

**REMEDIAL ACTION WORK PLAN**  
**for the**  
**BROWNFIELD CLEANUP PROGRAM**  
**at the**  
**FORMER GENEVA FOUNDRY SITE**  
**OPERABLE UNITS 1 AND 2**  
**Jackson Street**  
**City of Geneva, Ontario County, New York**  
**BCP Site No. C835027**

Prepared for:

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## PROFESSIONAL ENGINEER CERTIFICATION

I, David K. Meixell, certify that I am currently a NYS registered professional engineer and that this Remedial Action Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER *Technical Guidance for Site Investigation and Remediation* (DER-10).

  
Signature

May 25, 2017  
Date

David K. Meixell  
Professional Engineer Registration Number 075577  
State of New York



## 1.0 INTRODUCTION

The former Geneva Foundry facility (Site) is located on Jackson Street in the City of Geneva, Ontario County, New York. The property formerly housed a gray metal foundry that operated on portions of the Site, beginning in the late 1880's. A section of the Site was also used as a coal yard prior to the expansion of the foundry in the 1940's, at which time the foundry operations occupied nearly the entire Site. The Site is approximately 2.5 acres in size and occupies two tax parcels. Refer to *Figure 1 – Site Location Map* and *Figure 2 – Estimated Areas to be Remediated* for additional information. The parcel south of Jackson Street (OU 1) (Tax Parcel 104.8-1-34) formerly contained the main foundry building. The parcel north of Jackson Street (OU 2) (Tax Parcel 104.8-1-50) contained a smaller building and was reportedly used for storage and support purposes. Foundry operations ceased in 1988 and the City of Geneva acquired the property several years later. The New York State Department of Environmental Conservation (DEC) completed a preliminary environmental investigation of the Site in 1995 and the City entered the Environmental Restoration Program (ERP) in 1997. The Site buildings were demolished in 2005, however foundations and concrete slabs were left on the Site. A subsurface investigation was performed in 2006. The analytical results from that investigation are summarized in *Table 1 – Summary of Soil Analytical Results (VOCS)*, *Table 2 – Summary of Soil Analytical Results (SVOCS)* and *Table 3 – Summary of Soil Analytical Results (Metals)*.

The City successfully completed its obligation under the ERP in 2017. The Site was accepted into the DEC Brownfield Cleanup Program (BCP) on February 10, 2017.

The Site remediation will be performed by the City of Geneva under the BCP. This RAWP describes the design of the remedial program proposed for OUs 01 and 02. The conceptual elements of the remedial program were selected after the issuance of the *Proposed Remedial Action Plan* (PRAP) by the DEC in October 2016 under the ERP program. The purpose of the PRAP was to identify, evaluate and select an appropriate remedy or remedies addressing the impacts identified at the Site. The DEC subsequently issued a *Record of Decision* (ROD) (Appendix A) in January 2017. This RAWP details the design of the remedial measures and includes the information required to implement the remediation.

## **2.0 SITE DESCRIPTION**

The ROD presented detailed descriptions of the Site geography, hydrogeology and nature and extent of contamination determined present. A brief overview of this information is provided below.

### **2.1 General**

The geographic conditions in the area of the Site are noted on Figure 1. The two parcels comprising the Site are separated by Jackson Street, with the largest parcel being to the south. The Site is located in an area of residential and commercial land use, and is bordered to the south and west by Finger Lakes Railway tracks, to the north by residential properties and to the east by residential and commercial properties. The Site is currently zoned for industrial use by the City of Geneva. The City is considering a zone change to planned unit development (PUD) to allow multiple compatible land uses, such as restricted residential, commercial and/or recreational. The Site and vicinity are served by City of Geneva public water and sanitary sewer utilities. Natural gas and electricity are available to the Site via New York State Electric and Gas Corporation. Natural gas, water and sanitary sewer mains run along Jackson Street.

### **2.2 History**

A foundry was located on the Site beginning in the late 1800's. Part of the property was also used as a coal yard until the foundry was expanded in the 1940's. Foundry operations ceased in 1988. Site buildings were demolished in 2005.

### **2.3 Geology**

The Site is underlain by fine to medium sand. Groundwater is present at about 8 feet below ground surface and flows southward.

### **2.4 Extent of Contamination**

The remedial investigation and ROD identified four areas requiring remediation in OU 01 and OU 02, which are outlined on Figure 2.

#### **2.4.1 OU 01: 23 Jackson Street (South of Jackson Street)**

Three areas of soil that exceeded Soil Cleanup Objectives (SCOs) for restricted residential use have been identified in this OU and are noted on *Figure 3 – Exceedances of SCOs – Main Site*, with contaminants of concern (COCs) including metals and polycyclic aromatic hydrocarbons (PAHs). Specifically, the COCs include mercury, lead, benzo(a)anthracene, benzo(a) pyrene and benzo(b)fluoranthene. The remedial investigation and ROD did not identify impacts to groundwater in OU 01.

#### **2.4.2 OU 02: 44 Jackson Street (North of Jackson Street)**

One area of soil that exceeded SCOs for restricted residential use has been identified in this OU and is noted on *Figure 4 – Exceedances of SCOs – North Parcel*, with mercury being the COC. The remedial investigation and ROD did not identify impacts to groundwater in OU 02.

### **3.0 DESCRIPTION AND CONSTRUCTION REQUIREMENTS FOR THE PROPOSED REMEDIAL ACTION**

#### **3.1 Overview**

The following proposed remedy is consistent with the actions that were presented and described in the ROD:

- Representative soil samples will be collected from the areas to be excavated to provide proper characterization for offsite disposal.
- The areas of OU 01 and OU 02 where SCOs for restricted residential use were exceeded will be excavated to depths of 2 feet. The approximate locations of these areas are noted on Figure 2. The progress of each excavation will be monitored via visual and olfactory observations, the use of a photoionization detection (PID) meter and a field X-ray fluorescence (XRF) instrument. The PID and XRF will produce real-time indications of volatile organic compound (VOC) and metals concentrations in the soils.

- When field observations and measurements indicate sufficient volumes of impacted soils have been removed, confirmation soil samples will be collected from the sides and bottom of each excavation and analyzed for the respective COCs. Analytical results will be compared to SCOs for restricted residential use to assess the adequacy of the remediation.
- Clean fill meeting the requirements of New York Codes, Rules and Regulations, Title 6 (6 NYCRR), Part 375-6.7(d) will be brought to the Site to backfill the excavations and provide suitable cover to allow for restricted residential use of the Site. Refer to the *Request to Import/Reuse Fill or Soil* (Appendix B), which will be completed and submitted to the DEC for approval.
- A Site Management Plan (SMP) and institutional controls will be prepared and will include the use of environmental easements limiting Site uses to restricted residential, commercial and industrial uses, and restricting future groundwater use.

## **3.2 Remedial Excavations**

### **3.2.1 General Requirements**

The City of Geneva has employees that have maintained their annual refresher training for Health and Safety at Hazardous Waste Operations (HAZWOPER), and the City intends to perform the remedial activities. The City will make the necessary arrangements to locate and field mark public and private buried utilities near the areas to be remediated prior to any excavating. The City will also take necessary precautions to preserve utilities in or near areas requiring excavation and protect structures, utilities, sidewalks, pavements and other facilities from damage caused by settlement, lateral movement, undermining, washout and other hazards created by earthwork operations.

The City will provide the equipment and personnel needed for the project to excavate the soils from the remedial target areas and load the soil onto haul trucks for transport to the project landfill. Refer to Figure 2 for the location of the proposed excavations. The final extent



(horizontal and vertical) of the remedial excavation of soils required will be determined by the project engineer, based on the field screening results and observations made in the excavations.

Soil samples will be collected from the areas to be excavated and characterized, per the requirements of the project landfill. Following approval from the landfill to accept the soil, the excavations will proceed and the excavated soil will be directly loaded onto trucks for transport to the landfill. Trucks will be covered prior to leaving the Site.

Excavation and soil handling work shall be undertaken in a manner to keep the Site clean of impact from excavated soils. The City will promptly clean any such impact and arrange for proper disposal.

The City will provide high visibility, standard traffic barricading around excavations at the end of each work day and will take precautions to prevent surface stormwater from entering excavations.

The progress of each excavation will be monitored via visual and olfactory measures, as well as a PID and XRF. Confirmation soil samples will be collected when field observations indicate sufficient soil has been removed, as described in 4.1.4. If confirmation samples from the sidewalls indicate the SCOs for restricted residential use have not been met, the excavation will be extended and additional confirmation samples collected. Soil samples from the bottom of the excavations will serve as either confirmation samples or documentation samples, as defined in Division of Environmental Remediation (DER) *Technical Guidance for Site Investigation and Remediation* (DER-10), dated May 3, 2010.

For those areas where concrete slabs overlay the area to be excavated, the concrete will be broken into pieces no longer than 24 inches in any dimension and placed with the stockpiled soil for offsite disposal.

The three areas to be excavated on the south block are located on a level concrete pad and are not expected to be subject to erosion. Silt fencing will be installed along the lower edge of

the excavation on the north block to prevent the transport of solids onto Jackson Street via storm runoff.

The Community Air Monitoring Program (CAMP) included in the Site *Health and Safety Plan* (HASP) (Appendix C) and discussed in Section 5.0 will be employed at the perimeter of the Site during all ground intrusive activities (excavation work), during the loadout of potentially contaminated soils and when placing backfill in excavated areas.

### **3.2.2 Fill**

If analytical results from the sidewall confirmation samples indicate SCOs for restricted residential use have not been met, the excavation will be extended until SCOs are met. If confirmation samples indicate SCOs have been met, imported fill meeting the requirements of DER-10 Appendix 5<sup>1</sup> will be placed in the remedial excavations as follows:

- Place fill in loose layers not exceeding 12 inches and compact to the extent practical.
- Uniformly grade the backfilled area to a smooth surface, free from irregular surface changes.
- The City will provide the equipment to place imported fill material (if necessary) and grade as required. The existing surface drainage patterns in each location will be maintained.
- The cover is to be comprised of compacted approved fill, including a 4-inch layer of topsoil.
- All fill materials are to be placed on a soil separation fabric. Fabric shall be a non-woven, permeable, polypropylene soil separation and drainage fabric, minimum

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<sup>1</sup>DEC *Technical Guidance for Site Investigation and Remediation* (DER-10), dated May 3, 2010.

3 ounces per square yard, by *Typar* or equivalent. The fabric will aid in stabilizing the placement of the material and provide a demarcation feature indicating the bottom of the excavation.

- The volume of topsoil and general fill required for the project will be subject to the final size of the excavations.
- The topsoil is to be seeded, fertilized and mulched as necessary to establish a vegetative cover.

### **3.2.3 Restoration**

Other Site restoration activities shall include:

- Proper disposal of all concrete rubble and excavated soils from the remediated areas in an approved offsite landfill.
- Proper removal of all erosion and stormwater control facilities following approval from the project engineer.
- Restoration of staging areas to pre-existing conditions.

## **4.0 CONSTRUCTION FACILITIES AND CONTROLS**

### **4.1 Standards, Criteria and Guidance (SCGs)**

#### **4.1.1 Media-Specific SCGs**

The applicable guidance or regulatory criteria for evaluation of analytical results for the remedial program is 6 NYCRR Part 375-6, *Remedial Program Soil Cleanup Objectives*, specifically the SCOs for restricted residential use.

#### **4.1.2 Reuse of Soils**

Soils removed from the remedial excavations will not be reused as backfill.

#### **4.1.3 Imported Fill Materials**

Soils imported to the Site must meet SCOs for restricted residential use in accordance with DER-10 Appendix 5. A completed *Request to Import/Reuse Fill or Soil* (Appendix C) will be submitted to the DEC for approval.

#### **4.1.4 Confirmation Soil Samples**

Confirmation and documentation soil samples will be collected from the remedial excavation as described in Section 6.0. Results will be compared to DEC SCOs for restricted residential use.

#### **4.1.5 Landfill Disposal**

If additional samples are required for landfill profiling, the analyses must be completed in accordance with the requirements of the landfill.

#### **4.1.6 Compliance and Inspection**

The following guidance documents have been used in preparing this RAWP:

- DER-10.
- 6 NYCRR Part 375-1, *General Remedial Program Requirements* and Part 375-2, *Inactive Hazardous Waste Disposal Site Remedial Program*.

A qualified representative of the project engineer will be present during Site preparation tasks, all soil excavation work and Site restoration to assure the work is performed in substantial conformance with the RAWP and project specifications.

#### **4.1.7 Permits and Other Authorizations**

No other permit requirements or authorizations have been identified for this project.

### **4.2 Site Controls and Temporary Facilities**

#### **4.2.1 Protection of Fish and Wildlife**

The remedial action does not involve any disturbance of surface waters or sediments. An erosion and stormwater control plan (Section 4.2.2) will be implemented to provide general protective measures during the construction phase of the project.

#### **4.2.2 Erosion, Sediment and Stormwater Control Plan**

The following soil and erosion control measures are to be implemented by the contractor as an initial task prior to completing any of the remedial excavation activities:

- A silt fence shall be installed between the area to be excavated and Jackson Street prior to starting the OU-02 excavation.
- The contractor is to deploy mulching, as necessary, to prevent stormwater erosion in any of the cap cuts and fill areas.
- Newly graded areas shall be protected from traffic.
- The contractor shall repair and reestablish any surfaces that become eroded, rutted, settled or lose compaction.
- All haul trucks are to be inspected prior to departure from the Site for any spillage of the loaded materials and to ensure a cover is in place. Trucks will be washed in the decontamination area prior to leaving the Site until the activities performed under this section are complete. Wash/decontamination water will be collected and disposed of offsite at the Marsh Creek Wastewater Treatment Plant. Locations where vehicles enter or exit the Site shall be inspected at least daily (or more frequently if appropriate)

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

#### **4.2.3 Dust, Noise, Vibration, Odor and Vapor Control**

Based on the remedial investigation, excavation activities are not expected to generate a significant noise, vibration, nuisance odor or vapor release to the community. Equipment utilized will be comparable to that employed for road and underground utility repairs. Onsite work will be limited to weekdays between the hours of 8:00 a.m. and 5:00 p.m. The City will control and minimize dust generation at the Site. CAMP dust and vapor monitoring will be performed as detailed in the HASP (Appendix C) to confirm levels.

The City will undertake the following provisions to minimize dust and vapor migration:

- The disposal of excavated soils will be pre-approved and the excavated soils will be loaded directly onto trucks for transport to the landfill. Haul trucks will have covers.
- Imported soils hauled to the Site will be directly placed and subsequently stabilized in accordance with the RAWP specifications in a timely fashion. Temporary covers or mulch will be deployed, if needed, to control dust.
- The City will provide an onsite water truck equipped with a water cannon and sprayer to wet drive surfaces and excavations during remedial activities to minimize dust and odor releases.

#### **4.2.4 Decontamination**

Tools, equipment and vehicles will be decontaminated at the onsite decontamination pad noted on Figure 2 following use and prior to leaving the Site. Ground intrusive excavation equipment will be decontaminated prior to arriving at the Site and prior to leaving the Site.

Decontamination will consist of washing with soap and water. Wash waters in the decontamination area will be contained and transported to the Geneva Marsh Creek Wastewater Treatment Plant for disposal.

#### **4.2.5 Site Traffic Control Plan**

The primary construction entrances and exits for the Site shall be via the west end of Jackson Street. Traffic onto the Site shall be controlled by the City. Queuing of trucks (if needed) will be performed onsite to minimize offsite disturbances. Trucks will also be prohibited from parking and idling in the neighborhood outside the project Site. Figure 2 denotes the locations of the construction entrances, decontamination pad, truck route to State Route 14, worker parking area and truck queuing area.

#### **4.2.6 Temporary Facilities**

The following temporary facilities will be provided during the excavation and soil cover construction:

- Exclusion zones around the remedial excavations. The City will provide temporary excavation barricades around the open excavations when unattended or not being actively worked on by the contractor.
- Stormwater management and erosion control facilities (Section 4.2.2).
- Upwind and downwind dust and vapor monitoring stations per the CAMP as described in the HASP (Appendix C). A windsock will be used as a visual indicator of wind direction.
- If CAMP monitoring indicates dust is leaving the Site or if dust is visually observed leaving the Site, additional dust suppression techniques will be employed.

No dewatering of groundwater is anticipated during the excavation activities. If groundwater conditions requiring dewatering are encountered, the contractor will sample and characterize the water to assess an appropriate disposal method.

### **4.3 Project Disposal Plan**

The City will complete all required application forms needed for soil disposal at the Ontario County Landfill in Stanley, New York, or other appropriate disposal facility, upon receipt of analytical data for the characterization samples. Per 6 NYCRR Part 360-1.15(b)(10), it is anticipated that the excavated soil will be used by the landfill for alternative daily cover upon approval by the DEC. If another disposal facility is proposed, DEC approval will be obtained prior to its use.

The City will provide all waste manifest forms with all information provided and filled in, as needed, for transporting and disposing of all materials transported offsite. A signed copy of all manifest forms shall be retained for inspection, recording or copying by the project engineer. A copy of the manifest forms and weight receipts from the landfill for all loads shall be provided to the project engineer on a timely basis. Wash and decontamination waters will be collected at the decontamination station and transported to the Geneva Marsh Creek Wastewater Treatment Plant for treatment and disposal.

The City will coordinate the transport of the excavated materials to the landfill. Waste haulers used for this project will be permitted by the DEC to haul the material per DEC Part 364 regulations. If necessary, the City will use truck bed liners for loads of soil leaving the Site that may be subject to leakage of fluids. All materials excavated during the work are to be properly transported offsite to the approved facility.

## **5.0 HEALTH AND SAFETY PLAN**

### **5.1 Site Health and Safety Plan**

A written HASP has been developed for the project, describing the anticipated hazards and application of needed control measures related to the remediation activities. Refer to the HASP (Appendix C) for additional information. All Site activities will comply with the HASP.

At least one copy of the HASP shall be present at the Site during Site activities.



## **5.2 Community Air Monitoring Program**

A CAMP will obtain real-time, continuous monitoring data for VOCs and particulates (i.e., dust) at the downwind perimeter of each designated work area when excavation activities are in progress at the Site. The objective of the CAMP is to provide a measure of protection for the downwind community (i.e., offsite receptors, including residences and businesses, and onsite workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of remedial work activities. Action levels that require increased monitoring and corrective actions to abate emissions and/or implement a work shutdown are specified in the CAMP. CAMP requirements are summarized below. Refer to Appendix C for additional details.

- The project engineer will provide the necessary equipment and labor to complete the CAMP monitoring activities.
- The downwind perimeter of the immediate work area (i.e., the exclusion zone) will be monitored, with upwind concentrations measured at the start of each workday and periodically thereafter to establish background conditions.
- Any exceedance of the action levels and response activities shall be documented in the written construction records. All CAMP data will be included in the Final Engineering Report (FER) as an electronic attachment, with exceedances and response activities discussed in the text.

## **6.0 CONFIRMATION SOIL SAMPLING**

Grab soil confirmation samples will be collected from the sidewalls and bottom of the excavations with the assistance of the contractor's excavator, if necessary. At least one sample will be collected at a maximum spacing of 30 feet from each remedial excavation sidewall. One sample for every approximately 900 square feet will be collected from the bottom of each remedial excavation. The locations and depths selected for sampling will contain the highest amount of contamination, based on field-determined conditions, screening conducted during the work and/or prior data. The samples

will be submitted to an Environmental Laboratory Accreditation Program (ELAP) certified laboratory for analysis of Site COCs.

Confirmation analyses for each sample will include the following:

- EPA Method 8270 – Target Compound List (TCL) Semi-Volatile Organic Compounds (SVOCs) plus Tentatively Identified Compounds (TICs).
- Target Analyte List (TAL) metals.

Laboratory reporting requirements will be Category B deliverables. The analytical results will be compared to SCOs for restricted residential use.

## **6.1 Quality Assurance/Quality Control**

Onsite workers will have completed an initial 40-hour course on Health and Safety at Hazardous Waste Operations, as well as annual 8-hour refresher courses. Confirmation and documentation samples will be collected in accordance with DER-10 Section 5.4 and will be submitted to a laboratory accredited pursuant to the DEC ELAP for the analytical parameters noted in Section 6.0 of this RAWP. Sample collection will include additional quality assurance/quality control (QA/QC) samples as required by Analytical Services Protocol (ASP) Category B deliverable requirements. Data validation will include the preparation of a Data Usability Summary Report (DUSR) by a qualified, independent party and in accordance with DER-10 Appendix 2B.

## **7.0 SITE MANAGEMENT PLAN**

An SMP will be developed by the owner and project engineer, consistent with DER-10 and the DEC SMP template, to govern future Site use. This document will include an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the Site and details the steps and media-specific requirements necessary to ensure the institutional and engineering controls remain in place and effective.

## 8.0 SCHEDULE

The estimated remediation schedule is as follows:

DEC approves Work Plan and issues Fact Sheet announcing field work is about to start.....	July 2017
Implementation of Remedy.....	September to October 2017
Submission of Electronic Data Deliverables for EQUIS.....	November 2107
Submit Draft Environmental Easement .....	December 2017
Submit Draft Final Engineering Report.....	December 2017
Submit Draft Site Management Plan .....	December 2017
Submittal of Monthly Progress Reports.....	By 10 <sup>th</sup> of Following Month

## 9.0 CONSTRUCTION COMPLETION

Upon completion of the remedial excavation and restoration, an FER will be prepared in accordance with DER-10 Section 5.8 and the DEC's FER template. The FER will include:

- A description of the remedy, as constructed, according to the RAWP.
- A summary of all remedial actions completed, including:
  - Description of any problems encountered or changes to the approved remedy.
  - Description of changes to the design documents and a description as to why the changes were made.
  - Listing of the waste streams, quantity of materials disposed of and facility where such materials were disposed.

- Boundaries of the real property subject to the environmental easement, deed restriction or other institutional controls.
- Description of site restoration work, including backfill analytical results, the DEC approval letter for the backfill source and bills of lading from the DEC-approved source.
- Tables and figures containing all pre- and post-remedial data.
- Figures showing contamination remaining at the Site to be managed by the SMP.
- “As-built” drawings signed and stamped by a New York State registered professional engineer, including:
  - The surveyed remedial excavation area (plan view map), quantity and source documentation of imported backfills, backfill profile, survey restoration grade profile and location of all final documentation samples.
  - Permanent survey markers for horizontal and vertical control for Site management.
  - Identification of the applicable institutional controls employed, along with a copy of the environmental easement or other institutional controls that apply.
- Disposal documentation.
- The SMP for the project, including descriptions of all institutional and engineering controls.
- Results of all analyses, including laboratory data sheets and the required laboratory data deliverables [DUSRs, ASP data deliverables (on CD), waste characterization data (on CD), backfill analytical laboratory data (on CD), all CAMP monitoring data (on CD)] and other documents and data requested by the DEC and DOH.

The FER will include the following certification:

*I, \_\_\_\_\_, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan.*

*I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.*

*I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in an environmental easement created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such easement has been recorded.*

*I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the Department.*

*I certify that any financial assurance mechanisms required by the Department pursuant to Environmental Conservation Law have been executed.*

*I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.*

*I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.*

*I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, [name], of [business address], am certifying as Owner's Designated Site Representative and I have been authorized and designated by all site owners to sign this certification for the Site.*

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NYS Professional Engineer #

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Date

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Signature

# TABLES

FORMER GENEVA FOUNDRY SITE  
Jackson Street  
City of Geneva, Ontario County, New York  
BCP Site No. C835027

TABLE 1 - SUMMARY OF SOIL ANALYTICAL RESULTS (VOCs) - JANUARY 2006

COMPOUND	Restricted Use Soil Cleanup Objective <sup>1</sup> (µg/kg)	20-S	20-D	21-S	21-D	22-S	22-D	23-S	24-S	24-D	25-S	25-D	26-S	27-S	27-D	28-S	28-D	29-S	29-D	30-S	32-S	32-D
1,2,4-Trimethylbenzene	47,000	1.4 J	<2.9	<2.9	<2.9	<2.9	<2.9	<6.7	<3.1	<3.5	<3.1	<3.1	<2.9	<3.3	<3.2	<2.9	<3.1	<2.9	<3.1	<3.2	<3.1	<2.9
1,3,5-Trimethylbenzene	47,000	0.76 J	<2.9	<2.9	<2.9	<2.9	<2.9	<6.7	<3.1	<3.5	<3.1	<3.1	<2.9	<3.3	<3.2	<2.9	<3.1	<2.9	<3.1	<3.2	<3.1	<2.9
2-Butanone	100,000	2.0 J	1.8 J	<12	<12	<12	<12	<27	<12	<14	<12	<12	<11	<13	<13	<11	<12	<11	<13	<13	<12	<12
Acetone	100,000	10 J	4.4 J	3.0 J	2.5 J	2.1 J	2.0 J	5.5 J	2.1 J	2.3 J	3.3 J	3.5 J	1.4 J	2.3 J	2.1 J	3.0 J	2.4 J	2.6 J	1.8 J	2.9 J	1.6 J	1.6 J
Carbon disulfide	NL	5.6	2.2 J	<2.9	0.66 J	<2.9	<2.9	<6.7	1.3 J	<3.5	<3.1	<3.1	0.73 J	<3.3	<3.2	<2.9	<3.1	<2.9	<3.1	1.9 J	<3.1	<2.9
Methylene chloride	51,000	1.4 J	1.4 J	0.95 J	0.72 J	0.68 J	<5.8	1.4 J	1.1 J	<7.0	1.5 J	0.80 J	0.62 J	<6.6	0.79 J	0.81 J	<6.2	<5.7	<6.3	5.1 J	1.4 J	4.5 J
Naphthalene	100,000	<5.7	<5.8	<5.8	<5.9	<5.9	<5.8	8.1 J	0.65 J	<7.0	<6.2	<6.2	<5.7	<6.6	<6.3	<5.7	<6.2	<5.7	<6.3	0.80 J	<6.2	<5.9
Tetrachloroethene	5,500	<2.9	<2.9	<2.9	<2.9	<2.9	<2.9	<6.7	<3.1	<3.5	<3.1	<3.1	<2.9	<3.3	<3.2	0.57 J	<3.1	<2.9	<3.1	<3.2	4.7	21
Toluene	100,000	1.4 J	0.93 J	<2.9	<2.9	<2.9	<2.9	<6.7	<3.1	<3.5	<3.1	<3.1	0.61 J	<3.3	<3.2	<2.9	<3.1	<2.9	<3.1	1.9 J	<3.1	<2.9
Trichlorofluoromethane	NL	<5.7	<5.8	<5.8	<5.9	<5.9	<5.8	<13	<6.2	<7.0	<6.2	<6.2	<5.7	<6.6	<6.3	1.2 J	<6.2	<5.7	<6.3	<6.3	<6.2	<5.9
Xylenes (total)	100,000	2.7 J	0.98 J	<5.8	<5.9	<5.9	<5.8	<13	<6.2	<7.0	<6.2	<6.2	<5.7	<6.6	<6.3	<5.7	<6.2	<5.7	<6.3	<6.3	<6.2	<5.9

COMPOUND	Restricted Use Soil Cleanup Objective <sup>1</sup> (µg/kg)	34-S	34-D	35-S	35-D	36-S	36-D	37	1/10/06 Equip.	1/11/06 Equip.	Trip Blank
1,2,4-Trimethylbenzene	47,000	<3.1	1.4 J	<3.1	<3.2	<2.6	<2.9	<3.0	<2.5	<2.5	<2.5
1,3,5-Trimethylbenzene	47,000	<3.1	4.0	<3.1	<3.2	<2.6	<2.9	<3.0	<2.5	<2.5	<2.5
2-Butanone	100,000	<12	<11	<12	<13	<10	<10	<12	<10	<10	<10
Acetone	100,000	2.7 J	1.3 J	1.9 J	20 J	1.6 J	2.4 J	2.9 J	1.8 J	1.8 J	1.8 J
Carbon disulfide	NL	<3.1	<2.7	<3.1	<3.2	<2.6	<2.9	<3.0	<2.5	<2.5	<2.5
Methylene chloride	51,000	1.2 J	8.0	<6.1	<6.3	1.1 J	0.91 J	<6.0	0.61 J	0.62 J	<5.0
Naphthalene	100,000	<6.1	1.3 J	<6.1	<6.3	<5.2	<5.7	<6.0	<5.0	<5.0	<5.0
Tetrachloroethene	5,500	<3.1	<2.7	<3.1	<3.2	<2.6	<2.9	<3.0	<2.5	<2.5	<2.5
Toluene	100,000	0.76 J	<2.7	<3.1	<3.2	<2.6	<2.9	<3.0	<2.5	<2.5	<2.5
Trichlorofluoromethane	NL	<6.1	<5.4	<6.1	<6.3	<5.2	<5.7	<6.0	<5.0	<5.0	<5.0
Xylenes (total)	100,000	<6.1	<5.4	<6.1	<6.3	<5.2	<5.7	<6.0	<5.0	<5.0	<5.0

Notes:

<sup>1</sup>New York Codes, Rules and Regulations, Title 6 (6 NYCRR), Part 375-6.8, *Restricted Use Soil Cleanup Objectives for Residential Protection of Public Health*.

NL      None Listed

µg/kg    micrograms per kilogram, equivalent to parts per billion (ppb)  
J         Estimated Value

**FORMER GENEVA FOUNDRY SITE**  
**Jackson Street**  
**City of Geneva, Ontario County, New York**  
**BCP Site No. C835027**

**TABLE 2 - SUMMARY OF SOIL ANALYTICAL RESULTS (SVOCs) - JANUARY 2006**

COMPOUND	Restricted Use Soil Cleanup Objective <sup>1</sup> (µg/kg)	20-S	20-D	21-S	21-D	22-S	22-D	23-S	24-S	24-D	25-S	25-D	26-S	27-S	27-D	28-S	28-D	29-S	29-D
2-Methylnaphthalene	NL	1,100	190 J	<380	<390	220 J	86 J	1,100 J	350 J	<460	450	99 J	<380	73 J	<420	<38,000	<410	47 J	<410
4-Chloro-3-methylphenol	NL	<380	<380	<380	<390	<390	<380	<1,800	<410	<460	<410	<410	<380	<440	<420	<38,000	<410	<380	<410
4-Methyphenol	NL	<380	<380	<380	<390	<390	<380	<1,800	<410	<460	63 J	65 J	<380	<440	<420	<38,000	<410	<380	<410
Acenaphthene	100,000	<380	<380	<380	<390	<390	<380	<1,800	120 J	100 J	91 J	<410	<380	<440	<420	<38,000	<410	<380	<410
Acenaphthylene	100,000	<380	<380	<380	<390	60 J	<380	<1,800	220 J	280 J	1,000	100 J	<380	<440	<420	<38,000	<410	77 J	<410
Anthracene	100,000	64 J	<380	<380	66 J	88 J	92 J	<1,800	540	960	930	270 J	<380	<440	<420	<38,000	<410	130 J	<410
Benzo[a]anthracene	1,000	390	120 J	61 J	270 J	420	350 J	320 J	<b>1,600</b>	<b>3,100</b>	<b>4,900</b>	650	44 J	100 J	83 J	<38,000	<410	480	<410
Benzo[a]pyrene	1,000	400	120 J	74 J	280 J	480	460	320 J	<b>1,600</b>	<b>2,600</b>	<b>5,400</b>	590	39 J	110 J	110 J	<38,000	<410	470	<410
Benzo[b]fluoranthene	1,000	700	190 J	120 J	430	850	690	690 J	<b>2,400</b>	<b>2,700</b>	<b>8,000</b>	810	62 J	190 J	120 J	<38,000	<410	730	<410
Benzo[g,h,i]perylene	100,000	220 J	73 J	49 J	15 J	270 J	260 J	230 J	820	1,100	2,700	270 J	<380	70 J	<420	<38,000	<410	230 J	<410
Benzo[k]fluoranthene	1,000	200 J	63 J	<380	170 J	270 J	240 J	180 J	920	<b>1,100</b>	<b>2,900</b>	300 J	<380	61 J	43 J	<38,000	<410	280 J	<410
bis(2-Ethylhexyl)phthalate	NL	100 J	71 J	43 J	53 J	160 J	140 J	<1,800	260 J	100 J	250 J	<410	120 J	72 J	<420	<38,000	<410	180 J	<410
Chrysene	1,000	650	150 J	81 J	350 J	540	420	540 J	<b>1,700</b>	<b>3,000</b>	<b>5,100</b>	630	47 J	120 J	76 J	<38,000	45 J	560	<410
Di-n-butyl phthalate	NL	76 J	88 J	56 J	60 J	58 J	<380	<1,800	<410	56 J	51 J	<410	<380	52 J	<420	<38,000	<410	110 J	<410
Dibenz[a,h]anthracene	330	72 J	<380	<380	49 J	75 J	69 J	<1,800	270 J	280 J	<b>970</b>	77 J	<380	<440	<420	<38,000	<410	81 J	<410
Dibenzofuran	NL	300 J	56 J	<380	<390	76 J	45 J	<1,800	270 J	<460	310 J	81 J	<380	<440	<420	<38,000	<410	49 J	<410
Fluoranthene	100,000	760	210 J	120 J	570	690	550	400 J	2,900	5,700	6,100	1,500	72 J	150 J	57 J	<38,000	<410	1,200	<410
Fluorene	100,000	<380	<380	<380	<390	<390	42 J	<1,800	220 J	160 J	190 J	69 J	<380	<440	<420	<38,000	<410	53 J	<410
Indeno[1,2,3-cd]pyrene	500	140 J	60 J	40 J	110 J	150 J	170 J	<1,800	490	<b>780</b>	<b>1,700</b>	200 J	<380	<440	<420	<38,000	<410	160 J	<410
Naphthalene	100,000	590	120 J	<380	<390	180 J	84 J	320 J	330 J	<460	600	160 J	<380	84 J	<420	<38,000	<410	43 J	<410
Phenanthrene	100,000	1,200	190 J	50 J	370 J	480	400	900 J	2,300	3,300	3,000	1,000	54 J	130 J	<420	<38,000	<410	820	<410
Phenol	100,000	<380	<380	<380	<390	40 J	<380	<1,800	55 J	<460	100 J	<410	<380	<440	<420	<38,000	<410	<380	<410
Pyrene	100,000	750	180 J	100 J	470	680	520	560 J	3,200	6,000	5,700	1,200	66 J	180 J	63 J	<38,000	<410	1,100	<410



TABLE 2 - SUMMARY OF SOIL ANALYTICAL RESULTS (SVOCs) - JANUARY 2006

COMPOUND	Restricted Use Soil Cleanup Objective¹ (µg/kg)	30-S	32-S	32-D	33-S	34-S	34-D	35-S	35-D	36-S	36-D	37	1/10 EB	1/11 EB
2-Methylnaphthalene	NL	<21,000	<410	<390	180 J	<20,000	760	<400	<420	<1,700	<370	400	<11	<11
4-Chloro-3-methylphenol	NL	<21,000	<410	<390	<390	<20,000	<360	<400	<420	<1,700	<370	120 J	<11	<11
4-Methylphenol	NL	<21,000	<410	<390	<390	<20,000	590	<400	<420	<1,700	<370	<390	<11	<11
Acenaphthene	100,000	<21,000	<410	<390	400 J	<20,000	<360	<400	<420	<1,700	<370	<390	<11	<11
Acenaphthylene	100,000	<21,000	<410	<390	150 J	<20,000	<360	<400	<420	<1,700	<370	<390	<11	<11
Anthracene	100,000	<21,000	<410	<390	1,100	<20,000	<360	<400	<420	<1,700	<370	<390	<11	<11
Benzo[a]anthracene	1,000	<21,000	75 J	71 J	<b>2,700</b>	<20,000	45 J	68 J	<420	<1,700	<370	130 J	<11	<11
Benzo[a]pyrene	1,000	<21,000	83 J	73 J	<b>2,300</b>	<20,000	62 J	55 J	<420	<1,700	<370	150 J	<11	<11
Benzo[b]fluoranthene	1,000	<b>2,400 J</b>	140 J	120 J	<b>3,200</b>	<20,000	94 J	86 J	<420	<1,700	<370	280 J	<11	<11
Benzo[g,h,i]perylene	100,000	<21,000	48 J	<390	790	<20,000	65 J	<400	<420	<1,700	<370	75 J	<11	<11
Benzo[k]fluoranthene	1,000	<21,000	58 J	<390	<b>1,200</b>	<20,000	<360	<400	<420	<1,700	<370	93 J	<11	<11
Bis(2-Ethylhexyl)phthalate	NL	<21,000	53 J	<390	76 J	<20,000	190 J	<400	69 J	<1,700	<370	160 J	<11	<11
Chrysene	1,000	<21,000	120 J	79 J	<b>2,200</b>	<20,000	75 J	63 J	<420	<1,700	<370	210 J	<11	<11
Di-n-butyl phthalate	NL	<21,000	<410	<390	57 J	<20,000	370	<400	<420	<1,700	38 J	280 J	<11	<11
Dibenz[a,h]anthracene	330	<21,000	<410	<390	290 J	<20,000	<360	<400	<420	<1,700	<370	<390	<11	<11
Dibenzofuran	NL	<21,000	<410	<390	270 J	<20,000	73 J	<400	<420	<1,700	<370	48 J	<11	<11
Fluoranthene	100,000	3,500 J	170 J	95 J	5,400	<20,000	83 J	130 J	<420	<1,700	<370	320 J	<11	<11
Fluorene	100,000	<21,000	<410	<390	440	<20,000	<360	<400	<420	<1,700	<370	<390	<11	<11
Indeno[1,2,3-cd]pyrene	500	<21,000	<410	<390	440	<20,000	<360	<400	<420	<1,700	<370	50 J	<11	<11
Naphthalene	100,000	<21,000	<410	<390	280 J	<20,000	2,700	<400	<420	<1,700	<370	1,500	<11	<11
Phenanthrene	100,000	3,900 J	100 J	49 J	3,300	<20,000	480	110 J	<420	<1,700	<370	310 J	<11	<11
Phenol	100,000	6,400 J	<410	<390	<390	<20,000	47,000	<400	<420	<1,700	<370	860	<11	<11
Pyrene	100,000	3,700 J	200 J	90 J	5,100	<20,000	140 J	100 J	<420	<1,700	<370	280 J	<11	<11

Notes:

¹New York Codes, Rules and Regulations, Title 6 (6 NYCRR), Part 375-6.8, *Restricted Use Soil Cleanup Objectives for Residential Protection of Public Health* .  
µg/kg    micrograms per kilogram, equivalent to parts per billion (ppb)  
NL       None Listed  
J         Estimated Value  
Concentrations exceeding soil cleanup objectives denoted in **BOLD** .

**FORMER GENEVA FOUNDRY SITE**  
**Jackson Street**  
**City of Geneva, Ontario County, New York**  
**BCP Site No. C835027**

**TABLE 3 - SUMMARY OF SOIL ANALYTICAL RESULTS (METALS) - JANUARY 2006**

COMPOUND	Restricted Use Soil Cleanup Objective¹ (mg/kg)	20-S	20-D	21-S	21-D	22-S	22-D	23-S	24-S	24-D	25-S	25-D	26-S	27-S	27-D	28-S	28-D
Aluminum	NL	4,900	8,200	6,400	4,900	5,100	5,100	2,400	9,300	19,000	4,800	6,500	6,800	5,300	12,000	5,500	10,000
Antimony	NL	0.74 J	0.91 J	<6.9	0.49 J	1.0 J	0.38 J	0.73 J	0.74 J	<8.4	1.2 J	<7.5	0.60 J	0.30 J	<7.6	3.2 J	0.29 J
Arsenic	16	9.3	6.4	2.8	7.4	9.6	8.9	6.6	10	5.5	10	6.1	5.2	3.5	6.5	7.5	
Barium	350	63	63	220	110	85	160	4.6	140	210	110	100	49	40	99	130	74
Beryllium	14	0.39 J	0.60 J	0.32 J	0.32 J	0.35 J	0.44 J	0.29 J	0.69 J	1.3 J	0.44 J	0.57 J	0.37 J	0.28 J	0.65 J	0.29 J	.050 J
Cadmium	2.5	0.055 J	0.030 J	1.0 J	<1.2	1.3	0.24 J	0.34 J	0.99 J	0.52 J	1.4	0.19 J	0.30 J	0.24 J	0.17 J	0.67 J	0.25 J
Calcium	NL	97,000	40,000	200,000	130,000	63,000	38,000	130,000	12,000	5,000	35,000	12,000	25,000	22,000	5,600	35,000	10,000
Chromium	36	10	12	8.6	9.4	20	11	8.1	18	24	22	9.3	12	11	20	30	15
Cobalt	NL	5.2 J	5.0 J	3.3 J	3.4 J	4.6 J	5.1 J	3.0 J	6.9	12	5.1 J	6.6	3.8 J	2.6 J	8.9	4.4 J	6.8
Copper	270	25	18	6.0	12	53	25	25	38	24	91	21	14	13	25	53	62
Iron	NL	39,000	42,000	8,200	18,000	29,000	14,000	9,700	22,000	24,000	33,000	13,000	38,000	14,000	23,000	35,000	19,000
Lead	400	69	28	21	15	320	150	160	290	27	370	58	25	53	74	120	98
Magnesium	NL	17,000	8,200	61,000	19,000	19,000	9,200	6,100	3,100	4,100	7,300	3,100	3,600	3,700	4,100	8,000	3,200
Manganese	2,000	500	1,200	300	280	560	330	310	470	1,400	430	550	810	240	510	560	670
Nickel	140	15	12	12	10	19	13	12	17	27	17	14	9.7	8.6	18	26	14
Potassium	NL	1,300	1,300	2,200	1,600	1,100	940	920	1,700	5,000	990	1,600	950	800	1,900	810	1,100
Selenium	36	1.1	0.77 J	<0.58	0.41 J	1.2	0.68	0.73	1.8	0.96	2.3	3.2	1.1	0.48 J	1.2	1.1	0.63
Silver	36	<1.1	0.11 J	<1.2	<1.2	0.43 J	0.54 J	0.12 J	0.15 J	<1.4	0.22 J	0.34 J	<1.1	<1.3	<1.3	0.23 J	<1.2
Sodium	NL	480	390	250	170	77 J	77 J	96 J	190	100 J	220	74 J	160	150	83 J	140	80 J
Thallium	NL	0.51 J	1.4 J	0.68 J	0.31 J	<1.2	<1.2	<1.1	0.47 J	1.8	0.36 J	0.30 J	0.69 J	<1.3	1.2 J	0.40 J	0.68 J
Vanadium	NL	18	23	10	15	14	16	14	21	34	16	15	21	13	27	25	24
Zinc	2,200	31	35	91	39	290	100	100	190	73	520	57	51	85	97	160	110
Mercury	0.81	0.43	0.086 J	0.11 J	0.060 J	0.39	<b>1.0</b>	0.11	0.46	0.12 J	<b>1.2</b>	0.52	0.039 J	0.057 J	0.39	0.16	0.29

FORMER GENEVA FOUNDRY SITE  
Jackson Street  
City of Geneva, Ontario County, New York  
BCP Site No. C835027

TABLE 3 - SUMMARY OF SOIL ANALYTICAL RESULTS (METALS) - JANUARY 2006

COMPOUND	Restricted Use Soil Cleanup Objective <sup>1</sup> (mg/kg)	29-S	29-D	30-S	32-S	32-D	33-S	34-S	34-D	35-S	35-D	36-S	36-D	37	1/10 EB (mg/L)	1/11 EB (mg/L)
Aluminum	NL	5,000	12,000	4,900	12,000	6,100	6,500	3,500	680	17,000	19,000	2,300	5,300	2,200	0.036 J	0.034 J
Antimony	NL	<6.8	<7.5	3.3 J	0.89 J	0.25 J	3.4 J	0.34 J	<6.5	0.23 J	<7.6	<6.2	0.53 J	1.8 J	<0.06	<0.06
Arsenic	16	3.4	5.0	13	11	5.9	10	5.5	0.78	6.8	6.4	3.8	4.2	6.1	<0.005	<0.005
Barium	350	39	86	260	110	64	77	120	5.8 J	110	130	6.0 J	48	31 J	0.00043 J	<0.01
Beryllium	14	0.24 J	0.71 J	0.28 J	0.59 J	0.36 J	0.33 J	0.27 J	0.052 J	0.96 J	0.93 J	0.29 J	0.44 J	0.18 J	<0.01	<0.01
Cadmium	2.5	0.029 J	0.13 J	2.6 J	0.32 J	0.25 J	0.43 J	1.5	0.049 J	0.071 J	0.21 J	<1.0	0.093 J	1.1 J	0.00030 J	<0.01
Calcium	NL	36,000	11,000	47,000	35,000	6,900	48,000	6,600	480	59,000	4,300	280,000	23,000	23,000	0.045 J	0.026 J
Chromium	36	9.4	17	<b>70</b>	23	9.3	18	<b>48</b>	2.1	23	25	5.1	19	<b>95</b>	<0.01	<0.01
Cobalt	NL	2.3 J	9.7	6.2 J	8.4	4.1 J	3.8 J	3.0 J	0.50 J	14	11	9.0	3.8 J	6.3 J	<0.05	<0.05
Copper	270	14	16	150	61	43	41	64	2.8	27	21	9.3	40	95	<0.01	<0.01
Iron	NL	14,000	22,000	67,000	59,000	18,000	48,000	35,000	4,400	29,000	30,000	6,200	29,000	63,000	<0.05	<0.05
Lead	400	25	33	<b>590</b>	150	40	170	110	3.3	16	53	3.2	14	200	<0.005	<0.005
Magnesium	NL	9,100	5,100	6,300	6,600	2,700	5,900	1,800	290	9,500	5,400	14,000	2,400	4,700	<1.0	<1.0
Manganese	2,000	310	810	550	580	260	460	380	41	500	540	460	870	550	<0.05	<0.05
Nickel	140	7.8	16	50	22	8.7	12	40	1.7 J	37	28	21	12	78	0.0013 J	<0.05
Potassium	NL	830	1,200	850 J	1,800	820	1,200	420 J	94 J	2,900	2,000	1,500 J	670	430 J	<5.0	<5.0
Selenium	36	<0.57	0.83	<3.2	2.3	0.58 J	1.7	0.97	<0.54	0.88	0.90	<0.52	0.54 J	<3.0	<0.005	<0.005
Silver	36	<1.1	0.18 J	0.71 J	0.12 J	0.20 J	0.15 J	0.31 J	<1.1	<1.2	<1.3	<1.0	0.12 J	<6.0	0.0015 J	<0.01
Sodium	NL	90 J	140	220 J	150	100 J	120	260	65 J	65 J	39 J	160	150	51 J	0.025 J	0.0059 J
Thallium	NL	<1.1	1.0 J	<6.3	1.2	0.67 J	0.49 J	0.70 J	<1.1	0.26 J	2.0	<5.2	0.92 J	2.2 J	<0.01	<0.01
Vanadium	NL	14	27	28 J	38	18	18	9.0	1.8 J	31	34	8.0	18	7.6 J	<0.05	<0.05
Zinc	2,200	45	59	610	1,200	89	240	300	12	68	62	27	27	140	<0.01	<0.01
Mercury	0.81	0.042 J	0.24	0.59	0.16	0.093 J	0.15	0.12 J	0.018 J	0.037 J	0.060 J	0.018 J	0.075 J	0.14	<0.0002	<0.0002

Notes:

<sup>1</sup>New York Codes, Rules and Regulations, Title 6 (6 NYCRR), Part 375-6.8, *Restricted Use Soil Cleanup Objectives for Residential Protection of Public Health*.

Concentrations exceeding soil cleanup objectives denoted in **BOLD**.

mg/kg    milligrams per kilogram, equivalent to parts per million (ppm)  
NL        None Listed  
J          Estimated Value

# FIGURES



REF.: USGS - GENEVA SOUTH (NY) QUAD., 2013, 7.5 MIN. SCALE: 1"=2000'

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PROJECT:

DWG. TITLE:

CLIENT:

LOCATION:

**GENEVA FOUNDRY SITE**

**SITE LOCATION MAP**

CITY OF GENEVA

CITY OF GENEVA, ONTARIO COUNTY, NEW YORK

Note: No alteration permitted herein except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

PROJECT No.: 2015003(SRIA)

FILE NAME: **FIGURE 1**

SCALE: **AS NOTED**

DATE: **DEC 2015**

ENG'D BY: **DKM**

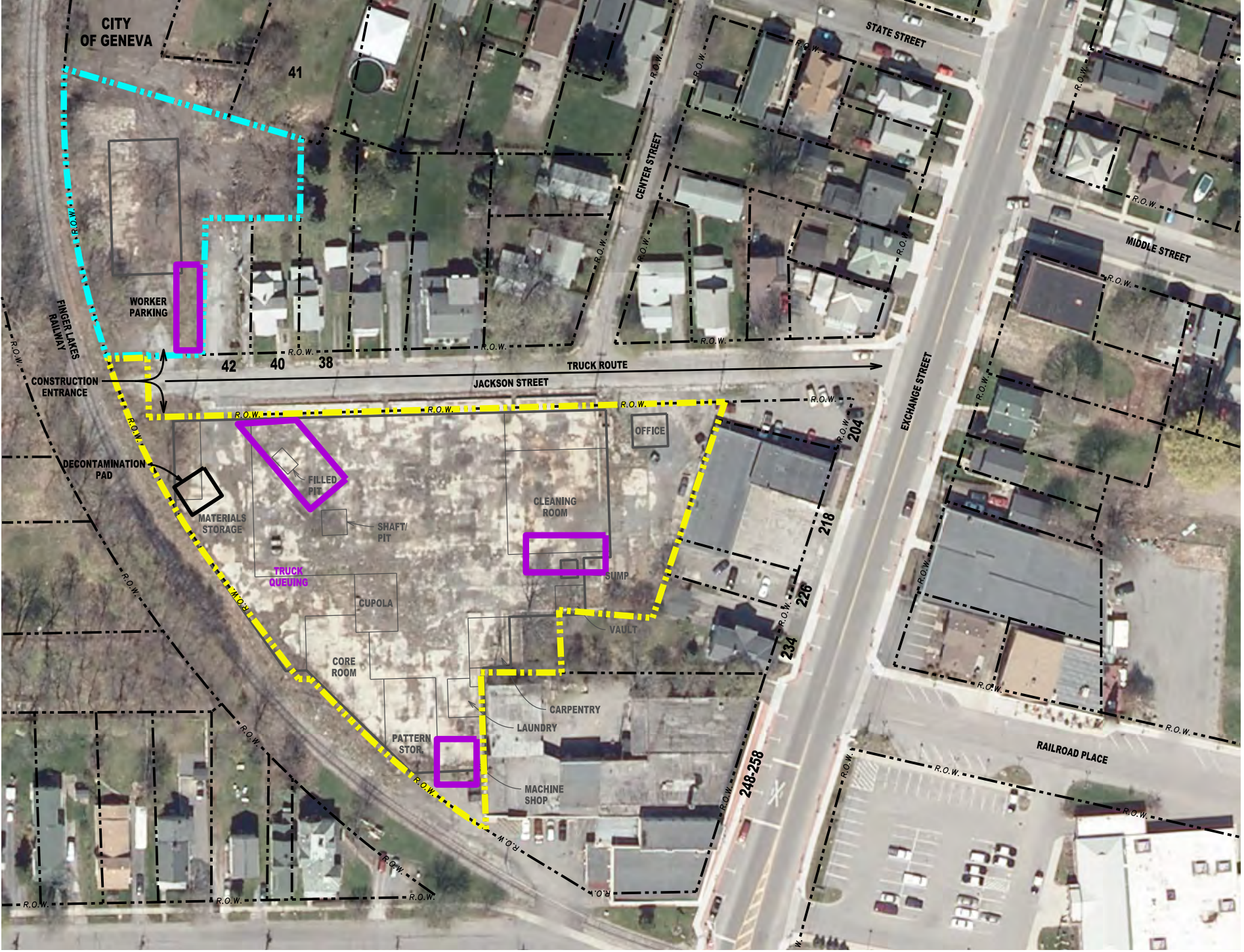
DRAWN BY: **JMD**

CHECKED BY: **DRV**

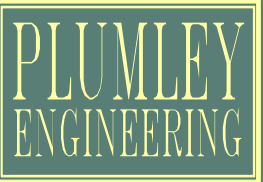


Key

- - - R.O.W. - - - Right of Way
- . - . - Property Line
- [Yellow dashed box] Operable Unit 1
- [Cyan dashed box] Operable Unit 2
- [Purple solid box] Estimated Extend of Excavations for Restricted Residential SCOs



Plan View



Civil and Environmental Engineering

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REVISIONS:	DATE:	BY:
△		

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PROJECT: **GENEVA FOUNDRY SITE**

DWG. TITLE: **AREAS TO BE EXCAVATED**

CLIENT: **CITY OF GENEVA**

LOCATION: **CITY OF GENEVA, ONTARIO COUNTY, NEW YORK**

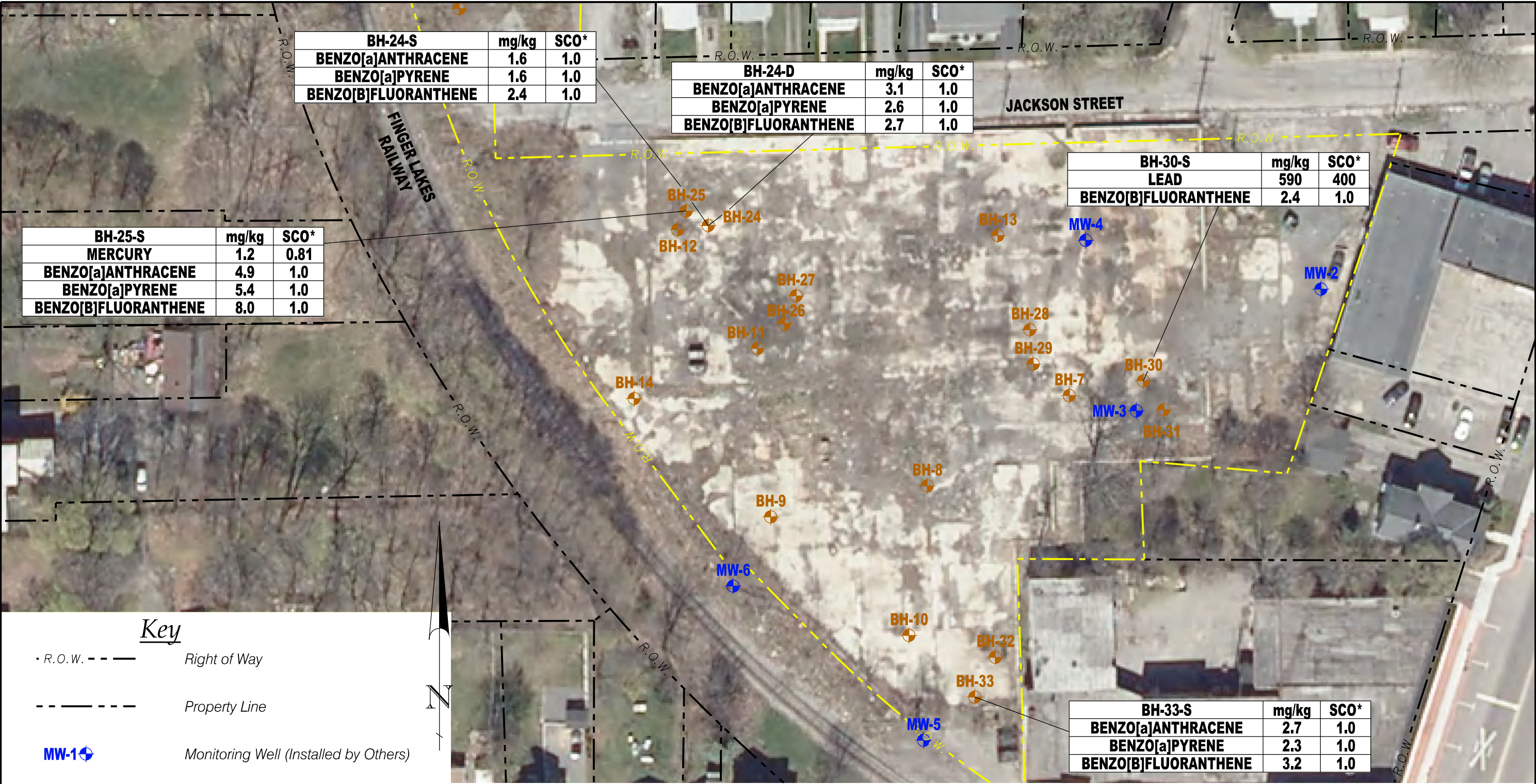
Note: No alteration permitted hereon except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

PROJECT No.: 2015003  
FILE NAME.: FIGURE 2  
SCALE: AS NOTED  
DATE: DEC. 2016  
ENG'D BY: DKM  
DRAWN BY: JMD  
CHECKED BY: DRV

SHEET NO.: **FIGURE 2**

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BH-25-S		
	mg/kg	SCO*
MERCURY	1.2	0.81
BENZO[a]ANTHRACENE	4.9	1.0
BENZO[a]PYRENE	5.4	1.0
BENZO[B]FLUORANTHENE	8.0	1.0

BH-24-S		
	mg/kg	SCO*
BENZO[a]ANTHRACENE	1.6	1.0
BENZO[a]PYRENE	1.6	1.0
BENZO[B]FLUORANTHENE	2.4	1.0

BH-24-D		
	mg/kg	SCO*
BENZO[a]ANTHRACENE	3.1	1.0
BENZO[a]PYRENE	2.6	1.0
BENZO[B]FLUORANTHENE	2.7	1.0

BH-30-S		
	mg/kg	SCO*
LEAD	590	400
BENZO[B]FLUORANTHENE	2.4	1.0

BH-33-S		
	mg/kg	SCO*
BENZO[a]ANTHRACENE	2.7	1.0
BENZO[a]PYRENE	2.3	1.0
BENZO[B]FLUORANTHENE	3.2	1.0

Key

• R.O.W. - - - - -

Right of Way

- - - - -

Property Line

MW-1

Monitoring Well (Installed by Others)

BH-15

Soil Boring (Performed by Others)

\*SCOs are Restricted Use Soil Cleanup Objectives for Residential Protection.

Plan View

250' = 1"

0 25 50

SCALE FEET

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PROJECT:

DWG. TITLE:

CLIENT:

LOCATION:

GENEVA FOUNDRY SITE

EXCEEDANCE OF SCO's - MAIN SITE

CITY OF GENEVA

CITY OF GENEVA, ONTARIO COUNTY, NEW YORK

Note: No alteration permitted hereon except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

PROJECT No.:

FILE NAME.:

SCALE:

DATE:

ENG'D BY:

DRAWN BY:

CHECKED BY:

2015003

FIGURE3(SRIA)

AS NOTED

DEC. 2015

DKM

JMD

DRV

SHEET NO.:

FIGURE 3

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Key

· R.O.W. - - - Right of Way

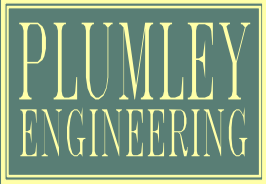
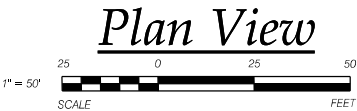
- - - Property Line

MW-1 Monitoring Well (Installed by Others)

BH-15 Soil Boring (Performed by Others)

SS-37 Surface Soil Sample (Collected by Others)

\*SCOs are Restricted Use Soil Cleanup Objectives for Residential Protection.



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PROJECT: **GENEVA FOUNDRY SITE**

DWG. TITLE: **EXCEEDANCE OF SCO's - NORTH PARCEL**

CLIENT: **CITY OF GENEVA**

LOCATION: **CITY OF GENEVA, ONTARIO COUNTY, NEW YORK**

Note: No alteration permitted hereon except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

PROJECT No.: 2015003  
FILE NAME.: FIGURE4(SRIAA)  
SCALE: AS NOTED  
DATE: DEC. 2015  
ENG'D BY: DKM  
DRAWN BY: JMD  
CHECKED BY: DRV

SHEET NO.:

FIGURE 4

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# APPENDICES

**APPENDIX A**

**RECORD OF DECISION**

# RECORD OF DECISION

---

Former Geneva Foundry Site  
Environmental Restoration Project  
Operable Units 1,2 and 3  
Geneva (C), Ontario County  
Site No. B00019  
January 2017



Prepared by  
Division of Environmental Remediation  
New York State Department of Environmental Conservation

# **DECLARATION STATEMENT - RECORD OF DECISION**

---

Former Geneva Foundry Site  
Environmental Restoration Project  
Operable Units 1,2, and 3  
Geneva (C), Ontario County  
Site No. B00019  
January 2017

## **Statement of Purpose and Basis**

This document presents the remedy for the Former Geneva Foundry site, an environmental restoration site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (the Department) for the Former Geneva Foundry site and the public's input to the proposed remedy presented by the Department. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

## **Description of Selected Remedy**

For OUs: 01, 02 and 03

The elements of the selected remedy are as follows:

### **1. Remedial Design**

OU 01, 02 and 03: A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and

- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

## 2. Excavation

Excavation and off-site disposal of contaminant source areas, including:

OU 01 and 02: All on-site soils which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8 in the upper two feet, will be excavated and transported off-site for disposal. Approximately 700 cubic yards of contaminated soil will be removed from OU 01 and approximately 300 cubic yards of contaminated soil will be removed from OU 02.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element #3.

OU 03: All site-related off-site soils which exceed residential SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. Contaminated soil associated with deposition from site emissions will be removed from approximately 220 off-site properties which will be identified during the remedial design. Excavation depths will be identified during the remedial design, but are expected to be limited to the upper 1 foot of soil.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at each property.

## 3. Cover System

OU 1 and 02: A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, and sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d).

## 4. Institutional Control

OU 01 and 02: Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- allow the use and development of the controlled property for restricted residential use, commercial use or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and

- require compliance with the Department approved Site Management Plan.

#### 5. Site Management Plan

OU 01 and 02: A Site Management Plan is required, which includes the following:

- a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

Engineering Controls: The cover system discussed in Paragraph 3 above.

This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- o descriptions of the provisions of the environmental easement including any land use and/or groundwater water use restrictions;
- o provisions for the management and inspection of the identified engineering controls;
- o maintaining site access controls and Department notification; and
- o the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

#### **New York State Department of Health Acceptance**

The New York State Department of Health (NYSDOH) concurs that the remedy for this site is protective of human health.

#### **Declaration**

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

January 13, 2017

Date



Robert W. Schick, P.E., Director  
Division of Environmental Remediation

# **RECORD OF DECISION**

Former Geneva Foundry Site  
Operable Units 1,2 and 3  
Geneva (C), Ontario County  
Site No. B00019  
January 2017

---

## **SECTION 1: SUMMARY AND PURPOSE**

The New York State Department of Environmental Conservation (the Department), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum. The remedy is intended to attain the remedial action objectives identified for this site for the protection of public health and the environment. This Record of Decision (ROD) identifies the selected remedy, summarizes the other alternatives considered, and discusses the reasons for selecting the remedy.

The 1996 Clean Water/ Clean Air Bond Act provides funding to municipalities for the investigation and cleanup of brownfields. Brownfields are abandoned, idled, or under-used properties where redevelopment is complicated by real or perceived environmental contamination. They typically are former industrial or commercial properties where operations may have resulted in environmental contamination. Brownfields often pose not only environmental, but legal and financial burdens on communities. Under the Environmental Restoration Program, the state provides grants to municipalities to reimburse up to 90 percent of eligible costs for site investigation and remediation activities. Once remediated, the property can then be reused.

The Department has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

## **SECTION 2: CITIZEN PARTICIPATION**

The Department seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by the Department in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

Geneva Free Library  
Attn: Reference Librarian  
244 Main Street  
Geneva, NY 14456  
Phone: (315) 789-5303

A public meeting was also conducted. At the meeting, the findings of the remedial investigation (RI) and the alternatives analyses (AA) were presented along with a summary of the proposed remedy. After the presentation, a question-and-answer period was held, during which verbal or written comments were accepted on the proposed remedy.

Comments on the remedy received during the comment period are summarized and addressed in the responsiveness summary section of the ROD.

### **Receive Site Citizen Participation Information By Email**

Please note that the Department's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program, Voluntary Cleanup Program, and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at <http://www.dec.ny.gov/chemical/61092.html>

### **SECTION 3: SITE DESCRIPTION AND HISTORY**

**Location:** The former foundry is located on 2.5 acres at 23 Jackson Street in a mixed urban residential/commercial neighborhood.

**Site Features:** The former foundry buildings were removed; only the slabs and foundations remain.

**Current Zoning and Land Use:** The site is currently inactive and is zoned commercial/industrial. A railroad and commercial property borders the site to the south and west with an automotive repair garage and residential properties to the east and north.

**Past Use of the Site:** A foundry was present at the site since the late 1800s and part of the site was a coal yard until expansion of the foundry in the 1940s. Foundry operations ceased in 1988. The Department completed a preliminary environmental investigation of the site in 1995. The results identified some areas of metals contamination in site soils. Based on these results the City of Geneva entered the Environmental Restoration Program in 1999.

**Operable Units:** The site was divided into three operable units. An operable unit represents a portion of a remedial program for a site that for technical or administrative reasons can be



addressed separately to investigate, eliminate or mitigate a release, threat of release or exposure pathway resulting from the site contamination.

Operable Unit 1 (OU 01) is the on-site parcel located south of Jackson Street and identified as 23 Jackson Street (104.8-1-34). OU 01 was the primary area for past industrial operations. OU 02 is the on-site parcel located north of Jackson Street and identified 44 Jackson Street (104.8-1-50). OU 02 included a warehouse and other foundry support operations. OU 03 consists of off-site areas impacted by contaminant deposition related to historical air emissions from the foundry.

Site Geology: The site is underlain by fine to medium sand. Groundwater occurs at about 8 feet and flows toward the southwest.

Operable Unit (OU) Numbers 00, 01, 02, and 03 are the subject of this document.

A site location map is attached as Figure 1.

#### **SECTION 4: LAND USE AND PHYSICAL SETTING**

The Department may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives (or an alternative) that restrict(s) the use of the site to restricted-residential use (which allows for commercial use and industrial use) as described in Part 375-1.8(g) were/was evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the RI to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is included in the Tables for the media being evaluated in Exhibit A.

#### **SECTION 5: ENFORCEMENT STATUS**

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

No PRPs have been documented to date.

Since no viable PRPs have been identified, there are currently no ongoing enforcement actions. However, legal action may be initiated at a future date by the state to recover state response costs should PRPs be identified. City of Geneva will assist the state in its efforts by providing all information to the state which identifies PRPs. City of Geneva will also not enter into any agreement regarding response costs without the approval of the Department.

#### **SECTION 6: SITE CONTAMINATION**

##### **6.1: Summary of the Remedial Investigation**

A Remedial Investigation (RI) has been conducted. The purpose of the RI was to define the

nature and extent of any contamination resulting from previous activities at the site. The field activities and findings of the investigation are described in the RI Report.

The following general activities are conducted during an RI:

- Research of historical information,
- Geophysical survey to determine the lateral extent of wastes,
- Test pits, soil borings, and monitoring well installations,
- Sampling of waste, surface and subsurface soils, groundwater, and soil vapor,
- Sampling of surface water and sediment,
- Ecological and Human Health Exposure Assessments.

The analytical data collected on this site includes data for:

- groundwater
- soil

#### **6.1.1: Standards, Criteria, and Guidance (SCGs)**

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. The Department has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. The tables found in Exhibit A list the applicable SCGs in the footnotes. For a full listing of all SCGs see: <http://www.dec.ny.gov/regulations/61794.html>

#### **6.1.2: RI Results**

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized in Exhibit A. Additionally, the RI Report contains a full discussion of the data. The contaminant(s) of concern identified at this site is/are:

For OU: 01

benzo(a)anthracene	mercury
benzo(a)pyrene	lead
benzo(b)fluoranthene	chromium

For OU: 02

mercury	chromium
---------	----------

For OU: 03

lead	arsenic
------	---------

As illustrated in Exhibit A, the contaminant(s) of concern exceed the applicable SCGs for:

- soil

## **6.2: Interim Remedial Measures**

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Record of Decision.

The following IRM(s) has/have been completed at this site based on conditions observed during the RI.

### **Abandoned Container Removal IRM**

In 1998, abandoned containers including drums, pails, gas cylinders, and aerosol cans were removed from the site and properly disposed of off-site.

### **Foundry Demolition IRM**

In 2005, asbestos was removed from the foundry buildings and the buildings were demolished, leaving concrete slabs and foundation walls.

## **6.3: Summary of Environmental Assessment**

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water.

Based upon the resources and pathways identified and the toxicity of the contaminants of ecological concern at this site, a Fish and Wildlife Resources Impact Analysis (FWRIA) was deemed not necessary for OUs 00, 01, 02, and 03.

## Nature and Extent of Contamination

### OU 01: 23 Jackson St. (On-Site Area South of Jackson Street)

Soil was analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, and polychlorinated biphenyls (PCBs). Groundwater was analyzed for VOCs, SVOCs, and metals. Based upon investigations conducted to date, the primary contaminants of concern for OU 01 include mercury, chromium, lead, and polycyclic aromatic hydrocarbons (PAHs). PAHs are a category of SVOCs.

Soil- PAHs are found in shallow soil (upper two feet) at three locations: near a filled pit in the northwest section of OU 01; near a former sump in the southeast section of OU 01, and near a former machine shop in the southernmost section of OU 01. Mercury is intermixed with the PAHs near the filled pit. Chromium and lead are intermixed with the PAHs near the former sump. Concentrations of the PAHs benz(a)anthracene (up to 4.9 parts per million (ppm)), benzo(a)pyrene (up to 5.4 ppm), and benzo(b)fluoranthene (up to 8 ppm) exceed the soil cleanup objective (SCO) for unrestricted use and restricted residential use (both 1 ppm). Mercury (1.2 ppm) exceeds the SCO for unrestricted use (0.18 ppm) and restricted residential use (0.81 ppm). Lead (590 ppm) exceeds the SCO for unrestricted use (64 ppm) and restricted residential use (400 ppm). Chromium (70 ppm) exceeds the SCO for unrestricted use (30 ppm), but not restricted residential use (180 ppm). Off-site impacts are discussed under OU 03.

Groundwater- The investigation did not identify any impacts to groundwater from OU 01.

### OU 02: 44 Jackson St. (On-Site Area North of Jackson Street)

Soil and groundwater were analyzed for VOCs, SVOCs, and metals. Based upon investigations conducted to date, the primary contaminants of concern for OU 02 are chromium and mercury.

Soil- Mercury is found in shallow soil (upper two feet) in the southeast section of OU 02. The concentration of mercury (1 ppm) exceeds the SCO for unrestricted use (0.18 ppm) and restricted residential use (0.81 ppm). Chromium (95 ppm) exceeds the SCO for unrestricted use (30 ppm), but not restricted residential use (180 ppm).

Groundwater- The investigation did not identify any impacts to groundwater from OU 02.

### OU 03: Off-Site Soil

Surface soil samples were collected on residential and commercial properties and analyzed for metals. The primary contaminants of concern for OU 03 are lead and arsenic.

Soil- Lead and arsenic associated with deposition of particulate matter from air emissions at the foundry are found in surface soil in the surrounding area extending up to approximately 1,300 feet from the site. Concentrations of lead found in off-site soil ranged from 12 to 6,380 ppm, compared to the residential use SCO of 400 ppm. Concentrations of arsenic found in off-site soil ranged from 0.9 to 228 ppm, compared to the residential use SCO of 16 ppm. Other sources of lead and arsenic that are not site-related (lead based paint, coal ash and other fill, other industrial operations, etc.) also contribute to off-site lead and arsenic concentrations.

#### **6.4: Summary of Human Exposure Pathways**

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure*.

The site is not fenced and people who enter the site (Operable Units 1 and 2) could contact contaminants in the soil by walking on the soil, digging, or otherwise disturbing the soil. People may also contact site-related contaminants in soils in off-site areas surrounding the site (Operable Unit 3). There is the potential for direct contact, incidental inhalation, or ingestion of dust containing site-related contaminants by digging or otherwise disturbing the soil both on and off-site. People are not drinking contaminated groundwater associated with the site because the area is served by a public water supply that is not affected by this contamination.

#### **6.5: Summary of the Remediation Objectives**

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

For OUs 01, 02, and 03:

##### **Soil**

###### **RAOs for Public Health Protection**

- Prevent ingestion/direct contact with contaminated soil.

###### **RAOs for Environmental Protection**

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

#### **SECTION 7: SUMMARY OF THE SELECTED REMEDY**

To be selected the remedy must be protective of human health and the environment, be cost-effective, comply with other statutory requirements, and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. The remedy must also attain the remedial action objectives identified for the site, which are presented in Section 6.5. Potential remedial alternatives for the Site were identified, screened and evaluated in the alternatives analysis (AA) report.

A summary of the remedial alternatives that were considered for this site is presented in Exhibit B. Cost information is presented in the form of present worth, which represents the amount of money invested in the current year that would be sufficient to cover all present and future costs associated with the alternative. This enables the costs of remedial alternatives to be compared on a common basis. As a convention, a time frame of 30 years is used to evaluate present worth costs for alternatives with an indefinite duration. This does not imply that operation, maintenance, or monitoring would cease after 30 years if remediation goals are not achieved. A summary of the Remedial Alternatives Costs is included as Exhibit C.

The basis for the Department's remedy is set forth at Exhibit D.

The selected remedy is referred to as the Limited Excavation remedy.

OU 01: 23 Jackson Street. (On-Site Parcel South of Jackson Street): The estimated present worth cost to implement the remedy is \$206,000. The cost to construct the remedy is estimated to be \$175,000 and the estimated average annual cost is \$2,000.

OU 02: 44 Jackson St. (On-Site Parcel North of Jackson St.): The estimated present worth cost to implement the remedy is \$106,000. The cost to construct the remedy is estimated to be \$75,000 and the estimated average annual cost is \$2,000.

OU 03: Off-Site: The estimated present worth cost to implement the remedy is \$16,600,000. The cost to construct the remedy is estimated to be \$16,600,000 and the estimated average annual cost is \$0.

The elements of the selected remedy are as follows:

1. Remedial Design

OU 01, 02 and 03: A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows;

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals; and
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development.

## 2. Excavation

Excavation and off-site disposal of contaminant source areas, including:

OU 01 and 02: All on-site soils which exceed restricted-residential SCOs, as defined by 6 NYCRR Part 375-6.8 in the upper two feet, will be excavated and transported off-site for disposal. Approximately 700 cubic yards of contaminated soil will be removed from OU 01 and approximately 300 cubic yards of contaminated soil will be removed from OU 02.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. The site will be re-graded to accommodate installation of a cover system as described in remedy element #3.

OU 03: All site-related off-site soils which exceed residential SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. Contaminated soil associated with deposition from site emissions will be removed from approximately 220 off-site properties which will be identified during the remedial design. Excavation depths will be identified during the remedial design, but are expected to be limited to the upper 1 foot of soil.

Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at each property.

## 3. Cover System

OU 1 and 02: A site cover will be required to allow for restricted residential use of the site. The cover will consist either of the structures such as buildings, pavement, and sidewalks comprising the site development or a soil cover in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs). Where the soil cover is required it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material as set forth in 6 NYCRR Part 375-6.7(d).

## 4. Institutional Control

OU 01 and 02: Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- require the remedial party or site owner to complete and submit to the Department a periodic certification of institutional and engineering controls in accordance with Part 375-1.8(h)(3);
- allow the use and development of the controlled property for restricted residential use, commercial use or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- require compliance with the Department approved Site Management Plan.

## 5. Site Management Plan



OU 01 and 02: A Site Management Plan is required, which includes the following:

a. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

Institutional Controls: The Environmental Easement discussed in Paragraph 4 above.

Engineering Controls: The cover system discussed in Paragraph 3 above.

This plan includes, but may not be limited to:

- o an Excavation Plan which details the provisions for management of future excavations in areas of remaining contamination;
- o descriptions of the provisions of the environmental easement including any land use and/or groundwater water use restrictions;
- o provisions for the management and inspection of the identified engineering controls;
- o maintaining site access controls and Department notification; and
- o the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.



## Exhibit A

### Nature and Extent of Contamination

This section describes the findings of the Remedial Investigation for all environmental media that were evaluated. As described in Section 6.1, samples were collected from various environmental media to characterize the nature and extent of contamination.

For each medium for which contamination was identified, a table summarizes the findings of the investigation. The tables present the range of contamination found at the site in the media and compares the data with the applicable SCGs for the site. The contaminants are arranged into two categories; semi-volatile organic compounds (SVOCs), and inorganics (metals and cyanide). For comparison purposes, the SCGs are provided for each medium that allows for unrestricted use. For soil, if applicable, the Restricted Use SCGs identified in Section 4 and Section 6.1.1 are also presented.

### Groundwater

Groundwater samples were collected from overburden monitoring wells. The samples were collected to assess groundwater conditions on-site. Two rounds of groundwater sampling were completed for each of the six monitoring wells. Five wells were located in OU 01 and one well in OU 02. Volatile organic compounds (VOCs) and SVOCs did not exceed SCGs in any samples. Lead in one of the OU 01 wells exceeded SCGs during the first sampling round, but was not detected in that well during the second round. No other metals of concern exceeded SCGs in groundwater. The results indicate that contamination in groundwater at the site is not a concern.

**Table #1 - Groundwater**

Detected Constituents	Concentration Range Detected (ppb) <sup>a</sup>	SCG <sup>b</sup> (ppb)	Frequency Exceeding SCG
Lead	Non Detect - 158	25	1 of 9

a - ppb: parts per billion, which is equivalent to micrograms per liter, ug/L, in water.

b- SCG: Standard Criteria or Guidance - Ambient Water Quality Standards and Guidance Values (TOGs 1.1.1), 6 NYCRR Part 703, Surface water and Groundwater Quality Standards, and Part 5 of the New York State Sanitary Code (10 NYCRR Part 5).

No site-related groundwater contamination of concern was identified during the RI. Therefore, no remedial alternatives need to be evaluated for groundwater.

### Soil

Surface and subsurface soil samples were collected during the RI. Surface soil samples were collected from a depth of 0-2 inches to assess direct human exposure. Subsurface soil samples were collected from depths of 0–1 feet and 1-2 feet on the site. All on-site samples are subsurface soil samples and all off-site samples are surface soil samples. The results indicate that soils in OU 01 exceed the unrestricted SCG for semi-volatile organics and metals and soils in OU 02 and OU 03 exceed the unrestricted SCG for metals. VOCs and PCBs did not exceed SCGs in any samples.

Figure 2 presents the nature and extent of the on-site soil contamination for OU 01 and OU 02. Figure 3A presents the estimated extent of the off-site surface soil contamination for OU 03.

**Table #2 - On-Site Soil (OU 01 and OU 02)**

Detected Constituents	Concentration Range Detected (ppm) <sup>a</sup>	Unrestricted SCG <sup>b</sup> (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG <sup>c</sup> (ppm)	Frequency Exceeding Restricted SCG
<b>SVOCs</b>					
Benzo(a)anthracene	Non Detect - 4.9	1	4 of 48	1	4 of 48
Benzo(a)pyrene	Non Detect - 5.4	1	4 of 48	1	4 of 48
Benzo(b)fluoranthene	Non Detect - 8	1	5 of 48	1	5 of 48
<b>Inorganics</b>					
Chromium	2.1 - 95	30	3 of 48	180	0 of 48
Lead	3.2 - 590	63	17 of 48	400	1 of 48
Mercury	Non Detect - 1.2	0.18	10 of 29	0.81	2 of 29

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Restricted Residential Use, unless otherwise noted.

**Table #2A - Off-Site Soil (OU 3)**

Detected Constituents	Concentration Range Detected (ppm) <sup>a</sup>	Unrestricted SCG <sup>b</sup> (ppm)	Frequency Exceeding Unrestricted SCG	Restricted Use SCG <sup>c</sup> (ppm)	Frequency Exceeding Restricted SCG
<b>Inorganics</b>					
Arsenic	0.094 - 228	13	223 of 347	16	182 of 347
Lead	12 - 6,380	63	373 of 383	400	208 of 383

a - ppm: parts per million, which is equivalent to milligrams per kilogram, mg/kg, in soil;

b - SCG: Part 375-6.8(a), Unrestricted Soil Cleanup Objectives.

c - SCG: Part 375-6.8(b), Restricted Use Soil Cleanup Objectives for the Protection of Public Health for Residential Use, unless otherwise noted.

For OU 01, the primary soil contaminants are polycyclic aromatic hydrocarbons (PAHs), chromium, lead, and mercury. As noted on Figure 2, there are three discrete areas of soil contamination in OU 01. These areas are associated with a filled pit in the northwest section of OU 01; a former sump in the southeast section of OU 01, and a former machine shop in the southernmost section of OU 01.

For OU 02, the primary soil contaminants are chromium and mercury. As noted on Figure 2, there are two discrete areas of soil contamination in OU 02. The chromium is located in the northwest section of OU 02 and the mercury is located in the southeast section of OU 02.

For OU 03 (off-site), arsenic and lead surface soil contamination was found above the Protection of Public Health SCO for a residential property. The arsenic and lead contamination are associated with historical air emissions from the foundry. These emissions contained arsenic and lead, which were deposited onto the soil in the surrounding area. Other sources that are not related to the foundry also contribute to the levels of arsenic and lead found off-site. These sources include lead-based paint, ash and other fill materials, and other historical industrial operations.

Based on the findings of the Remedial Investigation, the presence of PAHs and inorganics has resulted in the contamination of soil. The site contaminants identified in soil which are considered to be the primary contaminants of concern, to be addressed by the remedy selection process are, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, arsenic, chromium, lead, and mercury.

Exhibit B

Description of Remedial Alternatives

The following alternatives were considered based on the remedial action objectives (see Section 6.5) to address the contaminated media identified at the site as described in Exhibit A.

Alternative 1: No Action

The No Action Alternative is evaluated as a procedural requirement and as a basis for comparison. This alternative leaves the site in its present condition and does not provide any additional protection to public health and the environment.

Alternative 2: Restoration to Pre-Disposal or Unrestricted Conditions

This alternative achieves all of the SCGs discussed in Section 6.1.1 and Exhibit A and soil meets the unrestricted soil clean objectives listed in Part 375-6.8 (a). This alternative would include: all on-site soils (OU 01 and OU 02) which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8, will be excavated and transported off-site for disposal. All off-site soils (OU 03) which exceed unrestricted SCOs, as defined by 6 NYCRR Part 375-6.8, for contaminants associated with deposition from site emissions, will be excavated and transported off-site for disposal.

Approximately 4,200 cubic yards of contaminated soil will be removed from the site. The full extent of off-site contamination was not delineated to the unrestricted SCOs, but it is assumed that the number of properties would be at least 440 which is double the number of properties which are estimated to exceed the residential SCOs. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

Capital Cost: ..... \$26,200,000

Alternative 3: Limited Excavation to Restricted Residential SCOs On-Site and Excavation to Residential SCOs Off-Site

This alternative would include, excavating and off-site disposal of on-site soils (OU 01 and OU 02) which exceed restricted residential SCOs, as defined by 6 NYCRR Part 375-6.8, in the upper two feet, preventing exposures based on the intended use of the site for restricted residential. Approximately 700 cubic yards of contaminated soil will be removed from OU 01 and approximately 300 cubic yards of contaminated soil will be removed from OU 02. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site. A cover system will be constructed to allow for restricted residential use of the site. Upon completion of the remedy, a site management plan (SMP) will be developed which includes: imposition of an environmental easement; restricts site use to restricted residential, commercial and industrial uses; and restricts groundwater use.

For OU 03, all off-site soils which exceed residential SCOs, as defined by 6 NYCRR Part 375-6.8, for contaminants associated with deposition from site emissions, will be excavated and transported off-site for disposal, preventing exposure to site-related contamination. Site-related contaminated soil will be removed from approximately 220 properties which will be identified during the remedial design. The depth of excavation will be determined during the remedial design, but deposition related contamination is expected to be limited to the top 1 foot of soil. Clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

The design and implementation of on-site remedy will be completed in approximately 2 years. The off-site remedy will be implemented in phases. Remediation of the off-site properties will be a multi-year project. The Department expects to be able to provide a more specific estimate once the first group of properties are finished.

<i>Present Worth:</i> .....	<i>\$16,800,000</i>
<i>Capital Cost:</i> .....	<i>\$16,800,000</i>
<i>Annual Costs:</i> .....	<i>\$2,000</i>

**Exhibit C****Remedial Alternative Costs**

<b>Remedial Alternative</b>	<b>Capital Cost (\$)</b>	<b>Annual Costs (\$)</b>	<b>Total Present Worth (\$)</b>
#1 No Action	0	0	0
#2 Restoration to Pre-Disposal or Unrestricted Conditions	\$26,200,000	0	\$26,200,000
#3 Limited Excavation to Restricted Residential SCOs On-Site and Excavation to Residential SCOs Off-Site	\$16,800,000	\$2,000	\$16,800,000

## **Exhibit D**

### **SUMMARY OF THE SELECTED REMEDY**

The Department is selecting Alternative 3, Limited Excavation, as the remedy for this site. Alternative #3 will achieve the remediation goals for the site by excavation and off-site disposal of contaminated soils and fill exceeding restricted residential SCOs on-site and residential SCOs off-site. The elements of this remedy are described in Section 7. The selected on-site remedy is depicted in Figure 3. The selected off-site remedy is depicted in Figure 3A. The extent of the off-site remedy shown in Figure 3A represents properties that are most likely to be impacted by the foundry, but it is not a bright line separating areas impacted by the foundry from areas not impacted by the foundry. Additionally, properties with elevated levels of lead and/or arsenic that appear to be primarily associated with sources other than the foundry are not included in the selected off-site remedy. The Department, in consultation with the New York State Department of Health, will continue to evaluate all available data throughout the Remedial Design and Remedial Action process and make adjustments to the extent of the remedial area as needed.

### **Basis for Selection**

The selected remedy is based on the results of the RI and the evaluation of alternatives. The criteria to which potential remedial alternatives are compared are defined in 6 NYCRR Part 375. A detailed discussion of the evaluation criteria and comparative analysis is included in the AA report.

The first two evaluation criteria are termed "threshold criteria" and must be satisfied in order for an alternative to be considered for selection.

1. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

The selected remedy (Alternative 3) will satisfy this criterion by removing the contaminated soils from the site and impacted off-site properties and properly disposing of them off-site. Alternative 3 addresses the soil contamination near the surface, which is the primary interval that is contaminated and the most significant threat to the environment. Alternative 1 (No Action) does not provide any protection to public health and the environment and will not be evaluated further. Alternative 2, by removing all soil contaminated above the unrestricted soil cleanup objective, meets the threshold criteria. Alternative 3 relies on a cover system, a site use restriction, and a Site Management Plan to protect public health on-site with cleanup to residential use with no restrictions off-site. Alternative 3 will also include a restriction on groundwater use on the site as a precautionary measure.

2. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether a remedy will meet environmental laws, regulations, and other standards and criteria. In addition, this criterion includes the consideration of guidance which the Department has determined to be applicable on a case-specific basis.

Alternative 3 complies with SCGs to the extent practicable. It complies with the restricted residential use soil cleanup objectives at the surface through construction of a cover system on-site and it complies with the residential use soil cleanup objectives for site-related impacts off-site. Alternative 2, by removing all soil contaminated above the unrestricted" soil cleanup objective, also complies with this criterion. Because

Alternatives 2 and 3 satisfy the threshold criteria, the remaining criteria are particularly important in selecting a final remedy for the site.

The next six "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on-site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the engineering and/or institutional controls intended to limit the risk, and 3) the reliability of these controls.

Long-term effectiveness is best accomplished by those alternatives involving excavation of the contaminated overburden soils (Alternatives 2 and 3). Alternative 2 results in removal of all of the chemical contamination on-site and off-site and removes the need for property use restrictions. Alternative 3 provides for a lower level of cleanup than Alternative 2, but since most of the contamination is present in the upper two feet of soil, Alternative 3 results in removal of almost all of the chemical contamination at the site for the restricted residential intended use. Alternative 3 also requires an environmental easement restricting site use, a cover system, and long-term site management for on-site, but no restrictions for off-site properties. Alternative 3 will also include a groundwater use restriction on the site as a precautionary measure.

4. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternatives 2 and 3, excavation and off-site disposal, reduce the toxicity, mobility and volume of on-site waste by transferring the material to an approved off-site location. However, depending on the disposal facility, the volume of the material will not be reduced. Alternative 2 requires the excavation and disposal of a much larger volume of soil than Alternative 3.

5. Short-term Impacts and Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Alternatives 2 and 3 both have short-term impacts which could easily be controlled, however, Alternative 3 will have the least impact due to the lower volume of soil to removed and replaced, thereby limiting the impacts of noise, traffic and possible accidents as a result of the lower number of truck trips required to implement alternative 3. The time needed to achieve the remediation goals is the shortest for Alternative 3 and longer for Alternative 2.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction of the remedy and the ability to monitor its effectiveness. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, institutional controls, and so forth.

Alternative 3 is favorable in that the on-site remedy is readily implementable. Alternative 2 is also implementable, but the volume of soil excavated under this alternative will necessitate increased truck traffic on local roads for a longer period of time. Alternatives 2 and 3 both have challenges with implementing the off-site remedy such as obtaining access and coordinating activities with property owners and utilities. Distinguishing between site related



contamination and contamination related to other sources is a significant challenge for Alternative 3 and may not be feasible for Alternative 2. The off-site remedy for Alternative 3 is more easily implemented than Alternative 2 because Alternative 3 includes fewer properties and removes a smaller volume of soil from each property.

7. Cost-Effectiveness. Capital costs and annual operation, maintenance, and monitoring costs are estimated for each alternative and compared on a present worth basis. Although cost-effectiveness is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the other criteria, it can be used as the basis for the final decision.

The costs of the alternatives vary significantly. Alternative 3 has a lower cost, but has on-going annual costs on-site associated with long-term maintenance of the cover system and other site management activities. However, once development is complete, annual site management costs are expected to be low. Alternative 2 is much more expensive, but does not provide a proportional increase in protection.

8. Land Use. When cleanup to pre-disposal conditions is determined to be infeasible, the Department may consider the current, intended, and reasonable anticipated future land use of the site and its surroundings in the selection of the soil remedy.

Since the anticipated use of the site is restricted residential, Alternative 3 is less desirable because at least some contaminated soil remains on the property whereas Alternative 2 removes all of the contaminated soil permanently. However, the remaining contamination with Alternative 3 will be controllable with construction of a cover system, an environmental easement limiting on-site use to restricted residential, commercial, or industrial activities, and implementation of a Site Management Plan. Off-site use under Alternative 3 will not be restricted. With Alternative 2, all soil above the unrestricted use soil cleanup objective will be removed and restrictions on the site use will not be necessary. Impacted off-site properties include a mix of residential, commercial, and industrial uses. In this setting, Alternative 2 will not provide significant additional protection compared to Alternative 3.

The final criterion, Community Acceptance, is considered a "modifying criterion" and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

9. Community Acceptance. Concerns of the community regarding the investigation, the evaluation of alternatives, and the PRAP are evaluated. A responsiveness summary has been prepared that describes public comments received and the manner in which the Department will address the concerns raised.

Alternative 3 is being selected because, as described above, it satisfies the threshold criteria and provides the best balance of the balancing criterion.



REF.: USGS - GENEVA SOUTH (NY) QUAD., 2013, 7.5 MIN. SCALE: 1"=2000'

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PROJECT:

DWG TITLE:

CLIENT:

LOCATION:

**GENEVA FOUNDRY SITE**

**SITE LOCATION MAP**

CITY OF GENEVA

CITY OF GENEVA, ONTARIO COUNTY, NEW YORK

Note: No alteration permitted herein except as provided under Section 7309 Subdivision 2 of the New York State Education Law.

PROJECT No.: 2015003(SRIA)

FILE NAME: **FIGURE 1**

SCALE: **AS NOTED**

DATE: **DEC. 2015**

ENG'D BY: **DKM**

DRAWN BY: **JMD**

CHECKED BY: **DRV**





**OU2**

STATE ST

CENTER ST

MIDDLE ST

JACKSON ST

EXCHANGE ST

WADSWORTH ST

**OU1**

**OU3 includes all offsite properties**

RAILROAD PL

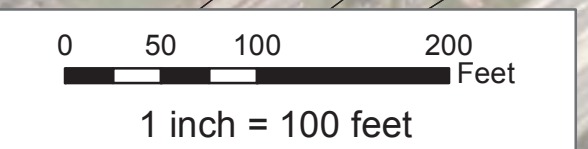
LEWIS ST

GENESEE PARK

**Figure 1A. Operable Units**  
**Former Geneva Foundry Site B00019**

**Legend**

- Property Boundaries
- Former Geneva Foundry Site





SS-37	ppm	SCO*
Chromium	95	30/180

BH-22-D	ppm	SCO*
Mercury	1	0.18/0.81

BH-25-S	ppm	SCO*
Mercury	1.2	0.18/0.81
Benzo(a)anthracene	4.9	1/1
Benzo(a)pyrene	5.4	1/1
Benzo(b)fluoranthene	8	1/1

BH-24-S	ppm	SCO*
Benzo(a)anthracene	1.6	1/1
Benzo(a)pyrene	1.6	1/1
Benzo(b)fluoranthene	2.4	1/1

BH-24-D	ppm	SCO*
Benzo(a)anthracene	3.1	1/1
Benzo(a)pyrene	2.6	1/1
Benzo(b)fluoranthene	2.7	1/1

BH-30-S	ppm	SCO*
Chromium	70	30/180
Lead	590	63/400
Benzo(b)fluoranthene	2.7	1/1

BH-33-S	ppm	SCO*
Benzo(a)anthracene	2.7	1/1
Benzo(a)pyrene	2.3	1/1
Benzo(b)fluoranthene	3.2	1/1

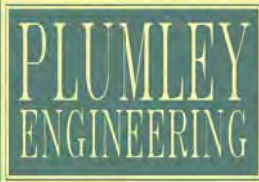
- R.O.W. --- Right of Way
- Property Line
- MW-16 Monitoring Well (Installed by Others)
- BH-15 Soil Boring (Performed by Others)

Operable Unit 1

Operable Unit 2

\*Unrestricted/Restricted Residential

Plan View



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Civil and Environmental Engineering

REVISIONS:	DATE:	BY:

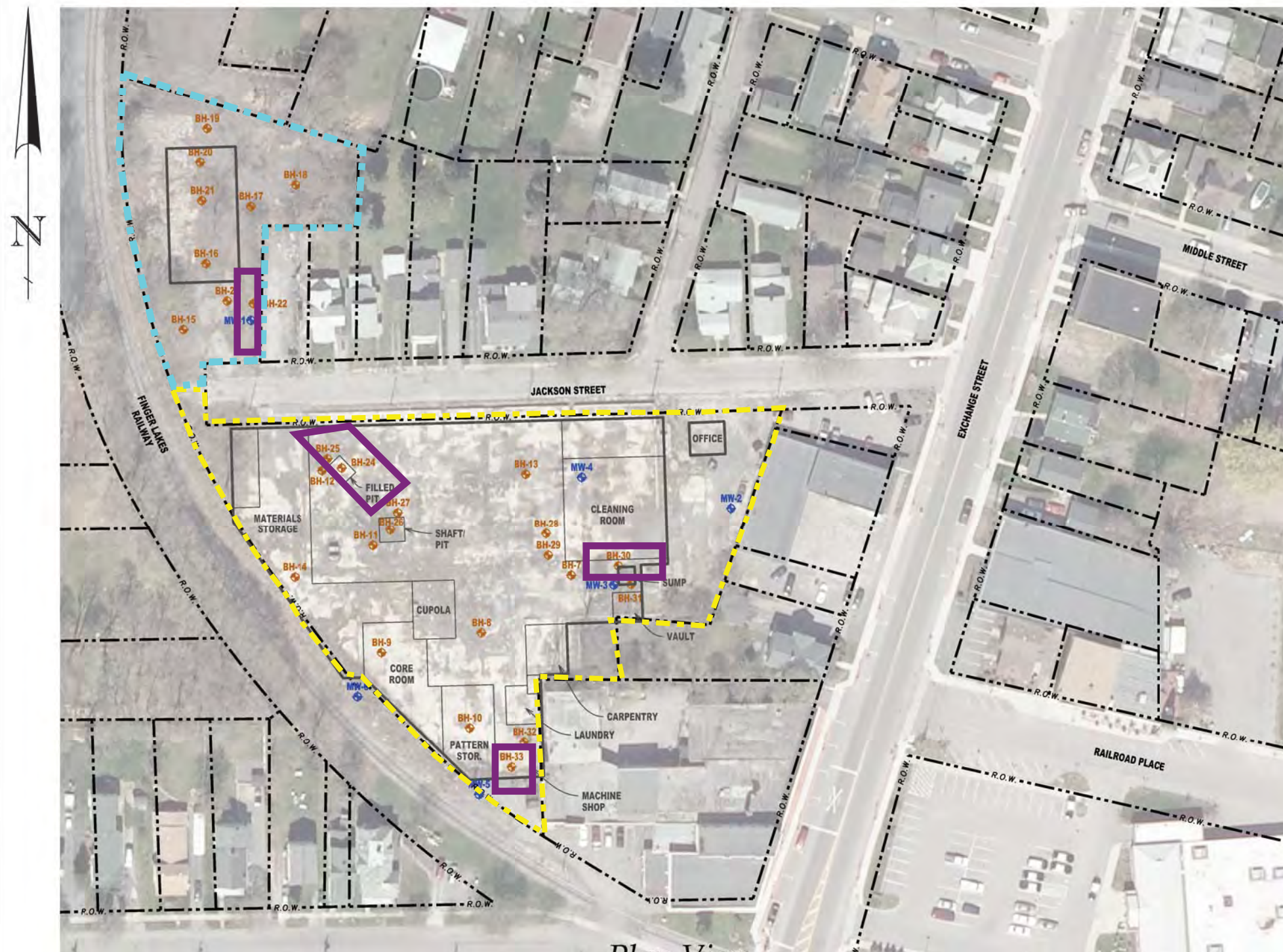
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PROJECT: **GENEVA FOUNDRY SITE**  
DWG. TITLE: **On-Site Remedial Investigation Results**  
CLIENT: **CITY OF GENEVA**  
LOCATION: **CITY OF GENEVA, ONTARIO COUNTY, NEW YORK**  
Note: No alteration permitted hereon except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

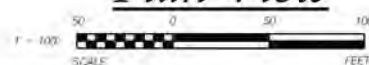
PROJECT No.: 2015003  
FILE NAME: FIGURE2(SRIAA)  
SCALE: AS NOTED  
DATE: DEC. 2015  
ENGD BY: DKM  
DRAWN BY: JMD  
CHECKED BY: DRV

SHEET NO.: **FIGURE 2**  
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Plan View



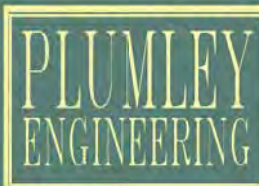
- R.O.W. --- Right of Way
- Property Line
- MW-16 Monitoring Well (Installed by Others)
- BH-15 Soil Boring (Performed by Others)

Operable Unit 1

Operable Unit 2

Estimated Extent of Excavations for Restricted Residential SCOs

Cover system and environmental easement required for entire site.



Civil and Environmental Engineering

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REVISIONS:	DATE:	BY:

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PROJECT:

## GENEVA FOUNDRY SITE ALTERNATIVE #3: On-Site

CLIENT:

CITY OF GENEVA

LOCATION:

CITY OF GENEVA, ONTARIO COUNTY, NEW YORK

Note: No alteration permitted hereon except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

PROJECT No.: 2015003  
FILE NAME: FIGURE2(SRIAA)  
SCALE: AS NOTED  
DATE: DEC. 2015  
ENGD BY: DKM  
DRAWN BY: JMD  
CHECKED BY: DRV

SHEET NO.:

FIGURE 3

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**Figure 3A. Alternative #3  
Selected Offsite Remedy**  
Former Geneva Foundry Site B00019

**Legend**

- Property Boundaries
- Former Geneva Foundry Site
- Proposed Estimated Offsite Remedial Boundary





# **APPENDIX A**

## **Responsiveness Summary**

# RESPONSIVENESS SUMMARY

**Former Geneva Foundry Site  
Operable Unit Nos. 1, 2 and 3  
Environmental Restoration Program  
Geneva (C), Ontario County, New York  
Site No. B00019**

The Proposed Remedial Action Plan (PRAP) for the Former Geneva Foundry site was prepared by the New York State Department of Environmental Conservation (the Department) in consultation with the New York State Department of Health (NYSDOH) and was issued to the document repositories on October 11, 2016. The PRAP outlined the remedial measure proposed for the contaminated soil at the Former Geneva Foundry site.

The release of the PRAP was announced by sending a notice to the public contact list, informing the public of the opportunity to comment on the proposed remedy.

A public meeting was held on October 18, 2016, which included a presentation of the remedial investigation alternative analysis (RI/AA) for the Former Geneva Foundry site as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for this site. The public comment period for the PRAP ended on November 25, 2016.

This responsiveness summary responds to all questions and comments raised during the public comment period. The following are the comments received, with the Department's responses:

**COMMENT 1:** In 2008, the soil was sampled. Nobody cared to come here to fix it then. Now there is a new development proposed. Is this new development the reason you want to fix it now?

**RESPONSE 1:** The former foundry property will be remediated as part of the proposed development project on that property, however the proposed development is not related to the cleanup of the neighborhoods surrounding the former foundry.

**COMMENT 2:** We waited eight years. Why did we wait eight years? What made DEC come back now?

**RESPONSE 2:** The surrounding neighborhood is expected to be remediated using State funds. To be eligible for State funding, the Department had to 1) determine that the former foundry was a source of the contamination in the neighborhoods; 2) determine the extent of the contamination related to the foundry; 3) determine that the contamination from the foundry represents a significant threat to public health and/or the environment; and 4) determine that there are no responsible parties willing or able to pay for the cleanup.

The Geneva Foundry project is complicated by the presence of localized lead and arsenic contamination that is unrelated to the foundry, such as historic impacts from other industries, and land uses (including lead paint and coal ash). This localized contamination represents a baseline



level of these contaminants and is referred to as “urban background.” These urban background sources can result in lead and arsenic levels that are above the Department’s residential soil cleanup objectives.

While previous sample results indicated that lead and arsenic were present at some off-site properties, at concentrations above the residential soil cleanup objectives, there was not sufficient data that suggested that emissions from the foundry was the source of lead and arsenic. In 2015, new technology (a next generation x-ray fluorescence (XRF) instrument) became available which could quickly and cost-effectively generate near lab-quality data for lead and arsenic in soils. With the screening data from the XRF and the numerous additional traditional soil samples collected in 2015, the Department was able to analyze trends in the data to determine whether the former foundry was the source of the contamination in the neighborhoods and determine the approximate extent of the impacts from the foundry.

**COMMENT 3:** What is an acceptable level of lead in parts per million and does it depend on the age of the receptor?

**RESPONSE 3:** Exposure to lead can be a potential issue at any age. The greatest concern is lead exposures to young children, because they are still developing, and lead has been shown to disrupt normal development of the nervous system in early life. Also, since young children often engage in hand-to-mouth activity, they are more likely than those from other age groups to increase their exposure to lead and other soil-borne contaminants as a result of inadvertent ingestion of soil particles that adhere to the skin. In this context, the United States Environmental Protection Agency studied the soil and dust ingestion rates of various age groups, environmental lead levels, and how these might relate to increases in blood lead levels and the risk for lead-related health effects. The findings of this work formed the technical basis for the federal lead standard in soil of 400 parts per million (ppm) in bare soil in children's play areas. This level is based on pharmacokinetic modeling that predicts a low probability for a significant increase in blood lead levels in hypothetically exposed young children. This also means that since adults typically ingest smaller amounts of soil and dust, and because they are beyond the vulnerable developmental stages of concern for young children, this concentration would be protective for adults since their resulting blood lead levels would be even lower than the modeled blood lead levels for children. The soil cleanup objectives (SCOs) for residential settings adopted by New York State are set at 400 ppm, and are based on the US EPA lead standard in soil.

**COMMENT 4:** Many of us have lived here for 40+ years. What are the implications for our health and are there any measures we should be taking?

**RESPONSE 4:** The surface soil sampling results for the residential properties were evaluated by comparing them to the residential SCOs. The SCOs are used as a tool to help guide decisions about the need to reduce exposures to environmental contaminants. They were developed using assumptions about exposure to soil through activities that typically occur on residential properties (e.g., working and playing in the yard, gardening).

Some of the sampling results exceeded the SCOs for arsenic and lead. However, exceedance of an SCO in the residential areas does not represent an immediate health hazard. Moreover, an SCO is not a "bright line" between soil concentrations that will result in health effects and those that will not. Instead, the SCOs are set at a soil level at which health effects are unlikely to occur.

Exceedance of an SCO suggests that measures to reduce the contaminant levels, or to otherwise prevent or reduce the potential for exposure to elevated levels, should be considered. The degree of public health concern when an SCO is exceeded depends on several factors, including the extent to which the SCO is exceeded, the potential for human exposure, other sources of exposure to the chemical, and the strength and quality of the available toxicological information on the chemical.

We do not expect there to be any immediate health effects from exposure to arsenic and/or lead in the soil through typical use of the yards. However, you can reduce the chances for exposure to arsenic and lead by taking reasonable and practical steps to minimize direct and repeated contact with bare soils (particularly by young children). Maintenance of a grass or mulch cover will help prevent direct contact with the soil. The use of doormats and periodic damp mopping of floors can help reduce exposure to outdoor soil that might be tracked indoors. It's important to note that all soils contain chemicals and microorganisms, and therefore it is always a good idea to minimize getting soil into the body whether it is contaminated or not. A very effective and easily implemented measure to accomplish this is for children and adults to wash their hands after outdoor activities.

**COMMENT 5:** Can you explain blood testing versus urine testing with respect to possible exposures to lead and who should be considered for additional testing?

**RESPONSE 5:** Measurement of blood lead levels is the most widely used way to evaluate lead exposure. One reason for this is the ease of comparing the results to current and well-established guidelines such as the Centers for Disease Control and Prevention's blood lead reference level. An elevated blood lead result for an infant, child or adult typically initiates a process to try to identify sources of lead exposure that might contribute to the lead level in blood. This may include confirmatory sampling, to help assess whether the exposure is ongoing or not. All of this information is also useful in evaluating possible steps that can be implemented to remove or prevent exposure to the identified lead source(s). Urinary lead levels have also been used to evaluate lead exposure, but this method of lead testing is not used as much because the results can be inconsistent as they are affected by variability of urine volume.

**COMMENT 6:** What if children moved to this area and were older than 6 and did not get tested? We moved in 2008 and they played in the dirt for 8 years.

**RESPONSE 6:** Incidental ingestion of soil (and therefore, of soil contaminants) is greatest among the youngest children, and declines with age as hand-to-mouth behaviors become less typical. In general, the recommendations for reducing exposure to contaminants in soil provided in the response to Comment 4 can be followed by people of all ages so that their potential long term exposure can be minimized. Barriers, such as a grass cover in play areas, reduce the likelihood of direct soil contact and thereby reduce the amount of soil that can be ingested by exposed individuals. Finally, only a fraction of the lead present in the ingested soil will be absorbed into the body. If you are concerned about your or your children's exposure to lead, consider seeing your health care provider and requesting a blood lead test.

**COMMENT 7:** The foundry is no longer operating. Is there any other entity or corporation that purchased it and has liability? Catchpole is still in existence. They made boilers and machinery parts around 1920. Can they pay?

**RESPONSE 7:** The Department is researching Catchpole and other corporate entities to determine whether they may be responsible parties.

**COMMENT 8:** If a property was missed and they wanted it sampled now, can the property still be sampled?

**RESPONSE 8:** Within the identified cleanup area, if the property owner will grant access, sampling will be conducted to evaluate whether there are impacts and whether remediation is warranted. Additional sampling will also be completed outside of the identified remediation area in order to ‘fine tune’ the extent of the cleanup area.

**COMMENT 9:** Can we see previous sample results from our Jackson St. property?

**RESPONSE 9:** Sampling results for a property have been provided to the property owner. If you are not the property owner, the sampling results for all properties sampled for his project are available in reports at the Geneva Free Library.

**COMMENT 10:** It sounds like the plan is to clean up the foundry site before cleaning up people’s properties. Why not clean up their properties first? Is it because the city of paying for the foundry site?

**RESPONSE 10:** The cleanup for both the foundry site and the off-site properties will proceed on parallel paths once this Record of Decision is issued. The timing to perform the cleanup of the off-site properties is independent of the cleanup at the foundry site. Since the foundry site cleanup is a much smaller project, it is expected to be finished first.

**COMMENT 11:** Where was the concern in 1987 when the NYSDOH memo made strong recommendations for remedial measures?

**RESPONSE 11:** As noted in Responses 2 and 64, the presence of lead and arsenic in soil near the Geneva Foundry project is complicated by urban background sources. The 1987 memo noted that the lead results from the residential property were “*at the high end of the range of-lead concentrations found in urban yards*”. Additional recommendations included notifying the property owner of the results and actions they can take to reduce their exposure, advising other local gardeners to thoroughly wash produce from their gardens, and to further evaluate emissions from the foundry and sensitive receptors near the foundry.

Based on the information available at that time, there was not sufficient data that suggested that emissions from the foundry represented a significant threat to human health or the environment.

**COMMENT 12:** On a scale from 1-10 how bad is this project compared to other contaminated sites in New York State?

**RESPONSE 12:** The Department does not use this type of scale to evaluate sites. Sites are not ranked on a scale, but simply identified as whether they represent a significant threat and require action. The Department, in consultation with the Department of Health, determines whether or not contamination from a site represents a significant threat to public health and/or the environment. For the Geneva Foundry site, as discussed in Response 2, there is now sufficient information to determine that contaminants attributable to the site represent a significant threat to public health and the environment.

**COMMENT 13:** How does the impact to the neighborhood affect property values?

**RESPONSE 13:** The Department recommends contacting a local real estate agent regarding this issue.

**COMMENT 14:** How do we make sure we get a clean bill of health? Arsenic and lead are a big concern for our health.

**RESPONSE 14:** When a property is remediated, the owner will receive a written notice that the property has been cleaned up to residential levels and that no further action is needed.

**COMMENT 15:** Why wasn't my house sampled?

**RESPONSE 15:** In 2015, the City of Geneva mailed notices to property owners around the foundry asking for permission to sample their property. All properties where the property owner responded, and granted access for the sampling, were sampled. See Response 8.

**COMMENT 16:** I don't remember getting a letter. Is it too late to get my soil sampled?

**RESPONSE 16:** See Response 8.

**COMMENT 17:** Will the State pay our medical bills?

**RESPONSE 17:** The State Superfund fund cannot be used to pay for medical expenses. Funds are authorized for investigation and remediation of contaminated properties.

**COMMENT 18:** What exactly will DEC dig out of the yards? Will you dig up everything or just tested areas? What about sidewalks and driveways?

**RESPONSE 18:** The first step will be to obtain access for any additional sampling. Then additional soil sampling will be completed to create a three dimensional map of the soil contamination. This information will be used to prepare a remedial design specific to the property. The property specific design will also specify whether sidewalks, driveways, above-ground pools, or other property features need to be removed and replaced and any other necessary restoration. Soil with foundry-related contaminants (arsenic and lead) exceeding residential soil cleanup objectives will be removed to the extent feasible and replaced with clean soil. Finally, the property will be restored (fences, sheds, trees, sidewalks, grass, etc. replaced) and the property owner will be provided with documentation of the cleanup and a written notice that the property has been cleaned up and that no further action is needed.

**COMMENT 19:** What is meant by "below sod layer"- that the chemical is not on the surface? Does grass act as a barrier or a protective buffer?

**RESPONSE 19:** As grass grows and is cut it produces a matt-like layer over the soil. This layer that is often referred to as the sod-layer or the thatch layer also includes the root structure of the grass. The soil samples were collected from below this sod layer. The sod-layer can act as a barrier between people and any contaminants in the soil below.

**COMMENT 20:** When you sample for hot spots, how detailed is sampling? How many samples per property are taken?

**RESPONSE 20:** The remedial design for each property will include sufficient sampling to create a three-dimensional map of the contamination. The specific number of samples will be property

specific and depend on a number of factors including the size of the property and previous sample results.

**COMMENT 21:** Where will contaminated soil be disposed of?

**RESPONSE 21:** Soil will be sampled prior to disposal to determine the appropriate disposal method. Based on the existing data, the Department anticipates that the soil will be disposed of at a solid waste landfill. The specific landfill will be identified by the contractor doing the work and approved by the Department.

**COMMENT 22:** How will you communicate with homeowners so they know they are on the schedule when they are ready to sample? By mail or phone call?

**RESPONSE 22:** All initial outreach will be by mail. Phone calls and email may be used to follow up as needed.

**COMMENT 23:** Will you re-sample properties that have already been sampled?

**RESPONSE 23:** Additional samples will be collected to the extent necessary to create the three-dimensional map of the contamination discussed in Responses 18 and 20.

**COMMENT 24:** Did you sample all the properties on State Street?

**RESPONSE 24:** Not all of the properties on State Street were sampled.

**COMMENT 25:** Was the chicken farm soil sampled? Are there health concerns with children eating the eggs?

**RESPONSE 25:** The chicken farm was sampled. We do not expect there to be significant lead exposures related to eating eggs from chickens raised on State Street.

**COMMENT 26:** Is the potential development at the end of Jackson and State Street for residential use? Was the 49 State Street property sampled for other contaminants? NYSEG used it back in the 1960's for transformers.

**RESPONSE 26:** The proposed development is for what the Department considers restricted residential use. The restricted residential use category allows a site to be used for residential use but only when there is common ownership or control by a single owner/managing entity of the site. Restricted residential use is the land use category intended for apartments, condominium, co-operative or other multi-family/common property control residential development. Restricted residential use does not allow vegetable gardens (unless approved by the Department) and single family houses.

The 49 State Street property was not part of the Geneva Foundry site in the Environmental Restoration Program (ERP) and it was not evaluated for compounds other than lead and arsenic.

**COMMENT 27:** How come they did not remove the contamination from the site in the 1990's when it was found to be contaminated? Why not remove it at that time or put up fencing?

**RESPONSE 27:** In 1998, abandoned containers including drums, pails, gas cylinders, and aerosol cans were removed from the foundry building and properly disposed of off-site, but a full environmental investigation of the foundry site could not be completed until the buildings were demolished in 2005. The results of the foundry site investigation indicated that the contamination



on the property was limited in extent and magnitude and did not warrant an interim remedial measure under the ERP to remove it.

**COMMENT 28:** I replaced my roof, there was asphalt and under that cedar shakes. When I finished I looked like a coal miner. The crawl space is a potential contaminated area. Is it possible that lead and arsenic got in the home as dust from cedar shakes? Dirt in the yards and garden was tracked into the house. Do you have enough money to customize clean-up of each house?

**RESPONSE 28:** As part of the design process, the specific concerns of each property owner will be considered and addressed, to the extent feasible, and necessary to assure a protective cleanup for which no further action is needed.

**COMMENT 29:** Do you have enough flexibility in the remedial design to work with all homeowners?

**RESPONSE 29:** The Department, as noted in Response 18, will develop a property specific design, which will allow some flexibility to work with property owners on a case-specific basis to 1) allow for limited samples to exceed the residential cleanup level, based on the location and/or depth of the exceedance, implementability of the removal, and the exposure potential; and/or 2) accommodate property owner concerns related to preservation of their property with respect to specific features such as mature trees, sheds, decorative plantings, or other features of significance to the property owner where possible. In all cases, sufficient remediation will be achieved to assure a protective cleanup for which a no further action letter can be issued.

**COMMENT 30:** Is \$16.8 million a fixed budget?

**RESPONSE 30:** The \$16.8 million is an initial estimate used for evaluating remedial alternatives and is not a fixed budget.

**COMMENT 31:** My house was built in 1850, then a second house was added with cedar shingles outside and a third house was then added on. They are all connected. How do you know what's in between them? And there is a stone basement. I've been hospitalized with symptoms of lead poisoning.

**RESPONSE 31:** See Responses 4 and 28. Specific health outcomes should be discussed directly with your health care provider along with any sampling information for your property.

**COMMENT 32:** Where did the facts sheets go? Did anything go out in Spanish?

**RESPONSE 32:** English and Spanish versions of the fact sheet were sent to property owners and tenants within and near the edges of the proposed off-site remediation area in early October 2016. At that time, fact sheets were also placed in the Geneva Free Library, posted on the Department's website for this project, and distributed electronically using the Department's listserv.

**COMMENT 33:** What about impacts to animals? Who pays veterinary bills for the animals? Dogs eat dirt.

**RESPONSE 33:** Potential health affects to pets should be discussed with a veterinarian. The State's Superfund fund cannot be used to pay for veterinary expenses. Funds are authorized for investigation and remediation of contaminated properties.

**COMMENT 34:** Moving forward, will there be routine testing after the cleanup is done? Will post cleanup testing be done? A sample location may be clean, but five feet away you may have much higher levels.

**RESPONSE 34:** For the off-site properties, the cleanup will achieve levels which are protective for residential use, so such routine testing is not needed. For the foundry site, a Site Management Plan will be developed that will identify the conditions under which additional testing may be completed in the future.

**COMMENT 35:** Did the City of Geneva take over responsibility when they took over this site?

**RESPONSE 35:** The City of Geneva has responsibility for the site consistent with municipal ownership of any property. The City of Geneva investigated the foundry site under the ERP, but that they will be cleaning up the former foundry property under the Department's Brownfield Cleanup Program. Certain liability protections are afforded under each of these remedial programs.

**COMMENT 36:** I grew up near the foundry. We didn't know about this issue growing up. This should have been done 10-15 years ago. People who sold my house never informed me. I bought my house in 2005. My house was not sampled. My garage is on top of a house that burned and was buried. Are you going to dig up my garage? Things get moved around a lot in the yard. Will everything get dug up? I'm building a new house, but my current house is not worth anything. No one will buy it.

**RESPONSE 36:** See Responses 8, 18 and 28.

**COMMENT 37:** Will testing be done under non-permanent structures such as pools?

**RESPONSE 37:** Sampling under non-permanent structures will be considered on a property-specific basis and may be conducted, as necessary, to complete the remedial design. Also see Responses 18 and 28.

**COMMENT 38:** If we take a shed down, will the shed get replaced?

**RESPONSE 38:** The Department will re-install or replace sheds, fences, or other feature that the Department removes.

**COMMENT 39:** Will the State cover medical testing costs if a resident does not have health insurance?

**RESPONSE 39:** See Response 17.

**COMMENT 40:** Will the site be fenced in and secured for safety during remediation?

**RESPONSE 40:** Fencing off the entire foundry site will be at the discretion of the City of Geneva during the remediation.

**COMMENT 41:** In 1970 there were plumes of black smoke and ash, and the sky was grey from the foundry. After 100 years, it should be distributed evenly all over. Why is the contamination found in select spots? Was that when it all happened?

**RESPONSE 41:** The distribution of lead and arsenic on any specific property appears to be related to a complex interaction of numerous factors including: foundry operations over a period of 100 years; wind speed and direction; wind patterns around trees and structures; contributions from urban background (lead paint, coal ash, etc.); as well as human and animal activities; etc.



**COMMENT 42:** Will lead and arsenic travel in the groundwater? What about overland flow? If property near me is impacted and it rains, will the contamination travel to my property?

**RESPONSE 42:** Groundwater at the site was tested during the remedial investigation and was not impacted. Lead and arsenic deposited on soil can migrate with the soil as a result of overland flow/erosion of soil, especially on slopes or where there is bare soil. This will be considered during the design process.

**COMMENT 43:** Could contamination travel into a basement? Could contamination travel down through a stone foundation or wet basement?

**RESPONSE 43:** Soil entering the basement should be brought to the Department's attention when the remedial design for your property is developed.

Ellis Bozzolo submitted a letter dated October 10, 2016 which included the following comments:

**COMMENT 44:** How can I obtain more information of the planned cleanup of the residential properties within the designated zone?

**RESPONSE 44:** To receive site information such as fact sheets sent right to your email inbox, the Department invites you to sign up with one or more contaminated sites county email listservs available at the following web page: <http://www.dec.ny.gov/chemical/61092.html>.

A web page dedicated to the Geneva Foundry projects is also available at <http://www.dec.ny.gov/chemical/107812.html>.

If "paperless" is not an option for you, call or write to the Department's project manager. Indicate that you need to receive paper copies of fact sheets about the site through the Postal Service. The option to receive paper is available to households only. Groups, organizations, businesses, and government entities are assumed to have email access.

Project documents are also available at the Geneva Free Library.

**COMMENT 45:** If I did not participate in the soil testing, will I still be considered for the clean-up of my property?

**RESPONSE 45:** See Response 8.

Pamela Thompkins submitted a letter dated October 13, 2016 which included the following comments:

**COMMENT 46:** How long has the contamination been there?

**RESPONSE 46:** The foundry operated from 1868 until the 1970s with limited emission controls, if any; however it wasn't until 2016 that the Department had enough information to determine the extent to which foundry emissions had impacted soil in the surrounding area.

Tom Swart submitted a letter dated October 13, 2016 which included the following comments:

**COMMENT 47:** Can you tell me what engineering firm is on board for finalizing investigation and design work?

**RESPONSE 47:** The City of Geneva has identified Plumley Engineering as the firm who will manage the remediation of the foundry site. The Department has not yet issued a work assignment for the characterization and remediation of the off-site properties.

**COMMENT 48:** Can you confirm that this cleanup will be funded by Responsible Parties and not the State of New York?

**RESPONSE 48:** The foundry site cleanup will be funded by the City of Geneva. The off-site cleanup will be funded by the State unless a viable responsible party is identified.

Pat Genovese submitted a letter dated October 13, 2016 which included the following comments:

**COMMENT 49:** When will the cleanup begin?

**RESPONSE 49:** Design activities both on-site and off-site are expected to begin in the Spring of 2017 with remediation to start after that.

**COMMENT 50:** Is it possible to rescind a recent property purchase because of this finding?

**RESPONSE 50:** This issue should be discussed with a real estate attorney.

Jeff Sessler submitted a letter dated October 14, 2016 which included the following comments:

**COMMENT 51:** Has there been any form of Request For Proposal for this remediation project?

**RESPONSE 51:** No RFP is anticipated for the design of the project.

Richard and Hillary Iannapollo submitted a letter dated October 14, 2016 which included the following comments:

**COMMENT 52:** We would like to know how properties were selected for soil sampling, and how the determination was made as to where to draw the proposed boundary for the cleanup.

**RESPONSE 52:** See Responses 2 and 15.

**COMMENT 53:** Our property was not sampled, so how could it be determined to exclude our property from the cleanup area if our soil wasn't sampled?

**RESPONSE 53:** Nearby properties located closer to the foundry were sampled. The Department analyzed trends in the data and considered distance from the foundry to establish the outer edge of the cleanup zone in that area. Additional sampling will be completed during the design phase to confirm the limits of the cleanup area.

Also see Responses 2, 8 and 15.

Sharon Ryan submitted a letter dated October 17, 2016 which included the following comments:

**COMMENT 54:** The contamination should be cleaned up with our bioremediation products.

**RESPONSE 54:** Comment noted.

Matthew Everdyke submitted a letter dated October 18, 2016 which included the following comments:

**COMMENT 55:** What specific technology was used to discern contamination from the foundry and background?

**RESPONSE 55:** See Response 2.

**COMMENT 56:** Why does there need to be a connection between the foundry and the contamination?

**RESPONSE 56:** The Department can only use State funds to clean up contamination that can be attributed to a disposal site. In this case the 'site' is the former Geneva Foundry and State funds can only be used to clean up contamination that is at or came from the foundry.

Richard and Hillary Iannapollo submitted a letter dated October 19, 2016 which included the following comments:

**COMMENT 57:** We would like our property sampled.

**RESPONSE 57:** Your request is noted. Your property is located outside of the remediation area. As discussed in Response 8, sampling will be completed outside of the identified remediation area in order to 'fine tune' the extent of the cleanup area.

Michael Bliss submitted a letter dated October 19, 2016 which included the following comments:

**COMMENT 58:** Who is the environmental consultant and project manager is for project?

**RESPONSE 58:** See Response 47.

Cindy Miller submitted a letter dated October 20, 2016 which included the following comments:

**COMMENT 59:** What action will be taken at houses within the cleanup area?

**RESPONSE 59:** See Response 18.

Meghan Genovese submitted a letter dated October 20, 2016 which included the following comments:

**COMMENT 60:** Is there some sort of public forum online where residents can post their questions and concerns?

**RESPONSE 60:** The Department does not maintain a public forum online, but it does maintains a web page dedicated to the Geneva Foundry project at <http://www.dec.ny.gov/chemical/107812.html>.

**COMMENT 61:** Judging from the remediation plan where you target cleanup for roughly 220 houses at 20 houses a year, we are looking at 14+ years of remediation. Considering that the contaminated ground will be continually disturbed during this process, won't residents be at more of a risk for inhalation exposure during this period? What protective steps do you suggest to minimize inhalation exposure and how do you plan to communicate these?

**RESPONSE 61:** Dust suppression methods, such as keeping the soil wet, will be used to control air emissions during the cleanup. Additionally, continuous, real-time, air monitoring will be conducted to verify the dust suppression methods are effective. These procedures will be a standard element of the remedial design as part of a Community Air Monitoring Plan or CAMP that will be available to the public.

**COMMENT 62:** Does this contamination increase the possibility of radon or any other contaminant in or around my home?

**RESPONSE 62:** There is no link between the lead and arsenic contamination from the foundry and radon or any other contaminants in or around a home.

**COMMENT 63:** Why were residential properties tested just for metals, and not volatile organic compounds, semi-volatile organic compounds or PCBs? Is it possible that residential soil is contaminated with these compounds?

**RESPONSE 63:** The objective of the off-site testing was to determine if the soil on the off-site properties had been impacted by contaminants from the foundry, which were metals. Volatile organic compounds emitted to the atmosphere do not generally result in localized soil impacts due to deposition. There are no documented use of or emissions of PCBs from the foundry, so PCBs could not have been traced back to the foundry. Semi-volatile organic compounds, particularly a subset known as polycyclic aromatic hydrocarbons, may be present in ash, but they are also prevalent in the environment from other sources including asphalt and asphalt sealer. Based on this, it was determined that metals would be the best indicator of foundry related impacts.

**COMMENT 64:** Regarding the contamination of residential properties, you state "Other sources of lead and arsenic that are not site related (lead based paint, coal ash and other fill, other industrial operations, etc.) also contribute to off-site lead and arsenic concentrations." What testing was performed to back up this statement?

**RESPONSE 64:** While a rigorous local background evaluation was not completed during the remedial investigation, the presence of lead and arsenic in older urban environments is well established. For example, according to the United States Environmental Protection Agency (<https://www.epa.gov/lead/protect-your-family-exposures-lead#soil>), "If your home was built before 1978, there is a good chance it has lead-based paint" and "soil, yards and playgrounds can become contaminated when exterior lead-based paint from houses or buildings flakes or peels and gets into the soil." The Agency for Toxic Substances & Disease Registry (<https://www.atsdr.cdc.gov/csem/csem.asp?csem=7&po=8>) states that, "White house paint contained up to 50% lead before 1955. Federal law lowered the amount of lead allowable in paint to 1% in 1971." That's 500,000 ppm and 10,000 ppm, respectively on a dry-weight basis. Based on this information, Ontario County records that indicate most area houses were constructed in the late 1800s and early 1900s, and visual observations of flaking exterior paint on some houses, it is reasonable to assume that some of the elevated lead results were, at least in part, attributable to lead paint.

For arsenic, buried coal ash was observed at a number of the properties that were sampled which indicates the historic use of coal furnaces for home heating. A study conducted by the Electric Power Research Institute (available at <http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000000001020556>) found that the fly ash (the 'smoke' that comes out of the chimney) from coal burning had a median arsenic concentration of 71 ppm. Based on this information it is reasonable to assume that the combined effect of deposition from coal burning sources other than the foundry also contributed to the elevated arsenic results.

**COMMENT 65:** When did the groundwater testing take place? Why only 5 wells? How did the placement of wells relate to soil contamination concentrations? Why were there only two rounds of testing, especially after the positive test for lead in the first sample?

**RESPONSE 65:** Groundwater samples were collected in April 1999 and again in June 1999. Six wells were located near the site. One well was placed hydraulically up-gradient of the former foundry building. The remaining wells were located hydraulically down-gradient of the site to determine whether a release from the foundry had impacted groundwater beneath the site. Two rounds of testing is typical for a remedial investigation.

**COMMENT 66:** Regarding the statement that volatile organic compounds and semi-volatile organic compounds did not exceed standards, criteria and guidance values in any groundwater samples – what compounds were tested for and what were the levels found? Are you using EPA standards? What are those standards?

**RESPONSE 66:** Volatile organic compounds were not detected in any of the wells. The semi-volatile organic compound bis(2-ethylhexyl)phthalate was detected in two wells at a concentration of 2 parts per billion; the groundwater standard is 5 parts per billion. Groundwater results are compared to New York State groundwater standards found in 6 NYCRR 703.5 and guidance values found in document entitled "*Division of Water Technical and Operational Guidance Series (1.1.1) AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES AND GROUNDWATER EFFLUENT LIMITATIONS*" dated June 1998.

**COMMENT 67:** Regarding the positioning of test wells, the PRAP states that groundwater flows south, yet according to the map in the presentation your testing wells look to be placed slightly to the west of the southernmost contamination area why is this? What about flow towards the lake?

**RESPONSE 67:** Groundwater flow at the site is more to the southwest than due south. The Record of Decision has been modified to correct this. Since groundwater at the site is not impacted, it would not impact Seneca Lake.

**COMMENT 68:** Given the foundry operated for over 100 years, is it possible that groundwater was contaminated and had just been flushed out at the time of testing?

**RESPONSE 68:** Groundwater contaminant distribution is a complicated interaction of contaminant concentration, pH, solubility, groundwater velocity, preferential pathways, time, and many other factors. Contaminant plumes for metals typically have an area of high concentration (source area) and then concentrations decrease with distance. Over time, the effects of dilution and dispersion cause the plume to shrink in size, but the source area remains the area with the highest concentrations.

**COMMENT 69:** What steps were taken to identify a responsible party? Are future investigations planned? If yes, when and how? If not why?

**RESPONSE 69:** See Responses 7, 8 and 20.

**COMMENT 70:** When exactly did the remedial investigation occur? What was communicated to the City of Geneva at the time of testing?

**RESPONSE 70:** The remedial investigation started in 1998 and will end with the issuance of this Record of Decision. The remedial investigation was managed by the City of Geneva under the ERP program.

Nick Tomkins submitted a letter dated October 31, 2016 which included the following comments:

**COMMENT 71:** Is this project going to go out for public bid?

**RESPONSE 71:** See Response 51.

Calvin Ruthven submitted a letter dated November 7, 2016 which included the following comments:

**COMMENT 72:** I own two properties within the remediation area. I would like these properties tested and cleaned up if needed.

**RESPONSE 72:** These properties will be tested and cleaned up if needed.

**COMMENT 73:** What is the cost of the cleanup?

**RESPONSE 73:** Remediation of the foundry site is estimated to cost approximately \$250,000. The preliminary estimate for the remediation of the off-site properties is approximately \$16.6 million.

**COMMENT 74:** How long will the cleanup take?

**RESPONSE 74:** Remediation of the foundry site is estimated to be completed within 2 years or less. Remediation of the off-site properties will be a multi-year project. The Department expects to be able to provide a more specific estimate once the first group of properties are finished.

**COMMENT 75:** How many properties are affected?

**RESPONSE 75:** Approximately 220 properties are within the remediation area, but that number may change once the extent of the remediation area is fine tuned.

MJ Calabrese submitted a letter dated November 16, 2016 which included the following comments:

**COMMENT 76:** I live outside of the remediation area. I had my soil tested on my own and the results were elevated for lead and arsenic. Will my property be tested?



**RESPONSE 76:** Your request is noted. As discussed in Response 8, additional sampling will be completed outside of the identified remediation area in order to ‘fine tune’ the extent of the cleanup area.

Mark Risk submitted a letter dated November 17, 2016 which included the following comments:

**COMMENT 77:** We would be interested in proposing on the residential clean-up work related to the Geneva foundry site.

**RESPONSE 77:** See Response 51.

Meghan Genovese submitted a letter dated November 24, 2016 which included the following comments:

**COMMENT 78:** I own property that is inside the remediation area, but is not impacted based on existing data. I am concerned that the previous sample locations were not representative and I would like the property to be re-sampled as part of the cleanup.

**RESPONSE 78:** The Department will offer additional sampling for the property.

**COMMENT 79:** The remediation timeline is too long and needs to be more aggressive.

**RESPONSE 79:** The Department understands the community’s concerns with respect to the schedule and will complete the remediation as quickly as feasible.



## **APPENDIX B**

### **Administrative Record**

# **Administrative Record**

**Former Geneva Foundry Site  
Operable Unit Nos. 1, 2 and 3  
Environmental Restoration Program  
Geneva (C), Ontario County, New York  
Site No. B00019**

1. *Proposed Remedial Action Plan for the Former Geneva Foundry site, Operable Unit Nos. 1,2 and 3*, dated October 2016, prepared by the Department.
2. State Assistance Contract between the Department and the City of Geneva, Contract No. C300873, dated October 8, 1999.
3. *Site Investigation Report And Remedial Alternatives Report For Brownfields Investigation Geneva Foundry Site*, dated August 2000, prepared by Passero Associates, P.C. and Larsen Engineers.
4. *Revised Supplemental Remedial Investigation/Alternatives Analysis Report for the Geneva Foundry Site*, dated December 2015, prepared by Plumley Engineering.
5. *Former Geneva Foundry Offsite Surface Soil Sampling – 2015*, dated August 2016, prepared by the Department.
6. Letter dated October 10, 2016 from Ellis Bozzolo, resident.
7. Letter dated October 13, 2016 from Pamela Thompkins, resident.
8. Letter dated October 13, 2016 from Tom Swart, Viasant, LLC.
9. Letter dated October 13, 2016 from Pat Genovese, resident.
10. Letter dated October 14, 2016 from Jeff Sessler, Sessler Wrecking.
11. Letter dated October 14, 2016 from Richard and Hillary Iannapollo, residents.
12. Letter dated October 17, 2016 from Sharon Ryan, Micro-Bac International.
13. Letter dated October 18, 2016 from Matthew Everdyke, resident.
14. Letter dated October 19, 2016 from Richard and Hillary Iannapollo, residents.
15. Letter dated October 19, 2016 from Michael Bliss, NRC (Formerly OP-TECH).
16. Letter dated October 20, 2016 from Cindy Miller, resident.

17. Letter dated October 20, 2016 from Meghan Genovese, resident.
18. Letter dated October 31, 2016 from Nick Tomkins, Severson Environmental Services, Inc.
19. Letter dated November 7, 2016 from Calvin Ruthven, resident.
20. Letter dated November 16, 2016 from MJ Calabrese, resident.
21. Letter dated November 17, 2016 from Mark Risk, Entact, LLC
22. Letter dated November 24, 2016 from Meghan Genovese, resident.

# **APPENDIX B**

## **REQUEST TO IMPORT/ REUSE FILL OR SOIL**



**NEW YORK STATE  
DEPARTMENT OF ENVIRONMENTAL CONSERVATION**



**Request to Import/Reuse Fill or Soil**

\*This form is based on the information required by DER-10, Section 5.4(e). Use of this form is not a substitute for reading the applicable Technical Guidance document.\*

**SECTION 1 – SITE BACKGROUND**

The allowable site use is:

Have Ecological Resources been identified?

Is this soil originating from the site?

How many cubic yards of soil will be imported/reused?

If greater than 1000 cubic yards will be imported, enter volume to be imported:

**SECTION 2 – MATERIAL OTHER THAN SOIL**

Is the material to be imported gravel, rock or stone?

Does it contain less than 10%, by weight, material that would pass a size 80 sieve?

Is this virgin material from a permitted mine or quarry?

Is this material recycled concrete or brick from a DEC registered processing facility?

**SECTION 3 - SAMPLING**

Provide a brief description of the number and type of samples collected in the space below:

-----  
*Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.*

*If the material meets requirements of DER-10 section 5.5 (other material), no chemical testing needed.*

### SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

---

*Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.*

*If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.*

### SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

---

Signature

---

Date

---

Print Name

---

Firm



# **APPENDIX C**

## **HEALTH AND SAFETY PLAN**

**HEALTH AND SAFETY PLAN**  
**for**  
**REMEDIAL ACTIVITIES**  
**at the**  
**FORMER GENEVA FOUNDRY SITE**  
**Jackson Street**  
**City of Geneva, Ontario County, New York**  
**BCP Site No. C835027**

Prepared for:

CITY OF GENEVA  
47 Castle Street  
Geneva, New York 14456

Prepared by:



8232 Loop Road  
Baldwinsville, New York 13027  
(315) 638-8587  
Project No. 2015003

November 2016  
Updated May 2017

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### FIGURE

- FIGURE 1 – PROPERTY BASE MAP  
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### TABLE

- TABLE 1 – HEALTH AND SAFETY DATA FOR  
SELECTED CONTAMINANTS OF CONCERN

### ATTACHMENTS

- ATTACHMENT A – AUTHORIZED PERSONNEL  
ATTACHMENT B – DAILY WORK ZONE AIR MONITORING LOG SHEET

## **1.0 PURPOSE AND APPLICABILITY**

This Health and Safety Plan (HASP) outlines precautions and protective measures that employees and subcontractors (“Workers”) of Plumley Engineering must take to minimize the risk to health and safety while performing remedial activities at Operable Units 01 and 02 of the former Geneva Foundry site, located on Jackson Street in the City of Geneva, Ontario County, New York. The site consists of two parcels that were investigated under the Environmental Restoration Program (ERP), prior to being accepted into the Brownfield Cleanup Program (BCP). A Remedial Action Work Plan (RAWP) presenting the proposed actions to address remaining contamination on the site will be submitted to the New York State Department of Environmental Conservation (DEC). Each worker shall review the HASP prior to working on the site. If activities require parties other than the engineer or its subcontractors to be at the site, these parties are solely responsible for maintaining compliance with all applicable regulations and for their own health and safety procedures. All on-site workers must have received the appropriate level of training for their specific duties in accordance with Occupational Safety and Health Administration (OSHA) 29 CFR 1910.120 (e).

## **2.0 SITE DESCRIPTION**

The site is located in a mixed residential-commercial area in the City of Geneva, New York and consists of two parcels, one south of Jackson Street and one north of Jackson Street. The buildings that formerly occupied the site were demolished and both parcels are now vacant properties. Refer to Figure 1 for additional information.

DEC issued a Record of Decision (ROD) in January 2017, and the RAWP being developed will be consistent with the contents of the ROD.

## **3.0 SCOPE OF WORK**

The following tasks are proposed to remediate the site:

- The ROD notes four areas to be excavated and removed for appropriate off-site disposal, with estimated depths of two feet. Existing concrete slabs remaining from the former buildings will be removed prior to excavating the designated areas.
- Waste characterization samples will be collected from the areas to be remediated, analyzed and submitted for approval to the Ontario County Landfill. Excavated soil will be loaded directly onto trucks following approval for disposal, covered and transported by a Part 364-permitted hauler to the landfill. Excavations will be carefully screened throughout the excavation process for indications of potential releases. Screening will consist of visual and olfactory monitoring, and use of a photoionization detection (PID) meter and a Field X-ray Fluorescence (XRF) instrument.
- If further impacted soils are not suspected, confirmation samples will be collected in accordance with DEC requirements and submitted to an ELAP-certified environmental laboratory for analysis of Target Compound List (TCL) semi-volatile organic compounds (SVOCs) plus Tentatively Identified Compounds (TICs) using EPA Method 8270 and Target Analyte List (TAL) metals for confirmation purposes.
- Stakes and plastic fencing will be placed around the excavations prior to leaving the site.
- If the results of the confirmation samples meet the soil cleanup objectives for restricted residential use, the excavations will be backfilled with clean fill that meets the requirements of Appendix 5 of DER-10.
- The removal tasks will be documented in a Site Management Plan and a Final Engineering Report.

These field activities are anticipated to take place during the 2017 calendar year.

#### 4.0 HEALTH AND SAFETY PERSONNEL

The following personnel are responsible for the development, implementation and maintenance of this HASP:

Project Manager.....David K. Meixell, P.E.

Site Safety Officer.....David K. Meixell, P.E.

Although responsibility for implementing this HASP is with the Site Safety Officer, the primary responsibility for health and safety lies with the individual workers. Each worker must be familiar with and conform to the safety procedures outlined in this HASP. The Site Safety Officer is responsible for all decisions regarding health and safety policies, procedures and protective measures. It is the responsibility of the Site Safety Officer to provide the resources required to allow the work to be conducted in conformance with this HASP.

The Site Safety Officer will also be responsible for:

- Maintaining a complete copy of the HASP at the site during all field activities.
- Assuring that all workers at the site are familiar with the procedures outlined in the HASP.
- Assuring that all workers have undergone the required OSHA training program.
- Assuring that workers have, and properly use and maintain, all specified personal protective and other health and safety equipment.
- Assuring that proper decontamination procedures are followed.
- Initiating immediate response actions, if necessary, and coordinating these actions with all workers at the site, any other individuals at the site, any involved agencies or medical facilities.

- Recommending improvements to this HASP, if needed.

The Site Safety Officer has the authority to:

- Direct any worker to alter or suspend any work practice they deem is not sufficient to protect human health.
- Deny access to the site to any individual or organization who does not have a complete copy of the HASP and/or the appropriate training and personal protective equipment (PPE) for the potential health and safety hazards at the site.

The presence or absence of the Site Safety Officer shall in no way relieve any individual or organization of their obligation to comply with the HASP or any applicable Federal, State and local laws and regulations.

## 5.0 GENERAL INFORMATION

**Plan Prepared By / Date:** Plumley Engineering / May 2017

**Proposed Date(s) of Work:** Initial activities will be in 2017. Follow-up activities may occur at various times throughout 2017.

**Background Review:** Preliminary      \_\_\_\_\_      Complete        X  

A review of prior site investigation and environmental site assessment reports has been completed sufficiently to support the preparation of the site HASP. As more detailed information is obtained or if new information is obtained that requires a modification to the HASP, an addendum will be issued.



## **6.0 SITE CONTAMINANT CHARACTERISTICS**

### **Definition of Site Contaminants of Concern**

The site formerly operated as a foundry for over 100 years. The main foundry building was located on the southern parcel with an associated building located on the northern parcel. Contaminants of concern (COCs) identified in the site soils include:

- Metals, including chromium, lead and mercury.
- SVOCs, including benzo(a)anthracene, benzo(a)pyrene, and benzo(b)fluoranthene.

### **Potential Hazardous Material(s)**

The areas identified for remediation contain the COCs. A representative of Plumley Engineering will monitor the progress of the excavations for visual or olfactory evidence of contamination, and will screen the excavation with a PID meter and an XRF instrument.

## **7.0 HAZARD EVALUATION AND REDUCTION**

Although less volatile than the volatile organic compounds (VOCs), SVOCs may also be present in the breathing zone.

Chemical constituents could occur in soils at the site, and thus pose a potential dermal exposure risk that can result from handling site soil or equipment that has come into contact with impacted soil.

The current OSHA permissible exposure limits (PEL) standards are provided in Table 1. Workers are not expected to be exposed to conditions exceeding the PEL.

Based on the nature of the contaminant and the type of work being performed, the most significant hazards at this site are:

- Potential direct contact with VOCs and SVOCs during excavation activities. The PPE requirements for the project are designed to eliminate this risk to the extent practical.
- Physical hazards related to operating and working with excavation equipment. All equipment operators and inspectors shall be familiar with the associated physical hazards and shall have had at least five years of related experience. Environmental contractors shall provide copies of their current HASP to the project engineer for review. The PPE requirements for the project are designed to eliminate this risk to the extent practical.

There are three primary pathways by which site workers can be exposed to chemical hazards: inhalation, ingestion and dermal contact. The chemical exposures across these pathways can cause two types of effects: acute and chronic. Acute effects occur during or shortly after exposure to a sufficiently high concentration of a chemical. Chronic effects occur after repeated or constant exposures for a long period of time. Regulatory exposure limits, such as PELs, are related to both acute effects (such as respiratory irritation) and chronic effects (such as cancer). Symptoms of chemical exposure may include behavioral changes, breathing difficulties, skin color changes, coordination difficulties, coughing, dizziness, weakness, irritability, skin irritation, eye irritation, respiratory tract irritation, headache, nausea, lightheadedness, sneezing, etc.

The primary pathway exposures associated with site VOCs is inhalation and dermal contact with affected media or tools that have come into contact with the affected media. SVOCs may also be present in the breathing space, although typically at concentrations less than VOCs. Real-time ambient air monitoring, appropriate engineering controls, PPE and good hygiene practices will be employed to minimize exposure to VOCs. Exposures to SVOCs, metals, pesticides and polychlorinated biphenyls (PCBs) is primarily by dermal contact with affected media or tools that have come into contact with the affected media.

Another potential pathway for exposure to COCs is through inhalation and dermal contact with airborne dust derived from contaminated soil.

The following precautions will be taken to reduce the potential exposure to site COCs during site investigation and remediation activities:

- Field personnel will conduct air monitoring with a PID meter during excavation activities to measure total concentrations of VOCs in the work zone breathing space.
- Engineering controls and/or appropriate respiratory protection will be used if visible dust does become present in the breathing space.
- The work procedures shall be modified if VOCs in the breathing space rise above action levels.
- Site investigation activities will be conducted in Level D PPE to minimize dermal exposure to potentially affected media (i.e., specifying the use of disposable protective gloves when handling site materials during field sampling activities) and reduce the risk of physical hazards (by requiring hard hats and safety glasses when inspecting drilling or test pits), as detailed in Section 8. The PPE will be upgraded, as necessary, for organic vapor, dermal and dust inhalation hazards.
- Any non-disposable PPE that comes in contact with potentially affected facility media will be decontaminated prior to leaving the work area.
- Soap, clean water and paper towels for washing hands will be provided at the site during all field activities. Hands will be washed thoroughly prior to eating, drinking and leaving the site.

The Site Safety Officer will have the NIOSH *Pocket Guide to Chemical Hazards* available for reference at the site. This reference identifies exposure routes, exposure symptoms, physical

properties, chemical incompatibilities, first aid treatment and other information for many chemical compounds.

Physical hazards expected during the investigation and remediation activities are related to working with heavy construction equipment (backhoe), potential utility conflicts for the excavation work, and slip, trip and fall hazards. Additional physical hazards may include heat or cold stress. These hazards will be evaluated by the Site Safety Officer prior to beginning work in a new area and as conditions change in the work area. The following precautions will be taken to reduce the physical hazards:

- A utility clearance program shall be completed prior to initiating the project, to include contacting Dig Safely New York and researching private utilities. No subsurface borings or test pits will be started at any location prior to utility clearance.
- “Tailgate” safety briefings will be conducted by the Site Safety Officer to identify additional safety protocols, as needed.
- The specified PPE shall be worn by all workers in the project exclusion zone.
- No confined space entries will take place under this HASP. If a confined space entry becomes necessary, appropriate confined space entry procedures will be detailed in an addendum to this plan.
- A warming space will be provided during cold weather, if needed.
- Good housekeeping in the work area will be maintained.

If VOCs in the breathing space are detected above action levels (or as determined by the monitoring plan), work will cease until a determination is made as to whether further controls are required.

If necessary, engineering controls will be developed to minimize dust generation at the sampling location. For example, water may be sprayed on the surface soils to reduce breathing space dust concentrations.

Encountering unknown or unexpected substances or containers of a hazardous nature is possible, though not expected based on the degree of prior investigation and remedial activities undertaken at the site. Work will be discontinued if field measurements or observations indicate there is a potential exposure to a hazard that was not anticipated, is not adequately characterized and controlled, or may exceed the protection provided by the PPE specified for the task.

## **8.0 SITE SAFETY WORK PLAN**

### **Site Map**

Figure 1 shows the main features on and adjacent to the site, and the locations of prior environmental sampling points.

### **Site Security**

Stakes and plastic fencing will be placed around the excavations and maintained until the excavations are backfilled.

### **Training**

All authorized workers will receive a HASP briefing and will be required to read and sign the HASP at the beginning of the field work. The following main items shall be covered:

- The tasks the workers will be required to perform, as detailed in the Work Plan.
- Site ingress, egress and decontamination procedures.

- Site hazards, accident prevention and overexposure symptoms.
- The required PPE plan and exclusion zone requirements.
- Emergency response procedures.

Attachment A is a record of all authorized workers who have either attended the startup training session or received a similar briefing from the Site Safety Officer, to include any visitors. This shall be kept up-to-date throughout the project.

Should unexpected site conditions be encountered requiring utilization of Level C or higher protection and/or other specialized operations (e.g., a confined space entry), the work shall not be carried out until a Response Team comprised of personnel with proper training in accordance 29 CFR Part 1910.120 (e) (f) (g) is formed to complete such work.

Any new personnel assigned to this project shall receive the HASP briefing and be required to read and sign the HASP before being allowed to perform work. The briefing will be given by the Site Safety Officer or a delegated safety representative who has previously completed this training.

The Site Safety Officer will be responsible for insuring that visitors receive the necessary site-specific visitor training applicable to the visitors' anticipated activities. Site visitors shall not be allowed access to the project exclusion zone unless they receive a site-specific training brief, can demonstrate they have received the appropriate training per 29 CFR Part 1910.120 (e) and have received the required project PPE equipment.

### **Zone(s) of Contamination Identified**

Workers are to assume that COCs may occur anywhere on the site in the surface soils, subsurface soil and groundwater.

## **Medical Surveillance**

If used, subcontractors shall be current with medical surveillance requirements in accordance with 29 CFR Part 1910.120 (f).

## **Exclusion Zone**

Temporary exclusion zones will be established around all subsurface drilling and sampling locations while such operations are being conducted. No unauthorized personnel will be allowed to approach the location, as monitored by the Site Safety Officer. Traffic cones will be used to designate the area, set at a safe distance from the associated hazard, as determined by the Site Safety Officer. Any worker in the exclusion zone shall comply with all aspects of the HASP.

## **Decontamination Area**

A central decontamination area where decontamination materials shall be placed and stored, and procedures conducted, will be designated at the outset of the project. Portable decontamination equipment will also be used to expedite the work.

## **Personal Protection Equipment**

- Level of protection in the exclusion zone shall be Level D – Modified.
- Level D PPE in the exclusion zone shall consist of the use of hard hats, rubber (nitrile) gloves, steel-toed boots if inspecting drilling or test pits operations, ear plugs and safety glasses. Latex gloves will be used by inspectors for handling soil samples.
- Drillers and any other site worker who is in close contact with soils during ground intrusive activities shall wear coveralls or other appropriate clothing to safeguard against debris and skin contact.

- A cellular telephone in proper working order shall be available at the work site at all times.
- Eating, drinking, smoking and carrying food or tobacco products are prohibited in the exclusion zone.

### **Decontamination Procedures**

- ***Personnel:*** Workers shall remove coveralls and wash face and hands with soap and water prior to eating, drinking, using restroom facilities or leaving the site.
- ***Protective Equipment:*** A detergent wash and clean water rinse will be used for rubber boots, hard hats, safety glasses and hand sampling tools.
- ***Sampling Equipment:*** A detergent wash and clean water rinse shall be used to clean sampling equipment before exiting the work site. Decontamination of tools shall be performed at the designated decontamination pad facility. Sampling tools will be dry brushed, as appropriate, prior to detergent cleaning.
- ***Vehicles:*** Trucks and excavation equipment will be decontaminated at the designated decontamination area prior to leaving the site. Excavation equipment will also be decontaminated prior to being brought onto the site.
- ***Disposal:*** Gloves, coveralls, etc., used at the site will be collected at a central location for disposal in accordance with all applicable laws of the State of New York or, where applicable, properly cleaned and disinfected for reuse. All water generated from decontamination shall be collected and containerized for proper testing and disposal in accordance with all applicable laws of the State of New York.



## **Equipment Checklist**

### ***Level D Modified***

Hardhat

Steel toed work boots

Safety glasses

Safety goggles or shield, if necessary

Tyvek coveralls, if necessary

Rubber and latex gloves

### ***Hearing Protection***

Ear Plugs

### ***Decontamination Materials***

Alconox

Brushes

Buckets

Potable water source and portable containers

Low pressure sprayer

Decontamination pad materials, including water containment

Plastic drop cloth material

Garbage can and plastic liners

### ***Field Instruments***

Photoionization Detector (PID) / Calibrated 10.6 eV

X-Ray Fluorescence (XRF) Analyzer

### ***Other***

Disposal dust masks

Glove and helmet liners for cold weather

## **9.0 ENVIRONMENTAL MONITORING PLAN**

### **Work Zone Monitoring**

Air monitoring in the exclusion zone near the point of operation will be periodically tested by the Site Safety Officer using a PID meter as a general precaution at a frequency of once every 60 minutes, or whenever a fugitive odor suggestive of possible VOCs is encountered. Should readings exceeding 5 parts per million (ppm) be recorded, additional readings in the operator breathing zone will be obtained. Should these levels continue to exceed 5 ppm over a sustained period of one minute, work will be discontinued until appropriate engineering controls (e.g. fan ventilation, vapor suppression) and a Community Air Monitoring Program (CAMP) are employed. The Site Safety Officer will continue to evaluate the situation and, if necessary, upgrade the PPE requirements to include air purifying respirators. Should Level C respirator PPE be required, all workers shall have had the proper training for their use and have had a fitness test performed current within the previous one-year period in accordance with 29 CFR 1910.120.134, Appendix A. Readings will be documented on the log sheet provided in Attachment B.

## **Community Air Monitoring Program**

A CAMP requires real-time monitoring for VOCs and particulates (i.e., dust) at the downwind perimeter of each designated work area when certain activities are in progress at the site. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors, including residences and businesses, and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions and/or work shutdown.

***Continuous CAMP monitoring*** for VOCs and particulates will be required for ***ground excavation*** activities.

***Periodic monitoring*** for VOCs will be required during ***non-excavation*** activities, such as collection of surface soil and sediment samples, collection of groundwater samples from existing monitoring wells, direct-push soil borings, installation of small diameter monitoring wells and test pits. “Periodic” monitoring during these activities will consist of taking a PID meter reading upon arrival at a test location and periodically during the work, as described above in “Work Zone Monitoring”.

### ***VOC CAMP Monitoring, Response Levels and Actions***

VOCs must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone). Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the COCs or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 ppm above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions and monitoring continued. After these steps, work activities can resume, provided the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less (but in no case less than 20 feet), is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shut down.

### ***Particulate CAMP Monitoring, Response Levels and Actions***

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m<sup>3</sup>) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed

leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m<sup>3</sup> above the upwind level and provided that no visible dust is migrating from the work area. If downwind PM-10 particulate levels are greater than 150 mcg/m<sup>3</sup> above the upwind level after implementation of dust suppression techniques or if visible emissions are observed, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m<sup>3</sup> of the upwind level and in preventing visible dust migration.

All 15-minute readings must be recorded and be available for review by DEC and New York State Department of Health (DOH) personnel. Instantaneous readings, if any, used for decision purposes should also be recorded.

## **10.0 INVESTIGATION WASTE DISPOSAL PLAN**

Investigation derived wastes (IDW) generated during the completion of the remedial investigation shall be handled as follows:

- Drill cuttings may be disposed of back within the borehole, provided the cuttings are not grossly contaminated (containing sheen or free product) and the borehole does not penetrate an aquitard or bedrock, nor creates a significant avenue for vertical migration of contamination. Such backfilling shall be completed to within 12 inches of grade, followed by the placement of 6 inches of bentonite, followed by 6 inches of clean soil (drilling sand) when in outdoor, unpaved areas. Patch with asphalt if in a paved area and with concrete if inside the building.
- Drill cuttings that are grossly contaminated shall be containerized in New York State Department of Transportation (DOT) approved drums or temporarily stockpiled on and

covered with plastic sheeting, and handled in accordance with the off-site disposal requirements discussed below. For test pits, grossly impacted soils shall be containerized in DOT-approved drums or temporarily stockpiled on and covered with plastic sheeting, and disposed of in accordance with the off-site disposal requirements discussed below. Such soils are not to be placed directly on the ground during the excavation procedures. All other soils may be placed back in the pit in the order they were removed and the surface left graded with clean soil to promote runoff.

- Groundwater generated from developing, purging and sampling monitoring wells is to be containerized upon production to allow visual observations and can subsequently be discharged to the ground near the point of on-site generation, provided the groundwater:
  - Is free of visual sheen or oil (no free product). No water is to be discharged at the site if it contains visual product.
  - Has no olfactory indicators.
  - Does not contain a known high concentration of COCs, based on prior site sampling work.

Water containing any of the above characteristics is to be stored in labeled containers in an area affording secondary containment and handled in accordance with the off-site disposal requirements discussed below. Water generated by decontamination procedures is to be handled following the same protocol.

- PPE wastes can be disposed of in a Part 360 permitted solid waste landfill, provided none of the materials contain free product staining. These latter materials are to be handled similarly to grossly impacted soils, as discussed below.
  - Representative samples of the IDW wastes must be collected and analyzed to properly allow the materials to be classified, treated or disposed of.

- Any IDW materials determined to be hazardous or solid wastes are to be transported by haulers permitted in accordance with New York Codes, Rules and Regulations, Title 6 (6 NYCRR) Part 364. Waste manifests are to be provided.
- All IWD materials taken from the site for disposal must be disposed of or treated in DEC-permitted facilities.

## **11.0 EMERGENCY RESPONSE PLAN**

A copy of the HASP and a NIOSH *Pocket Guide of Chemical Hazards* shall be available at the site at all times.

The Site Safety Officer is to be immediately notified of any on-site emergency.

### ***USE THE 911 SYSTEM FOR ANY THREATENING EMERGENCY.***

All workers will be alerted upon the occurrence of an emergency involving a potentially ongoing dangerous condition (e.g. a fire, explosion or electrical condition within or adjacent to the site) and the affected area evacuated immediately.

Emergency situations will be evaluated by the Site Safety Officer and initial emergency response measures will be undertaken, if appropriate.

Contact the Project Manager as soon as possible. Emergency telephone numbers are provided.

The following general sequential guidelines are provided for emergency situations:

1. If possible, remove the exposed or injured person(s) from immediate danger. Evacuate other personnel on the property to a safe distance until the Site Safety Officer determines it is safe to return to work.

2. Obtain paramedic and ambulance service (or fire department response, if needed) immediately by calling 911. Render first aid, as applicable to the rescuers' training.
3. If there is any doubt regarding the condition of the area, work shall not commence until all safety issues are resolved.
4. The Site Safety Officer shall contact the Project Manager at the earliest time practical and provide details of the incident.
5. A written report of the incident shall be forwarded to the Project Manager within 24 hours following the incident.

#### ***EMERGENCY TELEPHONE NUMBERS***

Plumley Engineering..... (315) 638-8587

**FOR ALL EMERGENCIES..... 911**

(Fire Department, Police Department, Ambulance)

#### ***Other Agencies***

Fire Department (non-emergency)..... (315) 789-2121

NYSEG (Gas Emergency) ..... (800) 572-1121

NYSEG (Electrical Emergency) ..... (800) 572-1131

Geneva General Hospital ..... (315) 787-4000

DEC Region 8, Avon Office ..... (585) 226-2466

DEC Spill Hotline ..... (800) 457-7362



**Nearest Hospital:**

Name: Geneva General Hospital

Location 196 North Street  
Geneva, New York 14456  
(less than one mile from site)

Telephone: (315) 787-4000

Refer to Figure 2 for a map from the Site to Geneva General Hospital.

Written directions to the hospital from the site:

- Head east on Jackson Street.
- Turn left on Center Street and proceed to North Street.
- Turn left onto North Street and proceed to the hospital.

# FIGURES

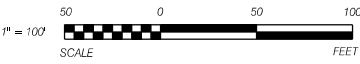
Key

- - - R.O.W. - - - Right of Way
- . - . - Property Line
- - - R.O.W. - - - Former Geneva Foundry Parcels

Adjacent Property Owners

- 41 State Street - Miller, Betty
- 38 Jackson Street - City of Geneva
- 40 Jackson Street - Ubiles, Mara
- 42 Jackson Street - Ubiles, Mara
- 204 Exchange Street - Trombley, Timothy R.
- 218 Exchange Street - Trombley, Timothy R.
- 226 Exchange Street - Trombley, Timothy R.
- 234 Exchange Street - Gringeri, Kathryn
- 248-258 Exchange Street - Albert Colizzi Trust

Plan View



**PLUMLEY**  
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TELEPHONE: (315) 638-8587  
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Civil and Environmental Engineering

REVISIONS:	DATE:	BY:
△		

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PROJECT: **GENEVA FOUNDRY SITE**

DWG. TITLE: **PROPERTY BASE MAP**

CLIENT: **CITY OF GENEVA**

LOCATION: **CITY OF GENEVA, ONTARIO COUNTY, NEW YORK**

Note: No alteration permitted hereon except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

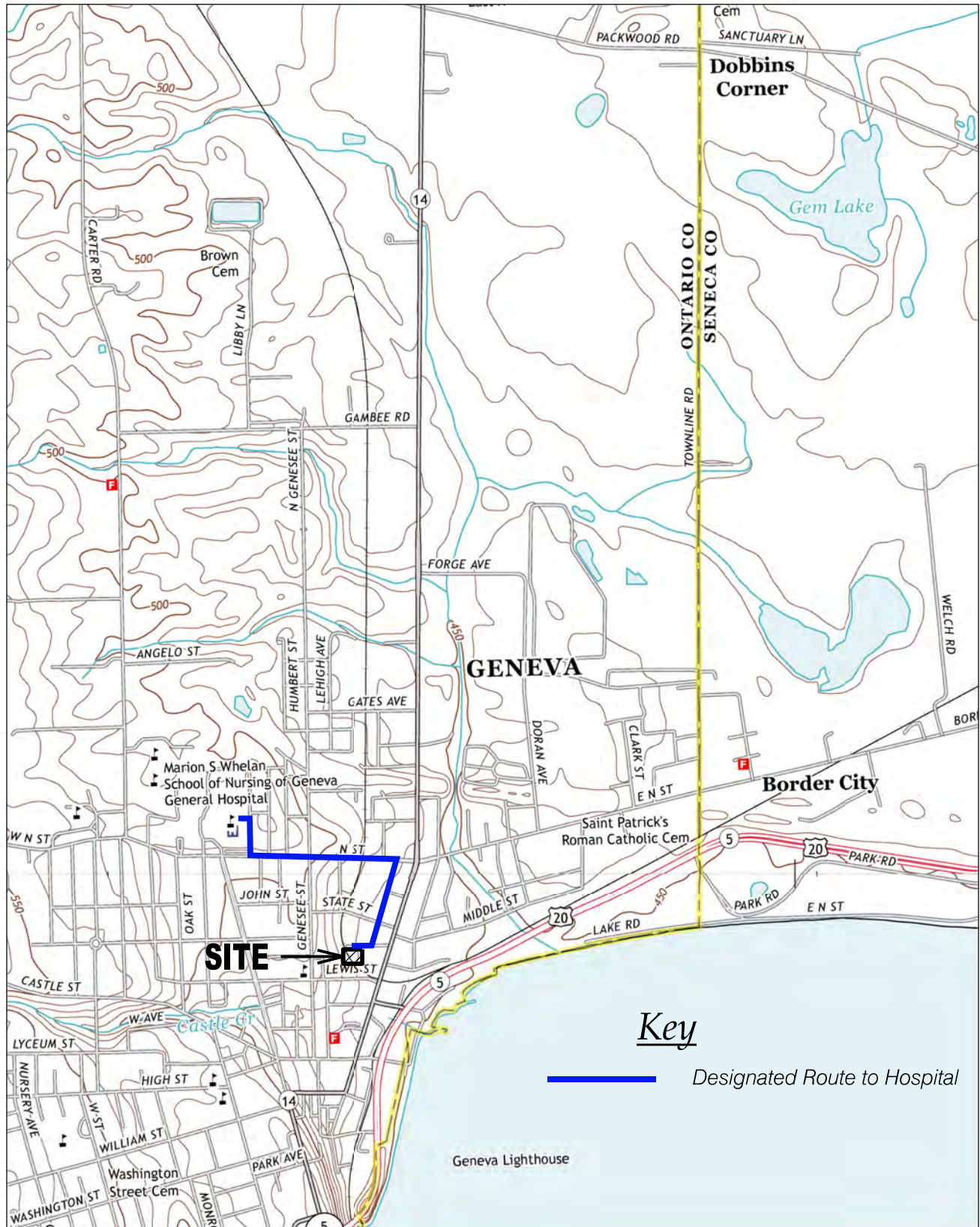
PROJECT No.:	2015003
FILE NAME.:	BCP APP. FIGURE1
SCALE:	AS NOTED
DATE:	NOV. 2016
ENG'D BY:	DKM
DRAWN BY:	JMD
CHECKED BY:	DRV

SHEET NO.:

**FIGURE 1**

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REF.: USGS - GENEVA NORTH (NY) QUAD., 2013, 7.5 MIN. SCALE: 1"=2000'

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ENGINEERING**

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PROJECT:

**FORMER GENEVA FOUNDRY SITE**

DWG. TITLE:

**ROUTE TO HOSPITAL**

CLIENT:

**CITY OF GENEVA**

LOCATION:

**CITY OF GENEVA, ONTARIO COUNTY, NEW YORK**

Note: No alteration permitted hereon except as provided under Section 7209 Subdivision 2 of the New York State Education Law.

PROJECT No.: 2015003

FILE NAME.: **Figure2**

SCALE: AS NOTED

DATE: MAY 2017

ENG'D BY: DKM

DRAWN BY: JJJ

CHECKED BY: DKM

# TABLE

**FORMER GENEVA FOUNDRY SITE**  
**Jackson Street**  
**City of Geneva, Ontario County, New York**  
**BCP Site No. C835027**

**TABLE 1 - HEALTH AND SAFETY DATA FOR SELECTED CONTAMINANTS OF CONCERN**

Contaminant	CAS Number	Ionization Potential (eV)	Odor Threshold (ppm)	PEL 8 hour (ppm)	PEL 15 minute (ppm)	TLV/ TWA (ppm)	STEL (ppm)	Flammable	Explosive Limits	
									LEL	UEL
Chromium	7440-47-3	11.00	390	350	NA	350	450	No	NA	NA
Lead	7439-92-1	NA	NA	100	NA	100	NA	Yes	NA	NA
Mercury	7439-97-6	9.24	NA	1	5	0.1	1	Yes	1.2%	7.8%
Benzo(a)anthracene	56-55-3	9.07	NA	75	NA	NA	NA	Yes	1.3%	9.6%
Benzo(a)pyrene	50-32-8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	205-99-2	8.76	NA	100	NA	100	125	Yes	0.8%	6.7%

Notes:

eV      electron volts  
ppm    parts per million  
NA      Not applicable

# ATTACHMENTS

**ATTACHMENT A**  
**DEC BCP Site No. C835027**  
**AUTHORIZED PERSONNEL**

I have read, understand and by signing, agree to comply with the provisions contained in the health and safety plan for this site.

	<b>Name</b>	<b>Representing</b>	<b>Signature</b>	<b>Date</b>
1.				
2.				
3.				
4.				
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25.				



**ATTACHMENT B**  
**DEC BCP Site No. C835027**  
**DAILY WORK ZONE AIR MONITORING LOG SHEET**

Job: \_\_\_\_\_ Date: \_\_\_\_\_ Start Time: \_\_\_\_\_

Monitoring Personnel: \_\_\_\_\_

Instruments (circle): PID: \_\_\_\_\_ HNU LEL Draeger Tubes Other \_\_\_\_\_

**Weather Conditions**

Temperature: \_\_\_\_\_ Sky (circle): Clear P. Cloudy Cloudy Overcast

Wind Speed (approx.): \_\_\_\_\_ Wind Direction: \_\_\_\_\_ Precipitation: \_\_\_\_\_

TIME	PID/LEL READINGS	WORK ZONE	COMMENTS (activities, changes in wind direction, temperature, etc.)

**Monitoring Performed By:** \_\_\_\_\_

Were Respirators Worn: Yes No

How Long? \_\_\_\_\_ Who? \_\_\_\_\_

Why? \_\_\_\_\_