, sand or gravel lenses, etc.) may not be of environmental significance in overburden at the Site at the scale of the sampling effort.

3.3.3 Elevations Survey and Groundwater Flow

The results of the elevations survey and measurements of depth to groundwater are used to evaluate groundwater gradients and flow at the Site.

Groundwater level measurements at monitoring well couplet MW-15S and MW-15D (Table 3) indicate there is a vertically-downward hydraulic gradient at that location, suggesting that groundwater from the overburden zone will likely flow downward into the bedrock zone if a pathway such as an open fracture exists.

Figures 23 and 24 present overburden groundwater contour maps based on groundwater level data collected in 2012 and 2015, respectively. Groundwater contours in both figures are generally similar and document a general south-southwest direction of overburden groundwater flow at the Site. Given that overburden groundwater is perched on top of the bedrock surface, localized variation in groundwater flow direction likely occurs based on the local topography of the bedrock surface (Figure 8).

3.3.4 Groundwater Contaminant Sources

SVOCs and PCBs were not detected in Site groundwater at concentrations above ambient groundwater quality standards or guidance. Therefore, SVOCs and PCBs in soil at the Site do not appear to be a source to Site groundwater.

Review of laboratory analytical results indicates that the following metals associated with black sand material had exceedances of SCOs in soil and a few isolated exceedances of the ambient groundwater quality standards and guidance values:

- Lead;
- Manganese; and
- Selenium.

Antimony was also detected in Site groundwater in two samples at concentrations above its ambient groundwater quality standard. Therefore, the black sand material may represent a source of metals in Site groundwater. However, the following metals were detected in Site groundwater at concentrations above their ambient groundwater quality standards or guidance values that are interpreted to be derived from natural sources:

- Iron;
- Magnesium; and
- Sodium.

The observed concentrations of these metals, commonly found in natural rock-forming minerals as described in Section 1.2, is consistent with the anticipated geochemical character of groundwater at the Site. These metals are considered as naturally occurring at the Site and raising only aesthetic and not environmental concerns.

Petroleum products including lubricating oil, cutting oils, fuel oil, and gasoline formerly used at the Site may have also affected shallow groundwater in the isolated areas shown in Figure 22. However, VOCs, SVOCs, PCBs, and metals typically are not present in areas of GCM at concentrations above the ambient groundwater quality standards and guidance values. The one isolated detection of the VOC 1,2,4-Trimethylbenzene in the groundwater sample from well TMW-07 in 2012 is likely associated with petroleum. However, the proximity of this detection to the street and its isolation to this location suggests that historic use of the street by vehicles (which use petroleum) or some other off-Site source cannot be ruled out.

3.4 *DATA USABILITY EVALUATION*

All laboratory analytical data for soil samples obtained during the RI were found to be valid and usable with the qualifications noted in data summary tables and the stand-alone Electronic Data Summary.

3.5 *QUALITATIVE HUMAN HEALTH EXPOSURE ASSESSMENT*

3.5.1 *Chemicals of Potential Concern*

Chemicals of potential concern (COPCs) for soil and groundwater are identified based on exceedances of applicable SCGs. Analytical data were reviewed to identify COPCs for each environmental medium. Tables 7 and 8 show the maximum detected concentrations in soil and groundwater samples collected at the Site, respectively.

Soil

The contemplated future use of the Site is mixed restricted residential and commercial. Therefore, soil data were compared to the Restricted Residential SCOs (i.e., the higher land use). The SCOs are intended to be applied to the top 15 feet of soil (or to the top of bedrock if shallower) consistent with NYSDEC's Soil Cleanup Guidance Policy dated 21 October 2010 (CP-51; NYSDEC, 2010b).

Most of the compounds detected at concentrations above the Restricted Residential SCOs occur predominantly in the black sand material. Two potential additional sources are residual petroleum constituents (VOCs, SVOCs, and/or metals) and former electrical equipment (PCBs). The following compounds were detected in one or more soil samples at the Site with the shown maximum concentration exceeding its Restricted Residential SCO:

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Chrysene

Metals

- Cadmium
- Chromium
- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Zinc

PCBs

- Aroclor 1254

Groundwater

Groundwater analytical data were compared to the NYSDEC's ambient groundwater quality standards and guidance values for Class GA groundwater (TOGS-1.1.1; NYSDEC, 1998). Groundwater has no current or planned future use at the Site. However, excavation dewatering may occur during future construction-related activities.

The following compounds were detected in one or more groundwater samples at the Site with the maximum concentration exceeding the TOGS-1.1.1 values:

VOCs

- 1,2,4-trimethylbenzene

Metals

- Antimony
- Iron
- Lead
- Magnesium
- Manganese
- Selenium
- Sodium

3.5.2 *Potential Exposure Pathways*

The Site is located within a mixed residential and commercial urban area. This area has been developed since the mid-1800s and has experienced various transformations in land use. The main portion of the Site which housed primary manufacturing and associated operations is the 490 Broadway parcel. Parcels west of Spring Street were used primarily for storage and parcels east of Mortimer Street were used primarily for parking and garage operations.

Currently, the Site is unoccupied and vacant. The current land use designation per the City of Buffalo for these parcels is "vacant-commercial". There are no buildings on Site and no current activities performed, with the exception of the RI and associated activities, which involves the performance of soil and groundwater sampling. It is also important to note that the Site is not secured by a fence or other security system. Hence, trespassing may occur and was routinely observed by ERM personnel during performance of the RI.

Potential exposure pathways for soil and groundwater are summarized as Pathways A through Q (Table 9). These potential exposure pathways were developed through consideration of the five relevant elements of a potential exposure pathway including: 1) environmental media as contaminant source; 2) contaminant release and transport mechanisms; 3) actual or potential points of exposure; 4) routes of exposure; and 5) potential receptor populations.

The following potential exposure pathways were identified for on-Site soil:

- Pathway A: Current Direct Contact (Dermal Absorption) with Soil for On-Site Commercial Workers;
- Pathway B: Current Incidental Ingestion of Soil for On-Site Commercial Workers;
- Pathway C: Current Fugitive Dust Emissions (Inhalation) of Soil for Commercial Workers;
- Pathway D: Current Direct Contact (Dermal Absorption), Incidental Ingestion and Dust Emissions (Inhalation) of Soil for Potential Trespassers;
- Pathway E: Future Direct Contact (Dermal Absorption) with Soil for On-Site (Indoor) Commercial Workers;
- Pathway F: Future Direct Contact (Dermal Absorption) with Soil for Commercial Workers;
- Pathway G: Future Direct Contact (Dermal Absorption) with Soil for Construction Workers/Utility Workers;
- Pathway H: Future Direct Contact (Dermal Absorption) with Soil for Residents;
- Pathway I: Future Incidental Ingestion of Soil for Commercial Workers;
- Pathway J: Future Incidental Ingestion of Soil for Construction Workers/Utility Workers;
- Pathway K: Future Incidental Ingestion of Soil for Residents;
- Pathway L: Future Fugitive Dust Emissions (Inhalation) of Soil for Commercial Workers.
- Pathway M: Future Fugitive Dust Emissions (Inhalation) of Soil for Construction Workers/Utility Workers.
- Pathway N: Future Fugitive Dust Emissions (Inhalation) of Soil for Residents.

The following potential exposure pathways were identified for on-Site groundwater:

- Pathway O: Future Direct Contact of Groundwater by Construction/Utility Workers during Excavation and Dewatering Activities.
- Pathway P: Future Incidental Ingestion of Groundwater by Construction/Utility Workers during Excavation and Dewatering Activities.
- Pathway Q: Future Inhalation of Vapors Indoors and Outdoors from Underlying Groundwater – Residents, Commercial Workers, and Construction/Utility Workers.

3.5.3 *Qualitative Exposure Assessment*

The pathway scenarios discussed focus on current conditions at the Site observed during implementation of the RI. Soil containing COPCs above applicable SCGs may be permanently removed from the Site or access will be restricted via installation of engineering controls (ECs), such as a soil cover system, and/or implementation of a NYSDEC-approved SMP after the completion of remedial actions. Thus, future exposure pathways are generally considered to be incomplete for the contemplated use of the Site except as noted below.

Soil

- Pathway A: Current, Direct Contact (Dermal Absorption) with Soil for On-Site Commercial Workers

  There are no current intrusive activities performed on Site with the exception of environmental investigation activities. Employees performing this sampling are required to wear PPE such as gloves, steel toed shoes, and safety glasses as routine protective measures. Employees receive hazard communication training and employees must also adhere to a Site-specific HASP that includes standard practices for the use of PPE. However, if these practices are not followed, there is the potential for dermal absorption of contaminants. Therefore, this pathway is considered potentially complete.

- Pathway B: Current, Incidental Ingestion with Soil for On-Site Commercial Workers

As noted in Pathway A, on-Site workers follow a Site-specific HASP; however, if hands are not washed prior to eating or the mouth is touched with gloves, there is a potential for exposure, hence, this pathway is considered potentially complete.

- Pathway C: Current Fugitive Dust Emissions (Inhalation) of Soil for Commercial Workers

  As noted in Pathway A, current on-Site workers follow Site-specific health and safety practices. During intrusive activities, there is a possibility of creating fugitive dust through the use of drilling or excavation equipment. As a result, the potential exposure pathway for inhalation of soil is considered potentially complete.

- Pathway D: Current Direct Contact (Dermal Absorption), Incidental Ingestion or Dust Emissions (Inhalation) of Soil for Potential Trespassers

  It is known that trespassers have been on the Site; however, there is no information regarding the likelihood that these trespassers may touch the soil directly with their hands and/or if they may disrupt the ground and create dust emissions. As a result, these pathways are considered to be potentially complete until such time that Site access is restricted and/or remedial action is completed.

- Pathway E: Future Direct Contact (Dermal Absorption) with Soil for On-Site Commercial Workers

  There is a possibility that portions of the Site will be used for commercial purposes. If buildings are constructed and occupied for commercial operations, there is no reason to believe that a commercial worker working primarily inside the building will be in direct contact with any exposed soil given the future implementation of an approved SMP. Therefore, this potential exposure pathway is considered incomplete.

- Pathway F: Future Direct Contact (Dermal Absorption) with Soil for Commercial Workers

  There is a possibility that some of the Site will be used for commercial purposes. If buildings are constructed and occupied for commercial operations there is no reason to believe that a commercial worker with responsibilities inside and outside the buildings on the grounds, will be in direct contact with any exposed soil given the future implementation of an approved SMP. Therefore, this potential exposure pathway is considered incomplete.

- Pathway G: Future Direct Contact (Dermal Absorption) with Soil for Construction Worker/Utility Worker

  Remediation and construction activities will take place on Site at a later date. The exact nature of the construction activities is not currently known and workers will have to follow a Final SMP including a Site-specific HASP requiring various forms of PPE. During remedial activities, an approved Interim SMP will be implemented until the Final SMP is approved. However, there will be a potential for direct contact with soil for this receptor population. As a result, this exposure pathway is considered potentially complete.

- Pathway H: Future Direct Contact (Dermal Absorption) with Soil for Residents

  As a potential future use for this Site will be restricted residential, direct contact with soil is possible but is unlikely given that areas of remaining contamination (if any) will be controlled by implementation of an approved SMP. Access to remaining contamination will be restricted and therefore this exposure pathway is considered incomplete.

- Pathway I: Future Incidental Ingestion of Soil for Commercial Workers

  Similar to Pathway E, given the planned implementation of an approved SMP at the Site, there is no reason to believe that a commercial worker will be in direct contact with any exposed earth whereby they may touch the soil and then their mouth. Therefore, this potential exposure pathway is considered incomplete.

- Pathway J: Future Incidental Ingestion of Soil for Construction Worker/Utility Worker;

  Similar to the potential direct contact pathway (Pathway G), construction activities will take place on Site at a later date and there will be a potential for direct contact with soil, which may lead to incidental ingestion. As a result, this exposure pathway is considered potentially complete.

- Pathway K: Future Incidental Ingestion of Soil for Residents

  Similar to Pathway E, given the planned use of restricted residential requiring implementation of an approved SMP, there is no reason to believe that residents may come into direct contact with remaining contamination in soil. Therefore, this potential exposure pathway is considered incomplete.

- Pathway L: Future Fugitive Dust Emissions (Inhalation) of Soil for Commercial Workers

  Given the planned restricted use of the Site requiring implementation of an approved SMP, there is no reasonable basis to believe that commercial workers may be exposed to fugitive dust emissions generated from remaining contamination in soil. Therefore, this potential exposure pathway is considered incomplete.

- Pathway M: Future Fugitive Dust Emissions (Inhalation) of Soil for Construction/Utility Workers

  On-Site construction/utility workers will be expected to follow an approved Final SMP post remedial action including a Site-specific HASP, and air monitoring will be performed as part of that HASP. During remedial activities an approved Interim SMP will be implemented until the Final SMP is approved. However, it is possible that construction/utility workers may encounter remaining contamination in soil and potentially be exposed to fugitive dust emissions at the Site. Therefore, this potential exposure pathway is considered potentially complete.

- Pathway N: Future Fugitive Dust Emissions (Inhalation) of Soil for Residents

  As noted above for pathway L, given the planned restricted use of the Site requiring implementation of an approved final SMP and Interim SMP during remedial action, there is no reasonable basis to believe that residents may be exposed to fugitive dust emissions generated from remaining contamination in soil. Therefore, this potential exposure pathway is considered incomplete.

Groundwater

The Site and the surrounding community are serviced by a municipal water supply and there are no public or private drinking water wells. In addition, groundwater use for drinking water will be restricted by an EE approved by the NYSDEC (unless groundwater is treated to a degree rendering it safe for its intended use). Therefore, consumption (ingestion) of groundwater by future Site occupants is considered an incomplete exposure pathway.

Two potential future exposure pathways for groundwater were found to be potentially complete. During future construction activities, such as excavation during remedial action or installation of utilities or other Site improvements after completion of the remediation, future exposure pathways may exist due to excavation and dewatering activities if those activities are conducted in areas of remaining contamination identified in the SMP.

- Pathway O: Future Direct Contact with Groundwater during Excavation Dewatering Activities for On-Site Construction/Utility Workers

  Excavation and dewatering activities in the future may be performed in areas of remaining contamination depending on the level of cleanup performed. Therefore, construction and utility workers may come into contact with groundwater. There will be a Site-specific HASP recommending the use of proper PPE, and therefore the potential for significant exposure via this pathway is considered relatively low. However, the potential for direct contact and incidental ingestion of groundwater cannot be ruled out, and therefore this potential exposure pathway is considered potentially complete.

- Pathway P: Future Incidental Ingestion of Groundwater during Excavation Dewatering Activities for On-Site Construction/Utility Workers

  Excavation and dewatering activities in the future may be performed in areas of remaining contamination depending on the level of cleanup performed. Therefore, construction and utility workers may come into contact with groundwater. There will be a Site-specific HASP recommending the use of proper PPE, and therefore the potential for significant exposure via this pathway is considered relatively low. However, the potential for direct contact and incidental ingestion of groundwater cannot be ruled out, and therefore this potential exposure pathway is considered potentially complete.

- Pathway Q: Future Inhalation of Vapors (VOCs) Indoors and Outdoors from Underlying Groundwater

  Chlorinated solvents or VOCs associated with petroleum are the typical drivers of vapor intrusion evaluations in New York State. VOCs associated with chlorinated solvents or petroleum have not been detected at significant concentrations (i.e., above the Unrestricted SCOs or the ambient groundwater quality standards and guidance values) with the exception of one isolated, low-level exceedance of 1,2,4-Trimethylbenzene in one groundwater sample collected in 2012 from monitoring well TMW-07. The lack of significant concentrations of VOCs in the Site soil documented in the many environmental samples summarized in this RI Report suggests there is no significant potential for a completed vapor intrusion exposure pathway at the Site. Therefore, this potential exposure pathway is considered incomplete.

3.5.4 Interpretation of Exposure Assessment

The interpretation of the exposure assessment is summarized in Table 9. The following exposure pathways for soil are considered complete or potentially complete under current and contemplated future Site scenarios:

- Pathway A: Current Direct Contact (Dermal Absorption) with Soil for On-Site Commercial Workers;
- Pathway B: Current Incidental Ingestion of Soil for On-Site Commercial Workers;
- Pathway C: Current Fugitive Dust Emissions (Inhalation) of Soil for Commercial Workers
- Pathway D: Current Direct Contact (Dermal Absorption), Incidental Ingestion and Dust Emissions (Inhalation) of Soil for Potential Trespassers;
- Pathway G: Future Direct Contact (Dermal Absorption) with Soil for Construction Worker/Utility Worker;

- Pathway J: Future Incidental Ingestion of Soil for Construction Worker/Utility Worker;
- Pathway M: Future Fugitive Dust Emissions (Inhalation) of Soil for Construction Worker/Utility Worker.

Direct contact with soil and inhalation of soil represent the greatest risk with regards to frequency and duration of potential exposures for on-Site commercial workers and on-Site construction and utility workers. The risk is greatest during intrusive activities (e.g., disturbance of surface soil or subsurface soil excavation and associated dewatering). Control measures such as proper implementation and compliance with an approved SMP, Interim SMP, the Site-specific HASP, use of appropriate PPE, dust suppression techniques, and the use of ICs will greatly reduce the risk of potential exposures.

Two potential exposure pathways involving groundwater may exist for on-Site construction/utility workers in the future: 1) direct contact with groundwater during subsurface disturbances (i.e., excavation and de-watering) in areas of remaining contamination (if any); and 2) incidental ingestion of groundwater.

3.6 *ECOLOGICAL RESOURCES ASSESSMENT*

Evidence of significant ecological resources was not observed on Site during the RI. Due to their vacant and undeveloped status, the 490 Broadway, 498 Spring Street, and 516 Spring Street parcels contain limited ecological resources consisting of grassy vegetation. Review of the NYSDEC's internet-based Environmental Resource Mapper suggests that the Site and adjacent properties are unlikely to contain rare plants or rare animals. Additionally, there is no evidence that COPCs present at the Site have the potential to migrate to and impact off-Site ecological resources. Therefore, a Fish and Wildlife Resources Impact Analysis (FWRIA) was not performed based on review of the NYSDEC's FWRIA decision key contained in DER-10 Appendix 3C.

3.7 *INVESTIGATION-DERIVED WASTES*

A total of 17 drums of IDW were generated during the RI. Specific wastes generated consisted of the following:

- two drums of soil cuttings;
- thirteen drums of purged groundwater or decontamination waters from the on-Site decontamination area; and
- two drums of used PPE and disposable sampling equipment.

Laboratory analytical results, including toxicity characteristic leaching procedure (TCLP) data, and generator knowledge were used to characterize drums of IDW for waste determination purposes. Results of the characterization analyses of the drums indicated that all IDW could be handled, managed, transported, and disposed off-Site as non-hazardous waste. Howden executed non-hazardous waste profiles which were approved by the waste transporter and facility receiving the waste as non-hazardous wastes.

The IDW drums were appropriately labeled and temporarily staged on Site in a locked steel storage container. The drums were removed from the Site on 17 November 2015 by Environmental Products and Services of Vermont - Buffalo, New York office (EP&S) under a non-hazardous waste manifest/bill of lading. EP&S transported the drums from the Site to the EP&S facility in Syracuse, New York, a Resource Conservation and Recovery Act (RCRA)-permitted facility. Associated waste profile information, laboratory testing results, and the non-hazardous manifest or bill of lading documentation for all IDW generated at the Site is presented in Appendix G.

4.0 REMEDIAL ASSESSMENT OF INVESTIGATION RESULTS

Environmental investigations performed at the Site have adequately:

- defined Site geological and hydrogeological conditions;
- identified and characterized sources of contamination;
- evaluated the location, amount, concentration, characteristics, and environmental fate and transport of contaminants present; and
- identified potential exposure pathways and receptor populations.

Therefore, further remedial investigation of the Site appears unwarranted.

Remedial action performed under the NYSDEC's BCP is predicated on future Site use as described in the NYSDEC's Soil Cleanup Guidance Policy CP-51 (NYSDEC, 2010b). The Site is currently vacant and the contemplated future use of the Site is commercial and/or restricted residential.

4.1 SOIL

Soil at the Site has been adequately investigated laterally and vertically to evaluate the nature and extent of contamination in excess of applicable SCGs and to allow for a remedial AA which contemplates future development of the Site Tables 10 through 15 present soil data remedial assessment summaries for the various SCOs.

The SCOs for the Protection of Groundwater should not apply to the remediation of the Site because:

- COPCs in Site soil generally are not present in shallow groundwater samples at concentrations above ambient groundwater quality standards and guidance values;
- overburden groundwater is limited to isolated, discontinuous areas perched on top of bedrock and lateral or vertical contaminant transport in Site groundwater is not anticipated to be significant;
- naturally-occurring groundwater quality in the area does not support its use for drinking water or other potable purposes;
- all future contemplated uses of the property will have access to a municipal potable water supply; and

- the future contemplated use of the Site is restricted and will include an IC in the form of an NYSDEC-approved environmental easement (EE) that will restrict the use of groundwater at the Site.

The SCOs for the Protection of Ecological Resources should not apply at this Site based on the results of the ecological resources assessment (see Section 3.6).

Most of the COPCs detected at concentrations above applicable SCGs occur predominantly in the black sand material. The black sand material, along with areas of GCM, will not be acceptable for on-Site reuse during Site redevelopment. Application of the Restricted Residential or Commercial SCOs under Approach 2 contained in NYSDEC's Soil Cleanup Guidance (NYSDEC, 2010b), or application of Site-specific Action Levels under Approach 4 of NYSDEC's Soil Cleanup Guidance, appear appropriate for remedial actions at the Site. The SCOs for Unrestricted Use will also be evaluated in Section 5.0 for comparison purposes.

ICs and/or ECs will be required to facilitate NYSDEC approval of an acceptable Remedial Work Plan for the contemplated Site use (restricted). In addition to an EE, a SMP will be required to ensure that remaining contamination (if any) subsequent to the completion of remedial action is managed appropriately.

4.1.1 *Potential for Off-Site Soil Impacts*

The potential for contiguous off-Site impacts that can be reasonably associated with former operations at the Site is associated with the distribution of black sand material. Review of historical environmental documentation including Sanborn maps and aerial photographs, as well as review of property records obtained from the City of Buffalo Building Department, suggests there is no reason to believe that black sand material was emplaced onto adjacent properties during Site operations. However, black sand material was observed during the RI in close proximity to apparent property boundaries at several locations (Figure 9):

- the southwestern portion of 498 Spring Street;
- the southwestern portion of 490 Broadway (near the boundary with the City's park); and
- the southeastern portion of 187 Mortimer.

Black sand material was not observed crossing apparent property boundaries at the surface. However, it is possible that incidental, contiguous subsurface black sand material may be encountered near the property line. Excavations near property boundaries will be evaluated for the presence of black sand material. If contiguous black sand material that is physically consistent with black sand material at the 490 Broadway parcel is found to be present at a property boundary, the NYSDEC will be notified within 24 hours and a plan will be proposed to address the contiguous black sand material beyond the Site boundary after procurement of an access agreement with the respective property owner.

4.2 GROUNDWATER

Table 16 presents a groundwater data remedial assessment summary.

COPCs were not detected in groundwater from the bedrock monitoring well (TMW-15D).

Overburden groundwater at the Site is laterally and vertically discontinuous and is limited to isolated areas perched on top of bedrock as demonstrated by several monitoring wells that are dry. It is possible that little groundwater will be encountered during excavations at the Site for redevelopment or other purposes. Transmissive (mobile) groundwater appears to be highly limited in occurrence and volume and is limited to fractures, macropores, or coarser zones such as sand and gravel. Lateral or vertical contaminant transport in groundwater is not anticipated to be significant at the Site.

It is anticipated that soil containing COPCs at concentrations above the Restricted Residential and/or Commercial SCOs will be permanently removed from the Site or capped during implementation of the selected remedial action. Therefore, future soil remediation at the Site during redevelopment will likely also act as source removal and control for the protection of groundwater, further reducing the potential for groundwater impacts.

COPCs detected in overburden groundwater at the Site at concentrations above ambient groundwater quality standards are generally low-level exceedances or are naturally occurring and are not considered to be of environmental significance. Investigation or remediation of background ground water conditions is not warranted for this Site consistent with NYSDEC technical guidance (NYSDEC, 2010a).

The Site and surrounding areas are serviced by municipal water. Anticipated future source removals during remedial action, the limited amount of mobile groundwater at the Site, and the contemplated implementation of ICs including an EE that will restrict the use of groundwater at the Site suggest that additional investigation or active remediation of groundwater at the Site are not warranted.

4.2.1 Potential for Off-Site Groundwater Impacts

COPCs were not detected in bedrock groundwater at the Site. COPCs detected in overburden groundwater at the Site are low-level exceedances or are naturally occurring and are not considered to be of environmental significance. Overburden groundwater at the Site is laterally and vertically discontinuous and is limited to isolated areas perched on top of bedrock. Therefore, lateral or vertical contaminant transport in groundwater at the Site is not anticipated to be significant. Additionally, soil remediation at the Site will act as source removal and control for the protection of groundwater, further reducing the potential for groundwater impacts. Based on these considerations, the potential for off-Site groundwater impacts is considered insignificant.

5.0 ALTERNATIVES ANALYSIS

This section provides an analysis of the selected remedial approach by media using the Remedy Selection Evaluation Criteria identified in Section 4.2 of Guidance Document DER-10: Technical Guidance for Site Investigation and Remediation (NYSDEC, 2010). Three alternatives for Site soil are evaluated as follows:

- Alternative 1: No Further Action.
- Alternative 2: Remediate Site to Unrestricted Use (Track 1), an alternative remedy which will achieve unrestricted use for soil without the use of institutional controls (ICs) or engineering controls (ECs).
- Alternative 3: Remove GCM, Remediate Site to SSALs, and Place Cover (Track 4), the selected remedy for soil which will achieve a Track 4 Cleanup as applicable based on planned redevelopment of specific parcels and intended uses for the Site.

One remedial approach is evaluated for Site groundwater.

5.1 REMEDIAL GOALS & REMEDIAL ACTION OBJECTIVES

The overall objective of the remedy to be implemented at the Site is to remediate the affected Site soils and address groundwater impacts under the conditions of the BCP. This section presents the remedial goals and remedial action objectives (RAOs) established for the Site media of interest (i.e., soil and groundwater).

Remedial goals are derived from the statute (i.e., Title 6, New York Code of Rules and Regulations [6NYCRR] Part 375) and NYSDEC guidance. The remedial goals for this Site are:

- to be protective of public health and the environment, given the intended use of the Site; and
- to include removal or elimination, to the extent feasible, of identifiable sources of contamination regardless of the intended use of the Site.

As discussed in DER-10 Section 4.1(c), RAOs are medium-specific objectives for the protection of public health and the environment, and are developed based on chemical-specific standards, criteria, and guidance (SCGs) to address contamination identified at a Site. In the case of protection of human health, RAOs usually reflect the concentration of COPCs and the potential exposure route. Protection may be achieved by reducing potential exposure (e.g., use restrictions, limiting access) as well as by reducing concentrations

Media that are candidates for remedial evaluation are identified based on the nature and extent of contamination and applicable or relevant and appropriate SCGs. Site media of interest are soil and groundwater as identified during the RI, and discussed in Section 4.0.

The applicability of the following RAOs for this Site was evaluated as follows.

5.1.1 ***Soil***

Prevent ingestion/direct contact with contaminated soil.
Several metals and SVOCs were identified in Site soil above certain Restricted Use SCOs. Therefore, this RAO is applicable for development of Site-specific RAOs.

Prevent inhalation of or exposure to contaminants volatilizing from contaminants in soil.
The QHHEA did not identify volatilization of VOCs in soil as a potential exposure pathway. Therefore, this RAO is not applicable for development of Site-specific RAOs.

Prevent migration of contaminants that would result in groundwater or surface water contamination.
As identified in the RI, the SCOs for the protection of groundwater should not apply at this Site because:

- COPCs in Site soil generally are not present in shallow groundwater samples at concentrations above ambient groundwater quality standards and guidance values;
- overburden groundwater is limited to isolated, discontinuous areas perched on top of bedrock and lateral or vertical contaminant transport in Site groundwater is not anticipated to be significant;
- naturally-occurring groundwater quality in the area does not support its use for drinking water or other potable purposes;
- all future contemplated uses of the property will have access to a municipal potable water supply; and
- the future contemplated use of the Site is restricted and will include an IC in the form of an NYSDEC-approved EE that will restrict the use of groundwater at the Site.

In addition, surface water is not present on or adjacent to the Site. Therefore, this RAO is not applicable.

Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.
As discussed in Section 3.6, evidence of significant on-Site ecological resources was not observed during the RI. Additionally, there is no evidence that contamination present in soil has the potential to migrate to and impact potential off-Site ecological resources on adjacent properties. Therefore, this RAO is not applicable.

5.1.2 Groundwater

Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
Groundwater at the Site contains some contaminants above ambient water quality standards and guidance values. Therefore, this RAO is applicable for development of Site-specific RAOs.

Prevent contact with, or inhalation of volatiles, from contaminated groundwater.
As discussed in the QHHEA, the lack of significant concentrations of VOCs detected in soil and ground water during the RI suggests there is no significant existing or potential, for a completed vapor intrusion exposure pathway at the Site. Therefore, the “inhalation of volatiles” component of this RAO is not applicable.

All potable water on-Site and in the surrounding area is supplied by the municipal system, and there are no groundwater supply wells located on-Site. However, future Site workers could be exposed via direct contact during subsurface disturbances. As such, this potential exposure pathway is classified as potentially complete. Therefore, this RAO is applicable as it relates to direct contact with groundwater, only.

Restore groundwater aquifer to pre-disposal/pre-release conditions, to the extent practicable.
As discussed further in Section 4.2, the lack of groundwater use in the area, the lack of significant mobile groundwater in overburden at the Site, and the proposed use of ICs at the Site to further prohibit the use of groundwater for drinking, suggest that implementation of groundwater quality restoration or plume containment/ stabilization are not required at the Site. Therefore, this RAO is not applicable.

Prevent the discharge of contaminants to surface water.
Shallow overburden groundwater at the Site is laterally and vertically discontinuous and is limited to isolated areas perched on top of bedrock as demonstrated by several monitoring wells that are dry. Shallow perched groundwater flow at the Site is generally to the south-southwest (i.e., towards Broadway) due to local bedrock contours. Additionally, surface water is not present within a one-half mile radius of the Site. Investigation results and the apparent absence of groundwater receptors in the area suggest that perched groundwater conditions, as documented in the 2012 Groundwater Investigation and the RI by ERM, do not represent a significant threat to human health or the environment. Therefore, this RAO is not applicable.

Remove the source of ground or surface water contamination.
As discussed in DER-10 Section 1.3, a source area is a discrete area of soil, sediment, surface water, or groundwater containing COPCs in sufficient concentrations to migrate in that medium, or to release significant levels of COPCs to another environmental medium, which could result in a threat to public health and/or the environment. A source area typically includes, but is not limited to, a portion of a site where a substantial quantity of any of the following is present:

1. concentrated solid or semi-solid hazardous substances;
2. non-aqueous phase liquids; or
3. GCM.

Although soil contaminants have not been present in groundwater at significant levels, source material with residual petroleum constituents has been detected at the Site (Figure 22). Therefore, the applicable RAO will be to remove source material in the form of GCM as identified by this document.

<u>Soil Vapor</u>
Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.
As discussed in the QHHEA, the lack of significant concentrations of VOCs detected in soil and ground water during the RI suggests there is no significant existing or potential, for a completed vapor intrusion exposure pathway at the Site. Therefore, no RAOs are applicable for soil vapor.

Based on the above discussion, guidance for development of RAOs in DER-10 Section 4.1(c), and the NYSDEC Generic RAOs, the Site-specific RAOs will be as follows:

Soil

- SRAO1 – Prevent ingestion/direct contact with soil that poses a risk to public health and the environment given the current and future intended use of the Site; and

Groundwater

- GWRAO1 – Prevent ingestion of, or direct contact with groundwater with contaminant levels exceeding drinking water standards.
- GWRAO2 - Remove GCM.

5.2 EVALUATION OF REMEDIAL ALTERNATIVES FOR SOIL

Remedial action performed under the NYSDEC's BCP is predicated on future Site use as described in the NYSDEC's Soil Cleanup Guidance Policy CP-51 (NYSDEC, 2010b). The currently contemplated future uses of the Site are Commercial and Residential, depending on the parcel. Attainment of a BCP Track 4 cleanup is proposed according to a particular parcel's proposed future use. For this AA, the final use for each Site parcel will be assumed as noted on the attached Conceptual Site Plan included as Appendix H. The following remedial alternatives are evaluated.

- *Alternative 1: No Further Action.*
- *Alternative 2: Remediate Site to Unrestricted Use* (Track 1), a remedy which would achieve unrestricted use relative to soil contamination across the Site without the use of ICs or ECs.
- *Alternative 3: Remove GCM, Remediate Identified Areas of the Site to SSALs, and Place Cover* (Track 4); a remedy that would achieve a Track 4 cleanup based on intended use for specific parcels.

5.2.1 *Summary of Remedial Alternatives*

5.2.1.1 *Alternative 1 – No Further Action*

This alternative would forego any remedial action or the use of ICs or ECs, resulting in the Site maintaining its current state.

Overall Protection of Public Health and the Environment

This alternative remedy would allow for soil and GCM to remain in place. This alternative remedy would also not utilize engineering or ICs and would not meet any of the Site specific RAOs. It is therefore concluded that this alternative remedy would not be protective of public health and the environment.

Standards, Criteria & Guidance (SCGs)

This alternative remedy would not achieve compliance with the remedial goals, chemical-specific SCGs and RAOs due to leaving soil above SCGs and GCM in place.

Long-Term Effectiveness and Permanence

This alternative remedy would not achieve long-term effectiveness by leaving all impacted soil/black sand in place. Therefore, this remedy would not be effective over the long term.

Reduction of Toxicity, Mobility or Volume of Contamination

This alternative remedy would leave in place all contaminants at the Site. The overall toxicity, volume, and mobility would remain unchanged.

Short-Term Impact and Effectiveness

This alternative remedy would not achieve short-term effectiveness by leaving all impacted soil/black sand in place. Therefore, this remedy would not be effective over the short term.

Implementability

There are no techniques, materials and equipment needed to implement this remedy. No EE would be required under this remedy. The remedy is not effective in remediating the contaminants associated with the Site. Therefore, the remedy is not implementable.

Cost Effectiveness

This alternative remedy requires no further action at the Site. Therefore, the remedy would not incur any remedial costs.

Community Acceptance

As discussed in DER-10 Section 4.2(j), this criterion will be evaluated after the public review of the remedy selection process as part of the final NYSDEC selection/approval of a remedy for the Site. This criterion will be evaluated in consideration of the remedy needed to achieve no further action at the Site.

5.2.1.2 *Alternative 2 – Remediate Site to Unrestricted Use (Track 1)*

Under this remedial alternative, all soil constituents present above the Unrestricted Use SCOs would be excavated and disposed off-Site. Based on geostatistical mapping conducted during the RI, this would involve excavation of approximately 66,500 in-place cubic yards (cy) of soil, including 5000 cy of GCM.

Since all soil exceeding Unrestricted Use SCOs would be removed from the Site, an EE or other ICs addressing soil would not be required.

Overall Protection of Public Health and the Environment

This alternative remedy would remove all soil from the Site that exceeds Unrestricted Use SCOs. Therefore, this alternative remedy would prevent ingestion/direct contact with soil poses a risk to public health and the environment regardless of the future use of the Site, and would meet SRAO1. It is therefore concluded that this alternative remedy would be protective of public health and the environment.

Standards, Criteria & Guidance (SCGs)

This alternative remedy would achieve compliance with the remedial goals, chemical-specific SCGs and RAOs for soil through removal of all soil to meet Unrestricted Use SOCs. Health and safety measures contained in the HASP and CAMP that comply with the applicable SCGs would be implemented during Site redevelopment. The primary SCGs that apply to this remedy is provided in Table 17.

Long-Term Effectiveness and Permanence

This alternative remedy would achieve long-term effectiveness by permanently removing all impacted soil/black sand above Unrestricted Use SCOs, and enabling unrestricted usage of the property. Therefore, this remedy would be effective over the long term.

Reduction of Toxicity, Mobility or Volume of Contamination

As discussed in Section 5.2.4.2, impacted soil would be permanently removed from the Site. This alternative remedy would remove a greater overall mass of contaminants from the Site (66,500 cy versus 19,300 cy). However, the overall toxicity and volume would remain unchanged. The mobility of the contaminants would be reduced via placement in a regulated disposal facility.

Short-Term Impact and Effectiveness

To achieve Unrestricted Use SCOs, additional excavation will be required beyond that needed to achieve Restricted SCOs. Potential risks due to exposure to affected material would still be addressed with a HASP. The CAMP would be implemented as stated in Section 5.2.6.1.

During the additional excavation work required to achieve Unrestricted Use SCOs, there would be a significant increase in truck traffic associated with transportation of an additional 47,200 in-place cy of soil to an off-Site disposal facility, and a corresponding volume of imported backfill material. The following table summarizes the volume of soil to excavated and disposed off-Site, as well as the necessary volume of clean fill to import depending on the final Site use.

	Excavate & Remove		Fill In		Total	
	Vol (cy)	Trucks	Vol (cy)	Trucks	Trucks	Days
Unrestricted	66,500	5,541	66,500	5,541	11,082	222
Restricted Use	19,300	1,604	24,400	2,034	3,638	73

** Assumes 50 truckloads per day and in-place volume of 12 cy per truck

Based on these estimates, an unrestricted use cleanup would require approximately 222 working days. This work would have to be completed prior to most redevelopment tasks under the restricted use alternative and considerably delay the use of the Site compared to Alternative 3 for the Site (an estimated 73 working days or 3-4 months).

Implementability

The techniques, materials and equipment to implement this remedy are readily available and have been proven effective in remediating the contaminants associated with the Site. No Environmental Easement would be required under this remedy. Therefore, the remedy is implementable.

Cost Effectiveness

Table 18 also presents the estimated costs to achieve Unrestricted Use SCOs. This estimated cost is $11,705,900.

Land Use

Cleanup of the Site to Unrestricted Use SCOs ultimately will allow for any level of redevelopment. However, as noted above, the additional volume of soil required for removal could delay completion of the redevelopment project by approximately eight months.

Community Acceptance

As discussed in DER-10 Section 4.2(j), this criterion will be evaluated after the public review of the remedy selection process as part of the final NYSDEC selection/approval of a remedy for the Site. This criterion will be evaluated in consideration of the remedy needed to achieve SCOs for the applicable restricted use and unrestricted use of the Site.

5.2.1.3 Alternative 3 – Remove GCM, Remediate Identified Areas of the Site to SSALs, and Place Cover (Track 4)

The Site has been adequately investigated to evaluate the nature and extent of contamination in excess of applicable SCGs. A Track 4 cleanup will be implemented based on the parcel-specific intended land use as indicated in Appendix H and Figure 26. Alternative 3 consists of the following components.

1. Areas of GCM (i.e., residual petroleum constituents) will be excavated and transported off-Site for disposal at a permitted disposal facility. The locations and depths of proposed remedial excavations for GCM are presented in Figure 26. Confirmation soil samples will be collected from the GCM excavations in a manner consistent with the requirements of DER-10 Section 5.4(b) and analyzed for STARS-list VOCs and SVOCs. The GCM excavations will be backfilled with soil or fill meeting the SCOs for the specific parcel's intended use.

2. As outlined in 6 NYCRR Part 375-3.8(e)(4), Track 4 soil cleanups use Site-specific information to identify Site-specific SCOs (or Site-Specific Action Levels or SSALs) that are protective of public health and the environment under a restricted-use scenario. For Track 4 remedies, restrictions are placed on the use of the property in the form of ECs and/or ICs. For restricted-residential use, the top two feet of all

exposed soils that are not otherwise covered by the components of the development of the Site (e.g. buildings, pavement) cannot exceed the restricted-residential SCOs. Areas that exceed the restricted-residential SCOs must be covered by material meeting the requirements of the generic soil cleanup table contained in 6 NYCRR Part 375-6.7(d) for restricted-residential future Site use. In determining the SSALs that will be employed under the proposed Track 4 cleanup approach for this Site, it is necessary to consider: 1) the need to remediate GCM (e.g., areas exhibiting residual petroleum constituents) where feasible; 2) the need to remediate exceedances of the SSALs; and 3) the exposure scenario of Site workers who may need to perform periodic grounds keeping or other subsurface intrusive work (e.g., utility repairs) involving work beneath the cover system. Toward these ends, Alternative 3 includes the following SSALs that are proposed for soil below the cover system.

Analyte	**SSAL**
Metals, mg/kg	
Arsenic	30
Cadmium	60
Lead	2200
Manganese	10,000
Mercury	2.8
Zinc	10,000
PCBs, mg/kg	1/10*
Total PAHs, mg/kg	500

Notes:
- mg/kg = milligrams per kilogram
- PCBs = polychlorinated biphenyls
- * = SSAL for surface soil = 1 mg/kg; SSAL for subsurface soil = 10 mg/kg
- PAHs = polycyclic aromatic hydrocarbons

The Track 4 cleanup of the Site will include ICs (i.e., an EE and a SMP) that will mitigate potential exposure pathways for Site workers for all COPCs. The SSALs proposed for this Site are deemed protective of human health for Site workers who may contact soils on a routine basis (twice per week). Additionally, the SSAL of 500 mg/kg total PAHs for subsurface soil is employed in lieu of achieving all of the individual PAH-specific SCOs in 6 NYCRR Part 375-6, and the SSAL for PCBs of 1 mg/kg in the surface soil and 10 mg/kg in the subsurface soil are also employed. These cleanup levels for PAHs and PCBs have been previously determined by NYSDEC to be feasible and protective in its various remedial programs, including the BCP (NYSDEC, 2010b).

3. Application of the proposed SSALs to the Site results in the identification of eight areas of soil below the cover systems that are proposed for remedial excavation (Figure 26).

   - B-16 (0.5-1.5ft)
     - Manganese at 31,800 mg/kg
   - B-25 (0.5-1.5ft)
     - Arsenic at 391 mg/kg
   - B-54 (0.5-1.5ft)
     - Manganese at 15,900 mg/kg
   - B-55 (0.5-1.5ft)
     - Manganese at 25,400 mg/kg
   - SAND-100B (0-2ft)
     - Lead at 5590 mg/kg
   - SAND-100C (0-2ft)
     - Lead at 5590 mg/kg
   - SAND-103A (0-3ft)
     - Cadmium at 92.7 mg/kg
   - SAND-103B (0-3ft)
     - Cadmium at 92.7 mg/kg

   The locations and depths of proposed SSAL remedial excavations are presented in Figure 26. An initial 20-foot by 20-foot area will be excavated to a depth of one-foot below the lowest sample depth of the exceedance, resulting in an estimated SSAL remedial excavation volume of 319 cy. Confirmation soil samples will be collected from the SSAL excavations consistent with the requirements of DER-10 Section 5.4(b). One floor and four wall samples will be collected from each SSAL excavation and analyzed for SSAL metals, PCBs, and PAHs. Additional on-Site soil excavation will be performed if necessary based on comparison of the confirmation soil sampling results to the SSALs.

4. Black sand material encountered during GCM remedial excavations, SSAL remedial excavations, or excavations for Site redevelopment (i.e., construction of buildings, sidewalks, paved areas, etc.) will be removed and transported off-Site for disposal at a permitted disposal facility. A soil cover system will be placed over areas of any remaining black sand material which are not otherwise covered by buildings, sidewalks, or pavement. The soil cover system shall comply with the use-based SCOs for that parcel and shall be a minimum of one-foot

thick in commercial use areas and a minimum of two-feet thick in residential use areas.

5. Areas exceeding the use-based SCOs which are not otherwise covered by buildings, sidewalks, or pavement will be covered with a soil cover system that complies with the use-based SCOs for that parcel. The soil cover system shall be a minimum of one-foot thick in commercial use areas and a minimum of two-feet thick in residential use areas.

6. Management of any impacted excavation water that may be encountered during remedial activities.

7. A demarcation layer consisting of orange plastic netting will be placed at the bottom of all excavations prior to backfilling. A demarcation layer will also be placed in unexcavated areas prior to emplacement of fill as part of a cover system.

8. An EE will be established which only permits restricted residential and/or commercial use. A SMP will be prepared to inform current and future property owners regarding the distribution of affected material exhibiting concentrations in excess of NYSDEC's Unrestricted Use SCOs, as well as remaining soil exceeding the applicable Restricted Use-based SCOs below the cover systems, and to specify the manner in which intrusive work may be conducted in these areas if deemed necessary. The SMP will also include relevant considerations for periodic review of ICs; and

If appropriate based on Site conditions encountered during the remedial action and Site redevelopment, selected parcels may be remediated to residential or to unrestricted use after consultation with and approval of NYSDEC.

Additional Information by Parcel

The Site comprises seven properties: 498 and 516 Spring Street; 187, 213, and 233 Mortimer Street; and 490 and 498 Broadway. Redevelopment plans for each of the parcels varies with the redevelopment proposal currently in review by the City of Buffalo Common Council and City of Buffalo Planning Department. Redevelopment of all parcels is contingent upon NYSDEC's approval of this AA Report. Further, redevelopment of potential residential units on Spring Street and Mortimer Street and along Sycamore Avenue is contingent on approvals from the City of Buffalo and development financing. The Conceptual Site Plan is attached as Appendix H. The Proposed Project Schedule is attached as Appendix I.

For all parcels, all soil excavation, handling, or disposal shall be performed in accordance with an NYSDEC-approved work plan developed during the initial remediation of the Site as part of the current Brownfield project. The further redevelopment of any parcel, after initial remediation, would require notice to NYSDEC and receipt of all Department approvals that are required for a subsequent change in use, and the development plan will be consistent with obtaining a site that meets all requirements under the BCP.

187 Mortimer Street

The contemplated use for this parcel is restricted residential. The SSAL exceedances will be excavated followed by placement of two-feet of clean cover (approximately 4,600 cy). No further redevelopment of 187 Mortimer is proposed.

213 Mortimer Street

The contemplated use for this parcel is restricted residential. The SSAL exceedance at B-54 will be excavated followed by placement of two-feet of clean cover (approximately 2,800 cy). No further redevelopment of 213 Mortimer is proposed.

233 Mortimer Street

The contemplated use for this parcel is restricted residential. Redevelopment of the property will be passive green space, remediated to a Track 4 Restricted Residential clean-up. This will require the removal of the top two feet of soil and the replacement with two feet of clean soil. The estimated volume of soil to be excavated and disposed off-Site is approximately 2166 cy; the estimated volume of clean soil to be brought onto the parcel is approximately 2166 cy. Any future alternate land use will be based on community input. If said input results in a proposal for an alternate land use, other than open space, SAAKC will seek an amendment of the Decision Document from NYSDEC to modify remedy of a Track 4 Restricted Residential clean up to accommodate the use proposed and advocated by the community. It is understood that modifying the remedy for an alternate use will require NYSDEC review and approval.

498 Broadway Parcel

The contemplated use of this parcel is commercial. One foot of clean soil cover will be emplaced. No further redevelopment of 498 Broadway is proposed. The parcel will be developed at a point in the future for a commercial use consistent with the City of Buffalo zoning requirements, after identification of an appropriate end-user and after obtaining all required City of Buffalo approvals.

490 Broadway Parcel

The contemplated use of this parcel is mixed restricted residential and commercial. Following the excavation of the SSAL exceedances, the top six inches of existing soil will be excavated from asphalt parking and driveway areas. Soil will be removed as necessary from building footprint areas to construct the building foundations. Parking areas and driveways will be covered with asphalt pavement. Driveways, parking areas, and the building foundations shall act as cover for those areas of the parcel. All other areas of the parcel will be excavated to a depth of two feet or will have two-feet of clean fill cover emplaced to meet Track 4, restricted residential requirements. Excavated materials will be disposed off-Site and excavated areas will be backfilled to existing grade with two feet of clean fill to meet Track 4, restricted residential requirements. The estimated volume of soil to be excavated and disposed off-Site is 13,014 cy. The estimated volume of clean soil to be brought onto the parcel is 16,733 cy.

A four story commercial use building will be constructed on the southeastern portion of the parcel along Broadway, consistent with the City of Buffalo zoning requirements. Soil in this area will be removed as required to achieve a Track 4 Commercial cleanup. Excavated soil will be disposed off-Site (estimate of 635 cy).

498 and 516 Spring Parcels

Redevelopment of these properties will be passive green space, remediated to a Track 4 Restricted Residential clean-up. This will require the removal of the top two feet of soil and the replacement with two feet of clean soil. The estimated volume of soil to be excavated and disposed off-Site is 2050 cy. The estimated volume of clean soil to be brought onto the parcel is 2050 cy. Any future alternate land use will be based on community input. If said input results in a proposal for an alternate land use, other than open space, SAAKC will seek an amendment of the Decision Document from NYSDEC to modify remedy of a Track 4 Restricted Residential clean up to accommodate the use proposed and advocated by the community. It is understood that modifying the remedy for an alternate use will require NYSDEC review and approval.

The combination of these EC and ICs with the proposed remediation described above will comprise the final remedy for Site soil.

Overall Protection of Public Health and the Environment

The soil RAOs have been established to protect public health and the environment and are listed below:

- SRAO1 – Prevent ingestion/direct contact with soil that poses a risk to public health and the environment given the current and future intended use of the Site.

This soil RAO will be achieved for the Site. GCM will be excavated and disposed off-Site along with soil that exceeds SSALs. Excavation of soil below the cover system at the Site as identified in Figure 26 will occur until post-excavation samples meet SSALs. A composite soil cover system consisting of one to two-feet of clean fill, buildings and/or pavement will be placed over any areas with constituents exceeding the applicable restricted use-based SCOs or (refer to Appendix H Conceptual Site Plans and Figure 26). These areas will be managed in-place under a SMP which will limit disturbance of the soil without the proper controls. As such, the selected remedy will prevent ingestion/direct contact with soil above the applicable SCOs and SSALs, and will meet SRAO1. It is therefore concluded that the selected remedy is protective of public health and the environment.

Standards, Criteria & Guidance (SCGs)

This alternative will achieve compliance with the remedial goals, chemical-specific SCGs, and RAOs for soil through removal of GCM, removal of soil above SSALs, and by placing a composite cover system (i.e., soil, pavement, buildings) to achieve a Track 4 cleanup, as applicable. The SMP would ensure that these controls remained protective for the long term.

Health and safety measures contained in a construction-specific HASP and CAMP that comply with the applicable SCGs will be implemented during Site redevelopment. The primary SCGs that apply to this remedy are provided in Table 17.

Long-Term Effectiveness and Permanence

The excavation activities will achieve long-term effectiveness by permanently removing an estimated 5000 cy of GCM from the Site, and an estimated 319 cy of soil below the cover system exceeding SSALs. A composite cover system consisting of clean soil cover, paved areas, walkways, or building foundations (refer to Appendix H - Conceptual Site Plan and Figure 26) will be placed over any remaining soil containing chemical constituents exceeding the applicable SCOs (based on individual parcel intended end-use). Implementation of an SMP will ensure that this protection remains effective for the long-term. The SMP will ensure long-term effectiveness of all ECs and ICs by requiring periodic inspection and certification that these controls and use restrictions continue to be in place and are functioning as they were intended assuring that protections designed into the remedy will provide continued high level of protection in perpetuity. Therefore, this remedy will be effective over the long term.

Reduction of Toxicity, Mobility or Volume of Contamination

As discussed in Section 5.2.4.1, an estimated volume of 5000 cy of GCM will be permanently removed along with an estimated 319 cy of soil below the cover system exceeding SSALs. The overall toxicity and volume will remain unchanged. The mobility of the contaminants will be reduced via placement in a regulated disposal facility. The remaining impacted soil will remain confined on-Site under a composite cover system consisting of clean soil cover, paved areas or building foundations (based on individual parcel intended end-use).

Short-Term Impact and Effectiveness

During implementation of the remedial work, potential risks due to exposure to affected material will be addressed with a HASP. A CAMP will be implemented during intrusive activities at the Site to allow rapid identification, evaluation, and response to any potential risks to the community, Site workers and/or the environment. Corrective action will consist of ECs (e.g., dust suppression techniques, venting, sloping, shoring, etc.) to address potential concerns as they occur. During the excavation work, there will be a temporary increase in truck traffic (associated with transportation of soil for off-Site disposal, and a similar amount to backfill the excavations. Additional truck traffic is also associated with import of clean fill for the soil cover and redevelopment construction. Therefore, the short-term impacts associated with this project are acceptable.

Implementability

The techniques, materials and equipment to implement this remedy are readily available and have been proven effective in remediating the contaminants associated with the Site. They use standard materials and services that are well established technology. There are no special difficulties associated with any of the activities proposed.

Removal of GCM, soil below the cover system exceeding SSALs, and placement of a cover system to achieve a Track 4 cleanup as applicable, along with the proposed ICs, comprises the selected remedy. The property owner at the time of the remedial action will be conducting the remediation and will need to agree to the establishment of an EE which limits use to a selected restricted use on applicable parcels. Therefore, there is no need to obtain other approvals for the EE. Hence, the remedy is implementable.

Cost Effectiveness

Table 18 presents a summary of significant costs associated with the implementation of the selected remedial action (Alternative 3). The remedial cost of Alternative 3 under the assumptions described above is estimated to be $5,323,400

Land Use

The Site has been historically used for industrial operations. The Site has been inactive since 1992 and vacant since 2006, and is being redeveloped to allow construction of new commercial and residential properties. The planned cleanup will return the Site to productive use and allow continued use of the property in this capacity.

Community Acceptance

As discussed in DER-10 Section 4.2(j), this criterion will be evaluated by NYSDEC after the public review of the remedy selection process as part of the final NYSDEC selection/approval of a remedy for the Site. This criterion will be evaluated in consideration of the remedy needed to achieve SCOs for the applicable commercial use, restricted use, and unrestricted use of the Site.

5.2.1.4 *Evaluation Summary*

Alternatives 2 and 3 are equally protective of human health and the environment, will both permanently address soil from the Site and satisfy the soil RAOs. In addition, both alternatives will allow for the return the property to productive use. However, Alternative 2 would require excavation, transport, and off-Site disposal of an additional 47,200 cy of material due to the requirement to achieve an unrestricted use cleanup. This would result in an estimated additional cost of approximately $6,382,500 along with a significant increase in truck traffic to the surrounding community. Therefore, implementation of Alternative 2 would not provide greater protection to human health and the environment given the intended Mixed Restricted Use of the property.

5.3 *EVALUATION OF GROUNDWATER REMEDY*

5.3.1 *Summary of Remedy*

The investigation results indicate the presence of low levels of VOCs with one slight exceedance, and metals above the NYSDEC Ambient Water Quality Standards for Class GA Groundwater. Investigation results and the apparent absence of groundwater receptors in the area suggest that perched groundwater conditions present at the Site do not represent a significant threat to human health or the environment. Groundwater investigations conducted in 2012 and during the RI suggest that Site demolition and associated remediation activities undertaken in 2006 through 2008 were effective in reducing the impact of previous Site operations on groundwater quality. An Environmental Easement will be established prohibiting groundwater use without treatment rendering it safe for intended use.

5.3.2 *Overall Protectiveness of the Public Health and the Environment*

All potable water is supplied to the Site by municipal water. There are no private drinking water wells at the Site or in the area surrounding the Site. As a result, the exposure pathway via ingestion of groundwater is presently incomplete. However, future Site workers could be exposed via direct contact during subsurface disturbances. The SMP will inform current and future property owners regarding the presence of groundwater with parameters above the Ambient Water Quality Standards. The SMP also will specify the manner in which intrusive work may be conducted in these areas if deemed necessary. To further protect public health, the Environmental Easement will prohibit any use of Site groundwater without treatment. This will prevent potable water consumption or exposure to Site groundwater above applicable levels. All GCM will be removed from the Site and disposed off-Site. Therefore, the proposed remedy will achieve the applicable remedial action objectives:

- GWRAO1 – Prevent ingestion of, or direct contact with groundwater with contaminant levels exceeding drinking water standards.
- GWRAO2 - Remove GCM.

5.3.3 *Standards, Criteria & Guidance (SCGs)*

The primary SCGs that will apply are provided in Table 17. Under the proposed remedy, groundwater contaminants will remain at concentrations above the ambient groundwater quality standards and guidance values.

Measurement of groundwater elevations in monitoring wells across the Site reveals that there is shallow perched groundwater at the Site. The overall flow direction of shallow perched groundwater at the Site is generally towards the south-southwest. However, there are significant local variations in groundwater flow direction that apparently are the result of inferred structural lows and highs in elevation on top of the bedrock surface.

Exceedances of NYSDEC ambient groundwater quality standard and guidance values were limited to one VOC in one well and metals in several wells. VOCs were not detected in the samples from wells TMW-04, TMW-08, and TMW-09 (the wells with petroleum-like sheen and odor). Several VOCs commonly associated with some petroleum products were detected in samples from wells TMW-01 and TMW-07. However, the only exceedance is a very slight exceedance for 1,2,4-Trimethylbenzene in the sample from well TMW-01. The exceedance is slight and localized in distribution.

The following metals were detected in one or more groundwater samples at concentrations above NYSDEC ambient groundwater quality standards and guidance values:

- Antimony;
- Iron;
- Lead;
- Magnesium;
- Manganese;
- Selenium; and
- Sodium.

The observed concentrations of these metals, all of which are commonly found in natural rock-forming minerals and soil, are consistent with the anticipated geochemical character of groundwater in western New York State for unfiltered samples collected from wells installed in glacial deposits with low organic carbon content. They are considered to be predominantly naturally occurring at the Site and raising aesthetic but not environmental concerns. Therefore, these concentrations are indicative of background groundwater conditions, and remediation is not warranted for groundwater at this Site consistent with 6 NYCRR Part 375-1.8(d)2.

SVOCs and PCBs were not detected in Site groundwater samples. Exceedances in groundwater samples collected at the Site are presented in Figure 25.

Further monitoring or remediation of background groundwater conditions is not warranted. Potable water for the Site and surrounding areas is provided by the municipal water supply. Additionally, the Site demolition and associated remediation activities undertaken in 2006 through 2008 were apparently effective in reducing the impact of previous Site operations on groundwater quality. Also, natural geochemical conditions suggest that implementation of groundwater quality restoration is not required at the Site.

5.3.4 *Long-Term Effectiveness and Permanence*

As part of this approach, COPCs will remain in groundwater at concentrations above ambient groundwater quality standards and guidance values. The proposed Environmental Easement on groundwater use at the Site will effectively achieve GWRAO1 - Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards – as long as they remain in place. The soil excavation will achieve GWRAO2 – Remove GCM.

5.3.5 *Reduction of Toxicity, Mobility or Volume of Contamination*

The concentrations of metals are consistent with the anticipated geochemical character of groundwater at the Site, and no appreciable decrease in the level of these compounds is expected. There is anticipated to be some decrease in the concentrations of VOCs due to ongoing natural attenuation processes.

While the implementation of this remedy is not expected to achieve a significant reduction in toxicity, mobility, or volume of contamination, the ICs restricting groundwater use will achieve GWRAO1 - Prevent ingestion of or direct contact with groundwater with contaminant levels exceeding drinking water standards.

The removal of GCM will achieve GWRAO2.

5.3.6 *Short-Term Impact and Effectiveness*

There will be no on-Site remedial activities to address groundwater. Therefore, there are no short-term impacts associated with this approach.

In addition, the remedy will achieve the sustainability and "green remediation" guidelines identified in DER-10 Section 1.14.

5.3.7 *Implementability*

This approach is readily implementable. An Environmental Easement approved by the NYSDEC will restrict groundwater use. Therefore, significant difficulties are not anticipated during implementation.

5.3.8 *Cost Effectiveness*

Other than legal costs to establish the Environmental Easement, there are no significant costs to implement this remedy. Therefore, this approach is cost-effective.

5.3.9 *Land Use*

The Site has been historically used for industrial operations. The Site has been inactive since 1982 and vacant since 2006, and is being redeveloped to allow construction of new Commercial and/or multi-family residential properties. The ICs restricting groundwater use will allow continued use of the property in this capacity.

5.3.10 *Community Acceptance*

As discussed in DER-10 Section 4.2(j), this criterion will be evaluated after the public review of the remedy selection process as part of the final NYSDEC selection/approval of a remedy for the Site.

5.3.11 *Evaluation Summary*

The groundwater remedy consists of an Environmental Easement on groundwater use which would restrict the use of groundwater at the Site without treatment rendering the groundwater safe for its intended use. This IC restricting groundwater use will be protective of human health by achieving GWRAO1 - Prevent ingestion of, or contact with groundwater with contaminant levels exceeding drinking water standards – as long as the controls remain in place. The soil remedy will achieve GWRAO2 – Remove GCM. The remedy is readily implementable and cost-effective, and there are no short-term impacts. The ICs restricting groundwater use will allow for construction and operation of the Site as planned. Therefore, this is an effective approach to address contaminants in groundwater above ambient water quality standards and guidance values.

5.4 *RECOMMENDED REMEDIAL ALTERNATIVE*

Based on the alternatives analysis evaluation, *Alternative 3 Remove GCM, Remediate Identified Areas of the Site to SSALs, and Place Cover – (Track 4)* is the recommended remedial alternative for the Site. Implementation of Alternative 3 will:

- be protective of human health and the environment;
- satisfy the RAOs;
- be consistent with current and contemplated future land use;
- be significantly less disruptive to the community than Alternative 2; and
- be more cost-effective and implementable than Alternative 2.

The recommended remedial action includes:

- excavation, transport, and off-Site disposal of GCM;
- excavation, transport, and off-Site disposal of identified soil below the cover system exceeding SSALs;
- excavation, transport, and off-Site disposal of black sand material encountered during Site redevelopment excavations;
- management of any impacted excavation water that may be encountered during remedial activities;
- the following ECs:
    - installation of a soil cover system consisting of clean soil cover (1-foot thick in commercial use areas and 2-feet thick in restricted residential use areas)
    - installation of a demarcation layer; and
    - installation of cover systems consisting of pavement, walkways, or building slabs and foundations;
- the following ICs:
    - an Environmental Easement limiting use of the Site to applicable restricted uses, which will vary by parcel based on final redevelopment planning as approved by NYSDEC; and
- implementation of a SMP including EC/IC Plan, a Site Monitoring Plan, an Excavation Work Plan, an O&M Plan, Site use limitations, and a groundwater use restriction.

Figure 26 summarizes physical components of the recommended remedial action at the Site based on the considerations outlined above.

Alternative 3 satisfies the RAOs and is protective of public health and the environment. It also provides significant benefits over other remedies based on evaluation of the NYSDEC's remedy selection criteria.

6.0 SUMMARY AND CONCLUSIONS

This RI/AA Report summarizes the results of previous environmental investigations performed at the Site, the results of the RI performed by Howden, and provides an engineering evaluation of possible remedial alternatives. Previous investigations performed by others at the Site included:

- Phase I Environmental Site Assessment, Buffalo Forge Plan No. 1, 490 Broadway Avenue, Buffalo, New York (Dames and Moore, 1993).
- Site Evaluation Report, Former Buffalo Forge Plant No. 1 (Conestoga-Rover & Associates, 2000).
- Phase I Environmental Site Assessment, Former Buffalo Forge Site, Buffalo, New York (Benchmark, 2009a).
- Phase II Environmental Site Investigation Report, Former Buffalo Forge Site, Buffalo, New York (Benchmark, 2009b).
- Limited Groundwater Investigation Report, Former Buffalo Forge Facility, Buffalo, New York (ERM, 2012).

Consistent with NYSDEC requirements described in DER-10, this RI was developed and implemented to meet the following goals:

- identify contaminant source areas;
- define the nature and extent of contamination;
- produce data of sufficient quantity and quality to support the development of a remedial AA Report and an acceptable RAWP; and
- generate sufficient data to evaluate the actual and potential threats to human health and the environment.

RI activities included soil boring installation and monitoring well completion with associated soil and ground water sampling for laboratory analysis. Samples were transported under chain of custody procedures to a NYSDOH-approved environmental laboratory for analysis of VOCs, SVOCs, PCBs, and selected metals as described in the approved RI Work

Plan. Data quality and usability for samples collected during the RI were evaluated through preparation of DUSRs in conformance with NYSDOH guidance. All data were found to be valid and usable with the qualifications noted in individual DUSRs.

ERM mobilized to the Site in November 2014 and initiated the RI site work activities. Subsurface utility clearances were requested through Dig Safely New York. Public and private subsurface utilities were identified, located, and marked with the use of a geophysical subcontractor. A total of 74 boreholes were advanced for the collection of soil samples and installation of groundwater monitoring wells in selected locations. Six boreholes were completed as overburden groundwater monitoring wells and one coupled with a bedrock groundwater monitoring well. Work was conducted in substantive conformance with procedures contained in the approved RI Work Plans. Groundwater monitoring wells samples were collected using minimal drawdown/low-flow sampling techniques.

A geophysical EM induction survey was conducted over the entire 490 Broadway parcel to search for two possible USTs that were reportedly abandoned in place. The results included one EM anomaly that was investigated and revealed the presence of buried concrete debris containing steel reinforcement bar. Additional areas of potential concern were not identified as a result of the geophysical survey.

A gamma radiation survey was conducted by ERM to evaluate background radioactivity levels near the surface of the Site and to evaluate for the potential presence of elevated radiation in the subsurface. Radioactivity levels measured during the surface background survey ranged from 5590 to 13,300 CPM. Radioactivity levels measured from subsurface materials encountered in soil cores were consistent with background radioactivity readings.

The currently-contemplated future use of the Site is mixed commercial and/or restricted residential. The contemplated use may vary by parcel based on the redevelopment goals of prospective purchasers and/or future tenants. Therefore, chemical analytical results for soil were compared to the 6 NYCRR Part 375 SCOs for Restricted Residential Use. Groundwater analytical results were compared to NYSDEC ambient groundwater quality standards and guidance values.

The following COPCs were detected in one or more soil or fill samples collected at the Site at concentrations above the Unrestricted Use SCOs:

VOCs

- Acetone

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

PCBs

- Aroclor 1242
- Aroclor 1248
- Aroclor 1254
- Aroclor 1260

Metals (mg/kg)

- Arsenic
- Barium
- Cadmium
- Chromium
- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Selenium
- Silver
- Zinc

Review and evaluation of resulting chemical data and comparison with applicable SCGs resulted in the following compounds detected in soil or fill samples at the Site with maximum concentrations exceeding Restricted Residential SCOs:

SVOCs

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Chrysene

Metals

- Cadmium

- Chromium
- Copper
- Lead
- Manganese
- Mercury
- Nickel
- Zinc

PCBs

- Aroclor 1254

Metals and SVOCs exceedances in soil were typically found in black foundry sand historically used as fill at the Site. PCBs in soil are attributed to the historical use of PCBs in electrical equipment at the Site.

Measurement of groundwater elevations in monitoring wells across the Site reveals that there is shallow perched groundwater across most of the Site. The overall flow direction of shallow perched groundwater at the Site is generally towards the south-southwest.

Groundwater samples from monitoring wells were analyzed for background fluorescence to evaluate potential hydraulic connections between monitoring wells based on the relative fluorescence intensity and fluorescence "fingerprint" of individual samples. Significant similarities in fluorescence "fingerprints" of groundwater samples collected at the Site during the RI were not observed, suggesting that groundwater flow in overburden is dominated by matrix flow and that preferential groundwater flow paths may not be of environmental significance in overburden at the Site.

The following compounds or elements were detected in one or more overburden groundwater samples collected at the Site at concentrations above the NYSDEC's ambient groundwater quality standards or guidance values listed in NYSDEC's TOGS-1.1.1:

VOCs

- Cadmium

SVOCs

None

PCBs

None

Metals (mg/kg)

- Antimony

- Iron
- Lead
- Magnesium
- Manganese
- Selenium
- Sodium

Laboratory analytical results indicate that the following metals associated with black sand material had exceedances of SCOs in soil and a few isolated exceedances of the ambient groundwater quality standards and guidance values:

- Lead;
- Manganese; and
- Selenium.

Therefore, the black sand material may represent a source of metals in Site groundwater. However, the following metals were detected in Site groundwater at concentrations above their ambient groundwater quality standards or guidance values that are interpreted to be derived from natural sources:

- Iron;
- Magnesium; and
- Sodium.

The one isolated detection of VOCs in groundwater is likely associated with petroleum. While historical use of petroleum products on the Site did occur, the proximity of this detection to the street and its isolation to this location suggests that historic use of the street by vehicles (which use petroleum) or some other off-Site source cannot be ruled out.

Review of laboratory analytical results indicates that COPCs were not detected in the bedrock groundwater sample.

The Site and the surrounding community are serviced by a municipal water supply and contain no known public or private drinking water wells. In addition, groundwater use for drinking water at the Site will be restricted by an EE approved by the NYSDEC.

Potential exposure pathways at the Site that are considered complete or potentially complete under current and future Site conditions and uses include:

- Pathway A: Current Direct Contact (Dermal Absorption) with Soil for On-Site Commercial Workers;

- Pathway B: Current Incidental Ingestion of Soil for On-Site Commercial Workers;
- Pathway D: Current Direct Contact (Dermal Absorption), Incidental Ingestion and Dust Emissions (Inhalation) of Soil for Potential Trespassers;
- Pathway G: Future Direct Contact (Dermal Absorption) with Soil for Construction Worker/Utility Worker;
- Pathway J: Future Incidental Ingestion of Soil for Construction Worker/Utility Worker;
- Pathway M: Future Fugitive Dust Emissions (Inhalation) of Soil for Construction Worker/Utility Worker.

Direct contact with soil and inhalation of soil appear to represent the greatest risk with regards to frequency and duration of potential exposures for on-Site commercial workers and on-Site construction and utility workers. The risk is greatest during intrusive activities (e.g., disturbance of surface soil or subsurface soil excavation and dewatering associated with future planned construction activities). Control measures such as proper implementation and compliance with an approved SMP, the Site-specific HASP, use of appropriate PPE, dust suppression techniques, and the use of ICs will greatly reduce the risk of potential exposures.

Two potential exposure pathways involving groundwater may exist for on-Site construction/utility workers: 1) direct contact with groundwater during subsurface disturbances (i.e., excavation and de-watering) in areas of remaining contamination (if any); and 2) incidental ingestion of groundwater.

Environmental investigations performed at the Site have met RI goals; therefore, further RI is not required.

Remedial action performed under the NYSDEC's BCP is predicated on future contemplated Site use. The Site is currently vacant and the contemplated future use of the Site is commercial and/or restricted residential.

An engineering analysis of the recommended remedial approach was performed for soil and groundwater using the Remedy Selection

Evaluation Criteria identified in Section 4.2 of DER-10 (NYSDEC, 2010a). Alternative 3 is the recommended remedial approach. Alternative 3 will achieve a Track 4 cleanup and the intended mixed restricted uses at the Site, while Alternative 2 would achieve unrestricted use across the entire Site.

Alternatives 2 and 3 would both permanently remove COPCs in soil such that the soils RAOs are met. Both alternatives would facilitate redevelopment of the property. However, efforts to implement Alternative 2 would involve significant additional excavated material, truck traffic, and additional cost due to the requirement to remove all black sand material, and would not provide greater protection to human health and the environment given the intended use of the property. The groundwater remedy for both Alternatives 2 and 3 is the same and consists of an Environmental Easement which will restrict groundwater use. The restriction on groundwater use is an effective approach to address COPCs in groundwater and will be protective of human health long as the IC remains in place. Alternative 3 is readily implementable and cost-effective, and there are no significant short-term impacts. For the reasons outlined above, Alternative 3 is the recommended remedy for the Site.

7.0 REFERENCES CITED

Benchmark, 2009a. Phase I Environmental Site Assessment Report- Former Buffalo Forge Site, Buffalo, New York; January 2009.

Benchmark, 2009b. Phase II Site Investigation Report- Former Buffalo Forge Site, Buffalo, New York; January 2009.

Bloom, A. L., 1978. Geomorphology: a systematic analysis of Late Cenozoic landforms. Prentice-Hall, Inc., Englewood Cliffs, pg. 19.

Brown and Caldwell, 2007. Decommissioning and Demolition Report – Buffalo Forge Facility; 14 September 2007.

Caldwell, D. H., 1988. Surficial Geologic Map of New York- Niagara Sheet. New York State Museum – Geological Survey, Map and Chart Series Number 40, Albany.

Conestoga-Rovers & Associates, 2000. Site Evaluation Report, Former Buffalo Forge Plant No. 1, Howden Buffalo, Inc.; April 2000.

Dames and Moore, 1993. Phase I Environmental Site Assessment, Buffalo Forge Plant No. 1, 490 Broadway Avenue, Buffalo, New York; May 1993.

ERM, 2012. Limited Groundwater Investigation Report, Former Buffalo Forge Facility, Buffalo, New York; August, 2012.

ERM, 2013. Final Remedial Investigation Work Plan, Former Buffalo Forge Property, Buffalo, New York; December 2013.

Howden, 2013. Brownfield Cleanup Program Application, Former Buffalo Forge Property, Erie County, New York; NYSDEC BCP Site Number C915280, Revised July 2013.

LaSala, Jr., A.M., 1968. Ground-water resources of the Erie-Niagara basin. New York State Water Resources Commission Basin Planning Report ENB-3, 114 pp., 5 plates.

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

NYSDEC, 2004. Draft Brownfield Cleanup Program Guide. NYSDEC Division of Environmental Remediation, Albany, May 2004

NYSDEC, 2006. 6 NYCRR Part 375. Environmental Remediation Program Regulations; Albany, 14 December 2006.

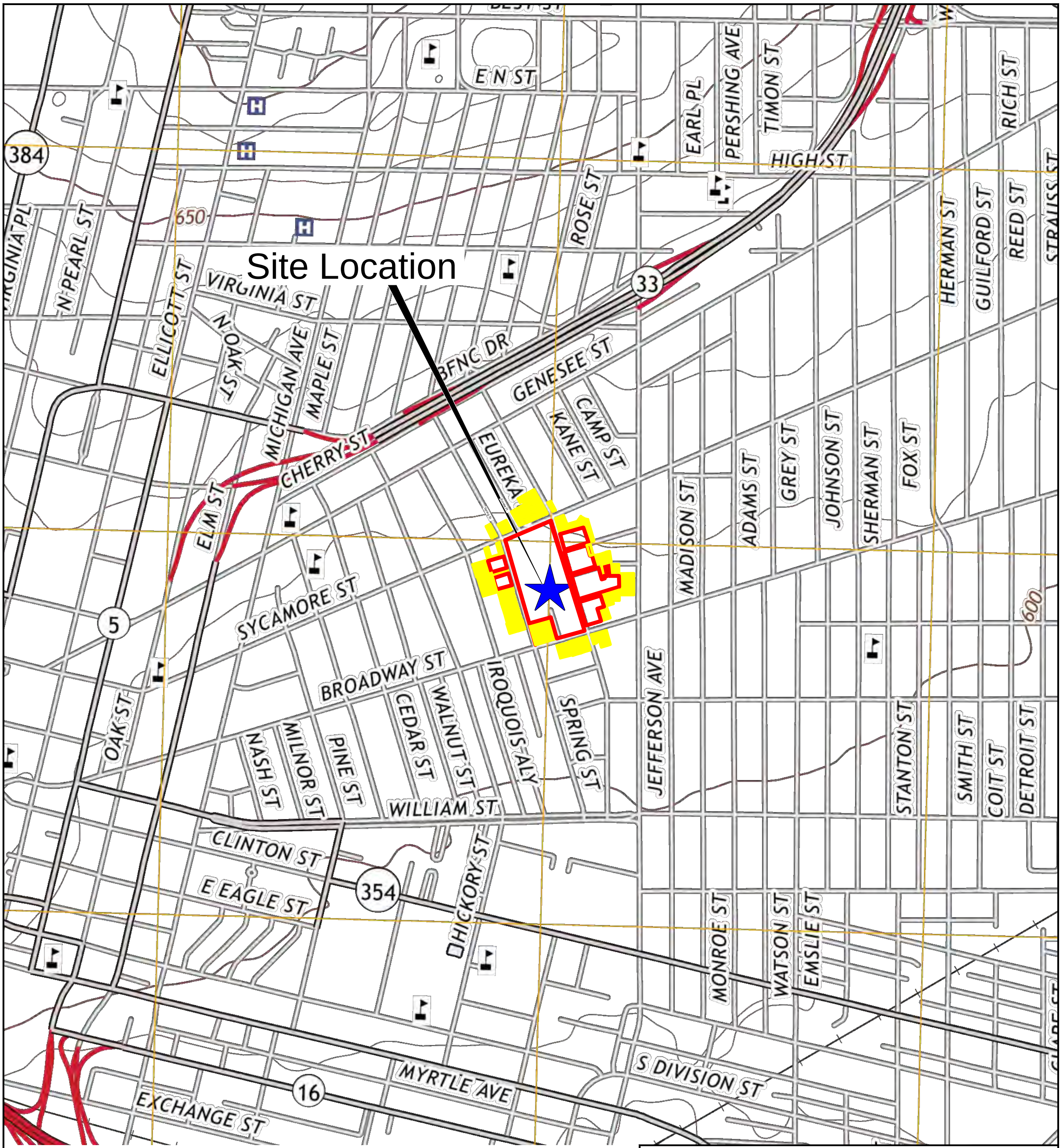
NYSDEC, 2010a. DER-10: Technical Guidance for Site Investigation and Remediation. NYSDEC Division of Environmental Remediation, Albany, May 2010.

NYSDEC, 2010b. Soil Cleanup Guidance. Commissioner's Policy CP-51. NYSDEC Division of Environmental Remediation, Albany, 21 October 2010.

Rickard, L.V. and Fisher, D.W., 1970. Geologic Map of New York - Niagara Sheet. New York State Museum and Science Service Map and Chart Series Number 15, Albany.

USEPA, 1996. Low-flow (minimal drawdown) groundwater sampling procedures. United States Environmental Protection Agency Groundwater Issue, Office of Research and Development and Office of Solid Waste and Emergency Response, EPA/540/S-95/504, 12 pp.

Figures



ROAD CLASSIFICATION

Interstate Route	🟥	State Route	═
US Route	═	Local Road	═
Ramp	🟥	4WD	- - -

Interstate Route · US Route · ○ State Route

Legend

🟥 BCP Parcel Outline

🟨 Adjoining Property to Site Parcels

Source: Base Map - USGS Topo
Buffalo NE Quad
New York - Erie Co.
7.5 Minute Series - 2013

0 1200 2400

GRAPHIC SCALE IN FEET

TITLE

Site Location Map
Former Buffalo Forge Facility
490 Broadway, Buffalo, NY 14204

PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	23 DECEMBER 2013	0181805.0001	1

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2013-06-18 - Howden - Buffalo Forge - Site Location Map - v03.dwg (12/23/2013 - 10:58am Melville)

Legend

--------- Former Building Footprint

— — — BCP Parcel Outline

0 75 150
GRAPHIC SCALE IN FEET

Source: Ortho Image, NYGIS Clearinghouse, http://gis.ny.gov. Parcel Outlines and Use From City of Buffalo, Enterprise GIS
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)

TITLE

Site Layout Map
Former Buffalo Forge Facility
Buffalo, New York

PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

FIGURE

2

DRAWN BY	SCALE	DATE	JOB NO.
EMF	GRAPHIC	16 JULY 2015	0181805

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2013-09-11 - Howden - Buffalo Forge - Site Layout Map- v03.dwg (07/16/2015 - 3:33pm Melville)

Legend

- Former Building Footprint
- BCP Parcel Outline
- TMW-08 Former Temporary Monitoring Well Location (2012)
- TMW-03 ● Soil Boring Location (Well Not Installed) (2012)
- SB-22 ◇ Soil Boring & Analytical Sample (2000)
- SB-24 ▽ Soil Boring, No Sample (2000)
- TMW-12 RI Monitoring Well Location (2014)
- TP-26 🟥 Sample Location - Exceeds Part 375 Industrial SCOs
- SB-4 ● Sample Location - Exceeds Part 375 Commercial SCOs
- SB-15 ● Sample Location - Exceeds Part 375 Restricted-Residential SCOs
- TP-24 ■ Test Pit Location, No Sample (2008)
- TP-31 ▨ Test Pit Location, Analytical Sample (2008)
- SB-6 ● Soil Boring Location (2008)
- B-16 × RI Soil Boring (2014)
- SAND-104 Black Sand Sample Location (2006)
- ☐ Extent of Completed Soil Excavation < NYSDEC TAGM 4046, STARS-1, and/or TSCA/RCRA Regulatory Levels
- 1' Total Soil Excavation Depth (in feet)

Note: All locations are approximate.

Up to eight additional soil borings may be advanced; four each at the locations of two USTs that were reported in Dames and Moore (1993) to be abandoned in-place. The locations of these soil borings are to be determined based on interviews with one or more former Buffalo Forge employees and the soil boring locations will be proposed to the NYSDEC for review and approval prior to their installation.

Source: Survey of Spring & Mortimor Streets, Soil Boring & well Sample Locations; dated 05/29/2015; by WM SCHUT Associates, Lancaster, NY
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)
Soil Excavation & Total Excavation Depths obtained from Brown & Caldwell figure 6-8 dated 08/30/2007
Sample Locations with Exceedances of SCOs obtained from Phase II Site Investigation Report Benchmark Figure 5 (2009); SoilBoring & Analytical Sample, Soil Boring No Sample from CRA(2000) March 31, 2000 Figure 1.

TITLE

All Sample Locations
Former Buffalo Forge Facility
Buffalo, New York

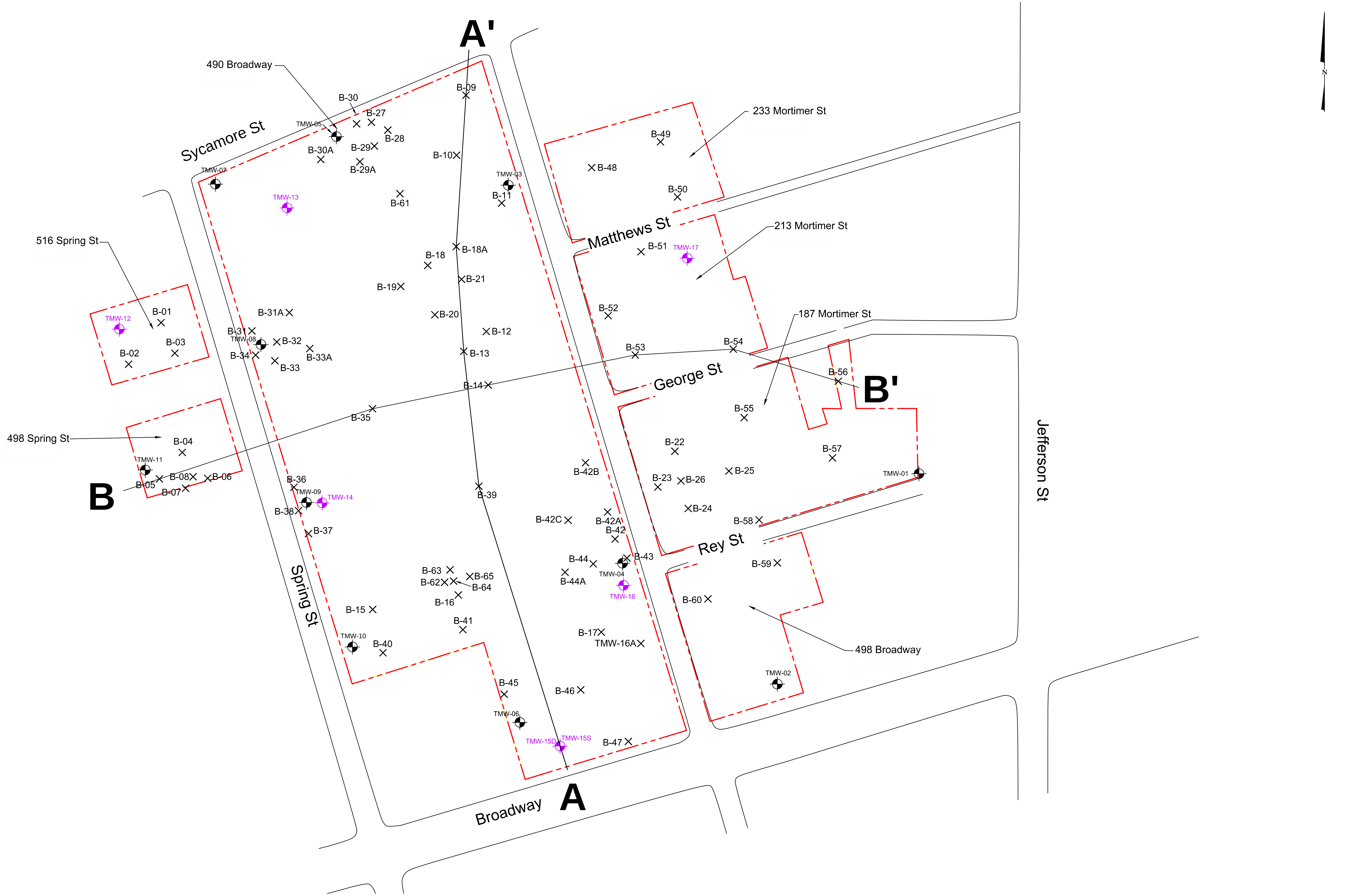
PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	22 MARCH 2018	0335506	3

M:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-07-15 - Howden - Buffalo Forge - Sample Locations- v02.dwg (03/22/2018 - 10:18am Melville)



Legend

- - - -	BCP Parcel Outline
TMW-08 ⊕	Temporary Monitoring Well Location (2012)
TMW-03 ●	Soil Boring Location (Well Not Installed) (2012)
TMW-12 ⊕	RI Monitoring Well Location (2014)
B-16 ✕	RI Soil Boring (2014)

0 75 150
GRAPHIC SCALE IN FEET

Source: Survey of Spring & Mortimor Streets, Soil Boring & well Sample Locations; dated 05/29/2015; by WM SCHUT Associates, Lancaster, NY
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)
Soil Excavation & Total Excavation Depths obtained from Brown & Caldwell figure 6-8 dated 08/30/2007
Sample Locations with Exceedances of SCOs obtained from Phase II Site Investigation Report Benchmark Figure 5 (2009); SoilBoring & Analytical Sample, Soil Boring No Sample from CRA(2000) March 31, 2000 Figure 1.

TITLE

Locations of Geologic Cross Sections
Former Buffalo Forge Facility
Buffalo, New York

PREPARED FOR

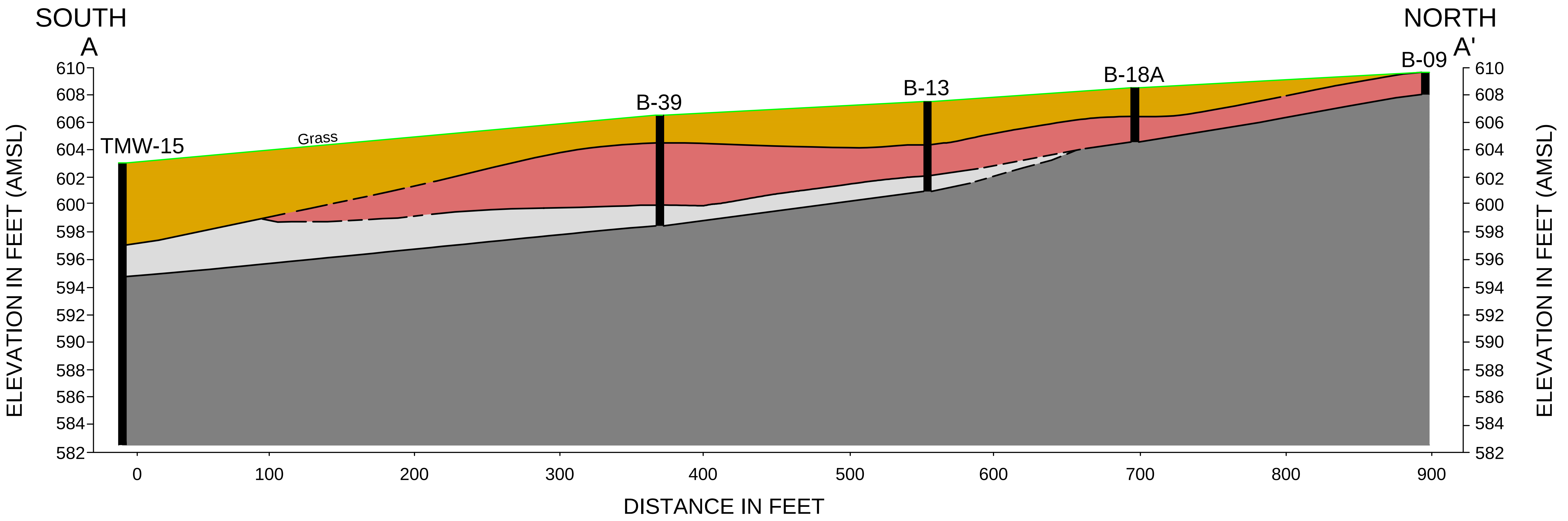
Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

FIGURE
4

DRAWN BY	SCALE	DATE	JOB NO.
EMF	GRAPHIC	26 JANUARY 2018	0335506

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-07-15 - Howden - Buffalo Forge - Geologic Cross Section Locations- v02.dwg (01/26/2018 - 9:58am Melville)



Vertical Exaggeration = 21.5x

Legend

⬜	Gravelly Sand
🟥	Silty Clay
🟧	Silty Sand
⬛	Bedrock

TITLE

Geologic Cross Section A-A'

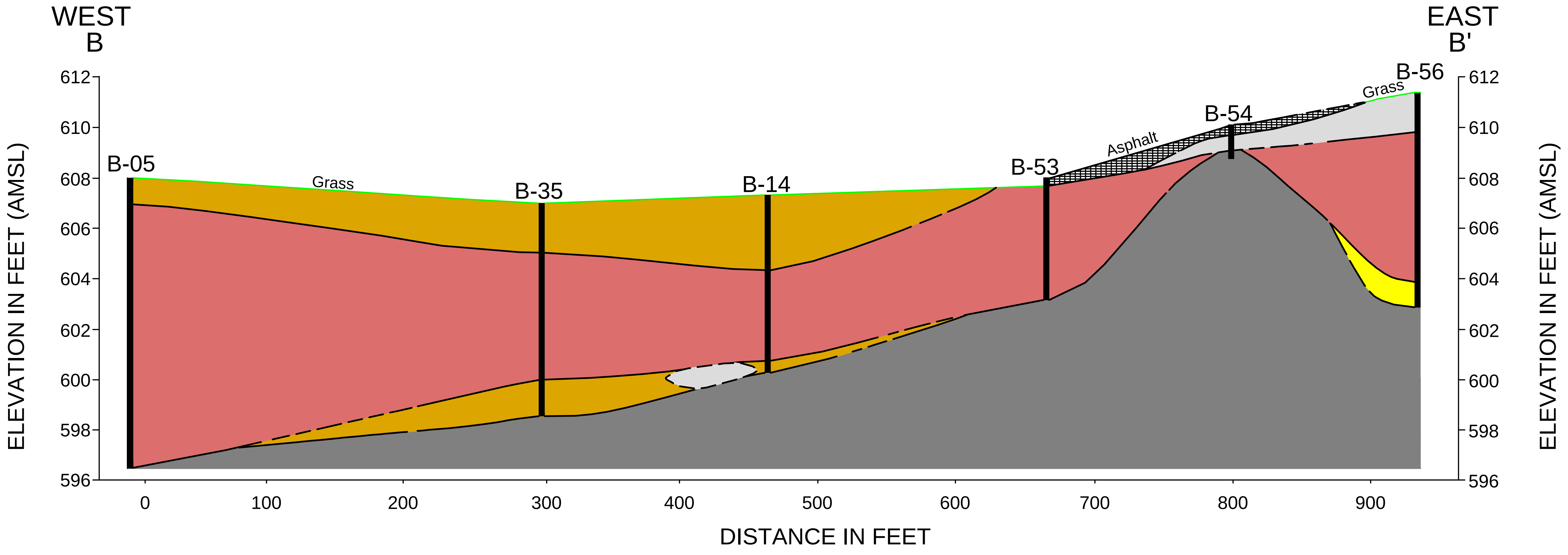
PREPARED FOR
Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

FIGURE
5

DRAWN BY	SCALE	DATE	JOB NO.
JR/EMF	GRAPHIC	21 OCTOBER 2015	0181805

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-07-22 - Howden - Buffalo Forge - Cross Section A-A - v02.dwg (10/21/2015 - 12:13pm Melville)



Vertical Exaggeration = 21.5x

Legend

⬜ Gravelly Sand
🟥 Silty Clay
🟧 Silty Sand
⬛ Bedrock
🟨 Sand
▦ Asphalt

TITLE

Geologic Cross Section B-B'

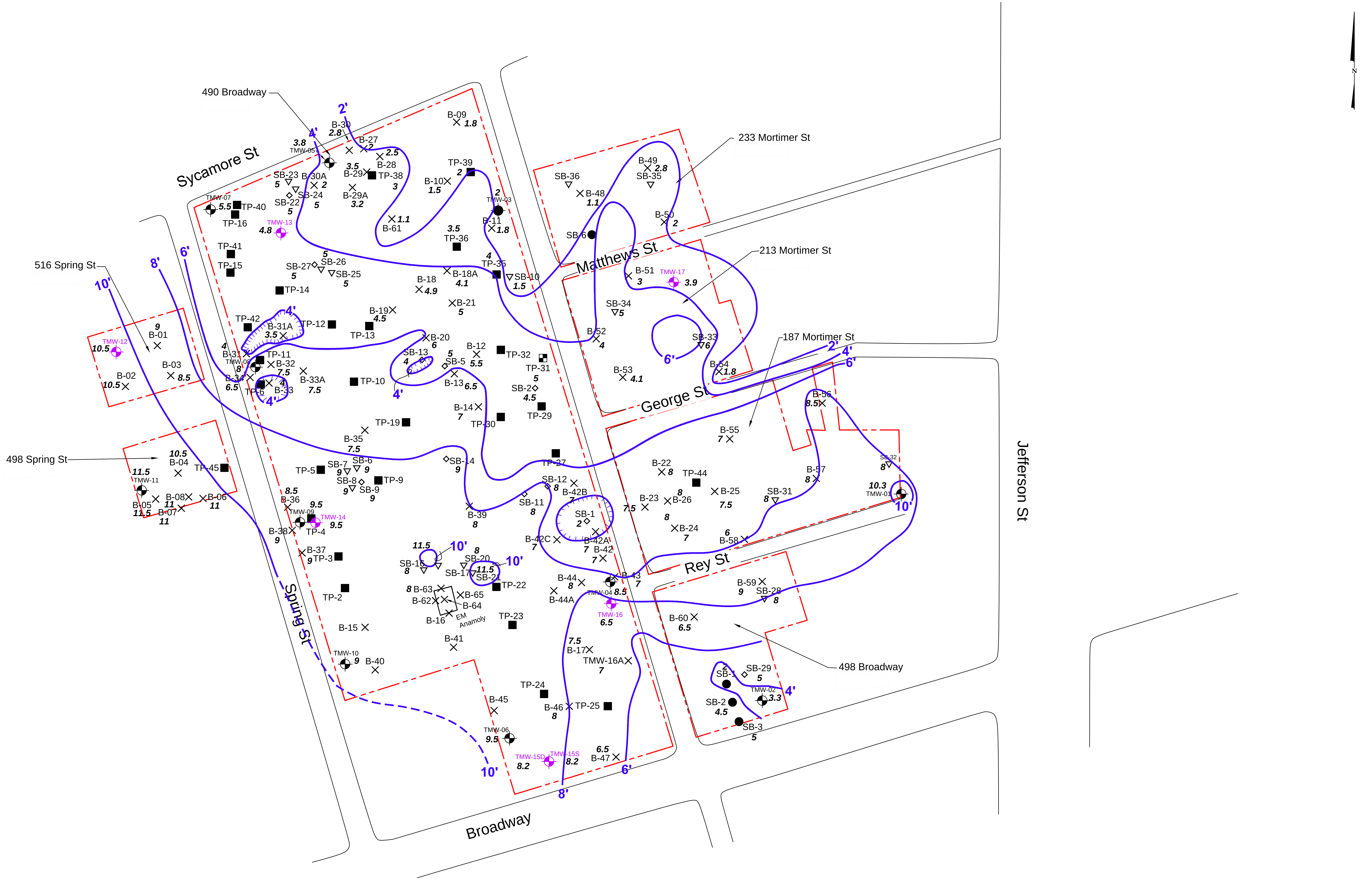
PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
JR/EMF	GRAPHIC	21 OCTOBER 2015	0181805	6

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-07-23 - Howden - Buffalo Forge - Cross Section B-B - v02.dwg (10/21/2015 - 12:17pm Melville)



Legend

- - -	BCP Parcel Outline
TMW-08 ⊕	Temporary Monitoring Well Location (2012)
TMW-03 ●	Soil Boring Location (Well Not Installed) (2012)
SB-22 ◇	Soil Boring & Analytical Sample (2000)
SB-24 ▽	Soil Boring, No Sample (2000)
TMW-12 ⊕	RI Monitoring Well Location (2014)
8' —	Overburden Isopach
TP-24 ■	Test Pit Location, No Sample (2008)
TP-31 ▨	Test Pit Location, Analytical Sample (2008)
SB-6 ●	Soil Boring Location (2008)
B-16 ×	RI Soil Boring (2014)
9.5	Overburden Thickness

Source: Survey of Spring & Mortimor Streets, Soil Boring & well Sample Locations; dated 05/29/2015; by WM SCHUT Associates, Lancaster, NY
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)
Soil Excavation & Total Excavation Depths obtained from Brown & Caldwell figure 6-8 dated 08/30/2007
Sample Locations with Exceedances of SCOs obtained from Phase II Site Investigation Report Benchmark Figure 5 (2009); SoilBoring & Analytical Sample, Soil Boring No Sample from CRA(2000) March 31, 2000 Figure 1.

0 75 150
GRAPHIC SCALE IN FEET

TITLE

Soil Overburden Thickness
Former Buffalo Forge Facility
Buffalo, New York

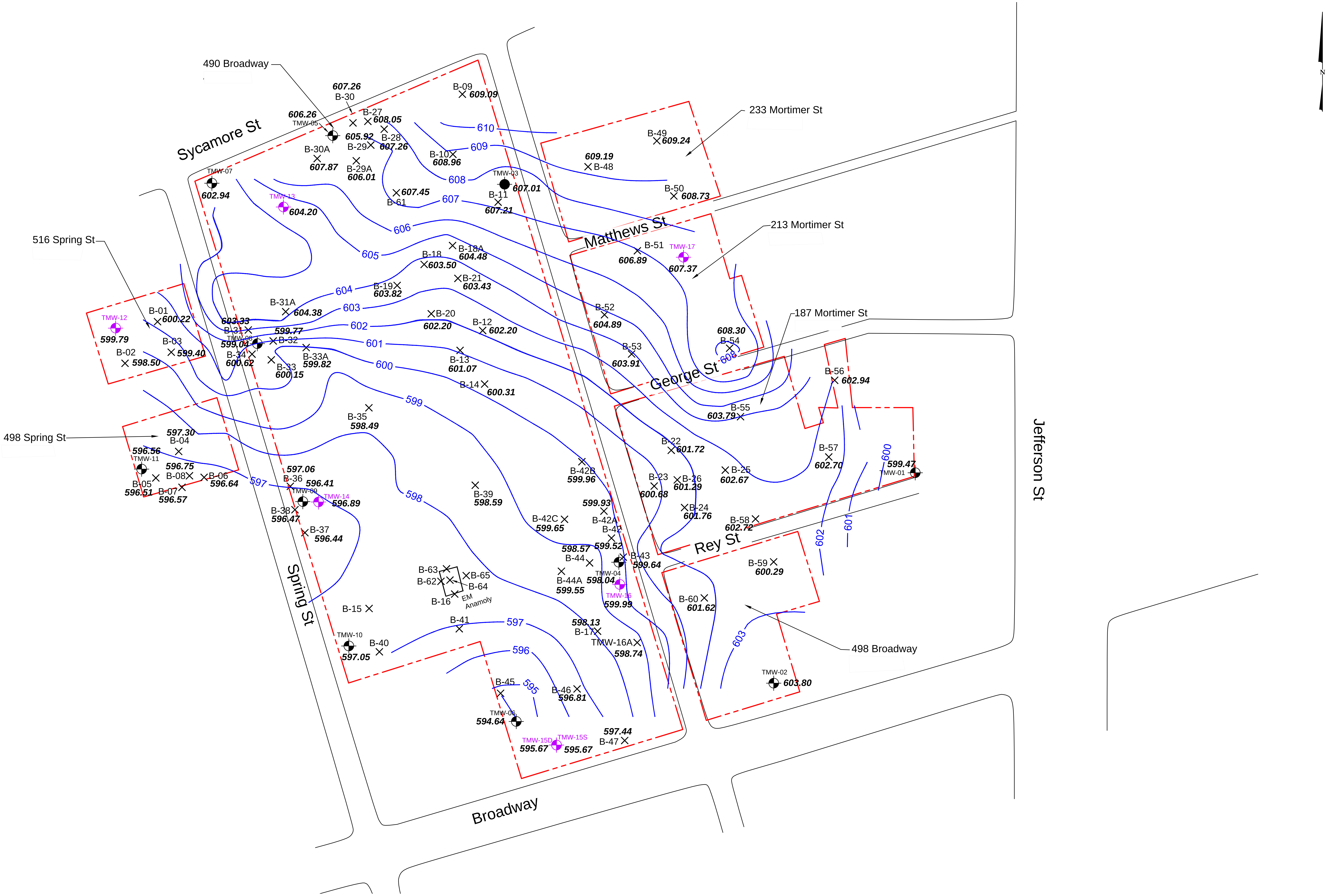
PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	29 JANUARY 2018	0335506	7

M:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-06-17 - Howden - Buffalo Forge - Overburden Thickness- v07.dwg (01/29/2018 - 3:07pm Melville)



0 75 150
GRAPHIC SCALE IN FEET

Legend

🟥 - - -	BCP Parcel Outline
TMW-08 ⊕	Temporary Monitoring Well Location (2012)
TMW-03 ●	Soil Boring Location (Well Not Installed) (2012)
TMW-12 ⊕	RI Monitoring Well Location (2014)
B-16 ×	RI Soil Boring (2014)
600.22	Top of Bedrock (In Feet Above Mean Sea Level)
596 ——	Bedrock Elevation Contour (In Feet Above Mean Sea Level)

Source: Survey of Spring & Mortimor Streets, Soil Boring & well Sample Locations; dated 05/29/2015; by WM SCHUT Associates, Lancaster, NY
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)
Soil Excavation & Total Excavation Depths obtained from Brown & Caldwell figure 6-8 dated 08/30/2007
Sample Locations with Exceedances of SCOs obtained from Phase II Site Investigation Report Benchmark Figure 5 (2009); SoilBoring & Analytical Sample, Soil Boring No Sample from CRA(2000) March 31, 2000 Figure 1.

TITLE

Structural Contours - Top of Bedrock
Former Buffalo Forge Facility
Buffalo, New York

PREPARED FOR

Howden North America Inc.

ERM. ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	26 JANUARY 2018	0335506	8

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-06-22 - Howden - Buffalo Forge - Top of Bedrock- v03.dwg (01/26/2018 - 12:02pm Melville)

Legend

- Former Building Footprint
- BCP Parcel Outline
- TMW-08 Former Monitoring Well Location (2012)
- TMW-03 Soil Boring Location (Well Not Installed) (2012)
- SB-22 ◇ Soil Boring & Analytical Sample (2000)
- SB-24 ▽ Soil Boring, No Sample (2000)
- TP-24 ■ Test Pit Location, No Sample (2008)
- TP-31 ▚ Test Pit Location, Analytical Sample (2008)
- SB-6 ● Soil Boring Location (2008)
- SAND-104 Black Sand Sample Location (2006)
- Extent of Completed Soil Excavation < NYSDEC TAGM 4046, STARS-1, and/or TSCA/RCRA Regulatory Levels
- 1' Total Soil Excavation Depth (in feet)
- 🟨 Evidence of Black Sand at Sample Location
- Estimated areas of Black Sand
- TMW-12 RI Monitoring Well Location (2014)
- B-16 × RI Boring Location (2014)

Source: Survey of Spring & Mortimor Streets, Soil Boring & well Sample Locations; dated 05/29/2015; by WM SCHUT Associates, Lancaster, NY
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)
Soil Excavation & Total Excavation Depths obtained from Brown & Caldwell figure 6-8 dated 08/30/2007
Sample Locations with Exceedances of SCOs obtained from Phase II Site Investigation Report Benchmark Figure 5 (2009); SoilBoring & Analytical Sample, Soil Boring No Sample from CRA(2000) March 31, 2000 Figure 1.

0 75 150
GRAPHIC SCALE IN FEET

TITLE

Estimated Areas of Black Sand
Former Buffalo Forge Facility
Buffalo, New York

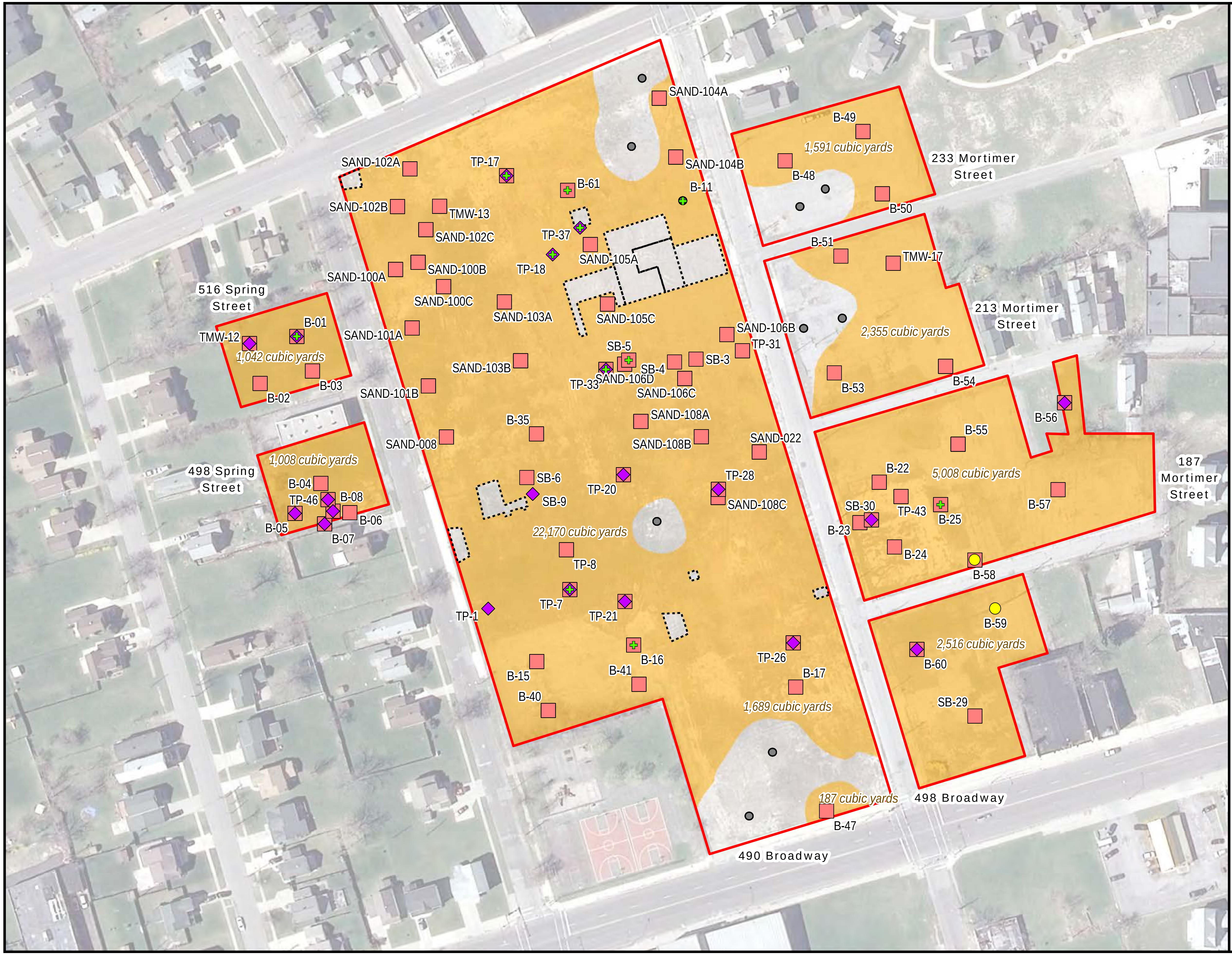
PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	22 MARCH 2018	0335506	9

M:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-06-17 - Howden - Buffalo Forge - Areas of Black Sand- v05.dwg (03/22/2018 - 10:13am Melville)



Legend

🟥	BCP Parcel Boundaries
⬚	Approximate extent of soil excavated during building demolition (2006)
●	Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Unrestricted SCOs:

🟥	Metals
○	VOCs
◆	SVOCs
✚	PCBs

Interpolated Concentration Areas*

🟧	Area Estimated to Exceed 1 or more SCOs (total estimated volume = 38,142 cubic yards)

** Areas estimated by geostatistical mapping by GIS software using Inverse Distance Weighting*

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

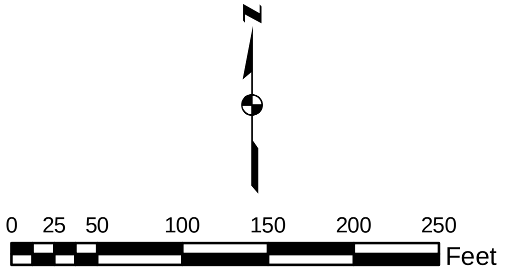
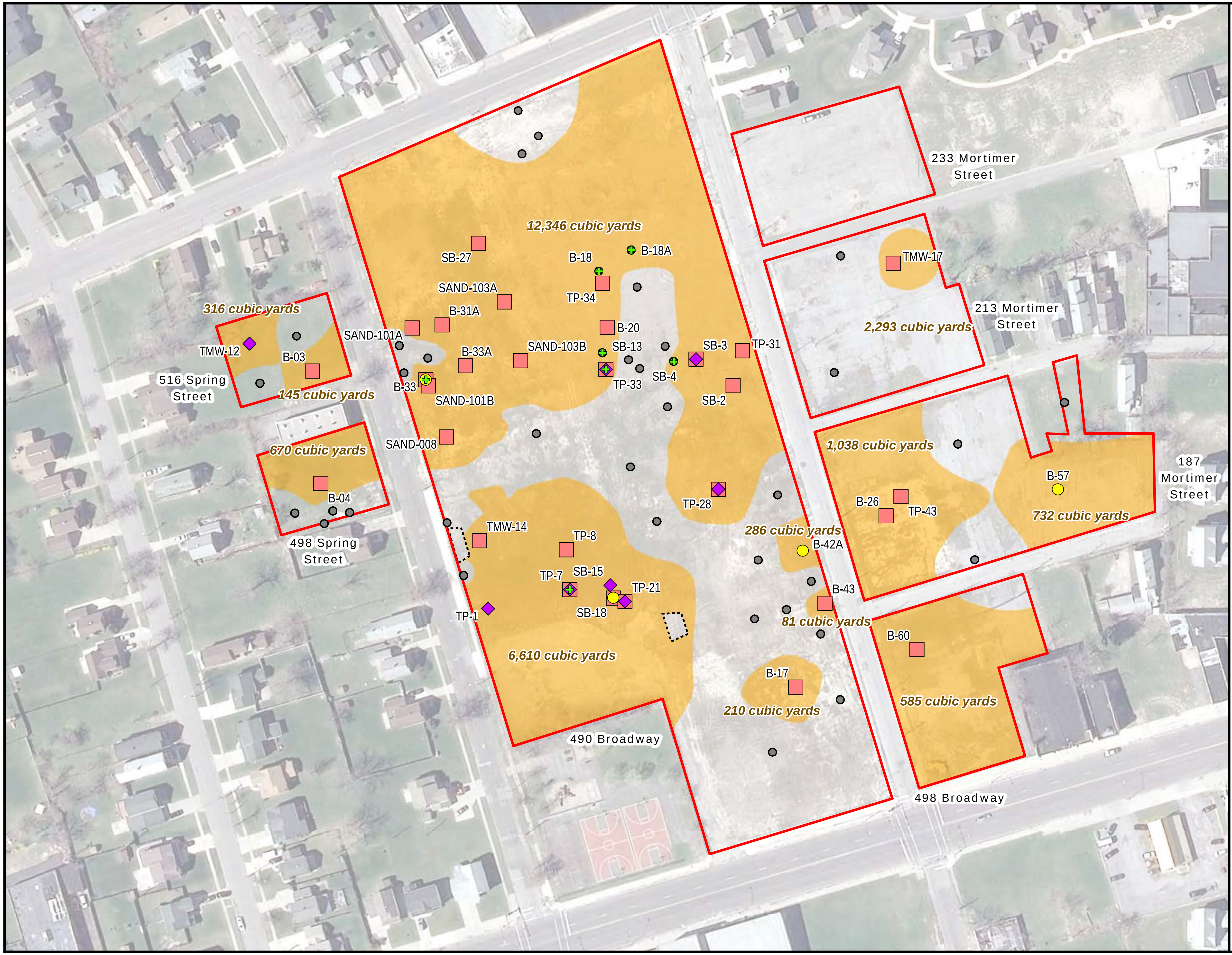


Figure 10: Estimated Areas Exceeding Unrestricted SCOs (0-2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMMV\Clients_F_K\Howden\BuffaloForge_NY\MXD\2015_07_Report\Figure10_AreasExceeding_Unrestricted_SCOs_0to2ft_20151008.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥 BCP Parcel Boundaries

⬚ Approximate extent of soil excavated during building demolition (2006)

● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Unrestricted SCOs:

- 🟥 Metals
- 🟡 VOCs
- 🟪 SVOCs
- ✚ PCBs

Interpolated Concentration Areas*

🟧 Area Estimated to Exceed 1 or more SCOs (total estimated volume = 30,026 cubic yards)

** Areas estimated by geostatistical modeling by GIS software using Inverse Distance Weighting*

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

N

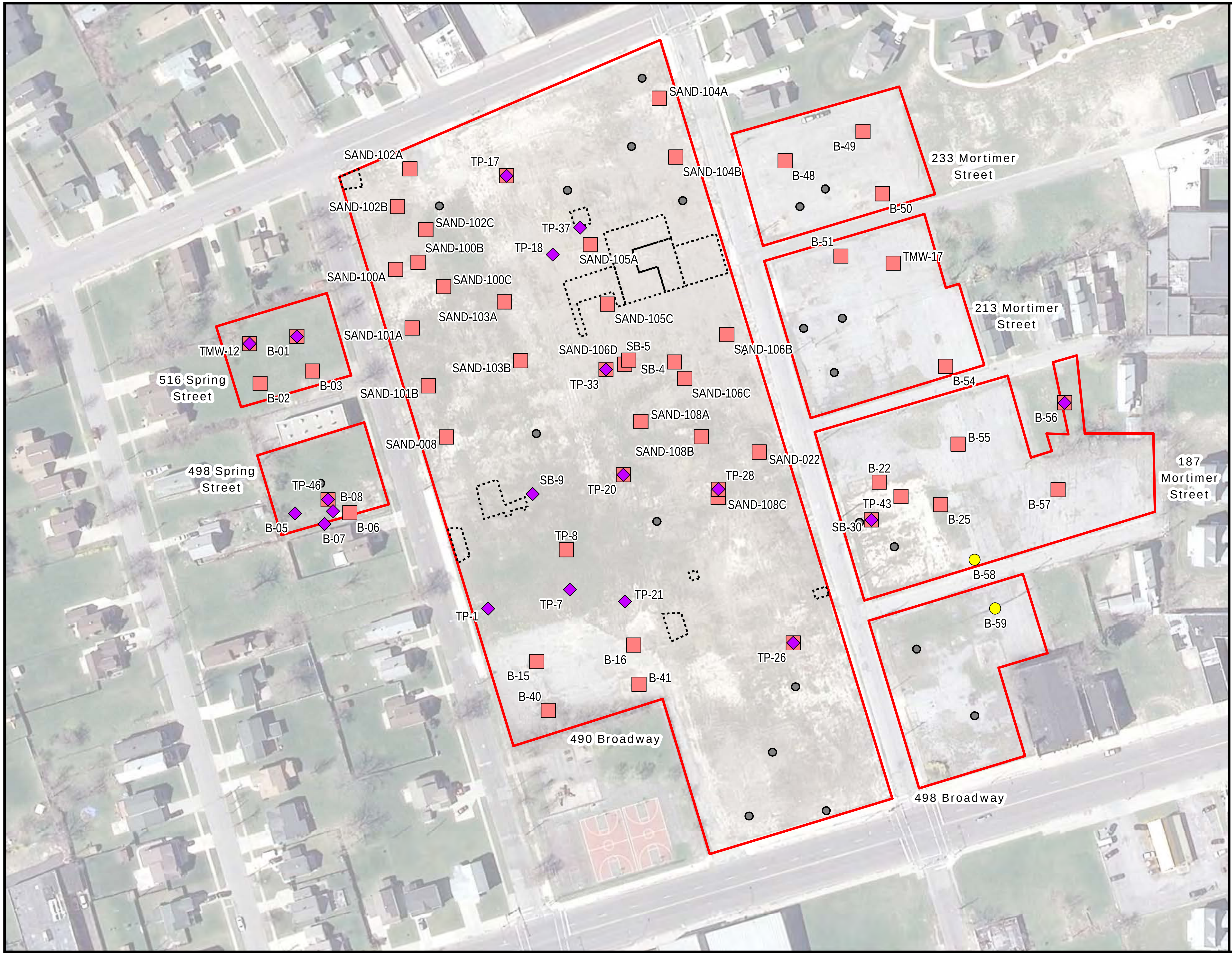
0 25 50 100 150 200 250
Feet

Figure 11: Estimated Areas Exceeding Unrestricted SCO (>2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2015_07_Report\Figure11_AreasExceeding_Unrestricted_SCOs_gt2ft_20151008.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥 BCP Parcel Boundaries

⬚ Approximate extent of soil excavated during building demolition (2006)

● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Protection of Groundwater SCOs:

🟥 Metals

🟡 VOCs

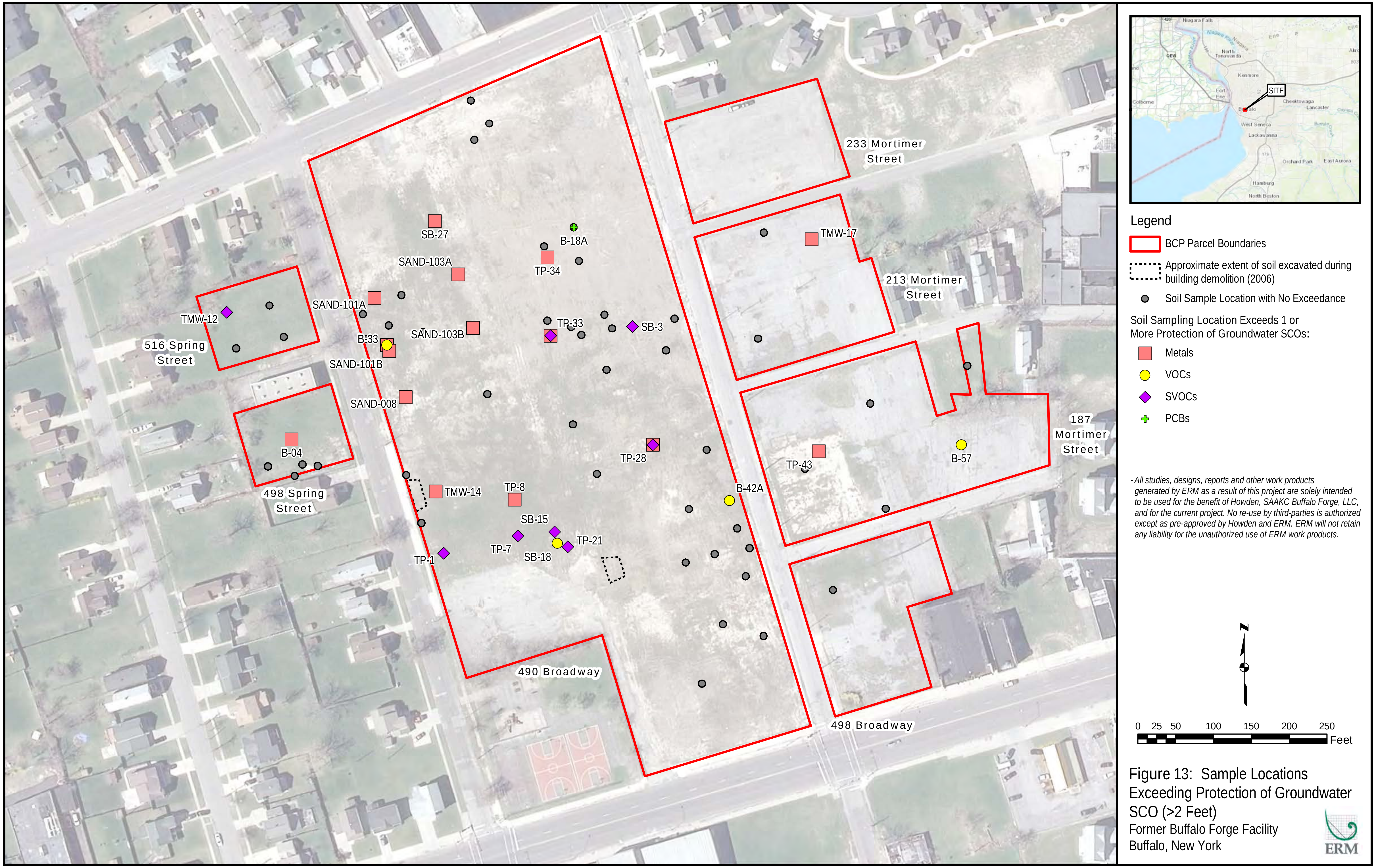
◆ SVOCs

- *All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.*

Figure 12: Sample Locations Exceeding Protection of Groundwater SCO (0-2 Feet)
Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure12_AreasExceeding_ProtectionGW_SCOs_0to2ft_20180501.mxd - Caldwell.Payne - 5/4/2018

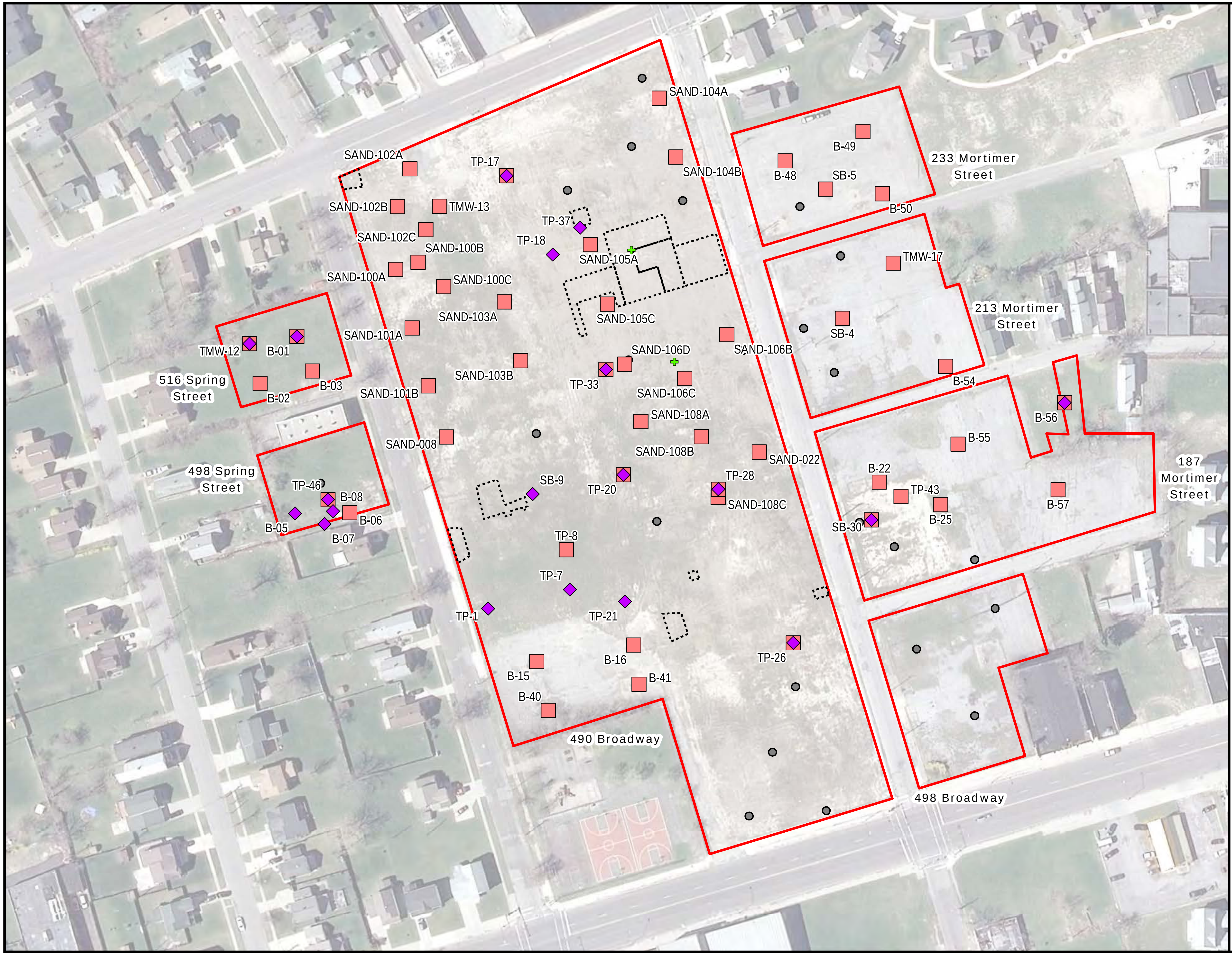


- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

Figure 13: Sample Locations Exceeding Protection of Groundwater SCO (>2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure13_AreasExceeding_ProtectionGW_SCOs_gt2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥	BCP Parcel Boundaries
⬚	Approximate extent of soil excavated during building demolition (2006)
●	Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Residential SCOs:

🟥	Metals
◆	SVOCs
✚	PCBs

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

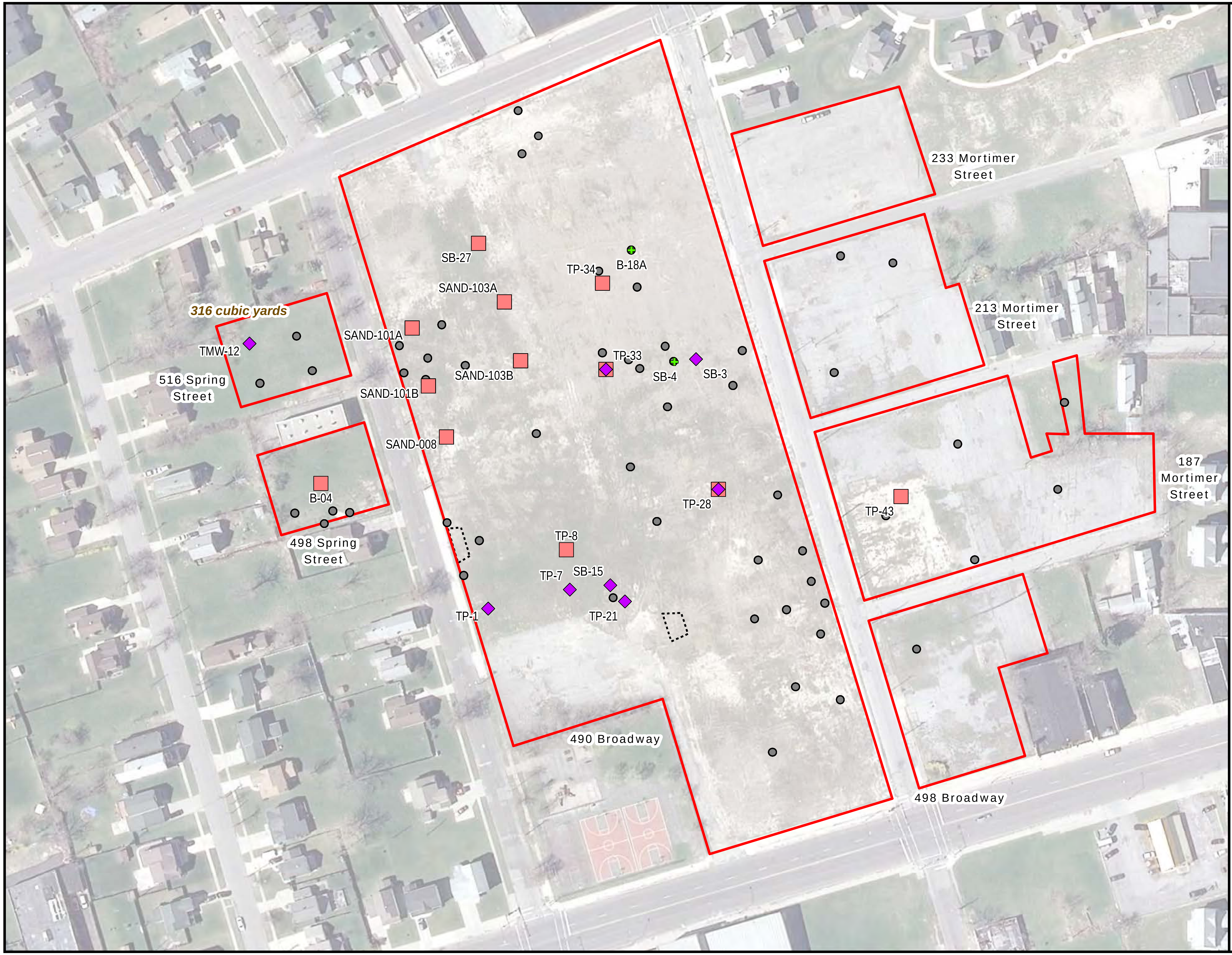
N

0 25 50 100 150 200 250 Feet

Figure 14: Sample Locations Exceeding Residential SCO (0-2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure14_AreasExceeding_Residential_SCOs_0to2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥 BCP Parcel Boundaries

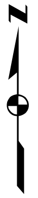
⬚ Approximate extent of soil excavated during building demolition (2006)

● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Residential SCOs:

- 🟥 Metals
- ◆ SVOCs
- ✚ PCBs

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.



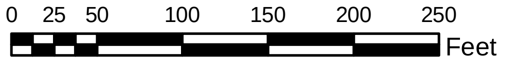
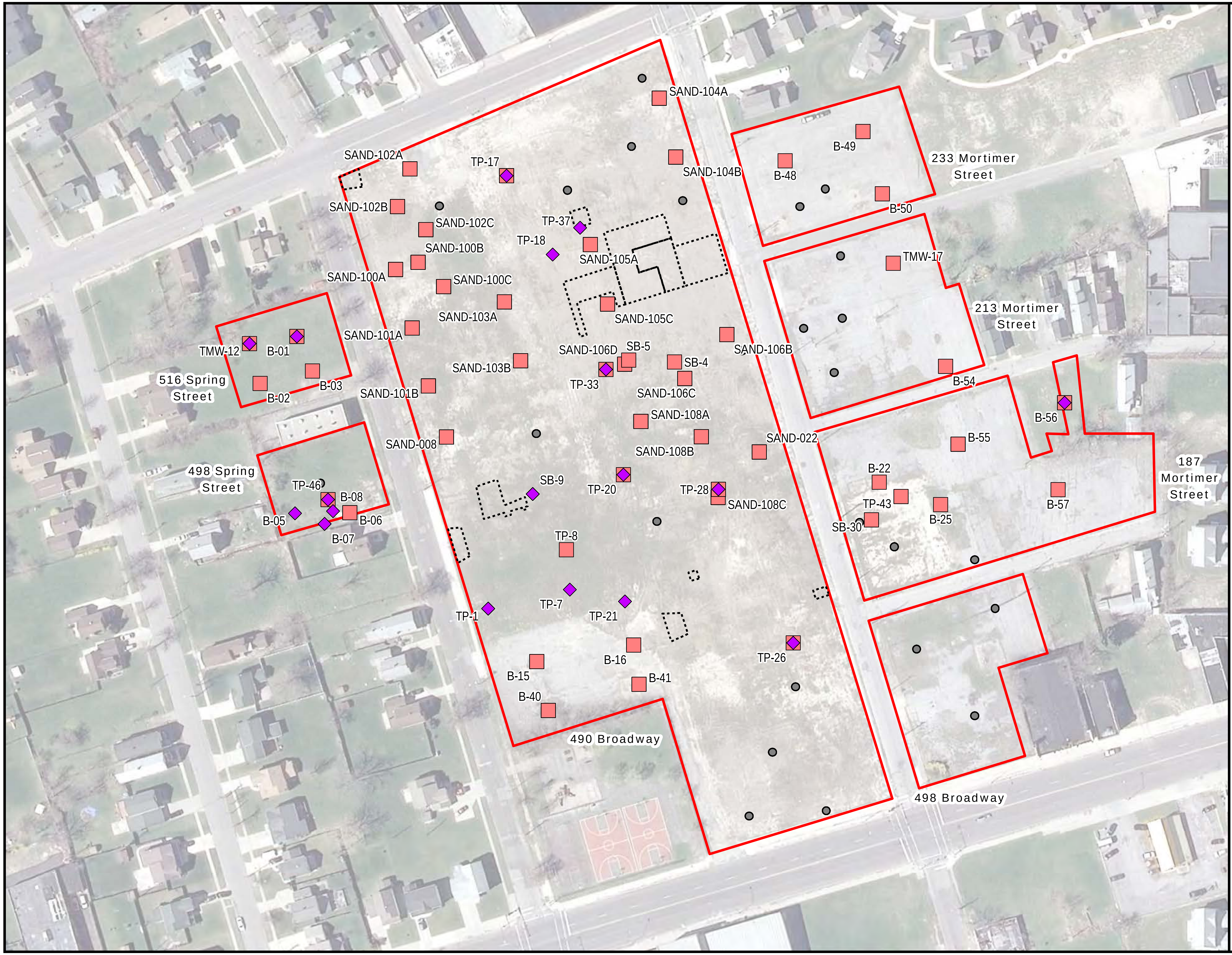


Figure 15: Sample Locations Exceeding Residential SCO (>2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure15_AreasExceeding_Residential_SCOs_gt2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

- ▭ BCP Parcel Boundaries
- ⬚ Approximate extent of soil excavated during building demolition (2006)
- ● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Restricted Residential SCOs:

- 🟥 Metals
- ◆ SVOCs

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

N

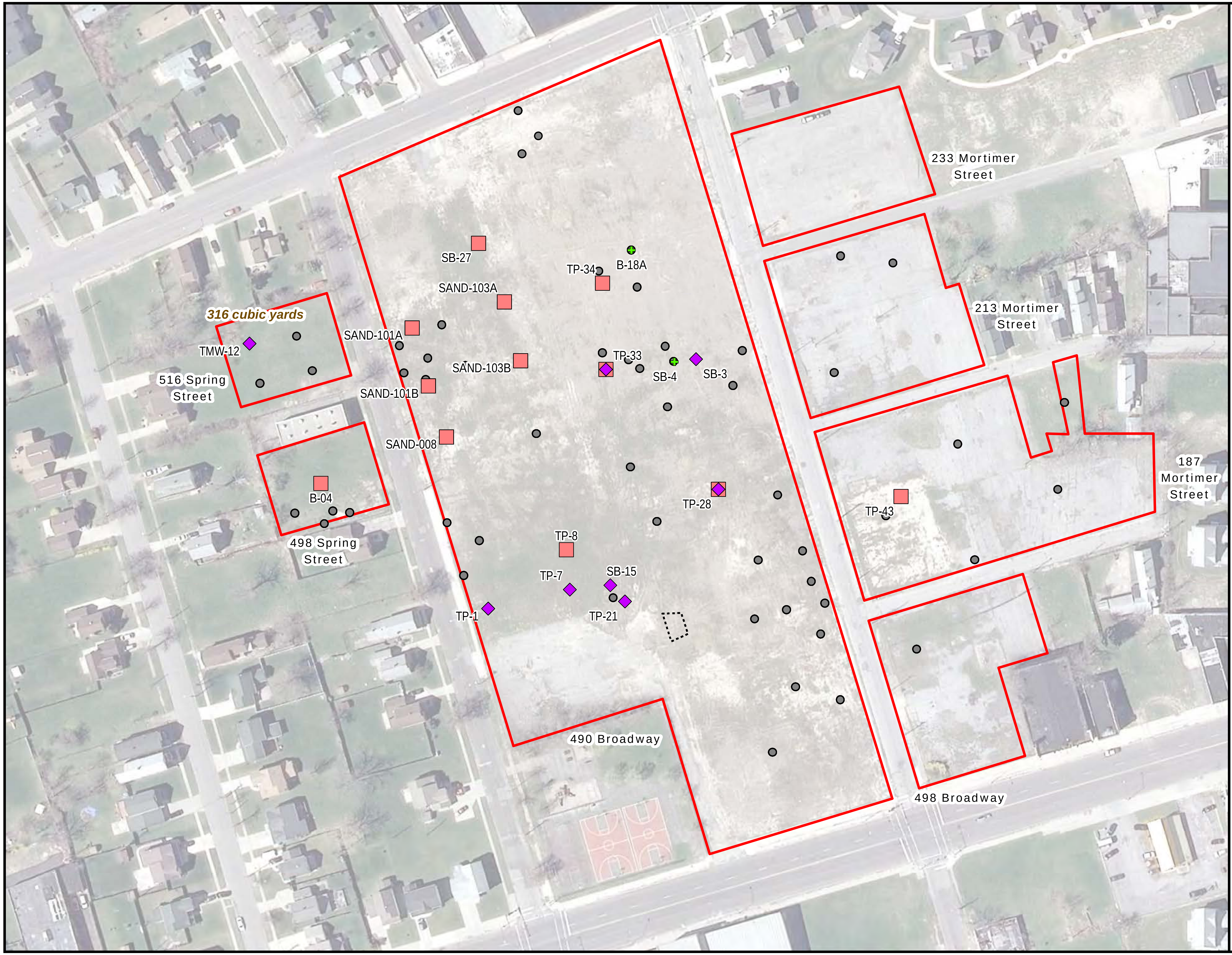
0 25 50 100 150 200 250 Feet

Figure 16: Sample Locations Exceeding Restricted Residential SCOs (0-2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMMV\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure16_AreasExceeding_RestrictedResidential_SCOs_0to2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥 BCP Parcel Boundaries

⬚ Approximate extent of soil excavated during building demolition (2006)

● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Restricted Residential SCOs:

🟥 Metals

◆ SVOCs

✚ PCBs

- *All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.*

N

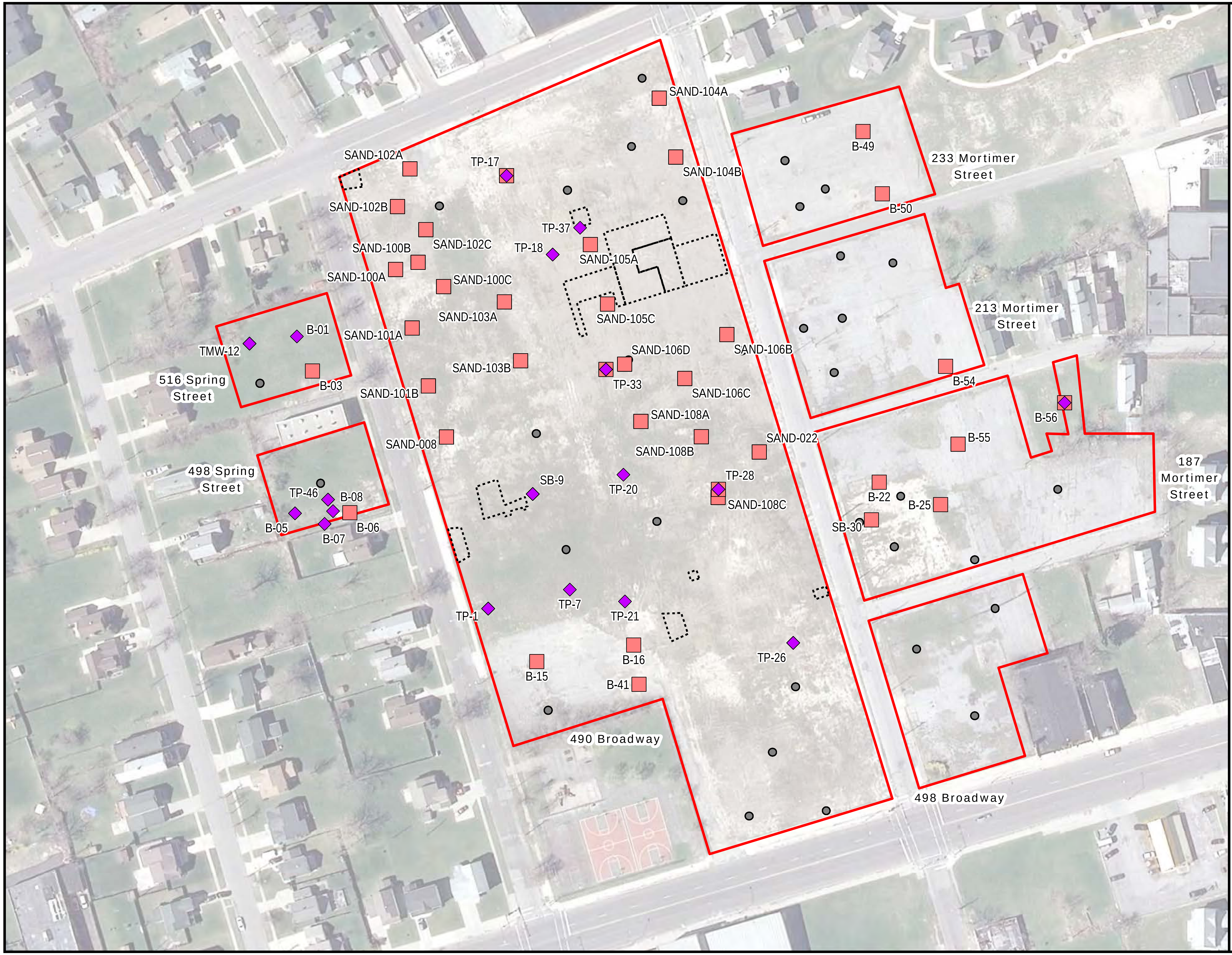
0 25 50 100 150 200 250 Feet

Figure 17: Sample Locations Exceeding Restricted Residential SCOs (>2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure17_AreasExceeding_RestrictedResidential_SCOs_gt2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥 BCP Parcel Boundaries

⬚ Approximate extent of soil excavated during building demolition (2006)

● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Commercial SCOs:

■ Metals

◆ SVOCs

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

N

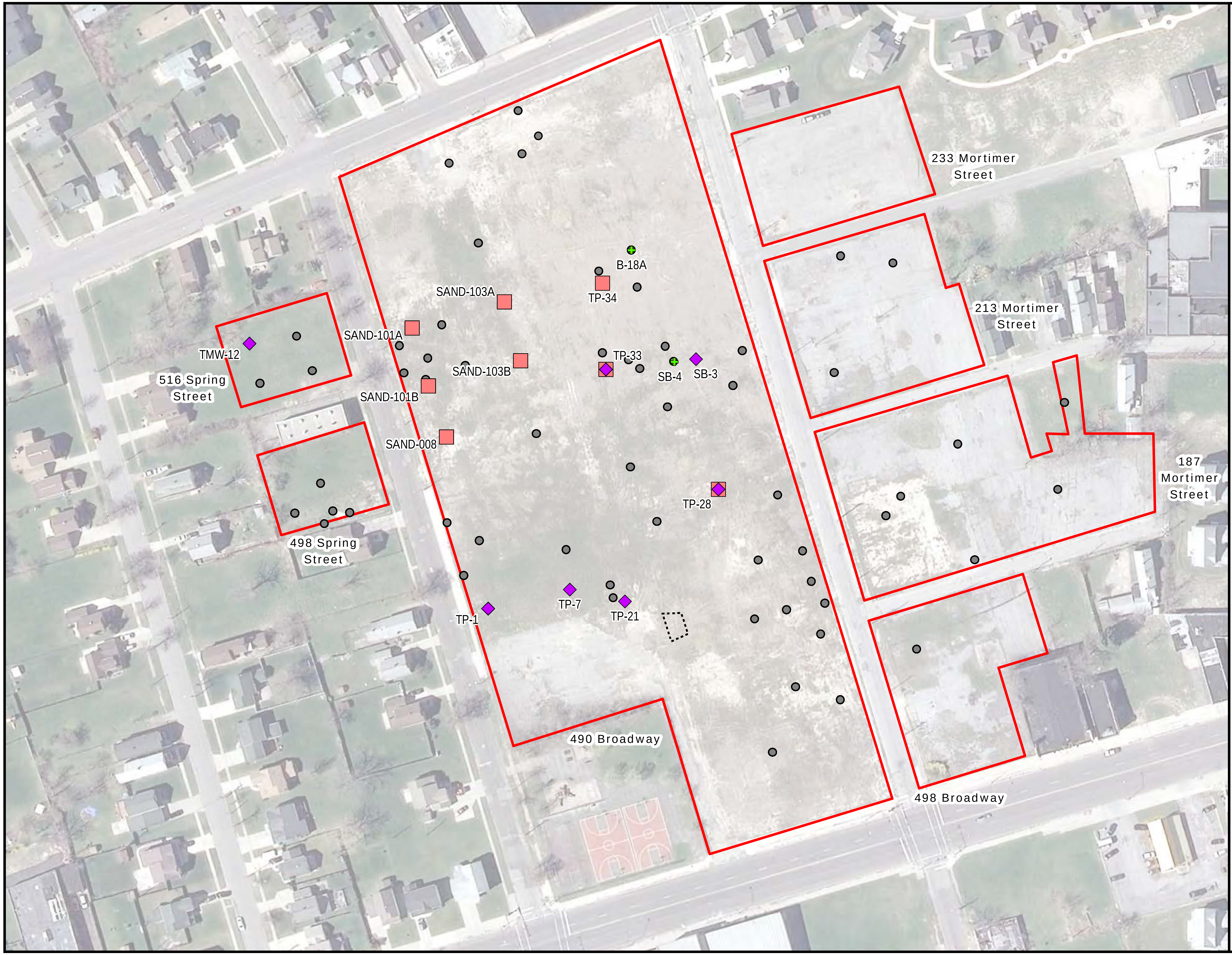
0 25 50 100 150 200 250 Feet

Figure 18: Sample Locations Exceeding Commercial SCOs (0-2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMMV\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure18_AreasExceeding_Commercial_SCOs_0to2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥 BCP Parcel Boundaries

⬚ Approximate extent of soil excavated during building demolition (2006)

● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Commercial SCOs:

🟥 Metals

◆ SVOCs

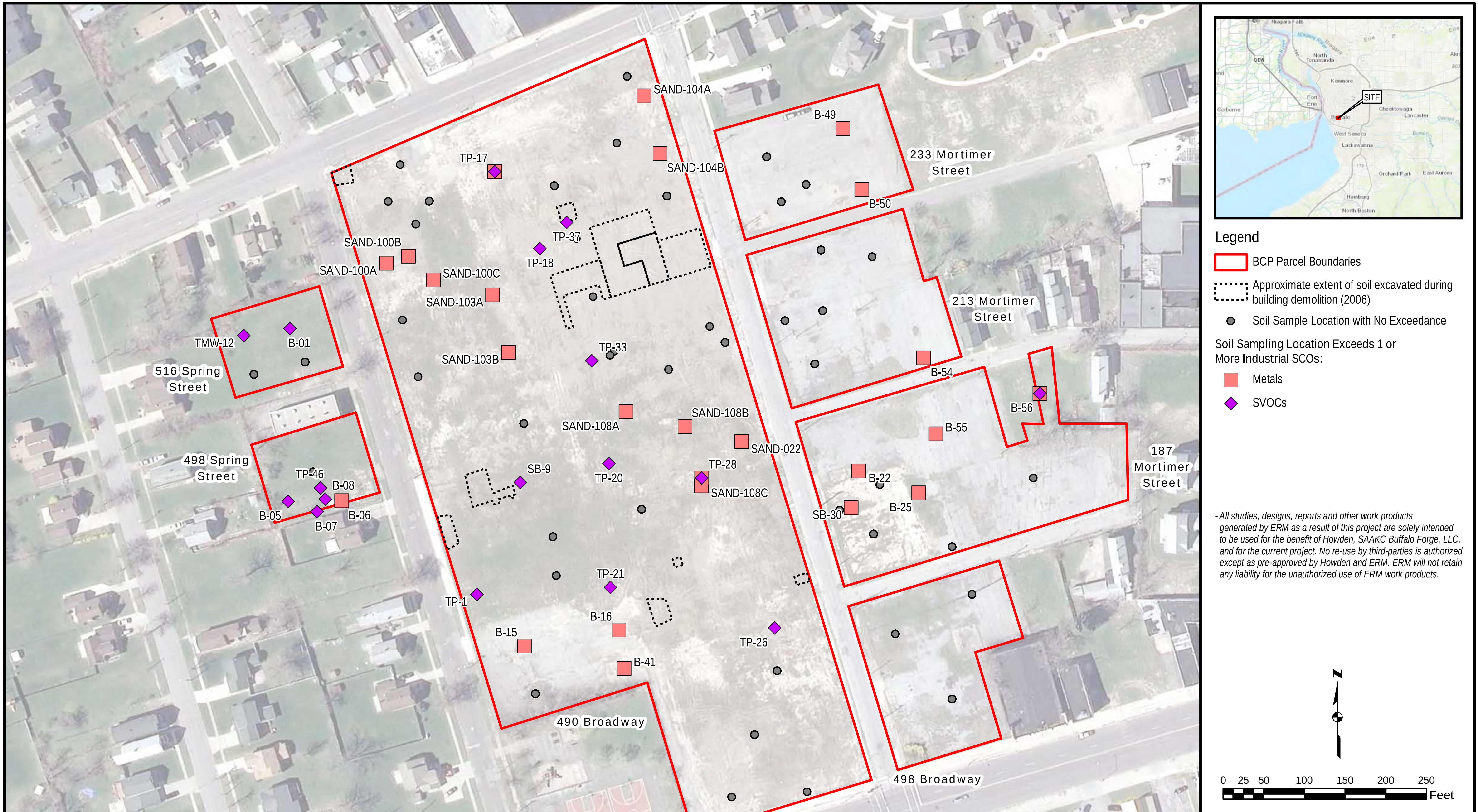
✚ SB-4 PCBs

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

Figure 19: Sample Locations Exceeding Commercial SCOs (>2 Feet)
Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMMV\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure19_AreasExceeding_Commercial_SCOs_gt2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

- 🟥 BCP Parcel Boundaries
- ⬚ Approximate extent of soil excavated during building demolition (2006)
- ● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Industrial SCOs:

- ■ Metals
- ◆ SVOCs

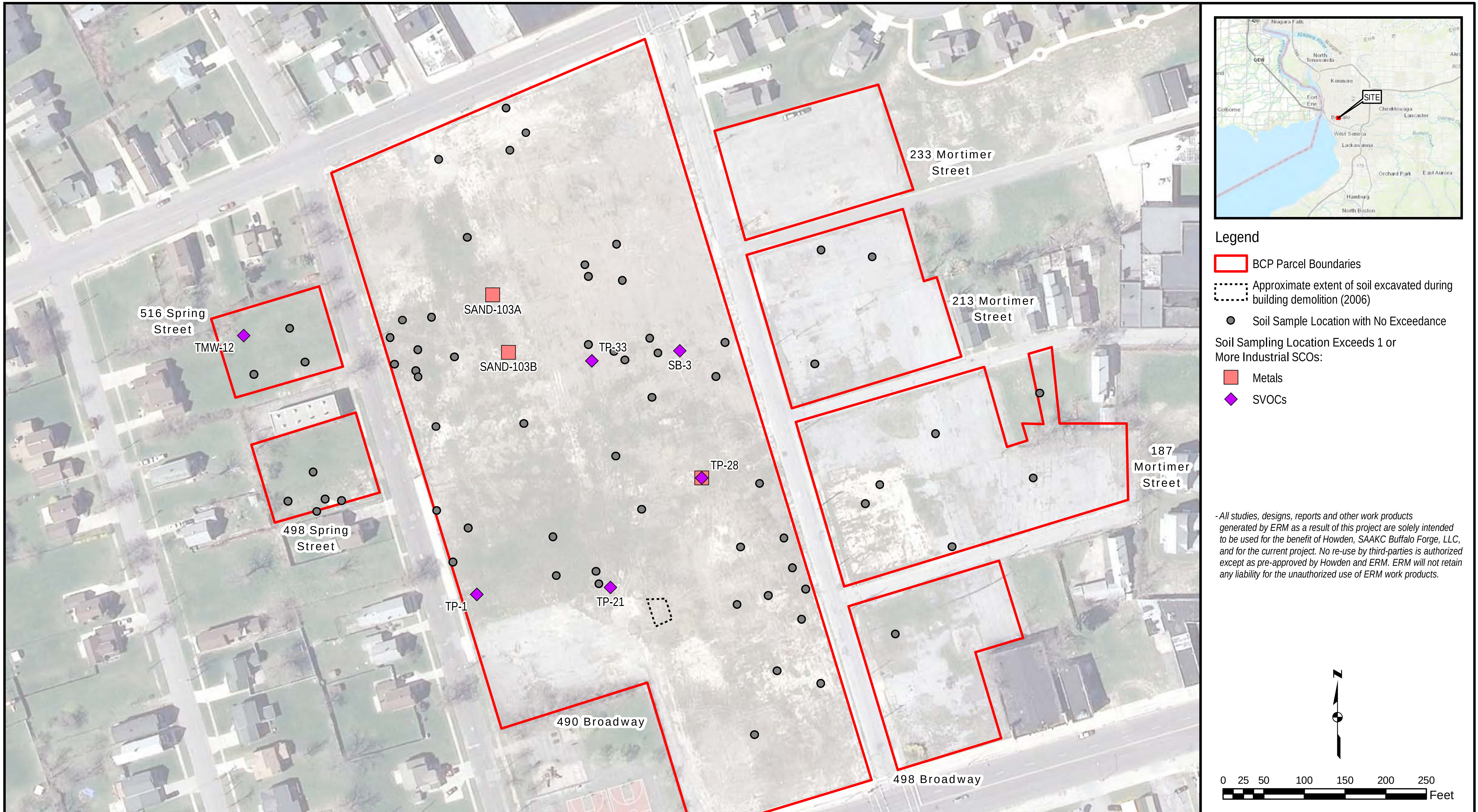
- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

Figure 20: Sample Locations Exceeding Industrial SCO (0-2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMMV\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure20_AreasExceeding_Industrial_SCOs_0to2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

🟥 BCP Parcel Boundaries

┄ Approximate extent of soil excavated during building demolition (2006)

● Soil Sample Location with No Exceedance

Soil Sampling Location Exceeds 1 or More Industrial SCOs:

■ Metals

◆ SVOCs

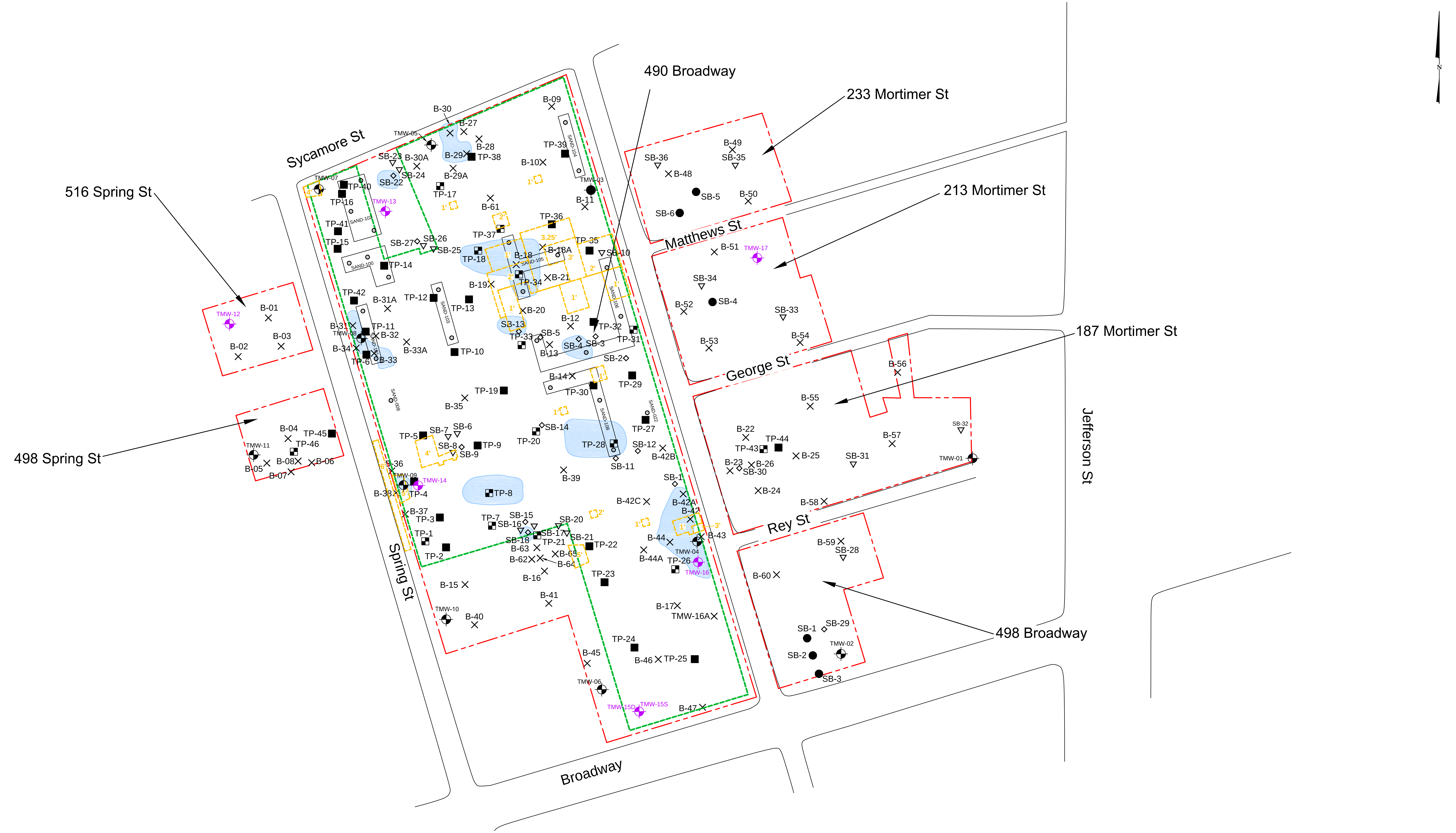
- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

Figure 21: Sample Locations Exceeding Industrial SCO (>2 Feet)

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure21_AreasExceeding_Industrial_SCOs_gt2ft_20180501.mxd - Caldwell.Payne - 5/4/2018



Legend

- Former Building Footprint
- BCP Parcel Outline
- TMW-08 Former Temporary Monitoring Well Location (2012)
- TMW-03 ● Soil Boring Location (Well Not Installed) (2012)
- SB-22 ◇ Soil Boring & Analytical Sample (2000)
- SB-24 ▽ Soil Boring, No Sample (2000)
- TMW-12 RI Monitoring Well Location (2014)
- TP-24 ■ Test Pit Location, No Sample (2008)
- TP-31 Test Pit Location, Analytical Sample (2008)
- SB-6 ● Soil Boring Location (2008)
- B-16 × RI Soil Boring (2014)
- SAND-104 Black Sand Sample Location (2006)
- Extent of Completed Soil Excavation < NYSDEC TAGM 4046, STARS-1, and/or TSCA/RCRA Regulatory Levels
- 1' Total Soil Excavation Depth (in feet)
- Estimated Areas of Grossly Contaminated Media

Source: Survey of Spring & Mortimor Streets, Soil Boring & well Sample Locations; dated 05/29/2015; by WM SCHUT Associates, Lancaster, NY
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)
Soil Excavation & Total Excavation Depths obtained from Brown & Caldwell figure 6-8 dated 08/30/2007
Sample Locations with Exceedances of SCOs obtained from Phase II Site Investigation Report Benchmark Figure 5 (2009); SoilBoring & Analytical Sample, Soil Boring No Sample from CRA(2000) March 31, 2000 Figure 1.

* Per DER-10 Section 1.3(b)23, includes estimated areas of soil or groundwater with visual, olfactory or other field-screening evidence of contamination.

TITLE

Estimated Areas of Grossly Contaminated Media *
Former Buffalo Forge Facility
Buffalo, New York

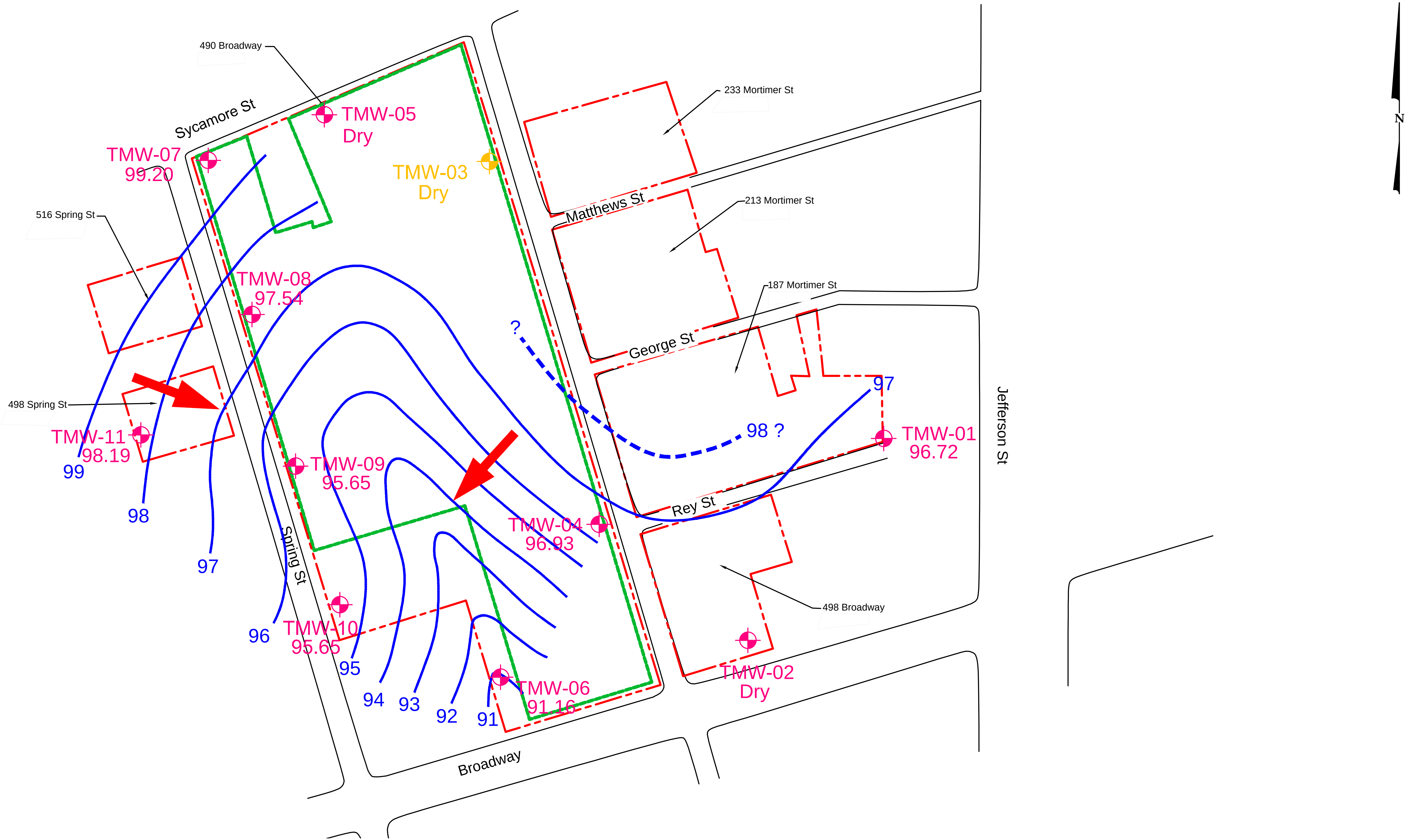
PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	22 MARCH 2018	0335506	22

M:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-07-15 - Howden - Buffalo Forge - Area of Grossly Contaminated Media- v04.dwg (03/22/2018 - 10:08am Melville)



Legend

BCP Parcel Outline

Approximate Former Building Location

TMW-04 RI Monitoring Well Location

96.93 Groundwater Elevation

TMW-03 Soil Boring Location (Well Not Installed)

Groundwater Contour

Inferred Groundwater Contour

Estimated Groundwater Flow Direction

Source: Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)

Note:

1. Groundwater elevations relative to an arbitrary site datum of 100.00 feet (ground surface at fire hydrant on east side of Mortimer Street between George and Matthew Streets.

0 150 300

GRAPHIC SCALE IN FEET

TITLE

Perched Groundwater Contours
13 March 2012
Former Buffalo Forge Facility
Buffalo, New York

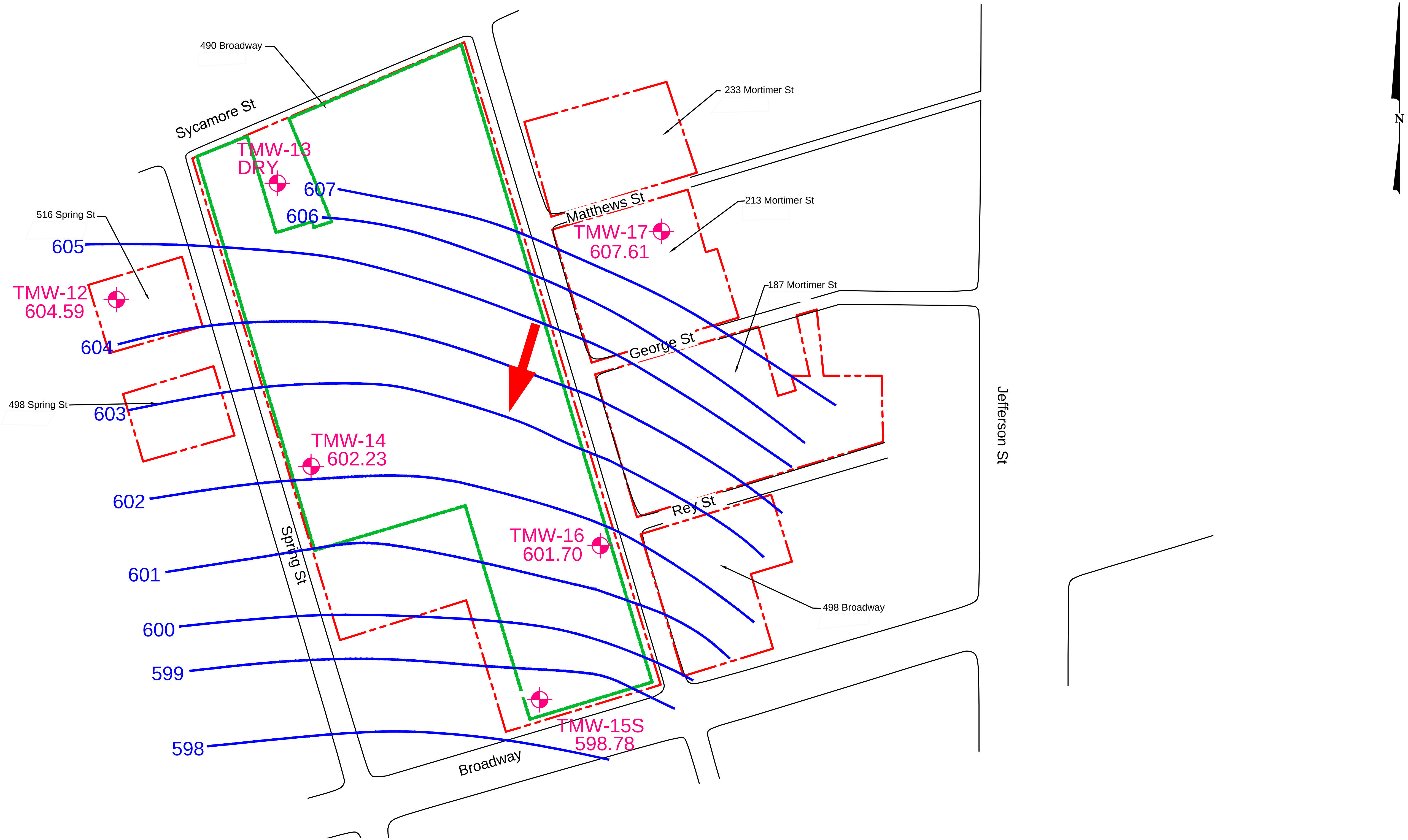
PREPARED FOR

Howden NA, Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	21 OCTOBER 2015	0181805	23

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2012-05-21 - Howden - Buffalo Forge - GW Contours-v02.dwg (10/21/2015 - 1:33pm Melville)



Legend

🟥 BCP Parcel Outline

🟩 Approximate Former Building Location

TMW-12 ⊕ RI Monitoring Well Location

604.59 Groundwater Elevation

— Groundwater Contour

↙ Estimated Groundwater Flow Direction

0 150 300

GRAPHIC SCALE IN FEET

Source: Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)

TITLE

Perched Groundwater Contours
27 May 2015
Former Buffalo Forge Facility
Buffalo, New York

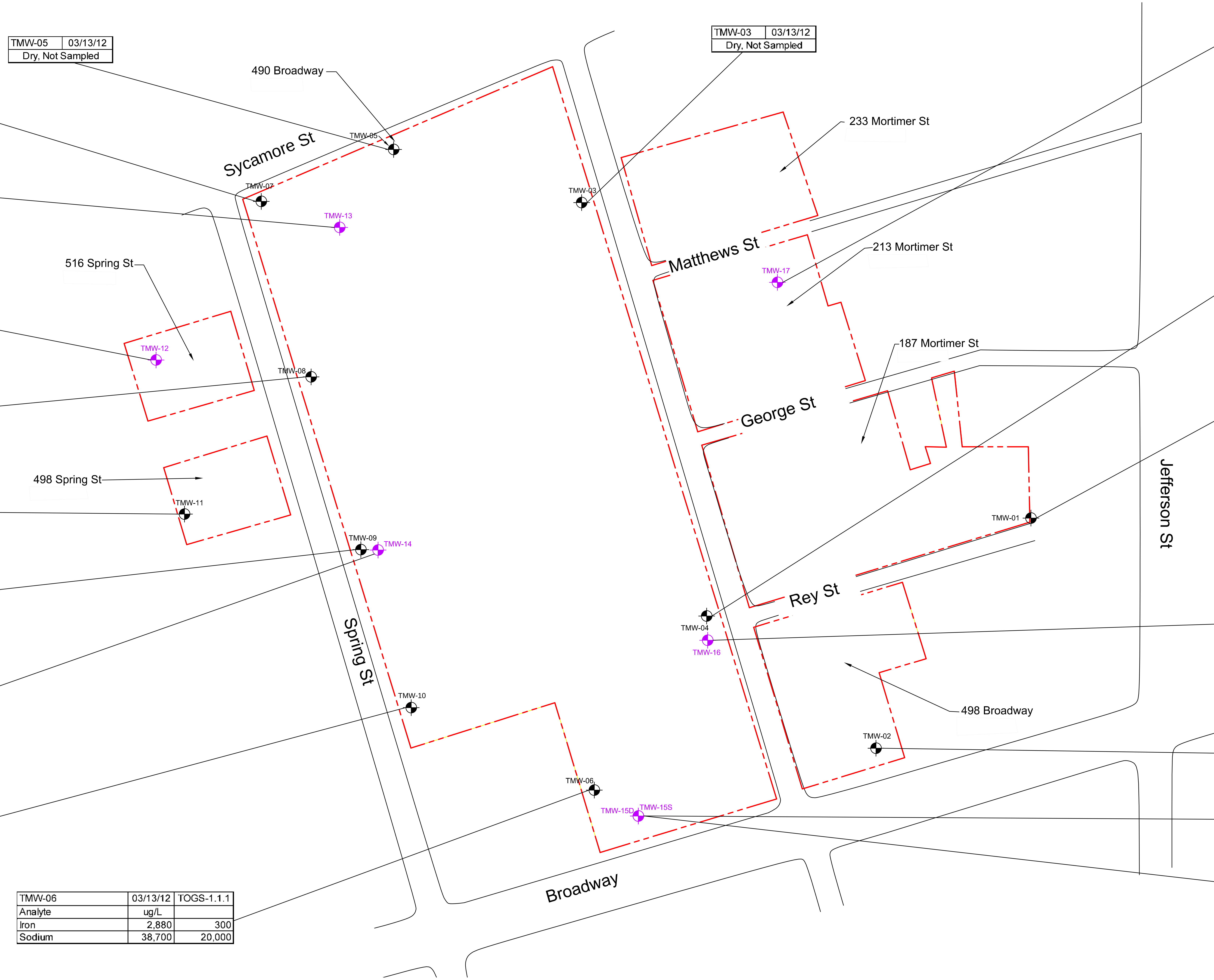
PREPARED FOR

Howden NA, Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	21 OCTOBER 2015	0181805	24

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-07-20 - Howden - Buffalo Forge - GW Contours 27 May 2015 - v01.dwg (10/21/2015 - 1:37pm Melville)



TMW-07	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	3,870	300
Magnesium	74,300	35,000
Sodium	37,900	20,000
1,2,4-Trimethylbenzene	6.6	5

TMW-13	05/27/15
Dry, Not Sampled	

TMW-12	05/27/15	TOGS-1.1.1
Analyte	ug/L	
Iron	1,050	300
Magnesium	46,200	35,000
Selenium	21.6	10
Sodium	23,800	20,000

TMW-08	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	16,400	300
Magnesium	49,600	35,000
Manganese	530	300
Sodium	51,000	20,000

TMW-11	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	4,400	300

TMW-09	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	21,300	300
Lead	65.7	25
Magnesium	68,600	35,000
Manganese	743	300
Sodium	77,100	20,000

TMW-14	05/27/15	05/27/15 (Duplicate	TOGS-1.1.1
Analyte	ug/L	ug/L	
Antimony	4.4	4.6	3
Iron	4,610	4,670	300
Magnesium	116,000	111,000	35,000
Sodium	30,600	28,300	20,000

TMW-10	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	11,100	300
Sodium	21,100	20,000

TMW-05	03/13/12
Dry, Not Sampled	

TMW-06	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	2,880	300
Sodium	38,700	20,000

TMW-03	03/13/12
Dry, Not Sampled	

TMW-17	05/27/15
Dry, Not Sampled	

TMW-04	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	17,500	300
Lead	80.2	25
Magnesium	64,100	35,000
Manganese	831	300
Sodium	26,500	20,000

TMW-01	03/13/12	TOGS-1.1.1
Analyte	ug/L	
Iron	3,800	300
Sodium	44,500	20,000

TMW-16	05/29/15	TOGS-1.1.1
Analyte	ug/L	
Iron	410	300
Magnesium	38,800	35,000
Sodium	167,000	20,000

TMW-02	03/13/12
Dry, Not Sampled	

TMW-15S	05/27/15	TOGS-1.1.1
Analyte	ug/L	
Selenium	12.1	10
Sodium	144,000	20,000

TMW-15D	05/27/15	TOGS-1.1.1
Analyte	ug/L	
Sodium	356,000	20,000

Legend

🟥 - - -	BCP Parcel Outline
TMW-08 ⊕	Temporary Monitoring Well Location (2012; Abandonded after Sampling)
TMW-12 ⊕	RI Monitoring Well Location (2015)
3,870 ug/L	Groundwater Exceedance of NYSTOGS 1.1.1 Standards/Guidance Values

Note: Analytes Listed are Limited to Analytes that Exceed NYSDEC Ambient Groundwater Quality Standards or Guidance Values (TOGS-1.1.1).

Source: Survey of Spring & Mortimor Streets, Soil Boring & well Sample Locations; dated 05/29/2015; by WM SCHUT Associates, Lancaster, NY
Approximate Building Outline obtained from Phase II Environmental Site Investigation Report, Benchmark (2009)
Soil Excavation & Total Excavation Depths obtained from Brown & Caldwell figure 6-8 dated 08/30/2007
Sample Locations with Exceedances of SCOs obtained from Phase II Site Investigation Report Benchmark Figure 5 (2009); SoilBoring & Analytical Sample, Soil Boring No Sample from CRA(2000) March 31, 2000 Figure 1.

0 75 150
GRAPHIC SCALE IN FEET

TITLE

Areas Exceeding Ambient Groundwater Quality Standards or Guidance Values
Former Buffalo Forge Facility
Buffalo, New York

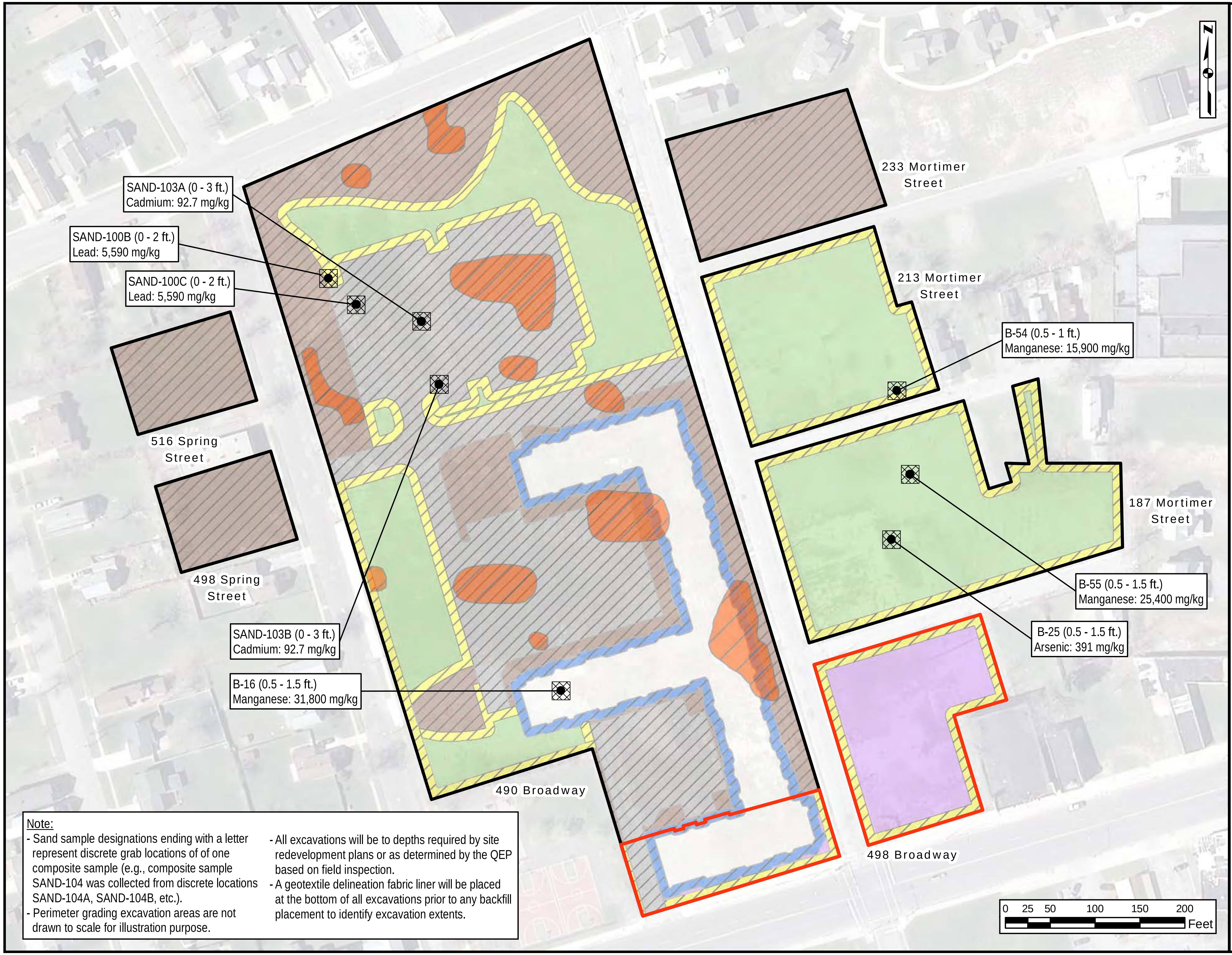
PREPARED FOR

Howden North America Inc.

ERM CONSULTING & ENGINEERING, INC.

DRAWN BY	SCALE	DATE	JOB NO.	FIGURE
EMF	GRAPHIC	21 OCTOBER 2015	0181805	25

R:\Scout\Projects\Howden - Buffalo Forge\CAD\2105 RI\2015-10-12 - Howden - Buffalo Forge - Areas Exceeding Ambient GW Q Standards- v01.dwg (10/21/2015 - 1:43pm Melville)



Note:

- Sand sample designations ending with a letter represent discrete grab locations of of one composite sample (e.g., composite sample SAND-104 was collected from discrete locations SAND-104A, SAND-104B, etc.).
- Perimeter grading excavation areas are not drawn to scale for illustration purpose.
- All excavations will be to depths required by site redevelopment plans or as determined by the QEP based on field inspection.
- A geotextile delineation fabric liner will be placed at the bottom of all excavations prior to any backfill placement to identify excavation extents.

Legend

▭ BCP Parcel Boundaries

Remedial Excavations

🟧 Grossly Contaminated Media (GCM) - 4+ ft. Excavation

● Site Specific Action Level Exceedance Locations, Sample Depth, and Analyte Concentration

▩ Site Specific Action Level Exceedance Excavations (20x20 ft)

Site Redevelopment

🟦 Foundation Excavation (10 ft. wide by 4 ft. deep)

▨ Asphalt / Parking Lot Excavation and Cover System - 6 inch Excavation

🟨 Perimeter Grading - 4 ft. Wide Excavation

🟫 City-Compliant Restricted Residential - 2 ft. Excavation and Add 2 ft. Cover

🟩 City-Compliant Restricted Residential Use - Add 2 ft. Cover

⬜ Building Cover System

🟪 City-Compliant Commercial Use - Add 1 ft. Cover

🟥 Proposed Commercial Use - Add 1 ft. Cover in all Areas Not Covered by Buildings or Pavement

- All studies, designs, reports and other work products generated by ERM as a result of this project are solely intended to be used for the benefit of Howden, SAAKC Buffalo Forge, LLC, and for the current project. No re-use by third-parties is authorized except as pre-approved by Howden and ERM. ERM will not retain any liability for the unauthorized use of ERM work products.

Figure 26: Recommended Remedial Alternative - Alternative 3 - Remove GCM, Remediate Site to SSALs, and Place Cover

Former Buffalo Forge Facility
Buffalo, New York

ERM

Q:\Team\DMM\Clients_F_K\Howden\BuffaloForge_NY\MXD\2018_ReportRevisions\Figure26_INTERNAL_BF_ExcavationAreas_SitePlanUpdated_Callouts_20180522.mxd - Caldwell.Payne - 8/31/2018

Tables

TABLE 1
Summary of Field Data - Soil
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

ERM	**Completion**	**Black Sand**	**Sample**	**Highest PID ppmv (ft bgs.)**	**Bedrock**	**Sample Location Coordinates^1**	
Boring ID	**Depth (ft bgs)**	**Encountered**	**Interval (ft bgs)**		**Encountered (ft bgs)**	**X**	**Y**
2000 Borings							
SB-1	2	N	NS	0.0	NA	1075174.759	1053251.17
SB-2	4.5	N	NS	0.0	4.5	1075103.084	1053435.338
SB-3	5	N	4-5	0.0	5	1075058.48	1053467.019
SB-4	5	N	4-5	0.0	5	1075229.786	1053517.737
SB-5	5	N	NS	0.0	5	1074977.767	1053465.825
SB-6	9	N	NS	0.0	9	1074855.494	1053324.949
SB-7	9	N	NS	0.0	9	1074842.218	1053320.68
SB-8	9	Y	NS	0.0	9	1074849.238	1053297.351
SB-9	9	Y	0.5-1.5	0.0	9	1074862.353	1053305.145
SB-10	1.5	N	NS	0.0	1.5	1075067.241	1053589.992
SB-11	8	N	NS	0.0	8	1075088.066	1053288.66
SB-12	8	N	NS	0.0	8	1075120.361	1053299.416
SB-13	4	N	NS	4.0	4	1074946.122	1053474.44
SB-14	9	N	NS	0.0	9	1074979.861	1053337.248
SB-15	11.5	N	7-8	0.0	11.5	1074955.572	1053195.581
SB-16	8	N	NS	0.0	8	1074948.331	1053183.57
SB-17	11.5	N	NS	0.0	11.5	1074968.242	1053189.796
SB-18	8	Y	6-6.5	1.2	8	1074959.519	1053180.321
SB-19	8	N	NS	0.0	8	1074964.443	1053183.213
SB-20	8	N	NS	0.0	8	1075003.809	1053190.1
SB-21	8	N	NS	0.0	8	1075016.12	1053179.469
SB-22	5	N	NS	0.0	5	1074762.317	1053702.406
SB-23	5	N	NS	0.0	5	1074760.911	1053721.887
SB-24	5	N	NS	0.0	5	1074770.716	1053711.324
SB-25	5	N	NS	0.0	5	1074820.681	1053595.475
SB-26	5	N	NS	0.0	5	1074805.972	1053600.221
SB-27	5	N	4.5-5	0.0	5	1074797.227	1053606.385
SB-28	8	N	NS	0.0	8	1075420.679	1053144.019
SB-29	5	Y	NS	2.0	5	1075393.293	1053038.436
SB-30	8	Y	0.3-1	0.0	8	1075268.969	1053274.162
SB-31	8	Y	NS	0.0	8	1075435.558	1053280.498
SB-32	8	N	NS	0.0	8	1075593.204	1053330.432
SB-33	6	Y	NS	0.0	6	1075332.703	1053495.687
SB-34	5	Y	NS	0.0	5	1075213.306	1053541.406
SB-35	1.5	N	NS	0.0	1.5	1075262.727	1053717.904
SB-36	1.5	N	NS	0.0	1.5	1075149.028	1053718.141
2008 Borings/Test Pits							
TP-1	6	Y	0.5-6	NM	NA	1074809.097	1053167.356
TP-2	4	N	NS	NM	NA	1074839.536	1053158.524
TP-3	4	N	NS	NM	NA	1074830.517	1053202.284
TP-4	4	Y	NS	NM	4	1074792.779	1053254.974
TP-5	4	Y	NS	NM	NA	1074805.906	1053322.41
TP-6	4	Y	NS	NM	NA	1074722.863	1053440.619
TP-7	4	Y	1-3	NM	4	1074906.881	1053190.259
TP-8	3.5	Y	0.5-3	NM	NA	1074902.729	1053238.084
TP-9	3.5	Y	NS	NM	NA	1074885.808	1053307.689
TP-10	3.5	Y	NS	NM	NA	1074851.976	1053444.437

TABLE 1
Summary of Field Data - Soil
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

ERM	**Completion**	**Black Sand**	**Sample**	**Highest PID**	**Bedrock**	**Sample Location Coordinates[1]**	
Boring ID	**Depth (ft bgs)**	**Encountered**	**Interval (ft bgs)**	**ppmv (ft bgs.)**	**Encountered (ft bgs)**	**X**	**Y**
TP-11	4	Y	NS	NM	NA	1074721.831	1053474.452
TP-12	3.5	Y	NS	NM	NA	1074821.348	1053523.729
TP-13	3.5	Y	NS	NM	NA	1074873.169	1053521.581
TP-14	3.5	Y	NS	NM	NA	1074748.9	1053570.859
TP-15	4	N	NS	NM	NA	1074680.743	1053595.59
TP-16	2.5	N	NS	NM	2.5	1074687.22	1053676.075
TP-17	3.5	Y	0.5-2	NM	NA	1074830.919	1053687.457
TP-18	3.5	Y	0.5-2.5	NM	NA	1074886.523	1053592.944
TP-19	3.5	N	NS	NM	NA	1074924.163	1053388.191
TP-20	3.5	Y	0.5-1.5	NM	NA	1074971.415	1053328.236
TP-21	3.5	Y	1-3	NM	NA	1074973.094	1053176.145
TP-22	7	Y	NS	NM	NA	1075049.415	1053160.097
TP-23	4	N	NS	NM	NA	1075071.657	1053107.426
TP-24	5.5	N	NS	NM	NA	1075115.498	1053011.833
TP-25	2.5	N	NS	NM	NA	1075203.788	1052994.888
TP-26	3.5	Y	1-2	NM	NA	1075175.298	1053126.352
TP-27	3.5	N	NS	NM	NA	1075131.75	1053345.172
TP-28	6.5	Y	0.5-6.5	NM	NA	1075085.33	1053310.61
TP-29	4	N	NS	NM	NA	1075112.109	1053410.249
TP-30	4	Y	NS	NM	NA	1075055.491	1053395.545
TP-31	5	Y	0.5-5	NM	5	1075114.078	1053477.195
TP-32	3	Y	NS	NM	NA	1075055.539	1053488.562
TP-33	4	Y	1-3	NM	NA	1074950.276	1053454.596
TP-34	5	N	3-5	NM	5	1074946.295	1053558.242
TP-35	4	N	NS	NM	4	1075049.669	1053592.979
TP-36	3.5	Y	NS	NM	3.5	1074994.476	1053631.478
TP-37	4	Y	1-1.5	NM	4	1074919.277	1053624.898
TP-38	3	N	NS	NM	3	1074876.942	1053730.349
TP-39	2	N	NS	NM	2	1075013.824	1053734.896
TP-40	5	N	NS	NM	NA	1074689.916	1053689.36
TP-41	5	N	NS	NM	NA	1074681.298	1053621.318
TP-42	6	N	NS	NM	NA	1074704.76	1053519.894
TP-43	5	Y	1-3	NM	NA	1075304.565	1053302.292
TP-44	5	Y	NS	NM	NA	1075326.466	1053304.63
TP-45	5	N	NS	NM	NA	1074672.436	1053325.118
TP-46	5.5	Y	0.5-2	NM	NA	1074616.66	1053298.561
SB-1	5	N	NS	NM	NA	1075368.371	1053025.51
SB-2	4.8	N	NS	NM	NA	1075376.69	1053000.3
SB-3	4.6	N	0.5-1.5	NM	NA	1075385.662	1052973.431
SB-4	4.4	Y	0.5-1.5	NM	NA	1075229.786	1053517.737
SB-5	2.2	Y	0.5-1.5	NM	NA	1075205.759	1053678.985
SB-6	2.1	Y	0.5-1.5	NM	NA	1075181.747	1053648.138
2012 Borings							
TMW-01	10.3	Y	NS	NM	10.3	1075610.57	1053288.86
TMW-02	3.5	Y	NS	NM	3.5	1075417.92	1053002.51
TMW-03	2	Y	NS	NM	2	1075051.74	1053681.5
TMW-04	8.5	NA	NS	NM	8.5	1075207.22	1053167.06
TMW-05	3.8	NA	NS	NM	3.8	1074817.83	1053747.66
TMW-06	9.5	NA	NS	NM	9.5	1075067.57	1052950.33
TMW-07	5.5	NA	NS	NM	5.5	1074653.3	1053682.99

TABLE 1
Summary of Field Data - Soil
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

ERM	**Completion**	**Black Sand**	**Sample**	**Highest PID ppmv (ft bgs.)**	**Bedrock**	**Sample Location Coordinates^1**	
Boring ID	**Depth (ft bgs)**	**Encountered**	**Interval (ft bgs)**		**Encountered (ft bgs)**	**X**	**Y**
TMW-08	8	NA	NS	NM	8	1074715.28	1053464.63
TMW-09	9.5	NA	NS	NM	9.5	1074777.14	1053249.58
TMW-10	9	NA	NS	NM	9	1074839.74	1053053.06
TMW-11	11.5	Y	NS	NM	11.5	1074557.73	1053293.86
2014-15 Borings							
B-01	9	NA	0.5-1.5, 2-3	2.1	9	1074579.38	1053494.46
B-02	10.5	NA	0.5-1.5, 2-3	3.4	10.5	1074535.15	1053437.84
B-03	8.5	NA	0.5-1.5, 2-3	1.9	8.5	1074598.05	1053452.93
B-04	10.5	NA	3-4	2.6	10.5	1074608.18	1053317.84
B-05	11.5	Y	0.5-1.5, 2-3	1.7	11.5	1074577.08	1053281.81
B-06	11	NA	0.5-1.5, 2-3	2.8	11	1074642.78	1053282.6
B-07	11	Y	0.5-1.5, 2-3	2.9	11	1074612.68	1053269.07
B-08	11	Y	0.5-1.5, 2-3	3.1	11	1074622.85	1053284.75
B-09	1.67	NA	0.5-1.5	NS	1.67	1074994.23	1053804.1
B-10	1.5	NA	0.5-1.5	NS	1.5	1074981.38	1053722.31
B-11	1.67	NA	0.5-1.5	NS	1.67	1075042.87	1053657.17
B-12	5.5	NA	4-5	0.9	5.5	1075021.87	1053482.45
B-13	6.5	NA	4-5	2.1	6.5	1074991.16	1053455.39
B-14	7	NA	4-5	0.2	7	1075024.54	1053409.6
B-15	2	NA	0.5-1	0	NA	1074867.32	1053104.12
B-16	2	Y	0.5-1.5	0	NA	1074983.8	1053123.76
B-17	7.5	NA	1-2, 2-3	0.7	7.5	1075178.28	1053073.21
B-18	4.75	NA	3-4.5	NS	4.75	1074942.26	1053572.42
B-18A	4	NA	3-4	0.7	4	1074980.94	1053598.09
B-19	4.5	NA	3-4.5	0.2	4.5	1074905.51	1053543.81
B-20	6	NA	3-5	0.7	6	1074951.9	1053505.21
B-21	5	NA	3.5-5	0.7	5	1074988.21	1053553.42
B-22	8	NA	0.5-1.5	0	8	1075278.51	1053319.43
B-23	7.5	Y	0.5-1.5	0	7.5	1075255.32	1053270.73
B-24	7	Y	0.5-1.5	0	7	1075296.64	1053241.53
B-25	7.5	NA	0.5-1.5	0.2	7.5	1075352.05	1053292.46
B-26	8	NA	2-3	0	8	1075286.73	1053279.16
B-27	2	NA	1-2	0.2	2	1074865.6	1053767.19
B-28	2.5	Y	1.5-2.5	0.1	2.5	1074887.88	1053756.49
B-29	3.5	NA	2-3.5	0.1	3.5	1074869.63	1053734.84
B-29A	3.2	NA	2-3	0	3.2	1074849.89	1053713.45
B-30	2.67	NA	2-2.8	12.3	2.67	1074845.39	1053765.06
B-30A	2	NA	1-2	0	2	1074796.71	1053716.56
B-31	4	NA	3-4	0	4	1074702.91	1053483.18
B-31A	3.5	NA	2-3	NS	3.5	1074753.82	1053508.15
B-32	7.5	NA	3-5	0.7	7.5	1074736.85	1053468.22
B-33	4	Y	3-4	1.8	4	1074734.22	1053442.55
B-33A	7.5	Y	3-4	1.4	7.5	1074781.7	1053459.24
B-34	6.5	NA	3-5	0	6.5	1074708.03	1053450.32
B-35	8.5	NA	0.5-1.5, 2-3	1.7	8.5	1074867.05	1053377.26
B-36	8.5	NA	2-4	0.8	8.5	1074760.13	1053270.45
B-37	9	NA	2-4	1.4	9	1074779.96	1053207.31
B-38	9	NA	2-4	1.2	9	1074766.41	1053238.54
B-39	8	NA	1.5-2.5, 4-5	1.8	8	1075011.78	1053271.85
B-40	1.5	Y	0.5-1	0	NA	1074881.33	1053045.14

TABLE 1
Summary of Field Data - Soil
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

ERM Boring ID	Completion Depth (ft bgs)	Black Sand Encountered	Sample Interval (ft bgs)	Highest PID ppmv (ft bgs.)	Bedrock Encountered (ft bgs)	Sample Location Coordinates[1]	
						X	Y
B-41	1	Y	0.5-1.5	0	NA	1074990.02	1053076.53
B-42	7	NA	4-5	18	7	1075197.16	1053199.88
B-42A	7	Y	4-5	163.4	7	1075186.92	1053236.67
B-42B	7	NA	4-5	0.9	7	1075156.893	1053303.848
B-42C	7	NA	4-5	1.1	7	1075133.26	1053225.51
B-43	7	NA	3-4	0.2	7	1075213.28	1053174.05
B-44	8	NA	4-5	5	8	1075167.4	1053166.17
B-44A	7	NA	6-7	0.3	7	1075129.05	1053154.79
B-45	1	NA	NS	NS	1	1075046.26	1052988.69
B-46	8	NA	1-2, 4-5	0	8	1075150.38	1052994.65
B-47	6.5	NA	1-2	0.4	6.5	1075215.2	1052924.43
B-48	1.83	NA	0.5-1.5, 1-1.5	0	1.83	1075165.33	1053705.4
B-49	2.67	NA	0.5-1.5	0	2.67	1075258.9	1053740.62
B-50	2	NA	0.5-1.5, 1.5-2	0	2	1075282.06	1053665.61
B-51	3	NA	0.5-1.5, 1.5-2.5	0.1	3	1075232.45	1053591.02
B-52	4	NA	0.5-1.5	0	4	1075187.71	1053503.92
B-53	4.83	NA	0.5-1.5, 1.5-2.5	0	4.83	1075224.58	1053450.46
B-54	1.33	NA	0.5-1	0	1.33	1075357.99	1053458.39
B-55	7	NA	0.5-1.5, 3-4	3.1	7	1075372.82	1053365.16
B-56	8.5	NA	0.5-1.5, 2-3	0.2	8.5	1075500.92	1053414.7
B-57	8	NA	0.5-1.5, 2-3	0.3	8	1075492.89	1053310.37
B-58	6	NA	1-2, 2-3	0.3	6	1075393.21	1053225.99
B-59	9	NA	0.5-1, 1-2	0.2	9	1075417.88	1053167.56
B-60	6.5	NA	0.5-1.5, 1.5-2.5	0.2	6.5	1075323.51	1053118.53
B-61	1.83	NA	1-1.5	0	1.83	1074904.45	1053669.93
B-62	0.7	NA	NS	0	0.7	1074965.13	1053141.06
B-63	2.1	NA	NS	0	2.1	1074972.63	1053158.09
B-64	1.7	NA	NS	0	1.7	1074977.38	1053142.75
B-65	0.8	NA	NS	0	0.8	1074999.49	1053148.88
TMW-12	10.5	NA	0.5-1.5, 3-4	2.7	10.5	1074522.33	1053485.67
TMW-13	4.67	NA	1-2	0	4.67	1074750.72	1053650.61
TMW-14	9.5	NA	2-4	1.5	9.5	1074798.51	1053249.08
TMW-15	20.5	NA	1-2	0.7	8.2	1075122.31	1052918.18
TMW-16	6.5	NA	4-5	2.9	6.5	1075208.51	1053136.82
TMW-16A	4.5	NA	3.5-4.5	0.4	4.5	1075232.18	1053057.77
TMW-17	3.75	NA	1-2, 3-4	NS	3.75	1075295.23	1053582.25

NOTES

ft bgs = feet below ground surface

[1] = NAD83 NYS West Zone (ft)

NA = Not Available

NS = Not Sampled

"--" = No groundwater encountered

TABLE 2
Summary of Soil Samples
Former Buffalo Forge Property
NYSDEC BCP Number C915280

Field ID	Matrix	Date Sampled	VOCs (8260)	SVOCs (8270)	PCBs (8082)	Metals (6010/7471)	TCLP Metals (6010/7470)
SB-3 (4.0-5.0ft)	Soil	2000	X	X	X	X	
SB-4 (4.0-5.0ft)	Soil	2000	X	X	X	X	
SB-9 (0.5-1.5ft)	Soil	2000	X	X	X	X	
SB-15 (7.0-8.0ft)	Soil	2000	X	X	X	X	
SB-18 (6.0-6.5ft)	Soil	2000	X	X	X	X	
SB-27 (4.5-5.0ft)	Soil	2000	X	X	X	X	
SB-30 (0.3-1.0ft)	Soil	2000	X	X	X	X	
Sand-100	Soil	2007		X		X	X
Sand-101	Soil	2007		X		X	X
Sand-102	Soil	2007		X		X	X
Sand-008	Soil	2007		X		X	X
Sand-103	Soil	2007		X		X	X
Sand-104	Soil	2007		X		X	X
Sand-105	Soil	2007		X		X	X
Sand-106	Soil	2007		X		X	X
Sand-107	Soil	2007		X		X	X
Sand-108	Soil	2007		X		X	X
Sand-022	Soil	2007		X		X	X
TP-1 (0.5-6.0ft)	Soil	2009		X	X	X	
TP-7 (1.0-3.0ft)	Soil	2009		X	X	X	
TP-8 (0.5-3.0ft)	Soil	2009	X	X	X	X	
TP-17 (0.5-2.0ft)	Soil	2009		X	X	X	
TP-18 (0.5-2.5ft)	Soil	2009		X	X	X	
TP-20 (0.5-1.5ft)	Soil	2009	X	X	X	X	
TP-21 (1.0-3.0ft)	Soil	2009		X	X	X	
TP-26 (1.0-2.0ft)	Soil	2009		X	X	X	
TP-28 (0.5-6.5ft)	Soil	2009		X	X	X	X
TP-31 (0.5-5.0ft)	Soil	2009		X	X	X	X
TP-33 (1.0-3.0ft)	Soil	2009		X	X	X	
TP-34 (3.0-5.0ft)	Soil	2009		X		X	
TP-37 (1.0-1.5ft)	Soil	2009		X	X		
TP-43 (1.0-3.0ft)	Soil	2009				X	
TP-46 (0.5-2.0ft)	Soil	2009		X	X	X	
SB-3 (0.5-1.5ft)	Soil	2009				X	
SB-4 (0.5-1.5ft)	Soil	2009				X	
SB-5 (0.5-1.5ft)	Soil	2009		X	X	X	
SB-6 (0.5-1.5ft)	Soil	2009		X	X	X	
BF-B50 (0.5-1.5)	Soil	11/17/2014	X	X	X	X	
BF-B50 (1.5-2.0)	Soil	11/17/2014	X	X	X	X	
BF-B49 (0.5-1.5)	Soil	11/17/2014	X	X	X	X	
BF-B48 (0.5-1.0)	Soil	11/17/2014	X	X	X	X	
BF-B48 (1.0-1.5)	Soil	11/17/2014	X	X	X	X	
BF-B52 (0.5-1.5)	Soil	11/17/2014	X	X	X	X	
BF-B51 (0.5-1.5)	Soil	11/17/2014	X	X	X	X	
BF-B51 (1.5-2.5)	Soil	11/17/2014	X	X	X	X	
BF-B51 (1.5-2.5)	Soil	11/17/2014				X	
BF-B51 (1.5-2.5)	Soil	11/17/2014				X	
BF-B11 (0.5-1.5)	Soil	11/19/2014		X	X	X	
BF-B10 (0.5-1.5)	Soil	11/19/2014		X	X	X	
BF-B9 (0.5-1.5)	Soil	11/19/2014		X	X	X	
BF-B61 (1.0-1.5)	Soil	11/19/2014		X	X	X	
BF-B18 (3.0-4.5)	Soil	11/19/2014	X	X	X	X	
BF-B18 (3.0-4.5)	Soil	11/19/2014				X	
BF-B18 (3.0-4.5)	Soil	11/19/2014				X	
BF-B53 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B53 (1.5-2.5)	Soil	11/24/2014	X	X	X	X	

TABLE 2
Summary of Soil Samples
Former Buffalo Forge Property
NYSDEC BCP Number C915280

Field ID	Matrix	Date Sampled	VOCs (8260)	SVOCs (8270)	PCBs (8082)	Metals (6010/7471)	TCLP Metals (6010/7470)
BF-B22 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B26 (2-3)	Soil	11/24/2014	X	X	X	X	
BF-B23 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B24 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B56 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B56 (2-3)	Soil	11/24/2014	X	X	X	X	
BF-B57 (2-3)	Soil	11/24/2014	X	X	X	X	
BF-B57 (2-3)	Soil	11/24/2014	X	X	X	X	
BF-B57 (2-3)	Soil	11/24/2014	X	X	X	X	
BF-B55 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B58 (1-2)	Soil	11/24/2014	X	X	X	X	
BF-B58 (2-3)	Soil	11/24/2014	X	X	X	X	
BF-B54 (0.5-1.0)	Soil	11/24/2014	X	X	X	X	
BF-B55 (3-4)	Soil	11/24/2014	X	X	X	X	
BF-B25 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B57 (0.5-1.5)	Soil	11/24/2014	X	X	X	X	
BF-B46 (1-2)	Soil	11/25/2014	X	X	X	X	
BF-B17 (2-3)	Soil	11/25/2014		X	X	X	
BF-B17 (1-2)	Soil	11/25/2014		X	X	X	
BF-B46 (4-5)	Soil	11/25/2014	X	X	X	X	
BF-TMW16 (4-5)	Soil	11/25/2014	X	X	X	X	
BF-B44 (4-5)	Soil	11/25/2014		X	X	X	
BF-B60 (0.5-1.5)	Soil	11/25/2014	X	X	X	X	
BF-B60 (1.5-2.5)	Soil	11/25/2014	X	X	X	X	
BF-B59 (0.5-1.0)	Soil	11/25/2014	X	X	X	X	
BF-B59 (1.0-2.0)	Soil	11/25/2014	X	X	X	X	
BF-B16 (0.5-1.5)	Soil	11/25/2014		X	X	X	
BF-B15 (0.5-1.0)	Soil	11/25/2014		X	X	X	
BF-TMW15(1-2)	Soil	11/25/2014	X	X	X	X	
BF-TMW15(1-2)	Soil	11/25/2014	X	X	X	X	
BF-TMW15(1-2)	Soil	11/25/2014	X	X	X	X	
BF-B47 (1-2)	Soil	11/25/2014	X	X	X	X	
BF-B43 (3-4)	Soil	11/25/2014		X	X	X	
BF-B42 (4-5)	Soil	11/25/2014		X	X	X	
BF-B32 (3-5)	Soil	11/26/2014	X	X	X	X	
BF-B31 (3-4)	Soil	11/26/2014	X	X	X	X	
BF-B34 (3-5)	Soil	11/26/2014	X	X	X	X	
BF-B33 (3-4)	Soil	11/26/2014	X	X	X	X	
BF-TMW13 (1-2)	Soil	11/26/2014		X	X	X	
BF-TMW13 (1-2)	Soil	11/26/2014				X	
BF-TMW13 (1-2)	Soil	11/26/2014				X	
BF-B27 (1-2)	Soil	11/26/2014	X				
BF-B28 (1.5-2.5)	Soil	11/26/2014	X				
BF-B29 (2-3.5)	Soil	11/26/2014	X				
BF-B30 (2-2.8)	Soil	11/26/2014	X				
BF-B01 (2-3)	Soil	12/1/2014	X	X	X	X	
BF-B01 (2-3)	Soil	12/1/2014	X	X	X	X	
BF-B01 (2-3)	Soil	12/1/2014	X	X	X	X	
BF-B01 (0.5-1.5)	Soil	12/1/2014	X	X	X	X	
BF-B02 (2-3)	Soil	12/1/2014	X	X	X	X	
BF-B02 (0.5-1.5)	Soil	12/1/2014	X	X	X	X	
BF-B03 (2-3)	Soil	12/1/2014	X	X	X	X	
BF-B03 (0.5-1.5)	Soil	12/1/2014	X	X	X	X	
BF-B05 (2-3)	Soil	12/1/2014	X	X	X	X	
BF-B05 (0.5-1.5)	Soil	12/1/2014	X	X	X	X	
BF-TMW12 (0.5-1.5)	Soil	12/1/2014	X	X	X	X	

TABLE 2
Summary of Soil Samples
Former Buffalo Forge Property
NYSDEC BCP Number C915280

Field ID	**Matrix**	**Date Sampled**	**VOCs (8260)**	**SVOCs (8270)**	**PCBs (8082)**	**Metals (6010/7471)**	**TCLP Metals (6010/7470)**
BF-TMW12 (3-4}	Soil	12/1/2014	X	X	X	X	
BF-TMW17 (1-2)	Soil	12/1/2014	X	X	X	X	
BF-TMW17 (2-3)	Soil	12/1/2014	X	X	X	X	
BF-B36 (2-4)	Soil	12/1/2014	X	X	X	X	
BF-B38 (2-4)	Soil	12/1/2014	X	X	X	X	
BF-B37 (2-4)	Soil	12/1/2014	X	X	X	X	
BF-TMW14 (2-4)	Soil	12/1/2014	X	X	X	X	
BF-B41 (0.5-1.5)	Soil	12/1/2014		X	X	X	
BF-B40 (0.5-1.0)	Soil	12/1/2014		X	X	X	
BF-B14 (4-5)	Soil	12/2/2014		X	X		
BF-B13 (4-5)	Soil	12/2/2014		X	X		
BF-B12 (4-5)	Soil	12/2/2014		X	X		
BF-B21 (3.5-5)	Soil	12/2/2014			X	X	
BF-B18A (3-4)	Soil	12/2/2014	X	X	X	X	
BF-B19 (3-4.5)	Soil	12/2/2014			X	X	
BF-B20 (3-5)	Soil	12/2/2014			X	X	
BF-B06 (0.5-1.5)	Soil	12/2/2014	X	X	X	X	
BF-B08 (2-3)	Soil	12/2/2014	X	X	X	X	
BF-B08 (0.5-1.5)	Soil	12/2/2014	X	X	X	X	
BF-B07 (0.5-1.5)	Soil	12/2/2014	X	X	X	X	
BF-TMW16A (3.5-4.5)	Soil	12/2/2014	X	X	X	X	
BF-B04 (0.5-1.5)	Soil	12/2/2014	X	X	X	X	
BF-B07 (2-3)	Soil	12/2/2014	X	X	X	X	
BF-B04 (3-4)	Soil	12/2/2014	X	X	X	X	
BF-B06 (2-3)	Soil	12/2/2014	X	X	X	X	
BF-B06 (2-3)	Soil	12/2/2014	X	X	X	X	
BF-B06 (2-3)	Soil	12/2/2014	X	X	X	X	
BF-B35 (2-3)	Soil	12/2/2014		X	X	X	
BF-B39 (4-5)	Soil	12/2/2014		X	X	X	
BF-B35 (0.5-1.5)	Soil	12/2/2014		X	X	X	
BF-B39 (1.5-2.5)	Soil	12/2/2014		X	X	X	
B-29A (2 - 3)	Soil	5/4/2015	X				
B-30A (1 - 2)	Soil	5/4/2015	X				
B-31A (2 - 3)	Soil	5/4/2015	X	X	X	X	
B-33A (3 - 4)	Soil	5/4/2015	X	X	X	X	
B-42A (4 - 5)	Soil	5/6/2015	X	X	X	X	
B-44A (6 - 7)	Soil	5/6/2015	X	X	X	X	
B-42B (4 - 5)	Soil	5/6/2015	X	X	X	X	
B-42C (4 - 5)	Soil	5/6/2015	X	X	X	X	
B-44 (7 - 8)	Soil	5/7/2015	X	X	X	X	
B-44 (7 - 8)	Soil	5/7/2015	X	X	X	X	
B-44 (7 - 8)	Soil	5/7/2015	X	X	X	X	
B-42 (6 - 7)	Soil	5/7/2015	X	X	X	X	

TABLE 3
Summary of Field Data - Ground Water
Former Buffalo Forge Property
NYSDEC BCP Number C915280

Well ID	DTW (feet)	Temp (°C)	SpC (uS/cm3)	Cond (uS/cm)	DO (mg/L)	pH	Turb (NTU)	ORP (mV)	Flow (ml/min)	Date
TMW-01	5.04	8.30	NA	464	5.39	7.97	1609.00	75.9	NR	3/13/2012
TMW-02	Dry									3/13/2012
TMW-03	Dry									3/13/2012
TMW-04	1.77	7.80	NR	810	2.52	9.69	70.10	-68.5	NR	3/13/2012
TMW-05	Dry									3/13/2012
TMW-06	5.20	7.92	NR	422	7.99	8.88	92.70	92.0	NR	3/13/2012
TMW-07	1.40	6.63	NR	822	7.67	10.67	232.00	109.7	NR	3/13/2012
TMW-08	1.82	7.51	NR	480	4.13	10.02	3672.00	106.0	NR	3/13/2015
TMW-09	1.95	8.11	NR	754	2.80	10.34	279.00	33.0	NR	3/13/2012
TMW-10	2.47	6.79	NR	842	6.42	11.4	106.80	46.5	NR	3/13/2012
TMW-11	2.11	8.29	NR	416	4.48	10.85	913.00	116	NR	3/13/2012
TMW-12	5.70	7.62	927	NR	6.80	7.53	27.10	69.40	67.00	5/27/2015
TMW-13	Dry									5/27/2015
TMW-14	3.92	15.53	1,082	NR	4.42	6.79	0.00	-101.5	125	5/27/2015
TMW-15S	4.74	14.65	861	NR	1.02	7.66	0.00	122.1	125	5/27/2015
TMW-15D	5.23	11.53	1,529	NR	3.77	7.36	0.00	-85.2	150	5/27/2015
TMW-16	4.48	Dry during sampling*								5/27/2015
TMW-17	3.12	Dry during sampling**								5/27/2015

Notes:

DTW - Depth to water

°C - Degrees Celsius

SpC - Specific conductivity in microSiemens per centimeter cubed

Cond - Conductivity in microSiemens per centimeter

DO - Dissolved oxygen

NR - Not recorded

mg/L - Milligrams per liter

Turb - Turbidity

NTU - Nephalometric turbidity unit

ORP - Oxidation-reduction potential in millivol

ml/min - Milliliters per minute

NS - Not sampled

* - Insufficient volume for instrumentation to read groundwater parameters. Sample was collected for VOCs and Metals only.

** - Insufficient volume for instrumentation to read groundwater parameters. No Sample collected.

TABLE 4
Summary of Ground water Samples
Former Buffalo Forge Property
NYSDEC BCP Number C915280

Field ID	**Matrix**	**Date Sampled**	**Date Received**	**VOCs (8260)**	**SVOCs (8270)**	**PCBs (8082)**	**Metals (6010/7470)**	**Antimony (200.8)**	**Thallium (200.8)**	**Cyanide (9012)**
TMW-01	Ground Water	3/13/2012	3/14/2012	X	X		X		X	X
TMW-04	Ground Water	3/13/2012	3/14/2012	X	X	X	X		X	X
TMW-06	Ground Water	3/13/2012	3/14/2012	X	X		X		X	X
TMW-07	Ground Water	3/13/2012	3/14/2012	X	X		X		X	X
TMW-08	Ground Water	3/13/2012	3/14/2012	X	X		X		X	X
TMW-09	Ground Water	3/13/2012	3/14/2012	X	X	X	X		X	X
TMW-10	Ground Water	3/13/2012	3/14/2012	X	X	X	X		X	X
TMW-11	Ground Water	3/13/2012	3/14/2012	X	X	X	X		X	X
TMW-15D(18)-20150527-01	Ground Water	5/27/2015	5/28/2015	X	X	X	X	X	X	
TMW-15S(5.5)-20150527-01	Ground Water	5/27/2015	5/28/2015	X	X	X	X	X	X	
TMW-14(6)-20150527-01	Ground Water	5/27/2015	5/28/2015	X	X	X	X	X	X	
TMW-12(8)-20150527-01	Ground Water	5/27/2015	5/28/2015	X	X	X	X	X	X	
TMW-16(4)-20150529-01	Ground Water	5/29/2015	6/2/2015	X			X	X	X	

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-01**	**B-01**	**B-02**	**B-02**	**B-03**	**B-03**	**B-04**	**B-04**	**B-05**	**B-05**	**B-06**	**B-06**	**B-06**	**B-07**	**B-07**	**B-08**	**B-08**	**B-09**	**B-10**	**B-11**
							Sample Date	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**02-Dec-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**19-Nov-14**	**19-Nov-14**	**19-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**QA/QC**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**3 - 4 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Metals, mg/kg																											
Aluminum	NS	NS	NS	NS	NS	NS		10,500	8,150	13,300	15,400	11,300	12,200	16,900 J	13,000 J	4,320	12,200	5,990 J	6,230 J	12,400 J	8,280 J	16,700 J	5,770 J	8,220 J	5,340 J	7,370 J	6,500 J
Antimony	NS	NS	NS	NS	NS	NS		4.80 J	< 7.04 J	< 7.77 J	< 7.47 J	< 6.74 J	< 6.75 J	< 8.24 J	< 7.80 J	< 8.18 J	< 6.95 J	< 8.15 J	< 8.43 J	< 6.90 J	< 7.46 J	< 7.75 J	< 8.92 J	< 7.27 J	< 7.14	< 6.28	< 6.10
Arsenic	13	16	16	16	16	16		14.5 J	2.54 J	7.82 J	3.84 J	5.36 J	7.27 J	7.46	6.17	5.01 J	4.53 J	53.8	52.7	3.99	14.0	3.26	9.33	3.58	< 1.19 J	6.09 J	3.22 J
Barium	350	820	350	400	400	10,000		300	50.0	333	97.1	138	122	140 J	118 J	79.6	75.5	85.0 J	87.9 J	78.1 J	126 J	110 J	79.9 J	49.4 J	27.4 J	52.8 J	48.1 J
Beryllium	7.2	47	14	72	590	2,700		0.512 J	0.332 J	0.562 J	0.554 J	0.501 J	0.574	0.786	0.646 J	0.489 J	0.505 J	0.839	0.862	0.527 J	0.703	0.710	0.628 J	0.363 J	< 0.595	0.314 J	0.291 J
Cadmium	2.5	7.5	2.5	4.3	9.3	60		1.44	< 0.587	0.521 J	0.441 J	0.311 J	0.302 J	0.604 J	0.523 J	0.716	< 0.579	0.922	1.12	< 0.575	1.73	< 0.646	0.480 J	< 0.606	< 0.595	< 0.523	< 0.508
Calcium	NS	NS	NS	NS	NS	NS		43,500	43,800	37,400	10,400	33,700	54,800	29,700 J	28,900 J	7,610	53,200	10,100 J	11,200 J	31,600 J	9,480 J	15,100 J	4,250 J	55,800 J	69,700	71,700	63,900
Chromium	30	NS	36	180	1,500	6,800		21.6	13.1	26.1	18.5	16.8	18.6	26.1	19.8	9.80	15.8	15.0	14.2	16.2	17.7	21.2	9.86	11.7	8.06 J	11.2 J	11.4 J
Cobalt	NS	NS	NS	NS	NS	NS		7.94	4.73 J	7.91	6.27	6.23	7.45	9.45	9.01	6.25 J	7.44	15.7	12.4	6.66	9.32	6.75	9.69	5.94 J	3.92 J	5.23 J	4.76 J
Copper	50	1,720	270	270	270	10,000		54.8	11.3	44.3	10.6	23.5	25.9	45.5	34.2	72.3	14.2	84.4	64.8	13.3	63.2	15.8	51.0	14.0	9.98 J	11.5 J	14.3 J
Iron	NS	NS	NS	NS	NS	NS		34,500	11,800	18,000	19,200	15,000	20,300	24,500	20,000	9,270	16,800	27,100	22,500	16,300	22,400	18,400	17,300	13,500	9,940 J	12,700 J	12,700 J
Lead	63	450	400	400	1,000	3,900		974 J	16.7 J	593 J	16.0 J	294 J	81.8 J	285	228	343 J	15.4 J	107	132	15.4	358	16.0	172	18.3	9.72 J	9.01 J	28.3 J
Magnesium	NS	NS	NS	NS	NS	NS		18,000	24,200	9,800	8,270	13,500	19,700	12,800 J	15,700 J	1,750	26,800	3,990 J	2,760 J	17,700 J	3,430 J	11,400 J	1,220 J	27,400 J	27,500 J	24,900 J	22,300 J
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		535 J	471 J	703 J	309 J	400 J	716 J	393	704	177 J	520 J	265 J	156 J	523	398	235	171	529	266 J	311 J	289 J
Nickel	30	130	140	310	310	10,000		18.7	9.81	15.8	15.6	12.4	16.7	21.5 J	18.6 J	14.4	14.6	22.5 J	19.8 J	15.0 J	23.2 J	16.9 J	19.0 J	11.4 J	7.29 J	10.4 J	9.34 J
Potassium	NS	NS	NS	NS	NS	NS		1,960	1,880	2,330	2,620	1,950	2,770	3,350	2,300	630	2,590	1,090	1,020	2,470	1,120	3,420	618	2,160	1,470 J	2,050 J	1,820 J
Selenium	3.9	4	36	180	1,500	6,800		1.03 J	< 1.17	< 1.30	< 1.25	< 1.12	0.979 J	< 1.37	< 1.30	< 1.36	< 1.16	< 1.36	1.25 J	< 1.15	< 1.24	< 1.29	< 1.49	< 1.21	< 1.19	< 1.05	< 1.02
Silver	2	8.3	36	180	1,500	6,800		< 1.26	< 1.17	< 1.30	< 1.25	< 1.12	< 1.13	< 1.37	< 1.30	< 1.36	< 1.16	< 1.36	< 1.41	< 1.15	< 1.24	< 1.29	< 1.49	< 1.21	< 1.19	< 1.05	< 1.02
Sodium	NS	NS	NS	NS	NS	NS		192 J	166 J	< 324	< 311	172 J	183 J	< 343	< 325	< 341	157 J	< 340	< 351	< 287	< 311	< 323	< 372	< 303	168 J	197 J	183 J
Thallium	NS	NS	NS	NS	NS	NS		< 3.15	< 2.94	< 3.24	< 3.11	< 2.81	< 2.81	< 3.43	< 3.25	< 3.41	< 2.90	< 3.40	< 3.51	< 2.87	< 3.11	< 3.23	< 3.72	< 3.03	< 2.98	< 2.62	< 2.54
Vanadium	NS	NS	NS	NS	NS	NS		27.8	18.2	30.4	25.4	23.4	28.3	35.0	28.8	15.1	25.4	26.5	25.5	24.4	21.7	29.2	17.7	20.9	15.3 J	19.0 J	18.6 J
Zinc	109	2,480	2,200	10,000	10,000	10,000		382	76.3	209	98.8	158	120	219 J	179 J	118	72.7	672 J	612 J	78.6 J	274 J	83.3 J	110 J	66.1 J	77.9	54.5	68.2
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		0.828 J	0.0732 J	0.524 J	0.0325 J	5.38 J	0.631 J	0.229	1.01	0.615 J	0.0173 J	0.948	0.826	0.0240	0.288	0.0213	0.681	< 0.0201	0.0150 J	< 0.0192	0.0506
Cyanide	27	40	27	27	27	10,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, mg/kg																											
Aroclor 1242	0.1	3.2	1	1	1	25		< 0.0346	< 0.0342	< 0.0356	< 0.0343	< 0.0330	< 0.0344	< 0.0351 J	< 0.0347 J	< 0.0379	< 0.0343 J	< 0.0363 J	< 0.0366	< 0.0334 J	< 0.0364	< 0.0341 J	< 0.0370	< 0.0332 J	< 0.0302	< 0.0322 J	< 0.0314 J
Aroclor 1248	0.1	3.2	1	1	1	25		< 0.0346	< 0.0342	< 0.0356	< 0.0343	< 0.0330	< 0.0344	< 0.0351 J	< 0.0347 J	< 0.0379	< 0.0343 J	< 0.0363 J	< 0.0366	< 0.0334 J	< 0.0364	< 0.0341 J	< 0.0370	< 0.0332 J	< 0.0302	< 0.0322 J	< 0.0314 J
Aroclor 1254	0.1	3.2	1	1	1	25		0.101 J	< 0.0342	< 0.0356	< 0.0343	< 0.0330	< 0.0344	< 0.0351 J	< 0.0347 J	< 0.0379	< 0.0343 J	< 0.0363 J	< 0.0366	< 0.0334 J	< 0.0364	< 0.0341 J	< 0.0370	< 0.0332 J	< 0.0302	< 0.0322 J	0.349 J
Aroclor 1260	0.1	3.2	1	1	1	25		< 0.0346	< 0.0342	< 0.0356	< 0.0343	< 0.0330	< 0.0344	< 0.0351 J	< 0.0347 J	< 0.0379	< 0.0343 J	< 0.0363 J	< 0.0366	< 0.0334 J	< 0.0364	< 0.0341 J	< 0.0370	< 0.0332 J	< 0.0302	< 0.0322 J	< 0.0314 J

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-01**	**B-01**	**B-02**	**B-02**	**B-03**	**B-03**	**B-04**	**B-04**	**B-05**	**B-05**	**B-06**	**B-06**	**B-06**	**B-07**	**B-07**	**B-08**	**B-08**	**B-09**	**B-10**	**B-11**
							Sample Date	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**02-Dec-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**19-Nov-14**	**19-Nov-14**	**19-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**QA/QC**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**3 - 4 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Semivolatiles, mg/kg																											
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		0.362 J	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	< 0.765	< 0.344	< 0.373	< 0.359	< 0.335	< 0.383	< 0.345	< 0.383	< 0.335	< 0.315	< 0.324	< 0.314
Acenaphthene	20	98	100	100	500	1,000		< 0.697	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	0.837	< 0.344	< 0.373	< 0.359	< 0.335	0.301 J	< 0.345	0.426	< 0.335	< 0.315	< 0.324	< 0.314
Acenaphthylene	100	107	100	100	500	1,000		0.898	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	< 0.765	< 0.344	< 0.373	< 0.359	< 0.335	< 0.383	< 0.345	< 0.383	< 0.335	< 0.315	< 0.324	< 0.314
Anthracene	100	1,000	100	100	500	1,000		0.484 J	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	2.01	< 0.344	< 0.373	< 0.359	< 0.335	0.88	< 0.345	1.16	< 0.335	< 0.315	< 0.324	< 0.314
Benz(a)anthracene	1	1	1	1	5.6	11		1.93	< 0.342	0.254 J	< 0.339	< 0.335	< 0.346	0.29 J	< 0.341	4.06	< 0.344	< 0.373	0.268 J	< 0.335	2.09	< 0.345	2.76	< 0.335	< 0.315	< 0.324	< 0.314
Benzo(a)pyrene	1	22	1	1	1	1.1		2.22	< 0.342	0.228 J	< 0.339	< 0.335	< 0.346	0.283 J	< 0.341	3.5	< 0.344	< 0.373	0.241 J	< 0.335	2.03	< 0.345	2.74	< 0.335	< 0.315	< 0.324	< 0.314
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		3.42	< 0.342	0.202 J	< 0.339	< 0.335	< 0.346	0.302 J	< 0.341	3.35	< 0.344	0.195 J	0.22 J	< 0.335	2.72	< 0.345	3.15	< 0.335	< 0.315	< 0.324	< 0.314
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		1.54	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	0.187 J	< 0.341	1.98	< 0.344	< 0.373	< 0.359	< 0.335	1.24	< 0.345	1.57	< 0.335	< 0.315	< 0.324	< 0.314
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		1.15	< 0.342	0.195 J	< 0.339	< 0.335	< 0.346	0.248 J	< 0.341	2.85	< 0.344	< 0.373	0.248 J	< 0.335	1.01	< 0.345	1.45	< 0.335	< 0.315	< 0.324	< 0.314
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		< 0.697	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	< 0.765	< 0.344	< 0.373	< 0.359	< 0.335	< 0.383	< 0.345	< 0.383	< 0.335	< 0.315	< 0.324	< 0.314
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		< 0.697	0.232 J	< 0.365	0.467	0.364	< 0.346	< 0.343	< 0.341	< 0.765	< 0.344	< 0.373	< 0.359	< 0.335	< 0.383	< 0.345	0.397	< 0.335	< 0.315	< 0.324	0.212 J
Carbazole	NS	NS	NS	NS	NS	NS		0.983	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	0.837	< 0.344	< 0.373	< 0.359	< 0.335	0.417	< 0.345	0.576	< 0.335	< 0.315	< 0.324	< 0.314
Chrysene	1	1	1	3.9	56	110		3.04	< 0.342	0.265 J	< 0.339	< 0.335	< 0.346	0.345	< 0.341	4.14	< 0.344	< 0.373	0.298 J	< 0.335	2.35	< 0.345	2.91	< 0.335	< 0.315	< 0.324	< 0.314
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		0.42 J	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	0.722 J	< 0.344	< 0.373	< 0.359	< 0.335	0.402	< 0.345	0.442	< 0.335	< 0.315	< 0.324	< 0.314
Dibenzofuran	7	210	14	59	350	1,000		0.742	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	0.623 J	< 0.344	< 0.373	< 0.359	< 0.335	0.23 J	< 0.345	0.264 J	< 0.335	< 0.315	< 0.324	< 0.314
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Fluoranthene	100	1,000	100	100	500	1,000		7.86	< 0.342	0.493	< 0.339	< 0.335	< 0.346	0.588	< 0.341	8.81	< 0.344	0.25 J	0.494 J	< 0.335	4.56	< 0.345	6.41	< 0.335	< 0.315	< 0.324	< 0.314
Fluorene	30	386	100	100	500	1,000		0.681 J	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	0.771	< 0.344	< 0.373	< 0.359 J	< 0.335	0.329 J	< 0.345	0.404	< 0.335	< 0.315	< 0.324	< 0.314
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		1.68	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	0.25 J	< 0.341	2.61	< 0.344	< 0.373	< 0.359	< 0.335	1.39	< 0.345	2.07	< 0.335	< 0.315	< 0.324	< 0.314
Naphthalene	12	12	100	100	500	1,000		0.915	< 0.342	< 0.365	< 0.339	< 0.335	< 0.346	< 0.343	< 0.341	0.417 J	< 0.344	< 0.373	< 0.359	< 0.335	< 0.383	< 0.345	< 0.383	< 0.335	< 0.315	< 0.324	< 0.314
Phenanthrene	100	1,000	100	100	500	1,000		8.61	< 0.342	0.34 J	< 0.339	< 0.335	< 0.346	0.312 J	< 0.341	8.14	< 0.344	< 0.373	0.367	< 0.335	3.7	< 0.345	5.05	< 0.335	< 0.315	< 0.324	< 0.314
Pyrene	100	1,000	100	100	500	1,000		5.48	< 0.342	0.393	< 0.339	< 0.335	< 0.346	0.502	< 0.341	6.88	< 0.344	0.227 J	0.408 J	< 0.335	3.65	< 0.345	5.46	< 0.335	< 0.315	< 0.324	< 0.314
Volatiles, mg/kg																											
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
2-Butanone	0.12	0.12	100	100	500	1,000		< 0.0191 J	< 0.0239 J	< 0.0249 J	< 0.0164 J	< 0.0185 J	< 0.0180 J	< 0.0182 J	< 0.0193 J	< 0.0241 J	< 0.0202 J	< 0.0236 J	< 0.0201 J	< 0.0198 J	< 0.0192 J	< 0.0186 J	< 0.0204 J	< 0.0205 J	NA	NA	NA
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Acetone	0.05	0.05	100	100	500	1,000		< 0.0191 J	< 0.0239 J	< 0.0249 J	< 0.0164 J	< 0.0185 J	< 0.0180 J	< 0.0182 J	< 0.0193 J	< 0.0241 J	< 0.0202 J	< 0.0236 J	< 0.0201 J	< 0.0386 J	< 0.0414 J	< 0.0186 J	< 0.0204 J	< 0.0205 J	NA	NA	NA
Benzene	0.06	0.06	2.9	4.8	44	89		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Carbon Disulfide	NS	NS	NS	NS	NS	NS		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Chlorobenzene	1.1	1.1	100	100	500	1,000		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Ethylbenzene	1	1	30	41	390	780		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
m,p-Xylenes	0.26	1.6	100	100	500	1,000		< 0.00381 J	< 0.00477 J	0.00418 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Methylcyclohexane	NS	NS	NS	NS	NS	NS		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Methylene chloride	0.05	0.05	51	100	500	1,000		< 0.00953 J	< 0.0119 J	< 0.0125 J	< 0.00822 J	< 0.00927 J	< 0.00898 J	< 0.00908 J	< 0.00966 J	< 0.0120 J	< 0.0101 J	< 0.0118 J	< 0.0101 J	< 0.00988 J	< 0.00958 J	< 0.00932 J	< 0.0102 J	< 0.0103 J	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		< 0.00953 J	< 0.0119 J	< 0.0125 J	< 0.00822 J	< 0.00927 J	< 0.00898 J	< 0.00908 J	< 0.00966 J	< 0.0120 J	< 0.0101 J	0.0181 J	< 0.0101 J	< 0.00988 J	< 0.00958 J	< 0.00932 J	< 0.0102 J	< 0.0103 J	NA	NA	NA
n-Butylbenzene	12	12	100	100	500	1,000		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
n-Propylbenzene	3.9	3.9	100	100	500	1,000		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
o-Xylene	0.26	1.6	100	100	500	1,000		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
sec-Butylbenzene	11	11	100	100	500	1,000		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Styrene	NS	NS	NS	NS	NS	NS		< 0.00953 J	< 0.0119 J	< 0.0125 J	< 0.00822 J	< 0.00927 J	< 0.00898 J	< 0.00908 J	< 0.00966 J	< 0.0120 J	< 0.0101 J	< 0.0118 J	< 0.0101 J	< 0.00988 J	< 0.00958 J	< 0.00932 J	< 0.0102 J	< 0.0103 J	NA	NA	NA
Tetrachloroethene	1.3	1.3	5.5	19	150	300		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Toluene	0.7	0.7	100	100	500	1,000		< 0.00381 J	< 0.00477 J	< 0.00498 J	< 0.00329 J	< 0.00371 J	< 0.00359 J	< 0.00363 J	< 0.00386 J	< 0.00481 J	< 0.00404 J	< 0.00472 J	< 0.00402 J	< 0.00395 J	< 0.00383 J	< 0.00373 J	< 0.00408 J	< 0.00410 J	NA	NA	NA
Xylenes (total)	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.

NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-12**	**B-13**	**B-14**	**B-15**	**B-16**	**B-17**	**B-17**	**B-18**	**B-18A**	**B-19**	**B-20**	**B-21**	**B-22**	**B-23**	**B-24**	**B-25**	**B-26**	**B-27**	**B-28**	**B-29**
							Sample Date	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**19-Nov-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**26-Nov-14**	**26-Nov-14**	**26-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**4 - 5 ft**	**4 - 5 ft**	**4 - 5 ft**	**0.5 - 1 ft**	**0.5 - 1.5 ft**	**1 - 2 ft**	**2 - 3 ft**	**3 - 4.5 ft**	**3 - 4 ft**	**3 - 4.5 ft**	**3 - 5 ft**	**3.5 - 5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**1 - 2 ft**	**1.5 - 2.5 ft**	**2 - 3.5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Metals, mg/kg																											
Aluminum	NS	NS	NS	NS	NS	NS		NA	NA	NA	5,230	11,400	25,000	16,700	7,970 J	6,070 J	6,650 J	17,400 J	5,680 J	4,970	13,400	19,700	2,270	27,000	NA	NA	NA
Antimony	NS	NS	NS	NS	NS	NS		NA	NA	NA	4.07 J	< 7.21 J	< 7.73 J	8.25 J	< 7.49	< 6.82 J	< 6.76 J	< 8.23 J	< 6.18 J	14.5 J	< 7.16 J	< 7.18 J	< 6.07 J	< 7.69 J	NA	NA	NA
Arsenic	13	16	16	16	16	16		NA	NA	NA	10.3 J	13.6 J	6.78 J	8.95 J	4.70 J	2.88	3.27	5.24	2.46	25.2 J	9.84 J	3.49 J	391 J	6.28 J	NA	NA	NA
Barium	350	820	350	400	400	10,000		NA	NA	NA	56.3	92.9	147	104	51.4 J	44.2 J	41.5 J	153 J	37.5 J	135	126	84.2	34.9	140	NA	NA	NA
Beryllium	7.2	47	14	72	590	2,700		NA	NA	NA	0.565	1.76	1.16	0.659	0.343 J	< 0.569	0.301 J	0.724	< 0.515	0.627 J	0.658 J	0.595 J	< 0.506 J	1.15 J	NA	NA	NA
Cadmium	2.5	7.5	2.5	4.3	9.3	60		NA	NA	NA	< 0.500	< 0.601	0.408 J	0.575 J	< 0.624	< 0.569	< 0.564	0.501 J	< 0.515	1.16 J	0.628 J	0.469 J	< 0.506 J	0.876 J	NA	NA	NA
Calcium	NS	NS	NS	NS	NS	NS		NA	NA	NA	249,000	320,000	4,960	35,700	104,000	84,200 J	53,900 J	14,100 J	64,900 J	18,600 J	44,000 J	9,490 J	206,000 J	3,570 J	NA	NA	NA
Chromium	30	NS	36	180	1,500	6,800		NA	NA	NA	571	1,410	30.4	22.7	11.9 J	9.78	10.7	21.9	8.81	15.7 J	20.3 J	22.7 J	8.35 J	33.3 J	NA	NA	NA
Cobalt	NS	NS	NS	NS	NS	NS		NA	NA	NA	5.78	7.94	12.0	9.86	5.58 J	4.46 J	4.77 J	12.7	3.94 J	7.46 J	8.45 J	7.77 J	< 5.06 J	12.5 J	NA	NA	NA
Copper	50	1,720	270	270	270	10,000		NA	NA	NA	34.5	46.3	22.8	77.7	14.7 J	10.8	10.6	23.6	9.24	132 J	36.4 J	10.6 J	25.9 J	25.8 J	NA	NA	NA
Iron	NS	NS	NS	NS	NS	NS		NA	NA	NA	73,000	114,000	30,600	43,600	13,000 J	10,900	12,000	22,200	10,000	50,300	23,900	21,500	8,140	31,500	NA	NA	NA
Lead	63	450	400	400	1,000	3,900		NA	NA	NA	247	130	16.0	118	20.3 J	7.26	7.88	39.9	6.89	360 J	235 J	60.9 J	176 J	13.5 J	NA	NA	NA
Magnesium	NS	NS	NS	NS	NS	NS		NA	NA	NA	19,500	15,100	7,740	11,300	25,000 J	25,600 J	23,300 J	5,430 J	24,800 J	1,040 J	13,200 J	7,060 J	7,660 J	8,520 J	NA	NA	NA
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		NA	NA	NA	20,700 J	31,800 J	318 J	407 J	446 J	267	276	701	246	170	504	337	204	391	NA	NA	NA
Nickel	30	130	140	310	310	10,000		NA	NA	NA	18.2	21.4	32.1	19.0	11.5 J	8.82 J	9.34 J	19.7 J	7.86 J	18.6 J	19.5 J	17.1 J	9.98 J	36.5 J	NA	NA	NA
Potassium	NS	NS	NS	NS	NS	NS		NA	NA	NA	308	282 J	4,560	2,630	2,300 J	1,840	1,850	2,910	1,750	439	2,720	3,060	641	4,600	NA	NA	NA
Selenium	3.9	4	36	180	1,500	6,800		NA	NA	NA	14.8 J	16.0 J	< 1.29 J	< 1.20 J	< 1.25	1.96	< 1.13	< 1.37	0.552 J	0.981 J	< 1.19 J	< 1.20 J	7.05 J	< 1.28 J	NA	NA	NA
Silver	2	8.3	36	180	1,500	6,800		NA	NA	NA	< 1.00	< 1.20	< 1.29	< 1.20	< 1.25	< 1.14	< 1.13	< 1.37	< 1.03	2.17 J	0.621 J	< 1.20 J	< 1.01 J	0.805 J	NA	NA	NA
Sodium	NS	NS	NS	NS	NS	NS		NA	NA	NA	173 J	212 J	< 322	180 J	199 J	184 J	176 J	< 343	178 J	< 292 J	323 J	231 J	< 253 J	471 J	NA	NA	NA
Thallium	NS	NS	NS	NS	NS	NS		NA	NA	NA	4.33	< 3.01	< 3.22	< 3.01	< 3.12	< 2.84	< 2.82	< 3.43	< 2.57	< 2.92 J	< 2.98 J	< 2.99 J	4.67 J	< 3.20 J	NA	NA	NA
Vanadium	NS	NS	NS	NS	NS	NS		NA	NA	NA	226	460	42.5	43.1	20.4 J	16.8	18.8	34.0	15.9	18.7 J	28.4 J	33.7 J	8.16 J	42.5 J	NA	NA	NA
Zinc	109	2,480	2,200	10,000	10,000	10,000		NA	NA	NA	14.9	32.3	88.4	105	49.0	56.7 J	59.4 J	83.5 J	65.3 J	169 J	159 J	111 J	95.8 J	84.6 J	NA	NA	NA
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		NA	NA	NA	< 0.0195	0.0171 J	0.0422	0.109	0.0314	0.0396	< 0.0186	0.485	< 0.0213	0.142	0.130	0.0541	0.197	0.0259	NA	NA	NA
Cyanide	27	40	27	27	27	10,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, mg/kg																											
Aroclor 1242	0.1	3.2	1	1	1	25		< 0.0315 J	< 0.0335 J	< 0.0345	< 0.0294	0.132 J	< 0.0359 J	< 0.0362	< 0.0323 J	< 0.306	< 0.0318 J	< 0.0357	< 0.0317 J	< 0.0341	< 0.0334	< 0.0344 J	< 0.0295	< 0.0358	NA	NA	NA
Aroclor 1248	0.1	3.2	1	1	1	25		< 0.0315 J	< 0.0335 J	< 0.0345	< 0.0294	< 0.0326	< 0.0359 J	< 0.0362	< 0.0323 J	< 0.306	< 0.0318 J	< 0.0357	< 0.0317 J	< 0.0341	< 0.0334	< 0.0344 J	< 0.0295	< 0.0358	NA	NA	NA
Aroclor 1254	0.1	3.2	1	1	1	25		< 0.0315 J	< 0.0335 J	< 0.0345	< 0.0294	< 0.0326	< 0.0359 J	< 0.0362	0.581 J	4.03 J	< 0.0318 J	0.0182 J	< 0.0317 J	< 0.0341	< 0.0334	< 0.0344 J	0.235 J	< 0.0358	NA	NA	NA
Aroclor 1260	0.1	3.2	1	1	1	25		< 0.0315 J	< 0.0335 J	< 0.0345	< 0.0294	< 0.0326	< 0.0359 J	< 0.0362	< 0.0323 J	< 0.306	< 0.0318 J	< 0.0357	< 0.0317 J	< 0.0341	< 0.0334	< 0.0344 J	< 0.0295	< 0.0358	NA	NA	NA

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-12**	**B-13**	**B-14**	**B-15**	**B-16**	**B-17**	**B-17**	**B-18**	**B-18A**	**B-19**	**B-20**	**B-21**	**B-22**	**B-23**	**B-24**	**B-25**	**B-26**	**B-27**	**B-28**	**B-29**
							Sample Date	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**19-Nov-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**02-Dec-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**26-Nov-14**	**26-Nov-14**	**26-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**4 - 5 ft**	**4 - 5 ft**	**4 - 5 ft**	**0.5 - 1 ft**	**0.5 - 1.5 ft**	**1 - 2 ft**	**2 - 3 ft**	**3 - 4.5 ft**	**3 - 4 ft**	**3 - 4.5 ft**	**3 - 5 ft**	**3.5 - 5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**1 - 2 ft**	**1.5 - 2.5 ft**	**2 - 3.5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Semivolatiles, mg/kg																											
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Acenaphthene	20	98	100	100	500	1,000		0.41	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Acenaphthylene	100	107	100	100	500	1,000		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Anthracene	100	1,000	100	100	500	1,000		1.28	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	0.155 J	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Benz(a)anthracene	1	1	1	1	5.6	11		0.305 J	< 0.326	< 0.334	0.17 J	0.435	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	0.255 J	0.249 J	0.216 J	0.227 J	< 0.362	NA	NA	NA
Benzo(a)pyrene	1	22	1	1	1	1.1		0.298 J	< 0.326	< 0.334	0.166 J	0.174 J	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	0.224 J	0.225 J	0.186 J	0.224 J	< 0.362	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		0.2 J	< 0.326	< 0.334	0.205 J	0.237 J	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	0.27 J	0.262 J	< 0.333	0.277 J	< 0.362	NA	NA	NA
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	0.229 J	< 0.362	NA	NA	NA
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		0.346	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	0.225 J	0.197 J	0.19 J	0.163 J	< 0.362	NA	NA	NA
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		< 0.322	< 0.326	< 0.334	0.234 J	0.254 J	1.49	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	1.54	0.268 J	0.161 J	0.244 J	NA	NA	NA
Carbazole	NS	NS	NS	NS	NS	NS		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Chrysene	1	1	1	3.9	56	110		0.896	< 0.326	< 0.334	0.216 J	0.883	< 0.362	< 0.355	0.177 J	< 0.308	NA	NA	NA	0.378	0.305 J	0.233 J	0.275 J	< 0.362	NA	NA	NA
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Dibenzofuran	7	210	14	59	350	1,000		0.929	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	0.00973 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	0.00163 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Fluoranthene	100	1,000	100	100	500	1,000		2.43	< 0.326	< 0.334	0.295 J	4.08	< 0.362	0.394	0.45	< 0.308	NA	NA	NA	0.507	0.499	0.422	0.423	< 0.362	NA	NA	NA
Fluorene	30	386	100	100	500	1,000		1.17	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	0.186 J	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	0.165 J	< 0.362	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		< 0.322	< 0.326	< 0.334	< 0.307	< 0.324	< 0.362	< 0.355	< 0.311	< 0.308	NA	NA	NA	< 0.336	< 0.331	< 0.333	< 0.289	< 0.362	NA	NA	NA
Phenanthrene	100	1,000	100	100	500	1,000		4.68	< 0.326	< 0.334	0.196 J	4.72	< 0.362	0.404	0.651	< 0.308	NA	NA	NA	0.38	0.344	0.187 J	0.209 J	< 0.362	NA	NA	NA
Pyrene	100	1,000	100	100	500	1,000		1.6	< 0.326	< 0.334	0.241 J	3.19	< 0.362	0.319 J	0.378	< 0.308	NA	NA	NA	0.418	0.425	0.346	0.361	< 0.362	NA	NA	NA
Volatiles, mg/kg																											
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	0.00973 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	0.00163 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	0.00273 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
2-Butanone	0.12	0.12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.0212 J	< 0.0144 J	NA	NA	NA	< 0.0232 J	< 0.0197 J	< 0.0200 J	< 0.0160 J	< 0.0249 J	< 0.0220 J	< 0.0213 J	< 0.0241 J
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Acetone	0.05	0.05	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	0.0219 J	< 0.0144 J	NA	NA	NA	< 0.0232 J	< 0.0197 J	< 0.0200 J	< 0.0160 J	< 0.0249 J	< 0.0220 J	< 0.0213 J	< 0.0241 J
Benzene	0.06	0.06	2.9	4.8	44	89		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Carbon Disulfide	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Chlorobenzene	1.1	1.1	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Ethylbenzene	1	1	30	41	390	780		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
m,p-Xylenes	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	0.00318 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Methylcyclohexane	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	0.00330 J	< 0.00483 J
Methylene chloride	0.05	0.05	51	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.0106 J	< 0.00720 J	NA	NA	NA	< 0.0116 J	< 0.00984 J	< 0.0100 J	0.0100 J	< 0.0125 J	0.00582 J	0.00746 J	< 0.0121 J
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	0.0101 J	< 0.00720 J	NA	NA	NA	< 0.0116 J	< 0.00984 J	< 0.0100 J	< 0.00798 J	< 0.0125 J	< 0.0110 J	< 0.0107 J	< 0.0121 J
n-Butylbenzene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
n-Propylbenzene	3.9	3.9	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
o-Xylene	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
sec-Butylbenzene	11	11	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Styrene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	< 0.0106 J	< 0.00720 J	NA	NA	NA	< 0.0116 J	< 0.00984 J	< 0.0100 J	< 0.00798 J	< 0.0125 J	< 0.0110 J	< 0.0107 J	< 0.0121 J
Tetrachloroethene	1.3	1.3	5.5	19	150	300		NA	NA	NA	NA	NA	NA	NA	0.00245 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Toluene	0.7	0.7	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	< 0.00423 J	< 0.00288 J	NA	NA	NA	< 0.00464 J	< 0.00393 J	< 0.00401 J	< 0.00319 J	< 0.00498 J	< 0.00441 J	< 0.00426 J	< 0.00483 J
Xylenes (total)	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.

NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-29A**	**B-30**	**B-30A**	**B-31**	**B-31A**	**B-32**	**B-33**	**B-33A**	**B-33A**	**B-34**	**B-35**	**B-35**	**B-36**	**B-37**	**B-38**	**B-39**	**B-39**	**B-40**	**B-41**	**B-42**
							Sample Date	**04-May-15**	**26-Nov-14**	**04-May-15**	**26-Nov-14**	**04-May-15**	**26-Nov-14**	**26-Nov-14**	**04-May-15**	**04-May-15**	**26-Nov-14**	**02-Dec-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**02-Dec-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**25-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**QA/QC**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**2 - 3 ft**	**2 - 2.8 ft**	**1 - 2 ft**	**3 - 4 ft**	**2 - 3 ft**	**3 - 5 ft**	**3 - 4 ft**	**3 - 4 ft**	**3 - 4 ft**	**3 - 5 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**2 - 4 ft**	**2 - 4 ft**	**2 - 4 ft**	**1.5 - 2.5 ft**	**4 - 5 ft**	**0.5 - 1 ft**	**0.5 - 1 ft**	**4 - 5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Metals, mg/kg																											
Aluminum	NS	NS	NS	NS	NS	NS		NA	NA	NA	13,600	8,940	12,000	5,070	15,400	13,300	14,200	10,100 J	16,200 J	8,490	8,680	8,630	13,000 J	18,500 J	11,600	19,400	13,000
Antimony	NS	NS	NS	NS	NS	NS		NA	NA	NA	< 7.51 J	< 3.46	< 7.27 J	< 7.46 J	< 3.31	< 3.58	< 6.90 J	< 7.17 J	< 7.00 J	< 7.39 J	< 6.80 J	< 6.33 J	< 7.60 J	< 7.22 J	6.25 J	6.14 J	< 7.10 J
Arsenic	13	16	16	16	16	16		NA	NA	NA	5.07	6.39	5.83	7.20	5.51 J	9.41 J	6.72	7.60	5.04	3.74 J	3.65 J	4.74 J	2.76	5.04	12.8 J	12.2 J	5.07 J
Barium	350	820	350	400	400	10,000		NA	NA	NA	95.5	105	78.1	35.2	97.9 J	386 J	100	135 J	102 J	49.6	57.7	58.7	97.0 J	129 J	97.0	162	96.6
Beryllium	7.2	47	14	72	590	2,700		NA	NA	NA	0.535 J	0.396	0.525 J	< 0.621	0.592	0.575	0.602	0.531 J	0.683	0.359 J	0.372 J	0.367 J	0.479 J	0.737	1.61	3.81	0.520 J
Cadmium	2.5	7.5	2.5	4.3	9.3	60		NA	NA	NA	0.646	0.764	< 0.605	0.481 J	0.829	0.971	< 0.575	0.597 J	< 0.583	< 0.616	< 0.566	< 0.528	< 0.634	< 0.601	1.62	1.19	< 0.591
Calcium	NS	NS	NS	NS	NS	NS		NA	NA	NA	56,900 J	56,000	82,800 J	120,000 J	19,600 J	28,700 J	70,800 J	52,100 J	49,400 J	56,800	69,000	70,100	29,200 J	44,200 J	210,000	231,000	85,200
Chromium	30	NS	36	180	1,500	6,800		NA	NA	NA	23.3	12.5	17.0	7.99	28.1 J	18.8 J	19.4	18.6	25.6	12.1	13.2	12.4	16.6	22.5	318	425	16.9
Cobalt	NS	NS	NS	NS	NS	NS		NA	NA	NA	6.74	5.65	7.75	3.20 J	8.18	8.28	8.49	6.67	9.50	5.61 J	5.92	6.27	6.37	9.47	8.13	7.78	8.68
Copper	50	1,720	270	270	270	10,000		NA	NA	NA	23.1	26.0	15.0	13.1	27.8 J	57.1 J	19.3	72.0	20.3	14.7	13.0	13.8	10.6	18.4	73.5	49.7	10.3
Iron	NS	NS	NS	NS	NS	NS		NA	NA	NA	17,100	13,200	18,300	13,100	25,900	23,500	21,300	20,200	22,700	13,900	13,700	14,300	15,400	22,100	115,000	90,600	15,800
Lead	63	450	400	400	1,000	3,900		NA	NA	NA	60.6 J	278	11.8 J	73.6 J	86.2 J	228 J	25.3 J	170	16.9	10.9 J	8.33 J	8.38 J	24.4	21.4	611 J	170 J	11.3
Magnesium	NS	NS	NS	NS	NS	NS		NA	NA	NA	19,900	15,800	25,500	4,150	7,680	6,840	21,800	18,600 J	24,100 J	25,100	24,500	22,900	15,700 J	16,200 J	18,000	30,500	28,600
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		NA	NA	NA	383	380	459	226	1,430 J	566 J	436	418	683	331 J	300 J	356 J	296	503	8,820 J	13,300 J	530 J
Nickel	30	130	140	310	310	10,000		NA	NA	NA	19.5 J	12.1	16.4 J	6.53 J	19.1	21.5	18.6 J	18.7 J	23.5 J	11.5	11.9	13.5	12.1 J	21.1 J	37.5	28.9	15.6
Potassium	NS	NS	NS	NS	NS	NS		NA	NA	NA	2,840	1,960	3,290	954	2,660	2,290	3,320	1,630	3,220	2,150	2,490	2,320	2,300	3,300	961	1,840	3,500
Selenium	3.9	4	36	180	1,500	6,800		NA	NA	NA	< 1.25	2.97	1.42	4.67	3.27	3.54	2.54	< 1.19	< 1.17	< 1.23	< 1.13	< 1.06	< 1.27	< 1.20	13.3	14.8	< 1.18 J
Silver	2	8.3	36	180	1,500	6,800		NA	NA	NA	< 1.25	< 0.577	< 1.21	< 1.24	1.18	0.913	< 1.15	< 1.19	< 1.17	< 1.23	< 1.13	< 1.06	< 1.27	< 1.20	< 1.10	2.48	< 1.18
Sodium	NS	NS	NS	NS	NS	NS		NA	NA	NA	299 J	222	298 J	220 J	128 J	135 J	308	444	151 J	186 J	169 J	181 J	< 317	265 J	280	737	238 J
Thallium	NS	NS	NS	NS	NS	NS		NA	NA	NA	< 3.13	2.31	< 3.03	2.01 J	< 1.38	1.28 J	< 2.88	< 2.99	< 2.92	< 3.08	< 2.83	< 2.64	< 3.17	< 3.01	< 2.76	< 3.14	< 2.96
Vanadium	NS	NS	NS	NS	NS	NS		NA	NA	NA	24.5 J	17.7	26.5 J	14.3 J	42.9 J	25.0 J	28.6 J	22.1	31.9	20.0	20.8	20.3	23.0	32.6	80.1	124	23.2
Zinc	109	2,480	2,200	10,000	10,000	10,000		NA	NA	NA	103 J	131	61.7 J	447 J	121 J	218 J	74.7 J	135 J	79.0 J	81.7	62.6	64.9	78.2 J	83.1 J	72.2	52.2	56.8
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		NA	NA	NA	0.0913	0.0446	0.0136 J	0.107	0.246 J	0.437 J	0.0217	0.271	< 0.0200	0.0133 J	0.0113 J	< 0.0209 J	0.0875	0.0476	0.0268 J	0.0962 J	0.0146 J
Cyanide	27	40	27	27	27	10,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, mg/kg																											
Aroclor 1242	0.1	3.2	1	1	1	25		NA	NA	NA	< 0.0363	< 0.0330	< 0.0336 J	< 0.0364 J	< 0.0356	< 0.0361	< 0.0352 J	< 0.0319	< 0.0337 J	< 0.0326	< 0.0320	< 0.0319	< 0.0326	< 0.0344 J	< 0.0317	< 0.0339	< 0.0323 J
Aroclor 1248	0.1	3.2	1	1	1	25		NA	NA	NA	0.0216 J	< 0.0330	< 0.0336 J	0.335 J	< 0.0356	< 0.0361	< 0.0352 J	< 0.0319	< 0.0337 J	< 0.0326	< 0.0320	< 0.0319	< 0.0326	< 0.0344 J	< 0.0317	< 0.0339	< 0.0323 J
Aroclor 1254	0.1	3.2	1	1	1	25		NA	NA	NA	< 0.0363	0.0311 J	< 0.0336 J	0.196 J	< 0.0356	< 0.0361	< 0.0352 J	0.0242 J	< 0.0337 J	< 0.0326	< 0.0320	< 0.0319	< 0.0326	< 0.0344 J	< 0.0317	< 0.0339	< 0.0323 J
Aroclor 1260	0.1	3.2	1	1	1	25		NA	NA	NA	< 0.0363 J	< 0.0330	< 0.0336 J	< 0.0364 J	< 0.0356	< 0.0361	< 0.0352 J	< 0.0319	< 0.0337 J	< 0.0326	< 0.0320	< 0.0319	< 0.0326	< 0.0344 J	< 0.0317	< 0.0339	< 0.0323 J

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-29A**	**B-30**	**B-30A**	**B-31**	**B-31A**	**B-32**	**B-33**	**B-33A**	**B-33A**	**B-34**	**B-35**	**B-35**	**B-36**	**B-37**	**B-38**	**B-39**	**B-39**	**B-40**	**B-41**	**B-42**
							Sample Date	**04-May-15**	**26-Nov-14**	**04-May-15**	**26-Nov-14**	**04-May-15**	**26-Nov-14**	**26-Nov-14**	**04-May-15**	**04-May-15**	**26-Nov-14**	**02-Dec-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**02-Dec-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**25-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**QA/QC**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**2 - 3 ft**	**2 - 2.8 ft**	**1 - 2 ft**	**3 - 4 ft**	**2 - 3 ft**	**3 - 5 ft**	**3 - 4 ft**	**3 - 4 ft**	**3 - 4 ft**	**3 - 5 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**2 - 4 ft**	**2 - 4 ft**	**2 - 4 ft**	**1.5 - 2.5 ft**	**4 - 5 ft**	**0.5 - 1 ft**	**0.5 - 1 ft**	**4 - 5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Semivolatiles, mg/kg																											
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	< 0.322	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Acenaphthene	20	98	100	100	500	1,000		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	0.187 J	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Acenaphthylene	100	107	100	100	500	1,000		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	< 0.322	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Anthracene	100	1,000	100	100	500	1,000		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	0.395	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Benz(a)anthracene	1	1	1	1	5.6	11		NA	NA	NA	< 0.362	0.287 J	< 0.339	< 3.54	0.474 J	0.258 J	< 0.354	0.648	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Benzo(a)pyrene	1	22	1	1	1	1.1		NA	NA	NA	< 0.362	0.254 J	< 0.339	< 3.54	0.444 J	0.246 J	< 0.354	0.59	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		NA	NA	NA	< 0.362	0.392	< 0.339	< 3.54	0.601 J	0.329 J	< 0.354	0.488	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		NA	NA	NA	< 0.362	0.173 J	< 0.339	< 3.54	0.291 J	< 0.362	< 0.354	0.375	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	0.253 J	0.199 J	< 0.354	0.506	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	< 0.322	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		NA	NA	NA	0.191 J	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	< 0.322	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Carbazole	NS	NS	NS	NS	NS	NS		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	0.169 J	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Chrysene	1	1	1	3.9	56	110		NA	NA	NA	< 0.362	0.3 J	< 0.339	< 3.54	0.479 J	0.284 J	< 0.354	0.667	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	< 0.322	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Dibenzofuran	7	210	14	59	350	1,000		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	< 0.322	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		< 0.00379 J	0.0133 J	< 0.00438 J	0.00307 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	100	100	500	1,000		NA	NA	NA	0.243 J	0.568	< 0.339	< 3.54	0.902 J	0.432 J	< 0.354	1.5	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Fluorene	30	386	100	100	500	1,000		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	0.174 J	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		NA	NA	NA	< 0.362	0.228 J	< 0.339	< 3.54	0.424 J	0.288 J	< 0.354	0.48	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	< 0.362	< 0.332	< 0.339	< 3.54	< 0.358 J	< 0.362	< 0.354	< 0.322	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Phenanthrene	100	1,000	100	100	500	1,000		NA	NA	NA	0.365	0.352	< 0.339	< 3.54	0.484 J	0.187 J	< 0.354	1.46	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Pyrene	100	1,000	100	100	500	1,000		NA	NA	NA	0.212 J	0.448	< 0.339	< 3.54	0.682 J	0.357 J	< 0.354	1.24	< 0.342	< 0.329	< 0.318	< 0.326	< 0.324	< 0.358	< 1.6	< 3.38	< 0.336
Volatiles, mg/kg																											
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		< 0.00379 J	0.0133 J	< 0.00438 J	0.00307 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		< 0.00379 J	0.00413 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
2-Butanone	0.12	0.12	100	100	500	1,000		< 0.0189 J	< 0.0193 J	< 0.0219 J	< 0.0242 J	< 0.0201 J	< 0.0233 J	0.0914 J	< 0.0201 J	< 0.0231 J	< 0.0179 J	NA	NA	< 0.0163 J	< 0.0176 J	< 0.0198 J	NA	NA	NA	NA	NA
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Acetone	0.05	0.05	100	100	500	1,000		< 0.0189 J	< 0.0312 J	< 0.0219 J	< 0.0444 J	< 0.0201 J	< 0.0233 J	0.239 J	< 0.0201 J	< 0.0231 J	< 0.0179 J	NA	NA	< 0.0163 J	< 0.0176 J	< 0.0198 J	NA	NA	NA	NA	NA
Benzene	0.06	0.06	2.9	4.8	44	89		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Carbon Disulfide	NS	NS	NS	NS	NS	NS		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1.1	100	100	500	1,000		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Ethylbenzene	1	1	30	41	390	780		< 0.00379 J	0.00414 J	< 0.00438 J	0.00815 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
m,p-Xylenes	0.26	1.6	100	100	500	1,000		< 0.00379 J	0.0101 J	< 0.00438 J	0.00444 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Methylcyclohexane	NS	NS	NS	NS	NS	NS		< 0.00379 J	0.00317 J	< 0.00438 J	0.00248 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.05	51	100	500	1,000		< 0.00947 J	< 0.00967 J	0.0283 J	< 0.0121 J	0.00855 J	< 0.0117 J	< 0.0159 J	< 0.0100 J	< 0.0115 J	< 0.00895 J	NA	NA	< 0.00813 J	< 0.00879 J	< 0.00988 J	NA	NA	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		< 0.00947 J	< 0.00967 J	< 0.0109 J	0.0159 J	< 0.0100 J	< 0.0117 J	< 0.0159 J	< 0.0100 J	< 0.0115 J	< 0.00895 J	NA	NA	< 0.00813 J	< 0.00879 J	< 0.00988 J	NA	NA	NA	NA	NA
n-Butylbenzene	12	12	100	100	500	1,000		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	3.9	100	100	500	1,000		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
o-Xylene	0.26	1.6	100	100	500	1,000		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
sec-Butylbenzene	11	11	100	100	500	1,000		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Styrene	NS	NS	NS	NS	NS	NS		< 0.00947 J	< 0.00967 J	< 0.0109 J	0.0168 J	< 0.0100 J	< 0.0117 J	< 0.0159 J	< 0.0100 J	< 0.0115 J	< 0.00895 J	NA	NA	< 0.00813 J	< 0.00879 J	< 0.00988 J	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	1.3	5.5	19	150	300		< 0.00379 J	< 0.00387 J	0.0195 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	0.0241 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Toluene	0.7	0.7	100	100	500	1,000		< 0.00379 J	< 0.00387 J	< 0.00438 J	< 0.00484 J	< 0.00402 J	< 0.00466 J	< 0.00636 J	< 0.00401 J	< 0.00461 J	< 0.00358 J	NA	NA	< 0.00325 J	< 0.00352 J	< 0.00395 J	NA	NA	NA	NA	NA
Xylenes (total)	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.

NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-42**	**B-42A**	**B-42B**	**B-42C**	**B-43**	**B-44**	**B-44**	**B-44A**	**B-46**	**B-46**	**B-47**	**B-48**	**B-48**	**B-49**	**B-50**	**B-50**	**B-51**	**B-51**	**B-52**	**B-53**
							Sample Date	**07-May-15**	**06-May-15**	**06-May-15**	**06-May-15**	**25-Nov-14**	**25-Nov-14**	**07-May-15**	**06-May-15**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**24-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**6 - 7 ft**	**4 - 5 ft**	**4 - 5 ft**	**4 - 5 ft**	**3 - 4 ft**	**4 - 5 ft**	**7 - 8 ft**	**6 - 7 ft**	**1 - 2 ft**	**4 - 5 ft**	**1 - 2 ft**	**0.5 - 1 ft**	**1 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**1.5 - 2 ft**	**0.5 - 1.5 ft**	**1.5 - 2.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Metals, mg/kg																											
Aluminum	NS	NS	NS	NS	NS	NS		7,600 J	11,400 J	14,600 J	13,000 J	14,400	15,400	7,270 J	7,870 J	16,800	16,400	5,440	32,500 J	16,900 J	4,850 J	10,600 J	13,200 J	1,430 J	10,900 J	17,400 J	23,700
Antimony	NS	NS	NS	NS	NS	NS		< 3.09 J	< 3.60 J	< 3.50 J	< 3.72 J	< 7.79 J	< 6.70 J	< 3.48 J	< 3.60 J	< 7.54 J	< 7.21 J	< 6.99 J	< 6.81 J	< 7.95 J	< 6.94 J	< 7.72 J	< 7.28 J	< 6.74 J	< 6.69 J	< 7.06 J	< 7.57 J
Arsenic	13	16	16	16	16	16		4.32	7.51	7.82	6.47	7.74 J	7.29 J	3.90	5.09	6.60 J	8.60 J	3.03 J	4.87 J	3.75 J	10.3 J	8.98 J	5.05 J	8.64 J	4.99 J	5.48 J	7.13 J
Barium	350	820	350	400	400	10,000		55.0 J	79.0 J	104 J	84.0 J	348	100	49.7 J	48.5 J	91.2	113	31.6	229 J	94.6 J	64.8 J	65.1 J	70.5 J	14.2 J	66.2 J	126 J	173
Beryllium	7.2	47	14	72	590	2,700		0.322	0.509	0.643	0.563	0.619 J	0.665	0.310	0.317	0.764	0.701	< 0.582	6.27	0.937	0.393 J	0.644	0.586 J	< 0.562	0.482 J	0.800	1.13 J
Cadmium	2.5	7.5	2.5	4.3	9.3	60		0.443 J	0.623 J	0.714 J	0.698 J	1.29	< 0.559	0.398 J	0.380 J	0.324 J	< 0.601	< 0.582	< 0.568	< 0.663	< 0.578	< 0.643	0.352 J	< 0.562	< 0.558	< 0.588	0.936 J
Calcium	NS	NS	NS	NS	NS	NS		91,500	85,600	90,200	98,400	82,400	76,700	102,000	106,000	21,900	73,300	75,100	227,000 J	15,900 J	323,000 J	289,000 J	13,000 J	268,000 J	72,900 J	14,000 J	3,860 J
Chromium	30	NS	36	180	1,500	6,800		12.0	14.7	17.4	16.6	25.8	20.6	11.5	12.4	25.5	22.0	7.91	19.9 J	20.9 J	837 J	762 J	17.2	5.30 J	14.7 J	21.7 J	28.4 J
Cobalt	NS	NS	NS	NS	NS	NS		5.33 J	8.69 J	9.75 J	7.85 J	10.2	8.00	4.83 J	4.43 J	8.14	9.38	3.82 J	< 5.68	6.65	5.71 J	6.48	5.61 J	< 5.62	7.60	11.3	13.6 J
Copper	50	1,720	270	270	270	10,000		11.3	22.0	19.6	21.1	52.0	18.7	11.2	9.09	18.5	19.8	9.43	3.81	10.2	19.4	14.3	9.17	12.0	14.9	13.3	21.0 J
Iron	NS	NS	NS	NS	NS	NS		11,800 J	16,300 J	19,400 J	17,200 J	25,900	20,800	10,900 J	11,200 J	23,400	23,500	9,840	9,560	17,300	105,000	91,500	15,700	3,880	16,500	24,000	30,000
Lead	63	450	400	400	1,000	3,900		1.61 J	8.03 J	6.43 J	6.89 J	108	11.3	1.57 J	1.51 J	12.0	13.0	6.40	4.53	27.1	66.7	66.8	32.6	43.8	9.18	29.6	19.5 J
Magnesium	NS	NS	NS	NS	NS	NS		19,600	21,400	20,600	19,000	16,900	20,500	20,500	25,000	13,200	23,700	31,500	35,200 J	5,320 J	10,400 J	12,500 J	2,370 J	8,050 J	21,700 J	9,310 J	6,570 J
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		329	371	442	460	548 J	332 J	294	183	244 J	418 J	244 J	3,280 J	1,220 J	21,800 J	22,700 J	476 J	142 J	393 J	631 J	462
Nickel	30	130	140	310	310	10,000		10.3 J	18.5 J	19.3 J	18.9 J	20.2	18.8	9.54 J	9.32 J	22.8	21.3	7.08	< 4.54	11.2	6.25	5.59	13.4	7.18	14.4	17.7	32.3 J
Potassium	NS	NS	NS	NS	NS	NS		1,980	2,340	2,860	2,390	3,370	3,440	1,950	2,080	3,110	3,970	1,740	1,280	1,470	341	1,060	1,400	601	2,310	2,360	4,130
Selenium	3.9	4	36	180	1,500	6,800		2.71	2.46	2.97	2.19	1.12 J	0.963 J	2.24	3.02	< 1.26 J	< 1.20 J	< 1.16 J	9.98	< 1.33	16.1	12.3	< 1.21	9.84	< 1.12	< 1.18	< 1.26 J
Silver	2	8.3	36	180	1,500	6,800		< 0.515	< 0.600	< 0.584	< 0.620	< 1.30	< 1.12	< 0.579	< 0.600	< 1.26	< 1.20	< 1.16	< 2.27	< 1.33	< 2.31	< 1.29	< 1.21	< 1.12	< 1.12	< 1.18	0.767 J
Sodium	NS	NS	NS	NS	NS	NS		241	425	204	166	218 J	211 J	246	223	201 J	300 J	235 J	749	232 J	177 J	327	179 J	146 J	292	214 J	378 J
Thallium	NS	NS	NS	NS	NS	NS		3.89 J	4.22 J	3.81 J	3.98 J	< 3.25	< 2.79	4.58 J	4.95 J	< 3.14	< 3.01	< 2.91	5.53	< 3.31	9.37	12.0	< 3.03	6.55	< 2.79	< 2.94	< 3.16 J
Vanadium	NS	NS	NS	NS	NS	NS		19.3	23.5	29.1	25.1	33.4	29.8	19.6	18.2	32.8	32.0	15.5	11.1	30.4	331	299	24.9	9.30	24.8	34.4	42.0 J
Zinc	109	2,480	2,200	10,000	10,000	10,000		43.2	58.6	64.9	68.3	201	61.8	44.9	45.6	69.0	68.6	111	< 6.81 J	64.7 J	28.7 J	4.30 J	141 J	28.9 J	50.8 J	69.4 J	72.1 J
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		0.00838	0.0143	0.0143	0.0140	0.328	0.0173 J	0.0173	0.0146	0.0178 J	0.0214 J	0.0224	0.0714	0.0946	0.0151 J	0.0210 J	0.124	0.0271	0.0433	0.0337	0.0307
Cyanide	27	40	27	27	27	10,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, mg/kg																											
Aroclor 1242	0.1	3.2	1	1	1	25		< 0.0324	< 0.0370	< 0.0347	< 0.0350	< 0.0367	< 0.0346	< 0.0351	< 0.0344	< 0.0354	< 0.0348	< 0.0325	< 0.0334	< 0.0358 J	< 0.0343	< 0.0349 J	< 0.0338	< 0.0308	< 0.0339	< 0.0342	< 0.0358
Aroclor 1248	0.1	3.2	1	1	1	25		< 0.0324	< 0.0370	< 0.0347	< 0.0350	< 0.0367	< 0.0346	< 0.0351	< 0.0344	< 0.0354	< 0.0348	< 0.0325	< 0.0334	< 0.0358 J	< 0.0343	< 0.0349 J	< 0.0338	< 0.0308	< 0.0339	< 0.0342	< 0.0358
Aroclor 1254	0.1	3.2	1	1	1	25		< 0.0324	< 0.0370	< 0.0347	< 0.0350	0.0256 J	< 0.0346	< 0.0351	< 0.0344	< 0.0354	< 0.0348	< 0.0325	< 0.0334	< 0.0358 J	< 0.0343	< 0.0349 J	< 0.0338	0.0461 J	< 0.0339	< 0.0342	< 0.0358
Aroclor 1260	0.1	3.2	1	1	1	25		< 0.0324	< 0.0370	< 0.0347	< 0.0350	< 0.0367 J	< 0.0346	< 0.0351	< 0.0344 J	< 0.0354	< 0.0348	< 0.0325	0.0216 J	< 0.0358 J	< 0.0343	< 0.0349 J	< 0.0338	< 0.0308	< 0.0339	< 0.0342	< 0.0358

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-42**	**B-42A**	**B-42B**	**B-42C**	**B-43**	**B-44**	**B-44**	**B-44A**	**B-46**	**B-46**	**B-47**	**B-48**	**B-48**	**B-49**	**B-50**	**B-50**	**B-51**	**B-51**	**B-52**	**B-53**
							Sample Date	**07-May-15**	**06-May-15**	**06-May-15**	**06-May-15**	**25-Nov-14**	**25-Nov-14**	**07-May-15**	**06-May-15**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**17-Nov-14**	**24-Nov-14**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**6 - 7 ft**	**4 - 5 ft**	**4 - 5 ft**	**4 - 5 ft**	**3 - 4 ft**	**4 - 5 ft**	**7 - 8 ft**	**6 - 7 ft**	**1 - 2 ft**	**4 - 5 ft**	**1 - 2 ft**	**0.5 - 1 ft**	**1 - 1.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**1.5 - 2 ft**	**0.5 - 1.5 ft**	**1.5 - 2.5 ft**	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Semivolatiles, mg/kg																											
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		< 0.308	4.46	< 0.347 J	< 0.348 J	< 0.353	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Acenaphthene	20	98	100	100	500	1,000		< 0.308	0.233 J	< 0.347 J	< 0.348 J	0.178 J	< 0.336	< 0.35 J	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Acenaphthylene	100	107	100	100	500	1,000		< 0.308	< 0.363	< 0.347 J	< 0.348 J	< 0.353	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Anthracene	100	1,000	100	100	500	1,000		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.6	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Benz(a)anthracene	1	1	1	1	5.6	11		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.78	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Benzo(a)pyrene	1	22	1	1	1	1.1		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.618	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.695	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.362	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.471	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.311 J	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		< 0.308	< 0.363	< 0.347 J	< 0.348 J	< 0.353	< 0.336	< 0.35	< 0.312	0.184 J	0.38	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	0.247 J	< 1.54	0.577	< 0.338	< 0.366
Carbazole	NS	NS	NS	NS	NS	NS		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.284 J	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Chrysene	1	1	1	3.9	56	110		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.795	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		< 0.308	< 0.363	< 0.347 J	< 0.348 J	< 0.353	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Dibenzofuran	7	210	14	59	350	1,000		< 0.308	0.29 J	< 0.347 J	< 0.348 J	0.254 J	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		0.0725 J	0.884 J	< 0.00382 J	< 0.00410 J	NA	NA	0.00914 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	0.00192 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Fluoranthene	100	1,000	100	100	500	1,000		< 0.308	< 0.363	< 0.347 J	< 0.348 J	1.87	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Fluorene	30	386	100	100	500	1,000		< 0.308	0.462	< 0.347 J	< 0.348 J	0.243 J	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		< 0.308	< 0.363	< 0.347 J	< 0.348 J	0.407	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Naphthalene	12	12	100	100	500	1,000		< 0.308	0.64	< 0.347 J	< 0.348 J	< 0.353	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Phenanthrene	100	1,000	100	100	500	1,000		< 0.308	1.25	< 0.347 J	< 0.348 J	2.29	< 0.336	< 0.35	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Pyrene	100	1,000	100	100	500	1,000		< 0.308	0.208 J	< 0.347 J	< 0.348 J	1.4	< 0.336	0.38 J	< 0.312	< 0.345	< 0.342	< 0.321	< 0.332	< 0.364	< 0.34	< 0.346	< 0.334	< 1.54	< 0.318	< 0.338	< 0.366
Volatiles, mg/kg																											
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		0.0725 J	0.884 J	< 0.00382 J	< 0.00410 J	NA	NA	0.00914 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	0.00192 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		0.0271 J	0.0879 J	< 0.00382 J	< 0.00410 J	NA	NA	0.00238 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
2-Butanone	0.12	0.12	100	100	500	1,000		< 0.0203 J	< 0.127 J	< 0.0191 J	< 0.0205 J	NA	NA	< 0.0212 J	< 0.0181 J	< 0.0238 J	< 0.0207 J	< 0.0164 J	< 0.0186 J	< 0.0241 J	< 0.0189 J	< 0.0207 J	< 0.0227 J	< 0.0202 J	< 0.0232 J	< 0.0211 J	< 0.0196 J
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		< 0.00406 J	0.0527 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Acetone	0.05	0.05	100	100	500	1,000		0.0186 J	0.123 J	< 0.0191 J	< 0.0205 J	NA	NA	< 0.0212 J	< 0.0181 J	< 0.0123 J	< 0.0267 J	< 0.0164 J	< 0.0186 J	< 0.0241 J	< 0.0189 J	0.0180 J	< 0.0227 J	< 0.0202 J	0.0165 J	< 0.0211 J	< 0.0196 J
Benzene	0.06	0.06	2.9	4.8	44	89		< 0.00406 J	< 0.0254 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	0.00375 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Carbon Disulfide	NS	NS	NS	NS	NS	NS		< 0.00406 J	< 0.0254 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Chlorobenzene	1.1	1.1	100	100	500	1,000		< 0.00406 J	< 0.0254 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Ethylbenzene	1	1	30	41	390	780		< 0.00406 J	< 0.0254 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		0.00311 J	0.0338 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
m,p-Xylenes	0.26	1.6	100	100	500	1,000		< 0.00286 J	0.0351 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	0.00499 J	< 0.00414 J	0.00439 J	< 0.00371 J	< 0.00483 J	0.00510 J	< 0.00414 J	< 0.00453 J	0.00324 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Methylcyclohexane	NS	NS	NS	NS	NS	NS		0.0215 J	0.135 J	< 0.00382 J	< 0.00410 J	NA	NA	0.00219 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Methylene chloride	0.05	0.05	51	100	500	1,000		< 0.0101 J	< 0.0636 J	< 0.00954 J	< 0.0103 J	NA	NA	< 0.0106 J	< 0.00907 J	< 0.0119 J	< 0.0103 J	< 0.00819 J	< 0.00928 J	< 0.0121 J	< 0.00944 J	< 0.0104 J	< 0.0113 J	< 0.0101 J	< 0.0116 J	< 0.0105 J	< 0.00981 J
Naphthalene	12	12	100	100	500	1,000		0.0181 J	1.06 J	< 0.00954 J	< 0.0103 J	NA	NA	< 0.0106 J	< 0.00907 J	< 0.0119 J	< 0.0103 J	< 0.00819 J	< 0.00928 J	< 0.0121 J	< 0.00944 J	< 0.0104 J	< 0.0113 J	< 0.0101 J	< 0.0116 J	< 0.0105 J	< 0.00981 J
n-Butylbenzene	12	12	100	100	500	1,000		0.00949 J	0.149 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
n-Propylbenzene	3.9	3.9	100	100	500	1,000		0.00533 J	0.0664 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
o-Xylene	0.26	1.6	100	100	500	1,000		< 0.00406 J	< 0.0254 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	0.00196 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
sec-Butylbenzene	11	11	100	100	500	1,000		0.00421 J	0.0555 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Styrene	NS	NS	NS	NS	NS	NS		< 0.0101 J	< 0.0636 J	< 0.00954 J	< 0.0103 J	NA	NA	< 0.0106 J	< 0.00907 J	< 0.0119 J	< 0.0103 J	< 0.00819 J	< 0.00928 J	< 0.0121 J	< 0.00944 J	< 0.0104 J	< 0.0113 J	< 0.0101 J	< 0.0116 J	< 0.0105 J	< 0.00981 J
Tetrachloroethene	1.3	1.3	5.5	19	150	300		< 0.00406 J	< 0.0254 J	0.00531 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Toluene	0.7	0.7	100	100	500	1,000		< 0.00406 J	< 0.0254 J	< 0.00382 J	< 0.00410 J	NA	NA	< 0.00424 J	< 0.00363 J	< 0.00476 J	< 0.00414 J	< 0.00328 J	< 0.00371 J	< 0.00483 J	< 0.00378 J	< 0.00414 J	< 0.00453 J	< 0.00404 J	< 0.00464 J	< 0.00421 J	< 0.00392 J
Xylenes (total)	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.

NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**B-53**	**B-54**	**B-54**	**B-55**	**B-55**	**B-56**	**B-56**	**B-57**	**B-57**	**B-58**	**B-58**	**B-59**	**B-59**	**B-60**	**B-60**	**B-60**	**B-61**	**SAND-022**	**SAND-008**	**SAND-100**
							Sample Date	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**24-Nov-14**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**25-Nov-14**	**19-Nov-14**	**01-Jan-07**	**01-Jan-07**	**01-Jan-07**
							Sample Type	**Grab**	**Grab**	**QA/QC**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**QA/QC**	**Grab**	**Composite**	**Composite**	**Composite**
							Depth	**1.5 - 2.5 ft**	**0.5 - 1 ft**	**0.5 - 1 ft**	**0.5 - 1.5 ft**	**3 - 4 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**0.5 - 1.5 ft**	**2 - 3 ft**	**1 - 2 ft**	**2 - 3 ft**	**0.5 - 1 ft**	**1 - 2 ft**	**0.5 - 1.5 ft**	**1.5 - 2.5 ft**	**1.5 - 2.5 ft**	**1 - 1.5 ft**	**0 - 2 ft**	**0 - 3 ft**	**0 - 2 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Metals, mg/kg																											
Aluminum	NS	NS	NS	NS	NS	NS		19,900	5,420	5,470	5,710	20,000	14,400	16,900	18,600	21,600	17,500	14,200	15,000	23,900	9,310	16,300 J	1,870 J	7,950 J	3,790	3,920	4,800
Antimony	NS	NS	NS	NS	NS	NS		< 8.52 J	7.20 J	< 7.81 J	26.5 J	< 7.56 J	< 7.06 J	< 7.93 J	< 6.74 J	< 7.58 J	< 8.07 J	< 6.75 J	< 7.54 J	4.04 J	< 7.85 J	3.87 J	< 6.87 J	< 7.62	31.3	25.7	82.3
Arsenic	13	16	16	16	16	16		6.76 J	16.0 J	10.1 J	17.5 J	6.49 J	28.4 J	7.54 J	7.21 J	7.18 J	4.35 J	4.65 J	6.30 J	5.29 J	18.8 J	6.62 J	6.94 J	0.965 J	46.1	8	11.2
Barium	350	820	350	400	400	10,000		134	110	87.0	151	142	184	108	154	155	121	101	89.9	161	148	189 J	28.7 J	88.9 J	1,060	1,210	328
Beryllium	7.2	47	14	72	590	2,700		0.882 J	< 0.532 J	< 0.650 J	0.312 J	0.850 J	0.749 J	0.722 J	2.40 J	1.16 J	0.726 J	0.612 J	0.653	1.13	0.795	0.767	< 0.572	0.381 J	< 5.63	< 0.631	< 5.7
Cadmium	2.5	7.5	2.5	4.3	9.3	60		0.541 J	2.84 J	1.21 J	8.39 J	0.459 J	1.63 J	< 0.661 J	< 0.562 J	0.831 J	0.810 J	0.499 J	0.414 J	0.392 J	0.466 J	0.314 J	< 0.572	< 0.635	48.6	11.2	18.1
Calcium	NS	NS	NS	NS	NS	NS		9,660 J	305,000 J	319,000 J	118,000 J	11,100 J	30,600 J	65,800 J	272,000 J	5,520 J	17,400 J	19,300 J	7,490	3,360	5,490	25,000 J	2,710 J	53,900	14,500	5,840	18,800
Chromium	30	NS	36	180	1,500	6,800		27.1 J	926 J	3,710 J	1,060 J	25.2 J	22.8 J	22.9 J	13.5 J	24.4 J	23.2 J	18.8 J	19.8	29.0	18.6	24.9 J	4.39 J	16.4 J	216	254	552
Cobalt	NS	NS	NS	NS	NS	NS		11.4 J	9.34 J	6.67 J	21.9 J	12.5 J	10.5 J	11.0 J	< 5.62 J	12.9 J	11.9 J	7.17 J	13.9	11.9	7.48	8.78	< 5.72	7.68	23.3	16.8	20.4
Copper	50	1,720	270	270	270	10,000		20.3 J	49.1 J	20.8 J	243 J	17.7 J	70.2 J	20.7 J	9.12 J	14.9 J	19.0 J	17.0 J	10.0	25.6	84.9	32.5 J	17.5 J	88.0 J	1,480	4,860	974
Iron	NS	NS	NS	NS	NS	NS		26,100	188,000	157,000	308,000	26,200	29,600	22,900	4,910	26,200	21,700	19,400	23,300	30,100	27,400	23,100 J	7,990 J	17,700 J	302,000	73,500	216,000
Lead	63	450	400	400	1,000	3,900		18.3 J	80.6 J	87.6 J	239 J	18.0 J	868 J	21.4 J	44.1 J	24.7 J	83.7 J	11.6 J	37.7	22.2	395	385 J	61.5 J	86.9 J	1,560	1,040	5,590
Magnesium	NS	NS	NS	NS	NS	NS		9,800 J	13,300 J	21,500 J	26,300 J	10,700 J	8,110 J	25,300 J	17,200 J	5,570 J	7,180 J	13,700 J	5,510	6,930	2,460	10,700 J	861 J	16,800 J	2,400	1,320	4,470
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		702	15,900	19,700	25,400	583	393	563	4,520	517	967	361	592 J	533 J	231 J	356 J	26.2 J	392 J	3,190	1,170	3,560
Nickel	30	130	140	310	310	10,000		26.9 J	23.0 J	5.15 J	94.3 J	26.2 J	23.7 J	23.2 J	4.07 J	21.3 J	17.7 J	16.9 J	14.0	28.6	19.5	20.2 J	5.95 J	25.4 J	234	245	408
Potassium	NS	NS	NS	NS	NS	NS		3,940	< 266	176 J	303	4,280	1,910	4,810	1,430	2,910	2,890	2,730	2,030	4,450	1,190	2,620 J	335 J	1,840 J	1,020	699	1,370
Selenium	3.9	4	36	180	1,500	6,800		< 1.42 J	35.2 J	25.3 J	22.5 J	< 1.26 J	< 1.18 J	< 1.32 J	9.08 J	< 1.26 J	< 1.35 J	< 1.13 J	< 1.26 J	< 1.18 J	< 1.31 J	< 1.25 J	< 1.14 J	< 1.27	4.6	4.4	7.5
Silver	2	8.3	36	180	1,500	6,800		< 1.42 J	4.02 J	4.98 J	9.00 J	0.828 J	0.823 J	< 1.32 J	< 1.12 J	< 1.26 J	0.686 J	< 1.13 J	< 1.26	< 1.18	< 1.31	< 1.25	< 1.14	< 1.27	2.9	2	< 1.14
Sodium	NS	NS	NS	NS	NS	NS		520 J	135 J	< 325 J	448 J	214 J	793 J	244 J	516 J	251 J	169 J	188 J	181 J	242 J	< 327	158 J	< 286 J	267 J	891	227	491
Thallium	NS	NS	NS	NS	NS	NS		< 3.55 J	< 2.66 J	< 3.25 J	< 2.87 J	< 3.15 J	< 2.94 J	< 3.30 J	< 2.81 J	< 3.16 J	< 3.36 J	< 2.81 J	< 3.14	< 2.94	< 3.27	< 3.13	< 2.86	< 3.17	< 11.3	< 25.3	< 11.4
Vanadium	NS	NS	NS	NS	NS	NS		36.8 J	343 J	452 J	379 J	36.6 J	30.0 J	33.0 J	9.61 J	39.4 J	35.9 J	32.0 J	36.2	43.1	21.2	32.2 J	5.49 J	23.3 J	50.6	32	54.4
Zinc	109	2,480	2,200	10,000	10,000	10,000		75.0 J	64.7 J	29.8 J	469 J	76.6 J	360 J	78.3 J	27.9 J	73.0 J	166 J	72.2 J	75.7	98.3	147	222 J	22.9 J	160	1,810	1,040	2,380
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		0.0239 J	< 0.0223	< 0.0201	0.0225	0.0299	0.634	0.0498	0.0746	0.0654	0.420	0.0299	0.0686	0.0319	0.405	0.352	0.396	0.0527	2.66	< 0.0433	0.259
Cyanide	27	40	27	27	27	10,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, mg/kg																											
Aroclor 1242	0.1	3.2	1	1	1	25		< 0.0372	< 0.0330	< 0.0339	< 0.0302	< 0.0328 J	< 0.0347	< 0.0353	< 0.0321	< 0.0378	< 0.0333	< 0.0335 J	< 0.0341	< 0.0350	< 0.0351	< 0.0363	< 0.0335	< 0.0327	NA	NA	NA
Aroclor 1248	0.1	3.2	1	1	1	25		< 0.0372	< 0.0330	< 0.0339	< 0.0302	< 0.0328 J	< 0.0347	< 0.0353	< 0.0321	< 0.0378	< 0.0333	< 0.0335 J	< 0.0341	< 0.0350	< 0.0351	< 0.0363	< 0.0335	< 0.0327	NA	NA	NA
Aroclor 1254	0.1	3.2	1	1	1	25		< 0.0372	< 0.0330	< 0.0339	< 0.0302	< 0.0328 J	< 0.0347	< 0.0353	< 0.0321	< 0.0378	< 0.0333	< 0.0335 J	< 0.0341	< 0.0350	< 0.0351	< 0.0363	< 0.0335	0.309 J	NA	NA	NA
Aroclor 1260	0.1	3.2	1	1	1	25		< 0.0372	< 0.0330	< 0.0339	< 0.0302	< 0.0328 J	< 0.0347	< 0.0353	< 0.0321	< 0.0378	< 0.0333	< 0.0335 J	< 0.0341	< 0.0350	< 0.0351	< 0.0363	< 0.0335	< 0.0327	NA	NA	NA

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**	**Location ID Sample Date Sample Type Depth**	**B-53 24-Nov-14 Grab 1.5 - 2.5 ft**	**B-54 24-Nov-14 Grab 0.5 - 1 ft**	**B-54 24-Nov-14 QA/QC 0.5 - 1 ft**	**B-55 24-Nov-14 Grab 0.5 - 1.5 ft**	**B-55 24-Nov-14 Grab 3 - 4 ft**	**B-56 24-Nov-14 Grab 0.5 - 1.5 ft**	**B-56 24-Nov-14 Grab 2 - 3 ft**	**B-57 24-Nov-14 Grab 0.5 - 1.5 ft**	**B-57 24-Nov-14 Grab 2 - 3 ft**	**B-58 24-Nov-14 Grab 1 - 2 ft**	**B-58 24-Nov-14 Grab 2 - 3 ft**	**B-59 25-Nov-14 Grab 0.5 - 1 ft**	**B-59 25-Nov-14 Grab 1 - 2 ft**	**B-60 25-Nov-14 Grab 0.5 - 1.5 ft**	**B-60 25-Nov-14 Grab 1.5 - 2.5 ft**	**B-60 25-Nov-14 QA/QC 1.5 - 2.5 ft**	**B-61 19-Nov-14 Grab 1 - 1.5 ft**	**SAND-022 01-Jan-07 Composite 0 - 2 ft**	**SAND-008 01-Jan-07 Composite 0 - 3 ft**	**SAND-100 01-Jan-07 Composite 0 - 2 ft**
Semivolatiles, mg/kg																											
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	< 0.346	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.221 J	< 0.359	< 0.34	< 0.331	NA	NA	NA
Acenaphthene	20	98	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	< 0.346	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.582	< 0.359	< 0.34	< 0.331	NA	NA	NA
Acenaphthylene	100	107	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	0.416	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	< 0.348	< 0.359	< 0.34	< 0.331	NA	NA	NA
Anthracene	100	1,000	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	0.632	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	1.02	< 0.359	< 0.34	< 0.331	NA	NA	NA
Benz(a)anthracene	1	1	1	1	5.6	11		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	2.03	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	1.3	0.402	0.263 J	< 0.331	NA	NA	NA
Benzo(a)pyrene	1	22	1	1	1	1.1		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	1.75	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.98	0.365	0.211 J	0.2 J	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	2.23	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.914	0.397	0.215 J	0.298 J	NA	NA	NA
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	1.01	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.497	0.228 J	< 0.34	0.256 J	NA	NA	NA
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	1.29	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.791	0.22 J	0.19 J	< 0.331	NA	NA	NA
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	< 0.346	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	< 0.348	< 0.359	< 0.34	< 0.331	NA	NA	NA
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		< 0.346	< 0.325	< 0.334	< 0.298	0.233 J	< 0.346	0.349	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	< 0.348	< 0.359	< 0.34	< 0.331	NA	NA	NA
Carbazole	NS	NS	NS	NS	NS	NS		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	0.588	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.451	< 0.359	< 0.34	< 0.331	NA	NA	NA
Chrysene	1	1	1	3.9	56	110		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	2.46	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	1.31	0.4	0.329 J	0.203 J	NA	NA	NA
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	0.386	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	< 0.348	< 0.359	< 0.34	< 0.331	NA	NA	NA
Dibenzofuran	7	210	14	59	350	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	0.303 J	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.418	< 0.359	< 0.34	< 0.331	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	0.00244 J	< 0.00389 J	0.00275 J	< 0.00476 J	0.00467 J	NA	NA	NA	NA
Fluoranthene	100	1,000	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	4.3	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	3.29	0.885 J	0.544 J	0.191 J	NA	NA	NA
Fluorene	30	386	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	0.342 J	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.515	< 0.359	< 0.34	< 0.331	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	1.24	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.564	0.239 J	< 0.34	0.229 J	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	0.182 J	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	0.245 J	< 0.359	< 0.34	< 0.331	NA	NA	NA
Phenanthrene	100	1,000	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	3.35	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	4.2	0.526	0.541	< 0.331	NA	NA	NA
Pyrene	100	1,000	100	100	500	1,000		< 0.346	< 0.325	< 0.334	< 0.298	< 0.336	3.24	< 0.34	< 0.319	< 0.375	< 0.347	< 0.33	< 0.34	< 0.352	2.64	0.742 J	0.439 J	0.221 J	NA	NA	NA
Volatiles, mg/kg																											
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	0.00244 J	< 0.00389 J	0.00275 J	< 0.00476 J	0.00467 J	NA	NA	NA	NA
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	0.00285 J	NA	NA	NA	NA
2-Butanone	0.12	0.12	100	100	500	1,000		< 0.0173 J	< 0.0179 J	< 0.0169 J	< 0.0198 J	< 0.0173 J	< 0.0216 J	< 0.0225 J	< 0.0182 J	0.0385 J	0.0297 J	< 0.0228 J	0.0642 J	< 0.0195 J	< 0.0246 J	< 0.0238 J	< 0.0237 J	NA	NA	NA	NA
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
Acetone	0.05	0.05	100	100	500	1,000		< 0.0173 J	0.0149 J	0.0161 J	< 0.0198 J	0.0167 J	< 0.0216 J	< 0.0225 J	< 0.0182 J	0.139 J	0.144 J	< 0.0228 J	0.323 J	< 0.0415 J	< 0.0246 J	< 0.0238 J	< 0.0237 J	NA	NA	NA	NA
Benzene	0.06	0.06	2.9	4.8	44	89		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
Carbon Disulfide	NS	NS	NS	NS	NS	NS		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	0.00261 J	NA	NA	NA	NA
Chlorobenzene	1.1	1.1	100	100	500	1,000		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
Ethylbenzene	1	1	30	41	390	780		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	0.00292 J	NA	NA	NA	NA
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
m,p-Xylenes	0.26	1.6	100	100	500	1,000		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	0.00671 J	< 0.00389 J	0.00785 J	0.00267 J	0.0166 J	NA	NA	NA	NA
Methylcyclohexane	NS	NS	NS	NS	NS	NS		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	0.00269 J	< 0.00476 J	0.00622 J	NA	NA	NA	NA
Methylene chloride	0.05	0.05	51	100	500	1,000		< 0.00867 J	< 0.00897 J	< 0.00847 J	< 0.00990 J	< 0.00866 J	< 0.0108 J	< 0.0113 J	0.00689 J	< 0.0132 J	< 0.0107 J	< 0.0114 J	< 0.0116 J	< 0.00974 J	0.00722 J	< 0.0119 J	0.0144 J	NA	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		< 0.00867 J	< 0.00897 J	< 0.00847 J	< 0.00990 J	< 0.00866 J	< 0.0108 J	< 0.0113 J	< 0.00911 J	< 0.0132 J	< 0.0107 J	< 0.0114 J	< 0.0116 J	< 0.00974 J	< 0.0123 J	< 0.0119 J	< 0.0119 J	NA	NA	NA	NA
n-Butylbenzene	12	12	100	100	500	1,000		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
n-Propylbenzene	3.9	3.9	100	100	500	1,000		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
o-Xylene	0.26	1.6	100	100	500	1,000		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	0.00453 J	NA	NA	NA	NA
sec-Butylbenzene	11	11	100	100	500	1,000		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
Styrene	NS	NS	NS	NS	NS	NS		< 0.00867 J	< 0.00897 J	< 0.00847 J	< 0.00990 J	< 0.00866 J	< 0.0108 J	< 0.0113 J	< 0.00911 J	< 0.0132 J	< 0.0107 J	< 0.0114 J	< 0.0116 J	< 0.00974 J	< 0.0123 J	< 0.0119 J	< 0.0119 J	NA	NA	NA	NA
Tetrachloroethene	1.3	1.3	5.5	19	150	300		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	< 0.00474 J	NA	NA	NA	NA
Toluene	0.7	0.7	100	100	500	1,000		< 0.00347 J	< 0.00359 J	< 0.00339 J	< 0.00396 J	< 0.00346 J	< 0.00432 J	< 0.00451 J	< 0.00364 J	< 0.00526 J	< 0.00429 J	< 0.00455 J	< 0.00463 J	< 0.00389 J	< 0.00492 J	< 0.00476 J	0.00438 J	NA	NA	NA	NA
Xylenes (total)	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.

NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**SAND-101**	**SAND-102**	**SAND-103**	**SAND-104**	**SAND-105**	**SAND-106**	**SAND-107**	**SAND-108**	**SB-1**	**SB-2**	**SB-3**	**SB-3**	**SB-4**	**SB-4**	**SB-5**	**SB-5**	**SB-6**	**SB-9**	**SB-13**	**SB-14**
							Sample Date	**01-Jan-07**	**01-Jan-07**	**01-Jan-07**	**01-Jan-07**	**01-Jan-07**	**01-Jan-07**	**01-Jan-07**	**01-Jan-07**	**07-Feb-00**	**07-Feb-00**	**07-Feb-00**	**03-Dec-08**	**07-Feb-00**	**03-Dec-08**	**07-Feb-00**	**03-Dec-08**	**03-Dec-08**	**07-Feb-00**	**08-Feb-00**	**08-Feb-00**
							Sample Type	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**	**Composite**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**0 - 4 ft**	**0 - 2 ft**	**0 - 3 ft**	**0 - 2 ft**	**0 - 2 ft**	**0 - 2 ft**	**-**	**0 - 2 ft**	**0.5 - 1 ft**	**4 - 4.5 ft**	**4-5 ft**	**0.5 - 1.5 ft**	**4 - 5 ft**	**0.5 - 1.5 ft**	**4 - 5 ft**	**0.5 - 1.5 ft**	**0.5 - 2 ft**	**0.5 - 1.5 ft**	**3 - 4 ft**	**8 - 9 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Metals, mg/kg																											
Aluminum	NS	NS	NS	NS	NS	NS		8,260	3,050	3,450	6,830	5,060	5,440	4,650	3,890	NA	7,200	10,100	17,400	11,300	21,400	13,300	29,000	20,400	9,770	7,770	4,800
Antimony	NS	NS	NS	NS	NS	NS		28.6	35.8	30.1	68.5	18.6	36.5	35	76.9	NA	2.9 J	2.5 J	< 18.7	0.32 J	< 17.6	0.31 J	< 87.7	< 76.8	0.72 J	< 7.2 J	< 6.9 J
Arsenic	13	16	16	16	16	16		11.9	7	12.3	15.8	8	13	19.3	28.1	NA	8.1	6.6	3	5.3	< 2.3	4.9	3	< 2	5.6	5	0.98
Barium	350	820	350	400	400	10,000		526	240	1,190	541	149	514	337	921	NA	125	78.5	110	87	171	83.7	228	131	27.4	67.7	35.5
Beryllium	7.2	47	14	72	590	2,700		< 5.92	< 5.2	< 0.575	< 0.631	< 0.571	< 0.608	< 0.604	< 59.5	NA	0.47	0.58	0.7	0.57	3.2	0.69	4.9	2.9	0.4	0.42	0.26
Cadmium	2.5	7.5	2.5	4.3	9.3	60		46.8	21.6	92.7	48.4	16.3	55.1	56.3	53.3	NA	0.36	0.8	< 0.25	0.51	< 0.23	0.16	< 0.23	< 0.2	0.14	0.31	0.24
Calcium	NS	NS	NS	NS	NS	NS		20,000	61,800	7,580	15,100	12,700	20,100	11,400	16,600	NA	48,200 J	56,400 J	7,070	89,400 J	159,000	23,300 J	226,000	245,000	13,500 J	78,800 J	113,000 J
Chromium	30	NS	36	180	1,500	6,800		389	556	133	523	290	354	453	225	NA	16.5	23	22.4	16.4	8.6	18.2	42.9	22.1	11.3	13.5	8.3
Cobalt	NS	NS	NS	NS	NS	NS		21.1	24	11.3	36.5	26	21	23.9	23.3	NA	8.2	14.2	6.9	10	4.1	10.9	1.7	1.2	5.6	7.2	4
Copper	50	1,720	270	270	270	10,000		1,290	3,930	1,070	4,170	846	977	1,150	2,490	NA	39.7 J	57 J	17.3	17.5 J	9.8	24 J	5	3.9	15.5 J	15.5 J	9.2 J
Iron	NS	NS	NS	NS	NS	NS		261,000	291,000	82,100	246,000	272,000	153,000	222,000	297,000	NA	22,700	30,400	20,600	21,200	8,960	22,600	28,200	13,800	21,200	15,200	9,980
Lead	63	450	400	400	1,000	3,900		1,020	1,150	835	7,100	299	788	522	2,030	NA	284	95.6	20	20.9	6	15.7	6.7	5.7	42.8	10.2	5.8
Magnesium	NS	NS	NS	NS	NS	NS		6,610	3,300	1,360	2,910	2,650	5,480	2,360	2,540	NA	14,600 J	16,600 J	5,840	29,100 J	24,600	15,800 J	39,300	26,500	2,640 J	26,200 J	38,400 J
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		3,530	4,790	875	1,960	2,260	1,510	1,410	2,250	NA	313 J	594 J	194	839 J	3,070	372 J	2,120	1,680	219 J	330 J	239 J
Nickel	30	130	140	310	310	10,000		293	455	221	405	229	600	738	202	NA	13.6	27	21.1	16.4	7.9	19.9	3.8	2.9	11.4	15.1	7.1
Potassium	NS	NS	NS	NS	NS	NS		2,070	781	1,120	446	586	960	762	770	NA	1,130	1,270	2,220	2,420	1,660	2,390	1,400	1,380	831	1,660	1,040
Selenium	3.9	4	36	180	1,500	6,800		7.3	8.8	3.3	6.5	6	4	4.9	10.1	NA	< 0.63	< 1.2	< 5	< 1.2	< 4.7	< 0.67	< 23.4	< 20.5	0.24	< 1.2	< 0.58
Silver	2	8.3	36	180	1,500	6,800		2.1	< 1.04	< 1.15	1.7	< 1.14	< 1.22	< 1.21	< 1.19	NA	< 1.3	< 1.2	< 0.62	< 1.2	< 0.59	< 1.3	< 0.58	< 0.51	< 1.1	< 1.2	< 1.2
Sodium	NS	NS	NS	NS	NS	NS		358	577	465	375	178	359	282	338	NA	< 142	< 172	180	238	544	< 190	913	7.3	< 199	226	< 168
Thallium	NS	NS	NS	NS	NS	NS		< 11.8	< 10.4	< 5.75	< 12.6	< 11.4	< 12.2	< 12.1	< 11.9	NA	0.49	< 1.2	< 7.5	< 1.2	< 7	< 1.3	< 7	< 6.1	0.55	< 1.2	< 1.2
Vanadium	NS	NS	NS	NS	NS	NS		66.3	61.1	29.1	54.9	66	40	48	50.8	NA	21.7	23.8	26.6	24.4	12.2	29.6	17.6	13	17.7	20	13.4
Zinc	109	2,480	2,200	10,000	10,000	10,000		5,630	1,460	758	11,100	543	5,610	2,770	2,760	NA	96.9	85.6	92	69.5	26.3	73.2	4.6	7.9	35.9	55.7	38.8
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		0.201	0.146	0.16	< 0.0424	0.122	0.265	0.232	1.25	NA	0.24 J	0.18 J	0.3	0.025 J	0.032	0.036 J	< 0.024	< 0.023	0.038 J	0.019 J	< 0.12
Cyanide	27	40	27	27	27	10,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.63	< 0.6	NA	< 0.62	NA	< 0.67	NA	NA	< 0.57	< 0.6	< 0.58
PCBs, mg/kg																											
Aroclor 1242	0.1	3.2	1	1	1	25		NA	NA	NA	NA	NA	NA	NA	NA	< 0.038	< 0.041	< 0.04	NA	< 0.081	NA	< 0.044	< 0.02	< 0.037	< 0.037	< 0.039	< 0.038
Aroclor 1248	0.1	3.2	1	1	1	25		NA	NA	NA	NA	NA	NA	NA	NA	< 0.038	< 0.041	< 0.04	NA	< 0.081	NA	< 0.044	0.077	0.05	< 0.037	< 0.039	< 0.038
Aroclor 1254	0.1	3.2	1	1	1	25		NA	NA	NA	NA	NA	NA	NA	NA	< 0.038	< 0.041	< 0.04	NA	1.3	NA	0.057	< 0.02	< 0.037	< 0.037	0.4	< 0.038
Aroclor 1260	0.1	3.2	1	1	1	25		NA	NA	NA	NA	NA	NA	NA	NA	< 0.038	< 0.041	< 0.04	NA	< 0.081	NA	< 0.044	0.16	0.072	< 0.037	< 0.039	< 0.038

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID **Sample Date** **Sample Type** **Depth**	**SAND-101** **01-Jan-07** **Composite** **0 - 4 ft**	**SAND-102** **01-Jan-07** **Composite** **0 - 2 ft**	**SAND-103** **01-Jan-07** **Composite** **0 - 3 ft**	**SAND-104** **01-Jan-07** **Composite** **0 - 2 ft**	**SAND-105** **01-Jan-07** **Composite** **0 - 2 ft**	**SAND-106** **01-Jan-07** **Composite** **0 - 2 ft**	**SAND-107** **01-Jan-07** **Composite** **-**	**SAND-108** **01-Jan-07** **Composite** **0 - 2 ft**	**SB-1** **07-Feb-00** **Grab** **0.5 - 1 ft**	**SB-2** **07-Feb-00** **Grab** **4 - 4.5 ft**	**SB-3** **07-Feb-00** **Grab** **4-5 ft**	**SB-3** **03-Dec-08** **Grab** **0.5 - 1.5 ft**	**SB-4** **07-Feb-00** **Grab** **4 - 5 ft**	**SB-4** **03-Dec-08** **Grab** **0.5 - 1.5 ft**	**SB-5** **07-Feb-00** **Grab** **4 - 5 ft**	**SB-5** **03-Dec-08** **Grab** **0.5 - 1.5 ft**	**SB-6** **03-Dec-08** **Grab** **0.5 - 2 ft**	**SB-9** **07-Feb-00** **Grab** **0.5 - 1.5 ft**	**SB-13** **08-Feb-00** **Grab** **3 - 4 ft**	**SB-14** **08-Feb-00** **Grab** **8 - 9 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																						
Semivolatiles, mg/kg																												
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.29 J	NA	0.13 J	NA	0.034 J	< 0.31	< 0.32	< 3.7	< 3.9	< 0.38
Acenaphthene	20	98	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.61	NA	0.22 J	NA	0.56	< 0.31	< 0.32	< 3.7	< 3.9	< 0.38
Acenaphthylene	100	107	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.32 J	NA	< 0.41	NA	0.038 J	< 0.31	< 0.32	< 3.7	< 3.9	< 0.38
Anthracene	100	1,000	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	1.1	NA	< 0.41	NA	0.25 J	< 0.31	< 0.32	< 3.7	< 3.9	< 0.38
Benz(a)anthracene	1	1	1	1	5.6	11		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	1.9	NA	< 4.1	NA	0.2 J	< 0.31	< 0.32	11	< 3.9	< 0.38
Benzo(a)pyrene	1	22	1	1	1	1.1		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	1.5	NA	< 0.41	NA	< 0.44	< 0.31	< 0.32	7.5	< 3.9	< 0.38
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.9	NA	0.093 J	NA	< 0.44	< 0.31	< 0.32	< 3.7	< 3.9	< 0.38
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	1.3	NA	< 4.1	NA	< 0.44	< 0.31	< 0.32	15	< 3.9	< 0.38
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.89	NA	< 4.1	NA	< 0.44	< 0.31	< 0.32	9.3	< 3.9	< 0.38
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	1.2	NA	< 4.1	NA	< 0.44	< 0.31	< 0.32	7.7	< 3.9	< 0.38
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	< 0.4	NA	< 4.1	NA	< 0.44	NA	NA	< 3.7	< 3.9	< 0.38
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	< 0.4	NA	< 4.1	NA	< 0.44	NA	NA	< 3.7	< 3.9	< 0.38
Carbazole	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.56	NA	< 0.41	NA	< 0.44	NA	NA	< 3.7	< 3.9	< 0.38
Chrysene	1	1	1	3.9	56	110		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	1.9	NA	< 4.1	NA	0.19 J	< 0.31	< 0.32	14	< 3.9	< 0.38
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.28 J	NA	< 4.1	NA	< 0.44	< 0.31	< 0.32	2.7 J	< 3.9	< 0.38
Dibenzofuran	7	210	14	59	350	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.5	NA	0.18 J	NA	0.54	NA	NA	< 3.7	< 3.9	< 0.38
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	3.3	NA	< 0.41	NA	0.85	< 0.31	< 0.32	14	2.1 J	< 0.38
Fluorene	30	386	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.67	NA	0.34 J	NA	0.37 J	< 0.31	< 0.32	< 3.7	< 3.9	< 0.38
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	0.87	NA	< 4.1	NA	< 0.44	< 0.31	< 0.32	7.9	< 3.9	< 0.38
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	100	1,000	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	3.3	NA	1.1	NA	0.47	< 0.31	< 0.32	1.5 J	3 J	< 0.38
Pyrene	100	1,000	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.41	2.6	NA	< 4.1	NA	0.47	< 0.31	< 0.32	15	1.8 J	< 0.38
Volatiles, mg/kg																												
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.025	< 0.024	NA	< 0.025	NA	< 0.023	NA	NA	< 0.023	< 0.024	< 0.023
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	0.05	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.025	< 0.024	NA	< 0.035	NA	< 0.027	NA	NA	< 0.023	< 0.024	< 0.023
Benzene	0.06	0.06	2.9	4.8	44	89		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	< 0.0067	NA	NA	< 0.0057	< 0.0060	< 0.0058
Carbon Disulfide	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	< 0.0067	NA	NA	0.0072	< 0.0060	< 0.0058
Chlorobenzene	1.1	1.1	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	< 0.0067	NA	NA	< 0.0057	< 0.0060	< 0.0058
Ethylbenzene	1	1	30	41	390	780		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	0.0035 J	NA	NA	< 0.0057	< 0.0060	< 0.0058
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylenes	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.05	51	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	< 0.0067	NA	NA	< 0.0057	< 0.0060	< 0.0058
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	3.9	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	11	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	< 0.0067	NA	NA	< 0.0057	< 0.0060	< 0.0058
Tetrachloroethene	1.3	1.3	5.5	19	150	300		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	< 0.0067	NA	NA	< 0.0057	< 0.0060	< 0.0058
Toluene	0.7	0.7	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	< 0.0062	NA	0.0025 J	NA	NA	< 0.0057	< 0.0060	< 0.0058
Xylenes (total)	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.0063	< 0.0060	NA	0.005 J	NA	0.018	NA	NA	< 0.0057	0.0094	< 0.0058

Notes:

< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.

NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**SB-15**	**SB-18**	**SB-22**	**SB-27**	**SB-29**	**SB-30**	**TMW-12**	**TMW-12**	**TMW-13**	**TMW-14**	**TMW-15S**	**TMW-16**	**TMW-16A**	**TMW-17**	**TMW-17**	**TMW-17**	**TP-1**	**TP-7**	**TP-8**	**TP-17**
							Sample Date	**09-Feb-00**	**09-Feb-00**	**09-Feb-00**	**09-Feb-00**	**10-Feb-00**	**10-Feb-00**	**01-Dec-14**	**01-Dec-14**	**26-Nov-14**	**01-Dec-14**	**25-Nov-14**	**25-Nov-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**25-Nov-08**	**25-Nov-08**	**25-Nov-08**	**26-Nov-08**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**QA/QC**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**7 - 8 ft**	**6 - 6.5 ft**	**4.5 - 5 ft**	**4.5 - 5 ft**	**0 - 1 ft**	**0.3 - 1 ft**	**0.5 - 1.5 ft**	**3 - 4 ft**	**1 - 2 ft**	**2 - 4 ft**	**1 - 2 ft**	**4 - 5 ft**	**3.5 - 4.5 ft**	**1 - 2 ft**	**1 - 2 ft**	**2 - 3 ft**	**0 - 6 ft**	**1 - 3 ft**	**0.5 - 3 ft**	**0.5 - 2 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Metals, mg/kg																											
Aluminum	NS	NS	NS	NS	NS	NS		4,450	2,950	NA	8,820	19,400	3,580	13,400	7,100	13,000	13,100	6,150	13,700	6,090 J	10,400	10,800	8,900	4,670	10,300	6,680	8,480
Antimony	NS	NS	NS	NS	NS	NS		0.34	1.3	NA	0.83	0.41 J	29.5 J	5.30 J	< 7.57 J	< 7.09 J	< 7.41 J	< 6.91 J	< 7.64 J	< 6.44 J	< 7.70 J	< 7.21 J	< 6.73 J	< 15.3	< 20.4	< 14.7	< 18.6
Arsenic	13	16	16	16	16	16		4.4	9.8	NA	9.5	6	18	11.8 J	3.66 J	7.17	9.43 J	4.70 J	5.27 J	3.99	6.02 J	10.6 J	4.63 J	4	5	4.5	17.5
Barium	350	820	350	400	400	10,000		33.3	115	NA	269	199	114	192	45.8	91.9	109	45.9	83.8	44.2 J	259 J	377 J	55.7	20.7	162	94.8	342
Beryllium	7.2	47	14	72	590	2,700		0.42	0.46	NA	0.53	1.3	0.54	0.603 J	0.401 J	0.585 J	0.572 J	< 0.576	0.600 J	< 0.537	0.600 J	0.671	0.342 J	< 0.2	1.2	0.48	1
Cadmium	2.5	7.5	2.5	4.3	9.3	60		0.5	0.37	NA	0.65	0.52	0.54	1.35	< 0.630	< 0.590	< 0.618	< 0.576	< 0.637	< 0.537	< 0.641	0.740	< 0.561	< 0.2	0.63	0.6	6.4
Calcium	NS	NS	NS	NS	NS	NS		60,100	12,000	NA	43,100	21,700 J	11,700 J	29,900	54,900	96,800 J	102,000	115,000	81,300	100,000 J	41,500	32,100	123,000	7,890	61,800	35,400	15,800
Chromium	30	NS	36	180	1,500	6,800		20.6	6.4	NA	16.4	22.2	11.6	23.5	10.9	120	18.0	9.74	18.6	10.0	15.6	17.4	13.2	6.2	17.2	10.8	52.8
Cobalt	NS	NS	NS	NS	NS	NS		4.4	4.7	NA	8.5	49.7	7.9	10.0	4.99 J	8.44	10.2	4.24 J	8.87	4.79 J	6.28 J	6.96	5.44 J	2.2	5	5	10.1
Copper	50	1,720	270	270	270	10,000		28.8 J	41.7 J	NA	49.4 J	20.3 J	255 J	72.1	13.9	36.2	19.2	11.0	18.8	10.6	30.3 J	43.8 J	9.60	10.8	53.2	113	204
Iron	NS	NS	NS	NS	NS	NS		11,500	11,100	NA	17,700	37,500	25,800	31,200	12,400	29,300	19,000	10,700	20,600	11,000	13,900 J	20,900 J	15,200	9,630	15,400	14,100	51,200
Lead	63	450	400	400	1,000	3,900		19.6	301	NA	419	93.1	764	462 J	32.4 J	94.7 J	18.1 J	4.84	13.2	5.44	230 J	295 J	5.46 J	46.2	189	210	1,560
Magnesium	NS	NS	NS	NS	NS	NS		8,970 J	2,480 J	NA	10,600 J	5,540 J	2,610 J	8,170	27,600	14,300	19,500	28,500	28,000	29,600 J	10,300	9,380	23,900	2,540	9,440	11,300	4,540
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		702 J	112 J	NA	677 J	1,680 J	159 J	578 J	412 J	1,900	491 J	283 J	526 J	271	414 J	422 J	1,720 J	146	1,090	455	516
Nickel	30	130	140	310	310	10,000		14	8.4	NA	16.4	17	16.5	23.0	9.19	23.2 J	20.6	7.68	17.4	8.72 J	15.2	15.1	9.41	7.7	12.2	15.4	50.4
Potassium	NS	NS	NS	NS	NS	NS		649	594	NA	2,830	1,640	466	2,300	1,780	3,110	3,580	1,580	4,420	1,850	1,700	1,740	1,990	645	1,380	1,520	1,370
Selenium	3.9	4	36	180	1,500	6,800		< 0.62	1.5	NA	< 0.65	0.45	1.2	0.822 J	< 1.26	3.46	4.97	2.93 J	< 1.27 J	2.65	< 1.28	0.853 J	4.02	< 4.1	< 5.4	< 5.9	< 5
Silver	2	8.3	36	180	1,500	6,800		< 1.2	< 1.5	NA	0.22	< 1.1	0.1	1.08 J	< 1.26	< 1.18	< 1.24	< 1.15	< 1.27	< 1.07	< 1.28	< 1.20	< 1.12	< 0.51	< 0.68	< 0.73	2.2
Sodium	NS	NS	NS	NS	NS	NS		< 121	296	NA	406	914	< 150	< 326	169 J	321	245 J	226 J	318 J	256 J	< 321	175 J	248 J	< 143	343	276	400
Thallium	NS	NS	NS	NS	NS	NS		0.59	0.82	NA	0.52	0.43	< 1.2	< 3.26	< 3.15	< 2.95	2.58 J	2.14 J	< 3.18	< 2.68	< 3.21	< 3.00	< 2.80	< 6.1	< 8.2	< 8.8	< 7.4
Vanadium	NS	NS	NS	NS	NS	NS		13.1	14	NA	21.1	32.9	12.7	32.9	19.5	50.9 J	26.0	18.2	29.3	17.8	22.4	26.2	23.2	8.8	20.4	14.7	25.4
Zinc	109	2,480	2,200	10,000	10,000	10,000		55.8	199	NA	246	95	194	335	83.6	176 J	65.2	42.9	63.7	47.9 J	122	153	43.2	42.9	204	169	2,120
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		< 0.12	0.35	NA	1.3	0.014 J	0.22 J	0.539 J	0.0940 J	0.0917	0.0650 J	0.0130 J	0.0220	< 0.0190	0.858 J	0.742 J	0.0192 J	0.026	0.45	1.1	6.4
Cyanide	27	40	27	27	27	10,000		< 0.62	< 0.74	NA	2.6 J	< 0.57	< 0.59	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, mg/kg																											
Aroclor 1242	0.1	3.2	1	1	1	25		< 0.041	< 0.049	NA	< 0.043	< 0.038	< 0.039	< 0.0359	< 0.0343	< 0.0343	< 0.0340	< 0.0333	< 0.0346	< 0.0315	< 0.0334	< 0.0331	< 0.0344	< 0.018	< 0.02	< 0.023	< 0.11
Aroclor 1248	0.1	3.2	1	1	1	25		< 0.041	< 0.049	NA	< 0.043	< 0.038	< 0.039	< 0.0359	< 0.0343	< 0.0343	< 0.0340	< 0.0333	< 0.0346	< 0.0315	< 0.0334	< 0.0331	< 0.0344	< 0.018	< 0.02	0.013 J	< 0.11
Aroclor 1254	0.1	3.2	1	1	1	25		< 0.041	< 0.049	NA	< 0.043	< 0.038	< 0.039	< 0.0359	< 0.0343	< 0.0343	< 0.0340	< 0.0333	< 0.0346	< 0.0315	< 0.0334	< 0.0331	< 0.0344	< 0.018	0.042	0.01 J	0.96
Aroclor 1260	0.1	3.2	1	1	1	25		< 0.041	< 0.049	NA	< 0.043	< 0.038	< 0.039	< 0.0359	< 0.0343	< 0.0343 J	< 0.0340	< 0.0333	< 0.0346	< 0.0315	< 0.0334	< 0.0331	< 0.0344	< 0.018	0.12	0.016 J	< 0.11

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**SB-15**	**SB-18**	**SB-22**	**SB-27**	**SB-29**	**SB-30**	**TMW-12**	**TMW-12**	**TMW-13**	**TMW-14**	**TMW-15S**	**TMW-16**	**TMW-16A**	**TMW-17**	**TMW-17**	**TMW-17**	**TP-1**	**TP-7**	**TP-8**	**TP-17**
							Sample Date	**09-Feb-00**	**09-Feb-00**	**09-Feb-00**	**09-Feb-00**	**10-Feb-00**	**10-Feb-00**	**01-Dec-14**	**01-Dec-14**	**26-Nov-14**	**01-Dec-14**	**25-Nov-14**	**25-Nov-14**	**02-Dec-14**	**01-Dec-14**	**01-Dec-14**	**01-Dec-14**	**25-Nov-08**	**25-Nov-08**	**25-Nov-08**	**26-Nov-08**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**QA/QC**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**7 - 8 ft**	**6 - 6.5 ft**	**4.5 - 5 ft**	**4.5 - 5 ft**	**0 - 1 ft**	**0.3 - 1 ft**	**0.5 - 1.5 ft**	**3 - 4 ft**	**1 - 2 ft**	**2 - 4 ft**	**1 - 2 ft**	**4 - 5 ft**	**3.5 - 4.5 ft**	**1 - 2 ft**	**1 - 2 ft**	**2 - 3 ft**	**0 - 6 ft**	**1 - 3 ft**	**0.5 - 3 ft**	**0.5 - 2 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**																					
Semivolatiles, mg/kg																											
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		0.31 J	< 0.49	NA	< 0.43	< 0.38	0.5 J	< 1.83	< 0.694	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	< 5.6	0.095 J	NA	< 0.41
Acenaphthene	20	98	100	100	500	1,000		0.27 J	< 0.49	NA	< 0.43	< 0.38	< 0.78	3.17	< 0.694	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	1.3 J	0.12 J	< 0.36	< 0.41
Acenaphthylene	100	107	100	100	500	1,000		< 0.82	0.19 J	NA	< 0.43	< 0.38	< 0.78	< 1.83	< 0.694	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	< 5.6	0.15 J	< 0.36	0.22 J
Anthracene	100	1,000	100	100	500	1,000		0.58 J	0.18 J	NA	< 0.43	< 0.38	0.29 J	6.33	1.78	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	0.303 J	< 0.333	< 0.35	1.5 J	0.35	< 0.36	0.27 J
Benz(a)anthracene	1	1	1	1	5.6	11		1.1 J	0.87 J	NA	0.25 J	< 0.38	1	13.8	4.21	< 0.36	< 0.351	< 0.335	0.266 J	< 0.314	0.736 J	0.454 J	< 0.35	31	1.1	0.21 J	1.4
Benzo(a)pyrene	1	22	1	1	1	1.1		0.76 J	0.99 J	NA	0.23 J	< 0.38	0.87	13	3.07	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	0.67 J	0.408 J	< 0.35	47	1.1	0.21 J	2.1
Naphthalene	12	12	100	100	500	1,000		< 0.82	< 0.49	NA	< 0.43	< 0.38	0.34 J	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 5.6	0.13 J	< 0.36	0.09 J
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		0.84 J	1 J	NA	0.23 J	< 0.38	0.83	12.2	2.83	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	0.71 J	0.46 J	< 0.35	72	1.5	0.32 J	3
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		< 0.82	0.27 J	NA	< 0.43	< 0.38	0.33 J	7.53	1.48	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	0.388 J	0.223 J	< 0.35	55	0.36	0.19 J	1.3
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		0.85 J	0.77 J	NA	0.2 J	< 0.38	0.71 J	9.48	2.57	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	0.434 J	0.223 J	< 0.35	25	0.53	0.1 J	1
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		< 0.82	< 0.49	NA	< 0.43	< 0.38	< 0.78	< 1.83	< 0.694	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	NA	NA	NA	NA
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		< 0.82	< 0.49	NA	< 0.43	< 0.38	< 0.78	< 1.83	< 0.694	0.3 J	< 0.351	< 0.335	0.18 J	< 0.314	< 0.335	< 0.333	< 0.35	NA	NA	NA	NA
Carbazole	NS	NS	NS	NS	NS	NS		0.29 J	< 0.49	NA	< 0.43	< 0.38	< 0.78	3.52	< 0.694	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	NA	NA	NA	NA
Chrysene	1	1	1	3.9	56	110		1.2 J	0.9 J	NA	0.26 J	< 0.38	1.1	14.9	4.12	< 0.36	< 0.351	< 0.335	0.356	< 0.314	0.782 J	0.452 J	< 0.35	44	1.4	0.26 J	1.9
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		< 0.82	< 0.49	NA	< 0.43	< 0.38	< 0.78	2.62	0.569 J	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	14	0.13 J	< 0.36	0.36 J
Dibenzofuran	7	210	14	59	350	1,000		0.3 J	< 0.49	NA	< 0.43	< 0.38	< 0.78	2.49	< 0.694	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
Fluoranthene	100	1,000	100	100	500	1,000		2.5 J	2 J	NA	0.65 J	< 0.38	2	32.6	9.86	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	1.45 J	0.821 J	< 0.35	29	1.8	0.29 J	1.9
Fluorene	30	386	100	100	500	1,000		0.42 J	< 0.49	NA	< 0.43	< 0.38	< 0.78	2.81	0.498 J	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	< 5.6	0.14 J	< 0.36	< 0.41
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		< 0.82	0.35 J	NA	< 0.43	< 0.38	0.36 J	9.79	2.12	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	0.439 J	0.265 J	< 0.35	58	0.47	0.18 J	1.5
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	1.29 J	< 0.694	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	< 0.335	< 0.333	< 0.35	NA	NA	NA	NA
Phenanthrene	100	1,000	100	100	500	1,000		2.8 J	0.58 J	NA	0.36 J	< 0.38	1.4	29.1	6.2	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	1.07 J	0.545 J	< 0.35	7.3	1.5	0.27 J	1
Pyrene	100	1,000	100	100	500	1,000		1.5 J	1.2 J	NA	0.36 J	< 0.38	1.4	26.8	7.69	< 0.36	< 0.351	< 0.335	< 0.343	< 0.314	1.23 J	0.677 J	< 0.35	29	1.5	0.43	1.5
Volatiles, mg/kg																											
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
2-Butanone	0.12	0.12	100	100	500	1,000		< 0.023	< 0.03	< 0.024	< 0.026	< 0.023	< 0.024	< 0.0246 J	< 0.0208 J	NA	< 0.0184 J	< 0.0185 J	< 0.0182 J	< 0.0184 J	< 0.0224 J	< 0.0207 J	< 0.0175 J	NA	NA	NA	NA
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
Acetone	0.05	0.05	100	100	500	1,000		< 0.023	0.067	< 0.024	< 0.026	< 0.023	< 0.024	< 0.0246 J	< 0.0208 J	NA	< 0.0184 J	< 0.0185 J	< 0.0473 J	< 0.0184 J	< 0.0557 J	< 0.0207 J	< 0.0348 J	NA	NA	0.01 J	NA
Benzene	0.06	0.06	2.9	4.8	44	89		< 0.0058	< 0.0074	< 0.0060	< 0.0064	< 0.0057	< 0.0059	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
Carbon Disulfide	NS	NS	NS	NS	NS	NS		< 0.0058	< 0.0074	< 0.0060	< 0.0064	< 0.0057	< 0.0059	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	< 0.006	NA
Chlorobenzene	1.1	1.1	100	100	500	1,000		< 0.0058	< 0.0074	< 0.0060	< 0.0064	0.0039 J	0.0028 J	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	< 0.006	NA
Ethylbenzene	1	1	30	41	390	780		< 0.0058	< 0.0074	< 0.0060	< 0.0064	< 0.0057	< 0.0059	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	< 0.006	NA
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
m,p-Xylenes	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	0.00197 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
Methylcyclohexane	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
Methylene chloride	0.05	0.05	51	100	500	1,000		< 0.0058	< 0.0074	< 0.0060	< 0.0064	< 0.0057	< 0.0059	< 0.0123 J	< 0.0104 J	NA	< 0.00920 J	< 0.00925 J	0.00513 J	< 0.00922 J	< 0.0112 J	< 0.0104 J	< 0.00874 J	NA	NA	0.008	NA
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	0.00636 J	< 0.0104 J	NA	< 0.00920 J	< 0.00925 J	< 0.00909 J	< 0.00922 J	< 0.0112 J	< 0.0104 J	< 0.00874 J	NA	NA	< 0.32	NA
n-Butylbenzene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
n-Propylbenzene	3.9	3.9	100	100	500	1,000		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
o-Xylene	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
sec-Butylbenzene	11	11	100	100	500	1,000		NA	NA	NA	NA	NA	NA	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
Styrene	NS	NS	NS	NS	NS	NS		< 0.0058	< 0.0074	< 0.0060	< 0.0064	< 0.0057	< 0.0059	< 0.0123 J	< 0.0104 J	NA	< 0.00920 J	< 0.00925 J	< 0.00909 J	< 0.00922 J	< 0.0112 J	< 0.0104 J	< 0.00874 J	NA	NA	NA	NA
Tetrachloroethene	1.3	1.3	5.5	19	150	300		< 0.0058	< 0.0074	< 0.0060	< 0.0064	< 0.0057	< 0.0059	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	NA	NA
Toluene	0.7	0.7	100	100	500	1,000		< 0.0058	< 0.0074	0.0019 J	< 0.0064	0.0036 J	< 0.0059	< 0.00492 J	< 0.00416 J	NA	< 0.00368 J	< 0.00370 J	< 0.00364 J	< 0.00369 J	< 0.00448 J	< 0.00414 J	< 0.00350 J	NA	NA	< 0.006	NA
Xylenes (total)	0.26	1.6	100	100	500	1,000		< 0.0058	< 0.0074	< 0.0060	< 0.0064	< 0.0057	< 0.0059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	< 0.019	NA

Notes:
< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.
NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**TP-18**	**TP-20**	**TP-21**	**TP-26**	**TP-28**	**TP-31**	**TP-33**	**TP-34**	**TP-37**	**TP-43**	**TP-46**
							Sample Date	**26-Nov-08**	**26-Nov-08**	**01-Dec-08**	**01-Dec-08**	**01-Dec-08**	**02-Dec-08**	**02-Dec-08**	**02-Dec-08**	**02-Dec-08**	**03-Dec-08**	**03-Dec-08**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**1 - 3 ft**	**1 - 2 ft**	**0.5 - 4 ft**	**0.5 - 5 ft**	**1 - 3 ft**	**3 ft**	**1 - 1.5 ft**	**1 - 3 ft**	**0.5 - 2 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**												
Metals, mg/kg																		
Aluminum	NS	NS	NS	NS	NS	NS		11,100	7,000	3,990	18,100	4,140	8,500	6,950	4,340	NA	6,680	10,400
Antimony	NS	NS	NS	NS	NS	NS		< 18.4	< 16.4	< 18.3	< 21.7	< 18.2	< 16.8	< 20	< 19.4	NA	< 19.2	< 20
Arsenic	13	16	16	16	16	16		4.3	5.2	8.7	15.2	20.9	7.9	8.7	12.5	NA	8.9	7
Barium	350	820	350	400	400	10,000		97.4	91.8	73.4	192	110	148	145	142	NA	225	181
Beryllium	7.2	47	14	72	590	2,700		0.56	0.52	0.53	1.1	0.45	0.65	0.51	0.4	NA	0.46	0.75
Cadmium	2.5	7.5	2.5	4.3	9.3	60		0.62	0.38	< 0.24	0.83	0.82	0.5	3.4	0.76	NA	0.48	0.58
Calcium	NS	NS	NS	NS	NS	NS		70,600	47,800	16,200	16,700	3,520	46,300	16,600	11,400	NA	66,200	36,200
Chromium	30	NS	36	180	1,500	6,800		15.6	10.2	6.9	81.4	12.6	23.6	19.4	46.5	NA	13.1	15.1
Cobalt	NS	NS	NS	NS	NS	NS		6.9	5.1	4.2	12.2	4.8	4.6	5	10.7	NA	5.4	6.2
Copper	50	1,720	270	270	270	10,000		37	65.6	25.4	87.2	118	122	282	420	NA	51.7	45.4
Iron	NS	NS	NS	NS	NS	NS		18,100	10,800	8,560	32,800	44,600	17,000	22,900	111,000	NA	13,000	20,200
Lead	63	450	400	400	1,000	3,900		56.3	216	54.4	432	437	283	1,070	868	NA	587	486
Magnesium	NS	NS	NS	NS	NS	NS		21,000	10,300	3,010	11,900	989	12,600	3,840	3,650	NA	9,560	9,600
Manganese	1,600	2,000	2,000	2,000	10,000	10,000		427	241	142	504	633	184	381	1,090	NA	634	525
Nickel	30	130	140	310	310	10,000		17.8	11.4	11.3	31.8	14.1	13.7	18	37.3	NA	12.5	14.7
Potassium	NS	NS	NS	NS	NS	NS		2,580	1,660	607	2,320	560	1,450	1,060	657	NA	1,500	2,050
Selenium	3.9	4	36	180	1,500	6,800		< 4.9	< 4.4	< 4.9	< 5.8	< 4.8	< 4.5	< 5.3	< 5.2	NA	< 5.1	< 5.3
Silver	2	8.3	36	180	1,500	6,800		< 0.61	< 0.55	< 0.61	< 0.72	< 0.61	< 0.56	< 0.66	< 0.64	NA	< 0.64	< 0.67
Sodium	NS	NS	NS	NS	NS	NS		303	253	171	234	187	302	258	292	NA	349	406
Thallium	NS	NS	NS	NS	NS	NS		< 7.4	< 6.6	< 7.3	< 8.7	< 7.3	< 6.7	< 8	< 7.7	NA	< 7.7	< 8
Vanadium	NS	NS	NS	NS	NS	NS		22	17	15.7	34.8	19.2	17.1	18.8	29.3	NA	14.5	19.4
Zinc	109	2,480	2,200	10,000	10,000	10,000		76.2	106	45.2	366	415	247	283	470	NA	164	168
Mercury	0.18	0.73	0.81	0.81	2.8	5.7		0.052	1.3 J	0.62	0.81	0.18	0.15	0.59	0.18	NA	1.2	0.59
Cyanide	27	40	27	27	27	10,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs, mg/kg																		
Aroclor 1242	0.1	3.2	1	1	1	25		< 0.1	< 0.02	< 0.021	< 0.022	< 0.019	< 0.019	< 0.04	NA	< 0.085	NA	< 0.021
Aroclor 1248	0.1	3.2	1	1	1	25		< 0.1	< 0.02	0.042	< 0.022	< 0.019	< 0.019	0.19	NA	< 0.085	NA	< 0.021
Aroclor 1254	0.1	3.2	1	1	1	25		0.85	0.0081 J	0.043	< 0.022	< 0.019	0.023	0.32	NA	0.44	NA	< 0.021
Aroclor 1260	0.1	3.2	1	1	1	25		< 0.1	0.014 J	0.04	< 0.022	< 0.019	< 0.019	0.17	NA	< 0.085	NA	< 0.021

TABLE 5
Summary of Soil Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

							Location ID	**TP-18**	**TP-20**	**TP-21**	**TP-26**	**TP-28**	**TP-31**	**TP-33**	**TP-34**	**TP-37**	**TP-43**	**TP-46**
							Sample Date	**26-Nov-08**	**26-Nov-08**	**01-Dec-08**	**01-Dec-08**	**01-Dec-08**	**02-Dec-08**	**02-Dec-08**	**02-Dec-08**	**02-Dec-08**	**03-Dec-08**	**03-Dec-08**
							Sample Type	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**	**Grab**
							Depth	**0.5 - 1.5 ft**	**0.5 - 1.5 ft**	**1 - 3 ft**	**1 - 2 ft**	**0.5 - 4 ft**	**0.5 - 5 ft**	**1 - 3 ft**	**3 ft**	**1 - 1.5 ft**	**1 - 3 ft**	**0.5 - 2 ft**
Analyte	**NY375 UNRES**	**NY375 RPGW**	**NY375 RRES**	**NY375 RRRES**	**NY375 RCOMM**	**NY375 RINDU**												
Semivolatiles, mg/kg																		
2-Methylnaphthalene	NS	NS	NS	NS	NS	NS		< 0.65	NA	0.14 J	1.3 J	NA	0.14 J	< 1.7	NA	0.094 J	NA	0.24 J
Acenaphthene	20	98	100	100	500	1,000		< 0.65	0.12 J	0.27 J	3.4 J	0.92 J	< 0.34	0.76 J	< 0.31	0.16 J	NA	0.86
Acenaphthylene	100	107	100	100	500	1,000		0.25 J	0.1 J	0.37	0.83 J	< 0.15	0.084 J	0.61 J	< 0.31	0.19 J	NA	0.25 J
Anthracene	100	1,000	100	100	500	1,000		0.34 J	0.39	0.97	9.1	1.5	0.11 J	1.7 J	< 0.31	0.44	NA	1.6
Benz(a)anthracene	1	1	1	1	5.6	11		2.1	1.4	2.2	20	5.4	0.2 J	8.8	< 0.31	1.7	NA	3.6
Benzo(a)pyrene	1	22	1	1	1	1.1		3.9	1.3	1.9	17	3.5	0.21 J	12	< 0.31	1.8	NA	3.3
Naphthalene	12	12	100	100	500	1,000		0.21 J	0.12 J	0.14 J	2.6 J	< 0.15	0.099 J	0.51 J	< 0.31	0.11 J	NA	0.36 J
Benzo(b)fluoranthene	1	1.7	1	1	5.6	11		5.7	1.4	2.4	19	3.6	0.32 J	17	< 0.31	2.6	NA	3.7
Benzo(g,h,i)perylene	100	1,000	100	100	500	1,000		3.5	0.96	0.69	12	1.6	0.13 J	18	< 0.31	0.92	NA	2.1
Benzo(k)fluoranthene	0.8	1.7	1	3.9	56	110		1.7	0.52	0.94	7	1.2 J	0.097 J	5.9	< 0.31	0.85	NA	1.3
Benzyl Butyl Phthalate	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bis(2-ethylhexyl)phthala	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	1	1	1	3.9	56	110		3.1	1.6	2.3	20	7	0.3 J	10	< 0.31	2.2	NA	3.7
Dibenz(a,h)anthracene	0.33	1,000	0.33	0.33	0.56	1.1		0.84	0.28 J	0.51	5.9	1.7	0.31 J	4.9	< 0.31	0.52	NA	1.1
Dibenzofuran	7	210	14	59	350	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	100	1,000	100	100	500	1,000		2.8	2.5	4.4	42	8	0.44	12	0.1 J	2.7	NA	7
Fluorene	30	386	100	100	500	1,000		0.21 J	0.11 J	0.35	3.8	0.73 J	< 0.34	0.44 J	< 0.31	0.11 J	NA	0.72
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.5	5.6	11		3.9	1.1	0.98	16	2	0.15 J	19	< 0.31	1.1	NA	2.8
Naphthalene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	100	1,000	100	100	500	1,000		1.1	1.9	3.2	41	15	0.36	6.1	0.074 J	2.2	NA	6.5
Pyrene	100	1,000	100	100	500	1,000		1.9	3.2	2.4	36	11	0.24 J	11	0.085 J	2.6	NA	6.6
Volatiles, mg/kg																		
1,2,4-Trimethylbenzene	3.6	3.6	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	8.4	8.4	47	52	190	380		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.12	0.12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.05	0.05	100	100	500	1,000		NA	< 0.034	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.06	0.06	2.9	4.8	44	89		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	NS	NS	NS	NS	NS	NS		NA	< 0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	1.1	1.1	100	100	500	1,000		NA	< 0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	1	1	30	41	390	780		NA	< 0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cum	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylenes	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylcyclohexane	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	0.05	0.05	51	100	500	1,000		NA	0.005 J	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	12	12	100	100	500	1,000		NA	< 0.31	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	12	12	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	3.9	3.9	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	0.26	1.6	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	11	11	100	100	500	1,000		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NS	NS	NS	NS	NS	NS		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	1.3	1.3	5.5	19	150	300		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	0.7	0.7	100	100	500	1,000		NA	< 0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	0.26	1.6	100	100	500	1,000		NA	< 0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

< = Compound not detected at concentrations
above the laboratory reporting detection limit.
The laboratory reporting detection limit is shown.

NA = Not analyzed
NS = No Soil Cleanup Objective
Units are in mg/kg = milligrams per kilogram
ft = feet
NY375 1UNRES = 6NYCRR P375 Unrestricted SCO.
NY375 2RPGW = 6NYCRR P375 Restricted SCO-Protection of GW.
NY375 3RRES = 6NYCRR P375 Restricted SCO-Residential.
NY375 4RRRES = 6NYCRR P375 Restricted SCO-Restricted Residential.
NY375 5RCOMM = 6NYCRR P375 Restricted SCO-Commercial.
NY375 6RINDU = 6NYCRR P375 Restricted SCO-Industrial.

TABLE 6
Summary of Groundwater Analytical Results
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	**Location ID Sample Date Sample Type NYSTOGS 1.1.1***	**TMW-1 13-Mar-12 Grab**	**TMW-4 13-Mar-12 Grab**	**TMW-6 13-Mar-12 Grab**	**TMW-7 13-Mar-12 Grab**	**TMW-8 13-Mar-12 Grab**	**TMW-9 13-Mar-12 Grab**	**TMW-10 13-Mar-12 Grab**	**TMW-11 13-Mar-12 Grab**	**TMW-12 27-May-15 Grab**	**TMW-14 27-May-15 Grab**	**Duplicate TMW-14 27-May-15 QA/QC**	**TMW-15D 27-May-15 Grab**	**TMW-15S 27-May-15 Grab**	**TMW-16 29-May-15 Grab**
Metals, µg/L															
Aluminum	NS	3,430	14,500	3,440	4,740	17,700	21,400	13,300	5,780	825	< 200	< 200	< 200	< 200	356
Antimony	3	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 1.7	< 0.23	4.4	4.5	< 0.14	< 1.1	0.55 J
Arsenic	25	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 1.9	< 10.0	5.74 J	< 10.0	6.16 J	< 10.0	< 10.0
Barium	1,000	95.1	252	56	77.6	169	203	109	93.3	74.6 J	< 100	< 100	71.3 J	59.1 J	83.7 J
Cadmium	5	< 0.17	3.9	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 0.17	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Calcium	NS	93,800	319,000	82,600	326,000	151,000	235,000	155,000	114,000	128,000	133,000	124,000	52,400	91,400	70,400
Chromium	50	7.4	17.2	4.4	5.3	17.2	22.7	47.3	4.7	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Cobalt	NS	0.4	3.4	< 0.38	< 0.38	5.4	7.4	2.8	< 0.38	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0	< 50.0
Copper	200	3.4	49.2	3.5	6.3	22.1	47.6	18.5	4.2	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0
Iron	300	3,800	17,500	2,880	3,870	16,400	21,300	11,100	4,400	1,050	4,610	4,670	< 100	107	410
Lead	25	2.6	80.2	< 2.1	2.5	7.7	65.7	11.6	10.1	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0	< 10.0
Magnesium	35,000	31,700	64,100	26,000	74,300	49,600	68,600	8,630	33,000	46,200	116,000	111,000	10,500	25,400	38,800
Manganese	300	231	831	107	199	530	743	299	82.5	94.0	92.7	88.4	20.7	202	128
Nickel	100	3.6	13.9	3.3	5	17	22.9	12	3.9	< 40.0	< 40.0	< 40.0	< 40.0	< 40.0	< 40.0
Potassium	NS	4,760	16,000	4,600	8,620	8,250	15,400	6,850	4,390	24,100	20,100	18,900	3,210	3,630	3,450
Selenium	10	3.9	2.6	2.3	7.2	< 2	< 2	4.5	8.1	21.6	< 10.0	7.90 J	< 10.0	12.1	< 10.0
Sodium	20,000	44,500	26,500	38,700	37,900	51,000	77,100	21,100	9,860	23,800	30,600	28,300	356,000	144,000	167,000
Vanadium	NS	5.3	24.8	5.5	9.1	28.7	36	36.1	8.9	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0	< 25.0
Zinc	2,000	59.3	293	35.2	57.4	102	157	44.3	38.1	< 60.0	< 60.0	< 60.0	< 60.0	< 60.0	< 60.0
Mercury	0.7	< 0.062	0.67	< 0.062	< 0.062	< 0.062	0.42	< 0.062	< 0.062	< 0.200	0.213	0.194 J	< 0.200	< 0.200	< 0.200
Volatiles, µg/L															
1,2,4-Trimethylbenzene	5	< 5	< 5	< 5	6.6	< 5	< 5	< 5	< 5	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
2-Butanone	50	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00	< 5.00
Acetone	50	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 5.00 J	< 5.00 J	< 5.00 J	< 5.00 J	< 5.00 J	< 5.00 J
Benzene	1	0.9	< 0.5	< 0.5	0.74	< 0.5	< 0.5	< 0.5	< 0.5	< 1.00	< 1.00	< 1.00	0.603 J	< 1.00	< 1.00
Ethylbenzene	5	< 1	< 1	< 1	1.4	< 1	< 1	< 1	< 1	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
m,p-Xylenes	5	1	< 1	< 1	4.3	< 1	< 1	< 1	< 1	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Toluene	5	1.7	< 1	< 1	1.1	< 1	< 1	< 1	< 1	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00	< 1.00
Xylenes (total)	5	1	< 1	< 1	4.3	< 1	< 1	< 1	< 1	NA	NA	NA	NA	NA	NA

See last page for Table 6 - Summary of Groundwater Analytical Results End Notes

Notes:

< = Compound not
detected at concentrations
above the laboratory
reporting detection limit.
The laboratory reporting
detection limit is shown.
Empty cells = Not analyzed
NS = No Standard
Units are in µg/L = micrograms per liter
ft = feet

Analyis performed by Paradigm Labs, Accutest, NJ.

TABLE 7
Maximum Detected Concentrations - Soil
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	**Maximum Contaminant Concentrations**
Metals, mg/kg	
Aluminum	32,500
Antimony	82
Arsenic	391
Barium	1,210
Beryllium	6.3
Cadmium	93
Calcium	323,000
Chromium	3,710
Cobalt	50
Copper	4,860
Iron	308,000
Lead	7,100
Magnesium	39,300
Manganese	31,800
Nickel	738
Potassium	4,810
Selenium	35
Silver	9.0
Sodium	914
Thallium	12
Vanadium	460
Zinc	11,100
Mercury	6.40
Cyanide	2.60
PCBs, mg/kg	
Aroclor 1242	0.132
Aroclor 1248	0.335
Aroclor 1254	4.03
Aroclor 1260	0.170
Semivolatiles, mg/kg	
2-Methylnaphthalene	4.46
Acenaphthene	3.40
Acenaphthylene	0.90
Anthracene	9.10
Benz(a)anthracene	31
Benzo(a)pyrene	47
Naphthalene	2.60
Benzo(b)fluoranthene	72
Benzo(g,h,i)perylene	55
Benzo(k)fluoranthene	25
Benzyl Butyl Phthalate	0.311
Bis(2-ethylhexyl)phthalate	1.54
Carbazole	3.52
Chrysene	44
Dibenz(a,h)anthracene	14
Dibenzofuran	2.49
1,2,4-Trimethylbenzene	0.88
Fluoranthene	42
Fluorene	3.80
Indeno(1,2,3-cd)pyrene	58
Naphthalene	1.29
Phenanthrene	41
Pyrene	36

TABLE 7
Maximum Detected Concentrations - Soil
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	**Maximum Contaminant Concentrations**
Volatiles, mg/kg	
1,2,4-Trimethylbenzene	0.884
1,3,5-Trimethylbenzene	0.088
2-Butanone	0.091
4-Isopropyltoluene	0.053
Acetone	0.323
Benzene	0.004
Carbon Disulfide	0.007
Chlorobenzene	0.004
Ethylbenzene	0.008
Isopropylbenzene (Cumene)	0.034
m,p-Xylenes	0.035
Methylcyclohexane	0.135
Methylene chloride	0.028
Naphthalene	1.060
n-Butylbenzene	0.149
n-Propylbenzene	0.066
o-Xylene	0.005
sec-Butylbenzene	0.056
Styrene	0.017
Tetrachloroethene	0.024
Toluene	0.004
Xylenes (total)	0.018

TABLE 8
Maximum Detected Concentrations - Ground Water
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	**Maximum Contaminant Concentrations**
Metals, µg/L	
Aluminum	21400
Antimony	4.5
Arsenic	6.16
Barium	252
Cadmium	3.9
Calcium	326000
Chromium	47.3
Cobalt	7.4
Copper	49.2
Iron	21300
Lead	80.2
Magnesium	116000
Manganese	831
Nickel	22.9
Potassium	24100
Selenium	21.6
Sodium	356000
Vanadium	36.1
Zinc	293
Mercury	0.67
Volatiles, µg/L	
1,2,4-Trimethylbenzene	6.6
Benzene	0.9
Ethylbenzene	1.4
m,p-Xylenes	4.3
Toluene	1.7
Xylenes (total)	4.3

TABLE 9
Exposure Summary Table
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Environmental Media	Point of exposure	Route of Exposure	Pathways	Receptor Population	Qualitative Assessment
Surface and subsurface soils	Direct contact	Absorption through the skin.	A	Current on site commercial, construction, and/or utility workers.	**Potentially Complete.** There are no current intrusive activities performed on Site with the exception of environmental investigation activities. Employees performing this sampling are required to wear PPE such as gloves, steel toed shoes, and safety glasses as routine protective measures. Employees receive hazard communication training and employees must also adhere to a Site-specific HASP that includes standard practices for the use of PPE. However, if these practices are not followed, there is the potential for dermal absorption of contaminants.
			D	Current on site potential trespassers.	**Potentially Complete.** Although it is known that trespassers have been on the Site, there is no information regarding the likelihood that these trespassers may touch the soil directly with their hands and/or if they may disrupt the earth and create dust emissions. As a result, these pathways will be considered potentially complete until such time that site access is restricted and/or remedial action is completed.
			E	Future on site commercial workers.	**Incomplete.** There is a possibility that portions of the Site will be used for commercial purposes. If buildings are constructed and occupied for commercial operations, there is no reason to believe that a commercial worker will be in direct contact with any exposed soil given the future implementation of an approved Site Management Plan (SMP).
			G	Future on site construction and/or utility workers.	**Potentially Complete.** Construction activities will take place on Site at a later date. The exact nature of the construction activities is not currently known and workers will have to follow a SMP including a Site-specific HASP requiring various forms of PPE. However, there will be a potential for direct contact with soil for this receptor population.
			H	Future on site residents.	**Incomplete.** As a potential future use for this Site will be restricted residential, direct contact with soil is possible but is unlikely given that areas of remaining contamination (if any) will be controlled by implementation of an approved SMP. Access to remaining contamination will be restricted.
	Incidental ingestion	Incidental ingestion when touching food or hands to mouth.	B	Current on site commercial, construction, and/or utility workers.	**Potentially Complete.** As noted in Pathway A, on-Site workers follow a Site-specific HASP; however, if hands are not washed prior to eating or the mouth is touched with gloves, there is a potential for exposure.
			I	Future on site commercial workers.	**Incomplete.** Similar to Pathway E, given the planned implementation of an approved SMP at the Site, there is no reasonable basis to believe that a commercial worker will be in direct contact with any exposed earth whereby they may touch the soil and then their mouth.
			J	Future on site construction and/or utility workers.	**Potentially Complete.** Similar to the potential direct contact pathway (Pathway G), construction activities will take place on Site at a later date and there will be a potential for direct contact with soil, which may lead to incidental ingestion.
			K	Future on site residents.	**Incomplete.** Similar to Pathway E, given the planned use of restricted residential requiring implementation of an approved SMP, there is no reasonable basis to believe that residents may come into direct contact with remaining contamination in soil.
	Inhalation/Fugitive dust emissions	Inhalation of airborne dusts released during on site excavation and soil removal activities.	C	Current on site commercial, construction, and/or utility workers.	**Potentially Complete.** As noted in Pathway A, envrionmental subsurface instrusive activities are currently being performed at the Site prior to the remedial action.On-Site workers performing this work follow a Site-specific HASP and employ particulate monitoring and dust mitigation. During intrusive activities there is a possibility of creating fugitive dust through the use of drilling epuipment. As a result, this exposure pathway is considered potentially complete.
			D	Current on site potential trespassers.	**Potentially Complete.** Although it is known that trespassers have been on the Site, there is no information regarding the likelihood that these trespassers may touch the soil directly with their hands and/or if they may disrupt the earth and create dust emissions. As a result, these pathways will be considered to be potentially complete until such time that site access is restricted and/or remedial action is completed.
			L, N	Future on site commercial workers and residents.	**Incomplete.** Given the planned restricted use of the Site requiring implementation of an approved SMP, there is no reasonable basis to believe that commercial workers may be exposed to fugitive dust emissions generated from remaining contamination in soil.
			M	Future on site construction/utility workers.	**Potentially Complete.** On-Site construction/utility workers will be expected to follow an approved SMP including a Site-specific HASP, and air monitoring will be performed as part of that HASP. However, it is possible that construction/utility workers may encounter remaining contamination in soil and potentially be exposed to fugitive dust emissions at the Site.

TABLE 9
Exposure Summary Table
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Groundwater	Direct contact	Absorption through the skin.	O	Future on site commercial, construction and/or utility workers.	**Potentially Complete.** Excavation and dewatering activities in the future may be performed in areas of remaining contamination depending on the level of cleanup performed. Therefore, construction and utility workers may come into contact with groundwater. There will be a Site-specific HASP recommending the use of proper PPE, and therefore the potential for significant exposure via this pathway is considered relatively low. However, the potential for direct contact of groundwater cannot be ruled out.
	Incidental ingestion	Consumption of groundwater when touching food or hands to mouth.	P	Future on site commercial, construction and/or utility workers.	**Potentially Complete.** Excavation and dewatering activities in the future may be performed in areas of remaining contamination depending on the level of cleanup performed. Therefore, construction and utility workers may come into contact with groundwater. There will be a Site-specific HASP recommending the use of proper PPE, and therefore the potential for significant exposure via this pathway is considered relatively low. However, the potential for incidental ingestion of groundwater cannot be ruled out.
	Vapor intrusion	Inhalation of vapors outdoors or indoors within new buildings.	Q	Future construction/utility workers, commercial workers, and residents	**Incomplete.** Chlorinated solvents or VOCs associated with petroleum are the typical drivers of vapor intrusion evaluations in New York State. VOCs associated with chlorinated solvents or petroleum have not been detected at significant concentrations (i.e., above the Unrestricted SCOs or the ambient groundwater quality standards and guidance values) with the exception of one isolated, low-level exceedance of 1,2,4-Trimethylbenzene in one groundwater sample collected in 2012 from monitoring well TMW-07. The lack of significant concentrations of VOCs in the Site soil documented in the many environmental samples summarized in this RI Report suggests there is no significant potential for a completed vapor intrusion exposure pathway at the Site

Table 10
Soil Data Remedial Assessment Summary - Unrestricted Use
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	Unrestricted SCOs	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Metals, mg/kg					
Aluminum	NS	139	NS	1430	32500
Antimony	NS	139	NS	0.31	82.3
Arsenic	**13**	139	19	0.965	391
Barium	**350**	139	9	14.2	1210
Beryllium	7.2	139	0	0.26	6.27
Cadmium	**2.5**	139	15	0.14	92.7
Calcium	NS	139	NS	2710	323000
Chromium	**30**	139	27	4.39	3710
Cobalt	NS	139	NS	1.2	49.7
Copper	**50**	139	40	3.81	4860
Iron	NS	139	NS	3880	308000
Lead	**63**	139	67	1.51	7100
Magnesium	NS	139	NS	861	39300
Manganese	**1,600**	139	24	26.2	31800
Nickel	**30**	139	19	2.9	738
Potassium	NS	139	NS	176	4810
Selenium	**3.9**	139	26	0.24	35.2
Silver	**2**	139	8	0.1	9
Sodium	NS	139	NS	7.3	914
Thallium	NS	139	NS	0.43	12
Vanadium	NS	139	NS	5.49	460
Zinc	**109**	139	56	4.3	11100
Mercury	**0.18**	139	45	0.00838	6.4
Cyanide	27	41	0	2.6	2.6
PCBs, mg/kg					
Aroclor 1016	0.1	129	0	ND	ND
Aroclor 1221	0.1	129	0	ND	ND
Aroclor 1232	0.1	129	0	ND	ND
Aroclor 1242	**0.1**	129	1	0.132	0.132
Aroclor 1248	**0.1**	129	2	0.013	0.335
Aroclor 1254	**0.1**	129	13	0.0081	4.03
Aroclor 1260	**0.1**	129	3	0.014	0.17
Aroclor 1262	0.1	101	0	ND	ND
Aroclor 1268	0.1	101	0	ND	ND
Semivolatiles, mg/kg					
1,2,4,5-Tetrachlorobenzene	NS	98	NS	ND	ND
1,2,4-Trichlorobenzene	NS	98	NS	ND	ND
1,2-Dichlorobenzene	NS	98	NS	ND	ND
1,3-Dichlorobenzene	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	98	NS	ND	ND
2,2-Oxybis(2-chloropropane)	NS	98	NS	ND	ND
2,3,4,6-Tetrachlorophenol	NS	98	NS	ND	ND
2,4,5-Trichlorophenol	NS	110	NS	ND	ND
2,4,6-Trichlorophenol	NS	110	NS	ND	ND
2,4-Dichlorophenol	NS	110	NS	ND	ND
2,4-Dimethylphenol	NS	110	NS	ND	ND
2,4-Dinitrophenol	NS	110	NS	ND	ND
2,4-Dinitrotoluene	NS	110	NS	ND	ND
2,6-Dinitrotoluene	NS	110	NS	ND	ND
2-Chloronaphthalene	NS	110	NS	ND	ND
2-Chlorophenol	NS	110	NS	ND	ND
2-Methylnaphthalene	NS	122	NS	0.034	4.46
2-Nitroaniline	NS	110	NS	ND	ND
2-Nitrophenol	NS	110	NS	ND	ND
3-3'-Dichlorobenzidine	NS	110	NS	ND	ND
3-Nitroaniline	NS	110	NS	ND	ND
4-Bromophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Chloro-3-Methylphenol	NS	110	NS	ND	ND
4-Chlorophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Nitrophenol	NS	110	NS	ND	ND
Acenaphthene	20	126	0	0.12	3.4
Acenaphthylene	100	126	0	0.038	0.898
Acetophenone	NS	98	NS	ND	ND
Anthracene	100	126	0	0.11	9.1
Atrazine	NS	98	NS	ND	ND
Benz(a)anthracene	**1**	126	22	0.17	31

Analyte	**Unrestricted SCOs**	**Total Number of Samples**	**Number of Exceedances**	**Minimum Concentration**	**Maximum Concentration**
Benzaldehyde	NS	98	NS	ND	ND
Benzo(a)pyrene	**1**	126	20	0.166	47
Naphthalene	12	28	0	0.09	2.6
Benzo(b)fluoranthene	**1**	126	20	0.195	72
Benzo(g,h,i)perylene	100	126	0	0.13	55
Benzo(k)fluoranthene	**0.8**	126	19	0.097	25
Benzyl Butyl Phthalate	NS	110	NS	0.311	0.311
Biphenyl	NS	98	NS	ND	ND
Bis(2-Chloroethoxy)Methane	NS	110	NS	ND	ND
2,2-Oxybis(1-chloropropane)	NS	12	NS	ND	ND
Bis(2-ethylhexyl)phthalate	NS	110	NS	0.161	1.54
Caprolactam	NS	98	NS	ND	ND
Carbazole	NS	110	NS	0.169	3.52
Chrysene	**1**	126	23	0.177	44
Dibenz(a,h)anthracene	**0.33**	126	17	0.13	14
Dibenzofuran	7	110	0	0.18	2.49
Dibutyl Phthalate	NS	110	NS	ND	ND
Dichloroethyl ether	NS	110	NS	ND	ND
1,2,4-Trimethylbenzene	3.6	83	0	0.00163	0.884
Diethyl Phthalate	NS	110	NS	ND	ND
1,2-Dichlorobenzene	NS	12	NS	ND	ND
Dimethyl Phthalate	NS	110	NS	ND	ND
1,3-Dichlorobenzene	NS	12	NS	ND	ND
Dinitro-o-cresol	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	110	NS	ND	ND
1,4-Dichlorobenzene	1.8	83	0	ND	ND
Di-N-Octyl Phthalate	NS	110	NS	ND	ND
1,2,4-Trichlorobenzene	NS	12	NS	ND	ND
4-Nitroaniline	NS	12	NS	ND	ND
Isobutanol	NS	12	NS	ND	ND
Fluoranthene	100	126	0	0.1	42
Fluorene	30	126	0	0.11	3.8
Hexachlorobenzene	0.33	110	0	ND	ND
Hexachlorobutadiene	NS	110	NS	ND	ND
Hexachlorocyclopentadiene	NS	110	NS	ND	ND
Hexachloroethane	NS	110	NS	ND	ND
Indeno(1,2,3-cd)pyrene	**0.5**	126	20	0.15	58
Isophorone	NS	98	NS	ND	ND
m-Cresol	0.33	98	0	ND	ND
Naphthalene	12	98	0	0.182	1.29
N-Nitrosodi-N-Propylamine	NS	110	NS	ND	ND
N-Nitrosodiphenylamine	NS	110	NS	ND	ND
o-Cresol	0.33	110	0	ND	ND
p-Chloroaniline	NS	110	NS	ND	ND
Pentachlorophenol	0.8	110	0	ND	ND
Phenanthrene	100	126	0	0.074	41
Phenol	0.33	110	0	ND	ND
p-Nitroaniline	NS	98	NS	ND	ND
Pyrene	100	126	0	0.085	36
Volatiles, mg/kg					
1,1,1-Trichloroethane	0.68	96	0	ND	ND
1,1,2,2-Tetrachloroethane	NS	96	NS	ND	ND
1,1,2-Trichloroethane	NS	96	NS	ND	ND
1,1-Dichloroethane	0.27	96	0	ND	ND
1,1-Dichloroethene	0.33	96	0	ND	ND
1,2,3-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trimethylbenzene	3.6	83	0	0.00163	0.884
1,2-Dibrom-3-Chloropropane	NS	83	NS	ND	ND
1,2-Dichlorobenzene	1.1	83	0	ND	ND
1,2-Dichloroethane	0.02	96	0	ND	ND
1,2-Dichloropropane	NS	96	NS	ND	ND
1,3,5-Trimethylbenzene	8.4	83	0	0.00238	0.0879
1,3-Dichlorobenzene	2.4	83	0	ND	ND
1,4-Dichlorobenzene	1.8	83	0	ND	ND
1,4-Dioxane	0.1	83	0	ND	ND
2-Butanone	0.12	96	0	0.0297	0.0914
2-Hexanone	NS	96	NS	ND	ND
4-Isopropyltoluene	NS	83	NS	0.0527	0.0527
4-Methyl-2-pentanone	NS	96	NS	ND	ND
Acetone	**0.05**	98	6	0.01	0.323
Benzene	0.06	96	0	0.00375	0.00375
Bromodichloromethane	NS	96	NS	ND	ND
Bromoform	NS	96	NS	ND	ND

Analyte	Unrestricted SCOs	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Carbon Disulfide	NS	98	NS	0.00261	0.0072
Carbon Tetrachloride	0.76	96	0	ND	ND
Chlorobenzene	1.1	98	0	0.0028	0.0039
Chlorobromomethane	NS	83	NS	ND	ND
Chloroethane	NS	96	NS	ND	ND
Chloroform	0.37	96	0	ND	ND
cis-1,2-Dichloroethene	0.25	96	0	ND	ND
cis-1,3-Dichloropropene	NS	96	NS	ND	ND
Cyclohexane	NS	83	NS	ND	ND
Dibromochloromethane	NS	96	NS	ND	ND
Ethylbenzene	1	98	0	0.00292	0.00815
Ethylene dibromide	NS	83	NS	ND	ND
Freon 11	NS	83	NS	ND	ND
Freon 113	NS	83	NS	ND	ND
Freon 12	NS	83	NS	ND	ND
Isopropylbenzene (Cumene)	NS	83	NS	0.00311	0.0338
m,p-Xylenes	0.26	83	0	0.00197	0.0351
Methyl acetate	NS	83	NS	ND	ND
Methyl bromide	NS	96	NS	ND	ND
Methyl chloride	NS	96	NS	ND	ND
Methyl tert-butyl ether	0.93	83	0	ND	ND
Methylcyclohexane	NS	83	NS	0.00219	0.135
Methylene chloride	0.05	98	0	0.005	0.0283
Naphthalene	12	85	0	0.00636	1.06
n-Butylbenzene	12	83	0	0.00949	0.149
n-Propylbenzene	3.9	83	0	0.00533	0.0664
o-Xylene	0.26	83	0	0.00196	0.00453
sec-Butylbenzene	11	83	0	0.00421	0.0555
Styrene	NS	96	NS	0.0168	0.0168
tert-Butylbenzene	5.9	83	0	ND	ND
Tetrachloroethene	1.3	96	0	0.00245	0.0241
Toluene	0.7	98	0	0.0019	0.00438
trans-1,2-Dichloroethene	0.19	96	0	ND	ND
trans-1,3-Dichloropropene	NS	96	NS	ND	ND
Trichloroethene	0.47	96	0	ND	ND
Vinyl chloride	0.02	96	0	ND	ND
Xylenes (total)	0.26	15	0	0.005	0.018

NS = No Soil Cleanup Objective
ND = Not Detected

Table 11
Soil Data Remedial Assessment Summary - Protection of Groundwater
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	Protection of GW SCOs	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Metals, mg/kg					
Aluminum	NS	139	NS	1430	32500
Antimony	NS	139	NS	0.31	82.3
Arsenic	**16**	139	13	0.965	391
Barium	**820**	139	4	14.2	1210
Beryllium	47	139	0	0.26	6.27
Cadmium	**7.5**	139	12	0.14	92.7
Calcium	NS	139	NS	2710	323000
Chromium	NS	139	NS	4.39	3710
Cobalt	NS	139	NS	1.2	49.7
Copper	**1,720**	139	4	3.81	4860
Iron	NS	139	NS	3880	308000
Lead	**450**	139	21	1.51	7100
Magnesium	NS	139	NS	861	39300
Manganese	**2,000**	139	19	26.2	31800
Nickel	**130**	139	11	2.9	738
Potassium	NS	139	NS	176	4810
Selenium	**4**	139	25	0.24	35.2
Silver	**8.3**	139	1	0.1	9
Sodium	NS	139	NS	7.3	914
Thallium	NS	139	NS	0.43	12
Vanadium	NS	139	NS	5.49	460
Zinc	**2,480**	139	5	4.3	11100
Mercury	**0.73**	139	15	0.00838	6.4
Cyanide	40	41	0	2.6	2.6
PCBs, mg/kg					
Aroclor 1016	3.2	129	0	ND	ND
Aroclor 1221	3.2	129	0	ND	ND
Aroclor 1232	3.2	129	0	ND	ND
Aroclor 1242	3.2	129	0	0.132	0.132
Aroclor 1248	3.2	129	0	0.013	0.335
Aroclor 1254	**3.2**	129	1	0.0081	4.03
Aroclor 1260	3.2	129	0	0.014	0.17
Aroclor 1262	3.2	101	0	ND	ND
Aroclor 1268	3.2	101	0	ND	ND
Semivolatiles, mg/kg					
1,2,4,5-Tetrachlorobenzene	NS	98	NS	ND	ND
1,2,4-Trichlorobenzene	NS	98	NS	ND	ND
1,2-Dichlorobenzene	NS	98	NS	ND	ND
1,3-Dichlorobenzene	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	98	NS	ND	ND
2,2-Oxybis(2-chloropropane)	NS	98	NS	ND	ND
2,3,4,6-Tetrachlorophenol	NS	98	NS	ND	ND
2,4,5-Trichlorophenol	NS	110	NS	ND	ND
2,4,6-Trichlorophenol	NS	110	NS	ND	ND
2,4-Dichlorophenol	NS	110	NS	ND	ND
2,4-Dimethylphenol	NS	110	NS	ND	ND
2,4-Dinitrophenol	NS	110	NS	ND	ND
2,4-Dinitrotoluene	NS	110	NS	ND	ND
2,6-Dinitrotoluene	NS	110	NS	ND	ND
2-Chloronaphthalene	NS	110	NS	ND	ND
2-Chlorophenol	NS	110	NS	ND	ND
2-Methylnaphthalene	NS	122	NS	0.034	4.46
2-Nitroaniline	NS	110	NS	ND	ND
2-Nitrophenol	NS	110	NS	ND	ND
3-3'-Dichlorobenzidine	NS	110	NS	ND	ND
3-Nitroaniline	NS	110	NS	ND	ND
4-Bromophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Chloro-3-Methylphenol	NS	110	NS	ND	ND
4-Chlorophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Nitrophenol	NS	110	NS	ND	ND
Acenaphthene	98	126	0	0.12	3.4
Acenaphthylene	107	126	0	0.038	0.898
Acetophenone	NS	98	NS	ND	ND
Anthracene	1,000	126	0	0.11	9.1
Atrazine	NS	98	NS	ND	ND
Benz(a)anthracene	**1**	126	22	0.17	31

Analyte	Protection of GW SCOs	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Benzaldehyde	NS	98	NS	ND	ND
Benzo(a)pyrene	**22**	126	1	0.166	47
Naphthalene	12	28	0	0.09	2.6
Benzo(b)fluoranthene	**1.7**	126	17	0.195	72
Benzo(g,h,i)perylene	1,000	126	0	0.13	55
Benzo(k)fluoranthene	**1.7**	126	7	0.097	25
Benzyl Butyl Phthalate	NS	110	NS	0.311	0.311
Biphenyl	NS	98	NS	ND	ND
Bis(2-Chloroethoxy)Methane	NS	110	NS	ND	ND
2,2-Oxybis(1-chloropropane)	NS	12	NS	ND	ND
Bis(2-ethylhexyl)phthalate	NS	110	NS	0.161	1.54
Caprolactam	NS	98	NS	ND	ND
Carbazole	NS	110	NS	0.169	3.52
Chrysene	**1**	126	23	0.177	44
Dibenz(a,h)anthracene	1,000	126	0	0.13	14
Dibenzofuran	210	110	0	0.18	2.49
Dibutyl Phthalate	NS	110	NS	ND	ND
Dichloroethyl ether	NS	110	NS	ND	ND
1,2,4-Trimethylbenzene	3.6	83	0	0.00163	0.884
Diethyl Phthalate	NS	110	NS	ND	ND
1,2-Dichlorobenzene	NS	12	NS	ND	ND
Dimethyl Phthalate	NS	110	NS	ND	ND
1,3-Dichlorobenzene	NS	12	NS	ND	ND
Dinitro-o-cresol	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	110	NS	ND	ND
1,4-Dichlorobenzene	1.8	83	0	ND	ND
Di-N-Octyl Phthalate	NS	110	NS	ND	ND
1,2,4-Trichlorobenzene	NS	12	NS	ND	ND
4-Nitroaniline	NS	12	NS	ND	ND
Isobutanol	NS	12	NS	ND	ND
Fluoranthene	1,000	126	0	0.1	42
Fluorene	386	126	0	0.11	3.8
Hexachlorobenzene	3.2	110	0	ND	ND
Hexachlorobutadiene	NS	110	NS	ND	ND
Hexachlorocyclopentadiene	NS	110	NS	ND	ND
Hexachloroethane	NS	110	NS	ND	ND
Indeno(1,2,3-cd)pyrene	**8.2**	126	4	0.15	58
Isophorone	NS	98	NS	ND	ND
m-Cresol	0.33	98	0	ND	ND
Naphthalene	12	98	0	0.182	1.29
N-Nitrosodi-N-Propylamine	NS	110	NS	ND	ND
N-Nitrosodiphenylamine	NS	110	NS	ND	ND
o-Cresol	0.33	110	0	ND	ND
p-Chloroaniline	NS	110	NS	ND	ND
Pentachlorophenol	0.8	110	0	ND	ND
Phenanthrene	1,000	126	0	0.074	41
Phenol	0.33	110	0	ND	ND
p-Nitroaniline	NS	98	NS	ND	ND
Pyrene	1,000	126	0	0.085	36
Volatiles, mg/kg					
1,1,1-Trichloroethane	0.68	96	0	ND	ND
1,1,2,2-Tetrachloroethane	NS	96	NS	ND	ND
1,1,2-Trichloroethane	NS	96	NS	ND	ND
1,1-Dichloroethane	0.27	96	0	ND	ND
1,1-Dichloroethene	0.33	96	0	ND	ND
1,2,3-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trimethylbenzene	3.6	83	0	0.00163	0.884
1,2-Dibrom-3-Chloropropane	NS	83	NS	ND	ND
1,2-Dichlorobenzene	1.1	83	0	ND	ND
1,2-Dichloroethane	0.02	96	0	ND	ND
1,2-Dichloropropane	NS	96	NS	ND	ND
1,3,5-Trimethylbenzene	8.4	83	0	0.00238	0.0879
1,3-Dichlorobenzene	2.4	83	0	ND	ND
1,4-Dichlorobenzene	1.8	83	0	ND	ND
1,4-Dioxane	0.1	83	0	ND	ND
2-Butanone	0.12	96	0	0.0297	0.0914
2-Hexanone	NS	96	NS	ND	ND
4-Isopropyltoluene	NS	83	NS	0.0527	0.0527
4-Methyl-2-pentanone	NS	96	NS	ND	ND
Acetone	**0.05**	98	6	0.01	0.323
Benzene	0.06	96	0	0.00375	0.00375
Bromodichloromethane	NS	96	NS	ND	ND
Bromoform	NS	96	NS	ND	ND

Analyte	Protection of GW SCOs	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Carbon Disulfide	NS	98	NS	0.00261	0.0072
Carbon Tetrachloride	0.76	96	0	ND	ND
Chlorobenzene	1.1	98	0	0.0028	0.0039
Chlorobromomethane	NS	83	NS	ND	ND
Chloroethane	NS	96	NS	ND	ND
Chloroform	0.37	96	0	ND	ND
cis-1,2-Dichloroethene	0.25	96	0	ND	ND
cis-1,3-Dichloropropene	NS	96	NS	ND	ND
Cyclohexane	NS	83	NS	ND	ND
Dibromochloromethane	NS	96	NS	ND	ND
Ethylbenzene	1	98	0	0.00292	0.00815
Ethylene dibromide	NS	83	NS	ND	ND
Freon 11	NS	83	NS	ND	ND
Freon 113	NS	83	NS	ND	ND
Freon 12	NS	83	NS	ND	ND
Isopropylbenzene (Cumene)	NS	83	NS	0.00311	0.0338
m,p-Xylenes	1.6	83	0	0.00197	0.0351
Methyl acetate	NS	83	NS	ND	ND
Methyl bromide	NS	96	NS	ND	ND
Methyl chloride	NS	96	NS	ND	ND
Methyl tert-butyl ether	0.93	83	0	ND	ND
Methylcyclohexane	NS	83	NS	0.00219	0.135
Methylene chloride	0.05	98	0	0.005	0.0283
Naphthalene	12	85	0	0.00636	1.06
n-Butylbenzene	12	83	0	0.00949	0.149
n-Propylbenzene	3.9	83	0	0.00533	0.0664
o-Xylene	1.6	83	0	0.00196	0.00453
sec-Butylbenzene	11	83	0	0.00421	0.0555
Styrene	NS	96	NS	0.0168	0.0168
tert-Butylbenzene	5.9	83	0	ND	ND
Tetrachloroethene	1.3	96	0	0.00245	0.0241
Toluene	0.7	98	0	0.0019	0.00438
trans-1,2-Dichloroethene	0.19	96	0	ND	ND
trans-1,3-Dichloropropene	NS	96	NS	ND	ND
Trichloroethene	0.47	96	0	ND	ND
Vinyl chloride	0.02	96	0	ND	ND
Xylenes (total)	1.6	15	0	0.005	0.018

NS = No Soil Cleanup Objective
ND = Not Detected

Table 12
Soil Data Remedial Assessment Summary - Residential
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	NY375 3RRES	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Metals, mg/kg					
Aluminum	NS	139	NS	1430	32500
Antimony	NS	139	NS	0.31	82.3
Arsenic	**16**	139	13	0.965	391
Barium	**350**	139	9	14.2	1210
Beryllium	14	139	0	0.26	6.27
Cadmium	**2.5**	139	15	0.14	92.7
Calcium	NS	139	NS	2710	323000
Chromium	**36**	139	25	4.39	3710
Cobalt	NS	139	NS	1.2	49.7
Copper	**270**	139	13	3.81	4860
Iron	NS	139	NS	3880	308000
Lead	**400**	139	24	1.51	7100
Magnesium	NS	139	NS	861	39300
Manganese	**2,000**	139	19	26.2	31800
Nickel	**140**	139	11	2.9	738
Potassium	NS	139	NS	176	4810
Selenium	36	139	0	0.24	35.2
Silver	36	139	0	0.1	9
Sodium	NS	139	NS	7.3	914
Thallium	NS	139	NS	0.43	12
Vanadium	NS	139	NS	5.49	460
Zinc	**2,200**	139	6	4.3	11100
Mercury	**0.81**	139	13	0.00838	6.4
Cyanide	27	41	0	2.6	2.6
PCBs, mg/kg					
Aroclor 1016	1	129	0	ND	ND
Aroclor 1221	1	129	0	ND	ND
Aroclor 1232	1	129	0	ND	ND
Aroclor 1242	1	129	0	0.132	0.132
Aroclor 1248	1	129	0	0.013	0.335
Aroclor 1254	**1**	129	2	0.0081	4.03
Aroclor 1260	1	129	0	0.014	0.17
Aroclor 1262	1	101	0	ND	ND
Aroclor 1268	1	101	0	ND	ND
Semivolatiles, mg/kg					
1,2,4,5-Tetrachlorobenzene	NS	98	NS	ND	ND
1,2,4-Trichlorobenzene	NS	98	NS	ND	ND
1,2-Dichlorobenzene	NS	98	NS	ND	ND
1,3-Dichlorobenzene	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	98	NS	ND	ND
2,2-Oxybis(2-chloropropane)	NS	98	NS	ND	ND
2,3,4,6-Tetrachlorophenol	NS	98	NS	ND	ND
2,4,5-Trichlorophenol	NS	110	NS	ND	ND
2,4,6-Trichlorophenol	NS	110	NS	ND	ND
2,4-Dichlorophenol	NS	110	NS	ND	ND
2,4-Dimethylphenol	NS	110	NS	ND	ND
2,4-Dinitrophenol	NS	110	NS	ND	ND
2,4-Dinitrotoluene	NS	110	NS	ND	ND
2,6-Dinitrotoluene	NS	110	NS	ND	ND
2-Chloronaphthalene	NS	110	NS	ND	ND
2-Chlorophenol	NS	110	NS	ND	ND
2-Methylnaphthalene	NS	122	NS	0.034	4.46
2-Nitroaniline	NS	110	NS	ND	ND
2-Nitrophenol	NS	110	NS	ND	ND
3-3'-Dichlorobenzidine	NS	110	NS	ND	ND
3-Nitroaniline	NS	110	NS	ND	ND
4-Bromophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Chloro-3-Methylphenol	NS	110	NS	ND	ND
4-Chlorophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Nitrophenol	NS	110	NS	ND	ND
Acenaphthene	100	126	0	0.12	3.4
Acenaphthylene	100	126	0	0.038	0.898
Acetophenone	NS	98	NS	ND	ND
Anthracene	100	126	0	0.11	9.1
Atrazine	NS	98	NS	ND	ND
Benz(a)anthracene	**1**	126	22	0.17	31

Analyte	NY375 3RRES	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Benzaldehyde	NS	98	NS	ND	ND
Benzo(a)pyrene	**1**	126	20	0.166	47
Naphthalene	100	28	0	0.09	2.6
Benzo(b)fluoranthene	**1**	126	20	0.195	72
Benzo(g,h,i)perylene	100	126	0	0.13	55
Benzo(k)fluoranthene	**1**	126	15	0.097	25
Benzyl Butyl Phthalate	NS	110	NS	0.311	0.311
Biphenyl	NS	98	NS	ND	ND
Bis(2-Chloroethoxy)Methane	NS	110	NS	ND	ND
2,2-Oxybis(1-chloropropane)	NS	12	NS	ND	ND
Bis(2-ethylhexyl)phthalate	NS	110	NS	0.161	1.54
Caprolactam	NS	98	NS	ND	ND
Carbazole	NS	110	NS	0.169	3.52
Chrysene	**1**	126	23	0.177	44
Dibenz(a,h)anthracene	**0.33**	126	17	0.13	14
Dibenzofuran	14	110	0	0.18	2.49
Dibutyl Phthalate	NS	110	NS	ND	ND
Dichloroethyl ether	NS	110	NS	ND	ND
1,2,4-Trimethylbenzene	47	83	0	0.00163	0.884
Diethyl Phthalate	NS	110	NS	ND	ND
1,2-Dichlorobenzene	NS	12	NS	ND	ND
Dimethyl Phthalate	NS	110	NS	ND	ND
1,3-Dichlorobenzene	NS	12	NS	ND	ND
Dinitro-o-cresol	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	110	NS	ND	ND
1,4-Dichlorobenzene	9.8	83	0	ND	ND
Di-N-Octyl Phthalate	NS	110	NS	ND	ND
1,2,4-Trichlorobenzene	NS	12	NS	ND	ND
4-Nitroaniline	NS	12	NS	ND	ND
Isobutanol	NS	12	NS	ND	ND
Fluoranthene	100	126	0	0.1	42
Fluorene	100	126	0	0.11	3.8
Hexachlorobenzene	0.33	110	0	ND	ND
Hexachlorobutadiene	NS	110	NS	ND	ND
Hexachlorocyclopentadiene	NS	110	NS	ND	ND
Hexachloroethane	NS	110	NS	ND	ND
Indeno(1,2,3-cd)pyrene	**0.5**	126	20	0.15	58
Isophorone	NS	98	NS	ND	ND
m-Cresol	100	98	0	ND	ND
Naphthalene	100	98	0	0.182	1.29
N-Nitrosodi-N-Propylamine	NS	110	NS	ND	ND
N-Nitrosodiphenylamine	NS	110	NS	ND	ND
o-Cresol	100	110	0	ND	ND
p-Chloroaniline	NS	110	NS	ND	ND
Pentachlorophenol	2.4	110	0	ND	ND
Phenanthrene	100	126	0	0.074	41
Phenol	100	110	0	ND	ND
p-Nitroaniline	NS	98	NS	ND	ND
Pyrene	100	126	0	0.085	36
Volatiles, mg/kg					
1,1,1-Trichloroethane	100	96	0	ND	ND
1,1,2,2-Tetrachloroethane	NS	96	NS	ND	ND
1,1,2-Trichloroethane	NS	96	NS	ND	ND
1,1-Dichloroethane	19	96	0	ND	ND
1,1-Dichloroethene	100	96	0	ND	ND
1,2,3-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trimethylbenzene	47	83	0	0.00163	0.884
1,2-Dibrom-3-Chloropropane	NS	83	NS	ND	ND
1,2-Dichlorobenzene	100	83	0	ND	ND
1,2-Dichloroethane	2.3	96	0	ND	ND
1,2-Dichloropropane	NS	96	NS	ND	ND
1,3,5-Trimethylbenzene	47	83	0	0.00238	0.0879
1,3-Dichlorobenzene	17	83	0	ND	ND
1,4-Dichlorobenzene	9.8	83	0	ND	ND
1,4-Dioxane	9.8	83	0	ND	ND
2-Butanone	100	96	0	0.0297	0.0914
2-Hexanone	NS	96	NS	ND	ND
4-Isopropyltoluene	NS	83	NS	0.0527	0.0527
4-Methyl-2-pentanone	NS	96	NS	ND	ND
Acetone	100	98	0	0.01	0.323
Benzene	2.9	96	0	0.00375	0.00375
Bromodichloromethane	NS	96	NS	ND	ND
Bromoform	NS	96	NS	ND	ND

Analyte	NY375 3RRES	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Carbon Disulfide	NS	98	NS	0.00261	0.0072
Carbon Tetrachloride	1.4	96	0	ND	ND
Chlorobenzene	100	98	0	0.0028	0.0039
Chlorobromomethane	NS	83	NS	ND	ND
Chloroethane	NS	96	NS	ND	ND
Chloroform	10	96	0	ND	ND
cis-1,2-Dichloroethene	59	96	0	ND	ND
cis-1,3-Dichloropropene	NS	96	NS	ND	ND
Cyclohexane	NS	83	NS	ND	ND
Dibromochloromethane	NS	96	NS	ND	ND
Ethylbenzene	30	98	0	0.00292	0.00815
Ethylene dibromide	NS	83	NS	ND	ND
Freon 11	NS	83	NS	ND	ND
Freon 113	NS	83	NS	ND	ND
Freon 12	NS	83	NS	ND	ND
Isopropylbenzene (Cumene)	NS	83	NS	0.00311	0.0338
m,p-Xylenes	100	83	0	0.00197	0.0351
Methyl acetate	NS	83	NS	ND	ND
Methyl bromide	NS	96	NS	ND	ND
Methyl chloride	NS	96	NS	ND	ND
Methyl tert-butyl ether	62	83	0	ND	ND
Methylcyclohexane	NS	83	NS	0.00219	0.135
Methylene chloride	51	98	0	0.005	0.0283
Naphthalene	100	85	0	0.00636	1.06
n-Butylbenzene	100	83	0	0.00949	0.149
n-Propylbenzene	100	83	0	0.00533	0.0664
o-Xylene	100	83	0	0.00196	0.00453
sec-Butylbenzene	100	83	0	0.00421	0.0555
Styrene	NS	96	NS	0.0168	0.0168
tert-Butylbenzene	100	83	0	ND	ND
Tetrachloroethene	5.5	96	0	0.00245	0.0241
Toluene	100	98	0	0.0019	0.00438
trans-1,2-Dichloroethene	100	96	0	ND	ND
trans-1,3-Dichloropropene	NS	96	NS	ND	ND
Trichloroethene	10	96	0	ND	ND
Vinyl chloride	0.21	96	0	ND	ND
Xylenes (total)	100	15	0	0.005	0.018

NS = No Soil Cleanup Objective
ND = Not Detected

Table 13
Soil Data Remedial Assessment Summary - Restricted Residential
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	Restricted Residential	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Metals, mg/kg					
Aluminum	NS	139	NS	1430	32500
Antimony	NS	139	NS	0.31	82.3
Arsenic	**16**	139	13	0.965	391
Barium	**400**	139	7	14.2	1210
Beryllium	72	139	0	0.26	6.27
Cadmium	**4.3**	139	13	0.14	92.7
Calcium	NS	139	NS	2710	323000
Chromium	**180**	139	19	4.39	3710
Cobalt	NS	139	NS	1.2	49.7
Copper	**270**	139	13	3.81	4860
Iron	NS	139	NS	3880	308000
Lead	**400**	139	24	1.51	7100
Magnesium	NS	139	NS	861	39300
Manganese	**2,000**	139	19	26.2	31800
Nickel	**310**	139	5	2.9	738
Potassium	NS	139	NS	176	4810
Selenium	180	139	0	0.24	35.2
Silver	180	139	0	0.1	9
Sodium	NS	139	NS	7.3	914
Thallium	NS	139	NS	0.43	12
Vanadium	NS	139	NS	5.49	460
Zinc	**10,000**	139	1	4.3	11100
Mercury	**0.81**	139	13	0.00838	6.4
Cyanide	27	41	0	2.6	2.6
PCBs, mg/kg					
Aroclor 1016	1	129	0	ND	ND
Aroclor 1221	1	129	0	ND	ND
Aroclor 1232	1	129	0	ND	ND
Aroclor 1242	1	129	0	0.132	0.132
Aroclor 1248	1	129	0	0.013	0.335
Aroclor 1254	**1**	129	2	0.0081	4.03
Aroclor 1260	1	129	0	0.014	0.17
Aroclor 1262	1	101	0	ND	ND
Aroclor 1268	1	101	0	ND	ND
Semivolatiles, mg/kg					
1,2,4,5-Tetrachlorobenzene	NS	98	NS	ND	ND
1,2,4-Trichlorobenzene	NS	98	NS	ND	ND
1,2-Dichlorobenzene	NS	98	NS	ND	ND
1,3-Dichlorobenzene	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	98	NS	ND	ND
2,2-Oxybis(2-chloropropane)	NS	98	NS	ND	ND
2,3,4,6-Tetrachlorophenol	NS	98	NS	ND	ND
2,4,5-Trichlorophenol	NS	110	NS	ND	ND
2,4,6-Trichlorophenol	NS	110	NS	ND	ND
2,4-Dichlorophenol	NS	110	NS	ND	ND
2,4-Dimethylphenol	NS	110	NS	ND	ND
2,4-Dinitrophenol	NS	110	NS	ND	ND
2,4-Dinitrotoluene	NS	110	NS	ND	ND
2,6-Dinitrotoluene	NS	110	NS	ND	ND
2-Chloronaphthalene	NS	110	NS	ND	ND
2-Chlorophenol	NS	110	NS	ND	ND
2-Methylnaphthalene	NS	122	NS	0.034	4.46
2-Nitroaniline	NS	110	NS	ND	ND
2-Nitrophenol	NS	110	NS	ND	ND
3-3'-Dichlorobenzidine	NS	110	NS	ND	ND
3-Nitroaniline	NS	110	NS	ND	ND
4-Bromophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Chloro-3-Methylphenol	NS	110	NS	ND	ND
4-Chlorophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Nitrophenol	NS	110	NS	ND	ND
Acenaphthene	100	126	0	0.12	3.4
Acenaphthylene	100	126	0	0.038	0.898
Acetophenone	NS	98	NS	ND	ND
Anthracene	100	126	0	0.11	9.1
Atrazine	NS	98	NS	ND	ND
Benz(a)anthracene	**1**	126	22	0.17	31

Analyte	Restricted Residential	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Benzaldehyde	NS	98	NS	ND	ND
Benzo(a)pyrene	**1**	126	20	0.166	47
Naphthalene	100	28	0	0.09	2.6
Benzo(b)fluoranthene	**1**	126	20	0.195	72
Benzo(g,h,i)perylene	100	126	0	0.13	55
Benzo(k)fluoranthene	**3.9**	126	5	0.097	25
Benzyl Butyl Phthalate	NS	110	NS	0.311	0.311
Biphenyl	NS	98	NS	ND	ND
Bis(2-Chloroethoxy)Methane	NS	110	NS	ND	ND
2,2-Oxybis(1-chloropropane)	NS	12	NS	ND	ND
Bis(2-ethylhexyl)phthalate	NS	110	NS	0.161	1.54
Caprolactam	NS	98	NS	ND	ND
Carbazole	NS	110	NS	0.169	3.52
Chrysene	**3.9**	126	8	0.177	44
Dibenz(a,h)anthracene	**0.33**	126	17	0.13	14
Dibenzofuran	59	110	0	0.18	2.49
Dibutyl Phthalate	NS	110	NS	ND	ND
Dichloroethyl ether	NS	110	NS	ND	ND
1,2,4-Trimethylbenzene	52	83	0	0.00163	0.884
Diethyl Phthalate	NS	110	NS	ND	ND
1,2-Dichlorobenzene	NS	12	NS	ND	ND
Dimethyl Phthalate	NS	110	NS	ND	ND
1,3-Dichlorobenzene	NS	12	NS	ND	ND
Dinitro-o-cresol	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	110	NS	ND	ND
1,4-Dichlorobenzene	13	83	0	ND	ND
Di-N-Octyl Phthalate	NS	110	NS	ND	ND
1,2,4-Trichlorobenzene	NS	12	NS	ND	ND
4-Nitroaniline	NS	12	NS	ND	ND
Isobutanol	NS	12	NS	ND	ND
Fluoranthene	100	126	0	0.1	42
Fluorene	100	126	0	0.11	3.8
Hexachlorobenzene	1.2	110	0	ND	ND
Hexachlorobutadiene	NS	110	NS	ND	ND
Hexachlorocyclopentadiene	NS	110	NS	ND	ND
Hexachloroethane	NS	110	NS	ND	ND
Indeno(1,2,3-cd)pyrene	**0.5**	126	20	0.15	58
Isophorone	NS	98	NS	ND	ND
m-Cresol	100	98	0	ND	ND
Naphthalene	100	98	0	0.182	1.29
N-Nitrosodi-N-Propylamine	NS	110	NS	ND	ND
N-Nitrosodiphenylamine	NS	110	NS	ND	ND
o-Cresol	100	110	0	ND	ND
p-Chloroaniline	NS	110	NS	ND	ND
Pentachlorophenol	6.7	110	0	ND	ND
Phenanthrene	100	126	0	0.074	41
Phenol	100	110	0	ND	ND
p-Nitroaniline	NS	98	NS	ND	ND
Pyrene	100	126	0	0.085	36
Volatiles, mg/kg					
1,1,1-Trichloroethane	100	96	0	ND	ND
1,1,2,2-Tetrachloroethane	NS	96	NS	ND	ND
1,1,2-Trichloroethane	NS	96	NS	ND	ND
1,1-Dichloroethane	26	96	0	ND	ND
1,1-Dichloroethene	100	96	0	ND	ND
1,2,3-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trimethylbenzene	52	83	0	0.00163	0.884
1,2-Dibrom-3-Chloropropane	NS	83	NS	ND	ND
1,2-Dichlorobenzene	100	83	0	ND	ND
1,2-Dichloroethane	3.1	96	0	ND	ND
1,2-Dichloropropane	NS	96	NS	ND	ND
1,3,5-Trimethylbenzene	52	83	0	0.00238	0.0879
1,3-Dichlorobenzene	49	83	0	ND	ND
1,4-Dichlorobenzene	13	83	0	ND	ND
1,4-Dioxane	13	83	0	ND	ND
2-Butanone	100	96	0	0.0297	0.0914
2-Hexanone	NS	96	NS	ND	ND
4-Isopropyltoluene	NS	83	NS	0.0527	0.0527
4-Methyl-2-pentanone	NS	96	NS	ND	ND
Acetone	100	98	0	0.01	0.323
Benzene	4.8	96	0	0.00375	0.00375
Bromodichloromethane	NS	96	NS	ND	ND
Bromoform	NS	96	NS	ND	ND

Analyte	Restricted Residential	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Carbon Disulfide	NS	98	NS	0.00261	0.0072
Carbon Tetrachloride	2.4	96	0	ND	ND
Chlorobenzene	100	98	0	0.0028	0.0039
Chlorobromomethane	NS	83	NS	ND	ND
Chloroethane	NS	96	NS	ND	ND
Chloroform	49	96	0	ND	ND
cis-1,2-Dichloroethene	100	96	0	ND	ND
cis-1,3-Dichloropropene	NS	96	NS	ND	ND
Cyclohexane	NS	83	NS	ND	ND
Dibromochloromethane	NS	96	NS	ND	ND
Ethylbenzene	41	98	0	0.00292	0.00815
Ethylene dibromide	NS	83	NS	ND	ND
Freon 11	NS	83	NS	ND	ND
Freon 113	NS	83	NS	ND	ND
Freon 12	NS	83	NS	ND	ND
Isopropylbenzene (Cumene)	NS	83	NS	0.00311	0.0338
m,p-Xylenes	100	83	0	0.00197	0.0351
Methyl acetate	NS	83	NS	ND	ND
Methyl bromide	NS	96	NS	ND	ND
Methyl chloride	NS	96	NS	ND	ND
Methyl tert-butyl ether	100	83	0	ND	ND
Methylcyclohexane	NS	83	NS	0.00219	0.135
Methylene chloride	100	98	0	0.005	0.0283
Naphthalene	100	85	0	0.00636	1.06
n-Butylbenzene	100	83	0	0.00949	0.149
n-Propylbenzene	100	83	0	0.00533	0.0664
o-Xylene	100	83	0	0.00196	0.00453
sec-Butylbenzene	100	83	0	0.00421	0.0555
Styrene	NS	96	NS	0.0168	0.0168
tert-Butylbenzene	100	83	0	ND	ND
Tetrachloroethene	19	96	0	0.00245	0.0241
Toluene	100	98	0	0.0019	0.00438
trans-1,2-Dichloroethene	100	96	0	ND	ND
trans-1,3-Dichloropropene	NS	96	NS	ND	ND
Trichloroethene	21	96	0	ND	ND
Vinyl chloride	0.9	96	0	ND	ND
Xylenes (total)	100	15	0	0.005	0.018

NS = No Soil Cleanup Objective
ND = Not Detected

Table 14
Soil Data Remedial Assessment Summary - Commercial
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	NY375 5RCOMM	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Metals, mg/kg					
Aluminum	NS	139	NS	1430	32500
Antimony	NS	139	NS	0.31	82.3
Arsenic	**16**	139	13	0.965	391
Barium	**400**	139	7	14.2	1210
Beryllium	590	139	0	0.26	6.27
Cadmium	**9.3**	139	11	0.14	92.7
Calcium	NS	139	NS	2710	323000
Chromium	**1,500**	139	1	4.39	3710
Cobalt	NS	139	NS	1.2	49.7
Copper	**270**	139	13	3.81	4860
Iron	NS	139	NS	3880	308000
Lead	**1,000**	139	9	1.51	7100
Magnesium	NS	139	NS	861	39300
Manganese	**10,000**	139	8	26.2	31800
Nickel	**310**	139	5	2.9	738
Potassium	NS	139	NS	176	4810
Selenium	1,500	139	0	0.24	35.2
Silver	1,500	139	0	0.1	9
Sodium	NS	139	NS	7.3	914
Thallium	NS	139	NS	0.43	12
Vanadium	NS	139	NS	5.49	460
Zinc	**10,000**	139	1	4.3	11100
Mercury	**2.8**	139	2	0.00838	6.4
Cyanide	27	41	0	2.6	2.6
PCBs, mg/kg					
Aroclor 1016	1	129	0	ND	ND
Aroclor 1221	1	129	0	ND	ND
Aroclor 1232	1	129	0	ND	ND
Aroclor 1242	1	129	0	0.132	0.132
Aroclor 1248	1	129	0	0.013	0.335
Aroclor 1254	**1**	129	2	0.0081	4.03
Aroclor 1260	1	129	0	0.014	0.17
Aroclor 1262	1	101	0	ND	ND
Aroclor 1268	1	101	0	ND	ND
Semivolatiles, mg/kg					
1,2,4,5-Tetrachlorobenzene	NS	98	NS	ND	ND
1,2,4-Trichlorobenzene	NS	98	NS	ND	ND
1,2-Dichlorobenzene	NS	98	NS	ND	ND
1,3-Dichlorobenzene	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	98	NS	ND	ND
2,2-Oxybis(2-chloropropane)	NS	98	NS	ND	ND
2,3,4,6-Tetrachlorophenol	NS	98	NS	ND	ND
2,4,5-Trichlorophenol	NS	110	NS	ND	ND
2,4,6-Trichlorophenol	NS	110	NS	ND	ND
2,4-Dichlorophenol	NS	110	NS	ND	ND
2,4-Dimethylphenol	NS	110	NS	ND	ND
2,4-Dinitrophenol	NS	110	NS	ND	ND
2,4-Dinitrotoluene	NS	110	NS	ND	ND
2,6-Dinitrotoluene	NS	110	NS	ND	ND
2-Chloronaphthalene	NS	110	NS	ND	ND
2-Chlorophenol	NS	110	NS	ND	ND
2-Methylnaphthalene	NS	122	NS	0.034	4.46
2-Nitroaniline	NS	110	NS	ND	ND
2-Nitrophenol	NS	110	NS	ND	ND
3-3'-Dichlorobenzidine	NS	110	NS	ND	ND
3-Nitroaniline	NS	110	NS	ND	ND
4-Bromophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Chloro-3-Methylphenol	NS	110	NS	ND	ND
4-Chlorophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Nitrophenol	NS	110	NS	ND	ND
Acenaphthene	500	126	0	0.12	3.4
Acenaphthylene	500	126	0	0.038	0.898
Acetophenone	NS	98	NS	ND	ND
Anthracene	500	126	0	0.11	9.1
Atrazine	NS	98	NS	ND	ND
Benz(a)anthracene	**5.6**	126	5	0.17	31

Analyte	NY375 5RCOMM	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Benzaldehyde	NS	98	NS	ND	ND
Benzo(a)pyrene	**1**	126	20	0.166	47
Naphthalene	500	28	0	0.09	2.6
Benzo(b)fluoranthene	**5.6**	126	6	0.195	72
Benzo(g,h,i)perylene	500	126	0	0.13	55
Benzo(k)fluoranthene	56	126	0	0.097	25
Benzyl Butyl Phthalate	NS	110	NS	0.311	0.311
Biphenyl	NS	98	NS	ND	ND
Bis(2-Chloroethoxy)Methane	NS	110	NS	ND	ND
2,2-Oxybis(1-chloropropane)	NS	12	NS	ND	ND
Bis(2-ethylhexyl)phthalate	NS	110	NS	0.161	1.54
Caprolactam	NS	98	NS	ND	ND
Carbazole	NS	110	NS	0.169	3.52
Chrysene	56	126	0	0.177	44
Dibenz(a,h)anthracene	**0.56**	126	10	0.13	14
Dibenzofuran	350	110	0	0.18	2.49
Dibutyl Phthalate	NS	110	NS	ND	ND
Dichloroethyl ether	NS	110	NS	ND	ND
1,2,4-Trimethylbenzene	190	83	0	0.00163	0.884
Diethyl Phthalate	NS	110	NS	ND	ND
1,2-Dichlorobenzene	NS	12	NS	ND	ND
Dimethyl Phthalate	NS	110	NS	ND	ND
1,3-Dichlorobenzene	NS	12	NS	ND	ND
Dinitro-o-cresol	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	110	NS	ND	ND
1,4-Dichlorobenzene	130	83	0	ND	ND
Di-N-Octyl Phthalate	NS	110	NS	ND	ND
1,2,4-Trichlorobenzene	NS	12	NS	ND	ND
4-Nitroaniline	NS	12	NS	ND	ND
Isobutanol	NS	12	NS	ND	ND
Fluoranthene	500	126	0	0.1	42
Fluorene	500	126	0	0.11	3.8
Hexachlorobenzene	6	110	0	ND	ND
Hexachlorobutadiene	NS	110	NS	ND	ND
Hexachlorocyclopentadiene	NS	110	NS	ND	ND
Hexachloroethane	NS	110	NS	ND	ND
Indeno(1,2,3-cd)pyrene	**5.6**	126	5	0.15	58
Isophorone	NS	98	NS	ND	ND
m-Cresol	500	98	0	ND	ND
Naphthalene	500	98	0	0.182	1.29
N-Nitrosodi-N-Propylamine	NS	110	NS	ND	ND
N-Nitrosodiphenylamine	NS	110	NS	ND	ND
o-Cresol	500	110	0	ND	ND
p-Chloroaniline	NS	110	NS	ND	ND
Pentachlorophenol	6.7	110	0	ND	ND
Phenanthrene	500	126	0	0.074	41
Phenol	500	110	0	ND	ND
p-Nitroaniline	NS	98	NS	ND	ND
Pyrene	500	126	0	0.085	36
Volatiles, mg/kg					
1,1,1-Trichloroethane	500	96	0	ND	ND
1,1,2,2-Tetrachloroethane	NS	96	NS	ND	ND
1,1,2-Trichloroethane	NS	96	NS	ND	ND
1,1-Dichloroethane	240	96	0	ND	ND
1,1-Dichloroethene	500	96	0	ND	ND
1,2,3-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trimethylbenzene	190	83	0	0.00163	0.884
1,2-Dibrom-3-Chloropropane	NS	83	NS	ND	ND
1,2-Dichlorobenzene	500	83	0	ND	ND
1,2-Dichloroethane	30	96	0	ND	ND
1,2-Dichloropropane	NS	96	NS	ND	ND
1,3,5-Trimethylbenzene	190	83	0	0.00238	0.0879
1,3-Dichlorobenzene	280	83	0	ND	ND
1,4-Dichlorobenzene	130	83	0	ND	ND
1,4-Dioxane	130	83	0	ND	ND
2-Butanone	500	96	0	0.0297	0.0914
2-Hexanone	NS	96	NS	ND	ND
4-Isopropyltoluene	NS	83	NS	0.0527	0.0527
4-Methyl-2-pentanone	NS	96	NS	ND	ND
Acetone	500	98	0	0.01	0.323
Benzene	44	96	0	0.00375	0.00375
Bromodichloromethane	NS	96	NS	ND	ND
Bromoform	NS	96	NS	ND	ND

Analyte	NY375 5RCOMM	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Carbon Disulfide	NS	98	NS	0.00261	0.0072
Carbon Tetrachloride	22	96	0	ND	ND
Chlorobenzene	500	98	0	0.0028	0.0039
Chlorobromomethane	NS	83	NS	ND	ND
Chloroethane	NS	96	NS	ND	ND
Chloroform	350	96	0	ND	ND
cis-1,2-Dichloroethene	500	96	0	ND	ND
cis-1,3-Dichloropropene	NS	96	NS	ND	ND
Cyclohexane	NS	83	NS	ND	ND
Dibromochloromethane	NS	96	NS	ND	ND
Ethylbenzene	390	98	0	0.00292	0.00815
Ethylene dibromide	NS	83	NS	ND	ND
Freon 11	NS	83	NS	ND	ND
Freon 113	NS	83	NS	ND	ND
Freon 12	NS	83	NS	ND	ND
Isopropylbenzene (Cumene)	NS	83	NS	0.00311	0.0338
m,p-Xylenes	500	83	0	0.00197	0.0351
Methyl acetate	NS	83	NS	ND	ND
Methyl bromide	NS	96	NS	ND	ND
Methyl chloride	NS	96	NS	ND	ND
Methyl tert-butyl ether	500	83	0	ND	ND
Methylcyclohexane	NS	83	NS	0.00219	0.135
Methylene chloride	500	98	0	0.005	0.0283
Naphthalene	500	85	0	0.00636	1.06
n-Butylbenzene	500	83	0	0.00949	0.149
n-Propylbenzene	500	83	0	0.00533	0.0664
o-Xylene	500	83	0	0.00196	0.00453
sec-Butylbenzene	500	83	0	0.00421	0.0555
Styrene	NS	96	NS	0.0168	0.0168
tert-Butylbenzene	500	83	0	ND	ND
Tetrachloroethene	150	96	0	0.00245	0.0241
Toluene	500	98	0	0.0019	0.00438
trans-1,2-Dichloroethene	500	96	0	ND	ND
trans-1,3-Dichloropropene	NS	96	NS	ND	ND
Trichloroethene	200	96	0	ND	ND
Vinyl chloride	13	96	0	ND	ND
Xylenes (total)	500	15	0	0.005	0.018

NS = No Soil Cleanup Objective
ND = Not Detected

Table 15
Soil Data Remedial Assessment Summary - Industrial
Former Buffalo Forge Property
NYSDEC BCP Site Number C915280

Analyte	NY375 6RINDU	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Metals, mg/kg					
Aluminum	NS	139	NS	1430	32500
Antimony	NS	139	NS	0.31	82.3
Arsenic	**16**	139	13	0.965	391
Barium	10,000	139	0	14.2	1210
Beryllium	2,700	139	0	0.26	6.27
Cadmium	**60**	139	1	0.14	92.7
Calcium	NS	139	NS	2710	323000
Chromium	6,800	139	0	4.39	3710
Cobalt	NS	139	NS	1.2	49.7
Copper	10,000	139	0	3.81	4860
Iron	NS	139	NS	3880	308000
Lead	**3,900**	139	2	1.51	7100
Magnesium	NS	139	NS	861	39300
Manganese	**10,000**	139	8	26.2	31800
Nickel	10,000	139	0	2.9	738
Potassium	NS	139	NS	176	4810
Selenium	6,800	139	0	0.24	35.2
Silver	6,800	139	0	0.1	9
Sodium	NS	139	NS	7.3	914
Thallium	NS	139	NS	0.43	12
Vanadium	NS	139	NS	5.49	460
Zinc	**10,000**	139	1	4.3	11100
Mercury	**5.7**	139	1	0.00838	6.4
Cyanide	10,000	41	0	2.6	2.6
PCBs, mg/kg					
Aroclor 1016	25	129	0	ND	ND
Aroclor 1221	25	129	0	ND	ND
Aroclor 1232	25	129	0	ND	ND
Aroclor 1242	25	129	0	0.132	0.132
Aroclor 1248	25	129	0	0.013	0.335
Aroclor 1254	25	129	0	0.0081	4.03
Aroclor 1260	25	129	0	0.014	0.17
Aroclor 1262	25	101	0	ND	ND
Aroclor 1268	25	101	0	ND	ND
Semivolatiles, mg/kg					
1,2,4,5-Tetrachlorobenzene	NS	98	NS	ND	ND
1,2,4-Trichlorobenzene	NS	98	NS	ND	ND
1,2-Dichlorobenzene	NS	98	NS	ND	ND
1,3-Dichlorobenzene	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	98	NS	ND	ND
2,2-Oxybis(2-chloropropane)	NS	98	NS	ND	ND
2,3,4,6-Tetrachlorophenol	NS	98	NS	ND	ND
2,4,5-Trichlorophenol	NS	110	NS	ND	ND
2,4,6-Trichlorophenol	NS	110	NS	ND	ND
2,4-Dichlorophenol	NS	110	NS	ND	ND
2,4-Dimethylphenol	NS	110	NS	ND	ND
2,4-Dinitrophenol	NS	110	NS	ND	ND
2,4-Dinitrotoluene	NS	110	NS	ND	ND
2,6-Dinitrotoluene	NS	110	NS	ND	ND
2-Chloronaphthalene	NS	110	NS	ND	ND
2-Chlorophenol	NS	110	NS	ND	ND
2-Methylnaphthalene	NS	122	NS	0.034	4.46
2-Nitroaniline	NS	110	NS	ND	ND
2-Nitrophenol	NS	110	NS	ND	ND
3-3'-Dichlorobenzidine	NS	110	NS	ND	ND
3-Nitroaniline	NS	110	NS	ND	ND
4-Bromophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Chloro-3-Methylphenol	NS	110	NS	ND	ND
4-Chlorophenyl Phenyl Ether	NS	110	NS	ND	ND
4-Nitrophenol	NS	110	NS	ND	ND
Acenaphthene	1,000	126	0	0.12	3.4
Acenaphthylene	1,000	126	0	0.038	0.898
Acetophenone	NS	98	NS	ND	ND
Anthracene	1,000	126	0	0.11	9.1
Atrazine	NS	98	NS	ND	ND
Benz(a)anthracene	**11**	126	3	0.17	31

Analyte	NY375 6RINDU	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Benzaldehyde	NS	98	NS	ND	ND
Benzo(a)pyrene	**1.1**	126	19	0.166	47
Naphthalene	1,000	28	0	0.09	2.6
Benzo(b)fluoranthene	**11**	126	5	0.195	72
Benzo(g,h,i)perylene	1,000	126	0	0.13	55
Benzo(k)fluoranthene	110	126	0	0.097	25
Benzyl Butyl Phthalate	NS	110	NS	0.311	0.311
Biphenyl	NS	98	NS	ND	ND
Bis(2-Chloroethoxy)Methane	NS	110	NS	ND	ND
2,2-Oxybis(1-chloropropane)	NS	12	NS	ND	ND
Bis(2-ethylhexyl)phthalate	NS	110	NS	0.161	1.54
Caprolactam	NS	98	NS	ND	ND
Carbazole	NS	110	NS	0.169	3.52
Chrysene	110	126	0	0.177	44
Dibenz(a,h)anthracene	**1.1**	126	6	0.13	14
Dibenzofuran	1,000	110	0	0.18	2.49
Dibutyl Phthalate	NS	110	NS	ND	ND
Dichloroethyl ether	NS	110	NS	ND	ND
1,2,4-Trimethylbenzene	380	83	0	0.00163	0.884
Diethyl Phthalate	NS	110	NS	ND	ND
1,2-Dichlorobenzene	NS	12	NS	ND	ND
Dimethyl Phthalate	NS	110	NS	ND	ND
1,3-Dichlorobenzene	NS	12	NS	ND	ND
Dinitro-o-cresol	NS	98	NS	ND	ND
1,4-Dichlorobenzene	NS	110	NS	ND	ND
1,4-Dichlorobenzene	250	83	0	ND	ND
Di-N-Octyl Phthalate	NS	110	NS	ND	ND
1,2,4-Trichlorobenzene	NS	12	NS	ND	ND
4-Nitroaniline	NS	12	NS	ND	ND
Isobutanol	NS	12	NS	ND	ND
Fluoranthene	1,000	126	0	0.1	42
Fluorene	1,000	126	0	0.11	3.8
Hexachlorobenzene	12	110	0	ND	ND
Hexachlorobutadiene	NS	110	NS	ND	ND
Hexachlorocyclopentadiene	NS	110	NS	ND	ND
Hexachloroethane	NS	110	NS	ND	ND
Indeno(1,2,3-cd)pyrene	**11**	126	3	0.15	58
Isophorone	NS	98	NS	ND	ND
m-Cresol	1,000	98	0	ND	ND
Naphthalene	1,000	98	0	0.182	1.29
N-Nitrosodi-N-Propylamine	NS	110	NS	ND	ND
N-Nitrosodiphenylamine	NS	110	NS	ND	ND
o-Cresol	1,000	110	0	ND	ND
p-Chloroaniline	NS	110	NS	ND	ND
Pentachlorophenol	55	110	0	ND	ND
Phenanthrene	1,000	126	0	0.074	41
Phenol	1,000	110	0	ND	ND
p-Nitroaniline	NS	98	NS	ND	ND
Pyrene	1,000	126	0	0.085	36
Volatiles, mg/kg					
1,1,1-Trichloroethane	1,000	96	0	ND	ND
1,1,2,2-Tetrachloroethane	NS	96	NS	ND	ND
1,1,2-Trichloroethane	NS	96	NS	ND	ND
1,1-Dichloroethane	480	96	0	ND	ND
1,1-Dichloroethene	1,000	96	0	ND	ND
1,2,3-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trichlorobenzene	NS	83	NS	ND	ND
1,2,4-Trimethylbenzene	380	83	0	0.00163	0.884
1,2-Dibrom-3-Chloropropane	NS	83	NS	ND	ND
1,2-Dichlorobenzene	1,000	83	0	ND	ND
1,2-Dichloroethane	60	96	0	ND	ND
1,2-Dichloropropane	NS	96	NS	ND	ND
1,3,5-Trimethylbenzene	380	83	0	0.00238	0.0879
1,3-Dichlorobenzene	560	83	0	ND	ND
1,4-Dichlorobenzene	250	83	0	ND	ND
1,4-Dioxane	250	83	0	ND	ND
2-Butanone	1,000	96	0	0.0297	0.0914
2-Hexanone	NS	96	NS	ND	ND
4-Isopropyltoluene	NS	83	NS	0.0527	0.0527
4-Methyl-2-pentanone	NS	96	NS	ND	ND
Acetone	1,000	98	0	0.01	0.323
Benzene	89	96	0	0.00375	0.00375
Bromodichloromethane	NS	96	NS	ND	ND
Bromoform	NS	96	NS	ND	ND

Analyte	NY375 6RINDU	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Carbon Disulfide	NS	98	NS	0.00261	0.0072
Carbon Tetrachloride	44	96	0	ND	ND
Chlorobenzene	1,000	98	0	0.0028	0.0039
Chlorobromomethane	NS	83	NS	ND	ND
Chloroethane	NS	96	NS	ND	ND
Chloroform	700	96	0	ND	ND
cis-1,2-Dichloroethene	1,000	96	0	ND	ND
cis-1,3-Dichloropropene	NS	96	NS	ND	ND
Cyclohexane	NS	83	NS	ND	ND
Dibromochloromethane	NS	96	NS	ND	ND
Ethylbenzene	780	98	0	0.00292	0.00815
Ethylene dibromide	NS	83	NS	ND	ND
Freon 11	NS	83	NS	ND	ND
Freon 113	NS	83	NS	ND	ND
Freon 12	NS	83	NS	ND	ND
Isopropylbenzene (Cumene)	NS	83	NS	0.00311	0.0338
m,p-Xylenes	1,000	83	0	0.00197	0.0351
Methyl acetate	NS	83	NS	ND	ND
Methyl bromide	NS	96	NS	ND	ND
Methyl chloride	NS	96	NS	ND	ND
Methyl tert-butyl ether	1,000	83	0	ND	ND
Methylcyclohexane	NS	83	NS	0.00219	0.135
Methylene chloride	1,000	98	0	0.005	0.0283
Naphthalene	1,000	85	0	0.00636	1.06
n-Butylbenzene	1,000	83	0	0.00949	0.149
n-Propylbenzene	1,000	83	0	0.00533	0.0664
o-Xylene	1,000	83	0	0.00196	0.00453
sec-Butylbenzene	1,000	83	0	0.00421	0.0555
Styrene	NS	96	NS	0.0168	0.0168
tert-Butylbenzene	1,000	83	0	ND	ND
Tetrachloroethene	300	96	0	0.00245	0.0241
Toluene	1,000	98	0	0.0019	0.00438
trans-1,2-Dichloroethene	1,000	96	0	ND	ND
trans-1,3-Dichloropropene	NS	96	NS	ND	ND
Trichloroethene	400	96	0	ND	ND
Vinyl chloride	27	96	0	ND	ND
Xylenes (total)	1,000	15	0	0.005	0.018

NS = No Soil Cleanup Objective
ND = Not Detected

Table 16
Groundwater Data Remedial Assessment Summary
Former Buffalo Forge Facility
NYSDEC BCP Site Number C915280

Analyte	TOGS-1.1.1 Values	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Metals, µg/L					
Aluminum	NS	14	NS	356	21400
Antimony	**3**	14	2	0.55	4.5
Arsenic	25	14	0	5.74	6.16
Barium	1,000	14	0	56	252
Beryllium	3	14	0	ND	ND
Cadmium	5	14	0	3.9	3.9
Calcium	NS	14	NS	52400	326000
Chromium	50	14	0	4.4	47.3
Cobalt	NS	14	NS	0.4	7.4
Copper	200	14	0	3.4	49.2
Iron	**300**	14	12	107	21300
Lead	**25**	14	2	2.5	80.2
Magnesium	**35,000**	14	8	8630	116000
Manganese	**300**	14	3	20.7	831
Nickel	100	14	0	3.3	22.9
Potassium	NS	14	NS	3210	24100
Selenium	**10**	14	2	2.3	21.6
Silver	50	14	0	ND	ND
Sodium	**20,000**	14	13	9860	356000
Thallium	0.5	14	0	ND	ND
Vanadium	NS	14	NS	5.3	36.1
Zinc	2,000	14	0	35.2	293
Mercury	0.7	14	0	0.194	0.67
Cyanide	100	8	0	ND	ND
PCBs, µg/L					
Aroclor 1016	0.09	9	0	ND	ND
Aroclor 1221	0.09	9	0	ND	ND
Aroclor 1232	0.09	9	0	ND	ND
Aroclor 1242	0.09	9	0	ND	ND
Aroclor 1248	0.09	9	0	ND	ND
Aroclor 1254	0.09	9	0	ND	ND
Aroclor 1260	0.09	9	0	ND	ND
Aroclor 1262	0.09	5	0	ND	ND
Aroclor 1268	0.09	5	0	ND	ND
Semivolatiles, µg/L					
1,2,4,5-Tetrachlorobenzene	5	5	0	ND	ND
1,2,4-Trichlorobenzene	5	13	0	ND	ND
1,2-Dichlorobenzene	3	13	0	ND	ND
1,3-Dichlorobenzene	3	13	0	ND	ND
1,4-Dichlorobenzene	3	13	0	ND	ND
2,2-Oxybis(2-chloropropane)	NS	5	NS	ND	ND
2,3,4,6-Tetrachlorophenol	NS	5	NS	ND	ND
2,4,5-Trichlorophenol	NS	13	NS	ND	ND
2,4,6-Trichlorophenol	NS	13	NS	ND	ND
2,4-Dichlorophenol	1	13	0	ND	ND
2,4-Dimethylphenol	NS	13	NS	ND	ND
2,4-Dinitrophenol	NS	13	NS	ND	ND
2,4-Dinitrotoluene	NS	13	NS	ND	ND
2,6-Dinitrotoluene	5	13	0	ND	ND
2-Chloronaphthalene	10	13	0	ND	ND
2-Chlorophenol	NS	13	NS	ND	ND
2-Methylnaphthalene	NS	13	NS	ND	ND
2-Nitroaniline	NS	13	NS	ND	ND
2-Nitrophenol	NS	13	NS	ND	ND
3-3'-Dichlorobenzidine	NS	13	NS	ND	ND
3-Nitroaniline	NS	13	NS	ND	ND
4-Bromophenyl Phenyl Ether	NS	13	NS	ND	ND
4-Chloro-3-Methylphenol	NS	13	NS	ND	ND
4-Chlorophenyl Phenyl Ether	NS	13	NS	ND	ND
4-Nitrophenol	NS	13	NS	ND	ND
Acenaphthene	20	13	0	ND	ND
Acenaphthylene	NS	13	NS	ND	ND
Acetophenone	NS	5	NS	ND	ND
Anthracene	50	13	0	ND	ND
Atrazine	7.5	5	0	ND	ND
Benz(a)anthracene	0.002	13	0	ND	ND

Analyte	TOGS-1.1.1 Values	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
Benzaldehyde	NS	5	NS	ND	ND
Benzo(a)pyrene	NS	13	NS	ND	ND
Benzo(b)fluoranthene	0.002	13	0	ND	ND
Benzo(g,h,i)perylene	NS	13	NS	ND	ND
Benzo(k)fluoranthene	0.002	13	0	ND	ND
Benzyl Butyl Phthalate	50	13	0	ND	ND
Biphenyl	NS	5	NS	ND	ND
Bis(2-Chloroethoxy)Methane	NS	13	NS	ND	ND
2,2-Oxybis(1-chloropropane)	NS	8	NS	ND	ND
Bis(2-ethylhexyl)phthalate	50	13	0	ND	ND
Caprolactam	NS	5	NS	ND	ND
Carbazole	NS	13	NS	ND	ND
Chrysene	0.002	13	0	ND	ND
Dibenz(a,h)anthracene	NS	13	NS	ND	ND
Dibenzofuran	NS	13	NS	ND	ND
Dibutyl Phthalate	50	13	0	ND	ND
Dichloroethyl ether	1	13	0	ND	ND
Diethyl Phthalate	50	13	0	ND	ND
Dimethyl Phthalate	50	13	0	ND	ND
Dinitro-o-cresol	NS	13	NS	ND	ND
Di-N-Octyl Phthalate	50	13	0	ND	ND
Fluoranthene	50	13	0	ND	ND
Fluorene	50	13	0	ND	ND
Hexachlorobenzene	0.35	13	0	ND	ND
Hexachlorobutadiene	5	13	0	ND	ND
Hexachlorocyclopentadiene	5	13	0	ND	ND
Hexachloroethane	NS	13	NS	ND	ND
Indeno(1,2,3-cd)pyrene	0.002	13	0	ND	ND
Isophorone	50	13	0	ND	ND
m-Cresol	NS	5	NS	ND	ND
Naphthalene	10	13	0	ND	ND
Nitrobenzene	5	13	0	ND	ND
N-Nitrosodi-N-Propylamine	NS	13	NS	ND	ND
N-Nitrosodiphenylamine	50	13	0	ND	ND
o-Cresol	NS	13	NS	ND	ND
p-Chloroaniline	NS	13	NS	ND	ND
Pentachlorophenol	1	13	0	ND	ND
Phenanthrene	NS	13	NS	ND	ND
Phenol	NS	13	NS	ND	ND
p-Nitroaniline	NS	13	NS	ND	ND
Pyrene	50	13	0	ND	ND
3/4-Cresol	NS	8	NS	ND	ND
Volatiles, µg/L					
1,1,1-Trichloroethane	5	14	0	ND	ND
1,1,2,2-Tetrachloroethane	5	14	0	ND	ND
1,1,2-Trichloroethane	1	14	0	ND	ND
1,1-Dichloroethane	5	14	0	ND	ND
1,1-Dichloroethene	5	14	0	ND	ND
1,2,3-Trichlorobenzene	5	6	0	ND	ND
1,2,4-Trichlorobenzene	5	6	0	ND	ND
1,2,4-Trimethylbenzene	**5**	14	1	6.6	6.6
1,2-Dibrom-3-Chloropropane	0.04	6	0	ND	ND
1,2-Dichlorobenzene	3	6	0	ND	ND
1,2-Dichloroethane	0.6	14	0	ND	ND
1,2-Dichloropropane	1	14	0	ND	ND
1,3,5-Trimethylbenzene	5	14	0	ND	ND
1,3-Dichlorobenzene	3	6	0	ND	ND
1,4-Dichlorobenzene	3	6	0	ND	ND
1,4-Dioxane	NS	6	NS	ND	ND
2-Butanone	50	14	0	ND	ND
2-Hexanone	50	14	0	ND	ND
4-Isopropyltoluene	5	14	0	ND	ND
4-Methyl-2-pentanone	NS	14	NS	ND	ND
Acetone	50	14	0	ND	ND
Benzene	1	14	0	0.603	0.9
Bromodichloromethane	50	14	0	ND	ND
Bromoform	50	14	0	ND	ND
Carbon Disulfide	60	14	0	ND	ND
Carbon Tetrachloride	5	14	0	ND	ND
Chlorobenzene	5	14	0	ND	ND
Chlorobromomethane	5	6	0	ND	ND
Chloroethane	5	14	0	ND	ND
Chloroform	7	14	0	ND	ND
cis-1,2-Dichloroethene	5	14	0	ND	ND

Analyte	TOGS-1.1.1 Values	Total Number of Samples	Number of Exceedances	Minimum Concentration	Maximum Concentration
cis-1,3-Dichloropropene	0.4	14	0	ND	ND
Cyclohexane	NS	6	NS	ND	ND
Dibromochloromethane	50	14	0	ND	ND
Ethylbenzene	5	14	0	1.4	1.4
Ethylene dibromide	0.0006	6	0	ND	ND
Freon 11	5	6	0	ND	ND
Freon 113	5	6	0	ND	ND
Freon 12	5	6	0	ND	ND
Isopropylbenzene (Cumene)	5	14	0	ND	ND
m,p-Xylenes	5	14	0	1	4.3
Methyl acetate	NS	6	NS	ND	ND
Methyl bromide	5	14	0	ND	ND
Methyl chloride	5	14	0	ND	ND
Methyl tert-butyl ether	10	14	0	ND	ND
Methylcyclohexane	NS	6	NS	ND	ND
Methylene chloride	5	14	0	ND	ND
Naphthalene	10	14	0	ND	ND
n-Butylbenzene	5	14	0	ND	ND
n-Propylbenzene	5	14	0	ND	ND
o-Xylene	5	14	0	ND	ND
sec-Butylbenzene	5	14	0	ND	ND
Styrene	5	14	0	ND	ND
tert-Butylbenzene	5	14	0	ND	ND
Tetrachloroethene	5	14	0	ND	ND
Toluene	5	14	0	1.1	1.7
trans-1,2-Dichloroethene	5	14	0	ND	ND
trans-1,3-Dichloropropene	0.4	14	0	ND	ND
Trichloroethene	5	14	0	ND	ND
Vinyl chloride	2	14	0	ND	ND
Xylenes (total)	5	8	0	1	4.3

ND = Not Detected

Table 17
List of Major New York State Standards, Criteria and Guidelines (SCGs)
Former Buffalo Forge Property
Buffalo, New York
NYSDEC BCP Site No. C915280

CITATION	DESCRIPTION	APPLICABILITY	WILL SELECTED REMEDY COMPLY WITH THIS SCG?	WILL REMEDY ADDRESSING UNRESTRICTED USE SCO COMPLY WITH THIS SCG?
STANDARDS & CRITERIA [(1)]				
6 NYCRR Part 371	Identification & Listing of Hazardous Wastes	Applies to waste characterization, transportation, and disposal requirements.	Yes	Yes
6 NYCRR Part 372	Hazardous Waste Manifest System and Related Standards For Generators, Transporters and Facilities	Applies during transport of any hazardous waste soil	Yes	Yes
6 NYCRR Part 375	Environmental Remediation Programs	This standard relates to all Site remedial activities, specifically soil cleanup objectives for Restricted Commercial Objectives and for Protection of Groundwater	Yes	Yes
6 NYCRR Part 376	Land Disposal Restrictions	This standard relates to the management of any hazardous waste removed during remedial action.	Yes	Yes
6 NYCRR Parts 700-706	Water Quality Standards	Provides means of evaluating ground water quality	No	No
6 NYCRR Part 364	Waste Transporter Permits	This standard applies to any waste removal	Yes	Yes
OSHA; 29 CFR 1910	Guidelines/Requirements for Workers at Hazardous Waste Sites (Subpart 120) and Standards for Air Contaminants (Subpart 1).	Relates to safety provisions during remedial construction activities and possibly O&M	Yes	Yes

Table 17
List of Major New York State Standards, Criteria and Guidelines (SCGs)
Former Buffalo Forge Property
Buffalo, New York
NYSDEC BCP Site No. C915280

CITATION	DESCRIPTION	APPLICABILITY	WILL SELECTED REMEDY COMPLY WITH THIS SCG?	WILL REMEDY ADDRESSING UNRESTRICTED USE SCO COMPLY WITH THIS SCG?
OSHA; 29 CFR 1926	Safety and Health Regulations for Construction	Relates to safety provisions during remedial construction activities	Yes	Yes
10 NYCRR Part 5-1.31 Drinking Water Supplies	Prohibits installation of a private supply well in areas served by public water supply	Applies to institutional controls	Yes	Yes
6 NYCRR Part 750-757 Implementation of NPDES Program in New York State (SPDES Regulations)	Controls wastewater and stormwater discharges	Relates to disposition of water generated during excavation activities	Yes	Yes
12 NYCRR Part 56 – Industrial Code 56 (Asbestos)	Regulates activities involving asbestos-containing materials	Applies during building demolition activities	Yes	Yes
6 NYCRR Subpart 374-3 Standards for Universal Waste	Regulates the management of specific wastes (batteries, pesticides, thermostats, lamps)	Applies during building demolition activities	Yes	Yes
GUIDELINES **(2)**				
CP-51 Soil Cleanup Guidance	Procedures for the selection of soil cleanup levels	Applies to identification of applicable Restricted / Unrestricted Use Soil Cleanup Objectives	Yes	Yes
NYSDOH Community Air Monitoring Plan for Intrusive Activities (incorporated with site-specific HASP)	Requirements for real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust)	Relates to any intrusive remedial activities including excavation & drilling	Yes	Yes

Table 17
List of Major New York State Standards, Criteria and Guidelines (SCGs)
Former Buffalo Forge Property
Buffalo, New York
NYSDEC BCP Site No. C915280

CITATION	DESCRIPTION	APPLICABILITY	WILL SELECTED REMEDY COMPLY WITH THIS SCG?	WILL REMEDY ADDRESSING UNRESTRICTED USE SCO COMPLY WITH THIS SCG?
NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York	Guidance in identifying and addressing existing and potential human exposures to contaminated subsurface vapors associated with known or suspected VOC contamination	Applies to control of soil vapor intrusion to future Site building	Yes	Yes
NYSDEC TOGS 1.1.1	Ambient Water Quality Standards and Guidance Values	Provides means of evaluating ground water quality	No	No
TOGS 1.3.8 New Discharges to Publicly-Owned Treatment Works	Used to evaluate effects of non-domestic discharges to a POTW	Relates to disposition of water generated during excavation activities	Yes	Yes
CP-43: Groundwater Monitoring Well Decommissioning Policy	Requirements for abandonment of groundwater monitoring wells	Applies to abandonment of wells at conclusion of remedy	Yes	Yes
NYSDEC DER-10	Technical Guidance for Site Investigation and Remediation	Relates to all Site remedial action activities, including notification, QA (Section 2), ICs (Section 5.6), schedule & progress reports (Section 5.7), reporting (Section 5.8), and operations, monitoring, & closeout (Section 6).	Yes	Yes

Table 17
List of Major New York State Standards, Criteria and Guidelines (SCGs)
Former Buffalo Forge Property
Buffalo, New York
NYSDEC BCP Site No. C915280

GLOSSARY OF ACRONYMS

CFR	Code of Federal Regulations
DER	Division of Environmental Remediation
HASP	Health & Safety Plan
ICs	Institutional Controls
ISTT	In-Situ Thermal Treatment
MNA	Monitored Natural Attenuation
NPDES	National Pollutant Discharge Elimination System
NYSDEC	New York State Department of Environmental Conservation
NYCRR	New York Code of Rules and Regulations
OSHA	Occupational Safety and Health
POTW	Publicly-Owned Treatment Works
QA	Quality Assurance
SCG	Standards, Criteria and Guidance
SCO	Soil Cleanup Objectives
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-Slab Depressurization
SVE	Soil Vapor Extraction
TBC	To Be Considered Information
TOGS	Technical & Operational Guidance Series
VOCs	Volatile Organic Compounds (VOCs)
USEPA	U. S. Environmental Protection Agency

Notes:

(1) Standards and Criteria were obtained from NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation, May 2010.

(2) Guidelines were obtained from NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation, May 2010.

TABLE 18
Cost Comparison for Remedial Alternatives
Former Buffalo Forge Property
Buffalo, New York
NYSDEC BCP Site No. C915280

	Unit	No. of Units	Unit Price	Subtotal	Comments
SELECTED REMEDIAL ACTION:					Assumes cleanup as shown in Figure 26.
ALTERNATIVE 3 - REMOVE GCM, REMEDIATE IDENTIFIED AREAS OF THE SITE TO SSALs, AND PLACE COVER					
Excavation of Soil					
Mob/Demob, Site Facilities, Soil Erosion & Sediment Control	lump	1	$200,293	$200,293	Assume 5% of construction costs (excluding contingency)
Soil Staging Pad	S.F.	0	$3	$0	Trucks will be direct loaded.
Sheeting and Shoring	S.F.	0	$90	$0	Sheeting and shoring unnecessary.
Excavation, Transport, and Disposal of RCRA Non-Haz Soil	ton	30,800	$50	$1,540,000	Union labor assumed with Level D PPE. Estimate includes GCM, SSAL, and redevelopment excavations shown in Figure 26.
SSAL Exceedance Post-Excavation Soil Sample Analysis	sample	40	$350	$14,000	Samples will be collected from 20'x20' excavation walls (4) and floor (1) and analyzed for metals, PAHs, and PCBs.
GCM Post-Excavation Soil Sample Analysis	sample	101	$225	$22,725	Samples will be collected from excavation walls and floors and analyzed for STARS-list VOCs and SVOCs.
Waste Characterization Analysis	sample	50	$740	$37,000	Analysis required for landfill approval. Estimate from developer.
Provision and Emplacement of Backfill	yd^3	24,400	$30	$732,000	Compacted clay and top soil. Estimate includes all soil cover and excavation backfill as shown on Figure 26.
Seeding and Restoration	S.F.	332,533	$0.16	$53,205	Grading and hydroseeding. Estimate from the developer.
Site Surveys	days	7	$1,500	$10,500	For contractor payment and record drawings.
Associated Construction Cover Systems	lump	1	$1,680,663	$1,680,663	Construction costs relating to emplacement of geotextile fabric, parking areas (including subbase), and building foundation cover systems as shown in Figure 26.
Project Management	-	-	-	$214,500.00	5% of remedial costs, USEPA Cost Estimating Guide.
Remedial Design	-	-	-	$77,200.00	3% of remedial costs, estimate based on remedial design work performed in preparation for the Alternative Analysis Report (excludes T&D and Associated Construction Cover Systems costs).
Construction Management	-	-	-	$257,400.00	6% of remedial costs, USEPA Cost Estimating Guide.
Contingency			10%	$483,900	
Total				**$5,323,400**	
ALTERNATIVE 2 - REMEDIATE SITE TO UNRESTRICTED USE					
Excavation of Soil					
Mob/Demob, Site Facilities, Soil Erosion & Sediment Control	lump	1	$805,992	$805,992	Assume 10% of construction costs (excluding contingency)
Soil Staging Pad	S.F.	0	$3	$0	Trucks will be direct loaded.
Sheeting and Shoring	S.F.	0	$90	$0	Sheeting and shoring unnecessary
Excavation, Transport, and Disposal of RCRA Non-Haz Soil	ton	119,700	$50	$5,985,000	Union labor assumed with Level D PPE.
Post-Excavation Soil Sample Analysis	sample	1100	$475	$522,500	Assume NYSDEC will approve one sample every 60' of excavation wall and one every 1800 ft^2 of excavation floor.
Waste Characterization Analysis	sample	100	$740	$74,000	One sample per 1000 yd^3 for first 5000 yd^3, then one sample per 5000 yd^3.
Provision and Emplacement of Backfill	yd^3	66,500	$30	$1,995,000	Compacted run-of-crush stone, and top soil
Seeding and Restoration	S.F.	499,500	$0.16	$79,920	Seeding for full site boundary
Site Surveys	days	20	$1,500	$30,000	For contractor payment and record drawings.
Project Management	-	-	-	$474,600	5% of remedial costs, USEPA Cost Estimating Guide
Remedial Design	-	-	-	$105,200.00	3% of remedial costs, estimate based on remedial design work performed in preparation for the Alternative Analysis Report (excludes T&D costs).
Construction Management	-	-	-	$569,500	6% of remedial costs, USEPA Cost Estimating Guide
Contingency			10%	$1,064,200	
Total				**$11,705,900**	
COST SAVINGS COMPARISON					
Gross Saving with Selected Remedial Action (Alternative 3)				$6,382,500	
Comparative Percent Cost of Unrestricted Use Remedial Alternative				220%	

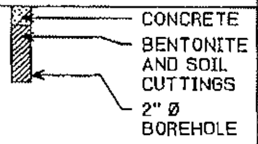
Appendix A
Soil Boring Logs
Previous Investigations

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-01)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-1
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CONCRETE FLOOR SLAB	-.5		001	☒		0
	CL-SILTY CLAY (NATIVE), trace fine sand, red brown, dry, no odor, some concrete debris @ 0.5ft BGS (on top of clay)	-2.0					
2.5	END OF HOLE @ 2.0ft BGS						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

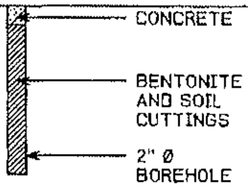
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-02)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-2
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CONCRETE FLOOR SLAB	-.4	 CONCRETE	003	☒		0
	CL-GRAVELLY SILTY CLAY (NATIVE), red/brown, dry to moist		BENTONITE AND SOIL CUTTINGS				
-2.5							
	- wet, shaley partings, refusal (@ 4.5ft BGS)	-4.5	2" Ø BOREHOLE				
-5.0	END OF HOLE @ 4.5ft BGS						
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

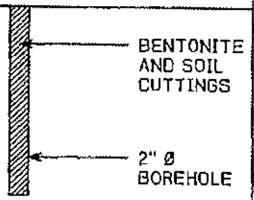
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-03)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-3
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CL-SILTY CLAY (NATIVE), some fine gray and white sands, red/brown, dry, no odor						
-2.5							
-5.0	- refusal (@ 5.0ft BGS)	-5.0		004	☒		0
	END OF HOLE @ 5.0ft BGS						
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

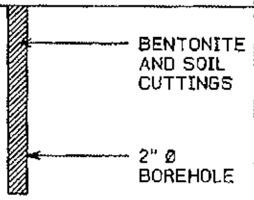
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-04)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-4
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER



DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CL-SILTY CLAY (NATIVE), some to trace fine gravel, brown/olive, moist, no odor		BENTONITE AND SOIL CUTTINGS				
2.5							
5.0	- motor oil odor (4.5 to 5.0ft BGS) - refusal (@ 5.0ft BGS)	-5.0	2" Ø BOREHOLE	005	☒		0
	END OF HOLE @ 5.0ft BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

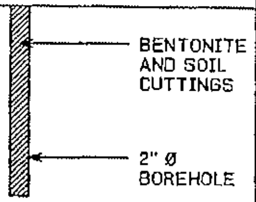
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-05)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-5
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CL-SILTY CLAY (NATIVE), with some to trace fine gravel, olive/brown, moist to wet, no odor						
2.5							
5.0	~ refusal (@ 5.0ft BGS) END OF HOLE @ 5.0ft BGS	-5.0		006	☒		0
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

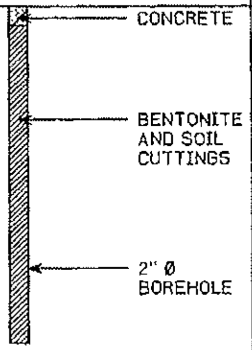
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-06)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-6
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.0					
	CONCRETE FLOOR SLAB	-.5					
	FILL-SAND, trace silt, fine grained sand, brown						0
2.5	CL-SILTY CLAY (NATIVE), red/brown, dry to moist, no odor	-2.5					
5.0							
7.5							0
	END OF HOLE @ 9.0ft BGS	-9.0					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							



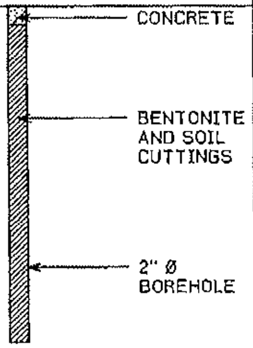
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-07)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-7
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CONCRETE FLOOR SLAB	-.5					
	FILL-SAND, trace silt, fine grained sand, brown						
-2.5	CL-SILTY CLAY (NATIVE), red/brown, dry to moist, no odor	-2.5					
-5.0							
-7.5							
	END OF HOLE @ 9.0ft BGS	-9.0					
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

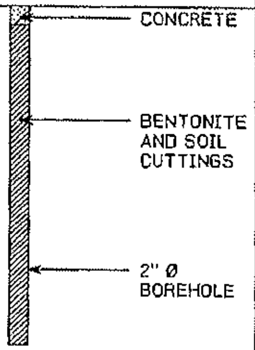
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-08)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-8
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CONCRETE FLOOR SLAB	-.4					
	FILL-SAND and SILT, fine grained sand, dark stained						0
2.5							
	SM-SILTY SAND, with some red/brown clay	-3.3					
	CL-SILTY CLAY (NATIVE), red/brown, dry to moist, no odor	-3.3					
5.0							0
7.5							
	END OF HOLE @ 9.0ft BGS	-9.0					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

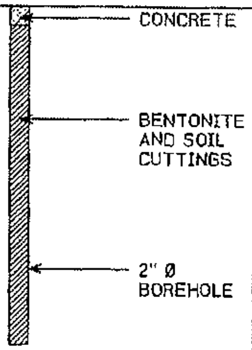
(WL-09)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-9
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.0				
	CONCRETE FLOOR SLAB	-.4				
	FILL-SAND and SILT, fine grained sand, dark stained					
2.5			007	☒		0
	SM-SILTY SAND, with some red/brown clay	-3.3				
	CL-SILTY CLAY (NATIVE), red/brown, dry to moist, no odor	-3.3				
5.0						
7.5						
	END OF HOLE @ 9.0ft BGS	-9.0				
10.0						
12.5						
15.0						
17.5						
20.0						
22.5						
25.0						
27.5						
30.0						
32.5						

MONITOR INSTALLATION



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-10)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-10
DATE COMPLETED: FEBRUARY 7, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	WOOD BLOCKS	-.4					0
	CONCRETE FLOOR SLAB	-.6					
-2.5	FILL-SAND, SILT and CLAY, brown, dry to moist, no odor - refusal (@ 1.5ft BGS)	-1.5					
	END OF HOLE @ 1.5ft BGS						
-5.0							
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

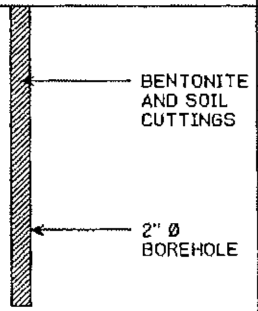
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(WL-11)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-11
DATE COMPLETED: FEBRUARY 8, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.0					
	CONCRETE FLOOR SLAB	-.4					
	CL-SILTY CLAY (NATIVE), with some to trace fine gravel, red/brown, dry to moist, no odor						0
2.5							
5.0							0
7.5		-8.0					
	END OF HOLE @ 8.0ft BGS						
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							



NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-12)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-12
DATE COMPLETED: FEBRUARY 8, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	CONCRETE FLOOR SLAB	-.4					
	CL-SILTY CLAY (NATIVE), with some to trace fine gravel, red/brown, dry to moist, no odor		BENTONITE AND SOIL CUTTINGS				0
-2.5							
-5.0							0
			2" Ø BOREHOLE				
-7.5							
	END OF HOLE @ 8.0ft BGS	-8.0					
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

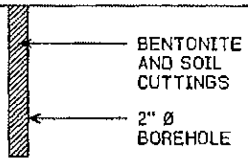
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-13)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-13
DATE COMPLETED: FEBRUARY 8, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ROCKS IN MACHINE PIT						
	CL-SILTY CLAY (NATIVE), with trace fine gravel, olive, brown, moist	-1.0					
-2.5	- chemical odor (3.0 to 4.0ft BGS)			008	☒		3-4
	- refusal (@ 4.0ft BGS)	-4.0					
-5.0	END OF HOLE @ 4.0ft BGS						
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

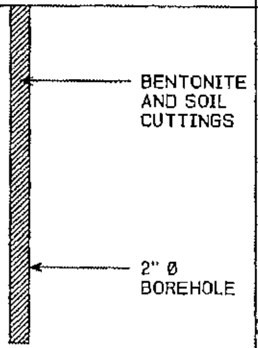
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-14)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-14
DATE COMPLETED: FEBRUARY 8, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER



DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-SANDY GRAVEL, medium to fine grained, wet						
	CL-SILTY CLAY (TILL), with silt seams, with some medium to fine gravel, hard, no odor	-1.4	BENTONITE AND SOIL CUTTINGS				
2.5							
5.0							
7.5			2" Ø BOREHOLE				
	- refusal (@ 9.0ft BGS)	-9.0		009	☒		0
	END OF HOLE @ 9.0ft BGS						
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

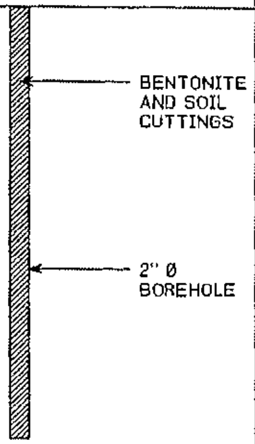
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊻ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-15)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-15
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-SANDY GRAVEL, SAND-GRAVEL MIXTURES, with some silt, trace clay, concrete debris, medium to fine grained, no odor						
2.5							
5.0							
7.5	- wet (@ 8.0ft BGS)			010	☒		0
10.0							
	END OF HOLE @ 11.5ft BGS	-11.5					
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

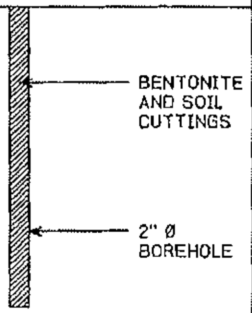
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-16)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-16
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-SANDY GRAVEL MIXTURE, some clay, medium to fine grained, brown, no odor						0
-2.5							
	- wet (@ 3.5ft BGS)						
		-4.0					
-5.0	CL-SILTY CLAY (NATIVE), trace fine sand and gravel, red/brown, wet, no odor						0
-7.5							
		-8.0					
	END OF HOLE @ 8.0ft BGS						
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



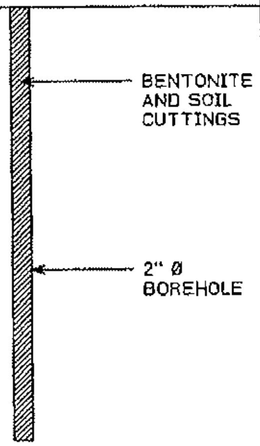
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-17)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-17
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-SANDY GRAVEL, SAND-GRAVEL MIXTURES, with some silt, trace clay, concrete debris, medium to fine grained, no odor						0
-2.5							
-5.0							
-7.5	- wet (@ 8.0ft BGS)						
-10.0							0
	END OF HOLE @ 11.5ft BGS	-11.5					
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

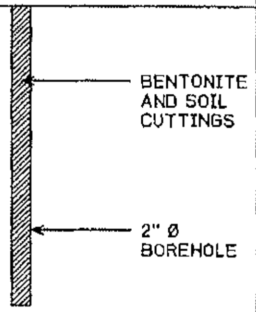
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-18)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-18
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-SANDY SILT, GRAVEL, BRICK, CINDERS, and wood fragments						
-2.5							
-5.0							
	- chemical odor (@ 6.0ft BGS)			011	☒		1.2
	CL-SILTY CLAY (NATIVE), with trace fine sand and gravel, moist to wet	-6.5					
-7.5							
	END OF HOLE @ 8.0ft BGS	-8.0					
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



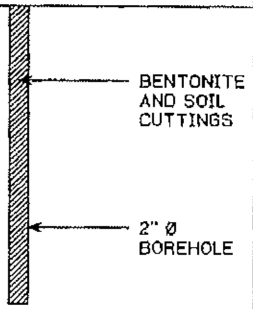
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-19)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-19
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-SAND-GRAVEL MIXTURES, with some silt and clay, tan, brown						0
-2.5							
	CL-SILTY CLAY (NATIVE), with trace fine sand, red/brown, moist, no odor	-3.0					
-5.0							0
-7.5							
	END OF HOLE @ 8.0ft BGS	-8.0					
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊻ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

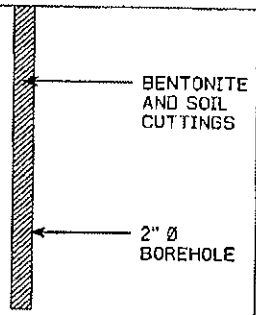
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(WL-20)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-20
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-CONCRETE DEBRIS, and medium fine brown sand and gravel						0
-2.5	CL-SILTY CLAY (NATIVE), with trace fine sand, red/brown, moist, no odor	*-2.5*					
-5.0							
-7.5							0
	END OF HOLE @ 8.0ft BGS	*-8.0*					
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



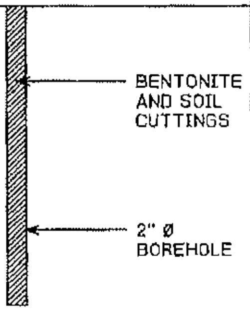
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-21)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-21
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-CONCRETE DEBRIS, and medium fine brown sand and gravel		 				0
2.5	CL-SILTY CLAY (NATIVE), with trace fine sand, red/brown, moist, no odor	-2.5					
5.0							0
7.5	END OF HOLE @ 8.0ft BGS	-8.0					
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

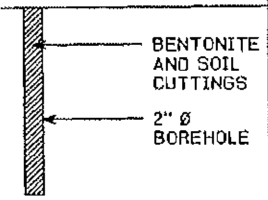
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(WL-22)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-22
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-GRAVEL and SAND, concrete debris, brown, gray						
-2.5	CL-SILTY CLAY (NATIVE), with trace fine sand, hard, dry to moist, no odor - stained layer (@ 4.7ft BGS)	-2.5		012	☒		0
-5.0	- refusal (@ 5.0ft BGS) END OF HOLE @ 5.0ft BGS	-5.0					
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

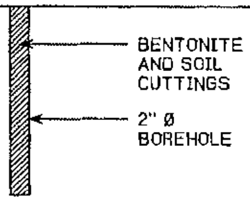
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-23)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-23
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-GRAVEL and SAND, concrete debris, brown, gray						
2.5	CL-SILTY CLAY (NATIVE), with trace fine sand, hard, dry to moist, no odor	-2.5					
5.0	- refusal (@ 5.0ft BGS) END OF HOLE @ 5.0ft BGS	-5.0					0
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							



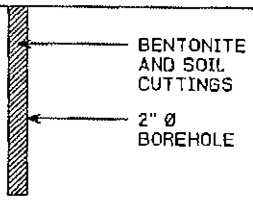
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊻ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-24)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-24
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	FILL-GRAVEL and SAND, concrete debris, brown, gray						
-2.5	CL-SILTY CLAY (NATIVE), with trace fine sand, hard, dry to moist, no odor	*-2.5*					
-5.0	- refusal (@ 5.0ft BGS)	*-5.0*					0
	END OF HOLE @ 5.0ft BGS						
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

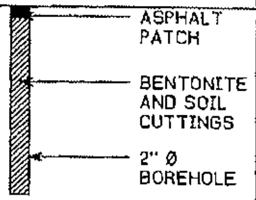
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-25)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-25
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	GM-SANDY GRAVEL (NATIVE), with silt						0
2.5	CL-SILTY CLAY, with trace fine sand, dense, red/brown, dry to moist, no odor	-2.0					
5.0	END OF HOLE @ 5.0ft BGS	-5.0					
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

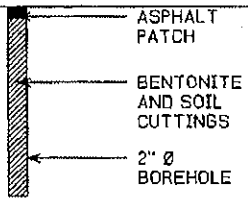
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-26)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-26
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	GM-SANDY GRAVEL (NATIVE), with silt	-2.0					0
-2.5	CL-SILTY CLAY, with trace fine sand, dense, red/brown, dry to moist, no odor						
-5.0	END OF HOLE @ 5.0ft BGS	-5.0					
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



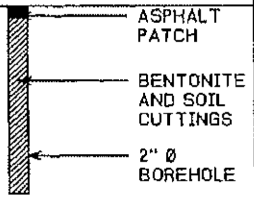
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(WL-27)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-27
DATE COMPLETED: FEBRUARY 9, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	GM-SANDY GRAVEL (NATIVE), with silt						
-2.5	CL-SILTY CLAY, with trace fine sand, dense, red/brown, dry to moist, no odor	-2.0					
	- slightly dark stained soils, no odor (@ 4.5ft BGS)			013			0
-5.0	END OF HOLE @ 5.0ft BGS	-5.0					
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

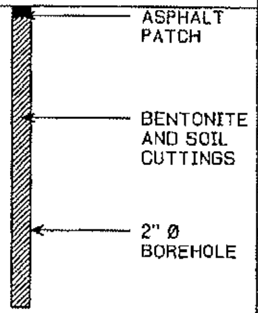
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-28)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-28
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER



DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	FILL-CLAY and BRICK DEBRIS, wet, no odor	-1.5					0
-2.5	CL-SILTY CLAY (NATIVE), with trace fine sand, dense, red/brown, dry, no odor						
-5.0							0
-7.5							
	END OF HOLE @ 8.0ft BGS	-8.0					
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							

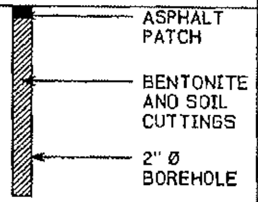
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-29)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-29
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.4		014	☒		2
	FILL-SAND and GRAVEL, with brick debris, black	-1.0					
2.5	CL-SILTY CLAY (NATIVE), with trace fine sand, dense, red/brown, dry, no odor	-4.0					
5.0	SM/CL-SANDY CLAY, some silt, brown, dry - refusal (@ 5.0ft BGS)	-5.0					
	END OF HOLE @ 5.0ft BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

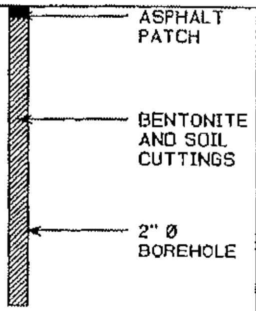
<u>NOTES:</u> MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-30)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-30
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3	 ASPHALT PATCH	015	☒		0
	FILL-CINDER and BRICK DEBRIS, black stained soils	-1.3					
2.5	CL-SILTY CLAY (NATIVE), with trace sand and gravel, dense, brown, dry, no odor - with some sand, red/brown, no odor		BENTONITE AND SOIL CUTTINGS				
5.0			2" Ø BOREHOLE				
7.5	- moist (@ 8.0ft BGS)	-8.0					
	END OF HOLE @ 8.0ft BGS						
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

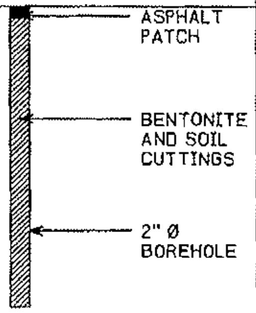
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-31)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-31
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	FILL-CINDERS and GRAVEL, gray/black	-1.5					0
2.5	SM-SANDY SILT (NATIVE), with some clay and gravel	-4.0					
5.0	CL-SILTY CLAY, with some fine sand, trace gravel, red/brown and gray						0
7.5	- more gravel, dense, moist, no odor (@ 7.0ft BGS)	-8.0					
	END OF HOLE @ 8.0ft BGS						
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

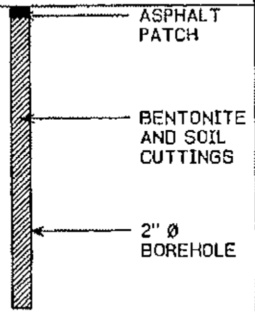


NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊻ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-32)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK
HOLE DESIGNATION: SB-32
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	FILL-GRAVELLY SAND and CINDER	-1.0					0
2.5	CL-SILTY CLAY (NATIVE), with trace gravel and sand - red/brown	-5.0					
5.0 7.5	SP-GRAVELLY SAND, brown, moist - 4" shale layer and clay (@ 6.5ft BGS) - dry, no odor (@ 7.0ft BGS)	-8.0					0
10.0	END OF HOLE @ 8.0ft BGS						
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊻ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

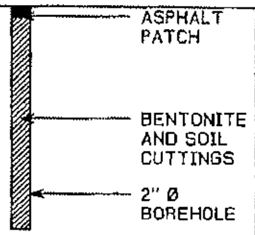
STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-33)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-33
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	FILL-CINDERS, SLAG, GRAVEL and SAND, hard, black	-1.0					0
2.5	CL-SILTY CLAY (NATIVE), with trace fine gravel, red/brown						
	SM-SILTY SAND, with clay, brown, dry, no odor	-4.0					0
5.0							
	- refusal (@ 6.0ft BGS)	-6.0					
	END OF HOLE @ 6.0ft BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							



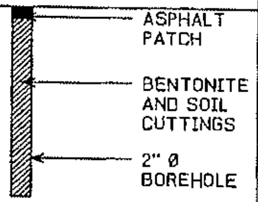
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ⊻ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-34)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-34
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	FILL-CINDERS, SLAG, GRAVEL and SAND, hard, black	-1.0					0
2.5	CL-SILTY CLAY (NATIVE), with trace fine gravel, red/brown						
	SM-SILTY SAND, with clay, brown, dry, no odor	-4.0					
5.0	- refusal (@ 5.0ft BGS)	-5.0					
	END OF HOLE @ 5.0ft BGS						
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

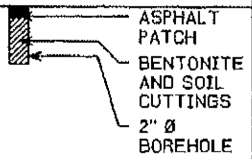
STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

(WL-35)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-35
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE			
				NUMBER	STATE	'N' VALUE	PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					
	FILL-GRAVELLY SAND, brick debris	-.7					0
	CL-SILTY CLAY (NATIVE), with rock fragments, dense, brown, dry, no odor - refusal (@ 1.5ft BGS)	-1.5					
-2.5	END OF HOLE @ 1.5ft BGS						
-5.0							
-7.5							
-10.0							
-12.5							
-15.0							
-17.5							
-20.0							
-22.5							
-25.0							
-27.5							
-30.0							
-32.5							



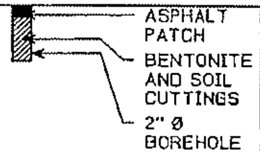
NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ⬭

STRATIGRAPHIC AND INSTRUMENTATION LOG
(OVERBURDEN)

(WL-36)
Page 1 of 1

PROJECT NAME: BUFFALO HOWDEN INC.
PROJECT NUMBER: 14791
CLIENT: HODGSON, RUSS, ANDREWS, WOODS & GOODYEAR
LOCATION: 490 BROADWAY, BUFFALO, NEW YORK

HOLE DESIGNATION: SB-36
DATE COMPLETED: FEBRUARY 10, 2000
DRILLING METHOD: DIRECT PUSH
CRA SUPERVISOR: D. STEINER

DEPTH ft. BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	ELEV. ft. AMSL	MONITOR INSTALLATION	SAMPLE NUMBER	SAMPLE STATE	SAMPLE 'N' VALUE	SAMPLE PID (ppm)
	GROUND SURFACE	0.0					
	ASPHALT	-.3					0
	FILL-GRAVELLY SAND, brick debris	-.7					
2.5	CL-SILTY CLAY (NATIVE), with rock fragments, dense, brown, dry, no odor - refusal (@ 1.5ft BGS)	-1.5					
	END OF HOLE @ 1.5ft BGS						
5.0							
7.5							
10.0							
12.5							
15.0							
17.5							
20.0							
22.5							
25.0							
27.5							
30.0							
32.5							

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ▽ STATIC WATER LEVEL ▼
CHEMICAL ANALYSIS ○

TABLE 1

SUMMARY OF SAMPLE LOCATIONS

Buffalo Urban Development Corporation
Former Buffalo Forge Site
Buffalo, New York

Location	Test Pit Dimensions		Soil Sample Interval (fbgs)	Depth (fbgs) and USCS Soil Classification (visual-manual)	Evidence of Black Foundry Sand	Field Observations / Notes
	Length (feet)	Depth (fbgs)				
Test Pit Locations						
TP-1	20.0	6.0	0.5 - 6.0	*0 - 0.5 Brown Clay cover soils 0.5 - 6.0 Various lenses of black, brown and tan/yellow fine sand, Dry.*	*Yes*	
TP-2	15.0	4.0		*0 - 4' Brown Clay with some round stone / gravel 1-2'' dia. Water perched at 3.0 fbgs.*		
TP-3	12.0	4.0		*0.0 - 0.5 Brown Clay cover soils. 0.5 - 4.0-Black /dark brown fill soil, some red brick pieces, round stone, trace of slag <1 " dia. Moist*		
TP-4	40.0	4.0		*1st 15 linear feet of test from west end of property line heading east, was native red sandy clay, moist wet. The remaining 25 linear feet heading east was brick/fill debris with large gravel (2-4' dia) and some sand. A trace foundry like sand found at 2 fbgs, but test pit mostly contained gravel and brick debris.*	*Yes*	*Refusal encounter approx 3fbgs.*
TP-5	28.0	4.0		*On south end of test pit, 0-2.5' clay soils with refusal (rock and/or concrete) at 2.5 fbgs. North end of test pit contained Clay Fill soils with traces of black sand, and brick debris. Moist*	*Yes*	
TP-6	20.0	4.0		*South end of test pit contained clay soils from 0-4', with some brick debris. Old drain tile pieces in test pit. No foundry type sand observed. North end of test pit contained clay soils with some concrete/rebar debris, Moist. A trace of black sand detected on north end of test pit.*	*Yes*	
TP-7	36.0	4.0	1.0 - 3.0	*0.0 - 1.0 Brown clay cover soils 1.0 - 3.0 Black/gray sand lenses 3.0 - 4.0 Red sandy clay soils,*	*Yes*	*excavator scraping rock at 3.5 fbgs.*
TP-8	15.0	3.5	0.5 - 3.0	*0.0 - 0.5 Red/brown clay cover soils 0.5 - 3.0 Black sand/ round stone, with brick debris, water encountered at 2.5'. Slight petroleum-like odor detected 3.0 - 3.5 Red/brown clay soils.*	*Yes*	*Analyzed test pit for TCL STARS list VOCs and PAHs* ***Petroleum-like odor noted***
TP-9	10.0	3.5		*0 - 0.5 Brown clay cover soils 0.5-3.5 Coarse gravel with fine black foundry sand.*	*Yes*	*North end of test pit wall appeared to have brown/red sandy clay from 0.5-3.5 fbgs*
TP-10	10.0	3.5		*0.0 - 0.5 Brown clay cover soils 0.5 - 1.0 Fine gravel <1/4" dia, w/some brick fragments, trace of black sand, Moist, 1.0 - 3.5 Red/brown native sandy clay, wet.*	*Yes*	
TP-11	12.0	4.0		*0.0 - 4.0 Brown /red sandy clay, wet. Slight trace of black cindery like pieces, <1/2" dia. Two 2-inch pipes running parallel with sidewalk were encountered approx 3.5' fbgs. Approx 15' east of sidewalk.*	*Yes*	
TP-12	12.0	3.5		*0.0 - 0.5 Brown clay cover soils, 0.5-1' FILL, brick gravel & sand, Dry. 1.0 - 2.0 Concrete floor/foundation 2.0 - 3.0 Foundry type sand-White/tan, with trace of black sand. 3.0 - 3.5 Native red sandy clay soil.*	*Yes*	
TP-13	12.0	3.5		*0.0 - 0.5 Brown clay cover soils 0.5 - 1.0 very thin lenses of black sand & fine gravel. 1.0 - 3.5 Red clay with some gray silt, dry to moist.*	*Yes*	
TP-14	12.0	3.5		*0.0 - 0.5 Brown clay cover soils 0.5 - 1.5 Brown fine sand backfill, moist. 1.5 - 2.0 Coarse gravel layer 1-2" dia round stone, trace of fine black sand fill. 2.0 - 3.5 Red sandy clay*	*Yes*	
TP-15	18.0	4.0		*0.0 - 1.0 Fine brown sand/clay cover soil-wet. 1.0 - 4.0 Brown clay , with pieces of weather rock, 1.0 - 2.0 dia. 4" cast iron drain pipe found in test pit.*		
TP-16	10.0	2.5		*0 - 2' Brown clay soils sitting on top of bedrock.*		
TP-17	10.0	3.5	0.5 - 2.0	*0.0 - 0.5' Brown clay cover soil 0.5 - 3.5 fine brown sand/clay moist to wet. The west sidewall of the test pit contained an area of old cast iron piping, surrounded by black sand fill.*	*Yes*	*Sample collected from the black sand fill*
TP-18	10.0	3.5	0.5 - 2.5	*0.0 - 1.0 Brown clay cover soils, 1.0 - 2.5 Black sand fill, w/ broken concrete debris approx 1-1.5' dia, petroleum-like odor detected, Dry, some misc 2" pipe debris encountered. 2.5- 3.5 Red /brown clay soil.*	*Yes*	***Petroleum-like odor noted***
TP-19	10.0	3.5		*0.0 -1.0 Brown clay cover soils 1.0 - 2.5 Fill brick fine gravel- gray/brown. 2.5 - 3.5 brown/red sandy clay soils, moist.*		

TABLE 1

SUMMARY OF SAMPLE LOCATIONS

Buffalo Urban Development Corporation
Former Buffalo Forge Site
Buffalo, New York

Location	Test Pit Dimensions		Soil Sample Interval (fbgs)	Depth (fbgs) and USCS Soil Classification (visual-manual)	Evidence of Black Foundry Sand	Field Observations / Notes
	Length (feet)	Depth (fbgs)				
TP-20	10.0	3.5	0.5 - 1.5	*0.0 - 0.5 Brown wet at surface silty clay cover soils, soft, some fine sand, medium plasticity .* *0.5 - 1.5 Black sand fill, some brick debris, some fine gravel, moist.* *1.5 - 3.5 Brown/red clay soil*	*Yes*	
TP-21	10.0	3.5	1.0 - 3.0	*0.0 - 1.0 Brown wet at surface silty clay cover soils, soft, some fine sand, medium plasticity* *1.0 - 3.0 Dark brown/black, moist with fine to coarse black sand and large pieces of limestone rock, brick and wood debris.* *3.0 - 3.5 Reddish brown, moist, silty clay with trace sand, stiff, high plasticity.*	*Yes*	
TP-22	8.0	7.0		*0.0 - 1.0 Brown wet at surface silty clay cover soils, soft, some fine sand, medium plasticity.* *1.0 - 6.5 brown/black moist, fill, reworked silty clay with intermixed black foundry sand with brick and wood debris, old electrical conduit, some lime stone debris.* *6.5-7.0 Reddish brown, moist, silty clay with trace sand, stiff, high plasticity.*	*Yes*	
TP-23	7.0	4.0		*0.0 - 1.0 Brown clay cover soils* *1.0 - 3.0 Medium brown silty clay with brick debris* *3.0 - 4.0 Reddish brown, moist, silty clay with trace fine sand, high plasticity, firm.*		
TP-24	9.0	5.5		*0.0 - 1.0 Brown clay cover soils.* *1.0 - 4.0 Medium brown sand, with some silt, few fine to coarse gravel backfill, medium density, low plasticity.* *4.0 - 5.5 Red /brown silty clay, hard*		
TP-25	8.0	2.5		*0.0 - 1.0 Brown clay cover soils.* *1.0 - 2.5 Reddish brown, moist, silty clay with trace fine sand, firm, medium plasticity, grey fine sand lenses and rootlets.*		
TP-26	13.0	3.5	1.0 - 2.0	*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel.* *0.5 - 2.0 Brown sandy Fill, with brick debris, medium density. Some isolated pockets of black fill material.* *2.0 - 3.5 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick.*	*Yes*	
TP-27	8.0	3.5		*0.0 - 1.0 Brown clay cover soils, with pieces of lime stone and bricks.* *1.0 - 3.5 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick.*		
TP-28	12.0	6.5	0.5-4.0 4.0-6.5	*0.-0.5 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel.* *0.5 - 4.0 Black/brown Fill w/ brick and wood material, clay tile pipe running in an east to west direction filled with black fine foundry sand, east and south side of test pit a steel pipe comes to a T at approximate center of test pit.* *4.0 - 6.5 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick. with petroleum-like odor.*	*Yes*	*Sample black fill-0.5-4.0' for Metals, PAHS & PCBs, sampled 4.0-6.5' for VOCs.* ***Petroleum-like odor noted***
TP-29	9.0	4.0		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel, with lime stone and brick debris.* *1.0 - 4.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick.*		
TP-30	9.0	4.0		*0.0 - 0.5 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel.* *0.5 - 1.5 Brown/black, moist, fill, reworked silty clay with intermixed black fine foundry sand with brick and limestone debris.* *1.5 - 4.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*	*Yes*	
TP-31	10.0	5.0	0.5 - 5.0	*0.0 - 0.5 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel.* *0.5 - 2.0 Brown, moist, fill, reworked silty clay with intermixed fine black foundry sand with brick and limestone debris.* *2.0 - 5.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*	*Yes*	*Most of black sand fill is in a possible former utility line or foundation that runs east west found in approximate center of test pit.* *Refusal on bedrock at 5.0 fbgs.*
TP-32	9.0	3.0		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel.* *1.0 - 1.5 Brown black, moist, fill, reworked silty clay with brick debris, with intermixed fine black foundry sand.* *1.5 - 3.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*	*Yes*	

TABLE 1

SUMMARY OF SAMPLE LOCATIONS

Buffalo Urban Development Corporation
Former Buffalo Forge Site
Buffalo, New York

Location	Test Pit Dimensions		Soil Sample Interval (fbgs)	Depth (fbgs) and USCS Soil Classification (visual-manual)	Evidence of Black Foundry Sand	Field Observations / Notes
	Length (feet)	Depth (fbgs)				
TP-33	9.5	4.0	1.0 - 3.0	*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 - 1.5 Black, moist, fine foundry sand, dense, loose when disturbed, with brick debris. 1.5 - 2.5 Brown , moist, reworked silty clay with trace fine sand with stone and brick debris. 2.5 - 3.0 Black, moist, fine foundry sand, dense, loose when disturbed, with brick debris, pinches out towards the west. 3.0 - 4.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*	*Yes*	*Perched groundwater lenses at sand clay interfaces.*
TP-34	8.0	5.0	3.0 - 5.0	*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 - 3.0 Reddish brown, moist, fine sand backfill with some silt with few coarse sands and fine to coarse gravel, medium dense, loose when disturbed. 3.0 - 5.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff, petroleum like odor in grey sandy lenses.*		*Sampled only for STARS list VOCs and PAHs Refusal 5.0 fbgs bedrock. **Petroleum-like odors noted***
TP-35	8.0	4.0		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 - 4.0 Reddish brown, moist, fine sand backfill with some silt with few coarse sands and fine to coarse gravel, medium dense, loose when disturbed.*		*Refusal bedrock 4.0 fbgs.*
TP-36	10.0	3.5		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 - 3.0 Reddish brown, moist, fine sand backfill with some silt with few coarse sands and fine to coarse gravel, medium dense, loose when disturbed. 3.0 - 3.5 Black, moist, fine foundry sand, dense, loose when disturbed.*	*Yes*	*Refusal bedrock 3.5 fbgs.*
TP-37	10.0	4.0	1.0 - 1.5	*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 - 1.5 Black dark brown, moist, silty clay mixed with fine black foundry sand, medium soft, low plasticity, with pieces plasticity orange fencing. 1.5 - 4.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*	*Yes*	*Refusal bedrock 4.0 fbgs.*
TP-38	9.0	3.0		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 -3.0 Dark brown, moist, reworked silty clay with trace fine sand and few fine to coarse gravels.*		*Refusal bedrock 3.0 fbgs.*
TP-39	10.0	2.0		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 -2.0 Dark brown, moist, reworked silty clay with trace fine sand and few fine to coarse gravels.*		*Refusal bedrock 2.0 fbgs.*
TP-40	11.0	5.0		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 - 5.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*		
TP-41	10.0	5.0		*0.0 - 0.5 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 0.5 - 2.0 Brown, moist, fine sand back fill with some coarse sand and fine to coarse gravel, medium dense, loose when disturbed with woody debris 2.0 - 5.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*		
TP-42	10.0	6.0		*0.0 - 1.0 Brown, moist, silty clay cap material, with some fine to coarse sand and fine to coarse gravel. 1.0 - 3.0 Brown, moist, reworked silty clay with trace fine sand with limestone debris, rebar and old electrical wiring. 3.0 - 5.5 Grey, moist to wet, crushed limestone with some silt and fine sand. 5.5 - 6.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*		
TP-43	9.5	5.0	1.0 - 3.0	*0.0 - 1.0 Brown, moist, fine sand with some coarse sand and fine to coarse gravel, medium dense, loose when disturbed. 1.0 - 2.5 Dark brown/black, reworked silty clay with trace sand with brick, limestone and metal debris. 2.5 - 5.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*		*Foundation approximately 3.0 feet from west wall of test pit, bricks and limestone were mixed coarse black sands.*

TABLE 1

SUMMARY OF SAMPLE LOCATIONS

Buffalo Urban Development Corporation
Former Buffalo Forge Site
Buffalo, New York

Location	Test Pit Dimensions		Soil Sample Interval (fbgs)	Depth (fbgs) and USCS Soil Classification (visual-manual)	Evidence of Black Foundry Sand	Field Observations / Notes
	Length (feet)	Depth (fbgs)				
TP-44	10.0	5.0		*0.0 - 1.0 Brown, moist, fine sand with some coarse sand and fine to coarse gravel, medium dense, loose when disturbed.* *1.0 - 2.5 Dark brown/black, reworked silty clay with trace sand with brick, limestone and metal debris.* *2.5 - 5.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*		*Foundation running east west 2.0 fbgs.*
TP-45	10.0	5.0		*0.0 - 0.5 Dark brown, moist, topsoil, silt with little clay, and few fine sands, rootlets, soft, low plasticity.* *0.5 - 5.0 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*		
TP-46	11.0	5.5	0.5 - 2.0	*0.0 - 0.5 Dark brown, moist, topsoil, silt with little clay, and few fine sands, rootlets, soft, low plasticity.* *0.5 - 2.0 Dark grey to black, moist, fine foundry sand, dense, loose when disturbed.* *2.0 - 5.5 Reddish brown, moist, silty clay with trace fine sand, with lensed grey fine sand layers less then half a cm thick, high plasticity, stiff.*	*Yes*	*Perched groundwater lenses at sand clay interfaces.*
Boring Locations						
SB-1	--	5.0		*0.0 - 1.5 Asphalt and orange brick debris.* *1.5 - 5.0 Brown, moist silty clay, with some fine sand with trace fine and coarse gravel, medium soft, low plasticity.*		
SB-2	--	4.8		*0.0 - 1.0 Asphalt and orange brick debris.* *1.5 - 4.8 Brown, moist silty clay, with some fine sand with trace fine and coarse gravel, medium soft, low plasticity*		
SB-3	--	4.6	0.5 - 1.5	*0.0 - 1.0 Asphalt and orange brick and concrete debris.* *1.5 - 4.6 Brown, moist silty clay, with trace fine sand with trace fine and coarse gravel, firm, low plasticity.*		
SB-4	--	4.4	0.5 - 1.5	*0.0 - 2.0 Brown black, moist, fines with asphalt and brick debris.* *2.0 - 4.4 Brown, moist silty clay, with trace fine sand with trace fine and coarse gravel, firm, low plasticity.*		
SB-5	--	2.2	0.5 - 1.5	*0.0 - 2.2 Brown, moist silty clay, with trace fine sand with trace fine and coarse gravel, firm, low plasticity*		
SB-6	--	2.1	0.5 - 2.0	*2.0 - 2.1 Brown, moist silty clay, with trace fine sand with trace fine and coarse gravel, firm, low plasticity.*		

Notes:
1. fbgs = feet below ground surface
2. USCS = Unified Soil Classification System

Appendix B
Monitoring Well Construction Logs- Previous Investigations

ERM

WELL : TMW-01

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location: HOWDEN NA
Project No.: 0157929
Drilling Company: Natnagle
Foreman: DiLavra
Surveyor:
Date and Time of Completion: 3-6-12 0900
Geologist: LW

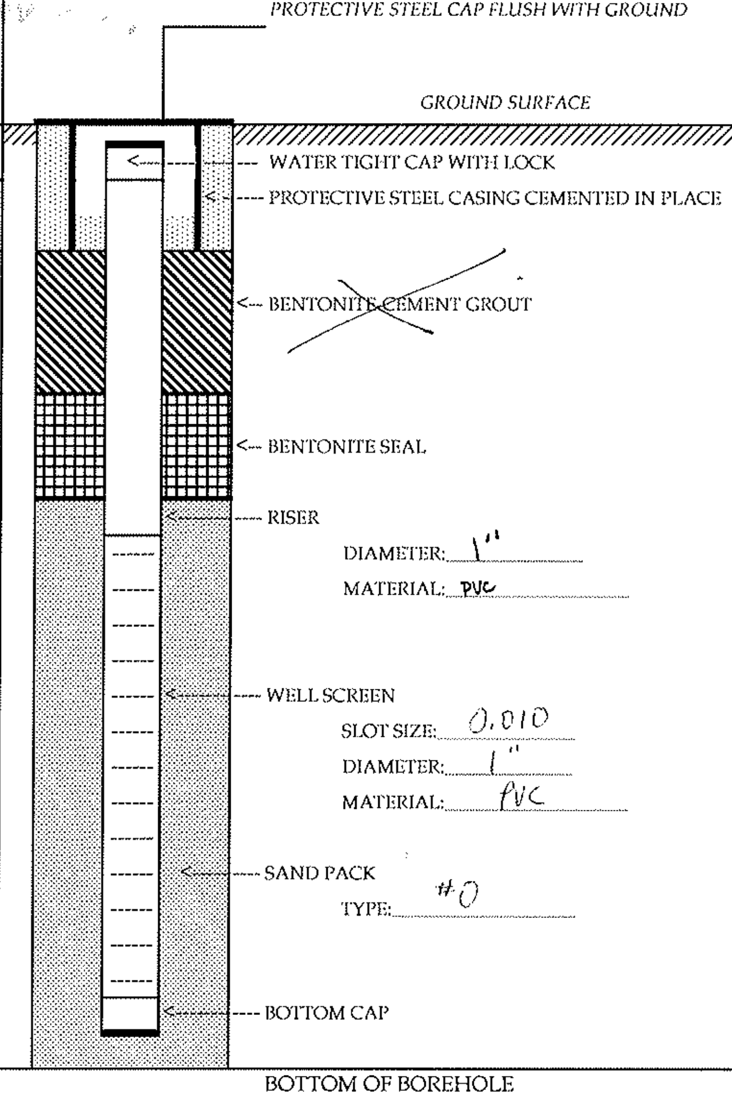
Water Level(s) *(ft below top of PVC casing)*

Date	Time	Level (feet)
3-6-12	0830	

Site Elevation Datum (feet):
Ground Elevation (feet):
Top of Protective Steel Cap Elevation (feet):
Top of Riser Pipe Elevation (feet):

	Generalized Soil Description	*Elevation	**Depth
		0.00	0.0
0-2'	2' Fill		
2'-3.7'	1.7' reddish Brown, firm, silt		
3.7'-5.8'	2.1' Brown to gray, silt, few small angular gravel, dry		2'
5.8-6'	2" light gray, gravel band, dry		4' 5.3'
6'-10.3'	4.3' light Brown to brown, SILT, moist, wet @ 7'		
			10.3

CONSTRUCTION DETAILS



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: #0

REMARKS

* Elevation (feet) above mean sea level unless noted ** Depth in feet below ground surface

g:geoforms\Well Construction Log (flush).XLS
rev. 10/99

ERM

WELL : TMW-82

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location: Howden NA
Project No.: 0157929
Drilling Company: Nothnagle
Foreman: Dilorra
Surveyor:
Date and Time of Completion: 3-6-12 0930
Geologist: LW

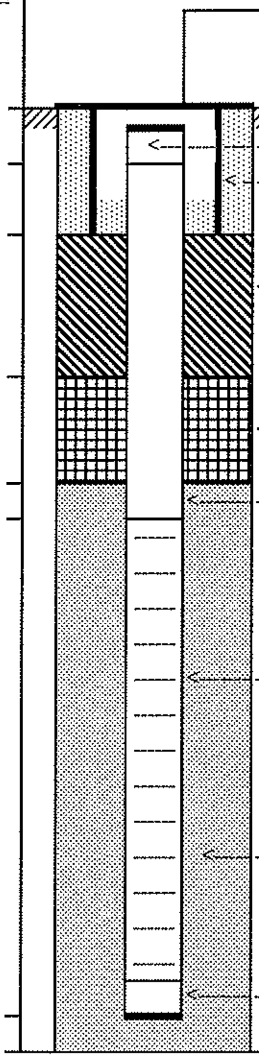
Water Level(s) (ft below top of PVC casing)

Date	Time	Level (feet)
3-6-12	0930	

Site Elevation Datum (feet):
Ground Elevation (feet):
Top of Protective Steel Cap Elevation (feet):
Top of Riser Pipe Elevation (feet):

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
8" fill 8"- 3.5' Light Brown to gray, silt, wet @ 3'		0.1'
		0.3'
		2.3'
		3.3' ~~3.5'~~

CONSTRUCTION DETAILS



PROTECTIVE STEEL CAP FLUSH WITH GROUND

GROUND SURFACE

WATER TIGHT CAP WITH LOCK

PROTECTIVE STEEL CASING CEMENTED IN PLACE

~~BENTONITE-CEMENT GROUT~~

BENTONITE SEAL

RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: #0

BOTTOM CAP

BOTTOM OF BOREHOLE

REMARKS Refusal at ~~3.5'~~ 3.3'

* Elevation (feet) above mean sea level unless noted

** Depth in feet below ground surface

ERM

WELL : TMW-03

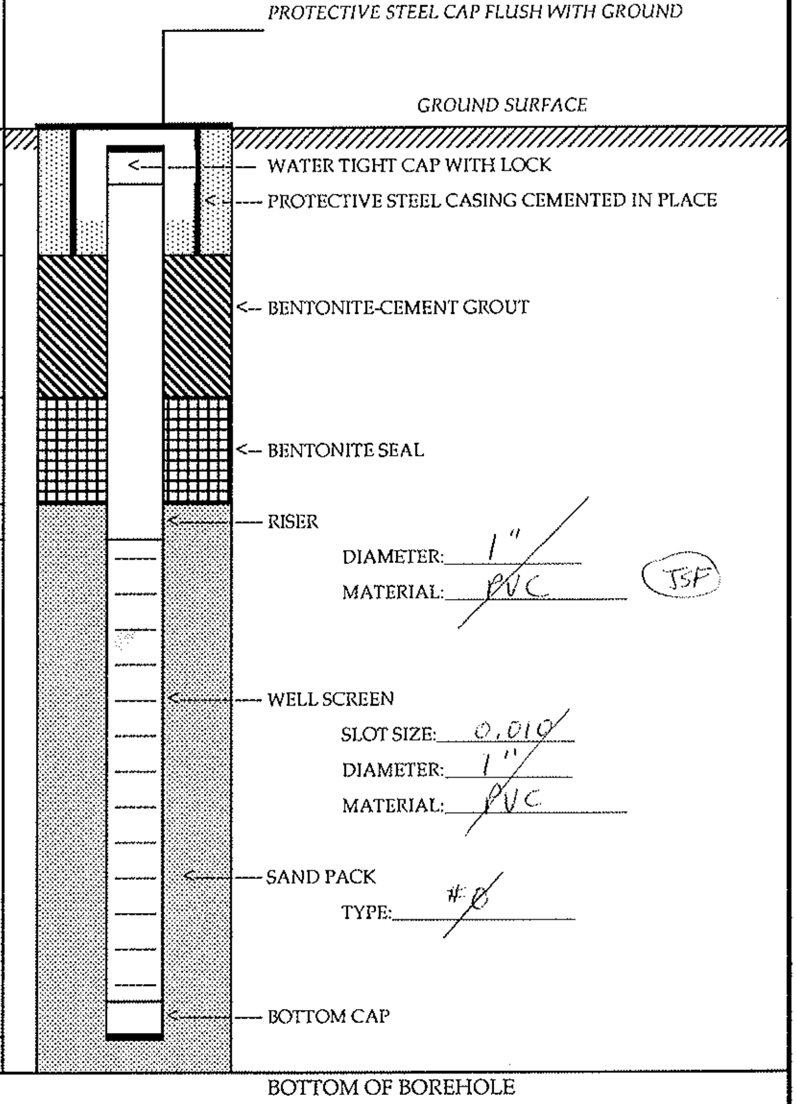
5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location Hawpen NA	*Project No.*	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum (feet)*
Drilling Company Notnangle	*Foreman* Dilavra	Date	Time	Level (feet)	*Ground Elevation (feet)*
Surveyor		3-6-12	1045		*Top of Protective Steel Cap Elevation (feet)*
Date and Time of Completion 3/16/12 1049	*Geologist* LW				*Top of Riser Pipe Elevation (feet)*

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
7" fill 1.3' brown to reddish brown, SILT, moist. No well, refusal at 2'		

CONSTRUCTION DETAILS



RISER
DIAMETER: ~~1"~~
MATERIAL: ~~PVC~~

JSF

WELL SCREEN
SLOT SIZE: ~~0.010~~
DIAMETER: ~~1"~~
MATERIAL: ~~PVC~~

SAND PACK
TYPE: ~~#0~~

REMARKS =2' refusal at two separate spots inside NYLD cleared radius
- Too shallow, well not installed

* Elevation (feet) above mean sea level unless noted ** Depth in feet below ground surface

g:geoforms\Well Construction Log (flush).XLS
rev. 10/99

ERM

WELL : TMW-03

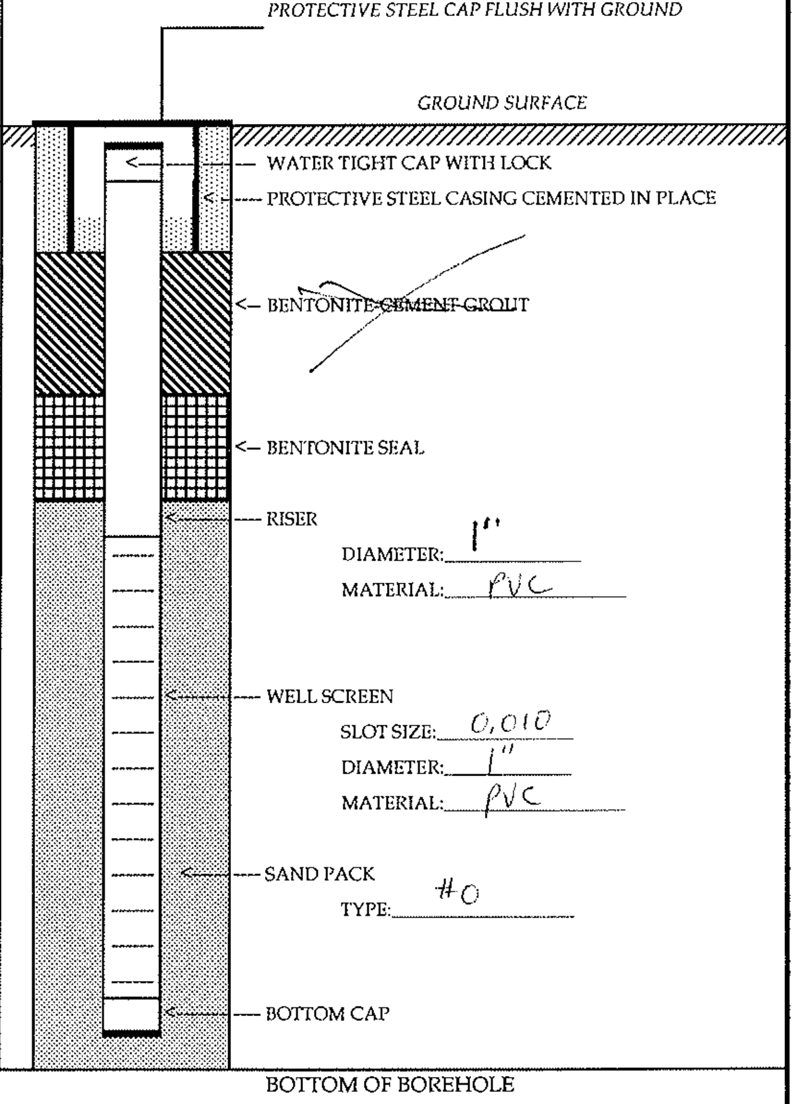
5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location HowDEN NA	*Project No.* 0157929	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum (feet)*
Drilling Company Nothnagle	*Foreman* Dilaura	Date	Time	Level (feet)	*Ground Elevation (feet)*
Surveyor		3-6-12	1027		*Top of Protective Steel Cap Elevation (feet)*
Date and Time of Completion 3-6-12 1027	*Geologist* LW				*Top of Riser Pipe Elevation (feet)*

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
0'-2' 2' fill (wood chip included).		
2'-4.3' 2.3' brown to reddish brown SILT, dry to moist		1.5'
4.3'-4.7' 4" Band of fill (some crushed brick		3.5'
4.7'-6.5 1.3' Brown SILT		
6.5'-8.5' 2.0' dark gray to dk brown, SILT, wet		
	8.5'	

CONSTRUCTION DETAILS



DIAMETER: 1"
MATERIAL: PVC

SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

TYPE: #0

REMARKS refusal at 8.5'

* Elevation (feet) above mean sea level unless noted ** Depth in feet below ground surface

ERM

WELL : FMW-85

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location Howden NA
Project No. 0157929
Drilling Company Nothnagle
Foreman DiLaura
Surveyor
Date and Time of Completion 1107 3-6-12
Geologist LW

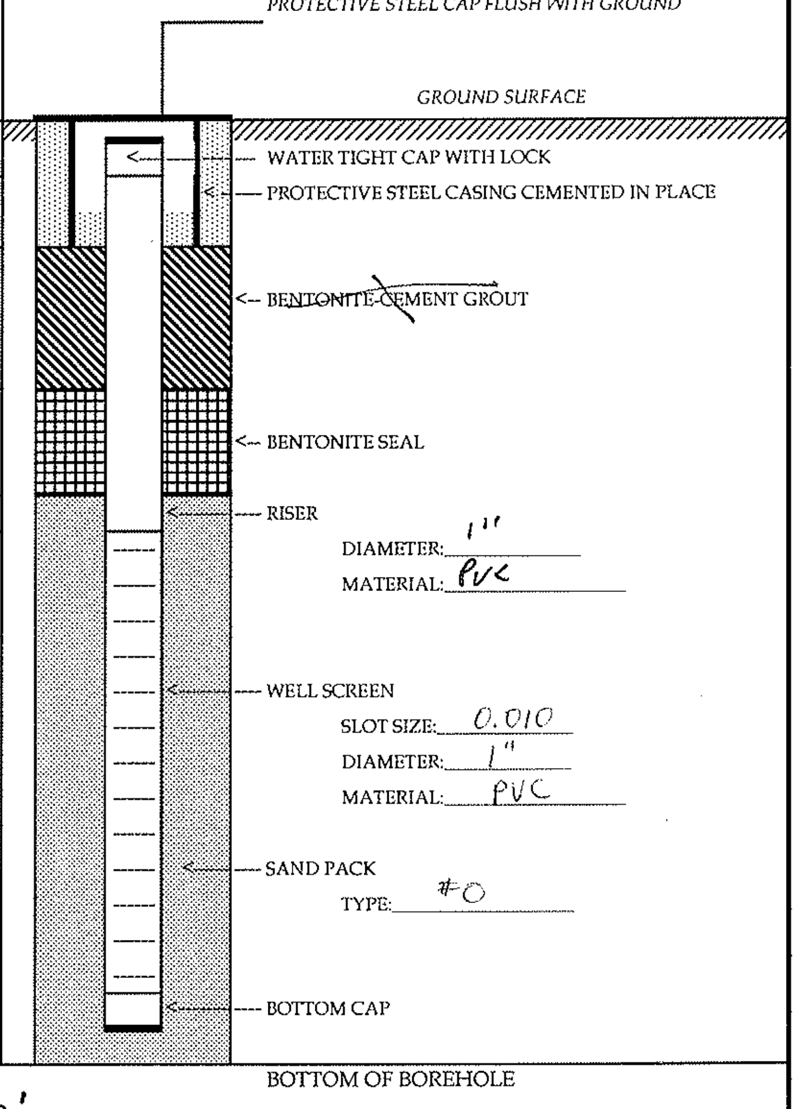
Water Level(s) *(ft below top of PVC casing)*

Date	Time	Level (feet)
3-6-12	1107	

Site Elevation Datum (feet)
Ground Elevation (feet)
Top of Protective Steel Cap Elevation (feet)
Top of Riser Pipe Elevation (feet)

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
~~NO recovery 0'-2'~~		
0'-2' brwn to reddish brwn, SILT, dry		1.8'
		2.8'
2'-3.8' dk gry to brwn, SILT, dry.		
		3.8'

CONSTRUCTION DETAILS



REMARKS refusal at 3.8'

* Elevation (feet) above mean sea level unless noted ** Depth in feet below ground surface

ERM

WELL: TMW-06

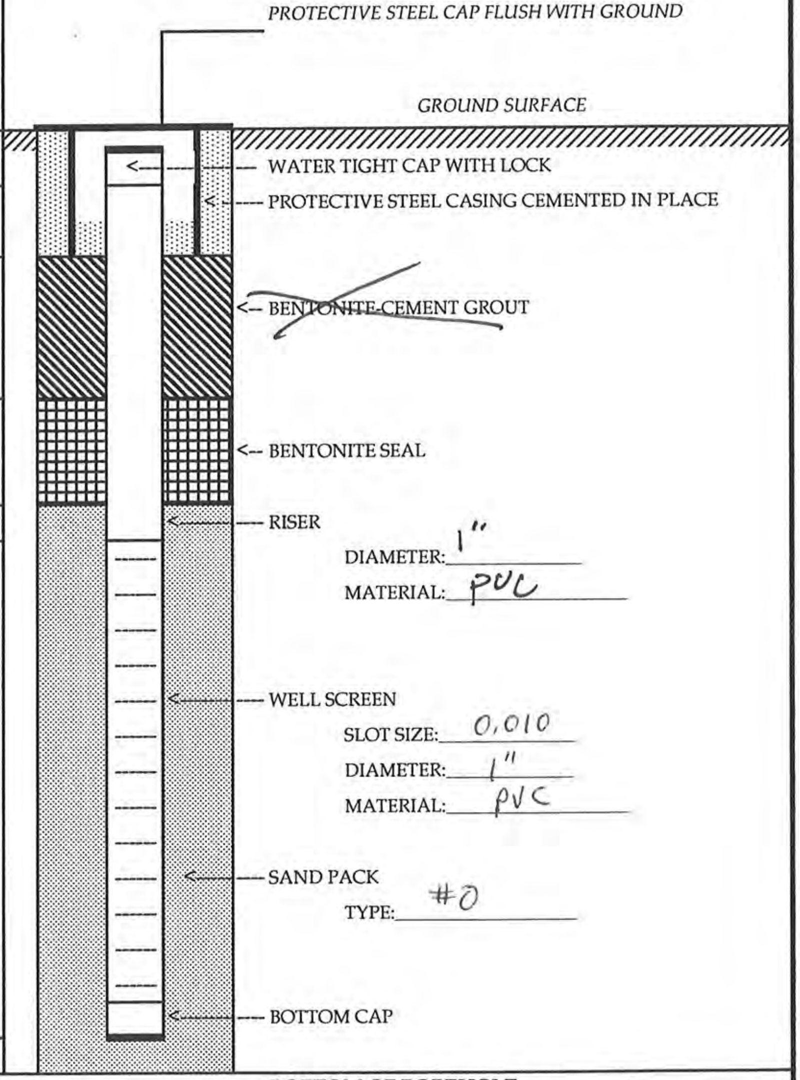
5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location Howden NA	*Project No.* 0157929	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum (feet)*
Drilling Company Nothnagle	*Foreman* Dicoura	Date	Time	Level (feet)	*Ground Elevation (feet)*
Surveyor		3-6-12	1435		*Top of Protective Steel Cap Elevation (feet)*
Date and Time of Completion 3-6-12	*Geologist* LW				*Top of Riser Pipe Elevation (feet)*

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
0-4.3 gray to reddish brown, SILT, clayey, moist. 4.3-4.6 reddish brown, SILT, some small gravel, moist 4.6-7.7 reddish brown, SILT, clayey 7.7-8.0 reddish brown SILT, some weathered limestone (≈$\frac{3}{4}$" in size), moist to wet 8.0-9.5 grayish brown, SILT, some small (≈¼") rock, wet.		3.5' 4.5' 9.5'

CONSTRUCTION DETAILS



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: #0

REMARKS refusal at 9.5.

* Elevation (feet) above mean sea level unless noted

** Depth in feet below ground surface

ERM

WELL : TMW-07

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location

Project No. 0157929

Drilling Company

Foreman

Surveyor

Date and Time of Completion 1230 3-6-12

Geologist

Water Level(s) (ft below top of PVC casing)

Date	Time	Level (feet)
3-6-12	1230	

Site Elevation Datum (feet)

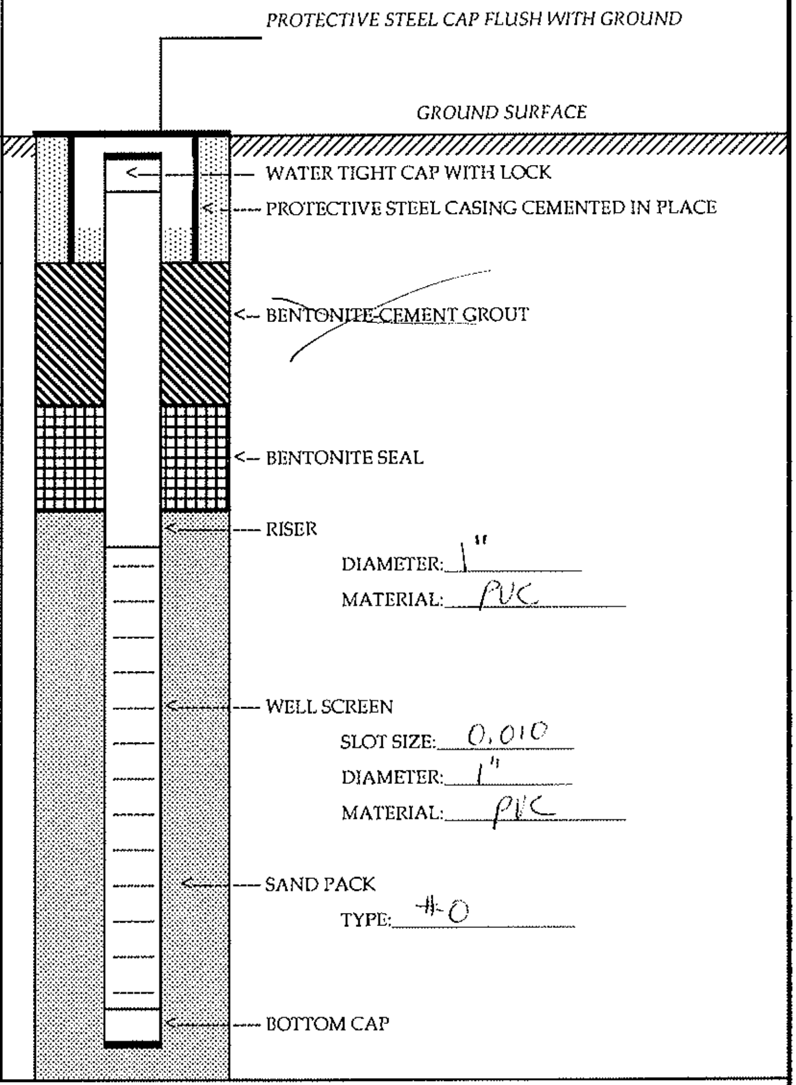
Ground Elevation (feet)

Top of Protective Steel Cap Elevation (feet)

Top of Riser Pipe Elevation (feet)

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
0-1" 1'' gray, SILT 1"-5.5 brown to reddish brown, SILT, wet at 3.2-3.5, 5.3-5.5	0.5' 2.5' 5.5'	



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: #0

BOTTOM OF BOREHOLE

REMARKS refusal @ 5.5'

* Elevation (feet) above mean sea level unless noted

** Depth in feet below ground surface

ERM

WELL : TMW-08

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location Howden NA

Project No.

Drilling Company Nothnagle

Foreman DiLorra

Surveyor

Date and Time of Completion 1251 3-6-12

Geologist LW

Water Level(s) *(ft below top of PVC casing)*

Date	Time	Level (feet)
3-6-12	1247	

Site Elevation Datum (feet)

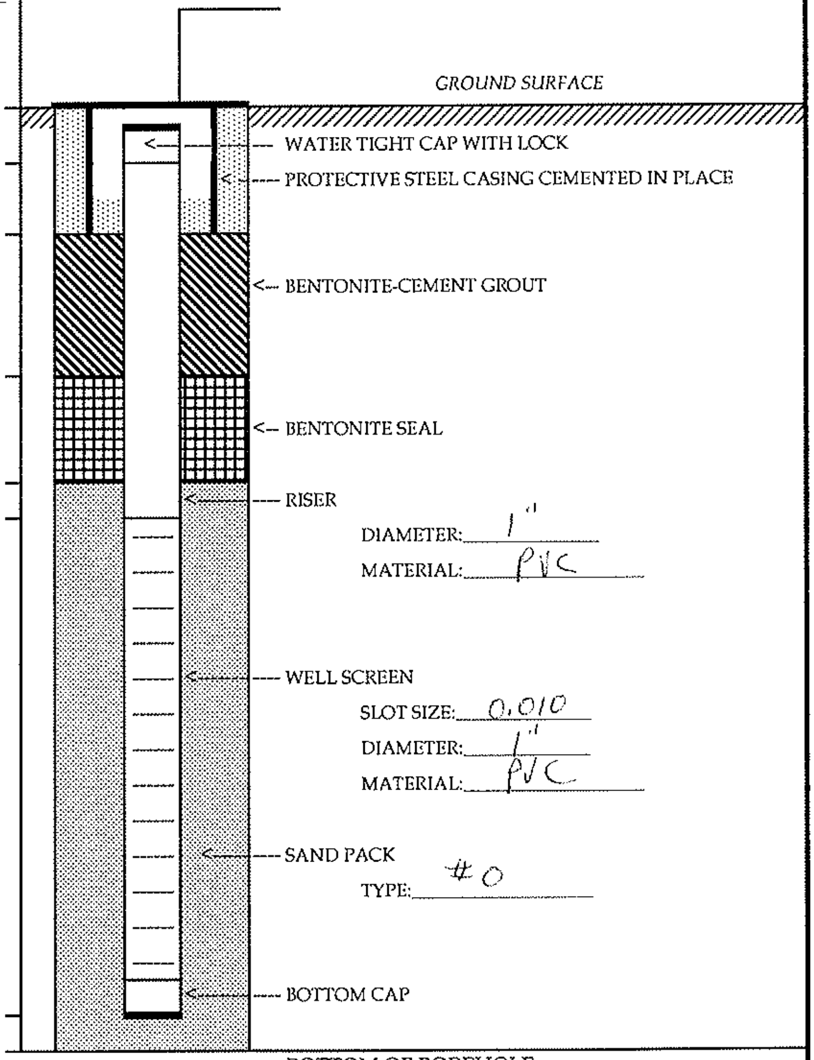
Ground Elevation (feet)

Top of Protective Steel Cap Elevation (feet)

Top of Riser Pipe Elevation (feet)

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
0 - 1.5" topsoil		
1.5" - 2' light brown (yellowish) sand, moist		2'
2' - 4' gry to reddish brwn, SILT		~~2~~
		3'
4' - 6' brwn to gry, SILT, sandy moist		
6' - 8' gray, SILT, moist to wet		
		8'



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: #0

BOTTOM OF BOREHOLE

REMARKS refusal at 8'

* Elevation (feet) above mean sea level unless noted ** Depth in feet below ground surface

ERM

WELL : TMW-09

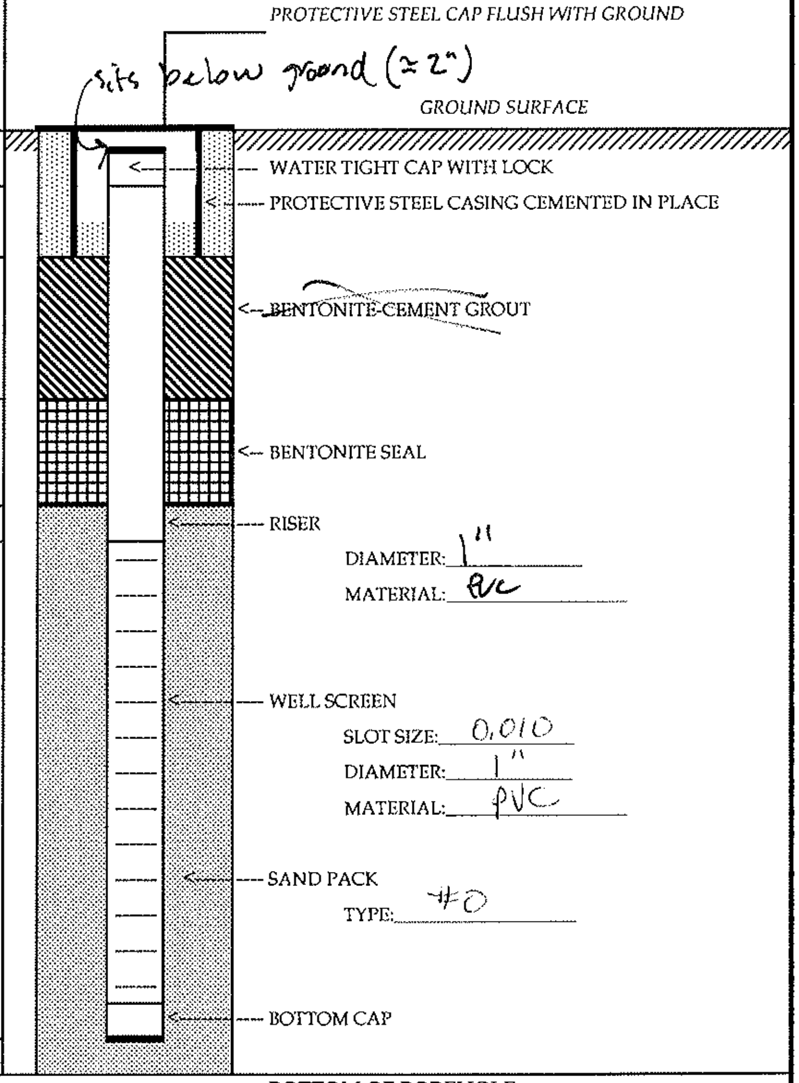
5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location HawDEN N.A	*Project No.*	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum (feet)*
Drilling Company Nothnagle	*Foreman* Divarra	Date	Time	Level (feet)	*Ground Elevation (feet)*
Surveyor		3-6-12	1330		*Top of Protective Steel Cap Elevation (feet)*
Date and Time of Completion 3/16/12 1348	*Geologist* LW				*Top of Riser Pipe Elevation (feet)*

	Generalized Soil Description	*Elevation	**Depth
		0.00	0.0
0-2'	2' reddish brown to gry, SILT, some sand, wet at 1.7'-2'		3.5
2'-8'	2' grayish brwn, SILT, wet, few gravel.		4.5
8-9.3'	1.3' reddishbrown, SILT, wet, few gravel, sand		
9.3'-9.5'	0.2' light gray, GRAVEL, dry, sandy.		9.5'

CONSTRUCTION DETAILS



BOTTOM OF BOREHOLE

REMARKS refusal at 9.5'

* Elevation (feet) above mean sea level unless noted

** Depth in feet below ground surface

ERM

WELL : TMW- 18

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location: HowDENNA
Project No.: 0157929
Drilling Company: Nothnagle
Foreman: DiLoura
Surveyor:
Date and Time of Completion: 3-6-12 1420
Geologist: LW

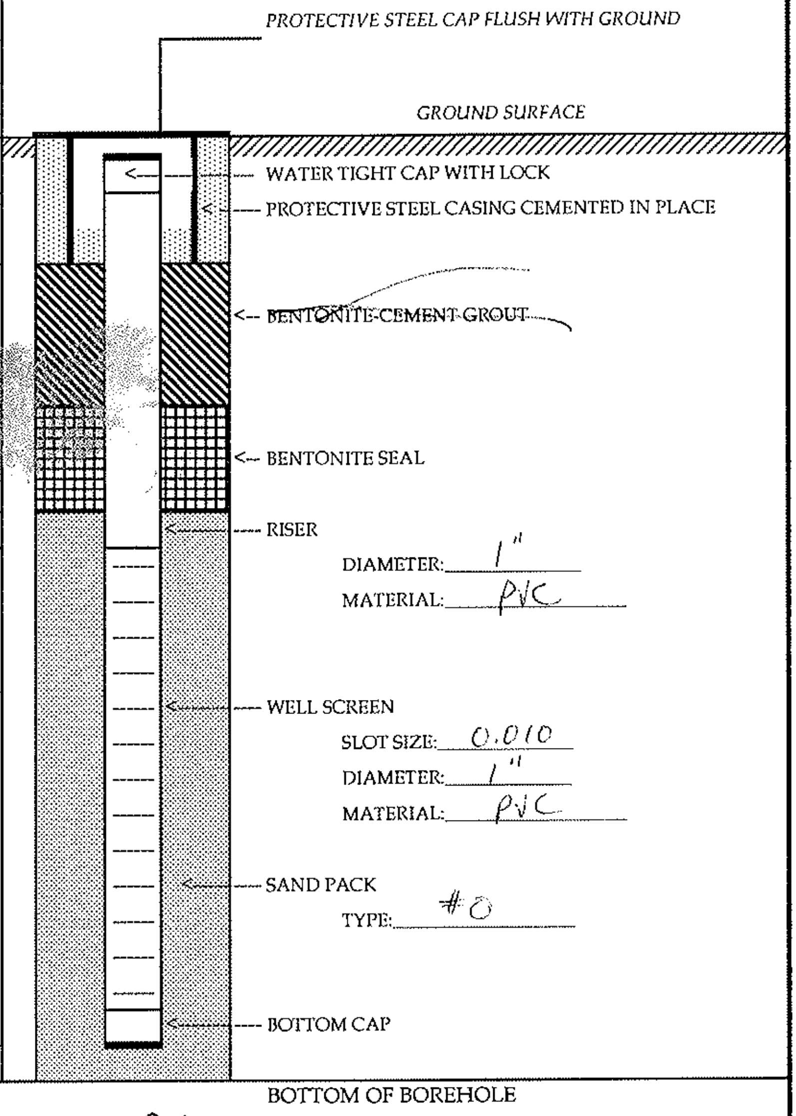
Water Level(s) *(ft below top of PVC casing)*

Date	Time	Level (feet)
3-6-12	1403	

Site Elevation Datum (feet):
Ground Elevation (feet):
Top of Protective Steel Cap Elevation (feet):
Top of Riser Pipe Elevation (feet):

Generalized Soil Description	*Elevation	**Depth
	0.00	0.0
"Slag Like" rock in fill.		
3' 0-3' fill/concrete		
1' 3'-4' grayish brown, SILT, moist.		3'
4'-7.3' reddish Brwn, SILT, moist		4'
7.3'-8' dk gry, SILT, some gravel, wet.		
8'-9' dk gry to brwn, SILT, moist to wet		9'

CONSTRUCTION DETAILS



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: #0

REMARKS refusal at 9'

* Elevation (feet) above mean sea level unless noted

** Depth in feet below ground surface

ERM

WELL : TMW-11

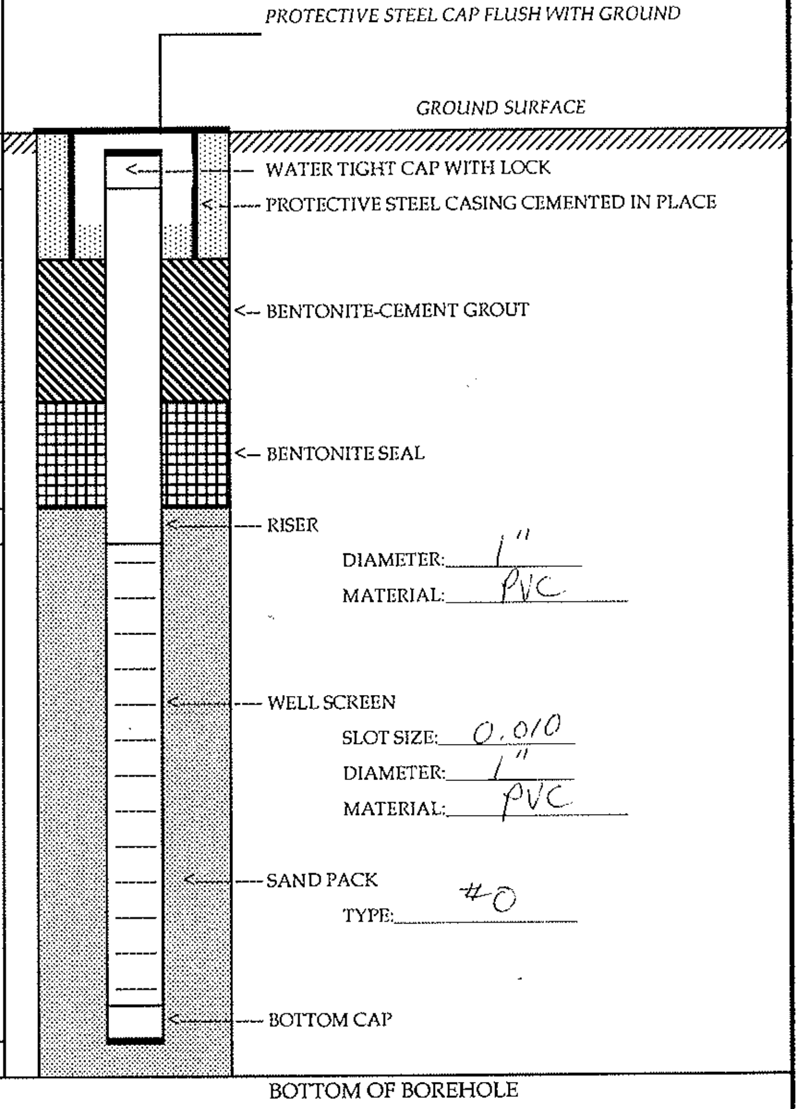
5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION LOG

Project Name & Location Harper NA	*Project No.* 0157929	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum (feet)*
Drilling Company Nothnagle	*Foreman* Dvorana	Date	Time	Level (feet)	*Ground Elevation (feet)*
Surveyor		3-6-12	1302		*Top of Protective Steel Cap Elevation (feet)*
Date and Time of Completion 3-6-12 1318	*Geologist* LW				*Top of Riser Pipe Elevation (feet)*

	Generalized Soil Description	*Elevation	**Depth
		0.00	0.0
0'-2'	2' Fill		
2'-4'	2' reddish brown to brown, SILT, moist		5.5'
4'-9'	5' reddish brown, mottled gray, SILT, moist		6.5'
9'-10.3'	1.3' dk gry to brwn, SILT, moist		
10.3'-11.5'	1.2' reddish brwn, SILT, moist		11.5'

CONSTRUCTION DETAILS



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: 0.010
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: #0

REMARKS refusal at 11.5'

* Elevation (feet) above mean sea level unless noted

** Depth in feet below ground surface

ERM

WELL : TMW-12

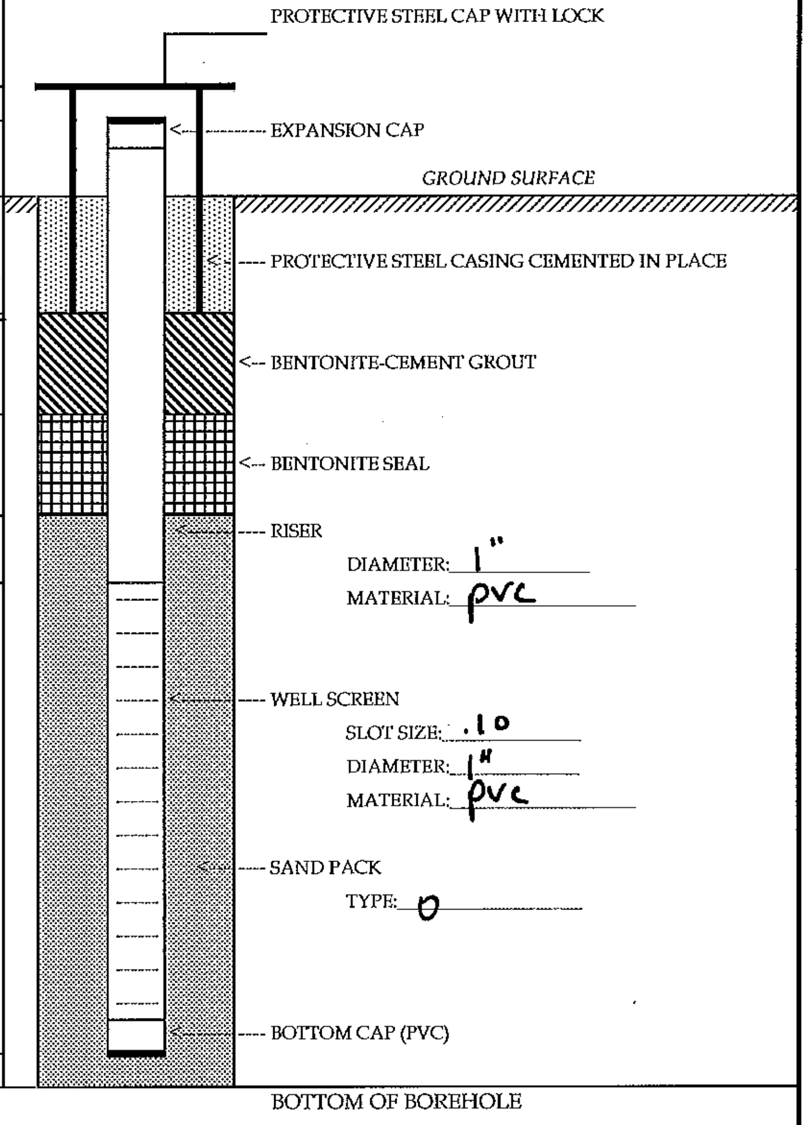
5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0381805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/7/15	*Geologist* 15.5				*Top of Riser Pipe Elevation*

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	
	0.0	4.5
	0.0	5.5
	0.0	10.5
	0.0	

CONSTRUCTION DETAILS



RISER

DIAMETER: 1"

MATERIAL: PVC

WELL SCREEN

SLOT SIZE: .10

DIAMETER: 1"

MATERIAL: PVC

SAND PACK

TYPE: 0

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

g:geoforms\Well Construction Log (stk-up).XLS
rev. 10/99

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

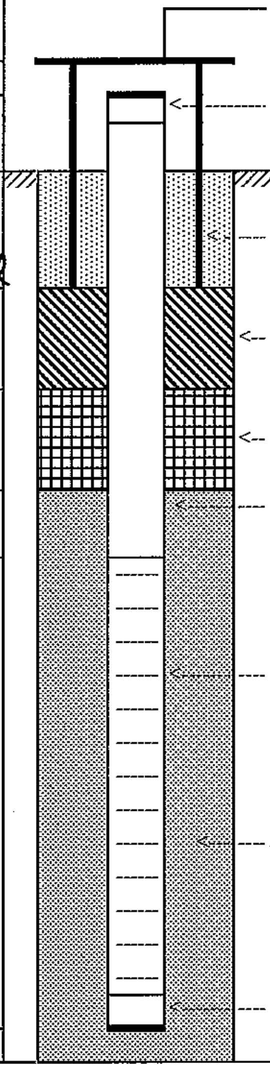
WELL : TMW-13

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/6/15	*Geologist* CV				*Top of Riser Pipe Elevation*

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	surface
	0.0	
	0.0	8"
	0.0	1'8"
	0.0	4'3"
	0.0	

CONSTRUCTION DETAILS



PROTECTIVE STEEL CAP WITH LOCK

<-- EXPANSION CAP

GROUND SURFACE

<-- PROTECTIVE STEEL CASING CEMENTED IN PLACE

<-- BENTONITE-CEMENT GROUT

<-- BENTONITE SEAL

<-- RISER

DIAMETER: 1"

MATERIAL: pvc

<-- WELL SCREEN

SLOT SIZE: .10

DIAMETER: 1"

MATERIAL: pvc

<-- SAND PACK

TYPE: D

<-- BOTTOM CAP (PVC)

BOTTOM OF BOREHOLE

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

WELL : TMW -14

MONITORING WELL CONSTRUCTION

Project Name & Location: Buffalo Forge

Project No.: 0181805

Drilling Company: PW

Foreman:

Surveyor:

Date and Time of Completion: 5/7/15 1000

Geologist: JR/CW

Water Level(s) (ft below top of PVC casing)

Date	Time	Level (feet)

Site Elevation Datum:

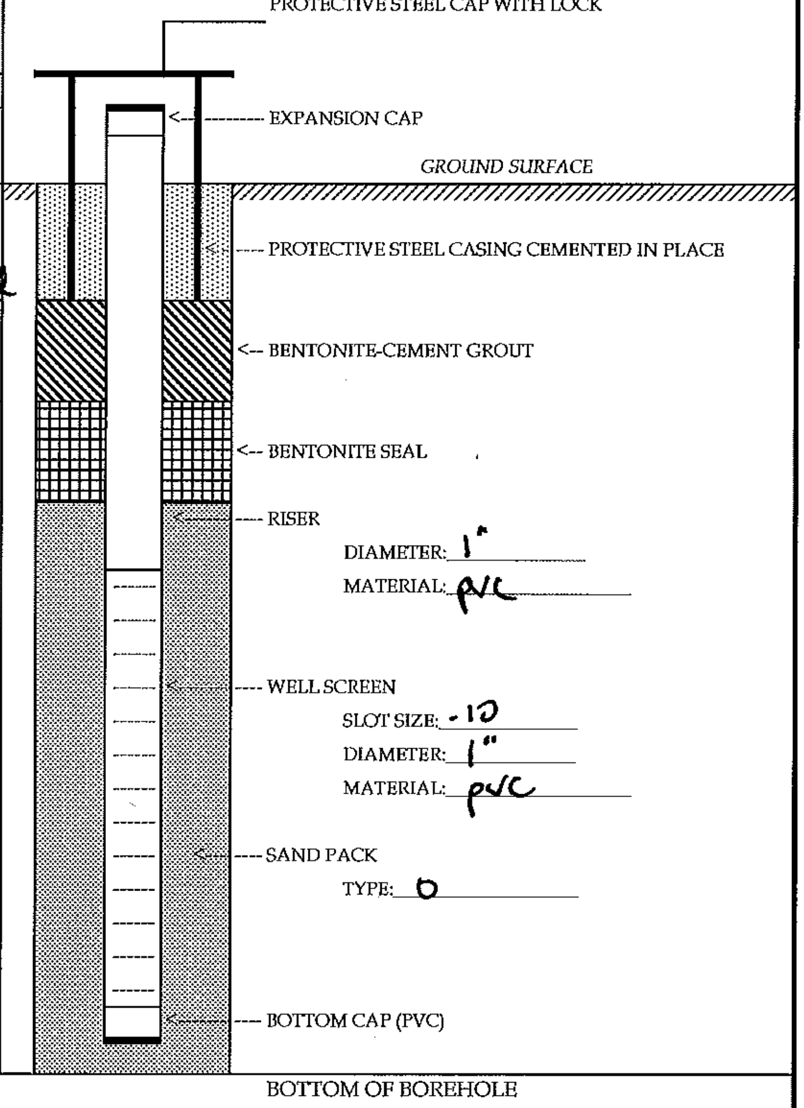
Ground Elevation:

Top of Protective Steel Cap Elevation:

Top of Riser Pipe Elevation:

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	surface
	0.0	
	0.0	2.5
	0.0	3.5
	0.0	9.5
	0.0	



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: 0

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

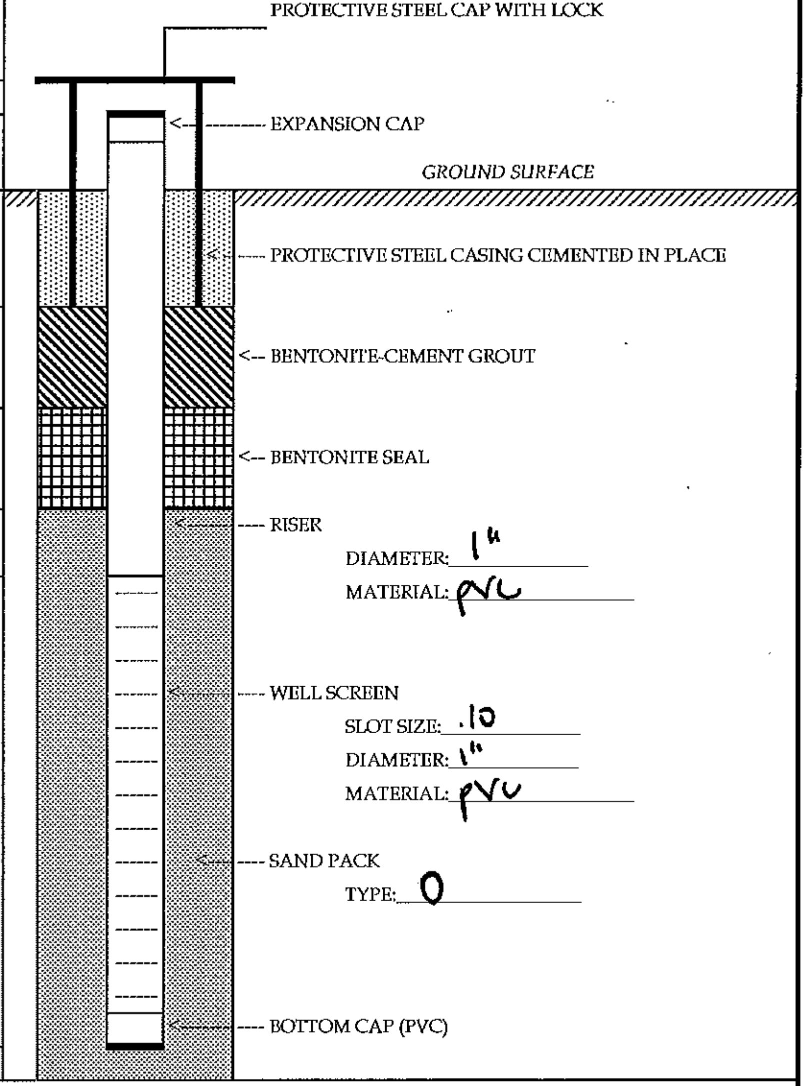
WELL : TMW-15S

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/6/15 0930	*Geologist* JR/CW				*Top of Riser Pipe Elevation*

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	1.0
	0.0	
	0.0	3.0
	0.0	4.0
	0.0	8.0
	0.0	

CONSTRUCTION DETAILS



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: 0

BOTTOM OF BOREHOLE

REMARKS couplet shallow & deep
flush-mount

* Elevation (feet) above mean sea level unless noted   ** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

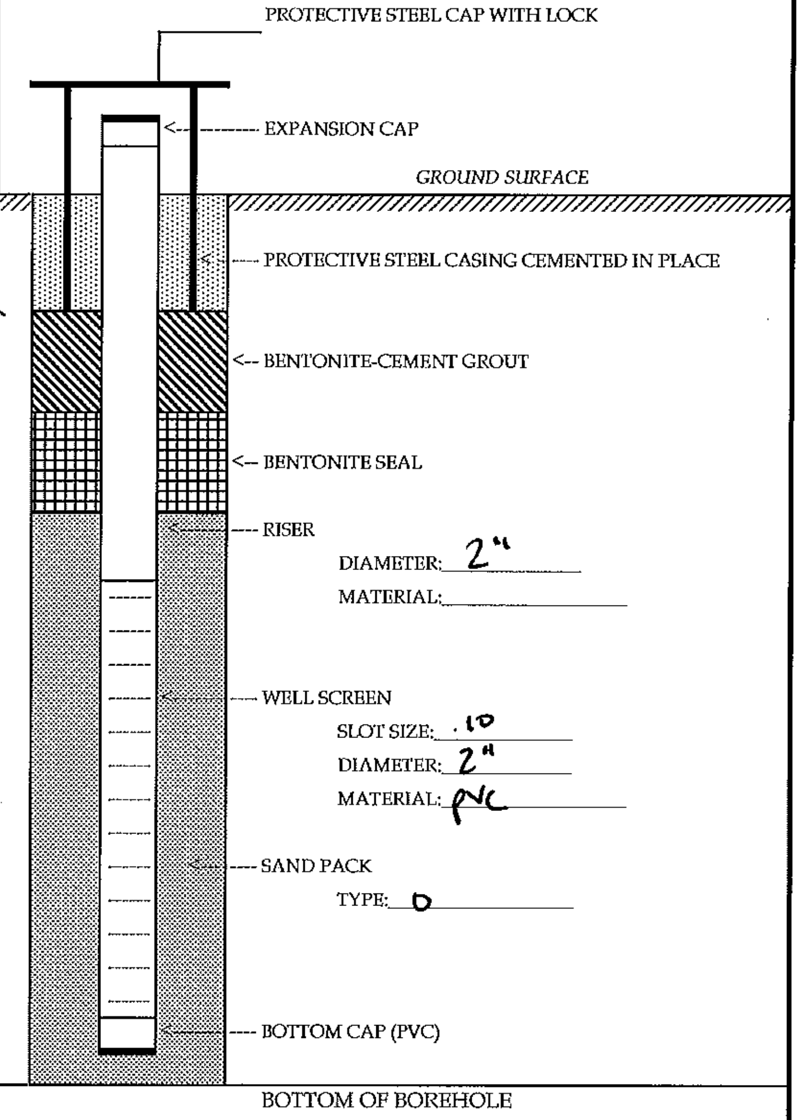
WELL : TMW-15D

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/6/15 0930	*Geologist* JRlcv				*Top of Riser Pipe Elevation*

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	8.5
	0.0	9.5
	0.0	10.5
	0.0	20.5
	0.0	



RISER
DIAMETER: 2"
MATERIAL:

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 2"
MATERIAL: PVC

SAND PACK
TYPE: 0

REMARKS couplet shallow + deep
flush-mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

WELL : TMW-16

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION

Project Name & Location: Buffalo Forge	Project No.: 0181805
Drilling Company: Parrat Wolff	Foreman:
Surveyor:	
Date and Time of Completion: 5/5/15 1400	Geologist: JR/CV

Water Level(s) (ft below top of PVC casing)

Date	Time	Level (feet)

Site Elevation Datum:

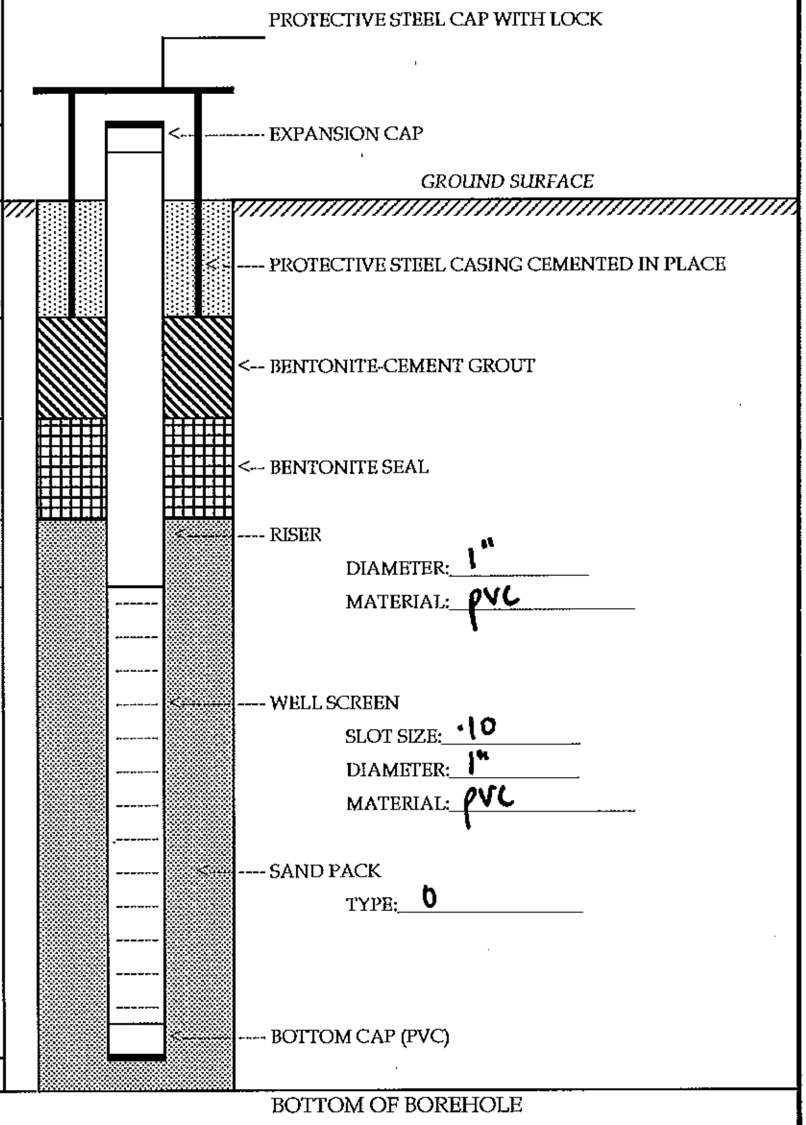
Ground Elevation:

Top of Protective Steel Cap Elevation:

Top of Riser Pipe Elevation:

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	
	0.0	1.5
	0.0	2.5
	0.0	6.5
	0.0	



RISER
DIAMETER: 1"
MATERIAL: pvc

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: pvc

SAND PACK
TYPE: 0

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

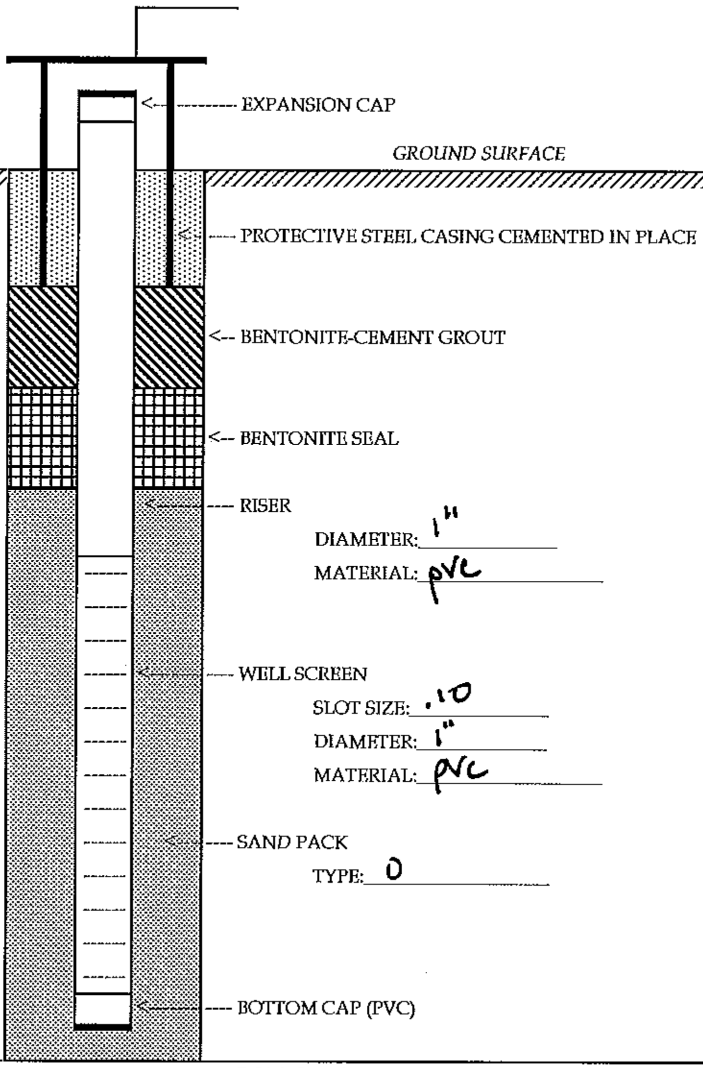
WELL : TMW-17

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/8/15	*Geologist* JR/CV				*Top of Riser Pipe Elevation*

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	
	0.0	9"
	0.0	1'9"
	0.0	3'9"
	0.0	

CONSTRUCTION DETAILS



RISER
DIAMETER: 1"
MATERIAL: pvc

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: pvc

SAND PACK
TYPE: 0

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

Appendix C
Soil Boring Logs
Remedial Investigations

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-01**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	9 ft
NORTHING	1074579.38	BOREHOLE DIAMETER	2 in
EASTING	1053494.46		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	609.22 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
0		SANDY SILT (MLS) subangular, fine to medium grained GRAVEL; some fine to coarse gravel, moist, brown (10YR 3/3), [brick debris]	MLS	▨				8450cpm
1		SANDY SILT (MLS) moist, brown (10YR 6/3)	MLS	▒	✋	12/12		BF-B01(0.5-1.5) [(0.5-1.5ft)] 8040cpm
2				▒	✋	12/12	0.2	BF-B01(2-3) [(2-3ft)]
3		SANDY SILT (MLS) firm, some clay, moist, brown (10YR 6/3)	MLS	▒	✋	12/12		7650cpm
4	605	CLAYEY SILT (CL) firm, moist, brown (10YR 6/3)	CL	▨	✋	12/12		7270cpm
5				▨	▒	12/12	2.1	
6		SILTY CLAY (CL-ML) some fine sand, moist, brown (10YR 6/3)	CL-ML	▥	▒	12/12	1.7	6880cpm
7		CLAYEY SAND (SC) fine to medium grained SAND; firm, some silt, little fine to medium gravel, moist, brown (5YR 4/3), [Bedrock refusal @ 9ftbgs.]	SC	▨	▒	12/12		8220cpm
8				▨	▒	12/12	0.9	
9	600							

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-02**
ERM PROJECT # 0181805
SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074535.15
EASTING 1053437.84
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609 ft

BOREHOLE DEPTH 10.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) medium dense, moist, brown (10YR 4/3)		MLS		✋	12/12	1.3	8090cpm BF-B02(0-1) [(0-1ft)]
		SANDY SILT (MLS) medium dense, moist, brown (10YR 6/3)	1	MLS		✋	12/12	1.2	8130cpm
2		CLAYEY SILT (CL-ML) medium dense, moist, brown (10YR 6/3)	2	CL-ML		✋	12/12	0.8	8140cpm BF-B02(2-3) [(2-3ft)]
		CLAYEY SILT (CL-ML) medium dense, wet, brown (10YR 6/3)	3	CL-ML		✋	12/12		8420cpm
4	605	SILTY CLAY (CL-ML) dense, wet, brown (10YR 6/3)	4	CL-ML		✋	12/12	0.3	7930cpm
		SILTY CLAY (CL-ML) dense, wet, brown (10YR 4/3)	5			▨	12/12	2	7160cpm
6				CL-ML		▨	12/12		
		SILTY CLAY (CL-ML) dense, trace fine to medium gravel, wet, brown (10YR 4/3)	7	CL-ML		▨	12/12	2.5	6880cpm
8		SILTY CLAY (CL-ML) dense, some fine to medium gravel, trace fine to medium sand, wet, brown (10YR 4/3)	8	CL-ML		▨	12/12	3.4	6940cpm
	600	SANDY CLAY (SW-SC) fine to medium grained SAND; moist, brown (10YR 4/3), [Bedrock refusal @ 10.5 ftbgs.]	9	SW-SC		▨	12/18	0.7	7840cpm

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample
▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-02**

ERM PROJECT # 0181805

SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074535.15
EASTING 1053437.84
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609 ft

BOREHOLE DEPTH 10.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
				SW-SC	▨	▒	12/18	0.7	
			10.5						
12									
14	595								
16									
18									
	590								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-03**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074598.05
EASTING 1053452.93
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.9 ft

BOREHOLE DEPTH 8.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
						SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SILT (CL-ML) medium dense, some fine to coarse gravel, moist, brown (10YR 4/3)		CL-ML		✋	12/12	0.4	7330cpm
		CLAYEY SILT (CL-ML) firm, moist to wet, brown (10YR 4/3)	1	CL-ML		✋	12/12	0.2	BF-B03(0.5-1.5) [(0.5-1.5ft)] 8530cpm
2	605	CLAYEY SILT (CL-ML) firm, moist to wet, brown (10YR 4/3), [some orange staining]	2	CL-ML		✋	12/12	0.3	7960cpm BF-B03(2-3) [(2-3ft)]
		SILTY CLAY (CL-ML) firm, little coarse gravel, wet, brown (10YR 4/3)	3	CL-ML		✋	12/12	0.1	7720cpm
4						✋	12/12	0.1	
		SILTY CLAY (CL-ML) firm, trace fine sand, moist, brown (5YR 4/3)	5	CL-ML		░	12/12	1.4	7340cpm
6		SILTY CLAY (CL-ML) firm, little fine sand, moist to wet, brown (5YR 4/3)	6	CL-ML		░	12/12	1.9	6280cpm
8	600	SANDY CLAY (SC) firm, little silt, moist to wet, brown (5YR 4/3), [Bedrock refusal @ 8.5 ftbgs.]	7	SC		░	12/18	1.4	6200cpm
			8.5						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-04**
ERM PROJECT # 0181805
SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074608.18
EASTING 1053317.84
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.8 ft

BOREHOLE DEPTH 10.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY CLAY (CL-ML) firm, dry to moist, brown (10YR 4/3)		CL-ML		✋	12/12	0.5	6730cpm
						✋	12/12	1	
2	605	CLAYEY SILT (CL-ML) medium dense, some construction debris, moist, dark brown (10YR 3/3), [wood, cinders, and white concrete debris]	2	CL-ML		✋	12/12	1.1	6580cpm
		SILTY CLAY (CL-ML) firm, moist, brown (10YR 4/3)	3	CL-ML		✋	12/12	1.2	6990cpm
4						✋	12/12		
		SILTY CLAY (CL-ML) firm, moist, brown (10YR 4/3)	5	CL-ML		▨	12/12	1.2	7050cpm
6		SILTY CLAY (CL-ML) firm, moist, brown (10YR 4/3), [some oxidation]	6	CL-ML		▨	12/12	2.4	7130cpm
	600					▨	12/12	2.6	
8		SILTY CLAY (CL-ML) firm, moist, brown (10YR 4/3)	8	CL-ML		▨	12/12	2.4	7760cpm
		SILTY CLAY (CL-ML) firm, some fine to medium gravel, moist, brown (5YR 4/3), [Bedrock refusal @ 10.5 ftbgs.]	9	CL-ML		▨	12/18	0.6	7370cpm

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-04**

ERM PROJECT # 0181805

SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074608.18
EASTING 1053317.84
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.8 ft

BOREHOLE DEPTH 10.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
			10.5	CL-ML	▨	▒	12/18	0.6	
12									
	595								
14									
16									
	590								
18									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-05**

ERM PROJECT # 0181805

SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074577.08
EASTING 1053281.81
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.01 ft

BOREHOLE DEPTH 11.5 ft
BOREHOLE DIAMETER 2 in

								SAMPLING DATA	
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SAND (SP) fine to medium grained SAND; loose, some gravel, dry, black (10YR 2/1)		SP	■	✋	12/12	0.6	7010cpm BF-B05(0.5-1) [(0.5-1ft)]
		SILTY CLAY (CL-ML) dense, moist, grayish brown (10YR 5/2)	1	CL-ML	▨	✋	12/12		7050cpm
2		SILTY CLAY (CL-ML) dense, little gravel, wet, brown (10YR 4/3)	2	CL-ML	▨	✋	12/12	0.3	6880cpm BF-B05(2-3) [(2-3ft)]
	605	CLAYEY SILT (CL-ML) medium dense, moist to wet, brown (10YR 4/3)	3	CL-ML	▨	✋	12/12		5760cpm
4		CLAYEY SILT (CL-ML) soft, wet, brown (10YR 4/3)	4	CL-ML	▨	✋	12/12	0.2	5770cpm
		CLAYEY SILT (CL-ML) soft, moist, brown (10YR 4/3), [oxidation]	5	CL-ML	▨	░	6/12	1.1	6900cpm
6		CLAYEY SILT (CL-ML) soft, moist, brown (10YR 4/3)	6	CL-ML	▨	░	6/12	1	6820cpm
					▨	░	6/12	1.2	
8	600	CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3), [oxidation]	8	CL-ML	▨	░	6/12	1.8	7380cpm
					▨	░	12/12	0.3	

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample
░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-05**
ERM PROJECT # 0181805
SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	11.5 ft
NORTHING	1074577.08	BOREHOLE DIAMETER	2 in
EASTING	1053281.81		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	608.01 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY CLAY (CL-ML) dense, moist, brown (10YR 4/3), [Bedrock refusal @ 11.5 ftbgs.]	11.5	CL-ML	▨	░	12/18	1.7	6710cpm
12									
	595								
14									
16									
18	590								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-06**
ERM PROJECT # 0181805
SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074642.78
EASTING 1053282.6
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.64 ft

BOREHOLE DEPTH 11 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Concrete]				✋	12/12	0.7	
		GRAVELLY SAND (GP-SP) fine to coarse grained SAND; subangular, fine to medium grained GRAVEL; loose, some silt, moist, dark brown (10YR 3/3), [cinders]	0.5	GP-SP					6570cpm BF-B06(0.5-1.5) DUP04 [(0.5-1.5ft)]
		SANDY SILT (SM) fine grained SAND; dense, moist, brown (10YR 4/3)	1			✋	12/12		6620cpm
2				SM		✋	12/12	1.4	
	605								BF-B06(2-3) [(2-3ft)]
		CLAYEY SILT (CL-ML) medium dense, moist to wet, black (10YR 4/3)	3			✋	12/12	0.9	5830cpm
4				CL-ML		✋	12/12	1.1	
		SILTY CLAY (CL-ML) firm, dry to moist, grayish brown (10YR 5/2)	5			▨	12/12	2.7	5610cpm
6				CL-ML		▨	12/12	2.2	
	600					▨	12/12	2.8	
8		SILTY CLAY (CL-ML) firm, trace fine gravel, moist, light brown (10YR 6/3)	8	CL-ML		▨	12/12	2.3	6450cpm
		SILTY CLAY (CL-ML) firm, little fine gravel, dry to moist, reddish brown (5YR 4/3), [oxidation]	9	CL-ML		▨	12/12	1.6	6560cpm

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-06**

ERM PROJECT # 0181805

SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York
DRILLING FOREMAN	
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	Geoprobe 6620 DT
ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
OFFICE LOCATION	Syracuse, NY
DATE: START	12/02/2014
FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING	1074642.78
EASTING	1053282.6

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.64 ft

BOREHOLE DEPTH	11 ft
BOREHOLE DIAMETER	2 in

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY CLAY (SC) firm, some fine to coarse gravel, moist to wet, grayish brown (10YR 5/2), [Bedrock refusal @ 11 ftbgs.]	11	SC	▨	░	12/12	1.6	6710cpm
12									
	595								
14									
16									
	590								
18									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-07**

ERM PROJECT # 0181805

SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING 1074612.68

EASTING 1053269.07

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.57 ft

BOREHOLE DEPTH 11 ft

BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
		GRAVELLY SAND (GP-SP) fine to medium grained SAND; subangular, fine to coarse grained GRAVEL; loose, trace construction debris, dry to moist, black (10YR 2/1), [cinders]		GP-SP		✋	12/12	1.3	7510cpm
		SILTY CLAY (CL-ML) firm, moist, brown (10YR 4/3)	1	CL-ML		✋	12/12	1.4	BF-B07(0.5-1.5) [(0.5-1.5ft)] 7290cpm
2	605	SILTY CLAY (CL-ML) firm, moist to wet, brown (10YR 4/3)	2	CL-ML		✋	12/12	1.5	6540cpm BF-B07(2-3) [(2-3ft)]
		CLAYEY SILT (CL-ML) firm, moist, brown (10YR 4/3)	3	CL-ML		✋	12/12	1.8	7410cpm
4		CLAYEY SILT (CL-ML) firm, moist, brown (10YR 4/3)	4	CL-ML		✋	12/12	1.9	7520cpm
		SILTY CLAY (CL-ML) stiff, dry, reddish brown (5YR 4/3), [oxidation]	5	CL-ML		▨	12/12	2.6	5840cpm
6						▨	12/12	2.1	
	600	SILTY CLAY (CL-ML) firm, dry to moist, grayish brown (10YR 5/2), [oxidation]	7	CL-ML		▨	12/12	2.9	6030cpm
8		SILTY CLAY (CL-ML) firm, trace fine sand, moist, reddish brown (5YR 4/3)	8	CL-ML		▨	12/12	2.4	6060cpm
		SILTY CLAY (CL-ML) firm, trace fine sand, trace fine gravel, moist, reddish brown (5YR 4/3)	9	CL-ML		▨	12/12	2.6	7120cpm

REMARKS:

cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-07**
ERM PROJECT # 0181805
SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	11 ft
NORTHING	1074612.68	BOREHOLE DIAMETER	2 in
EASTING	1053269.07		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.57 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY CLAY (SC) firm, trace fine to coarse gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 11 ftbgs.]	11	SC	▨	░	12/12	1.3	5670cpm
12									
	595								
14									
16									
	590								
18									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: Howden NA, Inc. Former Buffalo Forge Property - BCP #C915280	BORING # **B-08** ERM PROJECT # 0181805 SHEET 1 OF 2	

DRILLING CONTRACTOR Parratt-Wolff New York
DRILLING FOREMAN
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 6620 DT

ERM REPRESENTATIVE J. Reynolds/ C.Voorhees
OFFICE LOCATION Syracuse, NY
DATE: START 12/02/2014
FINISH 05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074622.85
EASTING 1053284.75
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.75 ft

BOREHOLE DEPTH 11 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		GRAVELLY SAND (GP-SP) fine to coarse grained SAND; subangular, fine to medium grained GRAVEL; loose, moist, black (10YR 2/1), [cinders]		GP-SP		✋	12/12	0.6	7260cpm
		CLAYEY SILT (CL-ML) dense, moist to wet, brown (10YR 4/3)	1	CL-ML		✋	12/12	0.2	BF-B08(0.5-1.5) [(0.5-1.5ft)] 6990cpm
2	605	CLAYEY SILT (CL-ML) medium dense, moist to wet, brown (10YR 4/3)	2	CL-ML		✋	12/12		7300cpm BF-B08(2-3) [(2-3ft)]
		SILTY CLAY (CL-ML) dense, moist, grayish brown (10YR 5/2)	3	CL-ML		✋	12/12	1.2	7410cpm
4		SILTY CLAY (CL-ML) dense, moist, grayish brown (10YR 5/2)	4	CL-ML		✋	12/12	0.5	7010cpm
		SILTY CLAY (CL-ML) dense, moist, brown (10YR 4/3), [oxidation]	5	CL-ML		░	12/12	3.1	6940cpm
6						░	12/12	2.4	
	600	SILTY CLAY (CL-ML) dense, trace fine gravel, moist, brown (10YR 4/3), [oxidation]	7	CL-ML		░	12/12	1.3	6920cpm
8		SILTY CLAY (CL-ML) dense, trace fine to medium sand, trace fine gravel, moist, brown (10YR 4/3)	8	CL-ML		░	12/12	2.1	6740cpm
		SILTY CLAY (CL-ML) dense, trace fine gravel, moist, brown (10YR 4/3)	9	CL-ML		░	12/12	0.4	6650cpm

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-08**
ERM PROJECT # 0181805
SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York
DRILLING FOREMAN	
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	Geoprobe 6620 DT
ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
OFFICE LOCATION	Syracuse, NY
DATE: START	12/02/2014
FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074622.85
EASTING 1053284.75
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.75 ft

BOREHOLE DEPTH 11 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAY (CL) dense, moist, brown (10YR 4/3), [oxidation]		CL	▨	▒	12/12	0.5	6530cpm
		CLAYEY SAND (SW-SC) dense, trace fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 11 ftbgs.]	10.5	SW-SC	▨				6730cpm
			11						
12									
	595								
14									
16									
	590								
18									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample
▒ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-09**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/19/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/19/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	1.67 ft
NORTHING	1074994.23	BOREHOLE DIAMETER	2 in
EASTING	1053804.1		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	610.76 ft		

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	610	CLAYEY SILT (CL-ML) firm, some fine sand, moist, reddish brown (5YR 4/3)		CL-ML	▨	✋	12/12		2820cpm
		CLAYEY SILT (CL-ML) firm, trace fine sand, trace fine gravel, moist, reddish brown (5YR 4/3), [Bedrock refusal @ 1.67 ftbgs.]	1	CL-ML	▨	✋	12/8		BF-B09(0.5-1.5) [(0.5-1.5ft)] 2900cpm
			1.67						
2									
4									
	605								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-10**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/19/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/19/2014
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	1.5 ft
NORTHING	1074981.38	BOREHOLE DIAMETER	2 in
EASTING	1053722.31		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	609.46 ft		

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SILT (CL-ML) dense, trace fine sand, moist, reddish brown (5YR 4/3)		CL-ML	▨	✋	12/12		6800cpm
		CLAYEY SILT (CL-ML) dense, trace fine to medium sand, moist, reddish brown (5YR 4/3), [Bedrock refusal @ 1.5 ftbgs.]	1	CL-ML	▨	✋	6/6		BF-B10(0.5-1.5) [(0.5-1.5ft)] 5540cpm
			1.5						
2									
4									
	605								
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-11**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/19/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/19/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075042.87
EASTING 1053657.17
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609.01 ft

BOREHOLE DEPTH 1.67 ft
BOREHOLE DIAMETER 2 in

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3)		CL-ML	▨	✋	12/12		1540cpm
		CLAYEY SILT (CL-ML) dense, trace fine to medium sand, moist, brown (10YR 4/3), [Bedrock refusal @ 1.67 ftbgs.]	1	CL-ML	▨	✋	8/8		BF-B11(0.5-1.5) [(0.5-1.5ft)] 1600cpm
			1.67						
2									
4	605								
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-12**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	5.5 ft
NORTHING	1075021.87	BOREHOLE DIAMETER	2 in
EASTING	1053482.45		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.7 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) medium dense, some fine to medium gravel, trace construction debris, moist, brown (10YR 5/3), [red brick fragments]		SM		✋	12/12	0	4730cpm
		SANDY SILT (SM) medium dense, some fine to medium gravel, trace clay, trace construction debris; moist, brown (10YR 5/3), [red brick fragments]	1	SM		✋	12/12	0	5090cpm
2	605	CLAYEY SILT (CL-ML) dense, some fine to medium gravel, trace construction debris, moist, brown (10YR 5/3), [red brick fragments]	2	CL-ML		✋	12/12	0	4640cpm
						✋	12/12	0.2	
4		CLAYEY SILT (CL-ML) dense, moist, brown to grayish brown (10YR 5/2)	4	CL-ML		✋	12/12	0.9	6090cpm BF-B12(4-5) [(4-5ft)]
		CLAYEY SILT (CL-ML) dense, some medium to coarse gravel, moist, grayish brown (10YR 5/2), [Bedrock refusal @ 5.5 ftbgs.]	5 5.5	CL-ML		▨	6/6	0.8	4950cpm
6									
8	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

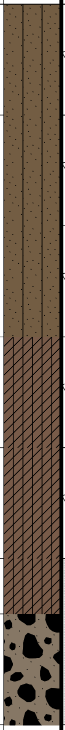
PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-13**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074991.16
EASTING 1053455.39
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.57 ft

BOREHOLE DEPTH 6.5 ft
BOREHOLE DIAMETER 2 in



DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) medium dense, some fine gravel, moist, brown (10YR 4/3)		SM		✋	12/12	0	4410cpm
		SANDY SILT (SM) medium dense, trace construction debris, moist, brown (10YR 4/3), [red brick fragments]	1	SM		✋	12/12	0	4870cpm
2	605					✋	12/12	0	
		CLAYEY SILT (CL-ML) dense, some fine sand, moist, reddish brown (5YR 4/3)	3	CL-ML		✋	12/12	0	4770cpm
4		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	4	CL-ML		✋	12/12	0	5350cpm BF-B13(4-5) [(4-5ft)]
		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	5	CL-ML		▨	18/18	2.1	5340cpm
6		GRAVELLY SAND (GW-SW) loose, moist, grayish brown (10YR 5/2), [Bedrock refusal @ 6.5 ftbgs.]	5.5	GW-SW					5350cpm
			6.5						
8	600								

SAMPLING DATA

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample
▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-14**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075024.54
EASTING 1053409.6
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.31 ft

BOREHOLE DEPTH 7 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
						SAMPLING DATA			
		SANDY SILT (SW-SM) medium dense, trace fine to medium gravel, moist, brown (10YR 4/3)		SW-SM		✋	12/12	0	4930cpm
		SANDY SILT (SW-SM) medium dense, trace clay, moist, brown (10YR 4/3)	1	SW-SM		✋	12/12	0	5040cpm
2	605					✋	12/12	0	
		CLAYEY SILT (CL-ML) dense, some fine sand, moist, reddish brown (5YR 4/3)	3	CL-ML		✋	12/12	0	5140cpm
4		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	4	CL-ML		✋	12/12	0	5020cpm BF-B14(4-5) [(4-5ft)]
		CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, reddish brown (5YR 4/3)	5	CL-ML		▨	12/12	0.1	5250cpm
6						▨	12/12	0.2	
		SILTY SAND (SM) medium grained SAND; loose, some fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 7 ftbgs.]	6.5	SM					5780cpm
			7						
	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-15**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/25/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	2 ft
NORTHING	1074867.32	BOREHOLE DIAMETER	2 in
EASTING	1053104.12		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	605.68 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]	0.3		■				
	605	GRAVELLY SAND (GP-SP) medium grained SAND; subangular, loose, some construction debris, moist, dark brown (10YR 3/3), [slag, red brick fragments. EOB. Refusal on concrete.]		GP-SP	▨	✋	12/12	0	4060cpm
					▨	✋	12/12		BF-B15(0.5-1.5) [(0.5-1.5ft)]
2			2						
4									
	600								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-16**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/25/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074983.8
EASTING 1053123.76
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.79 ft

BOREHOLE DEPTH 2 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
			0.3		■	✋	12/12		4060cpm
	605	GRAVELLY SAND (GP-SP) medium grained SAND; fine to coarse grained GRAVEL; loose, some construction debris, wet, black (10YR 2/1), [slag, red brick fragments. EOB. Refusal on concrete.]		GP-SP	▨	✋	12/12	0	BF-B16(0.5-1.5) [(0.5-1.5ft)]
2			2						
4									
6	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

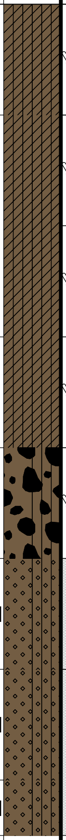
PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-17
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2015
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075178.28
EASTING 1053073.21
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.63 ft

BOREHOLE DEPTH 7.5 ft
BOREHOLE DIAMETER 2 in



DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
					SAMPLING DATA			
	605	CLAYEY SILT (CL-ML) medium dense, dry to moist, brown (10YR 4/3)		CL-ML	✋	12/12	0	6000cpm
		SILTY CLAY (CL-ML) medium dense, moist to wet, brown (10YR 4/3)	1	CL-ML	✋	12/12	0	6310cpm
2					✋	12/12	0.1	
		SILTY CLAY (CL-ML) medium dense, wet, brown (10YR 4/3)	3	CL-ML	✋	12/12	0.2	5670cpm
4		GRAVELLY SILT (GW-GM) soft, some fine sand, little medium to coarse gravel, moist, brown (10YR 4/3)	4	GW-GM	✋	12/12	0	5880cpm
	600	SANDY SILT (SW-SM) soft, little fine gravel, moist, brown (10YR 4/3)	5	SW-SM	▨	12/12	0.7	6120cpm
6		SANDY SILT (SW-SM) soft, trace fine gravel, moist, brown (10YR 4/3)	6	SW-SM	▨	12/18	0.4	6190cpm
		SANDY SILT (SW-SM) soft, some fine to medium gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 7.5 ftbgs.]	7	SW-SM			0.6	6010cpm
			7.5					
8								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample
▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-18

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/19/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/19/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING 1074942.26

EASTING 1053572.42

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.4 ft

BOREHOLE DEPTH 4.75 ft

BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) soft, moist, brown (10YR 4/3)		SM		✋	12/12		3950cpm
		SANDY SILT (SM) soft, some clay, moist, brown (10YR 4/3)	1	SM		✋	12/12		3250cpm
2		CLAYEY SILT (CL-ML) soft, some fine sand, trace fine gravel, moist, brown (10YR 4/3)	2	CL-ML		✋	12/12		3610cpm
	605					✋	12/12		BF-B18(3-4.5) [(3-4.5ft)]
4		CLAYEY SAND (SP-SC) soft, some fine to medium gravel, moist, dark brown (10YR 3/3), hydrocarbon-like odor, [Bedrock refusal @ 4.75 ftbgs.]	4	SP-SC		✋	9/9		3500cpm
			4.75						
6									
8									
	600								

REMARKS:

cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-18A**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	12/02/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074980.94
EASTING 1053598.09
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.58 ft

BOREHOLE DEPTH 4 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
						SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) medium dense, some fine gravel, moist, brown (10YR 4/3)		MLS		✋	12/12	0.4	4920cpm
		SANDY SILT (MLS) medium dense, some fine gravel, trace clay, moist, brown (10YR 4/3)	1	MLS		✋	12/12	0.6	5130cpm
2		CLAYEY SILT (CL-ML) dense, some fine sand, little fine gravel, moist, brown (10YR 4/3)	2	CL-ML		✋	12/12	0.7	4450cpm
	605	CLAYEY SILT (CL-ML) dense, some fine to medium gravel, moist to wet, brown to grayish brown (10YR 5/2), [Bedrock refusal @ 4 ftbgs.]	3	CL-ML		✋	12/12	0.7	5070cpm BF-B18A(3-4) [(3-4ft)]
4			4						
6									
8									
	600								

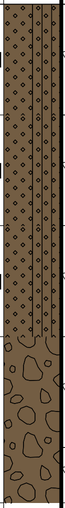
REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-19**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	12/02/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	4.5 ft
NORTHING	1074905.51	BOREHOLE DIAMETER	2 in
EASTING	1053543.81		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	608.32 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
		SANDY SILT (SW-SM) fine to medium grained SAND; soft, some fine gravel, moist, brown (10YR 4/3)		SW-SM		✋	12/12	0	3950cpm
		SANDY SILT (SW-SM) fine to medium grained SAND; soft, some fine gravel, trace clay, moist, brown (10YR 4/3)	1	SW-SM		✋	12/12	0	5340cpm
2		SANDY SILT (SW-SM) fine to medium grained SAND; soft, some clay, moist, brown (10YR 4/3)	2	SW-SM		✋	12/12	0	4480cpm
	605	COBBLES (GP) coarse grained GRAVEL; trace construction debris, moist, brown (10YR 4/3), [red brick fragments. EOB. refusal on bedrock.]	3	GP		✋	12/12	0.2	4150cpm BF-B19(3-4.5) [(3-4.5ft)]
4						✋	6/6		
			4.5						
6									
8	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-20**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2015
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074951.9
EASTING 1053505.21
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.2 ft

BOREHOLE DEPTH 6 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SW-SM) soft, moist, brown (10YR 4/3)		SW-SM		✋	12/12	0	5040cpm
		SANDY SILT (SW-SM) soft, some clay, trace fine gravel, moist, brown (10YR 4/3), [red brick fragments.]	1	SW-SM		✋	12/12	0	5110cpm
2									
		CLAYEY SILT (CL-ML) dense, trace construction debris, moist, reddish brown (5YR 4/3)	2.5	CL-ML		✋	12/12	0	5220cpm
	605					✋	12/12	0	
4		CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3)	4	CL-ML		✋	12/12	0	BF-B20(3-5) [(3-5ft)] 4280cpm
		CLAYEY SILT (CL-ML) dense, moist, grayish brown (10YR 5/2), [Bedrock refusal @ 6 ftbgs.]	5	CL-ML		▨	12/12	0.7	5220cpm
6			6						
8	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-21**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074988.21
EASTING 1053553.42
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.43 ft

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SW-SM) soft, some fine gravel, moist, brown (10YR 4/3)		SW-SM		✋	12/12	0	4850cpm
		SANDY SILT (SW-SM) soft, some fine gravel, trace clay, moist, brown (10YR 4/3)	1	SW-SM		✋	12/12	0	4670cpm
2		CLAYEY SILT (CL-ML) medium dense, some fine sand, trace fine gravel, moist, reddish brown (5YR 4/3)	2	CL-ML		✋	12/12	0	4700cpm
	605	CLAYEY SILT (CL-ML) dense, trace fine sand, moist, reddish brown (5YR 4/3), [Bedrock refusal @ 5 ftbgs.]	3			✋	12/12	0.2	4900cpm
4				CL-ML		✋	12/12	0.7	BF-B21(3.5-5) [(3.5-5ft)]
			5						
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

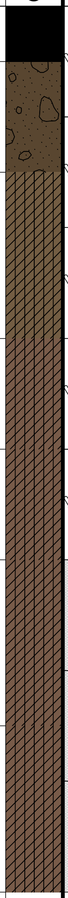
PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-22**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075278.51
EASTING 1053319.43
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609.72 ft

BOREHOLE DEPTH 8 ft
BOREHOLE DIAMETER 2 in



DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]			✋	12/12	0	
		GRAVELLY SAND (GP-SP) medium grained SAND; subangular, medium grained GRAVEL; loose, moist, dark brown (10YR 3/3)	0.5	GP-SP				
								4450cpm BF-B22(0.5-1.5) [(0.5-1.5ft)]
		CLAYEY SILT (CL-ML) soft, trace coarse sand, moist, brown (10YR 4/3)	1.5	CL-ML	✋	12/12	0	4000cpm
2								
					✋	12/12	0	
		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	3	CL-ML				4420cpm
					✋	12/12	0	
4		CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, reddish brown (5YR 4/3)	4	CL-ML				3690cpm
	605				✋	12/12	0	
		CLAYEY SILT (CL-ML) dense, trace fine to medium gravel, moist to wet, reddish brown (5YR 4/3)	5	CL-ML				3950cpm
					░	12/12	0	
6								
		CLAYEY SILT (CL-ML) dense, trace fine to medium gravel, moist, reddish brown (5YR 4/3), [Bedrock refusal @ 8 ftbgs.]	6.5	CL-ML	░	12/12	0	5160cpm
					░	12/12	0	
8			8					
	600							

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample
░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-23**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York
DRILLING FOREMAN	
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	Geoprobe 6620 DT
ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
OFFICE LOCATION	Syracuse, NY
DATE: START	11/24/2014
FINISH	05/04/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))	
NORTHING	1075255.32
EASTING	1053270.73
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	608.18 ft
BOREHOLE DEPTH	7.5 ft
BOREHOLE DIAMETER	2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SAND (SC) medium grained SAND; soft, trace fine gravel, moist, brown (10YR 4/3)		SC	▨	✋	12/12		3830cpm
		GRAVELLY SAND (GP-SP) medium grained SAND; subangular, medium grained GRAVEL; loose, trace clay, moist, black (10YR 2/1)	0.5	GP-SP	▨	✋	12/12		3930cpm BF-B23(0.5-1.5) [(0.5-1.5ft)]
2	605	CLAYEY SILT (CL-ML) medium dense, trace medium sand, moist, brown (10YR 4/3)	2	CL-ML	▨	✋ ✋	12/12 12/12		4580cpm
4		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	3.5	CL-ML	▨	✋	12/12	0	4860cpm
6		CLAYEY SILT (CL-ML) dense, moist, reddish brown to light brown (5YR 6/4)	4.5	CL-ML	▨	░	12/12		4730cpm
		CLAYEY SILT (CL-ML) dense, trace fine gravel, moist to wet, light brown (10YR 6/3), [Bedrock refusal @ 7.5 ftbgs.]	6.5	CL-ML	▨	░	12/18		5140cpm
8	600		7.5						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-24**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING 1075296.64

EASTING 1053241.53

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.76 ft

BOREHOLE DEPTH 7 ft

BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
						SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SAND (SW-SC) medium grained SAND; soft, trace roots, moist, brown (10YR 4/3)		SW-SC	▨	✋	12/12		4490cpm
		GRAVELLY SAND (GP-SP) medium grained SAND; subangular, medium grained GRAVEL; loose, some clay, moist, black (10YR 2/1)	0.5	GP-SP	▨	✋	12/12		4720cpm BF-B24(0.5-1.5) [(0.5-1.5ft)]
2		CLAYEY SILT (CL-ML) medium dense, some fine sand, moist, reddish brown (5YR 4/3)	1.5	CL-ML	▨	✋	12/12		5310cpm
		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	2.5	CL-ML	▨	✋	12/12		6940cpm
4	605	CLAYEY SILT (CL-ML) dense, moist, grayish brown (10YR 5/2)	3.5	CL-ML	▨	✋ ✋	12/12 12/12	0	5990cpm
		CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, reddish brown (5YR 4/3)	5	CL-ML	▨	░	12/12		5470cpm
6		CLAYEY SILT (CL-ML) some medium to coarse sand, trace fine gravel, moist to wet, reddish brown (5YR 4/3), [Bedrock refusal @ 7 ftbgs.]	6	CL-ML	▨	░	12/12		5930cpm
8	600		7						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-25
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075352.05
EASTING 1053292.46
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 610.17 ft

BOREHOLE DEPTH 7.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	610	[Asphalt.]				✋	12/12	0.1	
		GRAVELLY SAND (GP-SP) medium grained SAND; subangular, fine to medium grained GRAVEL; loose, some construction debris, dry, dark brown (10YR 3/3), [Slag.]	0.5	GP-SP					6880cpm BF-B25(0.5-1.5) [(0.5-1.5ft)]
						✋	12/12	0.2	
		SILTY CLAY (CL-ML) medium dense, moist to wet, grayish brown (10YR 5/2)	1.5	CL-ML					7800cpm
2						✋	12/12	0.2	
		CLAYEY SILT (CL-ML) soft, wet, brown (10YR 4/3)	3	CL-ML		✋	12/12	0.1	7990cpm
4						✋	12/12	0.1	
	605	CLAYEY SILT (CL-ML) medium dense, trace fine gravel, moist, brown (10YR 4/3)	5	CL-ML		▨	12/12	0	4910cpm
6		CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, reddish brown (5YR 4/3)	6	CL-ML		▨	12/18	0	4620cpm
		CLAYEY SILT (CL-ML) medium dense, some medium to coarse sand, trace fine gravel, moist, reddish brown (5YR 4/3), [Bedrock refusal @ 7.5 ftbgs.]	7	CL-ML					4084cpm
			7.5						
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample
▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-26**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	8 ft
NORTHING	1075286.73	BOREHOLE DIAMETER	2 in
EASTING	1053279.16		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	609.29 ft		

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]							
		SAND (SW) fine grained SAND; medium dense, some gravel, moist, brown (10YR 4/3)	0.3	SW		✋	12/12	0	4230cpm
		GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; medium dense, trace clay, moist, brown (10YR 4/3)	1	GP-SP		✋	12/12		4240cpm
2		CLAYEY SILT (CL-ML) medium dense, some sand, trace gravel, moist, brown (10YR 4/3)	2	CL-ML		✋	12/12		4000cpm BF-B26(2-3) [(2-3ft)]
		CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3)	3	CL-ML		✋	12/12		3780cpm
4	605					✋	12/12		
		CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3)	5	CL-ML		▒	12/12		4950cpm
6		CLAYEY SILT (CL-ML) dense, moist to wet, reddish brown (5YR 4/3)	6	CL-ML		▒	12/12		5330cpm
		CLAYEY SILT (CL-ML) medium dense, some fine gravel, trace medium to coarse sand, moist, reddish brown (5YR 4/3), [Bedrock refusal @ 8 ftbgs.]	7	CL-ML		▒	12/12		5600cpm
8			8						
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-27

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/26/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074865.6
EASTING 1053767.19
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 610.05 ft

BOREHOLE DEPTH 2 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SW-SM) loose, moist, brown (10YR 4/3)		SW-SM	▨	✋	12/12	0	5010cpm
		SANDY SILT (SW-SM) loose, some construction debris, moist, dark brown (10YR 3/3), [Some cinders. EOB. Refusal on bedrock.]	1	SW-SM	▨	✋	12/12	0.2	5810cpm BF-B27(1-2) [(1-2ft)]
2			2						
4									
	605								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-28**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/26/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074887.88
EASTING 1053756.49
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 610.14 ft

BOREHOLE DEPTH 2.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	610	SILTY SAND (SM) fine grained SAND; soft, moist, brown (10YR 4/3)		SM		✋	12/12	0.1	5570cpm
						✋	12/12	0.1	
2		GRAVELLY SAND (GP-SP) medium to coarse grained SAND; subangular, fine to medium grained GRAVEL; loose, trace construction debris, moist, black (10YR 2/1), [Trace slag & cinders. EOB. Refusal on bedrock.]	2	GP-SP		✋	6/6	0	BF-B28(1.5-2.5) [(1.5-2.5ft)] 5920cpm
			2.5						
4									
	605								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-29**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/26/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074869.63
EASTING 1053734.84
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609.42 ft

BOREHOLE DEPTH 3.5 ft
BOREHOLE DIAMETER 2 in

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine grained SAND; loose, dry to moist, brown (10YR 4/3)		SM		✋	12/12	0.1	5370cpm
						✋	12/12	0.1	
2		CLAYEY SILT (CL-ML) firm, moist to wet, dark brown (10YR 3/3)	2	CL-ML		✋	12/18	0.1	5760cpm BF-B29(2-3.5) [(2-3.5ft)] 5950cpm
		CLAYEY SILT (CL-ML) medium dense, some fine to medium sand, little fine to medium gravel, moist, dark brown (10YR 3/3), [Bedrock refusal @ 3.5 ftbgs.]	3	CL-ML				0.1	
			3.5						
4									
	605								
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-29A**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	12/02/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING 1074849.89

EASTING 1053713.45

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609.21 ft

BOREHOLE DEPTH 3.2 ft

BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
		SANDY SILT (MLS) fine to medium grained SAND; loose, some fine to medium gravel, trace clay, moist, brown (10YR 4/3)		MLS	▨	✋	12/12		5060cpm
		SILTY CLAY (CL-ML) firm, moist, reddish brown (5YR 4/3)	1	CL-ML	▨	✋	12/12	0	5660cpm
2		CLAYEY SILT (CL-ML) firm, little fine to medium gravel, wet, brown (10YR 4/3), [Bedrock refusal @ 3.2 ftbgs.]	2	CL-ML	▨	✋	12/14.4		5200cpm B-29A(2-3) [(2-3ft)]
			3.2						
4	605								
6									
8	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-30**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/26/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	2.67 ft
NORTHING	1074845.39	BOREHOLE DIAMETER	2 in
EASTING	1053765.06		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	610.06 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	610	SILTY SAND (SM) fine to medium grained SAND; soft, moist, brown (10YR 4/3)		SM	▨	✋	12/12	0.1	5750cpm
		SANDY SILT (SW-SM) soft, moist, brown (10YR 4/3)	1	SW-SM	▨	✋	12/12	0.1	6240cpm
2		SANDY SILT (SW-SM) soft, moist to wet, dark brown (10YR 3/3), hydrocarbon-like odor, [Bedrock refusal @ 2.67 ftbgs.]	2	SW-SM	▨	✋	8/8	12.3	5890cpm
			2.67						
4									
	605								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-30A**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/04/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074796.71
EASTING 1053716.56
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609.87 ft

BOREHOLE DEPTH 2 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; loose, dry, reddish brown (5YR 4/3)		MLS		✋	12/12	0	5830cpm
		SILTY SAND (SM) fine grained SAND; loose, some fine to medium gravel, dry to moist, brown (10YR 4/3), [Bedrock refusal @ 2 ftbgs.]	1	SM		✋	12/12		5670cpm B-30A(1-2) [(1-2ft)]
2			2						
4									
	605								
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-31**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/26/2014
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	4 ft
NORTHING	1074702.91	BOREHOLE DIAMETER	2 in
EASTING	1053483.18		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.33 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) fine grained SAND; medium dense, some gravel, moist, brown (10YR 4/3)		SM		✋	12/12		4630cpm
		SANDY SILT (SM) fine grained SAND; medium dense, some clay, some gravel, moist to wet, brown (10YR 4/3)	1	SM		✋	12/12		4230cpm
2	605	SANDY SILT (SM) fine grained SAND; medium dense, some clay, some gravel, moist to wet, dark brown (10YR 3/3), hydrocarbon-like odor, [EOB. Refusal @ 4ftbgs.]	2	SM		✋	12/12	0	4760cpm
						✋	12/12		BF-B31(3-4) [(3-4ft)]
4			4			✋	12/12		
6									
	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-31A**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/04/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074753.82
EASTING 1053508.15
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.88 ft

BOREHOLE DEPTH 3.5 ft
BOREHOLE DIAMETER 2 in

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY CLAY (CL-ML) firm, some fine sand, dry, reddish brown (5YR 4/3)		CL-ML	▨				4340cpm
		SILTY CLAY (CL-ML) firm, some fine sand, little fine to medium gravel, dry to moist, reddish brown (5YR 4/3)	1	CL-ML	▨				4870cpm
2		CLAYEY SILT (CL-ML) firm, trace construction debris, dry to moist, reddish brown (5YR 4/3), [Trace slag and brock debris.]	2	CL-ML	▨				5230cpm
	605	GRAVEL (GP) angular, coarse grained GRAVEL; firm, some silt, wet, gray (10YR 5/1), [Refusal @ 3.5 ftbgs.]	3	GP	▨				5160cpm
			3.5						
4									
6									
8	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-32**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074736.85
EASTING 1053468.22
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.27 ft

BOREHOLE DEPTH 7.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) fine grained SAND; medium dense, trace gravel, moist, brown (10YR 4/3)		SM	▒	✋	12/12		4390cpm
		SANDY SILT (SM) fine grained SAND; medium dense, trace clay, moist, brown (10YR 4/3)	1	SM	▒	✋	12/12		4550cpm
2	605	CLAYEY SILT (CL-ML) medium dense, some fine sand, moist, reddish brown (5YR 4/4)	2	CL-ML	▨	✋	12/12	0	4840cpm
4		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/4)	3	CL-ML	▨	✋	12/24		5030cpm BF-B32(3-5) [(3-5ft)]
		CLAYEY SILT (CL-ML) medium dense, moist, reddish brown (5YR 4/4)	5	CL-ML	▨	░	12/12	0.7	4750cpm
6	600	SANDY SILT (SM) some fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 7.5 ftbgs.]	6	SM	▒	░ ░	12/12 6/6	0.5	5200cpm
8			7.5						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-33**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/26/2014
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	4 ft
NORTHING	1074734.22	BOREHOLE DIAMETER	2 in
EASTING	1053442.55		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.15 ft		

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) fine grained SAND; medium dense, some gravel, moist, brown (10YR 4/3)		SM		✋	12/12		4770cpm
		SANDY SILT (SM) fine grained SAND; medium dense, some gravel, moist, brown (10YR 4/3)	1	SM		✋	12/12	0	4790cpm
2	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; loose, some construction debris, wet, gray to black (10YR 4/1), hydrocarbon-like odor, [EOB. Refusal @ 4ftbgs.]	2	GP-SP		✋	12/12		4810cpm
						✋	12/12	1.8	BF-B33(3-4) [(3-4ft)]
4			4						
6									
	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

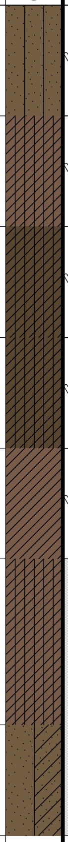
BORING # **B-33A**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/04/2015
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074781.7
EASTING 1053459.24
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.32 ft

BOREHOLE DEPTH 7.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine grained SAND; loose, dry, brown (10YR 4/3)		SM		✋	12/12		5050cpm
		CLAYEY SILT (CL-ML) firm, dry to moist, reddish brown (5YR 4/3), [black sand, cinders, brick, wood]	1	CL-ML		✋	12/12		5310cpm
2	605	SILTY CLAY (CL-ML) firm, dry to moist, dark brown (10YR 3/3), [mottled, trace black sand, brick]	2	CL-ML		✋	12/12	0	5820cpm
		SILTY CLAY (CL-ML) firm, dry to moist, dark brown (10YR 3/3), [mottled, black sand]	3	CL-ML		✋	12/12		5350cpm B-33A(3-4) [(3-4ft)]
4		CLAY (CL) firm, dry to moist, light reddish brown (5YR 4/3)	4	CL		✋	12/12		5680cpm
6		CLAYEY SILT (CL-ML) dense, little sand, moist, reddish black (5YR 4/3)	5	CL-ML		░	54/30	1.4	5620cpm
	600	SANDY CLAY (SP-SC) fine grained SAND; dense, some fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 7.5 ftbgs]	6.5	SP-SC		░		0.5	6290cpm
8			7.5						



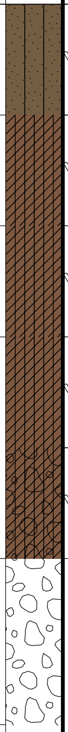
REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-34**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York
DRILLING FOREMAN	
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	Hand Auger/ Air knife
ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
OFFICE LOCATION	Syracuse, NY
DATE: START	11/26/2014
FINISH	11/26/2014
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))	
NORTHING	1074708.03
EASTING	1053450.32
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.12 ft
BOREHOLE DEPTH	6.5 ft
BOREHOLE DIAMETER	2 in



DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) fine grained SAND; medium dense, trace gravel, moist, brown (10YR 4/3)		SM	✋	12/12		4550cpm
		CLAYEY SILT (CL-ML) medium dense, some sand, moist, brown (5YR 4/4)	1	CL-ML	✋	12/12		5130cpm
2	605	CLAYEY SILT (CL-ML) dense, some fine sand, moist, brown (5YR 4/4)	2	CL-ML	✋	12/12	0	4640cpm
4		CLAYEY SILT (CL-ML) medium dense, some construction debris, moist to wet, reddish brown (5YR 4/4), [abandoned pipe in side of borehole] GRAVEL (GP) subangular, coarse grained GRAVEL; medium dense, moist to wet, [Refusal @ 6.5 ftbgs.]	3	CL-ML	✋ ✋	12/12 12/12		5430cpm BF-B34(3-5) [(3-5ft)] 4820cpm
6			5	GP				
8	600		6.5					

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

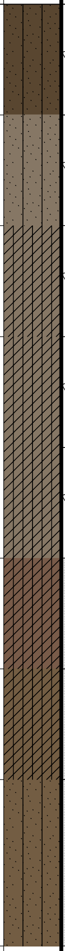
ERM 5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: Howden NA, Inc. Former Buffalo Forge Property - BCP #C915280	BORING # **B-35** ERM PROJECT # 0181805 SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074867.05
EASTING 1053377.26
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.99 ft

BOREHOLE DEPTH 8.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) soft, some fine to medium gravel, trace fine to coarse sand, trace construction debris; moist, dark brown (10YR 3/3), [Trace red brick fragments.]		SM	✋	12/12	0.3	5520cpm
		SANDY SILT (SM) medium dense, some fine gravel, trace construction debris, moist, grayish brown (10YR 5/2), [Trace red brick fragments.]	1	SM	✋	12/12	1.1	BF-B35(0.5-1.5) [(0.5-1.5ft)] 5570cpm
2	605	CLAYEY SILT (CL-ML) dense, moist to wet, grayish brown (10YR 5/2)	2	CL-ML	✋	12/12	1.1	5410cpm BF-B35(2-3) [(2-3ft)]
		SILTY CLAY (CL-ML) dense, moist, grayish brown (10YR 5/2)	3	CL-ML	✋	12/12	0.5	5590cpm
4					✋	12/12	0.7	
		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	5	CL-ML	░	12/12	1.7	5370cpm
6		SILTY CLAY (CL-ML) dense, trace fine gravel, moist, brown (10YR 4/3)	6	CL-ML	░	12/12	1.2	5050cpm
8	600	SILTY SAND (SM) medium dense, some fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 8.5 ftbgs.]	7	SM	░	12/18	0.8	5480cpm
			8.5					



REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample
░ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-36**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074760.13
EASTING 1053270.45
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.56 ft

BOREHOLE DEPTH 8.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	605	SANDY SILT (SM) fine grained SAND; medium dense, trace gravel, moist, brown (10YR 4/3), no odor		SM		✋	12/12		3940cpm
		CLAYEY SILT (CL-ML) medium dense, some fine sand, moist, reddish brown (5YR 4/4), no odor	1	CL-ML		✋	12/12		4930cpm
2		CLAYEY SILT (CL-ML) medium dense, moist, reddish brown (5YR 4/4), no odor	2	CL-ML		✋	12/12	0	
		CLAYEY SILT (CL-ML) medium dense, moist to wet, reddish brown (5YR 4/4), no odor	3	CL-ML		✋	12/12		4770cpm BF-B36(2-4) [(2-4ft)] 4860cpm
4						✋	12/12		
	600	SILTY SAND (SM) fine grained SAND; medium dense, some fine gravel, moist, brown (10YR 4/3), no odor	5	SM		░	12/12	0	5770cpm
6						░	12/12	0.8	
		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/4), no odor	7	CL-ML		░	16/18	0.9	5880cpm
8		SILTY SAND (SM) fine grained SAND; medium dense, some fine gravel, moist, grayish brown (10YR 5/2), no odor, [Bedrock refusal @ 8.5 ftbgs.]	7.5	SM					5570cpm
			8.5						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ░ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-37**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	9 ft
NORTHING	1074779.96	BOREHOLE DIAMETER	2 in
EASTING	1053207.31		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	605.44 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	605	SANDY SILT (SM) fine grained SAND; medium dense, some gravel, moist, brown (10YR 4/3)		SM		✋	12/12		4070cpm
		SANDY SILT (SM) medium dense, trace gravel, moist, reddish brown (5YR 4/4)	1	SM		✋	12/12		4020cpm
2		SANDY SILT (SM) medium dense, some clay, moist, reddish brown (5YR 4/4)	2	SM		✋	12/12	0	
		SANDY SILT (SM) dense, some clay, moist, reddish brown (5YR 4/4)	3	SM		✋	12/12		4130cpm BF-B37(2-4) [(2-4ft)] 4440cpm
4						✋	12/12		
	600	SANDY SILT (SM) dense, some clay, moist, reddish brown (5YR 4/4)	5	SM		▨	6/12	0.8	4230cpm
6						▨	6/12	1.4	
		SANDY SILT (SM) medium dense, some fine to medium gravel, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 9 ftbgs.]	7	SM		▨	6/12	1.4	5550cpm
8						▨	6/12	1	
			9						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-38**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074766.41
EASTING 1053238.54
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.47 ft

BOREHOLE DEPTH 9 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	605	SANDY SILT (SM) fine grained SAND; medium dense, some gravel, moist, brown (10YR 4/3), no odor		SM		✋	12/12		4380cpm
		SANDY SILT (SM) fine grained SAND; medium dense, some gravel, trace clay, moist, brown (10YR 4/3), no odor	1	SM		✋	12/12		4540cpm
2		SANDY SILT (SM) fine grained SAND; medium dense, trace clay, moist, reddish brown (5YR 4/4), no odor	2	SM		✋	12/12	0	
		SANDY SILT (SM) fine grained SAND; medium dense, trace clay, moist, reddish brown (5YR 4/4), no odor	3	SM		✋	12/12		4390cpm BF-B38(2-4) [(2-4ft)] 4480cpm
4						✋	12/12		
	600	SANDY SILT (SM) fine grained SAND; medium dense, trace fine gravel, moist, reddish brown (5YR 4/4), no odor	5	SM		▨	8/12	0.8	5450cpm
6						▨	8/12	1	
		SANDY SILT (SM) fine grained SAND; medium dense, some fine to medium gravel, moist to wet, reddish brown (5YR 4/4), no odor	7	SM		▨	8/12	1.2	5070cpm
8		SANDY SILT (SM) fine grained SAND; medium dense, some fine to medium gravel, wet, grayish brown (10YR 5/2), no odor, [Bedrock refusal @ 9 ftbgs.]	8	SM		▨	8/12	0.7	5340cpm
			9						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-39

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/02/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING 1075011.78

EASTING 1053271.85

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.59 ft

BOREHOLE DEPTH 8 ft

BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; medium dense, moist, brown (10YR 4/3)		MLS		✋	12/12	1.8	5400cpm
	605	SANDY SILT (MLS) fine grained SAND; medium dense, some fine to medium gravel, dry to moist, brown (10YR 4/3)	1	MLS		✋	12/12	1.5	5070cpm
2		SILTY CLAY (CL-ML) dense, trace fine gravel, moist, brown (10YR 4/3)	2	CL-ML		✋	12/12	1.4	BF-B39(1.5-2.5) [(1.5-2.5ft)] 5520cpm
		SILTY CLAY (CL-ML) dense, moist to wet, brown (10YR 4/3)	3	CL-ML		✋	12/12	0.9	5790cpm
4		SILTY CLAY (CL-ML) dense, some fine to medium gravel, wet to saturated, brown (10YR 4/3)	4	CL-ML		✋	12/12	0.7	6900cpm BF-B39(4-5) [(4-5ft)]
		SILTY CLAY (CL-ML) dense, moist to wet, brown (10YR 4/3)	5	CL-ML		░	12/12	0	5510cpm
6						░	12/12	0.3	
	600	SILTY SAND (SM) fine grained SAND; medium dense, some fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 8 ftbgs.]	6.5	SM		░	12/12	0	5430cpm
8			8						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-40
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	12/01/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074881.33
EASTING 1053045.14
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.57 ft

BOREHOLE DEPTH 1.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]	0.3		■				4490cpm
	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; medium dense, moist, dark black to black (10YR 3/3), no odor, [EOB. Refusal @ 1ftbgs.]	1	GP-SP	▨	✋	12/12	0	BF-B40(0.5-1) [(0.5-1ft)]
2									
4									
	600								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-41**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	12/01/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074990.02
EASTING 1053076.53
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.34 ft

BOREHOLE DEPTH 1 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]	0.3		■				
	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; medium dense, moist to wet, dark brown to black (10YR 3/3), [EOB. Refusal @ 1ftbgs]	1		▨	✋	12/12	0	4640cpm BF-B41(05-1) [(0.5-1ft)]
2									
4									
	600								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-42**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/05/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	7 ft
NORTHING	1075197.16	BOREHOLE DIAMETER	2 in
EASTING	1053199.88		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.52 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SILT (CL-ML) medium dense, dry, reddish brown (5YR 4/3)		CL-ML	▨	✋	12/12		5820cpm
	605				▨	✋	12/12		
2		SANDY SILT (MLS) medium dense, dry to moist, brown (10YR 4/3)	2	MLS	▦	✋	12/12	0	6580cpm
		CLAYEY SILT (CL-ML) medium dense, moist, brown (10YR 4/3)	3	CL-ML	▨	✋	12/12		6920cpm
4		CLAYEY SILT (CL-ML) medium dense, some fine sand, dry to moist, brown (10YR 4/3)	4	CL-ML	▨	✋	12/12		6740cpm
		CLAYEY SILT (CL-ML) medium dense, trace fine gravel, moist, brown (10YR 4/3), hydrocarbon-like odor	5	CL-ML	▨	▒	12/12	6.7	6320cpm
6	600	SANDY SILT (MLS) medium dense, trace fine gravel, moist to wet, grayish brown (10YR 5/2), hydrocarbon-like odor, [Bedrock refusal @ 7 ftbgs.]	6	MLS	▦	▒	12/12	18	5340cpm B-42(6-7) [(6-7ft)]
8			7						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-42A**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/06/2015
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	7 ft
NORTHING	1075186.92	BOREHOLE DIAMETER	2 in
EASTING	1053236.67		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.93 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
									5070cpm
		SANDY SILT (SM) fine grained SAND; loose, some roots, dry, brown (10YR 4/3)		SM	▨	✋	12/12	0.1	
			1						5500cpm
		SILTY CLAY (CL-ML) medium dense, little fine sand, dry to moist, reddish brown (5YR 5/3), [some black sand]		CL-ML	▨	✋	12/12	0	
2	605		2						5050cpm
		SILTY CLAY (CL-ML) firm, dry to moist, reddish brown (5YR 4/3), hydrocarbon-like odor			▨	✋	12/12	52.1	
				CL-ML	▨	✋	12/12	131.7	
4					▨	✋	12/12	163.4	B-42A(4-5) [(4-5ft)]
			5						4890cpm
		SILTY CLAY (CL-ML) firm, some fine gravel, moist to wet, reddish brown (5YR 4/4), hydrocarbon-like odor, [sheen]		CL-ML	▨	░	48/24	44.4	
6			6						5320cpm
		SILTY CLAY (CL-ML) medium dense, little fine gravel, wet, reddish brown (5YR 4/4), hydrocarbon-like odor, [Bedrock refusal @ 7 ftbgs.]		CL-ML	▨	░		23.5	
	600		7						
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-42B**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/06/2015
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075156.893
EASTING 1053303.848
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.96 ft

BOREHOLE DEPTH 7 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
		SANDY SILT (SM) fine grained SAND; loose, little roots, dry, reddish brown (5YR 4/4)	1	SM		✋	12/12		4850cpm 5300cpm
2	605	SILTY CLAY (CL-ML) firm, dry, reddish brown (5YR 4/4)	3	CL-ML		✋ ✋	12/12 12/12	0	5250cpm
4		SILTY CLAY (CL-ML) hard, trace fine sand, dry, brownish (10YR 4/3)	4	CL-ML		✋	12/12		
		SILTY CLAY (CL-ML) firm, trace fine sand, dry to moist, reddish brown (5YR 4/4)	5	CL-ML		✋	12/12		4870cpm B-42B(4-5) [(4-5ft)] 4550cpm
		CLAYEY SILT (CL-ML) dense, little fine sand, trace fine gravel, moist, brown (10YR 4/3)	5.5	CL-ML		▨	48/24	0.3	4820cpm
6		SANDY SILT (SM) fine grained SAND; medium dense, trace fine gravel, moist to wet, brown (10YR 4/3)	6.5	SM				0.9	4660cpm
	600	SANDY SILT (SM) fine grained SAND; medium dense, some coarse gravel, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 7 ftbgs.]	7	SM					
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-42C**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/06/2015
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075133.26
EASTING 1053225.51
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.65 ft

BOREHOLE DEPTH 7 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
0		SANDY SILT (SM) fine grained SAND; loose, some roots, dry, reddish brown (5YR 4/4)	SM	▥	✋	12/12	0	4580cpm
1	605	SILTY CLAY (CL-ML) firm, little roots, dry, reddish brown (5YR 4/4)	CL-ML	▥	✋	12/12		4650cpm
2		CLAY (CL) firm, trace silt, dry to moist, reddish brown (5YR 4/4)	CL	▨	✋	12/12	1.1	4370cpm
3		CLAY (CL) firm, little silt, dry to moist, reddish brown to grayish brown (5YR 5/2), [mottled]	CL	▨	✋	12/12	0.9	4770cpm
4		SILTY CLAY (CL-ML) firm, trace fine sand, dry to moist, reddish brown to grayish brown (5YR 5/2), [mottled]	CL-ML	▥	✋	12/12	0	4320cpm B-42C(4-5) [(4-5ft)]
5		CLAYEY SILT (CL-ML) firm, trace fine sand, trace fine gravel, moist, reddish brown (5YR 4/4)	CL-ML	▥	▒	48/24	0.6	4880cpm
6	600	GRAVELLY SAND (GP-SP) medium grained SAND; subangular, coarse grained GRAVEL; firm, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 7 ftbgs]	GP-SP	▩	▒		0.1	4670cpm
7								
8								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-43**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/05/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	7 ft
NORTHING	1075213.28	BOREHOLE DIAMETER	2 in
EASTING	1053174.05		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.64 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SILT (CL-ML) firm, dry, brown (10YR 4/3)		CL-ML	▨	✋	12/12		5950cpm
	605	SILTY CLAY (CL-ML) dense, dry to moist, brown (10YR 4/3)	1	CL-ML	▨	✋	12/12		5950cpm
2		[Red brick debris]	2		▩	✋	0/12	0	6010cpm
		SILTY CLAY (CL-ML) firm, wet to saturated, brown (10YR 4/3)	3	CL-ML	▨	✋	12/12		6120cpm
4		SANDY CLAY (CL-ML) fine grained SAND; dense, some fine to medium gravel, wet to saturated, brown (10YR 4/3)	4	CL-ML	▨	✋	12/12		5800cpm
		SANDY CLAY (SW-SC) fine grained SAND; dense, little fine gravel, moist, brown (10YR 4/3)	5	SW-SC	▧	░	12/12	0.2	6080cpm
6	600	SANDY CLAY (SW-SC) fine grained SAND; dense, some medium to coarse gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 7 ftbgs.]	6	SW-SC	▧	░	12/12	0.1	5830cpm
8			7						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-44**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/05/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	8 ft
NORTHING	1075167.4	BOREHOLE DIAMETER	2 in
EASTING	1053166.17		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.57 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		CLAYEY SILT (CL-ML) soft, saturated, brown (10YR 4/3)		CL-ML	✋	12/12		5360cpm
	605	SILTY CLAY (CL-ML) dense, some coarse gravel, little construction debris, wet to saturated, brown (10YR 4/3), [Red brick debris.]	1	CL-ML	✋	12/12		5470cpm
2					✋	12/12	0	
		SILTY CLAY (CL-ML) dense, wet, brown (10YR 4/3)	3	CL-ML	✋	12/12		5540cpm
4					✋	12/12		
		SILTY CLAY (CL-ML) dense, moist, reddish brown (5YR 4/3)	5	CL-ML	▨	12/12	0.8	5850cpm
6	600				▨	12/12	1.2	
		SILTY SAND (SM) fine to medium grained SAND; medium dense, some fine to medium gravel, moist to wet, grayish brown (10YR 5/2), hydrocarbon-like odor, [Bedrock refusal @ 8 ftbgs.]	7	SM	▨	12/12	5	5910cpm B-44(7-8) [(7-8ft)]
8			8					

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample
▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-44A**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/06/2015
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075129.05
EASTING 1053154.79
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION <Null> ft

BOREHOLE DEPTH 7 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) fine grained SAND; loose, little clay, little roots, dry, grayish brown (10YR 5/2)		SM		✋	12/12		4970cpm
		SILTY CLAY (CL-ML) firm, dry to moist, reddish brown (5YR 4/4), [minor black sand]	1	CL-ML		✋	12/12		4630cpm
2		CLAY (CL) firm, trace silt, dry to moist, reddish brown (5YR 4/4)	2	CL		✋	12/12	0	5110cpm
		SILTY CLAY (CL-ML) medium dense, little fine sand, moist, reddish brown (5YR 4/4)	3	CL-ML		✋	12/12		5230cpm
4		SILTY CLAY (CL-ML) firm, dry to moist, reddish brown (5YR 4/4)	4	CL-ML		✋	12/12		4860cpm
		CLAYEY SILT (CL-ML) medium dense, moist, reddish brown (5YR 4/4)	5	CL-ML		░	48/24		5600cpm
6		SILTY SAND (SM) fine grained SAND; medium dense, some fine gravel, moist to wet, brown (10YR 4/3)	6	SM				0.3	
		SILTY SAND (SM) fine grained SAND; medium dense, some fine gravel, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 7 ftbgs.]	6.5	SM					5270cpm B-44A(6-7) [(6-7ft)] 5270cpm
			7						
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-45

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/25/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075046.26
EASTING 1052988.69
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 604.65 ft

BOREHOLE DEPTH 1 ft
BOREHOLE DIAMETER 2 in

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]	0.3		■				
		[Concrete. EOB. Refusal due to concrete.]	1		▨	✋	0/12		
2									
4									
	600								
6									
8									
	595								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-46**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/05/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075150.38
EASTING 1052994.65
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 604.81 ft

BOREHOLE DEPTH 8 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine grained SAND; soft, dry to moist, brown (10YR 4/3)		SM		✋	12/12		6090cpm
		SANDY SILT (MLS) firm, dry to moist, reddish brown (5YR 4/3)	1	MLS		✋	12/12		6100cpm BF-B46(1-2) [(1-2ft)]
2		CLAYEY SILT (CL-ML) firm, dry to moist, brown (10YR 4/3)	2	CL-ML		✋	12/12		5830cpm
		CLAYEY SILT (CL-ML) firm, moist to wet, brown (10YR 4/3)	3	CL-ML		✋	12/12		5370cpm
4	600	SILTY CLAY (CL-ML) dense, wet, brown (10YR 4/3)	4	CL-ML		✋	12/12	0	5340cpm BF-B46(4-5) [(4-5ft)]
6		SILTY CLAY (CL-ML) dense, some fine gravel, trace medium to coarse sand, moist, brown (10YR 4/3)	5	CL-ML		▨ ▨	12/12 12/12		5840cpm
		SANDY SILT (MLS) fine grained SAND; medium dense, some fine gravel, moist to wet, brown (10YR 4/3)	6.5	MLS					5640cpm
8		SANDY SILT (MLS) fine grained SAND; dense, moist, brown (10YR 4/3), [Bedrock refusal @ 8 ftbgs.]	7.5	MLS		▨	12/12		5650cpm
	595		8						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample
▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-47**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR Parratt-Wolff New York
DRILLING FOREMAN
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 6620 DT

ERM REPRESENTATIVE J. Reynolds/ C.Voorhees
OFFICE LOCATION Syracuse, NY
DATE: START 11/25/2014
FINISH 05/05/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075215.2
EASTING 1052924.43
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 603.94 ft

BOREHOLE DEPTH 6.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
						SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (MLS) fine grained SAND; medium dense, little fine gravel, moist, brown (10YR 4/3)		MLS	▨	✋	12/12		5440cpm
						✋	12/12		BF-B47(1-2) [(1-2ft)]
2		SANDY SILT (MLS) fine grained SAND; medium dense, little fine gravel, moist, reddish brown (5YR 4/3)	2	MLS	▨	✋	12/12	0	5620cpm
		SANDY SILT (MLS) fine grained SAND; medium dense, some clay, little fine gravel, moist, reddish brown (5YR 4/3)	3	MLS	▨	✋	12/12		5560cpm
4	600	SANDY SILT (MLS) fine grained SAND; medium dense, some clay, moist to wet, reddish brown (5YR 4/3)	4	MLS	▨	✋	12/12		5270cpm
		SILTY SAND (SM) fine to medium grained SAND; medium dense, some fine to medium gravel, moist to wet, brown (10YR 4/3)	5	SM	▨	▨	12/12	0.4	5190cpm
6		SILTY SAND (SM) fine to medium grained SAND; medium dense, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 6.5 ftbgs.]	6	SM	▨	▨	6/6	0.3	4660cpm
			6.5						
8									
	595								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-48**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/17/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/17/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	1.83 ft
NORTHING	1075165.33	BOREHOLE DIAMETER	2 in
EASTING	1053705.4		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	610.29 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	610	[Asphalt.]	0.3		■				4310cpm
		GRAVELLY SAND (GP-SP) medium to coarse grained SAND; medium to coarse grained GRAVEL; loose, dry to moist, dark brown (10YR 3/3)	1	GP-SP	▒	✋	12/12	0	BF-B48(0.5-1.0) [(0.5-1ft)]
		CLAYEY SILT (CL-ML) soft, some rock fragments, saturated, reddish brown (5YR 4/3), [Bedrock refusal @ 1.83 ftbgs.]	1.83	CL-ML	▨	✋	10/10		8210cpm BF-B48(1.0-1.5) [(1-1.5ft)]
2									
4									
	605								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM 5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: Howden NA, Inc. Former Buffalo Forge Property - BCP #C915280	BORING # **B-49**	
		ERM PROJECT #	0181805
		SHEET 1 OF 1	

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/17/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/17/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	2.67 ft
NORTHING	1075258.9	BOREHOLE DIAMETER	2 in
EASTING	1053740.62		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	612.04 ft		

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]	0.3		■	🖐	12/12	0	6220cpm
		GRAVELLY SAND (GP-SP) medium to coarse grained SAND; subangular, fine to coarse grained GRAVEL; loose, moist, dark brown (10YR 3/3)	0.5	GP-SP	▨				
		GRAVEL (GP) subangular, fine to coarse grained GRAVEL; loose, some concrete, moist, gray (10YR 5/1)	1	GP	▨				
		CLAYEY SILT (CL-ML) medium dense, some medium sand, moist, dark brown (10YR 3/3), [Bedrock refusal @ 2.67 ftbgs.]		CL-ML	▨	🖐	12/12		12600cpm BF-B49(0.5-1.5) [(0.5-1.5ft)] 6690cpm
2	610					🖐	8/8		
			2.67						
4									
6									
	605								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

🖐 Grab Sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-50**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/17/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/17/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING 1075282.06

EASTING 1053665.61

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 610.73 ft

BOREHOLE DEPTH 2 ft

BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]	0.3		■				
	610	GRAVELLY SAND (GP-SP) medium to coarse grained SAND; subangular, medium grained GRAVEL; loose, moist, dark brown (10YR 3/3)	1	GP-SP	▨	✋	12/12		5490cpm
		GRAVEL (GP) loose, some concrete, moist, gray (10YR 5/1)	1.5		▨			0	BF-B50(0.5-1.5) [(0.5-1.5ft)] 10700cpm
2		SILTY CLAY (CL-ML) firm, moist, brown (10YR 4/3), [Bedrock refusal @ 2 ftbgs.]	2	CL-ML	▨	✋	12/12		6100cpm BF-B50(1.5-2.0) [(1.5-2ft)]
4									
6	605								
8									

REMARKS:

cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-51**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/17/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/17/2014
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	3 ft
NORTHING	1075232.45	BOREHOLE DIAMETER	2 in
EASTING	1053591.02		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	609.89 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]							
		GRAVELLY SAND (GP-SP) fine to coarse grained SAND; angular, medium to coarse grained GRAVEL; loose, contains construction debris, wet, dark brown (10YR 3/3), [Contains slag, brick fragements.]	0.3	GP-SP		✋	12/12		4790cpm
		CLAYEY SILT (CL-ML) dense, some fine to medium gravel, wet, light brown (10YR 6/3)	1	CL-ML		✋	12/12	0.1	BF-B51(0.5-1.5) [(0.5-1.5ft)] 4770cpm
2		CLAYEY SILT (CL-ML) firm, some fine sand, little fine to medium gravel, saturated, light grayish brown (10YR 5/2), [Bedrock refusal @ 3 ftbgs.]	2	CL-ML		✋	12/12		BF-B51(1.5-2.5) [(1.5-2.5ft)] 4500cpm
			3						
4									
	605								
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-52**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/17/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/17/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075187.71
EASTING 1053503.92
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.89 ft

BOREHOLE DEPTH 4 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]	0.3						
		GRAVELLY SAND (GP-SP) medium to coarse grained SAND; medium to coarse grained GRAVEL; loose, contains construction debris, moist, dark brown (10YR 3/3), [Contains slag.]	1	GP-SP		✋	12/12		16100cpm
		SILTY CLAY (CL-ML) dense, moist, reddish brown (5YR 4/3)	2	CL-ML		✋	12/12		BF-B52(0.5-1.5) [(0.5-1.5ft)] 6510cpm
2		SILTY CLAY (CL-ML) dense, little fine sand, wet, light brown (10YR 6/3)	3	CL-ML		✋	12/12	0	6340cpm
		CLAYEY SILT (CL-ML) medium dense, little fine sand, wet, light brown (10YR 6/3), [Bedrock refusal @ 4 ftbgs.]	4	CL-ML		✋	12/12		6110cpm
4	605								
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-53

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/24/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	4.83 ft
NORTHING	1075224.58	BOREHOLE DIAMETER	2 in
EASTING	1053450.46		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	608.01 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]	0.3		■				
		CLAYEY SILT (CL-ML) medium dense, moist to wet, brown (10YR 4/3)	1	CL-ML	▨	✋	12/12		4610cpm
		CLAYEY SILT (CL-ML) dense, wet, brown (10YR 4/3)	2	CL-ML	▨	✋	12/12		BF-B53(0.5-1.5) [(0.5-1.5ft)] 5930cpm
2		CLAYEY SILT (CL-ML) medium dense, trace fine to medium gravel, wet, brown (10YR 4/3), [Bedrock refusal @ 4.83 ftbgs.]	4.83	CL-ML	▨	✋ ✋	12/12 12/22	0	BF-B53(1.5-2.5) [(1.5-2.5ft)] 5950cpm
	605								
4									
6									
8	600								

REMARKS:

cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-54**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/24/2014

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075357.99
EASTING 1053458.39
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 610.1 ft

BOREHOLE DEPTH 1.33 ft
BOREHOLE DIAMETER 2 in

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	610	[Asphalt.]	0.3		■				4710cpm
		GRAVELLY SAND (GP-SP) fine to coarse grained SAND; subangular, fine to medium grained GRAVEL; loose, moist to wet, dark brown (10YR 3/3)	1	GP-SP	▨	✋	12/12	0	BF-B54(0.5-1.0) [(0.5-1ft)] 6710cpm
		[Large slag-like clasts. EOB. Refusal on berock.]	1.33		▩	✋	4/4		
2									
4									
	605								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-55**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	7 ft
NORTHING	1075372.82	BOREHOLE DIAMETER	2 in
EASTING	1053365.16		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	610.79 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG
		[Asphalt.]	0.3		■
	610	GRAVELLY SAND (GP-SP) medium to coarse grained SAND; subangular, fine to coarse grained GRAVEL; loose, some construction debris, dry to moist, dark brown (10YR 3/3), [Some slag-like material.]	1.5	GP-SP	▨
2		SILTY CLAY (CL-ML) dense, moist, reddish brown (5YR 4/3)	3	CL-ML	▨
		SILTY CLAY (CL-ML) dense, moist to wet, brown (10YR 4/3)	4	CL-ML	▨
4		CLAYEY SILT (CL-ML) dense, moist, light brown (10YR 6/3)	5	CL-ML	▨
		CLAYEY SILT (CL-ML) dense, some fine gravel, moist, brown (10YR 4/3)	6	CL-ML	▨
6	605	CLAYEY SILT (CL-ML) dense, some medium to coarse sand, trace fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 7 ftbgs.]	7	CL-ML	▨
8					

SAMPLING DATA

DEPTH	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
0.3	✋	12/12	0.8	4720cpm BF-B55(0.5-1.5) [(0.5-1.5ft)]
1.5	✋	12/12		5250cpm
2	✋	12/12	0	
3	✋	12/12	3.1	6880cpm BF-B55(3-4) [(3-4ft)]
4	✋	12/12	1.5	6510cpm
5	░	12/12	0	4840cpm
6	░	12/12	0.3	4450cpm

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-56**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	8.5 ft
NORTHING	1075500.92	BOREHOLE DIAMETER	2 in
EASTING	1053414.7		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	611.44 ft		

STRATA DESCRIPTION	DEPTH	USCS
GRAVELLY SAND (GP-SP) medium to coarse grained SAND; fine to medium grained GRAVEL; loose, trace construction debris, moist, dark brown (10YR 3/3), [Trace red brick debris.]	1.5	GP-SP
CLAYEY SILT (CL-ML) medium dense, some fine to medium sand, trace construction debris, moist, brown (10YR 4/3), [Trace red brick debris.]	3	CL-ML
CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	5	CL-ML
CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, reddish brown (5YR 4/3)	6	CL-ML
CLAYEY SILT (CL-ML) medium dense, some medium to coarse sand, trace fine gravel, moist, brown (10YR 4/3)	7.5	CL-ML
SAND (SW) coarse grained SAND; firm, some fine gravel, little clay, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 8.5 ftbgs.]	8.5	SW

DEPTH: 2, 4, 6, 8
ELEVATION: 610, 605

SAMPLING DATA

SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
✋	12/12		7590cpm
✋	12/12		BF-B56(0.5-1.5) [(0.5-1.5ft)] 9510cpm
✋	12/12		BF-B56(2-3) [(2-3ft)]
✋	12/12	0	9100cpm
✋	12/12		
░	12/12		9140cpm
░	6/12	0.2	5760cpm
░	6/12	0.1	6560cpm
░	6/6		

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

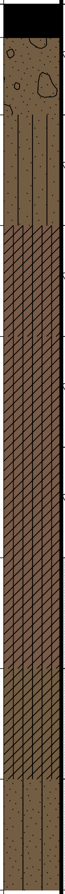
BORING # **B-57**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR Parratt-Wolff
New York
DRILLING FOREMAN
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 6620 DT

ERM REPRESENTATIVE J. Reynolds/ C.Voorhees
OFFICE LOCATION Syracuse, NY
DATE: START 11/24/2014
FINISH 05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075492.89
EASTING 1053310.37
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 610.7 ft

BOREHOLE DEPTH 8 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]							
	610	SANDY GRAVEL (GP-SP) fine to coarse grained SAND; medium to coarse grained GRAVEL; loose, some construction debris, dry to moist, brown (10YR 4/3), [Some slag-like debris.]	0.3	GP-SP		✋	12/12		5120cpm
		SANDY SILT (MLS) fine to medium grained SAND; dense, some clay, little medium to coarse gravel, dry to moist, brown (10YR 4/3)	1	MLS		✋	12/12		BF-B57(0.5-1.5) [(0.5-1.5ft)] 5150cpm
2		CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	2	CL-ML		✋	12/12		5640cpm BF-B57(2-3) [(2-3ft)]
		SILTY CLAY (CL-ML) dense, moist, reddish brown (5YR 4/3)	3	CL-ML		✋	12/12	0	4850cpm
4						✋	12/12		
	605	CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, reddish brown (5YR 4/3)	5	CL-ML		▒	12/12		5050cpm
6		CLAYEY SILT (CL-ML) dense, some fine gravel, little medium to coarse sand, moist to wet, brown (10YR 4/3)	6	CL-ML		▒	12/12		4710cpm
		SILTY SAND (SM) medium to coarse grained SAND; dense, some fine gravel, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 8 ftbgs.]	7	SM		▒	12/12	0.3	4560cpm
8			8						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-58**

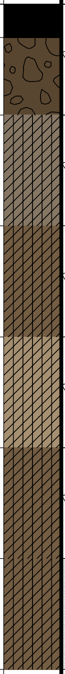
ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/24/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075393.21
EASTING 1053225.99
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.72 ft

BOREHOLE DEPTH 6 ft
BOREHOLE DIAMETER 2 in



DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]	0.3						
		GRAVEL (GP) angular, coarse grained GRAVEL; loose, some medium to coarse sand, dry to moist, dark brown (10YR 3/3)	1	GP		✋	12/12		6050cpm
		SILTY CLAY (CL-ML) dense, dry to moist, grayish brown (10YR 5/2), [Mottled.]	2	CL-ML		✋	12/12		6180cpm
2		SILTY CLAY (CL-ML) dense, dry, brown (10YR 4/3)	3	CL-ML		✋	12/12	0	6400cpm
	605	SILTY CLAY (CL-ML) dense, moist, light brown (10YR 6/3)	4	CL-ML		✋	12/12		6280cpm
4		SILTY CLAY (CL-ML) dense, little fine gravel, moist, brown (10YR 4/3)	5	CL-ML		✋	12/12		6780cpm
		SILTY CLAY (CL-ML) dense, some fine gravel, trace medium to coarse sand, moist, brown (10YR 4/3), [Bedrock refusal @ 6 ftbgs.]	6	CL-ML		▨	6/12	0.3	4590cpm
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-59**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075417.88
EASTING 1053167.56
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 609.29 ft

BOREHOLE DEPTH 9 ft
BOREHOLE DIAMETER 2 in

DEPTH	STRATA DESCRIPTION	USCS
0 - 0.3	[Asphalt.]	
0.3 - 1	GRAVELLY SAND (GP-SP) medium to coarse grained SAND; fine to medium grained GRAVEL; loose, some construction debris, moist, dark brown (10YR 3/3), [Some slag-like debris.]	GP-SP
1 - 1.5	SANDY CLAY (SC) firm, some construction debris, moist, dark brown (10YR 3/3), [Some slag-like debris.]	SC
1.5 - 2	CLAYEY SILT (CL-ML) dense, trace coarse sand, moist, reddish brown (5YR 4/3)	CL-ML
2 - 4.5	CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	CL-ML
4.5 - 5	CLAYEY SILT (CL-ML) dense, moist, grayish brown (10YR 5/2)	CL-ML
5 - 7	CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, brown (10YR 4/3)	CL-ML
7 - 9	SILTY SAND (SM) fine to medium grained SAND; medium dense, some fine gravel, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 9 ftbgs.]	SM

Elevation marks: 605 (about 4.3 ft), 600 (about 9.3 ft)

SAMPLING DATA

DEPTH	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
0 - 1	✋	12/12		6420cpm BF-B59(0.5-1.0) [(0.5-1ft)]
1 - 2	✋	12/12		6740cpm BF-B59(1.0-2.0) [(1-2ft)] 7040cpm
2 - 3	✋	12/12		6340cpm
3 - 4	✋	12/12	0	
4 - 5	✋	12/12		6250cpm
5 - 6	▨	6/12		4870cpm
6 - 7	▨	6/12	0.2	
7 - 8	▨	6/12	0.2	4890cpm
8 - 9	▨	6/12	0	

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-60**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/04/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	6.5 ft
NORTHING	1075323.51	BOREHOLE DIAMETER	2 in
EASTING	1053118.53		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	608.12 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt.]							
		GRAVELLY SAND (GP-SP) medium to coarse grained SAND; fine to medium grained GRAVEL; loose, some construction debris, moist, dark brown (10YR 3/3), [Some slag-like debris.]	0.3	GP-SP		✋ ✋	12/12 12/12		5770cpm BF-B60(0.5-1.5) [(0.5-1.5ft)]
		SANDY CLAY (SC) medium dense, some construction debris, moist, dark brown (10YR 3/3), [Some slag-like debris.]	1.5	SC					5320cpm
2		CLAYEY SILT (CL-ML) dense, trace fine to medium sand, moist, brown (10YR 4/3)	2	CL-ML		✋	12/12	0	BF-B60(1.5-2.5) [(1.5-2.5ft)] 5160cpm
4	605	CLAYEY SILT (CL-ML) dense, moist, reddish brown (5YR 4/3)	3	CL-ML		✋ ✋	12/12 12/12		5450cpm
6		SILTY SAND (SM) medium grained SAND; medium dense, some fine to medium gravel, moist to wet, brown (10YR 4/3), [Bedrock refusal @ 7 ftbgs.]	5	SM		▨	12/18	0.1 0.2	7670cpm
8	600		7						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

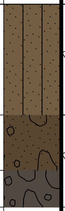
ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-61**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York
DRILLING FOREMAN	
DRILLING METHOD	Direct Push
DRILLING EQUIPMENT	Hand Auger/ Air knife
ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
OFFICE LOCATION	Syracuse, NY
DATE: START	11/19/2014
FINISH	11/19/2014
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))	
NORTHING	1074904.45
EASTING	1053669.93
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	608.55 ft
BOREHOLE DEPTH	1.83 ft
BOREHOLE DIAMETER	2 in



						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) medium to coarse grained SAND; soft, moist, brown (10YR 4/3)	1	SM		✋	12/12	0	3130cpm
		GRAVELLY SAND (GP-SP) medium to coarse grained SAND; fine to medium grained GRAVEL; loose, trace silt, moist to wet, dark brown (10YR 3/3)	1.5	GP-SP		✋	10/10		3140cpm BF-B61(1.0-1.5) [(1-1.5ft)] 3140cpm
		GRAVEL (GP) medium to coarse grained GRAVEL; loose, wet, dark gray (10YR 3/1), [Bedrock refusal @ 1.83 ftbgs.]	1.83	GP					
2									
	605								
4									
6									
8									
	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-62**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/04/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/04/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	0.7 ft
NORTHING	1074965.13	BOREHOLE DIAMETER	2 in
EASTING	1053141.06		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	605.55 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to medium grained GRAVEL; loose, dry, brown (10YR 4/3), [Concrete refusal @ 0.7ftbgs.]	0.7	GP-SP		✋	8/8.4	0	6350cpm
2									
4									
	600								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-63**

ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/04/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074972.63
EASTING 1053158.09
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.72 ft

BOREHOLE DEPTH 2.1 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]	0.3						5770cpm
	605	GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to medium grained GRAVEL; loose, dry, brown (10YR 4/3)	1	GP-SP					7640cpm
2		SANDY SILT (SM) fine grained SAND; medium dense, some fine gravel, some concrete, dry to moist, brown (10YR 4/3), [concrete debris and rebar, Concrete refusal @ 2.1ftbgs.]	2.1	SM				0	
4									
6	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # B-64

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/04/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/04/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074977.38
EASTING 1053142.75
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 605.69 ft

BOREHOLE DEPTH 1.7 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]	0.3		■				6670cpm
	605	SANDY SILT (SM) fine grained SAND; medium dense, trace fine gravel, dry, brown (10YR 4/3), [Concrete Refusal @ 1.7ftbgs.]	1.7	SM	▨			0	
2									
4									
	600								
6									
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **B-65**

ERM PROJECT # 0181805

SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	05/29/2015
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/29/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))

NORTHING 1074999.49

EASTING 1053148.88

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.08 ft

BOREHOLE DEPTH 0.8 ft

BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine grained SAND; loose, some fine to coarse gravel, dry, brown (10YR 4/3), [Concrete refusal @ 0.8ftbgs.]	0.8	SM	▨			0	
	605								
2									
4									
6	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # TMW-12

ERM PROJECT # 0181805

SHEET 1 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	10.5 ft
NORTHING	1074522.33	BOREHOLE DIAMETER	2 in
EASTING	1053485.67		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.1 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY SAND (SM) fine to medium grained SAND; loose, little gravel, moist to dry, dark brown (10YR 3/3), [some cinders, brick]		SM		✋	12/12	0.5	8100cpm
		SANDY SILT (SM) fine grained SAND; loose, moist, dark brown (10YR 3/3), [cinders]	1	SM		✋	12/12	0.4	BF-TMW12(0.5-1.5) [(0.5-1.5ft)] 7800cpm
2	605	CLAYEY SILT (CL-ML) firm, some gravel, some coarse sand, moist, dark brown (10YR 3/3), [cinders]	2	CL-ML		✋	12/12	0.3	6830cpm
		SANDY SILT (SM) fine grained SAND; medium dense, little gravel, moist to wet, light brown (10YR 6/3)	3	SM		✋	12/12	0.5	6760cpm BF-TMW12(3-4) [(3-4ft)]
4						✋	12/12	0.4	
		SILTY CLAY (CL-ML) firm, dry to moist, reddish brown (5YR 4/4)	5	CL-ML		▒	48/48	2.2	5820cpm
6								2.7	
	600							1.5	
8		SILTY CLAY (CL-ML) firm, trace fine sand, dry to moist, reddish brown (5YR 4/4)	8	CL-ML				2.4	6100cpm
		SANDY CLAY (SP-SC) fine to medium grained SAND; medium dense, little silt, little fine to medium gravel, moist, reddish black (5YR 4/4), [Bedrock refusal @ 10.5 ftbgs.]	9.5	SP-SC		▒	18/18	0.3	6900cpm

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-12**

ERM PROJECT # 0181805

SHEET 2 OF 2

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074522.33
EASTING 1053485.67
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 607.1 ft

BOREHOLE DEPTH 10.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
			10.5	SP-SC		▨	18/18	0.3	
12	595								
14									
16									
	590								
18									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

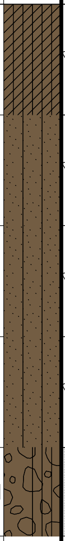
PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-13**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/26/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1074750.72
EASTING 1053650.61
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 606.54 ft

BOREHOLE DEPTH 4.67 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
						SAMPLING DATA			
		CLAYEY SILT (CL-ML) medium dense, moist to wet, brown (10YR 4/3) LIMESTONE		CL-ML		✋	12/12		4810cpm
	605	SANDY SILT (SM) fine to medium grained SAND; firm, some fine to medium gravel, wet, brown (10YR 4/3), [some brick]	1	SM		✋	12/12		5050cpm BF-TMW13(1-2) [(1-2ft)]
2		SANDY SILT (SM) fine to medium grained SAND; firm, some medium to coarse gravel, wet, brown (10YR 4/3), [some brick]	2	SM		✋	12/12	0	5090cpm
		SANDY SILT (SM) fine grained SAND; medium dense, some fine to medium gravel, saturated, brown (10YR 4/3)	3	SM		✋	12/12		4910cpm
4		GRAVELLY SILT (GP-GM) subangular, fine to coarse grained GRAVEL; soft, saturated, brown (10YR 4/3), [Bedrock refusal @ 4.8 ftbgs.]	4	GP-GM		░	10/9.6		4710cpm
			4.8						
6									
	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ░ Direct push geoprobe sample

ERM 5788 Widewaters Pkwy Syracuse, New York 13214 P: 1-315-445-2554	PROJECT: Howden NA, Inc. Former Buffalo Forge Property - BCP #C915280	BORING # **TMW-14** ERM PROJECT # 0181805 SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/07/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	9.5 ft
NORTHING	1074798.51	BOREHOLE DIAMETER	2 in
EASTING	1053249.08		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	606.54 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SANDY SILT (SM) fine grained SAND; medium dense, some gravel, moist, brown (10YR 4/3)		SM	░	✋	12/12	0	4310cpm
	605	CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3), [some slag and brick fragments]	1	CL-ML	▨	✋	12/12		4340cpm
2		CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3), [some slag and brick debris]	2	CL-ML	▨	✋	12/12		
4		Wet, (10YR 4/3), [cobbles and bricks]	3		●	✋ ✋	12/12 12/12		3860cpm BF-TMW14(2-4) [(2-4ft)]
6	600	CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3)	5	CL-ML	▨	░	48/54	1.5	5280cpm
		CLAYEY SILT (CL-ML) dense, trace fine gravel, moist, brown (10YR 4/3)	7	CL-ML	▨				6210cpm
8		CLAYEY SILT (CL-ML) dense, moist, brown (10YR 4/3), [Bedrock refusal @ 9.5 ftbgs.]	8	CL-ML	▨				5280cpm
			9.5						

REMARKS:

cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ░ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

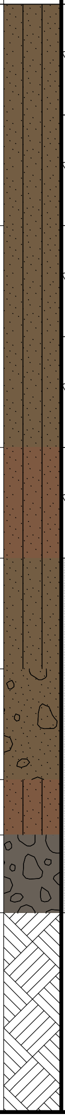
PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-15**
ERM PROJECT # 0181805
SHEET 1 OF 3

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075122.31
EASTING 1052918.18
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 604.14 ft

BOREHOLE DEPTH 20.5 ft
BOREHOLE DIAMETER 2 in



DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	SAMPLING DATA: RECOVERY	SAMPLING DATA: PID (ppm) 11.7 eV Lamp	SAMPLING DATA: Observations / Remarks
		SANDY SILT (SM) fine grained SAND; medium dense, moist, brown (10YR 4/3)		SM		✋ ✋	12/12 12/12		4910cpm BF-TMW15(1-2) [(1-2ft)]
2		SANDY SILT (SM) fine grained SAND; medium dense, little fine gravel, moist, brown (10YR 4/3)	2	SM		✋ ✋	12/12 12/12	0	5210cpm
4	600	SANDY SILT (SM) fine grained SAND; medium dense, little fine gravel, moist, reddish brown (5YR 4/4)	4	SM		✋	12/12		5640cpm
		SANDY SILT (SM) fine grained SAND; medium dense, trace fine gravel, moist, brown (10YR 4/3)	5	SM		▨	39/38.4	0.2	5060cpm
6		GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to medium grained GRAVEL; medium dense, dry, brown (10YR 4/3)	6	GP-SP				0.7	4980cpm
		SANDY SILT (SM) fine grained SAND; medium dense, some fine to medium gravel, moist, reddish brown (5YR 4/4)	7	SM					5510cpm
8		GRAVEL (GP) subangular, fine to coarse grained GRAVEL; medium dense, moist to wet, dark gray (10YR 4/1), [Bedrock @ 8.2 ftbgs.]	7.5	GP				0.4 0	5290cpm
	595	LIMESTONE, [water bearing fracture @ 14ftbgs.]	8.2						

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-15**
ERM PROJECT # 0181805
SHEET 2 OF 3

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	20.5 ft
NORTHING	1075122.31	BOREHOLE DIAMETER	2 in
EASTING	1052918.18		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	604.14 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		LIMESTONE, [water bearing fracture @ 14ftbgs.]*(Continued)*							
12									
14	590	LIMESTONE	14						
16									
18									
	585								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▨ Direct push geoprobe sample

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-15**
ERM PROJECT # 0181805
SHEET 3 OF 3

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/06/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	20.5 ft
NORTHING	1075122.31	BOREHOLE DIAMETER	2 in
EASTING	1052918.18		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	604.14 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		LIMESTONE*(Continued)*	20.5						
22									
24	580								
26									
28	575								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample ▒ Direct push geoprobe sample

ERM
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-16**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	11/25/2014
DRILLING EQUIPMENT	Geoprobe 6620 DT	FINISH	05/05/2015

HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))
NORTHING 1075208.51
EASTING 1053136.82
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION 608.44 ft

BOREHOLE DEPTH 6.5 ft
BOREHOLE DIAMETER 2 in

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA: SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY CLAY (CL-ML) soft, moist to wet, light brown (10YR 6/2)	1	CL-ML	▨	✋	12/12		5270cpm
		SILTY CLAY (CL-ML) dense, some coarse gravel, moist, brown (10YR 4/3), [some brick fragments]	2	CL-ML	▨	✋	12/12	0.1	5900cpm
2		CLAYEY SILT (CL-ML) medium dense, moist, brown (10YR 4/3)	3	CL-ML	▨	✋	12/12	0	5400cpm
	605	CLAYEY SILT (CL-ML) medium dense, moist, brown (10YR 4/3)	4	CL-ML	▨	✋	12/12	0.1	6340cpm
4		CLAYEY SILT (SM) medium dense, some fine sand, moist to wet, grayish brown (10YR 5/2), [moderate petroleum like odor]	5	SM	▨	✋	12/12	2.9	5920cpm BF-TMW16(4-5) [(4-5ft)]
		CLAYEY SILT (CL-ML) medium dense, trace fine sand, trace fine gravel, moist, grayish brown (10YR 5/2)	5.5	CL-ML	▨	▒	18/18		5880cpm
6		CLAYEY SILT (CL-ML) dense, some fine sand, trace fine gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 6.5 ftbgs.]	6.5	CL-ML	▨	▒		0.1	5930cpm
8	600								

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface
✋ Grab Sample ▒ Direct push geoprobe sample

ERM

5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-16A**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD		DATE: START	11/25/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	11/25/2014
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	4.5 ft
NORTHING	1075232.18	BOREHOLE DIAMETER	2 in
EASTING	1053057.77		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	607.04 ft		

DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		SILTY CLAY (CL-ML) soft, moist to wet, light brown (10YR 6/2)		CL-ML	▨	✋	12/12		5940cpm
		SILTY CLAY (CL-ML) dense, some coarse gravel, moist, brown (10YR 4/3)	1	CL-ML	▨	✋	12/12	0.2	6310cpm
2	605	CLAYEY SILT (CL-ML) medium dense, moist, brown (10YR 4/3)	2	CL-ML	▨	✋	12/12	0.4	7760cpm
		CLAYEY SILT (CL-ML) medium dense, moist, brown (10YR 4/3)	3	CL-ML	▨	✋	12/12	0.1	5910cpm
4		CLAYEY SILT (SM) medium dense, some fine sand, moist to wet, reddish brown (5YR 4/4), [Bedrock refusal @ 5 ftbgs.]	4	SM	▨	✋	6/6		TMW-16A(3.5-4.5) [(3.5-4.5ft)] 6230cpm
			4.5						
6									
	600								
8									

REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

✋ Grab Sample

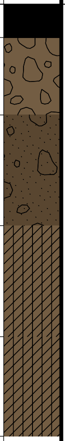
5788 Widewaters Pkwy
Syracuse, New York 13214
P: 1-315-445-2554

PROJECT:
Howden NA, Inc.
Former Buffalo Forge Property - BCP #C915280

BORING # **TMW-17**
ERM PROJECT # 0181805
SHEET 1 OF 1

DRILLING CONTRACTOR	Parratt-Wolff New York	ERM REPRESENTATIVE	J. Reynolds/ C.Voorhees
DRILLING FOREMAN		OFFICE LOCATION	Syracuse, NY
DRILLING METHOD	Direct Push	DATE: START	12/01/2014
DRILLING EQUIPMENT	Hand Auger/ Air knife	FINISH	05/08/2015
HORIZONTAL DATUM (NAD 1983 StatePlane New York West (US Feet))		BOREHOLE DEPTH	3.75 ft
NORTHING	1075295.23	BOREHOLE DIAMETER	2 in
EASTING	1053582.25		
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION	605.91 ft		

						SAMPLING DATA			
DEPTH	ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLE TYPE	RECOVERY	PID (ppm) 11.7 eV Lamp	Observations / Remarks
		[Asphalt]							
	605	GRAVEL (GP) subangular, coarse grained GRAVEL; medium dense, moist, (10YR 4/3)	0.3	GP					3970cpm
		GRAVELLY SAND (GP-SP) fine grained SAND; subangular, fine to coarse grained GRAVEL; medium dense, trace silt, moist, dark brown (10YR 3/3)	1	GP-SP					4520cpm
2		CLAYEY SILT (CL-ML) medium dense, some fine sand, moist, brown (10YR 4/3), [trace brick fragments]	2	CL-ML					4330cpm
		CLAYEY SILT (CL-ML) medium dense, some fine sand, trace gravel, moist, brown (10YR 4/3), [Bedrock refusal @ 3.9 ftbgs.]	3	CL-ML					4330cpm
			3.9						
4									
6	600								
8									



REMARKS:
cpm = counts per minute ftbgs = feet below ground surface

Appendix D
Monitoring Well Construction Logs-Remedial Investigation

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION

WELL : TMW-12

Project Name & Location: Buffalo Forge
Project No.: 081805
Drilling Company: PW
Foreman:
Surveyor:
Date and Time of Completion: 5/7/15
Geologist: 15.5

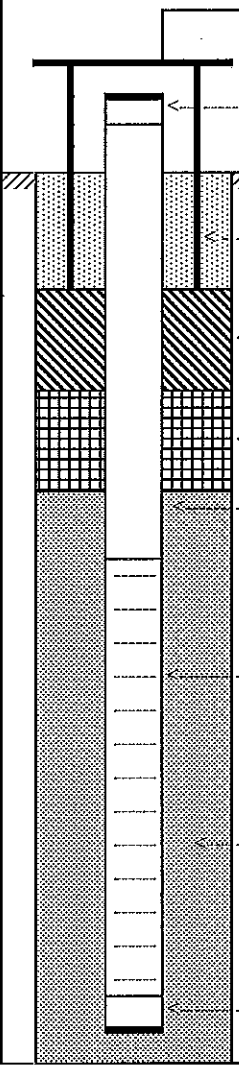
Water Level(s) (ft below top of PVC casing)

Date	Time	Level (feet)

Site Elevation Datum:
Ground Elevation:
Top of Protective Steel Cap Elevation:
Top of Riser Pipe Elevation:

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	
	0.0	4.5
	0.0	5.5
	0.0	10.5
	0.0	



PROTECTIVE STEEL CAP WITH LOCK

EXPANSION CAP

GROUND SURFACE

PROTECTIVE STEEL CASING CEMENTED IN PLACE

BENTONITE-CEMENT GROUT

BENTONITE SEAL

RISER
DIAMETER: 1"
MATERIAL: pvc

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: pvc

SAND PACK
TYPE: 0

BOTTOM CAP (PVC)

BOTTOM OF BOREHOLE

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

WELL : TMW-13

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge

Project No. 0181805

Drilling Company PW

Foreman

Surveyor

Date and Time of Completion 5/6/15

Geologist CV

Water Level(s) *(ft below top of PVC casing)*

Date	Time	Level (feet)

Site Elevation Datum

Ground Elevation

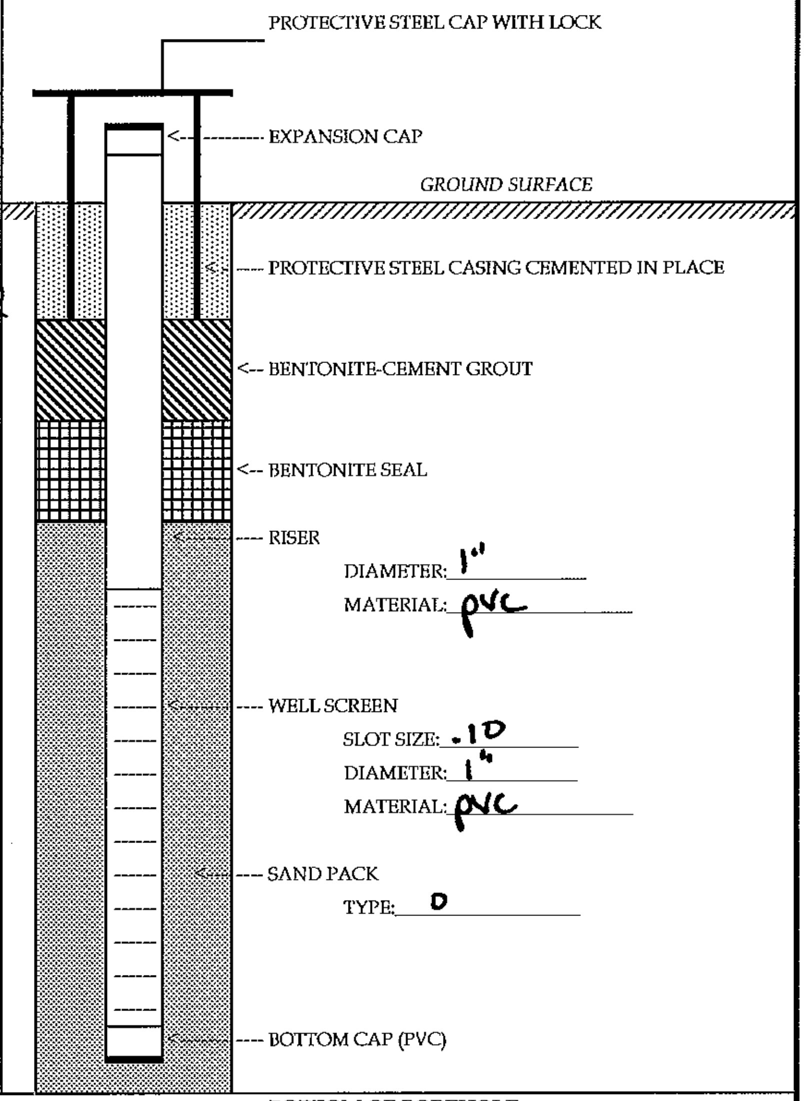
Top of Protective Steel Cap Elevation

Top of Riser Pipe Elevation

CONSTRUCTION DETAILS

Generalized Soil Description

*Elevation	**Depth
0.0	0.0
0.0	0.0
0.0	0.0
0.0	surface
0.0	
0.0	8"
0.0	1'8"
0.0	4'3"
0.0	



RISER
DIAMETER: 1"
MATERIAL: pvc

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: pvc

SAND PACK
TYPE: 0

BOTTOM OF BOREHOLE

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

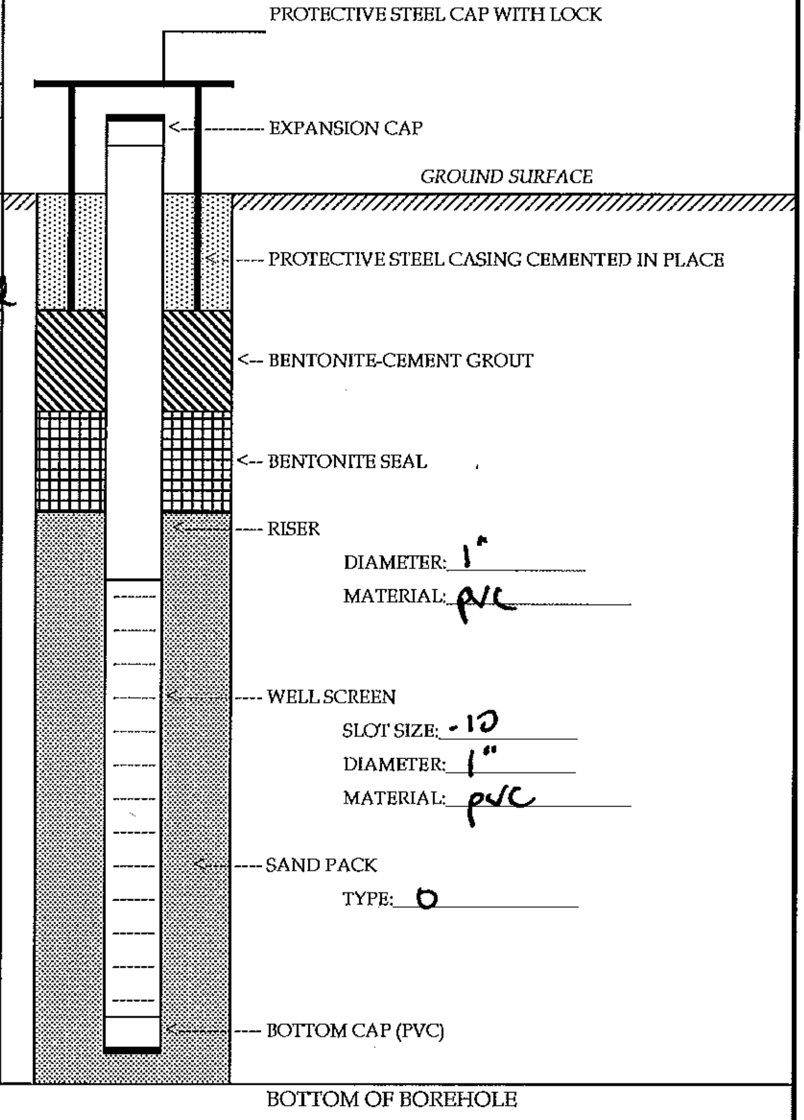
WELL : TMW-14

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* (ft below top of PVC casing)			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/7/15 1000	*Geologist* JR/CV				*Top of Riser Pipe Elevation*

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	surface
	0.0	
	0.0	2.5
	0.0	3.5
	0.0	9.5
	0.0	



RISER
DIAMETER: 1"
MATERIAL: PVC

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: PVC

SAND PACK
TYPE: 0

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted ** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

WELL : TMW-15S

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Site Elevation Datum*
Drilling Company PW	*Foreman*	*Ground Elevation*
Surveyor		*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/6/15 0930	*Geologist* JR/CW	*Top of Riser Pipe Elevation*

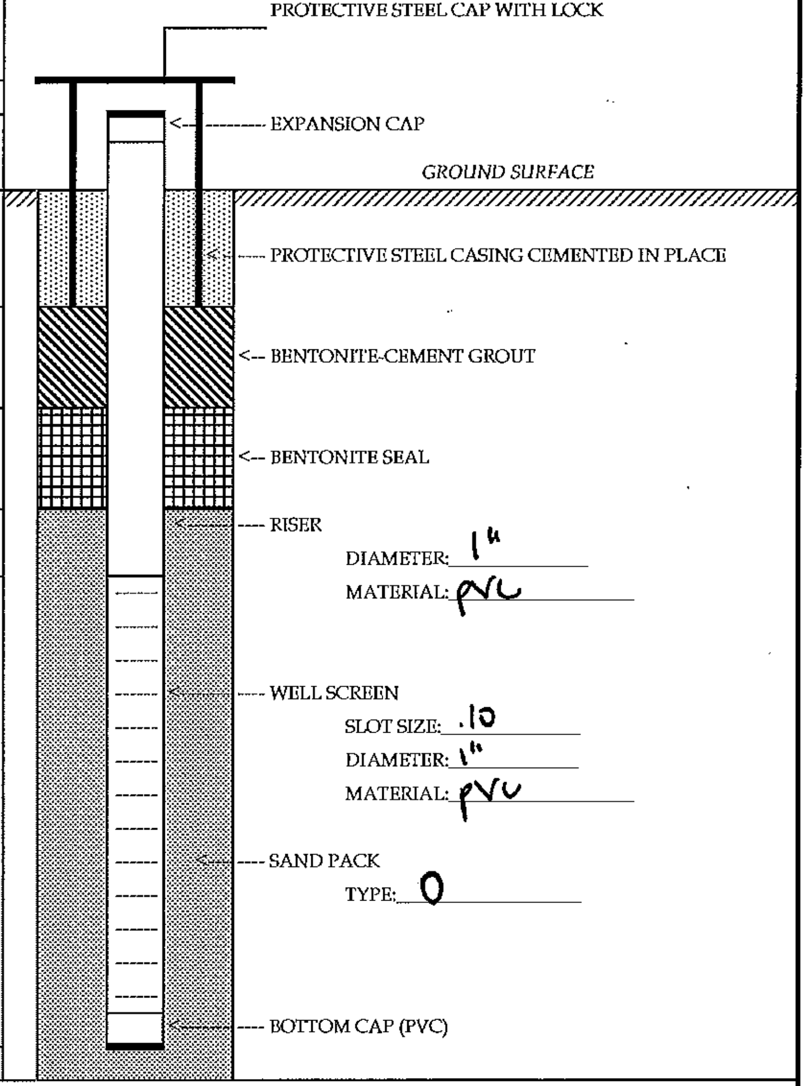
Water Level(s)

(ft below top of PVC casing)

Date	Time	Level (feet)

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	1.0
	0.0	
	0.0	3.0
	0.0	4.0
	0.0	8.0
	0.0	

CONSTRUCTION DETAILS



RISER

DIAMETER: 1"

MATERIAL: PVC

WELL SCREEN

SLOT SIZE: .10

DIAMETER: 1"

MATERIAL: PVC

SAND PACK

TYPE: 0

BOTTOM OF BOREHOLE

REMARKS couplet shallow & deep

flush-mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

g:geoforms\Well Construction Log (stk-up).XLS
rev. 10/99

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

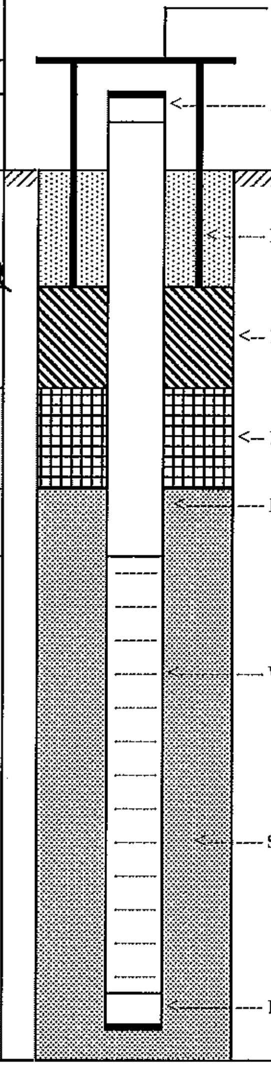
MONITORING WELL CONSTRUCTION

WELL : TMW-15D

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/6/15 0930	*Geologist* JRLCV				*Top of Riser Pipe Elevation*

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	8.5
	0.0	9.5
	0.0	10.5
	0.0	20.5
	0.0	



PROTECTIVE STEEL CAP WITH LOCK

EXPANSION CAP

GROUND SURFACE

PROTECTIVE STEEL CASING CEMENTED IN PLACE

BENTONITE-CEMENT GROUT

BENTONITE SEAL

RISER

DIAMETER: 2"

MATERIAL:

WELL SCREEN

SLOT SIZE: .10

DIAMETER: 2"

MATERIAL: PVC

SAND PACK

TYPE: 0

BOTTOM CAP (PVC)

BOTTOM OF BOREHOLE

REMARKS couplet shallow + deep

flush-mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

WELL : TMW-16

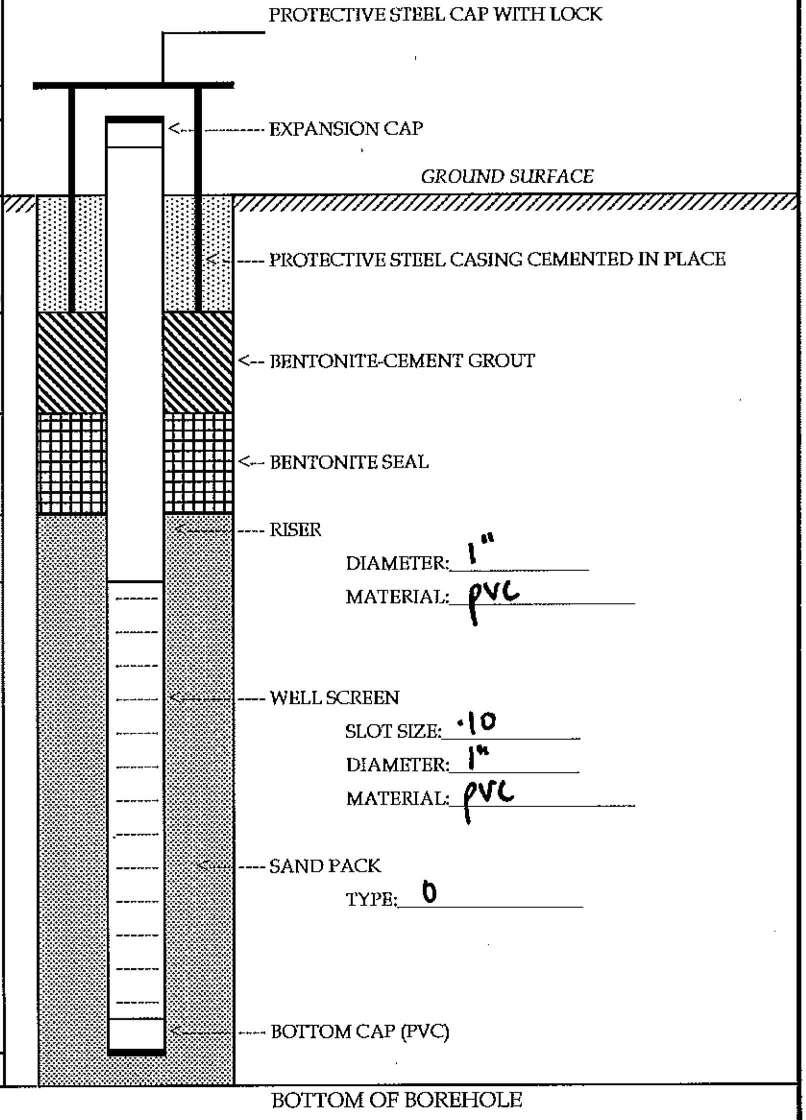
5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company Parratt Wolff	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/5/15 1400	*Geologist* JR/CV				*Top of Riser Pipe Elevation*

CONSTRUCTION DETAILS

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	
	0.0	1.5
	0.0	2.5
	0.0	6.5
	0.0	



RISER
DIAMETER: 1"
MATERIAL: pvc

WELL SCREEN
SLOT SIZE: .10
DIAMETER: 1"
MATERIAL: pvc

SAND PACK
TYPE: 0

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

ERM

5788 Widewaters Parkway, Dewitt, NY 13214 (315) 445-2554

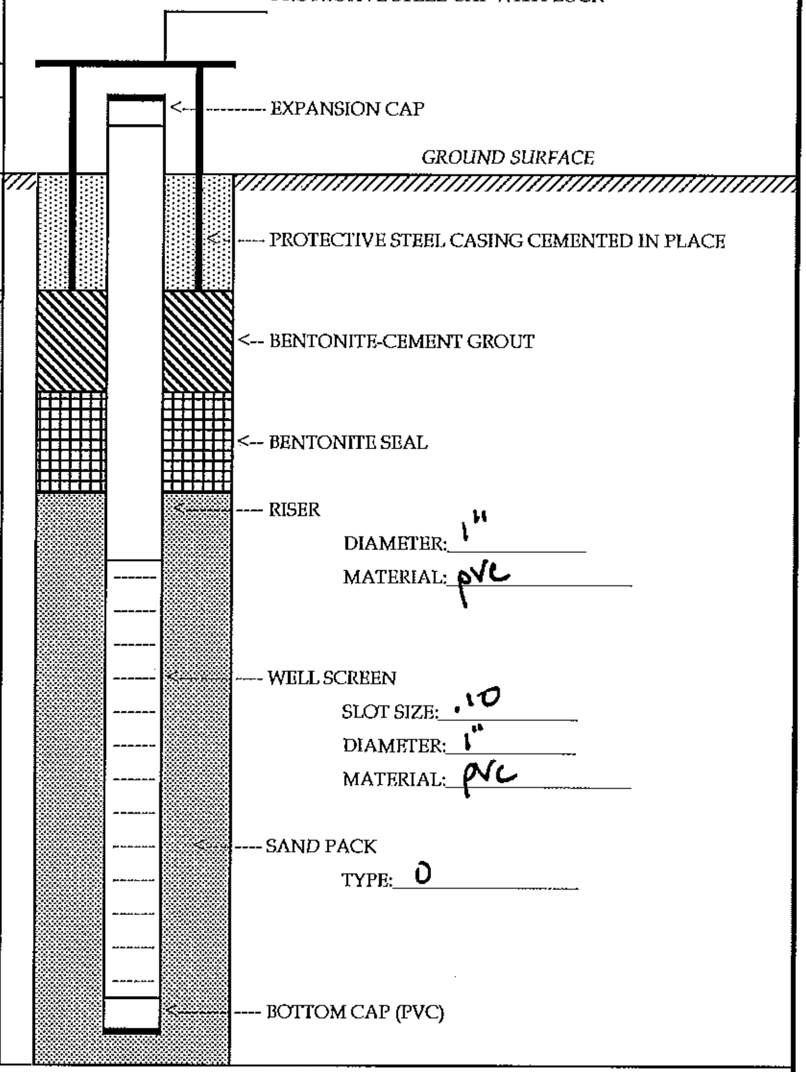
WELL : TMW-17

MONITORING WELL CONSTRUCTION

Project Name & Location Buffalo Forge	*Project No.* 0181805	*Water Level(s)* *(ft below top of PVC casing)*			*Site Elevation Datum*
Drilling Company PW	*Foreman*	Date	Time	Level (feet)	*Ground Elevation*
Surveyor					*Top of Protective Steel Cap Elevation*
Date and Time of Completion 5/8/15	*Geologist* JR/CV				*Top of Riser Pipe Elevation*

Generalized Soil Description	*Elevation	**Depth
	0.0	0.0
	0.0	0.0
	0.0	0.0
	0.0	Surface
	0.0	
	0.0	9"
	0.0	1'9"
	0.0	3'9"
	0.0	

CONSTRUCTION DETAILS



RISER

DIAMETER: 1"

MATERIAL: PVC

WELL SCREEN

SLOT SIZE: .10

DIAMETER: 1"

MATERIAL: PVC

SAND PACK

TYPE: 0

REMARKS flush mount

* Elevation (feet) above mean sea level unless noted

** Depth in feet below grade

g:geoforms\Well Construction Log (stk-up).XLS
rev. 10/99

Appendix E

Ground Water Sampling Records

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site

DATE 13 March 2012

PROJECT NUMBER: 0157929

SAMPLE ID : TMW-01

WELL ID : TMW-01

SAMPLERS : L. Witters
J. Fox

Time Onsite: 0800 / 0817

Time Offsite: 1533 / 1535

Depth of well (from top of casing) .... 10.12' Time: 0842

Static water level (from top of casing) .... 5.04' Time: 0841

Water level after purging (from top of casing) .... ____ Time: ____

Water level before sampling (from top of casing) ...... ____ Time: ____

Purging Method: N/A

____ Airlift
____ Bailer
____ Submersible
____ Low-Flow Pump
____ Peristaltic Pump
____ Ded. Pump

Volume of water removed:

____ gal.

Well Volume Calculation:

1 volume 3 volumes

1 in. well: ____ ft. of water x 0.04 = ____ gal. x 3 = ____ gal.
3 in. well: ____ ft. of water x 0.36 = ____ gal. x 3 = ____ gal.
4 in. well: ____ ft. of water x 0.65 = ____ gal. x 3 = ____ gal.
6 in. well: ____ ft. of water x 1.47 = ____ gal. x 3 = ____ gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	ºC	-	-	g/L	mV
Initial	7.97	464	1609	5.39	8.30				75.9
1 Volume									
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 0848

Collection Method:

X Disposable bailer
____ Teflon bailer
____ Dedicated pump
____ Submersible Pump
____ Low-Flow Sampling
____ Other: ____

Analyses: / Analytical Method:

X VOCs - 8260 X 503.1 ____ Other ____
X SVOCs 8270
X Metals TAL
X PCB 8082
____ MNA
X Other Cyanide

Observations

Weather/Temperature: Fog, Temp. +/- 42ºF, wind, W, estimated 10 mph

Sample Description: Heavy brown turbidity

Free Product? yes ____ no X describe ____

Sheen? yes ____ no X describe ____

Odor? yes ____ no X describe ____

Comments:

Well went dry, removed approximately 1.5 liters total.

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site
DATE 13 March 2012
PROJECT NUMBER: 0157929
SAMPLE ID : TMW-06
WELL ID : TMW-06
SAMPLERS : L. Witters
J. Fox

Time Onsite: 0800, 0817
Time Offsite: 1533, 1535

Depth of well (from top of casing) .... 9.36' Time: 0941
Static water level (from top of casing) .... 5.20' Time: 0940
Water level after purging (from top of casing) .... ____ Time: ____
Water level before sampling (from top of casing) ...... ____ Time: ____

Purging Method: N/A

____ Airlift ____ Low-Flow Pump
____ Bailer ____ Peristaltic Pump
____ Submersible ____ Ded. Pump

Volume of water removed: ____ gal.

Well Volume Calculation:

		1 volume	3 volumes
1 in. well: ____	ft. of water x 0.04 =	____ gal.	x 3 = ____ gal.
3 in. well: ____	ft. of water x 0.36 =	____ gal.	x 3 = ____ gal.
4 in. well: ____	ft. of water x 0.65 =	____ gal.	x 3 = ____ gal.
6 in. well: ____	ft. of water x 1.47 =	____ gal.	x 3 = ____ gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	°C	-	-	g/L	mV
Initial	8.88	422	92.7	7.99	7.92				92.0
1 Volume									
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 0955

Collection Method:		Analyses:		Analytical Method:
X	Disposable bailer	X	VOCs -	8260 X 503.1 ____ Other ____
	Teflon bailer	X	SVOCs	8270
	Dedicated pump	X	Metals	TAL
	Submersible Pump	X	PCB	8082
	Low-Flow Sampling		MNA	
	Other: ____	X	Other	Cyanide

Observations

Weather/Temperature: Overcast, Temp. +/- 42°F, wind, W, estimated 5 mph
Sample Description: Moderate brown turbidity
Free Product? yes ____ no X describe ____
Sheen? yes ____ no X describe ____
Odor? yes ____ no X describe ____

Comments:
Total volume removed ~0.9 liter; well went dry.

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site

DATE 13 March 2012

PROJECT NUMBER: 0157929

SAMPLE ID : TMW-04

WELL ID : TMW-04

SAMPLERS : L. Witters
J. Fox

	Time Onsite:	Time Offsite:
L. Witters	0800	1533
J. Fox	0817	1535

Depth of well (from top of casing) .... 8.58' Time: 1432

Static water level (from top of casing) .... 1.77' Time: 1431

Water level after purging (from top of casing) .... ______ Time: ______

Water level before sampling (from top of casing) ...... ______ Time: ______

Purging Method: N/A

____ Airlift ____ Low-Flow Pump
____ Bailer ____ Peristaltic Pump
____ Submersible ____ Ded. Pump

Well Volume Calculation:

		1 volume	3 volumes
1 in. well: ____	ft. of water x 0.04 =	____ gal.	x 3 = ____ gal.
3 in. well: ____	ft. of water x 0.36 =	____ gal.	x 3 = ____ gal.
4 in. well: ____	ft. of water x 0.65 =	____ gal.	x 3 = ____ gal.
6 in. well: ____	ft. of water x 1.47 =	____ gal.	x 3 = ____ gal.

Volume of water removed:
______ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	ºC	-	-	g/L	mV
Initial	9.69	810	70.1	2.52	7.8				-68.5
1 Volume									
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 1435

Collection Method:		Analyses:		Analytical Method:
X	Disposable bailer	X	VOCs -	8260 X 503.1 ____ Other ____
	Teflon bailer	X	SVOCs	8270
	Dedicated pump	X	Metals	TAL
	Submersible Pump	X	PCB	8082
	Low-Flow Sampling		MNA	
	Other: ____	X	Other	Cyanide, HRGC Fingerprint for Pertroleum ID

Observations

Weather/Temperature: Fog, Temperature +/- 42ºF, wind, W, estimated 10 mph

Sample Description: Moderate to heavy gray-brown turbidity

Free Product? yes ____ no X describe ______

Sheen? yes X no ____ describe Slight/moderate petroleum-like

Odor? yes X no ____ describe slight/moderate petroleum-like

Comments:

Removed approximately 4.5 liters total.

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site
DATE 13 March 2012
PROJECT NUMBER: 0157929
SAMPLE ID : TMW-11
WELL ID : TMW-11
SAMPLERS : L. Witters
J. Fox

Time Onsite:	Time Offsite:
0800	1533
0817	1535

Depth of well (from top of casing) .... 11.65' Time: 1058
Static water level (from top of casing) .... 2.11' Time: 1057
Water level after purging (from top of casing) .... ______ Time: ______
Water level before sampling (from top of casing) ...... ______ Time: ______

Purging Method: N/A

____ Airlift
____ Bailer
____ Submersible
____ Low-Flow Pump
____ Peristaltic Pump
____ Ded. Pump

Well Volume Calculation:

		1 volume	3 volumes
1 in. well: ____	ft. of water x 0.04 =	____ gal.	x 3 = ____ gal.
3 in. well: ____	ft. of water x 0.36 =	____ gal.	x 3 = ____ gal.
4 in. well: ____	ft. of water x 0.65 =	____ gal.	x 3 = ____ gal.
6 in. well: ____	ft. of water x 1.47 =	____ gal.	x 3 = ____ gal.

Volume of water removed:
______ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	ºC	-	-	g/L	mV
Initial	10.85	416	"ERR1"	4.48	8.29				116.0
1 Volume			913						
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 1100

Collection Method:		Analyses:		Analytical Method:
X	Disposable bailer	X	VOCs -	8260 X 503.1 ____ Other ____
	Teflon bailer	X	SVOCs	8270
	Dedicated pump	X	Metals	TAL
	Submersible Pump	X	PCB	8082
	Low-Flow Sampling		MNA	
	Other: ______	X	Other	Cyanide

Observations

Weather/Temperature: Overcast, Temp. +/- 45ºF, wind, W, estimated 5-10 mph
Sample Description: Moderate to heavy brown turbidity
Free Product? yes ____ no X describe ______
Sheen? yes ____ no X describe ______
Odor? yes ____ no X describe ______

Comments:
"Err1"= low battery; replaced battery and second reading was 913 NTU
Removed approximately

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site
DATE 13 March 2012
PROJECT NUMBER: 0157929
SAMPLE ID : TMW-10
WELL ID : TMW-10

SAMPLERS :	L. Witters J. Fox	**Time Onsite:** 0800 0817	**Time Offsite:** 1533 1535

Depth of well (from top of casing) .... 8.99' Time: 1022
Static water level (from top of casing) .... 2.47' Time: 1021
Water level after purging (from top of casing) .... ______ Time: ______
Water level before sampling (from top of casing) ...... ______ Time: ______

Purging Method: N/A

____ Airlift
____ Bailer
____ Submersible
____ Low-Flow Pump
____ Peristaltic Pump
____ Ded. Pump

Well Volume Calculation:

			1 volume		3 volumes
1 in. well:	____	ft. of water x 0.04 =	____ gal.	x 3 =	____ gal.
3 in. well:	____	ft. of water x 0.36 =	____ gal.	x 3 =	____ gal.
4 in. well:	____	ft. of water x 0.65 =	____ gal.	x 3 =	____ gal.
6 in. well:	____	ft. of water x 1.47 =	____ gal.	x 3 =	____ gal.

Volume of water removed:
______ gal. >3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	°C	-	-	g/L	mV
Initial	11.4	842	106.8	6.42	6.79				46.5
1 Volume									
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 1025

Collection Method:		Analyses:		Analytical Method:
X	Disposable bailer	X	VOCs -	8260 X 503.1 ____ Other ____
	Teflon bailer	X	SVOCs	8270
	Dedicated pump	X	Metals	TAL
	Submersible Pump	X	PCB	8082
	Low-Flow Sampling		MNA	
	Other: ______	X	Other	Cyanide

Observations

Weather/Temperature: Overcast, Temp. +/- 42°F, wind, W, estimated 10 mph
Sample Description: Moderate brown turbidity
Free Product? yes ____ no X describe ______
Sheen? yes ____ no X describe ______
Odor? yes ____ no X describe ______

Comments:
Well very turbid and going dry, removed approximately 3.0 liters total.

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site

DATE 13 March 2012

PROJECT NUMBER: 0157929

SAMPLE ID : TMW-09

WELL ID : TMW-09

SAMPLERS : L. Witters
J. Fox

Time Onsite: 0800 / 0817

Time Offsite: 1533 / 1535

Depth of well (from top of casing) .... 8.71' Time: 1259

Static water level (from top of casing) .... 1.95' Time: 1258

Water level after purging (from top of casing) .... ______ Time: ______

Water level before sampling (from top of casing) ...... ______ Time: ______

Purging Method: N/A

____ Airlift ____ Low-Flow Pump

____ Bailer ____ Peristaltic Pump

____ Submersible ____ Ded. Pump

Volume of water removed: ______ gal.

Well Volume Calculation:

		1 volume		3 volumes
1 in. well: ____	ft. of water x 0.04 =	____ gal.	x 3 =	____ gal.
3 in. well: ____	ft. of water x 0.36 =	____ gal.	x 3 =	____ gal.
4 in. well: ____	ft. of water x 0.65 =	____ gal.	x 3 =	____ gal.
6 in. well: ____	ft. of water x 1.47 =	____ gal.	x 3 =	____ gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	ºC	-	-	g/L	mV
Initial	10.34	754	279	2.80	8.11				33
1 Volume									
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 1305

Collection Method:		Analyses:		Analytical Method:
X	Disposable bailer	X	VOCs -	8260 X 503.1 ____ Other ____
	Teflon bailer	X	SVOCs	8270
	Dedicated pump	X	Metals	TAL
	Submersible Pump	X	PCB	8082
	Low-Flow Sampling		MNA	
	Other: ______	X	Other	Cyanide, HRGC Fingerprint for Petroleum ID

Observations

Weather/Temperature: Mostly Sunny, Temp. +/- 48ºF, wind, WSW, estimated 10 mph

Sample Description: Moderate brown turbidity

Free Product? yes ____ no X describe ______

Sheen? yes X no ____ describe Slight to moderate petroleum-like

Odor? yes X no ____ describe Slight petroleum-like

Comments:

Very turbid, removed approximately 3.5 liters total.

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site

DATE 13 March 2012

PROJECT NUMBER: 0157929

SAMPLE ID : TMW-08

WELL ID : TMW-08

SAMPLERS : L. Witters
J. Fox

Time Onsite: 0800
0817

Time Offsite: 1533
1535

Depth of well (from top of casing) .... 7.03' Time: 1336

Static water level (from top of casing) .... 1.82' Time: 1335

Water level after purging (from top of casing) .... ______ Time: ______

Water level before sampling (from top of casing) ...... ______ Time: ______

Purging Method: N/A

____ Airlift
____ Bailer
____ Submersible
____ Low-Flow Pump
____ Peristaltic Pump
____ Ded. Pump

Volume of water removed: ______ gal.

Well Volume Calculation:

		1 volume	3 volumes
1 in. well: ____	ft. of water x 0.04 =	____ gal.	x 3 = ____ gal.
3 in. well: ____	ft. of water x 0.36 =	____ gal.	x 3 = ____ gal.
4 in. well: ____	ft. of water x 0.65 =	____ gal.	x 3 = ____ gal.
6 in. well: ____	ft. of water x 1.47 =	____ gal.	x 3 = ____ gal.

>3 volumes: yes ____ no ____ purged dry? yes ____ no ____

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	ºC	-	-	g/L	mV
Initial	10.02	480	3672	4.13	7.51				106
1 Volume									
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 1340

Collection Method:
X Disposable bailer
____ Teflon bailer
____ Dedicated pump
____ Submersible Pump
____ Low-Flow Sampling
____ Other: ______

Analyses:		Analytical Method:
X	VOCs -	8260 X 503.1 ____ Other ____
X	SVOCs	8270
X	Metals	TAL
X	PCB	8082
	MNA	
X	Other	Cyanide, HRGC Fingerprint for Petroleum ID

Observations

Weather/Temperature: Mostly Sunny, Temp. +/- 50ºF, wind, W, estimated 10-20 mph

Sample Description: Moderate to heavy gray-brown turbidity

Free Product? yes ____ no X describe ______

Sheen? yes X no ____ describe Slight to moderate petroleum-like

Odor? yes X no ____ describe Slight petroleum-like, slightly sweet

Comments:

Very turbid, well went dry, removed approximately 1.4 liters total.

GROUND WATER SAMPLING RECORD

SITE Buffalo Forge Site DATE 13 March 2012
PROJECT NUMBER: 0157929
SAMPLE ID : TMW-07
WELL ID : TMW-07 Time Onsite: Time Offsite:
SAMPLERS : L. Witters 0800 1533
J. Fox 0817 1535

Depth of well (from top of casing) .... 4.60' Time: 1136
Static water level (from top of casing) .... 1.40' Time: 1135
Water level after purging (from top of casing) .... Time:
Water level before sampling (from top of casing) ...... Time:

Purging Method: N/A

Airlift
Bailer
Submersible
Low-Flow Pump
Peristaltic Pump
Ded. Pump

Well Volume Calculation:

		1 volume		3 volumes
1 in. well:	ft. of water x 0.04 =	gal.	x 3 =	gal.
3 in. well:	ft. of water x 0.36 =	gal.	x 3 =	gal.
4 in. well:	ft. of water x 0.65 =	gal.	x 3 =	gal.
6 in. well:	ft. of water x 1.47 =	gal.	x 3 =	gal.

Volume of water removed:
gal. >3 volumes: yes no purged dry? yes no

Field Tests:

	pH	Cond.	Turb.	DO	Temp.	DEP	SAL	TDS	ORP
units	-	µs/cm	NTU	mg/L	ºC	-	-	g/L	mV
Initial	10.67	822	232	7.67	6.63				109.7
1 Volume									
2 Volumes									
3 Volumes									

Sampling

Time of Sample Collection: 1140

Collection Method:		Analyses:		Analytical Method:
X	Disposable bailer	X	VOCs -	8260 X 503.1 Other
	Teflon bailer	X	SVOCs	8270 Sampled ~0.2 liters
	Dedicated pump	X	Metals	TAL
	Submersible Pump	X	PCB	8082 (If sufficient volume)
	Low-Flow Sampling		MNA	
	Other:	X	Other	Cyanide

Observations

Weather/Temperature: Fog, Temp. +/- 45ºF, wind, W, estimated 5-10 mph
Sample Description: Moderate brown turbidity
Free Product? yes no X describe
Sheen? yes no X describe
Odor? yes no X describe

Comments:
Well went dry, removed approximately 0.4 liters total.

LOW FLOW DATA SHEET

Well ID: TMW-12 **Date:** 5/27/15 **Project Name:** Buffalo Forge **Project Number:** 0181805

Weather Conditions: cloudy, ±70° F

Pump Used
Geopump

Static water level before lowflow: 5.70 (feet below top of casing)
Bottom of well: NM (feet below top of casing)

Time Started: 1510 Time Finished: 1520

Time	DTW	Pump	Turb.	Temp.	pH	Cond.	DO	Flow	ORP	Comments
	feet	(on/off)	NTU	deg. C	SU	us/cm	mg/L	ml/min.	mv	
			+/-10%	+/-3%	0.1 unit	+/-3%	+/-10%	100-400	+/-10 mv	
1515	7.62	on	27.1	7.77	7.53	0.727	6.80	67	65.4	

Notes: PID: 0.0 well dry after one volume. No sample.

Sample ID:
Sample Time:
Total Vol. Purged: Gallons
Samplers Initials:

LOW FLOW DATA SHEET

Well ID: TMW13 Date: 5/27/15 Project Name: Buffalo Forge Project Number: 0181805

Weather Conditions: Cloudy, ± 70° F

Pump Used
None

Static water level before lowflow: Dry (feet below top of casing)
Bottom of well: NM (feet below top of casing)

Time Started: ______ Time Finished: ______

Time	DTW	Pump	Turb.	Temp.	pH	Cond.	DO	Flow	ORP	Comments
	feet	(on/off)	NTU	deg. C	SU	us/cm	mg/L	ml/min.	mv	
			+/- 10%	+/- 3%	0.1 unit	+/- 3%	+/- 10%	100-400	+/- 10 mv	

Notes: PID : 0.0
Dry - Not Sampled.

Sample ID:
Sample Time:
Total Vol. Purged: Gallons
Samplers Initials:

PID: 0.0 PPM

LOW FLOW DATA SHEET

Well ID: TMW-14 **Date:** 5/27/15 **Project Name:** Buffalo Forge **Project Number:** 0181805

Weather Conditions: Part Cloudy, ± 70°F

Pump Used
Geopump

Static water level before lowflow: 3.92 (feet below top of casing)
Bottom of well: 8.65 (feet below top of casing)

Time Started: 1310 Time Finished: 1500

Time	DTW	Pump	Turb.	Temp.	pH	Cond.	DO	Flow	ORP	Comments
	feet	(on/off)	NTU	deg. C	SU	us/cm	mg/L	ml/min.	mv	
1310	3.93	off	+/-10%	+/-3%	0.1 unit	+/-3%	+/-10%	100-400	+/-10 mv	
1315	3.93	ON	8.5	15.65	7.16	1176	-0.81	150	-136.1	
1320	3.94	ON	3.74	15.32	7.42	1136	-0.67	125	-139.6	
1325	3.95	ON	1.11	15.24	7.32	1110	4.41	125	-120.9	
1330	3.96	ON	1.77	15.43	7.26	1097	4.100	125	-115.0	
1335	3.96	ON	0	15.60	7.16	1089	4.50	125	-119.1	
1340	3.97	ON	0	15.63	7.08	1089	4.37	125	-116.7	
1345	3.97	ON	0	15.55	6.92	1083	4.36	125	-112.8	
1350	3.97	ON	0	15.53	6.89	1081	4.33	125	-108.6	
1355	3.98	ON	0	15.59	6.80	1083	4.31	125	-105.8	
1400	3.98	ON	0	15.53	6.79	1082	4.42	125	-101.5	

Notes: PID : 0.0 PPM

Sample ID: TMW-14 (6) 20150527-01
Sample Time: 1400
Total Vol. Purged: 2.5 Gallons
Samplers Initials: DB

PID 0.6

LOW FLOW DATA SHEET

Well ID: TMW 15S **Date:** 5/27/15 **Project Name:** Buffalo Forge **Project Number:** 0181805

Weather Conditions: cloudy, ± 70°F

Pump Used
Geopump

Static water level before lowflow: 4.74 (feet below top of casing)
Bottom of well: NM (feet below top of casing)

Time Started: 1040 Time Finished: ______

Time	DTW	Pump	Turb.	Temp.	pH	Cond.	DO	Flow	ORP	Comments
	feet	(on/off)	NTU	deg. C	SU	us/cm	mg/L	ml/min.	mv	
			+/- 10%	+/- 3%	0.1 unit	+/- 3%	+/- 10%	100-400	+/- 10 mv	
1045	4.98	on	0.00	15.20	8.04	0.771	2.52	120	163.1	
1050	5.18	on	0.00	14.86	7.61	0.789	1.21	120	167.8	
1055	5.27	on	0.00	15.02	7.61	0.799	1.12	120	162.0	
1100	5.31	on	0.00	15.02	7.62	0.808	1.11	125	153.1	
1105	5.44	on	0.00	15.05	7.62	0.819	1.07	125	142.5	
1110	5.54	on	0.00	15.03	7.64	6.828	1.05	125	138.1	
1115	5.74	on	0.00	15.06	7.66	0.824	1.05	125	129.7	
1120	5.91	on	0.00	14.65	7.66	0.861	1.02	125	122.1	Air in line water low

Notes: let recharge sample @ 1130

Sample ID: TMW-15S (5.5)-20150527-01
Sample Time: 1130
Total Vol. Purged: 2 Gallons
Samplers Initials: JR

PID: 5.7 ppm

LOW FLOW DATA SHEET

Well ID: TMW15-D **Date:** 5/27/15 **Project Name:** Buffalo Forge **Project Number:** 0181805

Weather Conditions: Cloudy, ±70° F

Pump Used
Geopump

Static water level before lowflow: 5.23 (feet below top of casing)
Bottom of well: ~~14.40~~ 19.2 (feet below top of casing)

Time Started: 1040 Time Finished: 1200

Time	DTW	Pump	Turb.	Temp.	pH	Cond.	DO	Flow	ORP	Comments
	feet	(on/off)	NTU	deg. C	SU	us/cm	mg/L	ml/min.	mv	
			+/-10%	+/-3%	0.1 unit	+/-3%	+/-10%	100-400	+/-10 mv	
1040	5.3	OFF		11.92	7.30	1553	DB ~~34.8~~4.07	150	-108.3	
1045	5.29	ON	0.11	11.82	7.34	1548	4.06	150	-71.0	
1050	5.25	ON	0	11.63	7.37	1540	3.99	150	-77.1	
1055	5.25	ON	0	11.07	7.37	1538	3.93	200	-78.4	
1100	5.26	ON	0	11.65	7.38	1535	3.90	150	-80.8	
1105	5.26	ON	0	11.57	7.38	1533	3.83	150	-83.1	
1110	5.26	ON	0	11.59	7.38	1530	3.69	150	-85.3	
1115	5.25	ON	0	11.53	7.30	1529	3.77	150	-85.2	
1120	5.25	ON	0							

Notes: PID: 5.7 ppm

Sample ID: TMW15D (18)-20150527-01 MS/MSD ~~MS/MSD~~
Sample Time: 1125
Total Vol. Purged: 3 Gallons
Samplers Initials: DB

PID: 0.0.

LOW FLOW DATA SHEET

Well ID: TMW16 Date: 5/27/15 Project Name: Buffalo Forge Project Number: 0181805

Weather Conditions: Cloudy, ± 70°

Pump Used: Geopump

Static water level before lowflow: 4.48 (feet below top of casing)
Bottom of well: NM (feet below top of casing)

Time Started: 1320 Time Finished: 1325

Time	DTW	Pump	Turb.	Temp.	pH	Cond.	DO	Flow	ORP	Comments
	feet	(on/off)	NTU	deg. C	SU	us/cm	mg/L	ml/min.	mv	
			+/-10%	+/-3%	0.1 unit	+/-3%	+/-10%	100-400	+/-10 mv	

Notes: Well went dry on lowest pump setting possible while filling flow cell. ~~No sample collected~~ Sample collected for VOCs and Metals due to low recharge.

Sample ID: TMW-16(4)-20150527-01
Sample Time: 1430
Total Vol. Purged: Gallons
Samplers Initials:

PID: 0.0 PPM

LOW FLOW DATA SHEET

Well ID: TMW17 **Date:** 5/27/15 **Project Name:** Buffalo Forge **Project Number:** 0181805

Weather Conditions: Cloudy, ±70°

Pump Used
Geopump

Static water level before lowflow: 3.12 (feet below top of casing)
Bottom of well: ______ (feet below top of casing)

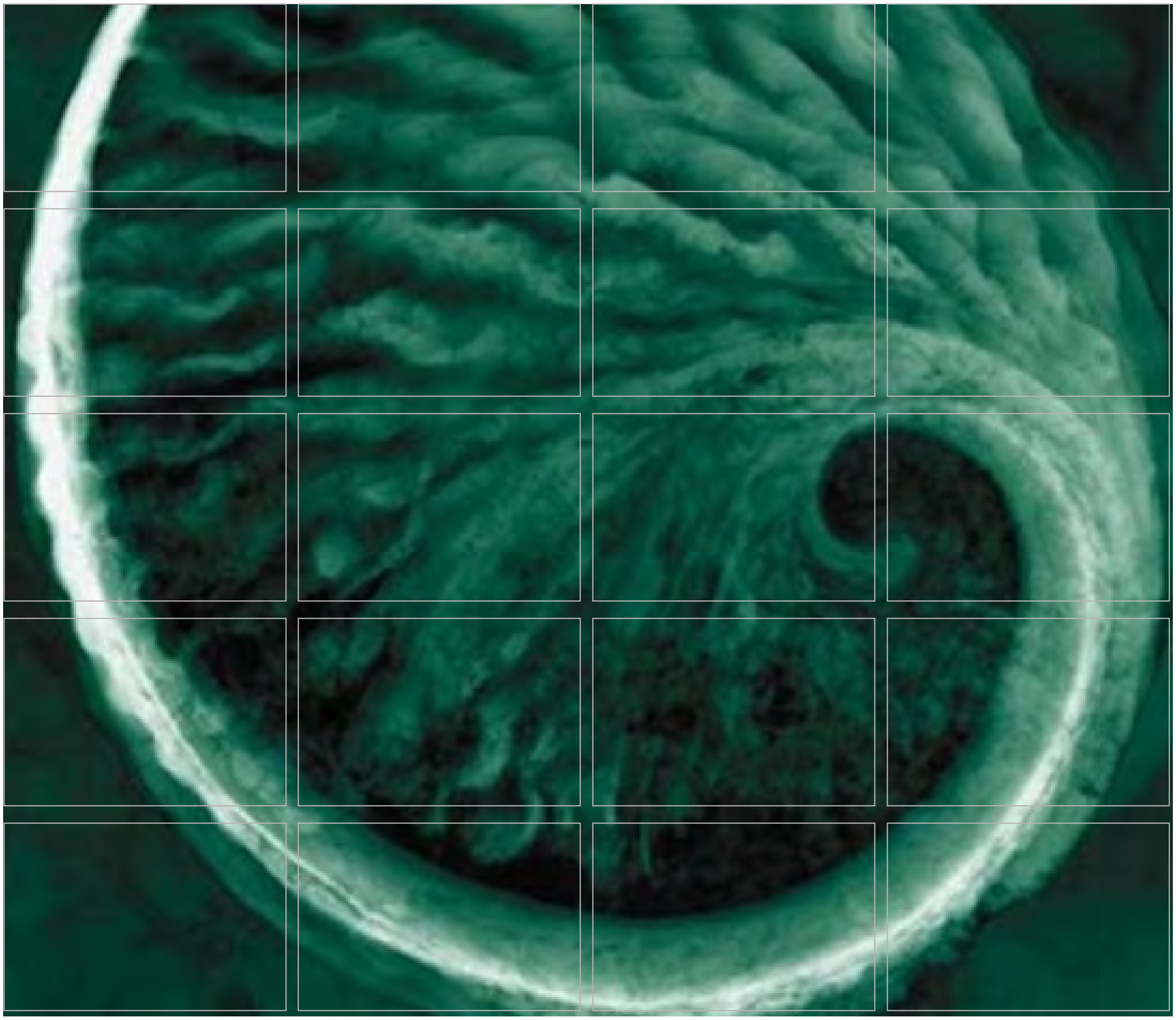
Time Started: ______ Time Finished: ______

Time	DTW	Pump	Turb.	Temp.	pH	Cond.	DO	Flow	ORP	Comments
	feet	(on/off)	NTU	deg. C	SU	us/cm	mg/L	ml/min.	mv	
			+/- 10%	+/- 3%	0.1 unit	+/- 3%	+/- 10%	100-400	+/- 10 mv	

Notes: Well dry while filling flow cell.
Not sampled.

Sample ID:
Sample Time:
Total Vol. Purged: Gallons
Samplers Initials:

Appendix F
Background Fluorescence Report



Background Fluorescence Analysis (BFA)

DRAFT Qualitative BFA Evaluation
Former Buffalo Forge Property
City of Buffalo, Erie County, New York

Wednesday, 21 October 2015

ERM featuring NANO TRACE TECHNOLOGIES™

Background Fluorescence Analysis (BFA) Basics

Determination of groundwater flow direction is usually based on the interpolation of potentiometric head or groundwater level measurements from the existing monitoring well network. The average linear velocity of ground water is then calculated using flow equations that assume isotropic homogeneous aquifer conditions. In reality, these assumptions often are problematic and groundwater flow direction and seepage velocity assessments may be prone to error. The main objective of BFA is to document the fluorescence "fingerprint" of groundwater at a site and perform a comparison to evaluate possible groundwater flow paths. It is often possible to separate preferential (faster) from matrix (slower) groundwater flow. Every groundwater sample has a unique fluorescence "fingerprint" due to the presence of numerous fluorescent organic compounds in different concentrations. Some fluorescence "fingerprints" may share some main peaks or bear similarities along certain "fingerprint" segments. The qualitative BFA approach provides an additional line of evidence and to aid the interpretation of potential preferential ground water flow paths at a site and associated contaminant transport behavior.

Sampling and Preparation

Five groundwater samples were collected at the Former Buffalo Forge Property in the City of Buffalo, Erie County, New York (the Site) between 27 May and 29 May 2015 using low-flow sampling techniques. Additional sample volume from each well was transferred into two 40-ml transparent glass vials. Immediately after sample collection, all vials were stored in a cooler to prevent photo-degradation of the fluorescent organic compounds. The samples were transported under chain of custody to Nano Trace Technologies™ (Nano Trace) laboratory in Orphund, Switzerland on 5 June 2015. All samples were filtered in the laboratory using acid-washed 0.45-µm glass fiber filters to aid sample preservation prior to fluorescence analysis. All filtered samples were analyzed using a quartz cell on a calibrated spectro-fluorometer. Between each sample run, Milli-Q® water was analyzed to assess the instrumental background and to assure that the cell was clean prior to the next analysis.

Results and Interpretations

Several main peaks were used as tracers (e.g. 303 nm, 368 nm, 448 nm, and 513 nm) to facilitate the evaluation of hydraulic connectivity. The relative fluorescence intensity (RFI), a value linearly correlated to the dissolved organic carbon (DOC) concentration in groundwater, varied between 2 RFI – 562 RFI (with the maximum recorded for well TMW-16 at 327 nm). For comparison, non-impacted natural spring systems typically show an average of 25 RFI. RFI is unitless and specific to the spectro-fluorometer used in the analysis.

This table summarizes all peaks found between the fluorescence emission of 286 nm and 714 nm. The numbers in red font represent the dominant peaks whereas the number in the cell indicates the RFI. The RFI emission values are proportional to the total concentration of organics in the sample and reflect all fluorescent organic substances that emit at this specific wavelength range. All main and shoulder peaks are used in addition of fluorescence "fingerprint" similarity (similar slope segments) to describe each fluorescence "fingerprint". The wide variety of peaks suggests an older spill history as many compounds of concern are degrading, producing many degradation by-products.

	1	2	3	4	5	
	TMW12	TMW14	TMW15d	TMW15s	TMW16	Count
286			**12**			1
296					**511**	1
297		**109**				1
302			**30**			1
303	**21**			**358**		2
304			**30**			1
305	**21**					1
307	**20**					1
308			**29**			1
310	**19**		**29**			2
312			**29**			1
314			**28**			1
327					**562**	1
330				**403**		1
333				**405**		1
335				**403**		1
342					**456**	1
344					**456**	1
359				**511**		1
362				**509**		1
365			**71**			1
367		**315**				1
368	**98**		**72**			2
430		**126**	37		**62**	3
433			37			1
436		**126**				1
438		**126**	37			2
445			**37**			1
448		122	**37**	**125**		3
450			**37**			1
456	**27**					1
474					**46**	1
475			**36**			1
486			**33**			1
487				**91**		1
489			**33**			1
491			**33**			1
496			**33**			1
499					**45**	1
511				**106**		1
513				**106**	**47**	2
514	**14**					1
516	**13**				**47**	2
543		**50**			40	2
545		**50**				1
546	**10**		22			2
547		**49**			41	2
549		**49**	22			2
552	**10**	**49**				2
554			**22**			1
556		**49**	**21**			2
560		**49**	**22**			2
561	**9**					1
562			**21**			1
563		**48**				1
565	**9**			**53**		2
568				**53**	**51**	2
570	**9**				**51**	2
610				**21**		1
620				**19**		1
626				19	**33**	2
627	2	9				2
629	2	9			**33**	3
695			4			1
698			**5**			1
699				**34**		1
700	5				**31**	2
702					**30**	1
703		**17**		**34**		2
704	5		4		**30**	3
705				**33**		1
706	**5**				30	2
707		**17**		**33**		2
708	**5**		**5**			2
709		**17**		32		2
710			**5**		29	2
711	**5**			32		2
712			**5**		28	2
713		**17**				1
714	**5**			31		2

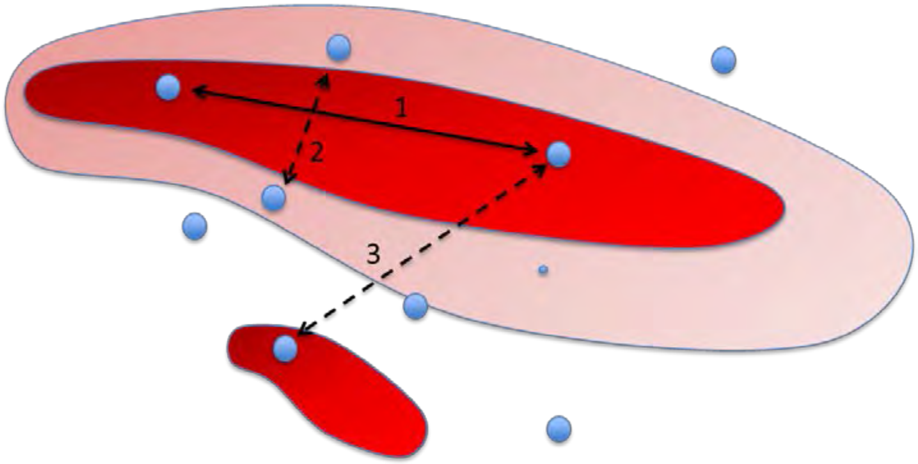
hydraulically connected or 2 separate sources	→	considered for the flow path evaluation	→	potential preferential ground water flow
some major peaks match				
some fingerprint segments match			→	potential matrix (porous) ground water flow
some minor peaks match	→	not considered		
no peaks match				

	1	2	3	4	5
303 nm	21	90	29	358	470
368 nm	98	314	72	465	342
513 nm	13	68	29	106	47
	TMW12	TMW14	TMW15d	TMW15s	TMW16
TMW12	▓	░	🟧	⬛	⬛
TMW14	░	▓	░	⬛	⬛
TMW15d	🟧	░	▓	⬛	⬛
TMW15s	⬛	⬛	⬛	▓	░
TMW16	⬛	⬛	⬛	░	▓

303 nm = significant COC peaks
367 nm = natural organic acid
513 nm = N-containing compounds

The above table presents a well association matrix for the samples analyzed. Each fluorescence "fingerprint" is compared with other fluorescence "fingerprints" using a proprietary computer code and its similarity (peak location, fluorescence yield of peaks, slopes) is rated. The rating uses five different colors to demonstrate similarity (blue, green, orange) or dissimilarity (grey, black) of the fluorescence "fingerprints". Blue and green cells are interpreted as indicating potential preferential hydraulic connections along which some of the organic compounds are transported in groundwater. Orange cells provide useful information on porous (matrix) groundwater flow and natural attenuation processes between two compared wells.

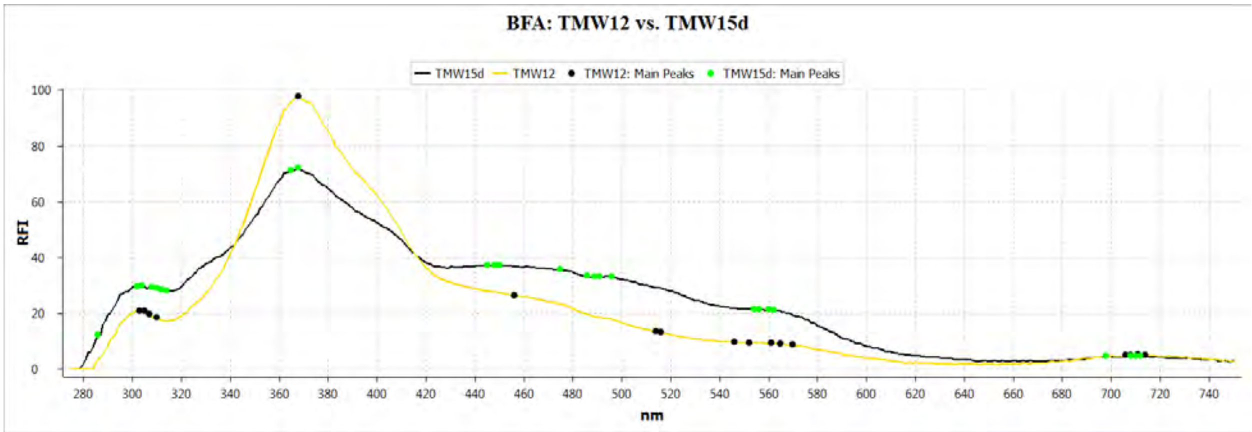
Information of the left table is incorporated into the Site map. Only three color codes are used to evaluate preferential/porous (matrix) ground water flow conditions: blue, green, and orange. If two fluorescent fingerprints are identical or similar (i.e., most main peaks and both curves match), three scenarios are hydrologically possible:



1. A hydraulic connection exists between Well A and Well B (because their organic fluorescent content is very similar);
2. The two wells are not hydraulically connected; both wells may be located in the fringe zone of a plume. The components have undergone a similar degradation and therefore show a similar fluorescence “fingerprint”; or
3. The two wells are not hydraulically connected; their similarity is due to two similar yet unconnected sources.

Once all conditions of the well association table above are met, preferential groundwater flow paths may emerge.

The BFA suggested one possible potential groundwater flow path at the Site. Some peaks matched between TMW-12 and TMW-15D.



However, the fluorescence “fingerprints” of the various samples are generally different, suggesting that any hydraulic connection between the wells appears unlikely. Samples from TMW-14, TMW-15S, and TMW-16 contain higher amounts of fulvic acids, which may be the result of natural attenuation processes.

The areas with the highest fluorescence yields are found in TMW-15S and TMW-16. Another point of interest is the fluorescence yield at emission wavelength 513 nm; peaks at this location usually suggest nitrogen-containing fluorescence substances (i.e., amines or sewage). They also may be derived from degradation process of more complex organic nitrogen-containing compounds.

Disclaimer: BFA is a qualitative tool using a synoptic sample approach. The results of this study should not be used as single line of evidence. Aquifers are open and dynamic systems. The potential preferential groundwater flow paths presented above are suggestions only. To irrefutably demonstrate any hydraulic connection, Nano Trace recommends tracer testing.

Appendix G
Investigation-Derived Waste Documentation

EPS ENVIRONMENTAL PRODUCTS & SERVICES OF VERMONT, INC.

24-Hour Emergency Phone Number
1-800-843-8265

Please print or type

BILL OF LADING

1. Document No. BUF4539

2. Page 1 of 1

3. Generator's Name and Mailing Address
HOWDEN NORTH AMERICA, INC.
2475 GEORGE URBAN BLVD.
DEPEW NY 14043

Site Address
490 BROADWAY ST.
BUFFALO NY 14204

4. Generator's Phone (716)617-6900

5. Transporter 1 Company Name ENVIRONMENTAL PROD & SVCS OF VT, INC

6. NYR000115733

A. State Transporter's ID 2147672 (IN)

B. Transporter 1 Phone 800 843-8265

7. Transporter 2 Company Name

8.

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
ENVIRONMENTAL PROD & SVCS OF VT, INC
532 STATE FAIR BLVD.
SYRACUSE NY 13204

10. NYR000115733

E. State Facility's ID

F. Facility's Phone 800 843-8265

GENERATOR

HM	11. Shipping Name	12. Containers No.	Type	13. Total Quantity	14. Unit Wt./Vol.
	a NON-RCRA, NON-DOT SOLIDS, N.O.S. (Trace metals contaminated soil)	002	DM	1200	P
	b NON-RCRA, NON-DOT, LIQUIDS, N.O.S. (Trace metals contaminated water)	013	DM	650	G
	c NON-RCRA, NON-DOT SOLIDS, N.O.S. (PPE & polysheeting)	002	DM	150	P
	d.				

G. Additional Descriptions for Materials Listed Above

a. APP #:0915101-DT, 2 X 55 GAL

b. APP #:0915102-PFT, 13 X 55 GAL

c. APP #:0915103-DT, 2 X 55 GAL

d. JOB#: B4031

15. Special Handling Instructions and Additional Information
1) 2) 3)

16. **GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this document are not subject to federal manifest requirements.

Printed/Typed Name Jason Reynolds
Signature
Date Month 11 Day 17 Year 15

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name JoHNNY ElBerry
Signature Johnny Elberry
Date Month 11 Day 17 Year 15

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Date Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the materials covered by this bill of lading except as noted in item 19.
Printed/Typed Name
Signature
Date Month Day Year

BILL OF LADING

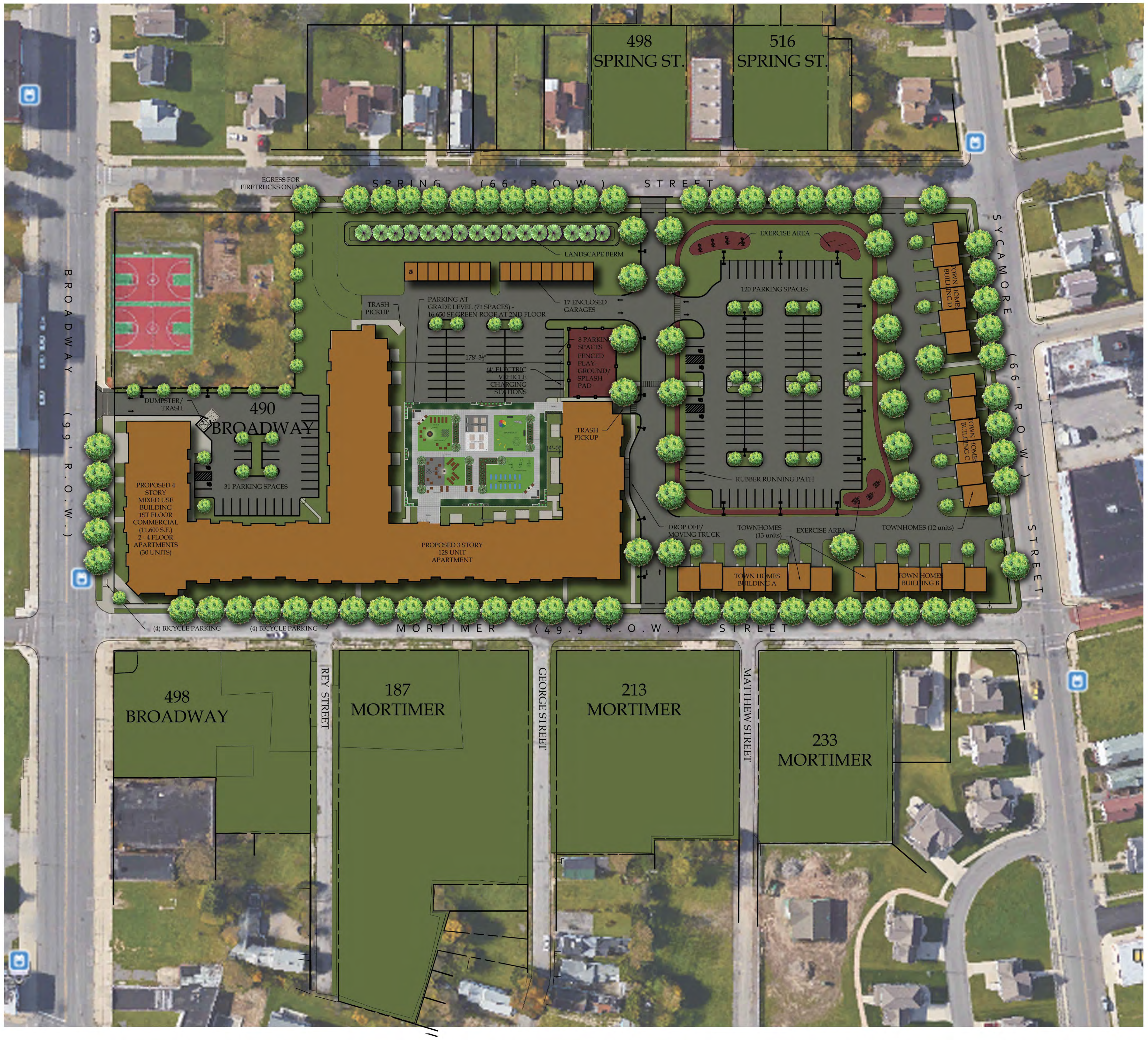
Appendix H
Conceptual Site Plan

SAA|EVI

RAR development, inc.

SCG DEVELOPMENT

SILVESTRI ARCHITECTS PC



The Forge on Broadway

BUFFALO, NEW YORK

Appendix I
Project Schedule

PROJECT SCHEDULE 5-23-18
BUFFALO FORGE SITE
2019 COC