PARSONS

SITE CHARACTERIZATION WORK PLAN

TONAWANDA PLASTICS
EPA ID NYD051816262

Prepared for:

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Parsons PN 449024

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FIGURES

ACRONYMS

Acronym	Definition / Description
Allied	Allied Fibers and Plastics Company (now Honeywell)
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylene
cm/s	Centimeter(s) per second
COC	Contaminant of concern
CRA	Conestoga-Rovers and Associates
CY	Cubic yard(s)
eV	Electrovolt
IDW	Investigation derived waste
PAH	Polycyclic aromatic hydrocarbon
PID	Photoionization detector
ppm	Part(s) per million
PVC	Polyvinyl chloride
RCP	Reinforced concrete pipe
Site	Tonawanda Plastics Site
SVI	Soil vapor intrusion
TCC	Tonawanda Coke Corporation
VOC	Volatile organic compound

1.0 INTRODUCTION

Parsons has prepared this work plan for additional characterization of the Tonawanda Plastics Site in Tonawanda, New York (the Site). This work will be undertaken by Honeywell upon approval by the New York State Department of Environmental Conservation (NYSDEC). The work described in this plan is intended to provide a general assessment of subsurface conditions at potential areas of concern across the Site. A further objective is to better define groundwater flow patterns at the Site.

Based on recent communications between Honeywell and NYSDEC, it is understood that this investigation is intended to be preliminary and will better define areas where additional investigations may be necessary. Further investigations may require the installation of back-hoe dug test pits.

With the approval of NYSDEC, the work proposed in this plan will be initiated. Results of the field activities will be summarized in a report to NYSDEC. Based on subsurface conditions observed during this preliminary investigation, appropriate additional investigations will be proposed.

2.0 BACKGROUND

The Tonawanda Plastics Site (Site) encompasses approximately 17 acres, located at 3821 River Road in Tonawanda, New York (Figure 1). The Site was originally developed by Allied Fibers and Plastics Company (Allied, now Honeywell) in the early 1950s, and was operated as a manufacturing facility through 1982. Site operations included the polymerization of ethylene into low molecular weight polyethylene (trademark: A-C® Polyethylene and Co-polymers) which was finished into powder, pelleted and solid forms. Allied sold the property to Rouse Breihan Inc. in 1985. Several of the Site buildings are currently used for office and laboratory space, vehicle maintenance, and warehousing. Multiple other buildings on the property are unused and unoccupied.

In summer 1981, approximately 500 cubic yards (CY) of coal tar and soils were excavated and removed from the eastern portion of the Site (NYSDEC 2018a). Analytical results of confirmatory soil samples collected following the excavation showed that chemicals of concern (COCs) were non-detect or in low parts per million (ppm) concentrations. NYSDEC informed Allied in October 1981 that no further remediation was necessary.

In 1991, Allied excavated an area at the west end of the property where spent and off-specification batches of magnesium chromate catalyst were disposed. This area has historically been referenced as the blow-down pit. The disposal area was remediated by excavation in 1991. Multiple investigations have been completed since this material was removed, including the installation, monitoring and sampling of 12 groundwater monitoring wells and the investigation and sampling of the 36-inch storm sewer, which traverses the area.

In December 2015, Honeywell submitted an Investigation Summary Report to the NYSDEC (Parsons 2015). This report included the results of surface water, sediment, and groundwater monitoring and sampling from the western end of the Site near the former blow-down pit. Although low levels of COCs were detected in select wells, the report concluded that there were no continuing sources and no evidence to suggest that residual impact in groundwater would migrate offsite.

In October 2017, Honeywell submitted a second Investigation Summary Report to the NYSDEC (Parsons 2017a). This report included the results of surface water and groundwater monitoring and sampling and a soil vapor intrusion (SVI) investigation completed for the building used as offices and laboratories.

3.0 SITE DESCRIPTION

The Site is located along River Road in the Town of Tonawanda, Erie County, New York. There are several other industrial facilities in the area including the TCC facility north and east of the Site. River Road forms the western site boundary, and the Niagara Mohawk Power Corporation (now National Grid PLC) owns and maintains an electrical power transmission corridor to the south.

The closest surface water body to the Site is the Niagara River, which runs approximately 1,500 feet west of the Site.

The Site is situated on a low permeability, silty clay till layer, that is up to 20 feet thick. Perched groundwater on top of this till has been observed within four feet of the ground surface. As reported in the *Remedial Investigation Summary Report Tonawanda Coke Corporation* (Conestoga-Rovers and Associates [CRA] May 1997) there is less than a foot of soil/fill at the surface at the east end of the Site, with the silty clay beneath.

Site COCs have been selected based on the results of previous investigations and historical operations at the Site. COCs include volatile organic compounds (VOCs) (benzene, toluene, ethylbenzene, and xylene [BTEX]), chlorinated VOCs, polycyclic aromatic hydrocarbons (PAHs), chromium and cyanide.

For the purpose of investigation proposed in this work plan, the Site is being divided into three geographical areas (Figure 2). A description of each of the three investigation areas follows.

3.1 East Area

The East Area of the Site is east of the main access road (Figure 2). The approximately 4.2-acre area is currently undeveloped. Historically, railroad tracks traversed the area. Several above-ground storage tank bases are visible in aerial photographs and there is a stack of unknown purpose located in the far east end.

Some information about the underlying geology of the area has been obtained from reports prepared for the TCC property. Three test pits (TP-AA, BB, CC) were excavated near the eastern end of the Site on the TCC side of the property line. The test pits were 1.8,1.4,1.0 feet deep, respectively (CRA 2008). Approximately 0.8 to 1.6 feet of coal fines were described as lying on top of a native reddish-brown clay with traces of silt.

There is a well (MW16-89) on the TCC side of the property line. The ground elevation at the well is 599.9, with the top of clay at 599.0. The well is reportedly four feet deep. The average groundwater elevation from readings taken at this well is 599.5 (at the ground surface).

During a site walk with the NYSDEC in 2016, tar-like material was observed on the ground surface near the access road and the TCC water treatment tanks. Based on historically available documents, 500 cubic yards of material were removed from near a railroad/tank unloading area in this section of the Site in 1981. The exact location of the excavation has not been identified.

3.2 West Area

The West Area of the property occupies approximately 3.3 acres and contains no buildings. The former blow-down pit that was remediated in 1991 is in this area. Additionally, a berm, running parallel to River Road, was constructed near the western property boundary in approximately 2005. A subsurface investigation was completed on the property to support the remediation and subsequent groundwater investigation relating to the blow-down waste pit area. There are 12 groundwater monitoring wells in the area. Drilling records indicated that there is fill overlying a silty clay layer. Groundwater was identified within five feet of the ground surface. A 36-inch-diameter reinforced concrete pipe (RCP) storm sewer traverses the area from south to north. At the request of NYSDEC, influent and effluent samples from the sewer have been analyzed. Additional samples are planned to investigate if this sewer could be a pathway for migration of COCs. On January 31, 2018, NYSDEC and Honeywell agreed to a work plan to further investigate conditions related to the 36-inch sewer (Parsons 2017b).

3.3 Center Area

The approximately 9.6-acre Center Area of the Site is where historical and current plant operations are concentrated. There are approximately 13 buildings and structures in this area. TCC has operations in some of the buildings, including laboratory and office space, storage areas, and equipment repair shops. There are several above-ground storage tanks in the area, which have been present since the late 1950s. The shape and construction of the tanks suggest they were utilized to store pressurized liquids or gases. The only known environmental investigation work completed in the Center Area is a SVI study for the laboratory and office buildings completed in 2016 (Parsons 2017a). No COCs were detected in the office building indoor air at concentrations exceeding the USEPA regional screening levels. Although COCs were detected in the laboratory building indoor air, it is likely that these detections originated from activities conducted in the building, not from sub-slab vapor intrusion. A 48-inch RCP storm sewer traverses the central area of the Site and includes several catch basins. This sewer is believed to tie into the non-contact cooling water discharge from the TCC operations. The outfall of the 48-inch sewer does not appear to daylight.

4.0 OBJECTIVES

Primary objectives being addressed in this work plan include:

- Determining if previously unidentified waste material or grossly impacted soils remain on-site;
- Determining if COCs that may be present in soil, are impacting groundwater;
- Better defining groundwater flow patterns across the Site.

To fulfill these objectives, additional investigation work will be completed across the Site.

5.0 SITE CHARACTERIZATION

5.1 Task 1 – Property Line and Boring Location Surveys

A Site property boundary survey will be completed before the exact boring locations for investigation are determined. A New York State licensed surveyor will complete the survey and mark the property boundary. The surveyor will return after investigation activities are completed to record the location and elevation data for each of the boring and monitoring well locations. Horizontal locations will be measured to the nearest 0.1 foot. Vertical elevations will be measured with respect to the National Vertical Datum of 1988 to the nearest 0.01 foot.

5.2 Task 2 – Soil Borings

A series of direct-push (Geoprobe®) borings will be completed in the East and Center Areas of the Site.

Geoprobe® equipment will be decontaminated prior to use, between borings, and prior to demobilizing from the Site. All downhole equipment will be either cleaned using an Alconox™ wash and clean water rinse or steam cleaned prior to use and between boring locations. Disposable acetate liners will be used for collection of soil cores.

Geoprobe® borings will be advanced to a minimum depth of six inches below the boundary of impacted or fill material and into native materials. In consultation with NYSDEC, the depths may be adjusted based on encountered subsurface conditions. Soil samples will be screened with a photoionization detector (PID) fitted with an 11.7 electronvolt (eV) lamp to detect any VOCs. PID readings will be recorded and included on the boring log. Photographs will be taken of the recovered material. If there are no visible or olfactory indications of contamination or elevated PID readings, the soil cuttings from Geoprobe® locations will be returned to the hole after the boring is complete. Cuttings with signs of contamination will be contained and managed in accordance with Section 5.6, Waste Management.

If elevated PID readings are noted, or there are visual signs on contamination, soil samples will be collected and analyzed for the site COCs.

If apparent impact (i.e., as determined by visual, olfactory, or PID deflection), is <u>not</u> detected at any of the proposed boring locations, representative soil samples from twenty percent of the borings will still be retained and sent to a New York State approved laboratory for analysis of chemicals of concern. The exact sample locations and intervals selected, retained, and submittal to the laboratory will be determined in the field, as concurred to by the NYSDEC field representative and Honeywell's environmental contractor.

Up to 21 borings will be completed in the East Area. The locations of the borings will be determined in the field, based on observed conditions. The boring locations will be targeted to areas where historical operations were identified, including the former tank locations, railroad areas, and the stack. Borings in the east end will be distributed to cover the full area. Borings will not be placed within areas where grossly contaminated material has been observed on the surface (i.e., tar boils) but will be placed around those areas to define the lateral extent of the wastes and related COCs. Preliminary

boring locations in the East Area are identified on Figure 3. As noted above, these locations are subject to revision based on field observations.

Up to 10 borings will be completed in the Center Area of the Site. Borings will be concentrated around the former gas holder identified in the northeast corner of the area. Preliminary boring locations in the Center Area are identified on Figure 4. These locations are subject to change based on field observations.

No borings are planned for the West Area of the Site. Because of the topography in this area (steep slopes and near flowing water), it is unreasonable to complete the investigation via Geoprobe. Parsons will use hand tools to clear brush and remove accumulated debris which may mask visible indications of impact near the 36-inch sewer outlet (Figure 5). If there is visible evidence of tar like material, Parsons will use hand tools to delineate the extent of the material within 10-feet of the outfall pipe and within the limits of the property boundary. No samples will be collected in this area.

5.3 Task 3 – Groundwater Monitoring Well

Two groundwater monitoring wells (MW-13, MW-14) will be installed in the Eastern Area of the Site (see Figure 2). The exact locations are subject to change based on field conditions. Since these wells are intended to provide groundwater samples from the same zone as the existing wells, the maximum depth for these well is 15 feet. The well will be constructed in a manner consistent with existing wells.

Prior to the installation of the wells, Dig Safely New York (811) will be contacted for utility marking, and a private underground utility locator will be retained to use geophysical methods to screen the proposed drilling location for underground hazards. Potential overhead hazards (e.g., overhead power lines) will be identified. The upper five feet of the well boring will be excavated using a soft-dig techniques or hand tools.

Below the depth of five feet, the boring will be advanced using hollow-stem auger drilling methods. Split-spoon samples will be continuously collected to classify the soil and identify potential water-bearing zones. Soil samples will be screened with a PID fitted with an 11.7 eV lamp to detect any VOCs. PID readings will be recorded and included on the boring log. If elevated PID readings are noted, there are olfactory indications of contaminants, or if visible contamination is found, a soil sample will be collected and submitted to the laboratory for analysis of Site COCs.

Wells will be drilled to a depth of five feet below the first encountered saturated zone (maximum of 15 feet below ground surface [bgs]). Final depths may be adjusted depending on subsurface conditions.

Monitoring wells will be constructed as follows:

- A two-inch-diameter polyvinyl chloride (PVC) screen and riser with 0.01-inch slotted screen will be installed. The screen will be up to ten feet long and will be installed at a depth that will allow groundwater collection. The screen will be placed to straddle the first encountered saturated zone.
- A sand pack of 00-size sand will be placed around the screen, extending to one foot above the screen. A bentonite seal with a minimum thickness of two feet will be installed on top of the sand pack. Above the seal, a cement/bentonite mixture

will be tremie grouted in place to a depth of approximately 1-foot bgs. The top 1 foot will be backfilled with native soil.

- The well will be completed with a steel above-ground (stickup) protective casing cemented into the ground and equipped with a locking cap.

5.4 Well Development

Following installation, the new wells will be developed prior to sampling. Development will be accomplished using a submersible pump and surging techniques. Development will be continued until pH, temperature, specific conductance, and water clarity (turbidity) stabilize or for a maximum of one hour.

A development record will be completed in the field and will include the following:

- Well number, date, and time of development;
- Development method;
- Pre-development water level and well depth;
- Development flow rate and water level measurement taken every five minutes;
- Volume and description of water produced; and
- Field analytical measurements, including pH, temperature, and specific conductance.

5.5 Groundwater Sampling

Parsons will complete one round of groundwater sampling of the new wells. Sampling will begin a minimum of one week following installation and development of the monitoring wells.

Two rounds of groundwater level monitoring will be completed following well installation. The first monitoring event will occur at the time of groundwater sampling. The second event will occur approximately three weeks later. Water levels in all 14 groundwater monitoring wells will be recorded.

Groundwater samples will be submitted to a NYSDEC Environmental Laboratory Accreditation Program certified laboratory for analysis of Site COCs. Groundwater samples will be collected using low-flow sampling techniques in accordance with the methods provided in NYSDEC Technical Guidance for Site Investigation and Remediation (DER-10) and consistent with the 2015 investigation. Field parameters such as dissolved oxygen, pH, oxidation reduction potential, specific conductance, temperature, visual appearance, and depth to water will be recorded during monitoring well purging to establish when parameter stabilization has occurred. The stabilized values for these parameters will also be recorded on field forms.

After stabilization is achieved, or after a maximum of one hour of purging, samples will be collected for the laboratory analyses listed above. All samples will be shipped to the laboratory within required holding times using an overnight carrier (or laboratory courier service). All samples will be stored on ice prior to and during shipping.

5.6 Waste Management

Investigation derived waste (IDW) may include residual soil generated during intrusive sampling, equipment decontamination rinse water, groundwater from well development, purging and sampling, and personal protective equipment and sampling materials.

Any IDW generated during investigation activities will be collected in UN[1]1A2 drums and staged onsite. A sample of the soils and groundwater will be collected and submitted for waste characterization followed by appropriate disposal.

5.7 Health and Safety

The Project Safety, Health and Environmental Plan will be revised, as necessary, to include this new work. Parsons will also conduct daily health and safety tailgate meetings prior to each field event.

Prior to starting any subsurface work, Dig Safely New York (811) will be notified to identify and mark underground utilities or structures near the planned work. Parsons will work with the property owner to review existing plans of underground utilities in the investigation areas. A third party will be retained to complete a field survey for the presence of underground utilities at the proposed boring and well installation locations.

[1] UN – United Nations

6.0 ANALYTICAL DATA MANAGEMENT

Groundwater, soil, and waste samples will be collected from Site. These samples will be analyzed using the USEPA SW-846 "Test Methods for Evaluating Solid Waste," November 1986, 3rd edition (and subsequent updates) and other USEPA methods (USEPA, 1983, 1992, 1995). VOCs will be analyzed using method 8260C. SVOCs including PAHs will be analyzed using method 8270D. Inorganics will be analyzed using method 6010C. Laboratories will have New York State Department of Health (NYSDOH) Environmental Laboratory Accreditation Program (ELAP) certification for all analyses pertaining to solid and hazardous waste categories. All samples collected for analytical testing will be packaged, placed on ice and transported to TestAmerica Laboratories, Inc. in Amherst NY (NELAP No.10026).

Field quality control (QC) samples will also be collected during the groundwater sampling events. One each of duplicate and matrix spike/matrix spike duplicate (MS/MSD) samples will be collected to meet the frequency requirements of one for every 20 or fewer samples. Each duplicate and MS/MSD water sample will be collected concurrently with, and by the same method as, the primary sample.

A data usability summary report (DUSR) will be completed for the groundwater and soil sampling results in accordance with the NYSDEC's DUSR guidelines (DER-10). The DUSR will be developed by reviewing and evaluating the analytical data package. Data packages will be reviewed and evaluated for items such as completeness, holding times, compliance with QC limits and specifications, analytical protocols, raw data conversion to correctly summarized results, and confirmation that the correct data qualifiers have been used. If the DUSR indicates problems with some or all of the data in the package, the data will be either rejected or validated to determine if it can be used. The DUSR will discuss data deficiencies, analytical protocol deviations, and QC problems and the effect on the data. Recommendations on re-analysis and/or re-sampling will be included, if needed.

The electronic data management systems will be implemented to process the information effectively without loss or alteration. As of April 1, 2011, the New York State Division of Environmental Remediation (DER) has implemented an Environmental Information Management System (EIMS). The EIMS uses the database software application EQuIS™ from EarthSoft® Inc. To improve the management of environmental data and reduce paper quantities, all laboratory analytical data minus instrument raw data must be submitted in the DEC-approved Electronic Data Deliverable (EDD).

7.0 REPORT PREPARATION

Data obtained during the field investigations identified in this scope of work will be compiled, evaluated, and summarized. A Preliminary Site Characterization Report will then be prepared following completion of the investigations and receipt of analytical data. This report will document the investigation activities specified in this work plan and include written logs and photographs of each of the borings, mapping of the boring locations, and a summary of the visual observations made in each of the investigation areas.

8.0 REFERENCES

CRA, 1997. Remedial Investigation Summary Report Tonawanda Coke Corporation, Conestoga-Rovers and Associates, May 1997.

CRA, 2008. Final Supplemental Report, Revision 1 and Feasibility Study, Tonawanda Coke Corporation, Conestoga-Rovers and Associates, January 2008.

Parsons, 2015. Investigation Summary Report – Tonawanda Plastics Site EPA ID NYD051816262, Parsons Inc. December 2015.

Parsons, 2017a. Investigation Summary Report – Tonawanda Plastics Site EPA ID NYD051816262, Parsons Inc. October 2017.

Parsons, 2017b. Storm Sewer Investigation Work Plan – 36-inch Storm Sewer, Tonawanda Plastics Site, Parsons Inc. December 2017.

NYSDEC, 2018a. Environmental Site Remediation Database; Site Name Allied Chemical – Special Chem Div, Site No 915003B.

NYSDEC, 2018b. Environmental Site Remediation Database; Site Name Allied Chemical – Special Chem Div., Site No 915003C.

FIGURES

HONEYWELL TONAWANDA PLASTICS SITE
3821 RIVER ROAD, TONAWANDA, ERIE COUNTY, NY

FIGURE 1

SITE LOCATION MAP

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730

451048.01101
P:\HONEYWELL_TONAWANDA_PLASTICS\CAD\HONEYWELL_TONAWANDA_SET_011718/HONEYWELL_TONAWANDA_SLM_011718(1).dwg

LEGEND

- PROPOSED SOIL BORING LOCATION
- PROPOSED GROUNDWATER MONITORING WELL LOCATION

150' 75' 0 150'

Approximate Scale in Feet

N

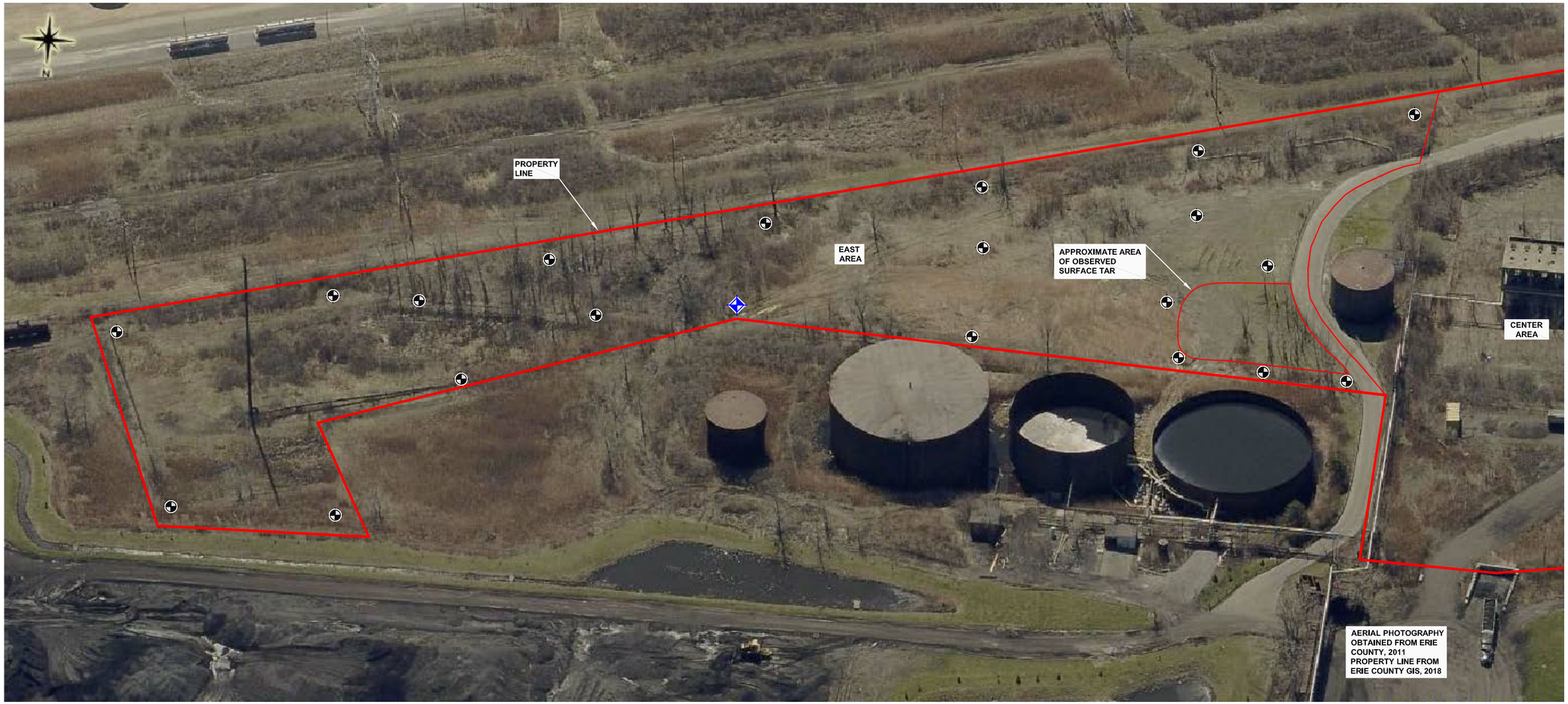
HONEYWELL TONAWANDA PLASTICS SITE
3821 RIVER ROAD, TONAWANDA, ERIE COUNTY, NY

FIGURE 2

SITE PLAN WITH INVESTIGATION AREAS AND PROPERTY LINE

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO, NEW YORK 14202 PHONE: 716-541-0730

451048.01101
P:\HONEYWELL_TONAWANDA_PLASTICS\CAD\HONEYWELL_TONAWANDA_SET_011718/HONEYWELL_TONAWANDA_SITE_with_Invest_Areas_&PL_011718(2).dwg



LEGEND

PROPOSED SOIL BORING LOCATION

PROPOSED GROUNDWATER MONITORING WELL LOCATION

100' 50' 0 100'

Approximate Scale in Feet

HONEYWELL TONAWANDA PLASTICS SITE
3821 RIVER ROAD, TONAWANDA, ERIE COUNTY, NY

FIGURE 3

EAST AREA SITE PLAN

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730

451048.01101
P:\HONEYWELL_TONAWANDA_PLASTICS\CAD\HONEYWELL_TONAWANDA_SET_011718/HONEYWELL_TONAWANDA_EAST_AREA_031318(3).dwg

LEGEND

- PROPOSED SOIL BORING LOCATION
- PROPOSED GROUNDWATER MONITORING WELL LOCATION

100' 50' 0 100'

Approximate Scale in Feet

N

HONEYWELL TONAWANDA PLASTICS SITE
3821 RIVER ROAD, TONAWANDA, ERIE COUNTY, NY

FIGURE 4

CENTER AREA SITE PLAN

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO. NEW YORK 14202 PHONE: 716-541-0730

451048.01101
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100' 50' 0 100'

Approximate Scale in Feet

HONEYWELL TONAWANDA PLASTICS SITE
3821 RIVER ROAD, TONAWANDA, ERIE COUNTY, NY

FIGURE 5

WEST AREA SITE PLAN

PARSONS
40 LA RIVIERE DRIVE, SUITE 350, BUFFALO, NEW YORK 14202 PHONE: 716-541-0730

451048.01101
P:\HONEYWELL_TONAWANDA_PLASTICS\CAD\HONEYWELL_TONAWANDA_SET_011718/HONEYWELL_TONAWANDA_WEST_AREA_031318(5).dwg