RAMBOLL

ENVIRONMENT
& HEALTH

Work Plan

Supplemental Remedial Investigation

Former Accurate Die Casting Site (No. C731052)

Fayetteville, NY

A remedial investigation (RI) was conducted at the Former Accurate die Casting site (Site No. C731052) as part of the Brownfield Cleanup Program (BCP) administered by the New York State Department of Environmental Conservation (NYSDEC). The RI was conducted between November 11, 2019 and February 3, 2020 in accordance with the Remedial Investigation Work Plan (RIWP) dated October 2019 which was approved by NYSDEC and NYSDOH. An RI Report dated September 3, 2021 documenting the findings of the RI was submitted to NYSDEC for review and approval.

As outlined in a comment later dated, July 14, 2023, NYSDEC has requested that additional investigation activities be completed at the site. In response to this request, this work plan provides details pertaining to the installation of three additional groundwater monitoring wells, collection and analysis of groundwater samples from the new and select existing wells and sampling of soil vapor along the property boundary.

Monitoring Well Installation

Two monitoring wells will be installed to evaluate the groundwater quality on the west/northwest portion of the site as shown on Figure 1. A third well will be installed near the former UST located on the west side of the building. The wells will be set to screen the silt and sand unit that overlies the glacial till. Based on the drilling logs completed in this area it is expected that the top of glacial till will be encountered between 10 and 15 ft below grade.

The borings will be advanced using direct push methos to up to 2 ft into the glacial till to confirm its presence. Soil samples will be collected continuously for descriptive purposes and to confirm the depth of the glacial till unit.

Upon retrieval, each soil sample will be described for: 1) percent recovery; 2) soil type; 3) color; 4) moisture content; 5) texture; 6) grain size and shape; 7) consistency; 8) evidence of staining or other chemically related impacts; and 9) any other relevant observations. In addition, headspace screening of soil will be performed with a PID to allow evaluation of the bulk volatile organic concentration of each soil sample. Screening will be performed in approximate 2-ft intervals unless observations warrant deviation. This descriptive information will be recorded on a soil boring log form.

The monitoring wells will be set on top of the till to monitor the overburden groundwater. A bentonite pellet plug will be placed within the glacial till at the base of the boring. This plug will be covered with 6 inches of sand to prevent plugging of the well screen. The monitoring wells will be constructed with up to 10 ft of screen with the top of the screen set to no less than 3 ft below grade to allow for placement of an annular seal to minimize inflow of surface runoff. The wells will be constructed of ¾ to 1-inch inside diameter PVC. The well screen will be a 0.010-inch slot pre-packed well screen flush-threaded to PVC riser of sufficient length to bring the top of the well to between 2 and 3 ft above grade. The annular space above the well screen will be filled with cement/bentonite grout. Well heads will be completed with locking steel protective casings set within a concrete pad.

Drilling equipment used for the well installation will be decontaminated between locations.

Each newly installed monitoring well will be developed no earlier than 24 hours following installation. Development will be performed by surging and purging the well using a bailer or pump, as appropriate, to remove the fine-grained material which may have settled within the well and to provide hydraulic communication with the surrounding formation. Three to five well volumes will be removed as part of this process. Groundwater parameters will be measured and recorded prior to development, after removal of each well volume during development, and at the conclusion of development. Parameters will include turbidity, pH, temperature, specific conductance and dissolved oxygen (DO). Water levels will be measured prior to and at the conclusion of development. During well development, stability will be established as 3 consecutive readings as outlined below.

- Temperature (±10%)
- pH (±10%)
- Specific conductivity (±10%)
- DO (±10%)
- Turbidity (±10%)
-

If stability is not achieved, purging will cease after 5 well volumes have been removed.

Survey

A location and elevation survey will be completed following completion of the well installation to record the horizontal location and vertical elevation of newly installed monitoring wells (grade, top of PVC and protective casing). The survey will be completed by a New York State-licensed surveyor. Horizontal datum will be referenced to North American Datum (NAD) 83 (2007) New York State Plane Eastern Zone and vertical datum to North American Vertical Datum (NAVD) 88. Elevation will be surveyed to 0.01-foot accuracy.

Groundwater Sampling and Analysis

One set of groundwater samples will be collected from the three new overburden monitoring wells and the following existing monitoring wells as follows:

Overburden	**Bedrock**
MW-01 (upgradient)	MW-15 (upgradient)
MW-02	MW-7
MW-05	MW-11
MW-12	MW-23
MW-13	
MW-17	
MW-18	
MW-22	
MW-24	

Prior to the collection of groundwater samples, groundwater levels will be measured to the nearest 0.01 foot from the well to be sampled using an electronic water level probe. The water level measurements will be recorded from a reference point to be marked on each well casing.

Groundwater samples will be collected using low-flow sampling techniques. The wells will be purged at a flow rate not to exceed 500 milliliters per minute (ml/min) and water quality parameters will be

monitored. The samples will be collected once the water quality measurements have stabilized as outlined below.

- Temperature ± 3% of measurement
- pH ± 0.1 pH units
- Specific conductance ± 3% of measurement
- Redox ±10 mV
- DO ±10% of measurement
- Turbidity ± 10% of measurement

If a stable groundwater level cannot be maintained at a yield of at least 100 ml/min, the well will be dewatered to the intake of the pump and water will be allowed to recover and the groundwater sample will be collected.

Groundwater samples being collected for VOC analysis as part of the semi-annual groundwater monitoring program are being collected using passive diffusion bags (PDBs). New PDBs are placed in the wells following collection of the samples during each event and therefore, are present in the wells. For consistency, the samples to be collected for VOC analysis from the wells that are part of the long-term monitoring program will be collected from the PDBs. Once the PDB has been removed low flow sampling methods will be employed for collection of the samples for the remainder of the analyses.

The collected samples will be submitted to an ELAP-certified laboratory for analysis. The samples will be analyzed for the TCL/TAL analytical suite including TCL VOCs + TICs, TCL SVOCs + TICs, TCL PCBs, TCL pesticides, TCL herbicides, TAL metals, cyanide, and mercury. QC samples will include a field duplicate, Matrix spike (MS) and matrix spike duplicated (MSD). The QC samples will be collected at a frequency of 1 QA/QC set per 20 environmental samples.

The laboratory will provide a data package that meets the requirements of NYS ASP Category B. The package will subsequently be reviewed by a data validator and a Data Usability Summary Report (DUSR) will be prepared.

Table 1 provides a summary of analytical parameters and associated methods, number of samples and associated (QA/QC) samples. Groundwater samples from select overburden and bedrock monitoring wells were previously analyzed for emerging contaminants at the request of NYSDEC. Therefore, these analyses will not be completed on samples collected during this sampling event.

Soil Vapor Sampling

Soil vapor (SV) samples will be collected from 9 locations as shown on **Figure 1**. These locations were selected to be in the same general locations as the SV samples collected in 2009. The sample numbers will also be the same as previously used with the date being the differentiator in the database. Consistent with the 2009 sampling event, SV samples will be collected from 4 to 5 ft below grade using temporary sample probes. Nearby monitoring wells will be gauged prior to advancing each boring to identify the approximate depth to water to confirm that the target sample probe depth will be at least 1 ft above the water table. The SV points will be advanced by hand (slide hammer, drill, or similar) and constructed with a slotted or permeable point attached to tubing. The annular space around the probe will be filled with 60-100 mesh glass beads or clean sand to between 0.5 and 1 foot above the sample point. A hydrated granular bentonite seal will be placed above the glass beads to surface grade to minimize ambient air infiltration.

The soil vapor sampling will be scheduled for at least 12 hours following placement of the probe. Prior to collection of the samples, 1 to 3 volumes of air will be removed from the tubing. Helium tracer gas will then be used to verify that there is no leakage through the surface seal.

The SV samples will be collected from each location using batch-certified SUMMA canisters at a rate of 0.2 L/min maximum for a period of up to 2 hours. For QA/QC purposes 1 ambient air sample and 1 duplicate sample will be collected for analysis. The samples will be analyzed for standard list VOCs by USEPA Method TO-15.

Following sample collection, the tubing will be pulled out or cut off to approximately 8 inches below grade and the surface will be sealed with bentonite.

Air Monitoring

Consistent with the CAMP provided in Appendix 1A of NYSDEC's Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER-10) (NYSDEC 2010), air monitoring will be conducted during advancement of soil borings associated with the monitoring wells. Accordingly, one upwind and one downwind station equipped with PID and particulate monitoring equipment will be housed in enclosures and mounted on tripods. The specific locations of the equipment will be based on wind direction and the location of the potential exposure populations at the time the field activities are completed.

Investigation Derived Waste (IDW) Management

IDW will consist of personal protective equipment (PPE0, tubing, sampler liners, excess soil and water generated during decontamination and well purging. Soil will be placed in DOT-approved 55-gallon drums and staged on the Site pending characterization and off-site disposal. The PPE and other supplies will be disposed as solid waste. Decontamination and well purge water will be transferred to the onsite groundwater treatment plant for treatment.

Table 1
Sample Analysis and QA/QC Summary
Former Accurate Die Casting Site
Fayetteville, NY

Task	Matrix	Analyses	Method	Number of Samples	Trip Blank	Equipment Blank	Field Duplicate	MS	MSD	Estimated Total Number of Samples	Deliverable	Validated (Y/N)
Groundwater	Water	TCL Volatiles + TICs	USEPA Method 8260	15	4	1	1	1	1	23	Category B	Y
		TCL Semivolatiles + TICs	USEPA Method 8270	15	0	1	1	1	1	19		
		TCL PCBs	USEPA Method 8082	15	0	1	1	1	1	19		
		TCL Pesticides	USEPA Method 8081B	15	0	1	1	1	1	19		
		TCL Herbicides	USEPA Method 8151	15	0	1	1	1	1	19		
		TAL Inorganics	USEPA Method 6010	15	0	1	1	1	1	19		
		Cyanide	USEPA Method 9010	15	0	1	1	1	1	19		
		Mercury	USEPA Method 7471	15	0	1	1	1	1	19		

PROPOSED MONITORING WELL
BEDROCK MONITORING WELL
OVERBURDEN MONITORING WELL
ABANDONED OVERBURDEN MONITORING WELL
GROUNDWATER COLLECTION MANHOLE
GROUNDWATER COLLECTION TRENCH
ONONDAGA COUNTY PARCEL BOUNDARY 2022

Notes
- Stream from USGS National Hydrography Dataset.

0 100 200 Feet

PROPOSED MONITORING WELLS

FOUBU ENVIRONMENTAL SERVICES, LLC
REMEDIAL ACTION WORK PLAN
547 EAST GENESEE STREET
FAYETTEVILLE, NEW YORK
SITE NO. C734052

FIGURE 01

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

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- PROPOSED SOIL VAPOR SAMPLE
- BEDROCK MONITORING WELL
- OVERBURDEN MONITORING WELL
- ABANDONED OVERBURDEN MONITORING WELL
- GROUNDWATER COLLECTION MANHOLE
- GROUNDWATER COLLECTION TRENCH
- ONONDAGA COUNTY PARCEL BOUNDARY 2022

Notes
- Stream from USGS National Hydrography Dataset.

0 100 200 Feet

PROPOSED SOIL VAPOR SAMPLE LOCATIONS

FOUBU ENVIRONMENTAL SERVICES, LLC
REMEDIAL ACTION WORK PLAN
547 EAST GENESEE STREET
FAYETTEVILLE, NEW YORK
SITE NO. C734052

FIGURE 02

RAMBOLL AMERICAS
ENGINEERING SOLUTIONS, INC.
A RAMBOLL COMPANY

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