REMEDIAL ACTION PLAN

APPLETON WIRE (FORMER)
908 N. LAWE STREET
APPLETON, WI 54911
BRRTS# 02-45-000015

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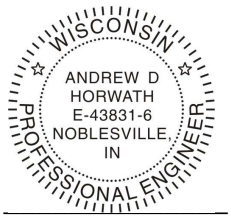
CERTIFICATIONS

I, Andrew Horwath, hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the Rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.



Andrew D. Horwath

Senior Engineer, Lic. No. E-43831-6

Signature, title and P.E. number

P.E. stamp

I, Wayne Fassbender, hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03 (1), Wis. Adm. Code, am registered in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code, or licensed in accordance with the requirements of ch. GHSS 3, Wis. Adm. Code, and that, to the best of my knowledge, all of the information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Wayne P. Fassbender

Senior Project Manager — 4/10/2019

Signature and title — Date

EXECUTIVE SUMMARY

Chrome plating operations at the former Appleton Wire property were performed by Albany International Corp. (Albany) from 1963 to 1981. An eastern portion of the facility (now a warehouse) housed the chrome plating operation. The operation was discontinued in 1981 and the chrome plating equipment was dismantled and sold in 1982 as part of the decommissioning process. In 1985, the facility was sold to new owners. A portion of the facility including the attached warehouse is now owned by Luvata Appleton, LLC (Luvata) and the warehouse is used for storing spools of raw manufacturing materials (metal wire), and recyclable metal scrap. The southern portion of the property is owned by Appvion, Inc.

From 1985 to present, several rounds of subsurface investigations were performed by multiple consultants to better determine the extent of chromium impacts in soil and groundwater. The extents of chromium impacts in soil and groundwater have been determined. Soil and groundwater impacts are limited to the original property boundaries with minor detections in Meade Street, and are largely limited to areas inside the warehouse and under the concrete slab to maximum depths of between 15-20 feet.

Relatively low concentrations of chlorinated volatile organic compound (CVOCs) were identified within the warehouse area and active manufacturing facility, mostly in groundwater. The detections are sporadic and do not demonstrate an explicit source area. Rather, these detections are attributed to cleaning and degreasing solutions which contained these compounds as active ingredients and were used to clean machinery. There are no plans to target the CVOCs for active remediation. In the areas where active remedial measures are planned for hexavalent chromium, the remedial products proposed for treating the chromium will have the added benefit of reducing the concentrations of CVOCs through the process of reductive de-chlorination. High purge volume sub-slab sampling will be performed within the active manufacturing area following remedial activities to determine if there is a risk of vapor intrusion.

Subsurface data collected over the years indicates that the releases to the subsurface of chromic acid containing hexavalent chromium have occurred along deteriorated sections of the supply piping and associated concrete secondary containment piping chase. Additional releases occurred within the partial basement that housed the supply tanks for the chromic acid. Most lateral distribution has occurred along man-made artificial pathways such as areas of sandy building fill and old chromic acid supply piping runs. Air scrubbing units designed to remove chromium vapor from work areas inside the warehouse were located outside on the north and

south sides of the warehouse. Localized leakage from these air scrubbing units likely contributed to the impacts seen outside to the north. Spread of impacts to a small area outside the warehouse to the south is not anticipated to be associated with the former air scrubbing unit located in this area because soil impacts are deeper and were not detected in the shallow soils. This area of impact is believed to be associated with transport of contaminated groundwater within the granular fill material adjacent to basement walls and connective fill located beneath and around the warehouse foundation which acted as a preferential migration pathway.

A groundwater recovery and treatment system was installed by STS Consultants, Inc. in 1988 to collect and treat groundwater from a sump in the partial basement. This system was enhanced in 1992 to include a French drain and groundwater collection trench located outside on the north side of the warehouse. The treatment system has removed approximately 900 pounds of chromium over time from localized groundwater near the recovery trench and basement sump. However, it is not applicable for removing chromium from unsaturated soil, and will not reduce chromium concentrations in the overall groundwater plume to a significant extent over a reasonable period of time. Therefore, it is not cost effective to continue operation and it is recommended that the groundwater pump and treat system be decommissioned during the active remediation phase.

Native soil consists of a thick and relatively uniform blanket of lean clay having trace sand deposited in a glacio-lacustrine environment. The clay soil overlies dolomite bedrock which is encountered at approximately 120-130 feet below ground surface (bgs). The clay soil is of very low permeability and does not readily transmit water. The water table in the clay soil is encountered between 3-6 feet bgs at the Site. The presence of buildings and paving over most of the Site limits infiltration of rain water, which protects against direct contact human exposure, limits flushing of chromium in unsaturated soil to the water table, and reduces the hydraulic gradient which in turn reduces the potential for groundwater and contaminant migration. These pre-existing “engineered barriers”, along with institutional controls such as groundwater use restrictions, will be utilized as part of the Site closure strategy to protect against human exposure to Site contaminants and limit infiltration of rain water. However, active remedial measures are necessary to reduce the overall mass of contaminants.

The remedial goals include reducing the concentration of total chromium in groundwater to below the regulatory enforcement standard (ES) of 100 micrograms per liter (µg/l), and reducing the concentration of hexavalent chromium in unsaturated soil to levels below the soil to groundwater residual contaminant level (RCL) of 3.84 mg/kg.

Pilot testing was performed to determine the effectiveness of injected amendments to reduce hexavalent chromium in groundwater to trivalent chromium and then fixate the trivalent chromium by producing insoluble and immobile precipitates such as chromium hydroxides and iron-chromium hydroxide co-precipitates. Pilot testing was performed in areas of highest groundwater impacts. Two commercially available products, one produced by Regenesis® and one produced by Provectus Environmental Products® were tested. Each of the products contained various electron donors and iron to create subsurface reducing conditions and provide a source of iron for chromium sequestration. Both products performed well, with reductions of chromium in observation wells to concentrations below the ES, and in some locations below the groundwater preventative action limit (PAL).

The Remedial Action Options Report (RAOR), dated January 16, 2018, presented four options ranging from the least costly and disruptive first option which included the installation of a down-gradient permeable reactive barrier; to the fourth option with the greatest cost which included excavation of all soil with elevated chromium concentrations and subsequent landfilling. Options 2 and 3 included variations on excavating and disposal of unsaturated soil in some locations, on-site treatment of unsaturated soil in some locations, and injections of reagents below the water table in some locations. All treatment-related actions for unsaturated soil involved ex-situ or in-situ blending with a reducing agent such as zero-valent iron (ZVI) to convert the hexavalent chromium to trivalent chromium to form insoluble chromium hydroxide precipitates and iron-chromium complexed precipitates. All proposed injections included the same type of reducing agents performing the same stable chemical reactions below the water table.

Since producing the RAOR, the remedial approach has been refined to accommodate site access constraints, address difficulties with excavating and ex-situ treatment of unsaturated soil, and now includes methods that will result in more uniform treatment of unsaturated soil. The proposed remedial methods include in-situ soil blending with ZVI to a depth of six (6) feet within the warehouse and in-situ soil blending to a depth of 15 feet within the area of impacts outside the warehouse to the north. Height restrictions within the warehouse limit the size of equipment for blending; therefore, injection methods will be utilized to distribute reagents below the water table from 6-20 feet below grade within the warehouse area. Injection methods will also be utilized to treat impacts below the water table from 5-20 feet below grade in the limited area of impacts located outside the warehouse to the south.

Soil sampling will be performed initially along the perimeter of the soil blending zones in areas previously identified as having high concentrations of hexavalent chromium to determine residual concentrations in untreated soil. Additional samples will be collected within the blending zones after the blending process has been completed to determine the effectiveness of treatment. Select monitoring wells that are abandoned as part of soil blending activities will be replaced and sampled for two (2) years after an initial waiting period of six (6) months to determine the effectiveness of groundwater treatments. If significant reductions have been achieved with no significant rebound of chromium concentrations in groundwater, Site closure will be pursued. It is anticipated that continuing obligations including cap maintenance will be required as a condition for Site closure.

1.0 INTRODUCTION

EnviroForensics, LLC (EnviroForensics) has prepared this Remedial Action Plan (RAP) on behalf of Albany International Corp. (Albany) pertaining to recommended remedial actions to reduce concentrations of hexavalent chromium within the subsurface at their former chrome plating facility located at 908 N. Lawe Street, Appleton, Wisconsin (Site). The location of the Site is shown on **Figure 1**. The goals of the proposed remedial actions are to reduce concentrations of chromium in groundwater to below the enforcement standard (ES) of 100 micrograms per liter (µg/l), and to reduce concentrations of hexavalent chromium in unsaturated soil to below the soil to groundwater Residual Contaminant Level (RCL) of 3.84 milligrams per kilogram (mg/kg). This Report follows guidelines for remedial action design set forth in Wisconsin Administrative Code (WAC) Chapter NR 724 rule and other associated State of Wisconsin Chapter NR 700 series rules.

This RAP follows submittal of the initial Site Investigation Report (SIR), dated October 19, 2017, the Remedial Action Options Report (RAOR), dated January 16, 2018, and a Supplemental Site Investigation Report (SSIR), dated October 22, 2018. This RAP contains supplemental information requested by the Wisconsin Department of Natural Resources (WDNR) in its letter response to the RAOR, dated April 12, 2018, which could only be presented following the completion of remedial pilot testing. The results of pilot testing are included in this report.

The proposed remedial actions require a temporary exemption to the requirements of WAC Chapter NR 140, and coverage under a Wisconsin Pollutant Discharge Elimination System (WPDES) general permit. The application for such will be submitted under separate cover. In addition, a Public Participation Plan as required by WAC Chapter NR 714 will be developed and submitted under separate cover.

2.0 BACKGROUND AND CURRENT CONDITIONS

2.1 Site and Surrounding Property Information

The Site is situated in a mixed area of industrial and residential properties as seen on the aerial photograph, **Figure 2**. Currently, the Site is owned by Luvata Appleton, LLC (Luvata) and consists of one (1) single-story slab-on-grade manufacturing building of approximately 42,500 square feet and an attached warehouse of approximately 10,500 square feet. The warehouse is mainly concrete slab on grade; however, there is a partial basement in the southeast corner that has an approximate area of 1,300 square feet and is 11 feet below grade (**Figure 3**). The basement, which was constructed after the warehouse was built, has poured concrete walls and floor slab. As seen on **Figure 2**, the Site is nearly completely under roof or paved. Adjacent properties to the north, west, and south are industrial, while adjacent properties to the east are residential.

2.2 Site History

A portion of the Site was operated for chrome plating by the Appleton Wire Division of Albany International Corporation from 1963 to 1981. The eastern portion of the facility (now a warehouse) housed the chrome plating operation. The main plating line was located in the southern half of the warehouse and a secondary plating line was located in the north half of the warehouse. The operation was discontinued in 1981. The chrome plating equipment was dismantled and sold in 1982, and the warehouse was de-contaminated by washing with an acidified surfactant solution as part of the decommissioning process. In 1985, the northern portion of the facility including the warehouse was sold to Valley Cast. The southern portion of the facility including an office building and parking lot were sold to Appleton Papers. Valley Cast sold their portion of the property to Luvata Appleton, LLC in 2006.

In 1985, a sump pump failed and flooding occurred in the partial basement of the warehouse. Facility employees of Valley Cast noticed that the water was tainted yellow and notified Albany International. Initial testing showed that the water was contaminated with chromium. A groundwater recovery and treatment system was subsequently installed to collect and treat groundwater from the sump. This system was enhanced in 1992 to include a French drain and groundwater collection trench located outside on the north side of the warehouse.

From 1985 to 2018, several rounds of subsurface investigations were performed by multiple consultants to better determine the extent of chromium impacts in soil and groundwater. During these investigations, relatively low concentrations of chlorinated volatile organic compounds (CVOCs) were detected in sub-surface soil and groundwater beneath the facility. In 2018, the extent and magnitude of chromium and CVOC impacts were determined.

2.3 Hydrogeology

Soil beneath the Site consists of a relatively homogenous blanket of massive reddish-brown lean clay, having trace amounts of sand to the maximum sampling depth of 60 feet. This fine-grained soil was deposited in a glacio-lacustrine environment. The clay soil is of very low permeability and does not readily transmit water. Discontinuous seams of clayey, medium to coarse sand and fine to medium gravel were observed in boring MW-19C [(14-inches thick at a depth of 35 feet below ground surface (bgs)], and MW-24A (4-feet thick at a depth of 32-36 feet bgs). Based on the boring logs of past consultants, there appears to be some sand and gravel fill within a few feet of the warehouse foundation. In addition, 2-3 feet of sand and fine gravel fill was observed in soil samples collected behind the east and south concrete basement walls. The basement was constructed after the warehouse was built. As such, similar fill materials on all sides of the basement are expected. The clay soil overlies dolomite bedrock which is encountered at approximately 120-130 feet bgs.

The shallow water table is encountered at the Site within the glacial clay overburden at between approximately 3-6 feet bgs. Recharge of groundwater to Site monitoring wells is extremely slow due to the very low hydraulic conductivity of the clay soil. Horizontal hydraulic conductivity values for the clay based on slug test data ranged between 9.7×10^{-6} and 1.4×10^{-7} centimeters per second, decreasing with depth. The horizontal groundwater flow velocity is estimated at between 1.6 feet per year for the upper 20 feet of saturated soil and 0.023 feet per year for the silty clay below 20 feet considering the current hydraulic gradient (induced by the existing pump and treat system) of 0.016 feet per foot. The movement of hexavalent chromium groundwater impacts will be at a lower velocity due to retardation factors which have not been calculated at this time. Vertical hydraulic gradient values of between 0.34 to 0.73 feet per foot were measured between water table observation wells and piezometers. The clay soil has a vertical permeability of 1.39×10^{-8} centimeters per second determined by flexible wall hydraulic conductivity testing performed on a Shelby tube sample.

Groundwater in the unconsolidated clay is unconfined and not a useable resource for domestic applications. Pumping in the sump and French drain affect localized groundwater flow and directs flow towards them (**Figure 4**). However, groundwater flow within the Site area is to the southeast based on several past measurements taken at monitoring wells located away from the localized influence of the groundwater pump and treatment system.

2.4 Nature and Extent of Impacts

A composite of both total chromium and hexavalent chromium impacts in soil can be seen on **Figure 5.** The extent of total chromium impacts in groundwater can be seen on **Figure 6**. The primary Site contaminant of concern (COC) is hexavalent chromium, which is highly mobile and toxic. The other form of chromium existing in the natural environment is trivalent chromium. The concentrations of trivalent chromium in soil do not pose a direct contact risk, and is not considered a significant contributor to groundwater impacts because it is relatively insoluble. A secondary COC are the CVOCs detected in soil and groundwater.

Releases to the subsurface of chromic acid containing hexavalent chromium occurred during past chrome plating operations. Subsurface data indicates that releases of chromic acid to the subsurface have occurred primarily within the footprint of the two plating lines in the warehouse, along deteriorated sections of the supply piping and associated concrete secondary containment raceways, and within the partial basement that housed the supply tanks for the chromic acid. Air scrubbing units designed to remove chromium vapor from work areas inside the warehouse were located outside on the north and south sides of the warehouse. Leakage from these units likely contributed to the impacts seen outside to the north. The spread of chromium impacts to a small area outside the warehouse to the south is not anticipated to be associated with the former air scrubbing unit located in this area because soil impacts are deeper. This area of impact is believed to be associated with transport of contaminated groundwater within the granular fill material adjacent to basement walls and connective fill located beneath and around the warehouse foundation which acted as a preferential migration pathway.

Relatively low concentrations of CVOCs were detected in soil and groundwater within the warehouse and also the eastern portion of the Luvata active manufacturing building (**Figures 7** and **8**, respectively). The source of CVOC detections in the subsurface is not known and according to Luvata and Albany officials, they did not use chlorinated solvents in their manufacturing processes at the Site. It is anticipated that the presence of CVOCs in the subsurface is likely associated with past use of cleaning solutions containing tetrachloroethene

(PCE) and/or trichloroethene (TCE) as active ingredients for degreasing of tools or general equipment cleaning. The cleaning solutions may have entered the subsurface through cracks, joints, or other penetrations in the floor slab as the cleaning compound splashed off equipment and spilled onto the floor.

2.4.1 Soil Impacts

Figure 9 shows the extent of hexavalent chromium in soil. Iso-concentration lines of 1, 5, 50, 100, and 150 mg/kg are presented on this figure to show the distribution of hexavalent chromium impacts. The extent of hexavalent chromium in soil depicted on this figure approximately mimics the extent of both total and hexavalent chromium depicted on **Figure 5**. The vertical extent of hexavalent chromium impacts has been limited due to Site soil of very low vertical permeability. **Figure 10** shows the lines of transect for the geologic cross-sections. The vertical extent of hexavalent chromium is limited to the upper 15-20 feet of soil as can be seen on the geologic cross sections presented on **Figures 11, 12,** and **13**.

As seen on **Figure 5**, hexavalent chromium impacts in the top four (4) feet of shallow soil at concentrations exceeding the industrial direct contact RCL are limited to areas within the warehouse, the warehouse basement, and an area near the former air scrubbing unit outside of the warehouse to the north. These areas are currently paved to prevent exposure.

A major source area for the CVOC impacts was not identified beneath the building and the detections of CVOCs in soil are limited and sporadic. As seen on **Figure 7**, low concentrations of cis-1,2-dichloroethene were detected in soil samples collected from inside the active manufacturing area at GP-36, GP-37, and GP-41. A low concentration of TCE, below the limit of quantitation, was detected at boring GP-40. PCE was detected in soil at one (1) location (MW-25A) inside the warehouse.

2.4.2 Groundwater Impacts

The extent of chromium impacts in groundwater roughly mimics the distribution of chromium in soil (**Figure 6**). The greatest concentrations of chromium in groundwater are below the warehouse and warehouse basement area. Chromium concentrations exceeding the ES are limited to the Luvata property, a small area of the Appvion, Inc. property, and the Meade Street right-of-way just off the southeast corner of the warehouse. The extension of groundwater impacts to the area outside of the warehouse near MW-5 is likely due to sand and gravel fill

around the basement. This fill appears to extend around the outside foundation of the warehouse in the area of MW-5 and could have acted as a preferential migration pathway for groundwater impacts from within the warehouse to this outside area.

The vertical extent of chromium impacts in groundwater above regulatory standards diminishes rapidly with depth, and is generally limited to the depth of water table observation wells which are screened between 4-21 feet bgs. There were no detections of chromium above the ES in piezometers screened between 30-40 feet bgs.

Various CVOCs were detected in the shallow groundwater as can be seen on **Figure 8**. PCE was detected in new temporary well TW-1 at a concentration of 49.8 µg/l, which exceeds the ES of 5.0 µg/l. The only other detection of PCE was in past analysis of groundwater in monitoring well MW-19 on August 31, 2017 at a concentration of 28.5 µg/l. TW-1 and MW-19 contained TCE at concentrations of 60.3 and 5.7 µg/l, respectively which are above the ES for TCE of 5 µg/l. Dichloroethene and vinyl chloride, which are typically degradation products of PCE and/or TCE, were detected in concentrations exceeding the ES for these compounds at monitoring wells TW-1, TW-2, TW-6, MW-21, MW-25, and MW-26.

The lateral extent of CVOC impacts in groundwater has been defined to the extent practical and appears limited to shallow groundwater within an eastern portion of the manufacturing area and a western portion of the warehouse. Vertical migration has not significantly occurred as indicated by no detections above laboratory detection limits in deeper groundwater at wells MW-19A, MW-21A, MW-25A, and MW-26A.

3.0 REMEDIAL PILOT TEST

3.1 Introduction

A pilot test was performed during the last week of April, 2018 to determine the treatability of groundwater contaminated with hexavalent chromium. The target compound for treatment is hexavalent chromium, identified in Site groundwater at concentrations up to 331milligrams per liter (mg/L). The target treatment zone was 8 to 23 feet below the warehouse floor slab.

The test included injecting two (2) different remedial solutions in two (2) separate areas of groundwater impacts within the warehouse area. These areas are shown on **Figure 14**. Additional observation wells OW-1 through OW-3 were installed to supplement existing groundwater monitoring wells in these areas (refer to well construction logs in **Appendix A**).

3.2 Objectives

In general, specially formulated remedial products were tested to determine their ability to produce subsurface conditions supportive of reducing hexavalent chromium to trivalent chromium with subsequent sequestering of the trivalent chromium through the production of insoluble and immobile hydroxide and chromium-iron hydroxide complexed precipitates. In addition, injection locations were selected at various distances to groundwater monitoring wells for the purpose of providing information regarding the effective radius of injection influence.

Product A is a proprietary reagent manufactured by Provectus Environmental Products, Inc.® (Provectus) that contains multiple organic carbon sources and micro-scale zero-valent iron (ZVI). Product B, also a proprietary reagent mixture, contains liquid iron and an electron donor emulsion manufactured by Regenesis®. Both products contained organic energy sources to stimulate growth of subsurface anaerobic microbial populations and iron compounds to support depletion of oxygen and enhancement of subsurface reducing conditions to facilitate the biotic and chemical/abiotic treatment of chromium.

3.3 Procedures

Injections occurred through direct-push rods with a retractable two-foot long section that exposed an inner rod having open holes for injection of remedial fluids. The injection tool used is similar to http://ectmfg.com/product/2-25-retractable-injection-tool-24-exposed/. The direct-

push tooling was removed from each location after the prescribed volume of solution was injected, and the boreholes were abandoned in accordance with Chapter NR 141.25 and patched with concrete (refer to borehole abandonment forms in **Appendix B**).

Product A was injected in the northern portion of the warehouse and Product B was injected in the southern portion of the warehouse at the points shown on **Figure 14**. The solutions were injected from bottom to top in roughly 2-foot intervals.

Product A was injected into nine (9) direct-push injection points designated IP-9 through IP-17 as shown on **Figure 14**. The solution was injected from 8 to 23 feet bgs at each point. Approximately 120 gallons of solution per point were injected.

Product B was injected into eight (8) direct-push injection points designated IP-1 through IP-8 as shown on the attached **Figure 14**. The solution was injected from 10 to 20 feet bgs at each point. Approximately 248 gallons of solution per point were injected.

3.4 Delivery and Loss of Product

During the injections limited daylighting occurred with Product B in most injection points of the southern pilot test area. "Daylighting" refers to injected product that takes a preferential path of least resistance along the drill rods and exits at the surface. This typically occurs in low permeability soil, such as that which exists at the Site. The daylighted product was collected with a shop vacuum and placed in a 55-gallon drum for sampling and disposal. Approximately 25-30 gallons of Product B were recovered from daylighting.

Daylighting of Product A occurred along an approximate 10-foot length of the north wall where the floor slab met the outside footing. The total amount of daylighted product at this location was between 25-30 gallons. However, significant short circuiting of Product A occurred with injection points near well MW-20 and in close proximity to the former chromium supply piping trench shown on **Figure 14**. The product short circuited into the buried piping chase, where it followed the piping chase back to the basement area, cascaded down the north wall of the basement, and onto the floor. This material continued weeping out of the piping chase for several days following injections and was vacuumed off the floor of the basement and placed in 55-gallon drums for sampling and subsequent disposal. Approximately 100 gallons of Product A were collected from the basement.

Product A injected with much less daylighting around the drill rod than that which occurred with Product B. This was likely due to the relative amounts of product injected as specified by the manufacturers. The manufacturer's designs called for approximately 2,000 gallons of Product B versus 1,000 gallons of Product A. Groundwater mounding was observed to occur in both injection areas and the greater amount of Product B in the southern injection zone likely caused the issues with daylighting. Injection pressures in both areas were similar and ranged roughly between 30-65 pounds per square inch (psi) as seen in the application charts below.

Provect-IRM Injections (Product A)			
Injection Point	**Injection Pressure**	**Flow Rate**	**Gallons Injected**
IP-9	43.6	4.7	120
IP-10	30.8	3.7	136
IP-11	50.6	5.3	120
IP-12	31.2	2.0	120
IP-13	62.0	5.1	120
IP-14	51.2	4.9	120
IP-15	38.5	2.1	104
IP-16	31.6	3.4	120
IP-17	31.2	2.3	120
Average Pressure	41.2		
	Average Flow Rate	3.7	
	Total Gallons Injected		1,080

3-D Microemulsion/CRS Injections (Product B)			
Injection Point	**Injection Pressure**	**Flow Rate**	**Gallons Injected**
IP-1	35.4	3.8	250
IP-2	46.4	3.7	250
IP-3	66.1	3.9	360
IP-4	39.9	3.9	250
IP-5	33.4	4.4	250
IP-6	32.0	4.2	250
IP-7	39.0	3.9	140
IP-8	34.3	3.2	250
Average Pressure	40.8		
	Average Flow Rate	3.9	
	Total Gallons Injected		2,000

3.5 Performance Monitoring

Groundwater monitoring wells OW-1, OW-2, MW-26, and MW-20 in the north injection area and monitoring wells OW-3, MW-19, and MW-29 in the south injection area were utilized to monitor the progression of subsurface reducing conditions and sequestering of chromium. The groundwater data is recorded in **Table 1**. Following baseline groundwater sampling on April 23, 2019, the pilot injections were subsequently started the same day. Earlier data is presented for some wells to show correlations. As seen on the table, three (3) post-injection sampling events were performed at approximately three (3) months, four (4) months, and nine (9) months following the injections.

In addition, water quality field parameters were measured in the wells during active injections to monitor changes. Along with visual observations of color changes, this monitoring was performed to determine the radius of injection influence as the injections progressed. This data is presented in **Table 1**.

3.6 Results

3.6.1 ORP/DO Trends

Trends in transitioning from an oxygenating environment to a reducing environment can be determined by measuring the oxidation/reduction potential (ORP) and dissolved oxygen (DO) concentration of the groundwater. Due to the sluggish recharge of groundwater in the monitoring wells, samples for analysis for these parameters were collected with a bailer and then decanted into a vessel where the parameters were measured using a multi-probe instrument. During this process, rapid changes in DO can occur from influx of atmospheric oxygen. During January 2019, the pilot test monitoring wells were purged using low-flow methods which allows a constant stream of water past the multi-probe instrument and limits introduction of atmospheric oxygen. The difference in DO measured during low-flow sampling as compared with dissolved oxygen measured from a sample collected with a bailer can be seen in the data in **Table 1**. As can be seen, the sample collected using the bailer yielded much higher DO readings than the sample collected using low-flow methods. As a result, DO content in the samples collected using bailers cannot be used as an indicator of subsurface reducing conditions. ORP values were more consistent during the course of groundwater monitoring, regardless of sampling method (bailer versus low-flow), and may be more useful as an indicator of reducing trends in groundwater.

Positive values of ORP indicate oxygenating conditions and negative ORP values indicate reducing conditions. As seen in **Table 1**, significant changes from positive to negative ORP values have occurred in pilot test monitoring wells MW-19, and OW-1 through OW-3. The changes indicate a transition from an oxygenating environment to a reducing environment as the ORP values have decreased from positive values to negative values. This has resulted in an environment conducive to reducing hexavalent chromium to trivalent chromium. In addition, pH values have not changed significantly and are in the range supportive of chemical interactions with iron oxides and formation of stabilized chromium hydroxide precipitates which is between 5 and 12.

3.6.2 Groundwater Concentration Trends

In the trivalent state, chromium will react quickly with ferrous iron, sulfate, and organic ligands in the subsurface to form insoluble and immobile hydroxide precipitates. The reaction time is on the order of minutes to days, and the precipitates formed are very stable. As can be seen in **Table 1** and the groundwater analytical laboratory reports in **Appendix C**, initial concentrations of total chromium in observation wells OW-1 through OW-3 and monitoring well MW-19 have decreased more than 99% during the monitoring period. Total chromium concentrations in MW-19 and OW-3 are now below or at the ES, and the concentrations in OW-1 and OW-2 are below the PAL.

MW-29 in the south area and MW-26 in the north area did not exhibit any significant reduction in chromium. These wells are seven (7), and nine (9) feet, respectively from the nearest injection point and likely outside of the injection radius of influence. MW-20 in the north area had roughly a 45% reduction in chromium concentration although the concentration in this well remains well above the ES. Much of the injected product near MW-20 short circuited to the nearby piping chase and the dosing was not great enough to effectively treat the area around MW-20.

Adequate dosing of reagents appears to have been achieved as dissolved iron concentrations remain in wells achieving the greatest reductions such as MW-19, OW-1, and OW-2. As previously mentioned, MW-20 did not receive the desired dosing due to short circuiting and this has resulted in the low dissolved iron concentrations seen in this well. Low iron concentrations also exist in wells MW-26 and MW-29 which were outside the zone of injectable influence. Groundwater concentrations were initially below the ES in OW-3, but have rebounded to just at

the ES during the last round of sampling. ORP values have also positively increased, but remain negative. In addition, it appears that dissolved iron at OW-3 is in the process of being depleted. Only one injection point (IP-7) was located within five (5) feet of OW-3 and this observation well was not surrounded by injections. It is likely that the reagent dose applied near OW-3 was inadequate since it was not surrounded by injection points and influx of contaminated groundwater within the immediate area likely overwhelmed injected reagent.

3.6.3 Effective Radius of Influence

Color changes due to coloration of the reagent solutions and oxidizing iron, along with changes in ORP values, were monitored frequently in wells during the injection process to determine a radius of influence from injection points. Color changes occurred in the north area a minimum of five (5) feet from OW-1 and in the south area at distances of 5.5 feet from OW-3 and 8.5 feet from MW-19. Based on these observations and complete reductions of chromium seen in the north area, it is anticipated that the radius of influence is somewhat greater than the five (5) feet observed in OW-1. Based on this information, we would expect that a conservative effective radius of influence for remedial planning purposes is five (5) feet within the clay soil.

3.6.4 Effects in Shallow Unsaturated Soil

Mounding of injection products and groundwater were observed to occur in some observation wells during the injection process. Soil samples were collected in January 2018 to determine if there had been enough residence time for the reagent solutions to effectively reduce concentrations of hexavalent chromium in the overlying and typically unsaturated soil. Samples were collected from depths of 1-3 feet and 3-5 feet at the locations of PT-1 through PT-4 as shown on **Figure 14**. Additional soil samples were collected from the locations BG-1 and BG-2 to establish background conditions. The soil samples were analyzed for the leachability of remaining chromium according to the Synthetic Precipitation Leaching Procedure (SPLP) using Environmental Protection Agency (EPA) SW-846 Method 1312 (refer to soil analytical laboratory reports in **Appendix D**). As can be seen in **Table 2**, there *may* have been reductions of hexavalent chromium within the 3-5 feet depth interval. However, the results indicate that significant reductions of hexavalent chromium in soil to concentrations that do not pose a continued threat to groundwater cannot be obtained by temporary and likely incomplete saturation that occurs due to groundwater mounding during injections.

3.7 Summary

Both injectable Products A and B performed well to produce reducing conditions in the subsurface and sequester chromium. Both products injected freely at low pressures ranging from 30 to 65 psi. Product A was injected into the north area, which had the greatest chromium concentrations in groundwater and acted to sequester chromium to concentrations below the ES. This product contained a higher ratio of iron to organics than product B.

Product B also reduced concentrations of chromium in groundwater to below ES; however, initial concentrations of chromium in this area were much lower than in the north area and twice as much product was used to achieve similar percentage reduction in chromium concentration. This product contained a lower ratio of iron compound to organics. The effective radius of injection for both areas is anticipated to be five (5) feet.

We conclude that injecting higher percentages of ZVI will both induce reducing conditions in the saturated subsurface and effectively form immobile, insoluble chromium-iron hydroxide precipitates. The addition of organics is a benefit to enhance and retain reducing conditions. The organics have the added benefit of combining with the reduced chromium to form chromium organic ligands which are also insoluble compounds. The introduction of organics also provide an energy source for the growth of naturally occurring microbes which can also reduce hexavalent chromium through cellular interactions and are beneficial to support sustained reducing conditions within the saturated environment.

Temporary groundwater mounding during the injection process may have resulted in some reductions of hexavalent chromium in the unsaturated zone; however, this is not a predictable process and cannot be relied on to reduce the hexavalent chromium to concentrations that will be protective of groundwater. Additional remedial actions are needed to treat soil within the unsaturated zone between the surface and 5-6 feet bgs.

4.0 SUMMARY OF EVALUATIONS FOR REMEDIAL OPTIONS

Reports provided by the pump and treat system operator indicate the system has operated since 1989 and has removed approximately 900 pounds of chromium to date. Unfortunately, the system will not have any effect on reducing hexavalent chromium within unsaturated soil within the source area. Further, the pump and treat system has minimal effect on recovering contaminated groundwater from distant areas of impact due to the very low hydraulic conductivity of the native clay soil and the associated long time it would take for contaminated groundwater to be removed by the system. Therefore, further operation of the pump and treat system has been deemed impractical and ineffective for treatment of unsaturated soil and groundwater contaminated with hexavalent chromium.

Soil flushing by installing infiltration galleries with hydraulic control using the existing pump and treat system was initially evaluated and dismissed due to the anticipated long duration needed to reach compliance standards, and the fact that Site disruption would be no less than with other methods.

The installation of a permeable reactive barrier (PRB) of ZVI to treat groundwater migrating from the Site after decommissioning of the current groundwater pump and treatment system was also considered. The PRB would need to extend along the eastern edge of the warehouse from a point north of the current outside groundwater collection trench to a point south of the warehouse and then wrap around the southern end of the warehouse and extend west onto property currently owned by Appvion. This is the least costly remedial action, but was eliminated from further consideration for several reasons. This is strictly a passive remedial action, would not treat unsaturated soil, and would be a long-term treatment relying on the very slow movement of groundwater. This would not result in Site closure in a reasonable time, and would need to be permanently monitored. Further, over time, the ZVI may need to be replaced and costs would increase accordingly.

Excavation of all contaminated soil to a depth of 20 feet with land disposal as partially hazardous and partially non-hazardous soil was also evaluated. This option was not selected due to high cost, logistical issues with segregation and sampling for proper disposal, and landfilling of all material was not deemed to be a sustainable practice for the environment. In addition, height restrictions within the warehouse limit the size of equipment which can operate within this space and thereby limits the depth of excavation.

Excavation of soil only within the upper unsaturated 5-6 feet with on-site treatment was evaluated and dismissed due to limited outside space to perform ex-situ blending to achieve chromium fixation prior to landfilling as non-hazardous waste, as well as the logistical issues associated with segregation and sampling prior to disposal. In addition, landfill disposal of all of this material was not deemed to be a sustainable practice for the environment.

The partial basement area in the southeast corner of the warehouse currently holds polyvinyl treatment tanks associated with the pump and treat system. It has a partially open ceiling. It was initially evaluated for treatment of hazardous materials excavated from the upper 5-6 feet of unsaturated soil. The idea was that the concrete ceiling could be removed and much of the hazardous soil could be placed in the basement and blended in place with dry reducing compounds using an excavator. After further evaluation, height restrictions within the warehouse will not accommodate an excavator with enough reach to adequately blend the reducing compounds with the soil.

In-situ soil blending was evaluated for all areas to a depth of 15-20 feet; however, as previously mentioned, this is not feasible for areas inside the warehouse due to height restrictions and associated limits on the size of equipment that can access the warehouse.

After evaluating all likely remedial options, we have elected an approach which utilizes injections of reducing reagents below the water table and soil blending with ZVI within the unsaturated zone. Based on the results of pilot testing, amending the subsurface with reagents is effective in converting hexavalent chromium to insoluble and immobile trivalent chromium precipitates. These methods were deemed the most practical and effective for reducing source area impacts within a reasonable time and should allow for Site closure in the near term. In-situ blending and in-situ treatment below the water table will result in only minimal amounts of materials that will need to be disposed of in a landfill. The specifics of the proposed remedial approach are discussed in section 5.0 below in the chronological order that they will be implemented at the Site.

5.0 PROPOSED REMEDIAL ACTIONS

Site remedial actions will take place in a series of closely spaced and integrated phases that are described in Sections 5.1 through 5.4 below in greater detail.

Phase 1 will include project setup activities such as: distribution of project information and meetings to encourage public participation; locating buried utilities; installation of necessary access doors; setup of remote temporary warehouse operations; relocation of all raw materials within the warehouse by Luvata; removal of any non-essential overhead obstructions; and erecting a barrier between the Luvata active manufacturing operations and the remedial zones.

Phase 2 will include injections of a reducing reagent below the water table within the warehouse and outside area adjacent to the south. Injections performed through the existing paving will help reduce daylighting of the reagent and promote more even distribution within the subsurface.

Phase 3 will involve removal of exterior pavement and the interior concrete floor slab, and re-location of buried underground utilities to clear the way for soil blending activities.

Phase 4 will consist of soil blending in areas inside of the warehouse, decommissioning of the existing groundwater pump and treat system, partial backfilling of the basement, and soil sampling to determine the effectiveness of remedial soil blending. In addition, soil samples will be collected from the sidewalls of the blending pits prior to blending to determine remaining residual concentrations of hexavalent chromium.

Phase 5 will shift the soil blending operations to the area outside and north of the warehouse.

Phase 6 includes Site restoration activities and **Phase 7** includes post-remedial groundwater monitoring.

5.1 Initial Preparations (Phase 1)

Prior to performing any remedial activities, all stored materials will need to be removed from the warehouse. Albany and Luvata are currently working to evaluate temporary nearby warehousing options to support Luvata's manufacturing needs. The locations of utilities will need to be determined prior to subsurface work to avoid them during remedial injections, and to determine whether they need to be relocated during soil blending operations. An overhead entrance door

will be installed on the north side of the warehouse to provide equipment access. The area outside the north wall of the warehouse will be initially used to stage equipment and some materials. This space is very limited due to loading docks on this side of the warehouse that need to be kept open for delivery of raw materials. This area will be separated from other areas of the north parking lot with temporary chain-link fencing to prevent access to the remedial zones. The expected locations of the fencing and overhead door are shown on **Figure 3**.

The chain-link fence will have a gate that can be opened to accept remedial materials but will otherwise be closed and locked. Signs will be placed on the exterior of the fencing to warn the general public of the potential hazards of entering. During operational Phases 3 and 4, this area will be considered the warm zone, and the warehouse (where work is being actively performed) will be designated the exclusion zone. During Phase 5, these designations will flip, with the warm zone being inside the warehouse and the exclusion zone being outside within the fenced area where active soil blending will occur. Only designated workers and supervisors having appropriate personal protective equipment and current Occupational Safety and Health Administration Hazardous Waste Operations and Emergency Response training will be allowed entry to these work zones during remedial soil blending activities.

There is one (1) doorway connecting the Luvata active manufacturing building and the warehouse. Access to the warehouse can be restricted by closing by an existing sliding door. After the warehouse is completely emptied, the door will be closed and a temporary barrier will be erected to prevent unauthorized entry into the exclusion zone, and to keep dust out of the active manufacturing area. The barrier will consist of 10-mil plastic sheeting mounted on wood studs anchored to the wall. Signs indicating no entry into the warehouse will also be posted.

A Site Health & Safety Plan (HASP) will be prepared to establish guidance for safe working practices, and to provide directions to project staff, subcontractors, and other allowed site inspectors regarding Site health and safety issues. The information provided in the HASP will include access restrictions, procedures and contacts in case of emergency, directions to local medical facilities, personal protection requirements, and safety data sheets for any chemicals used during the remedial process.

The primary site COC is hexavalent chromium. Exposure to hexavalent chromium is through ingestion, inhalation, and dermal contact. Saw cutting of concrete and blending of powdered ZVI with the soil will be done under wet conditions with the goal of eliminating dust.

With the exception of concrete sawing, it is anticipated that the work can be performed in modified Level D personal protective equipment (PPE) to include steel-toed work boots, Tyvek suits and booties, nitrile gloves, particulate dust masks, goggles with side shields, and hard hats. Tyvek suits and booties, will be disposed of at the end of each work day and replaced with new the next work day, or will be replaced with new, if significant soiling occurs during the course of a work day. Nitrile gloves and particulate dust masks will be replaced as needed. There will be no smoking or consumption of food when within the warm or exclusion zones.

During concrete sawing operations, a half or full face respirator will be required as a preventative measure even though the sawing will be done under wet conditions (Level C PPE). There is no way to monitor hexavalent chromium concentrations that may be present within any dust or mist generated by the sawing operations on a real-time basis that could be used to reduce the level of PPE. The respirators will be equipped with particulate filters with designation N95 having a 95% removal efficiency as recommended by the National Institute of Occupational Safety & Health.

Decontamination of remedial equipment will be performed during remedial operations as needed and after soil blending operations are complete. Decontamination of equipment will take place over the soil blending pits using high pressure wash water consisting of potable water. Decontamination in this manner will eliminate the need for additional containment, characterization, and disposal of the decontamination fluids.

5.2 Groundwater Injections (Phase 2)

The target COC for saturated zone treatment is hexavalent chromium, identified in Site groundwater at concentrations up to 170 mg/L. The objective of groundwater treatment is to reduce total chromium concentrations to below the ES of 100 µg/L. The remedial technology selected for groundwater treatment is reduction of hexavalent chromium to the less toxic and insoluble precipitates of trivalent chromium by chemical and microbial processes. To accomplish this, injections will be performed from a depth of 20 feet up to a depth of 6 feet within the warehouse and the outside area to the south of the warehouse. Injections will also be performed within the basement to a depth of 10 feet below the basement slab.

There is a piping chase that contained the supply and waste lines for the chromium operations that took place in the secondary plating line previously located on the north half of the warehouse. The chase can be seen as dashed black lines on **Figures 9 and 15**. The chase is

made of concrete and was intended to function as secondary containment for the supply and waste piping in the event of a leak. Corrosion of the supply piping, subsequent flows of chromic acid through the chase, and leakage of chromic acid through breaches in the chase are the suspected primary cause of chromium contamination in soil and groundwater on the northern half of the warehouse and extending back to the basement area. As described in Section 3.4, short circuiting of injected product occurred along into the buried piping chase during the pilot test, resulting in the accumulation of product on the basement floor. Therefore, the piping chase will need to be removed prior to injections. This concrete may contain hazardous concentrations of hexavalent chromium and will be tested prior to disposal as either hazardous or non-hazardous waste.

The layout of injection points on a spacing of 10 feet are shown on **Figure 15**. The proposed amendment is similar to Product A from the pilot test and is to be injected is a single product with the following combination of compounds:

- Anaerobic BioChem (ABC®), a mixture of lactates, fatty acids, alcohols and a phosphate buffer; and
- ZVI.

Five (5) separate groundwater remediation areas have been defined based on the magnitude and distribution of hexavalent chromium impacts identified during the site investigation. The areas that will be treated by injection are highlighted and designated A through E on **Figure 15**. The total treatment application will consist of 24,600 pounds of ABC+ZVI (50% of each by weight) along with a minimal amount of guar to keep the ZVI in suspension. The products will be mixed with potable water to produce a total of 8,400 gallons of a slurry at the desired concentration. This is equivalent to approximately 5 percent of the treatment volume pore space assuming a porosity of 30 percent.

The products will be delivered directly to the site in 2,000 pound super sacks and stored inside the site building prior to use. Mixing will be performed in large, trailer-mounted tanks with continuous agitation. The solution will then be pumped from the tanks, through a manifold to the injection points via flexible hosing. Injection will occur at up to four (4) points simultaneously. The solution will be injected directly through the bottom of the direct-push rods in 1 to 2 foot intervals in a bottom-up approach. Pressure and flow rate will be monitored separately at each injection point and recorded to confirm that injection design parameters are met.

The ABC+ ZVI slurry will be similar in viscosity to the Provect-IRM (Product A) slurry that was injected for pilot testing as described in Section 3.0. Therefore, the injection pressure and flow rate are anticipated to be similar to those observed during the Product A injections. The pilot test injection pressure ranged from 31 to 62 psi, and the flow rate ranged from 2.0 to 4.9 gallons per minute. The proposed direct-push injection points are arranged in a grid pattern within each area as shown on **Figure 15**. However, the final locations may be adjusted slightly to avoid subsurface utilities. The injection plan for each area A through E is summarized below:

- Area A: Advance 28 injection points at locations surrounding the southern pilot test area.

- Area B: Advance nine (9) injection points through the basement floor, and seven (7) injection points around the perimeter of the south and east basement walls. The target injection interval in the basement will be from just beneath the floor slab to 10 feet bgs.

- Area C: Advance 19 injection points to the south and east of the northern pilot test area. Injection Area C overlaps the northern pilot test area around the MW-20 well nest to address elevated hexavalent chromium concentrations detected during pilot test performance monitoring. A higher percentage of ZVI may be applied to the mixture in this location depending on subsurface response to injection and daylighting issues.

- Area D: Advance 12 injection points west of the northern pilot test area.

- Area E: Advance 16 injection points outside south of the warehouse building, surrounding the MW-5 well nest.

In addition, nine (9) injection points will be advanced in a row outside the north building wall. This area will primarily be treated by soil blending with ZVI; however, the mixing equipment will need to stay several feet away from the building in order to avoid compromising the integrity of the footing. The purpose of this row of injections is to treat contaminated soil below and around the footing.

The direct-push tooling will be removed from each location after the prescribed volume of solution is injected, and the boreholes will be abandoned in accordance with Chapter NR 141.25.

5.3 Soil Blending (Phases 3, 4, 5, and 6)

The primary objective of soil blending is to reduce hexavalent chromium concentrations in the target treatment zones to levels that do not pose an industrial direct-contact risk or a continued threat of leaching to groundwater. Therefore, our goal is to reduce concentrations to below the soil to groundwater RCL of 3.84 mg/kg, which is lower than the industrial direct-contact RCL of 6.36 mg/kg. A soil treatability study will be performed prior to soil blending to determine optimal application rates of ZVI required for the proposed treatment areas, which have variable concentrations of hexavalent chromium.

Samples of the blended soil will be collected upon completion of the initial blending process to determine residual levels of hexavalent chromium. The results will help determine whether treatment goals for unsaturated soil have been met. No additional soil blending with ZVI is planned due to project timing constraints associated with the displaced Luvata warehousing operations and cost considerations. Additional blending with Portland cement will be completed following sampling to increase structural support within the soil prior to re-paving.

5.3.1 Concrete and Asphalt Removal Prior to Soil Blending (Phase 3)

Prior to blending, the concrete slab within the warehouse and a portion of the asphalt parking lot to the north will be removed and any buried utilities removed, re-plumbed, or relocated as needed. These areas are shown as Areas A and B (concrete) and Area C (asphalt) on **Figure 16**. There is a line of steel columns that support the warehouse roof running down the east-west centerline of the warehouse. Soil blending activities will need to stay five (5) feet away from these column supports to avoid hitting and possibly undermining the footings. Therefore, concrete will not be removed in the area of the column supports.

Approximately 4,000 square feet of concrete will be removed in Areas A and B, and 2,300 square feet of asphalt from Area C. In addition, the remaining basement ceiling (concrete slab overlying the basement area) will be cut and either removed for landfilling or dropped into the basement, whichever is more easily performed logistically. Concrete support pillars for the basement ceiling will be left in place.

Two core samples of the concrete warehouse slab have been collected to date and were analyzed for hazardous and leachable concentrations of chromium by the Toxicity Characteristic Leaching Procedure (TCLP), EPA SW-846 Method 1311. The concrete cores were collected from areas of

high chromium concentrations in soil and were designated CCS-1 and CCS-2, the locations of which are depicted on **Figure 14**. These two (2) samples did not contain concentrations of leachable chromium above laboratory detections limits (refer to concrete TCLP analytical laboratory reports in **Appendix D**).

Additional concrete core samples will be collected from areas of the slab within the warehouse prior to or during the groundwater injection activities and analyzed for chromium according to the TCLP method to provide a more representative hazardous determination for the area of concrete to be removed and landfilled. It is anticipated that the concrete slab will be characterized as non-hazardous and can be landfilled as special waste. In the event that some of the concrete fails the TCLP test and is classified as hazardous, that concrete may be placed in the basement area for treatment with additional ZVI depending on amount and associated cost with landfill disposal as hazardous waste. In this scenario, a variance from the EPA Resource Conservation and Recovery Act hazardous waste operating license will be required. To keep options open in this regard, we are requesting a variance in accordance with the applicable rules contained in WAC Chapter NR 718 and further explained in guidance document RR 705. The variance requested is for accumulation and in-situ treatment of hazardous waste within the confines of the Site (basement area) according to the EPA Area of Contamination policy.

Based on communications with representatives of Albany, the asphalt paving north of the warehouse was completed after the chromium plating operation had been discontinued. This material was laid on a fresh gravel base and is not anticipated to have come into contact with chromium contamination. Therefore, the asphalt paving will be removed and sent to an asphalt recycling facility for re-melting and re-use.

5.3.2 Decommissioning of the Existing Pump and Treat System (Phase 4)

The existing pump and treat system will be decommissioned after injections are completed and during the concrete removal and/or soil blending phase. The pump currently in the collection trench located north of the warehouse will be removed, cleaned and discarded. This pump has been historically operated manually and intermittently. Grout will be pumped into the conveyance piping that leads to the basement treatment area, and the existing concrete and steel manway in which the pump is located will be removed. The sump in the basement controls the flow of groundwater into the basement area. This sump pump will be removed following utility work in the basement.

There are three utilities that enter the basement area consisting of a storm water lateral that conveys roof drainage to the storm water main, a sanitary lateral that conveys water from a sink within the warehouse and treated groundwater from the pump and treat system, and a water lateral that provides water to the sink in the warehouse. All of these utilities tie into mains located in Meade Street adjacent to the warehouse to the east. In addition, there is electrical power supplied to the basement for lighting and operation of pumps.

The storm water lateral will be re-routed to so that it is closer to the outside wall of the warehouse. The sanitary lateral will either be disconnected and capped in the basement, or rerouted above the warehouse floor for future use by Luvata. The water lateral will be disconnected and capped because it will no longer be needed as the sink in the warehouse will be taken out of service along with the pump and treat system.

Groundwater is expected to enter the basement through holes drilled in the basement floor during injection activities, through the floor sump, and through the porous concrete block wall. According to historic flow rates, we anticipate that groundwater will fill the basement at a rate between 6-11 gallons per hour. To control the inflow of groundwater during utility work in the basement, the sump discharge will be directed to the polyvinyl treatment tanks to keep the floor dry for workers. After utility work is complete, the sump pump may operate until basement backfilling begins, prior to which the electricity to the basement will be disconnected at the service panel in the warehouse and the sump pump removed. The polyvinyl treatment tanks will be left in the basement.

If hazardous concrete has been placed in the basement, one 2,200 pound sack of ZVI will be spread onto the debris to allow sequestering of residual chromium that remains within the concrete debris during recharge of groundwater to the basement over time.

The area of the basement is 1,300 square feet. With an average inflow expected at 8.5 gallons per hour, the depth of water in the basement after 24 hours is 0.021 feet or 0.25 inches. After one week, the depth of water in the basement at this inflow rate would be 1.8 inches. This inflow rate is fairly low and will provide some options regarding timing of basement backfilling operations. If actual infiltration rates are significantly greater, reassessment of keeping the sump activated during soil blending will be performed.

5.3.3 Soil Blending Procedures (Phases 4 and 5)

Soil blending with ZVI will be performed within the warehouse (Phase 4) and the outside area to the north of the warehouse (Phase 5). These areas are labeled Area A, Area B, and Area C on **Figure 16**. A rotary blending tool will be attached to a backhoe and used to break up the clay soil into small clumps. Dry ZVI powder will be added and homogenized with the soil through the blending process. Potable water supplied by a nearby fire hydrant will be added as needed to aide in the blending process and establish the wet chemistry reactions that will sequester chromium. The soil blending process inside the warehouse (Areas A and B) will be performed to a depth of six (6) feet using a smaller excavator and blending head. A larger excavator and blending head will be utilized in Area C to blend soil to a depth of 15 feet.

The treatment zones will be subdivided into smaller cells, typically 20 by 20 feet in dimension. Predetermined quantities of amendment will be added to each cell and blended with the soil using the in situ blender. If possible, cells in outside Area C will also be subdivided into two (2) vertical 7.5-ft lifts working from the maximum depth of 15 feet upwards. This will ensure vertical distribution of the ZVI.

An average estimated dosage (loading rate) that would be anticipated for the clay soil in this type of application is 1.5% by weight (i.e. mass of ZVI to mass of soil). Although some areas will require a higher percentage of ZVI and some areas a lower percentage, this average should be sufficient to achieve the cleanup objective. Using 2,123 total cubic yards to be blended in Areas A, B, and C, and a bulk soil density of 128 lbs/cubic foot, we calculate that 110,056 lbs (55 tons) of ZVI will be required. A bench scale study will be performed prior to blending to identify areas where dosing may be increased or decreased to achieve a reduction of hexavalent chromium to the target cleanup level of 3.84 mg/kg in unsaturated soil. The excess soil that will be generated by adding amendments and blending will be placed in the basement (see Section 5.3.5 for additional details).

ZVI powder will have a particle size of 150 microns and will be supplied to the site in 2,200 pound sacks. As needed, the sacks will be brought from the fenced staging area on the north side of the warehouse to the treatment cell using a forklift. Each sack is equipped with 4 looped lifting straps (one on each corner) that when pulled upwards, allows for the entire sack to drain under gravity. These loops will be connected to the lifting ring, located on the bottom of the excavator's bucket, by a field technician using nylon braided lifting straps. The operator of the excavator will then tilt the sack on its side to allow access to the release ropes located on the

underside of the sacks. Once the operator signals the field technician to proceed, the technician will release the ropes on the underside of the sack to allow for the ZVI to pour from the sack once lifted. Releasing ZVI in this manner, and using water as an additive, will reduce or eliminate the production of ZVI dust.

Confirmation soil sampling will be completed within the blended areas to provide evidence of stabilization of the hexavalent chromium and is discussed in more detail in Section 5.3.4 below.

5.3.4 Soil Sampling (Phases 4 and 5)

Two separate soil sampling protocols will be needed to: determine the areas of remaining soil impacts outside of the immediate soil blending areas; and to evaluate the effectiveness of hexavalent chromium reductions in the areas of active blending.

Sampling to Determine Residual Hexavalent Chromium Concentrations

During the blending process, soil samples will be collected using a bucket excavator during soil loosening activities prior to blending. These samples will be collected from sidewalls of proposed blending areas where the greatest concentrations of hexavalent chromium have been detected during past investigations. These areas and proposed locations for soil sampling are shown on **Figure 17**. At each location, one composite soil sample will be collected from the 1-4 foot depth interval. Incremental sampling methods will be utilized to collect the composite samples. The samples will be sent to a Wisconsin Certified Laboratory for analysis of hexavalent chromium by EPA SW-846 Method 7196. These samples will be used to identify areas where cap maintenance will be required as a condition of site closure.

Post-remedial Sampling to Determine Effectiveness of Hexavalent Chromium Reductions

Composite soil samples will be collected from the 1-5 foot depth interval in Areas A and B, and also from the depth intervals of 5-10 and 10-15 feet in Area C to evaluate the effectiveness of hexavalent chromium reductions with respect to the target cleanup level. The composite samples will be collected using a hand auger and incremental sampling methods. The proposed locations for post-remedial sampling are shown on **Figure 17**. These samples will also be analyzed for hexavalent chromium by EPA SW-846 Method 7196.

5.3.5 Site Restoration (Phase 6)

Upon soil sampling to determine the effectiveness of remedial actions and residual hexavalent chromium concentrations in soil blending Areas A through C, the soil will be re-blended with Portland cement. The initial remedial soil blending process inherently loosens the structural strength of the soils; therefore, geotechnical stabilization will be required prior to preparations for re-paving. The amount of Portland cement required has not been determined, but in most cases three (3) to five (5) weight percent is sufficient. It is anticipated that the amount of Portland cement needed to achieve a three (3) percent weight percentage in Areas A through C is 110 tons.

The addition of amendments and water added during the soil blending will also increase the volume of soil present, resulting in a mounding effect. It is anticipated that mounding of one (1) foot will occur in Areas A and B, and two (2) feet is anticipated in Area C. This excess and treated soil will be used to backfill the basement area. We anticipate that all mounded soil will fit into the basement area once compacted; however, if all excess treated soil will not fit in the basement, then some of this soil may be landfilled as special waste after confirmation sampling has been completed.

The concrete slab will be repaired within Areas A and B and will include concrete paving over the filled basement area. A gravel base will be added in all areas to be paved and concrete will be reinforced with steel mesh and re-bar. The asphalt will be repaired in Area C outside of the warehouse to the north.

Upon completing the re-paving process, portions of the warehouse floor and outside areas that have not been re-paved and where remedial activities have occurred will be washed with a floor scrubbing machine and non-toxic cleaning solutions to remove any residual remedial compounds or soil.

6.0 POST REMEDIAL SAMPLING

Phase 7 involves post-remedial sampling and is the final phase of planned remedial activities. Sampling activities will include:

- Groundwater monitoring to determine the overall effectiveness of hexavalent chromium reduction;
- Vapor screening to determine if methane or hydrogen sulfide has been formed and if they pose a fire or explosion risk; and
- Sub-slab vapor sampling within the active manufacturing building to determine if remaining concentrations of CVOCs pose a risk of vapor intrusion.

6.1 Groundwater Sampling

The post-injection groundwater monitoring program is detailed on **Table 3**. The monitoring well locations are depicted on **Figure 18**. Existing wells (MW-2, -5, -5A, and MW-25), post-remediation replacement wells (MW-19R, -19AR, -20R, -20AR, -26R, -28R, and MW-30R), and new well clusters (MW-31/31A and MW-32/32A) will be used for remediation performance monitoring purposes. These wells are positioned both within and immediately surrounding the target remediation areas.

New well clusters MW-31/31A and MW-32/32A will consist of one (1) water table monitoring well each screened from 4-14 feet bgs, and one (1) piezometer each screened from 25-30 feet bgs. They will be constructed of 2-inch diameter polyvinyl chloride (PVC) and fitted with flush-mounted well protectors. Bentonite chips will be used to fill the annular space above the filter pack seal.

The objectives of monitoring are to verify that subsurface conditions are conducive to reductive processes and to document decreasing hexavalent chromium concentration trends. It is anticipated that monitoring will begin six (6) months following injections to allow the subsurface to stabilize and the maximum effect of hexavalent chromium reductions to have occurred. The monitoring plan presented in **Table 3** will be implemented after the six-month period and will be conducted on a quarter year basis for two (2) years.

Groundwater elevation measurements will be collected from Site monitoring wells before, during, and after injections to evaluate the temporary effect of injection on potentiometric

surfaces and flow direction. The depth to water in each well will be measured to the nearest 0.01 foot using an electronic water level indicator. During quarterly post-remedial groundwater monitoring events, the wells will be purged dry 3-4 days prior to sampling to allow the wells to sufficiently recharge the amount of water needed for sampling.

Groundwater samples will be collected by bailer due to slow recharge, and analyzed for dissolved chromium, iron, and manganese according to EPA test method 6010. Water quality data including electrical conductivity, temperature, DO, total dissolved solids, pH and ORP will be measured in the field with portable meters/test kits during each sampling event.

Investigation-derived media (IDM), including purge water and decontamination fluids, will be containerized in 55-gallon drums. A licensed contractor will be retained to remove drums following each monitoring event. The IDM will be managed under existing non-hazardous waste profiles.

6.2 Vapor Screening for Methane and Hydrogen Sulfide

Although the risk of generating high concentrations of flammable gas is low considering the nature and distribution of contaminants at the site, methane and hydrogen sulfide can be produced via in-situ chemical reduction processes. The production of vapors at each injection area will be evaluated by collecting headspace field measurements at monitoring wellheads using a portable gas analyzer. Vapor screening measurements will be collected prior to injections and during the groundwater monitoring events. The wellheads will be fitted with expandable plugs with ports designed for vapor monitoring. If the vapor concentration exceeds 10% of the LEL (i.e., 0.5% by volume methane or 0.4% by volume hydrogen sulfide), vapors will be evacuated using appropriate, intrinsically-safe equipment. Additional mitigation methods will be evaluated if necessary.

6.3 Sub-slab Vapor Intrusion Sampling for CVOCs

A vapor intrusion assessment of the manufacturing area is required due to the concentration of CVOCs in soil and groundwater beneath the building. Specifically, high purge volume (HPV) sampling is recommended because of the large size of the building. HPV sampling consists of extracting vapor from a relatively large area (typically 25 to 50 foot radius) using a vacuum connected to constructed extraction point(s). Because a large volume of vapor is removed during sampling, this method accounts for spatial and temporal variability in sub-slab vapor

concentrations. Therefore, repeat sampling is not required and the vapor intrusion assessment can be completed in a single event as opposed to the more common sub-slab sampling procedure which requires one sampling event during the heating months and another sampling event during the non-heating months. This also reduces the number of samples that need to be collected per area of slab.

The proposed vapor intrusion assessment area is outlined on **Figure 19**. It is based on the extent of CVOC impacts in soil and groundwater within the current manufacturing area. The warehouse area will not be sampled at this time, since extensive remediation within the warehouse is planned and the remedial compounds will act to promote degradation of CVOCs in soil and groundwater within the warehouse. In addition, the thickness of the slab and underlying gravel base is similar in both the manufacturing area and concentrations of CVOCs are higher within the manufacturing area than in the warehouse area. If the results of vapor sampling within the manufacturing area indicate no risk of vapor intrusion and negative pressure readings at the time of sampling indicate relatively homogeneous air flow beneath the slab, then it may be assumed that there is no vapor risk within the warehouse area.

WDNR guidance specifies that extraction points should not be located closer than 25 feet to footing walls. We are assuming that a 30-foot radius of influence will be achieved during testing. Three (3) extraction points designated HPV-1 through HPV-3 are proposed, along with four (4) Vapor Pin® sub-slab vacuum monitoring points. Each extraction point will be installed by coring holes through the concrete floor and placing short screened section of PVC pipe immediately beneath the floor slab. A riser pipe will extend from the top of the screen to approximately one (1) foot above the floor, and a cement seal will be added around the riser flush with the floor.

HPV sampling methods and quality control measures to be used by field staff are presented in **Appendix E**. In general, these follow the recommendations listed in WDNR Publication RR-800 *Addressing Vapor Intrusion at Remediation & Redevelopment Sites in Wisconsin*.

One (1) sub-slab vapor sample will be collected from each of the three (3) extraction points during the HPV sampling process. The sub-slab vapor samples will be collected in 6-liter vacuum canisters with 200 ml/min regulators. The samples will be submitted to an environmental laboratory for analysis of analysis of the contaminants of concern via EPA Test Method TO-15. The analytical results of the sub-slab vapor samples will be compared to industrial vapor risk screening levels (VRSLs).

The HPV sampling methods and results will be documented in a brief letter-format summary report along with data summary tables and figures to support data interpretation. The final report will be submitted to WDNR with recommendations for mitigation action(s) if necessary.

7.0 REMEDIAL TIMEFRAME AND PATH TO SITE CLOSURE

7.1 Anticipated Remedial Timeframe

The anticipated timeframe for the various phases of remediation are as follows:

- Phase 1 Initial Preparations including re-location of warehouse operations with removal of all warehouse contents, and re-location of any buried utilities is anticipated to be performed throughout the months of May and June, 2019.
- Phase 2 Groundwater Injections are anticipated to be completed by mid-July, 2019.
- Phase 3 Concrete and Asphalt Removal will begin in conjunction with groundwater injections and are anticipated to be complete by August 1, 2019.
- Phases 4 and 5 include soil blending, confirmation soil sampling, and decommissioning of the pump and treat system. These remedial activities are anticipated to be completed by mid-August, 2019.
- Phase 6 Site Restoration includes re-blending of treated soil and replacement of paving is anticipated to be completed by early-mid September, 2019.
- Phase 7 Post-remedial Groundwater Sampling will begin in early March, 2020 and will continue for two (2) years until March of 2022.
- An application for Site closure is anticipated for June of 2022.

7.2 Path to Site Closure

Following active remedial measures, groundwater monitoring wells will be sampled for two (2) years after an initial waiting period of six (6) months to assess any changes in the direction of groundwater flow and to determine the effectiveness of groundwater treatments. Depending on changes in the direction of groundwater flow, additional wells outside of the facility may require monitoring and/or the proposed locations of monitoring wells may need to be adjusted. Contaminant transport calculations may also be performed to further identify suitable locations for the monitoring wells.

If significant reductions have been achieved with no significant rebound of chromium concentrations in groundwater, Site closure will be pursued. It is anticipated that GIS registry for soil and groundwater impacts will be needed along with cap maintenance as a condition for Site closure.

Post-remedial sub-slab sampling will be performed to determine if remaining CVOCs pose a risk for vapor intrusion. If a risk of vapor intrusion is identified, then an assessment of risk mitigation will be performed. If necessary, long-term obligations with respect to passive or active vapor mitigation measures may also be a condition of Site closure.

TABLES

TABLE 1
GROUNDWATER GEOCHEMICAL ANALYTICAL RESULTS
Former Appleton Wire Facility
908 North Lawe Street, Appleton, Wisconsin

Monitoring Well Identification	Screen Interval	Sample Date	Dissolved Metals			Inorganic/Physical Parameters						Field Parameters					
			Chromium	Manganese	Iron	Nitrate	Nirtrite	Sulfate	Chemical Oxygen Demand	Total Organic Carbon	Dissolved Organic Carbon	Temperature	pH	Specific Conductance	Oxidation Reduction Potential	Turbidity	Dissolved Oxygen
Reporting Units			**µg/L**	**µg/L**	**µg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**Celsius**	**S.U.**	**µS/cm**	**mV**	**NTU**	**mg/L**
MW-19	10.3 - 20.3	6/29/17	**23,600**	**36.7**	<15.5	**6.9**	<0.80	**51.4 J**	**15.3**	<0.25	<0.25	**19.90**	**7.59**	**1.24**	**174**	**22.4**	**9.18**
		4/23/18	**18,900**	<11.3	<155	NA	NA	NA	NA	NA	NA	**16.60**	**7.53**	**1.31**	**177**	**0.0**	**10.17**
		7/16/18	**172**	**948**	**22,400**	NA	NA	NA	NA	NA	NA	**20.20**	**6.55**	**2.35**	**27**	**0.0**	**8.56**
		8/20/18	**97.6**	**1640**	**88,200**	NA	NA	NA	NA	NA	NA	**19.66**	**6.26**	**2.67**	**-45**	**265**	**10.04**
		1/21/2019 *	**16.1**	**608**	**12,200**	NA	NA	NA	NA	NA	NA	**18.30**	**7.52**	**2.56**	**-81**	**373**	**0.06**
MW-20	4.4 - 14.4	06/28/17	**265,000**	<36.6	<680	**15.9**	<0.80	**103**	**31.4 J**	<0.76	**1.1 J**	**17.42**	**7.15**	**2.72**	**171**	**70.8**	**11.04**
		04/23/18	**296,000**	<11.3	<155	NA	NA	NA	NA	NA	NA	**15.73**	**7.21**	**2.70**	**282**	**50.4**	**NA**
		07/16/18	**161,000**	**99.1**	**929 J**	NA	NA	NA	NA	NA	NA	**20.33**	**7.10**	**2.73**	**78**	**47.8**	**8.76**
		08/20/18	**174,000**	**73.1**	**156**	NA	NA	NA	NA	NA	NA	**19.93**	**7.54**	**2.52**	**103**	**0.0**	**10.05**
		1/21/2019 *	**179,000**	**37.1**	<35.4	NA	NA	NA	NA	NA	NA	**17.09**	**8.20**	**2.55**	**126**	**1.9**	**5.02**
MW-26	4.0 - 14.0	07/16/18	**21,600**	**115**	**3,550**	NA	NA	NA	NA	NA	NA	**19.66**	**7.45**	**1.390**	**-94**	**227**	**8.74**
		08/20/18	**17,100**	**15.6**	<15.5	NA	NA	NA	NA	NA	NA	**20.48**	**7.36**	**1.240**	**72**	**0.0**	**9.94**
		1/21/2019 *	**26,700**	**1.5 J**	<35.4	NA	NA	NA	NA	NA	NA	**16.46**	**8.24**	**1.310**	**95**	**2.7**	**4.40**
MW-29	4.0 - 14.0	04/23/18	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15.86**	**7.89**	**0.589**	**104**	**30.2**	**10.40**
		07/16/18	**220**	**13.1**	**89.6 J**	NA	NA	NA	NA	NA	NA	**20.00**	**7.44**	**0.820**	**107**	**10.5**	**7.99**
		08/20/18	**380**	NA	NA	NA	NA	NA	NA	NA	NA	**20.23**	**7.52**	**0.661**	**-31**	**0.0**	**9.93**
		1/21/2019 *	**376**	<1.1	<35.4	NA	NA	NA	NA	NA	NA	**17.54**	**8.36**	**0.837**	**40**	**1.9**	**6.20**
OW-1	5.0 - 15.0	04/23/18	**20,000**	**31.1 J**	<155	NA	NA	NA	NA	NA	NA	**14.38**	**7.48**	**1.960**	**283**	**37.2**	**10.28**
		07/16/18	**84.6**	**628**	**28,000**	NA	NA	NA	NA	NA	NA	**20.68**	**6.44**	**3.420**	**17**	**56.9**	**8.99**
		08/20/18	**16.6**	**338**	**19,200**	NA	NA	NA	NA	NA	NA	**19.73**	**7.57**	**2.580**	**-177**	**99.3**	**11.17**
		1/21/2019 *	<2.5	**28**	**2,620**	NA	NA	NA	NA	NA	NA	**15.33**	**8.79**	**1.560**	**-200**	**88.0**	**9.40**
OW-2	5.0 - 15.0	04/23/18	**25,800**	<11.3	<155	NA	NA	NA	NA	NA	NA	**15.75**	**7.71**	**1.280**	**275**	**1.9**	**9.53**
		07/16/18	**17.0**	**2,680**	**188,000**	NA	NA	NA	NA	NA	NA	**21.09**	**6.79**	**5.240**	**105**	**45.1**	**7.51**
		08/20/18	**5.9 J**	**398**	**24,100**	NA	NA	NA	NA	NA	NA	**19.77**	**6.86**	**3.210**	**-128**	**0.0**	**9.91**
		8/20/2018 *	NA	NA	NA	NA	NA	NA	NA	NA	NA	**18.82**	**7.35**	**3.490**	**-166**	**0.8**	**0.18**
		1/21/2019 *	**4.0 J**	**209**	**22,100**	NA	NA	NA	NA	NA	NA	**16.67**	**7.88**	**2.410**	**-135**	**4.3**	**3.27**

TABLE 1
GROUNDWATER GEOCHEMICAL ANALYTICAL RESULTS
Former Appleton Wire Facility
908 North Lawe Street, Appleton, Wisconsin

Monitoring Well Identification	Screen Interval	Sample Date	Dissolved Metals			Inorganic/Physical Parameters						Field Parameters					
			Chromium	Manganese	Iron	Nitrate	Nirtrite	Sulfate	Chemical Oxygen Demand	Total Organic Carbon	Dissolved Organic Carbon	Temperature	pH	Specific Conductance	Oxidation Reduction Potential	Turbidity	Dissolved Oxygen
Reporting Units			**µg/L**	**µg/L**	**µg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**Celsius**	**S.U.**	**µS/cm**	**mV**	**NTU**	**mg/L**
OW-3	5.0 - 15.0	04/23/18	**1,050**	<22.3	<15.5	NA	NA	NA	NA	NA	NA	**16.76**	**7.16**	**1.100**	**175**	**249**	**10.25**
		07/16/18	**505**	**158**	**299**	NA	NA	NA	NA	NA	NA	**20.36**	**7.21**	**0.841**	**-45**	**364**	**7.81**
		08/20/18	**13.8**	**133**	**2940**	NA	NA	NA	NA	NA	NA	**20.22**	**7.25**	**0.811**	**-112**	**0.0**	**10.22**
		1/21/2019 *	**100**	**35**	**158**	NA	NA	NA	NA	NA	NA	**16.49**	**7.99**	**1.110**	**-19**	**4.8**	**0.53**

Notes:
Only detected compounds are listed
Bolded values are above laboratory detection limits
J = Analyte concentration detected between the laboratory Reporting Limit and the laboratory Method Detection Limit
* = Purging and sampling performed using low-flow methods. All other samples collected using a bailer.
NA = Not Analyzed
S.U. = Standard Units
µS/cm = Microsiemens per centimeter
mV = Millivolt
NTU = Nephelometric Turbidity Unit
mg/L = Milligram per liter

TABLE 2
SPLP SAMPLE ANALYTICAL RESULTS - CHROMIUM
Former Appleton Wire Facility
908 N. Lawe St., Appleton, Wisconsin

Boring Identification	Sample Depth (feet)	Sample Date	SPLP Chromium (µg/L)
Public Health Enforcement Standard			**100**
Public Health Preventive Action Limit			**10**
PT-1	1-3	1/21/2018	**14,700**
	3-5		**10,300**
PT-2	1-3	1/21/2018	**89.0**
	3-5		**9.2**
PT-3	1-3	1/21/2018	<3.9
	3-5		**214**
PT-4	1-3	1/21/2018	**3,090**
	3-5		**173**
BG-1	1-5	1/21/2018	**1,810**
BG-2	1-3	1/21/2018	**2,010**
	3-5		**315**

Notes:

Synthetic Precipitation Leaching Procedure (SPLP) chromium samples analyzed using EPA SW-846 Method 1312

All SPLP concentrations reported in micrograms per liter (µg/l)

Bolded values are above Laboratory Detection Limits

Bolded and Orange Shaded values indicates an exceedance of the Public Health Enforcement Standard

Bolded and Blue Shaded values indicates an exceedance the Public Health Preventive Action Limit

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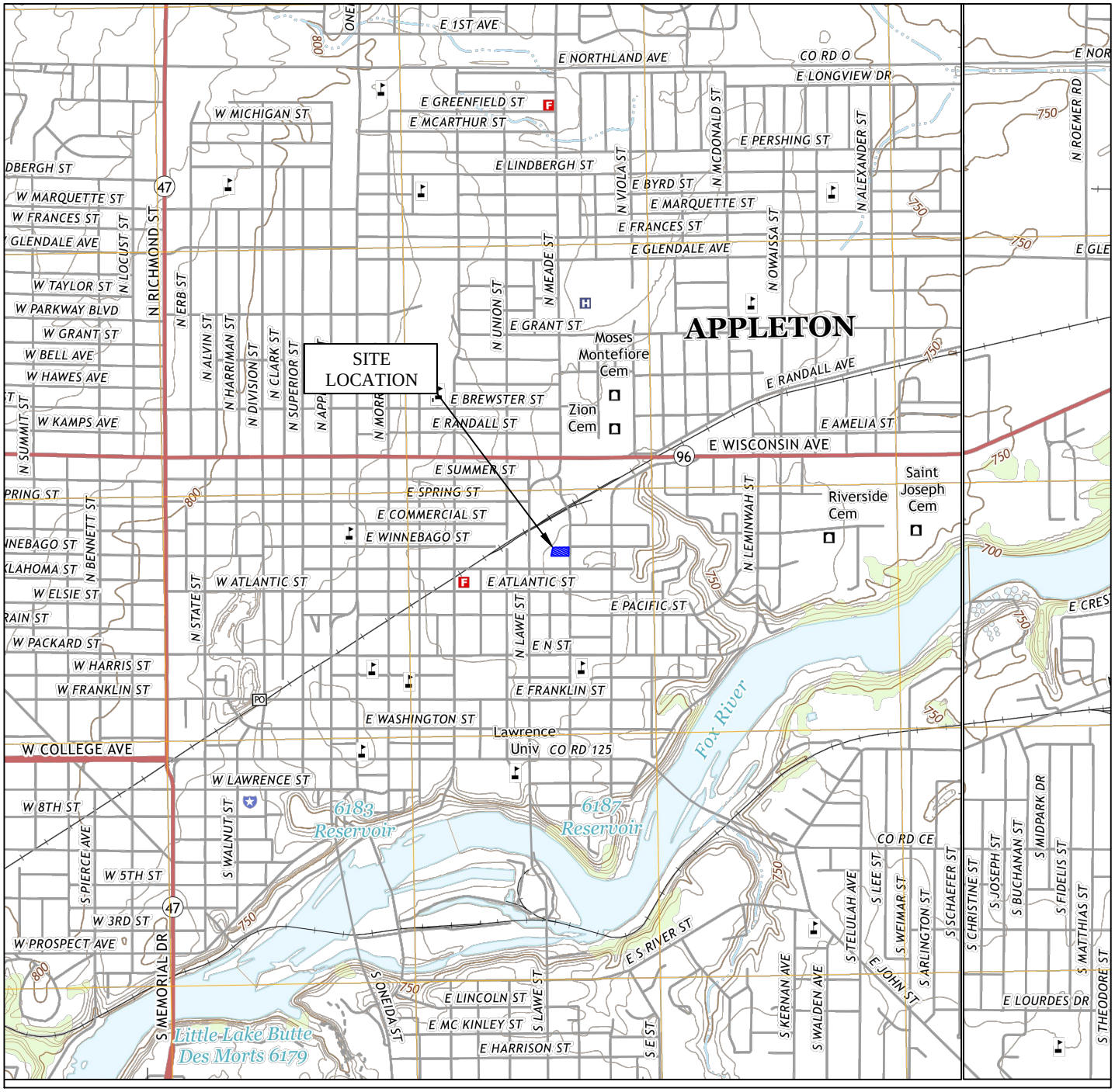
TABLE 3
POST-REMEDIATION GROUNDWATER MONITORING PLAN
Former Appleton Wire Facility
908 N. Lawe Street, Appleton, Wisconsin

	Frequency of Monitoring		
Monitoring Well ID	**Quarterly for 2 Years** (Remediation Performance)	**Annually for 2 Years** (Plume Distribution)	**Final Pre-Closure Event**
MW-1			C
MW-1B			C
MW-2		C, I, M	
MW-2A			C
MW-5	C, I, M		
MW-5A		C, I, M	
MW-10R			C
MW-10B			C
MW-17			C
MW-17A			C
MW-18			C
MW-18A			C
MW-19R	C, I, M		
MW-19AR		C, I, M	
MW-20R	C, I, M		
MW-20AR		C, I, M	
MW-21			C
MW-21A			C
MW-22			C
MW-22A			C
MW-23			C
MW-23A			C
MW-24			C
MW-24A			C
MW-25		C, I, M	
MW-25A			C
MW-26R	C, I, M		
MW-28R	C, I, M		
MW-30R	C, I, M		
MW-31		C, I, M	
MW-31A		C, I, M	
MW-32		C, I, M	
MW-32A		C, I, M	

Notes:
Groundwater monitoring will begin approximately six (6) months after completion of the remedial actions
C = total chromium analysis
I = iron analysis
M = manganese analysis

FIGURES



Scale 1:24,000

1 1/2 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

N

Source: US Geological Survey, Appleton, Wisconsin, 7.5 Minute Series, 2016
Source: US Geological Survey, Kaukauna, Wisconsin, 7.5 Minute Series, 2016

No.	Date	Revision	Approved

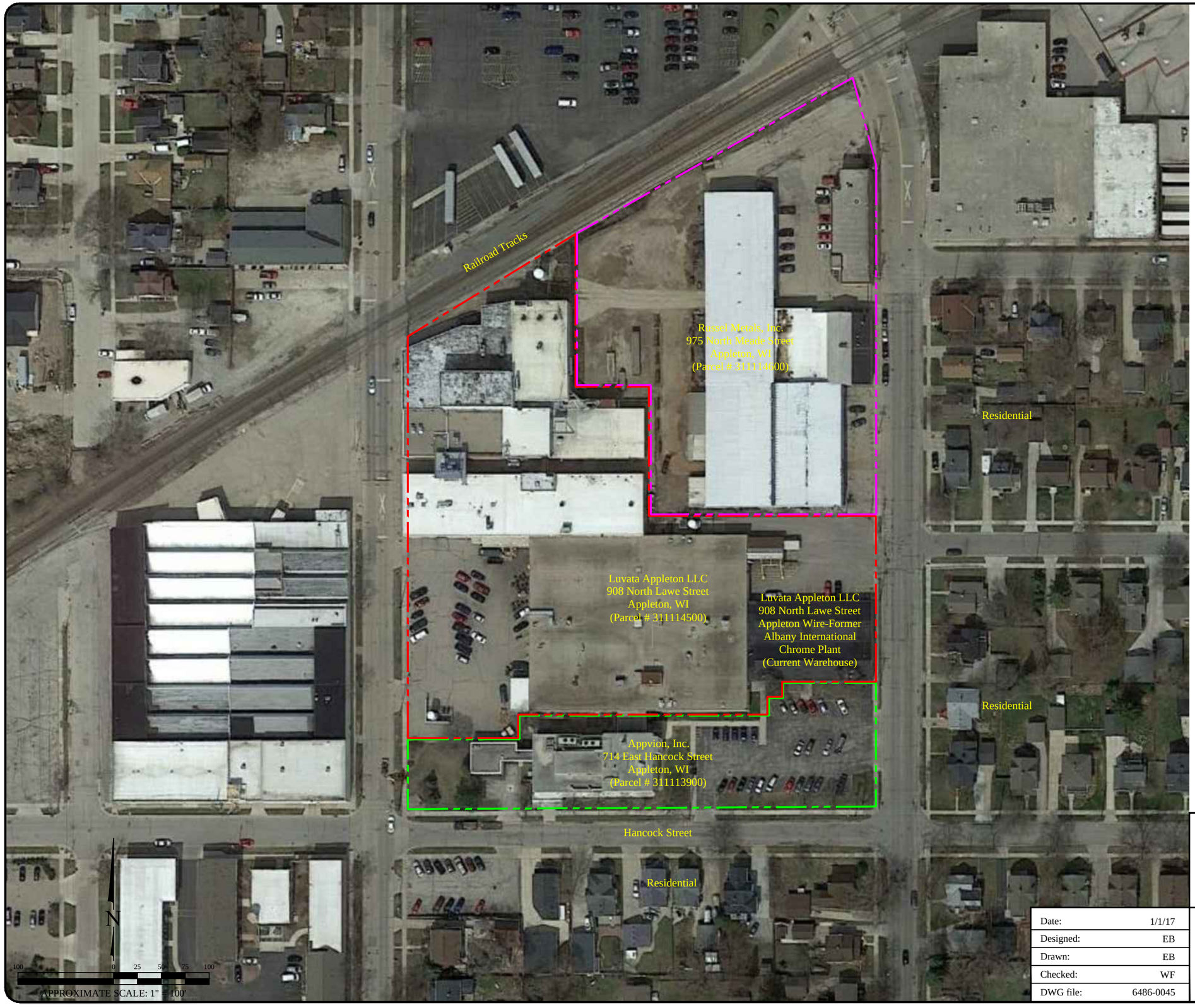
ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Date:	1/11/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-0044

SITE LOCATION MAP

Former Appleton Wire Division of Albany International Corporation
908 North Lawe Street
Appleton, Wisconsin

Figure
1
Project
6486



Legend

Property boundary

SITE AERIAL PHOTOGRAPH

Former Appleton Wire Division of Albany International Corporation
908 North Lawe Street
Appleton, Wisconsin

Date:	1/1/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-0045

ENVIRO forensics
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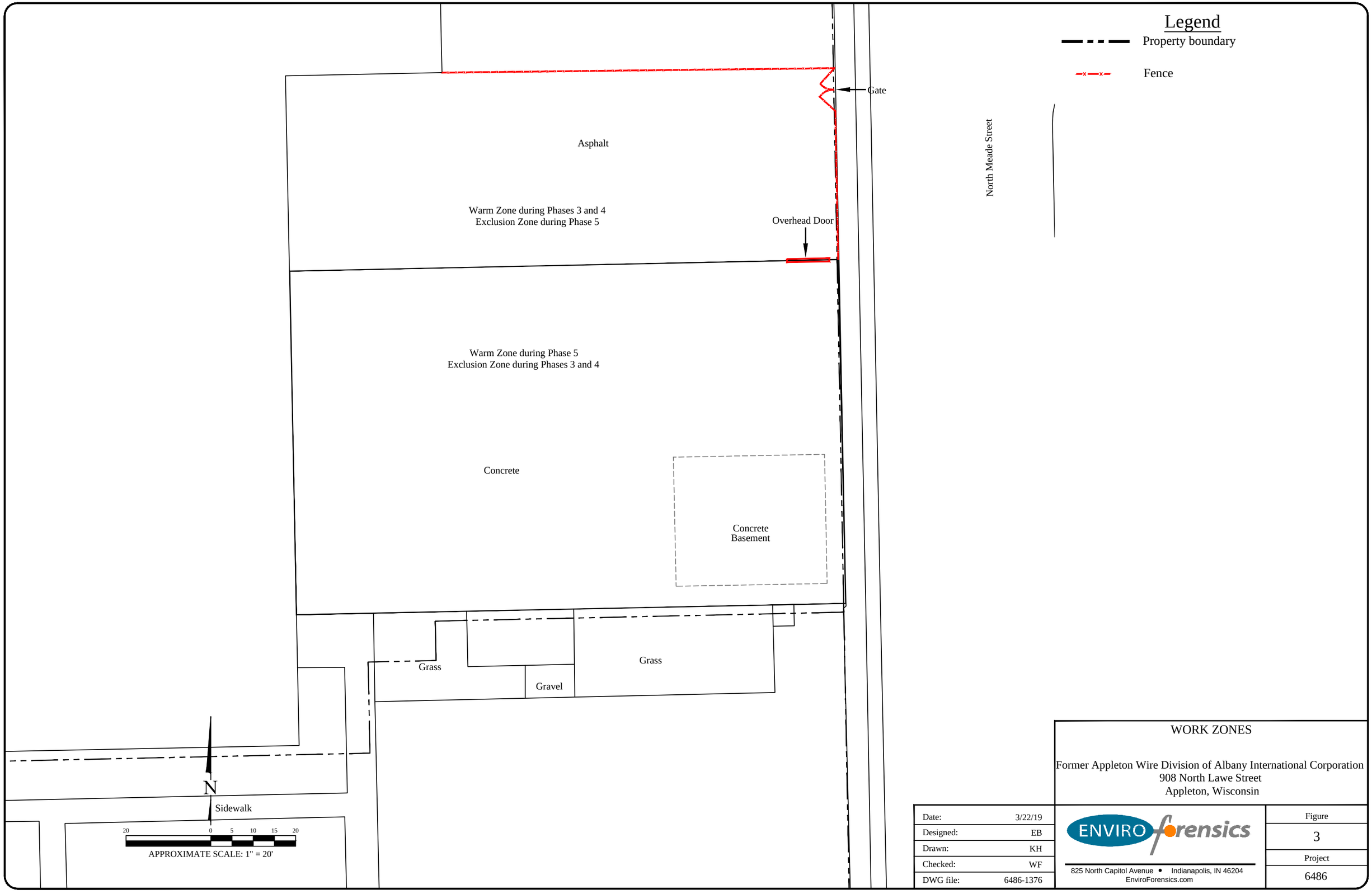
EnviroForensics.com

Figure
2
Project
6486



WORK ZONES

Former Appleton Wire Division of Albany International Corporation
908 North Lawe Street
Appleton, Wisconsin

Date:	3/22/19
Designed:	EB
Drawn:	KH
Checked:	WF
DWG file:	6486-1376

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Figure
3

Project
6486

N

40 0 10 20 30 40

APPROXIMATE SCALE: 1" = 40'

Legend

- Property boundary
- GAS — Underground gas utility line
- WTR — Underground water utility line
- SAN — Underground sanitary utility line
- UGT — Fiber optics line
- STM — Underground storm utility line
- Pipe chase
- French drain and associated piping
- Sump
- Former Sump
- Floor drain
- Manhole
- MW-1 — Monitoring well (STS)
- MW-18 — Monitoring well (McMahon)
- MW-19 — Monitoring well (Badger)
- MW-10 — Monitoring well abandoned (MW-10 in 1998) and (MW-11 in 1991)
- MW-4 — Monitoring well (EnviroForensics)
- Dairy tile floor
- 761 — Groundwater elevation contour
- 758.35 — Groundwater elevation (feet above mean sea level)

Gravel
Asphalt
Residential
Luvata Appleton LLC
908 North Lawe Street
820 Residence
814 Residence
806 Residence
802 Residence
Sidewalk
Concrete
Concrete (Former Transformer)
Concrete (Former Air Scrubber)
Basement
Grass
Gravel
Appvion, Inc.
714 East Hancock Street
Hancock Street
North Meade Street

MW-22 765.74
MW-22A
MW-17A
MW-17 762.89
MW-11
MW-23A
MW-23 761.54
MW-16 762.83
MW-26A
MW-30A
MW-30 760.58
MW-10/MW-10
MW-25A
MW-25 764.95
MW-20 761.73
MW-20A
MW-20B
MW-27B
MW-19 763.33
MW-27 760.59
MW-19A
MW-19C
MW-21 763.53
MW-21A
MW-29A
MW-29 763.60
MW-28 761.20
MW-28A
761.84
MW-10R
MW-10B
MW-3 763.79
MW-5C
B-5/MW-5A
MW-2A
MW-2 762.13
MW-24A
MW-24 761.28
MW-18 761.53
MW-18A
MW-13
MW-1 758.35

765 764 763 762 761 760 759 758 757 756 755.50 763

WATER TABLE CONTOUR MAP
JULY 26, 2017

Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	8/15/17
Designed:	EB
Drawn:	EB
Checked:	BK
DWG file:	6486-0666

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Figure 4

Project 6486

Legend

- Property boundary
- Underground gas utility line
- Underground water utility line
- Underground sanitary utility line
- Fiber optics line
- Underground storm utility line
- Pipe chase
- French drain and associated piping
- Sump
- Floor drain
- Dairy tile floor
- B-3 Soil boring (Others)
- C-1 Soil samples collected through concrete floor (Others)
- C-3 Soil samples collected through concrete wall (Others)
- MW-10 Monitoring well abandoned
- MW-10 Monitoring well abandoned
- MW-4 Monitoring well (EnviroForensics)
- GP-14 Soil boring (EnviroForensics)
- WS-1 Soil samples collected through concrete wall (EnviroForensics)
- GP-24 Soil boring New (EnviroForensics)
- GP-36/TW-1 Soil boring/Teporary well New (EnviroForensics)

Analyte	Soil to Groundwater Residual Contaminant Level	Non-Industrial Residual Contaminant Level	Industrial Residual Contaminant Level
Total Cr	NE	NE	NE
Cr (VI)	3.84*	0.301	6.36

Note:
1. Bold shaded blue values exceed WDNR Soil to Groundwater Residual Contaminant Level
2. Bold shaded green values exceed WDNR Non-Industrial Residual Contaminant Level
3. Bold shaded orange values exceed WDNR Industrial Residual Contaminant Level
4. Bold values exceed laboratory detection levels
5. Cr and Cr (VI) standards and analytical results are reported in milligram per kilogram (mg/kg)
6. Cr (VI) = Hexavalent Chromium
7. Cr = Chromium
8. NA = Not analyzed
9. NS = Not sampled
10. * = Calculated using EPA Risk-Based Screening Level Calculator
11. Lab LOD = Laboratory limit of detecting

- Total chromium concentrations 100 mg/kg
- Total chromium concentrations 500 mg/kg
- Total chromium concentrations exceeding Non-Industrial Residual Contaminant Level
- Total chromium concentrations exceeding Industrial Direct Contact Contaminant Level
- MW-19 Water table observation well (with 10 foot screen length)
- MW-19A Piezometer (with 5 foot screen length set within the 30-40' depth interval)
- MW-1B Piezometer (with 5 foot screen length set within the 40-50' depth interval)

B-21

2/1/90	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft
Total Chromium	138	148	170	439	596	280	20.4	19.6

B-13

2/12/87	5-6.5 ft	7.5-9 ft	10-11.5 ft	15-16.5 ft
Total Cr	68.8	44.6	188	6
Cr (VI)	68.8	44.6	188	<0.2

B-16

2/12/87	5-6.5 ft	7.5-9 ft
Total Cr	6.5	7.1
Cr (VI)	0.2	0.2

B-22

2/1/90	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft
Total Chromium	472	150	121	184	510	21	20.9	21.8

B-23

2/1/90	2 ft	3 ft	4 ft	5 ft	6 ft
Total Chromium	20.4	108	142	203	140

GP-20

8/30/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	69.5	53.1	111	23.9
Cr (VI)	<0.900	NS	NS	NS

GP-23

8/30/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	1,180	3,690	126	834
Cr (VI)	1.03	NS	NS	NS

GP-33

GP-33	Pace		Synergy	
5/23/18	1-1.5 ft	3.5-4 ft	1-1.5 ft	3.5-4 ft
Cr (VI)	<0.796	0.763 J	<0.64	<0.64
Lab LOD	0.796	0.718	0.64	0.64

B-14

2/12/87	12.5-14 ft
Total Chromium	6.5

MW-26A

5/11/17	0.5-1 ft	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Total Cr	574	131	130	192	26.8	26.2	23.9	25.1
Cr (VI)	NS	4.29	NS	35.1	NS	<0.900	NS	NS

GP-3

5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	27	55	NS	NS
Cr (VI)	<0.212	<0.223	NS	NS

GP-26

1/18/18	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Chromium	145	47.7	54.0	24.7

GP-32

5/23/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	12.8	14.7	26.9	23.6
Cr (VI)	0.841 J	<0.741	<0.740	<0.779

GP-24

1/18/18	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Chromium	680	77.9	31.0	26.0

GP-35

GP-35	Pace		Synergy	
5/23/18	1-1.5 ft	3.5-4 ft	1-1.5 ft	3.5-4 ft
Cr (VI)	<0.668	<0.747	<0.64	<0.64
Lab LOD	0.668	0.747	0.64	0.64

GP-25

1/18/18	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Chromium	556	86.6	65.5	59.2

GP-34

GP-34	Pace		Synergy	
5/23/18	1-1.5 ft	3.5-4 ft	1-1.5 ft	3.5-4 ft
Cr (VI)	<0.774	<0.669	0.867 J	<0.64
Lab LOD	0.774	0.669	0.64	0.64

MW-22A

5/16/17	0-5 ft
Total Cr	NS
Cr (VI)	1.88

B-15

2/12/87	5-6.5 ft	7.5-9 ft
Total Cr	6.8	5.6
Cr (VI)	0.2	2

GP-16

5/16/17	0-5 ft	5-10 ft	10-15 ft
Total Cr	NS	NS	NS
Cr (VI)	2.02	<0.900	<0.900

MW-20C

5/15/17	0-5 ft	10-15 ft	40-45 ft	45-50 ft	50-55 ft	55-60 ft
Total Cr	NS	NS	25.4	26.1	24.0	24.1
Cr (VI)	37.9	122	NS	NS	NS	NS

MW-20A

5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	30-35 ft	35-40 ft
Total Cr	362	146	263	24	16	17	15	15
Cr (VI)	3.08	0.941	0.343	0.469	0.55	0.277	<0.231	<0.211

GP-31

5/23/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	24.2	23.1	23.6	25.2
Cr (VI)	<0.746	<0.771	<0.754	<0.740

GP-30

5/23/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	18.9	23.7	18.2	24.4
Cr (VI)	<0.775	<0.744	<0.762	<0.737

GP-2

5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	25	18	NS	NS
Cr (VI)	<0.253	<0.211	NS	NS

MW-25A

5/11/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Total Cr	41.6	29.4	27.8	27.8	26.9	24.6	23.9
Cr (VI)	2.07	NS	<0.900	NS	<0.900	NS	NS

GP-36

5/22/18	0-5 ft	5-10 ft
Cr (VI)	<0.750	NS

GP-1

5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	NS	37	18	62
Cr (VI)	NS	<0.221	<0.218	<0.234

GP-40

5/22/18	0-5 ft	5-10 ft
Cr (VI)	<0.708	NS

GP-40/TW-5

GP-29

5/22/18	0-5 ft
Cr (VI)	<0.734

GP-39

5/22/18	0-5 ft
Cr (VI)	<0.837

GP-39/TW-4

GP-41

5/22/18	0-5 ft	5-10 ft
Cr (VI)	<0.745	NS

GP-41/TW-6

GP-38

5/22/18	0-5 ft
Cr (VI)	<0.745

GP-38/TW-3

MW-21A

5/14/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	21	13	18	15
Cr (VI)	<0.229	<0.224	<0.230	<0.226

GP-37

5/22/18	0-5 ft	5-10 ft
Cr (VI)	<0.686	NS

GP-37/TW-2

GP-36/TW-1

GP-7

5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	18	18	22	28
Cr (VI)	<0.227	0.368	0.582	0.287

GP-8

5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	39	48	46	NS
Cr (VI)	0.45	0.761	0.709	NS

MW-29A

5/10/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Total Cr	575	42.9	30.1	53.9	22.0	25.9	25.7
Cr (VI)	12.0	NS	1.24	NS	<0.900	NS	NS

MW-19A

6/30/09	10-15 ft	15-20 ft	20-25 ft	25-30 ft	30-35 ft	35-40 ft
Total Cr	99	14	15	19	14	12
Cr (VI)	19	<0.260	<0.260	<0.260	<0.260	<0.260

MW-19C

5/8/17	0-5 ft	10-15 ft	40-45 ft	45-50 ft	50-55 ft	55-60 ft
Total Cr	NS	NS	23.7	24.8	23.9	24.1
Cr (VI)	2.20	171	NS	NS	NS	NS

C-4

8/14/86	0-0.5 ft
Total Cr	57
Cr (VI)	57

GP-11

5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	1,130	76	45	15
Cr (VI)	4.48	1.77	<0.235	<0.236

B-2/MW-2

2/12/87	2-3.5 ft
Total Cr	12.7
Cr (VI)	0.4

B-3

2/12/87	4-5.5 ft
Total Cr	5.6
Cr (VI)	0.5

B-8

2/12/87	7.5-9 ft
Total Cr	6.6
Cr (VI)	<0.2

GP-15

5/16/17	0-5 ft	5-10 ft	10-15 ft
Total Cr	NS	NS	NS
Cr (VI)	<0.900	<0.900	<0.900

MW-27B

5/10/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	34-36 ft	35-40 ft	40-45 ft	45-50 ft
Total Cr	65.9	64.1	38.6	29.9	25.0	25.5	6.4	12.3	25.2	24.6
Cr (VI)	25.3	NS	8.13	NS	<0.900	NS	<0.900	NS	NS	NS

MW-28A

5/11/17	0-1 ft	0-5 ft	4-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Total Cr	2,620	1,850	328	90.9	36.6	27.9	25.3	25.3	23.7
Cr (VI)	NS	422	NS	NS	2.20	NS	<0.900	NS	NS

OW-3

1/18/18	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Chromium	99.8	27.5	27.2	18.1

OW-2

1/18/18	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Chromium	16.4	36.9	207	72.1

GP-9

5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	29	42	23	15
Cr (VI)	<0.228	0.748	<0.221	0.774

GP-10

5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	77	48	22	NS
Cr (VI)	1.03	1.11	<0.225	NS

UB-4

UB-4	Pace		Synergy	
5/23/18	1-1.5 ft	3.5-4 ft	1-1.5 ft	3.5-4 ft
Total Cr	31.6	27.8	24.2	20.6
Lab Limit	0.30	0.30	0.14	0.14
Cr (VI)	<0.750	<0.720	<0.64	<0.64
Lab LOD	0.750	0.720	0.64	0.64

GP-21

GP-21	8/30/17		8/31/17		
	0-5 ft	5-10 ft	10-15 ft	15-19.5 ft	19.5-20 ft
Total Cr	44.6	70.5	53.5	65.9	10.8
Cr (VI)	1.59	NS	NS	NS	NS

B-20

2/1/90	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft
Total Chromium	96.2	111	138	340	167	20.5	22.2	22.2

B-19

2/1/90	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft
Total Chromium	164	105	138	103	42.8	24.7	23.6	22.6

GP-22

8/30/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	52.3	45.6	34.1	25.7
Cr (VI)	<0.900	NS	NS	NS

B-18

2/1/90	2 ft	3 ft	4 ft	5 ft	6 ft	7 ft	8 ft	9 ft
Total Chromium	26.1	46.7	38.7	40	36.6	23.9	20.9	20.2

B-11/MW-11

2/12/87	5-6.5 ft	7.5-9 ft	10-11.5 ft
Total Cr	9.4	9.5	10.5
Cr (VI)	1.3	0.9	8.1

UB-1

5/16/17	0-5 ft	5-10 ft	10-15 ft
Total Cr	NS	NS	NS
Cr (VI)	1.51	<0.900	<0.900

TP-2

3/26/86	15 ft
Total Cr	36.6
Cr (VI)	30.8

TP-3

3/26/86	13 ft
Total Cr	<0.30
Cr (VI)	<0.01

GP-27

1/18/18	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Chromium	3,410	122	174	283

OW-1

1/18/18	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Chromium	241	77.2	135	104

MW-30A

5/9/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Total Cr	78.8	24.4	31.3	53.1	25.8	25.0	20.9
Cr (VI)	2.54	NS	<0.900	NS	<0.900	NS	NS

GP-19

5/15/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	30.6	44.9	25.3	23.9
Cr (VI)	NS	NS	NS	NS

GP-6

5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	51	18	23	NS
Cr (VI)	<0.229	1.23	1.35	NS

C-6

8/14/86	0-0.8 ft
Total Cr	14
Cr (VI)	14

B-10

2/12/87	5-6.5 ft
Total Cr	6.2
Cr (VI)	0.2

GP-18

5/15/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	58.4	53.0	55.7	24.8
Cr (VI)	NS	NS	NS	NS

GP-28

1/18/18	0-5 ft	10-15 ft	15-20 ft
Total Chromium	10.1	18.9	189

C-3

8/14/86	0-2 ft
Total Cr	<0.2
Cr (VI)	0.1

C-2

8/14/86	0-0.5 ft
Total Cr	7,317
Cr (VI)	7,300

GP-13

5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	164	43	NS	NS
Cr (VI)	3.06	0.306	NS	NS

MW-10B

5/18/17	0-5 ft
Total Cr	NS
Cr (VI)	<0.900

WS-4

8/30/17	8 ft
Total Cr	6.4
Cr (VI)	NS

B-9

2/12/87	7.5-9 ft	10-11.5 ft	15-16.5 ft
Total Cr	7.1	6.9	6.2
Cr (VI)	0.2	1.9	<0.2

GP-17

5/15/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	1,550	25.8	24.6	25.5
Cr (VI)	NS	NS	NS	NS

GP-12

5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Total Cr	355	128	NS	NS
Cr (VI)	<0.221	<0.237	NS	NS

WS-3

8/30/17	8 ft
Total Cr	6.5
Cr (VI)	NS

C-1

8/14/86	0-1 ft
Total Cr	0.6
Cr (VI)	0.6

C-5

8/14/86	NA
Total Cr	20
Cr (VI)	20

WS-2

8/30/17	8 ft
Total Cr	1,160
Cr (VI)	NS

WS-1

8/30/17	8 ft
Total Cr	55.3
Cr (VI)	NS

B-5/MW-5

2/12/87	2.5-4 ft	5-6.5 ft	7.5-9 ft	10-11.5 ft	12.5-14 ft	15-16.5 ft
Total Cr	10.5	9.7	9.6	18.2	29.1	7.9
Cr (VI)	0.4	0.2	2.6	18.2	21.7	0.2

B-4

2/12/87	2-3.5 ft
Total Cr	7.6
Cr (VI)	0.6

GP-14

5/16/17	0-5 ft	5-10 ft	10-15 ft
Total Cr	NS	NS	NS
Cr (VI)	<0.900	<0.900	<0.900

B-6

2/12/87	2.5-4 ft
Total Cr	6.6
Cr (VI)	0.2

B-7

2/12/87	7.5-9 ft
Total Cr	6.9
Cr (VI)	<0.2

UB-2

5/16/17	0-5 ft	5-10 ft	10-15 ft
Total Cr	NS	NS	NS
Cr (VI)	1.84	<0.900	<0.900

B-1/MW-1

2/12/87	8-9.5 ft
Total Cr	5.8
Cr (VI)	0.2

MW-1B

5/17/17	0-5 ft
Total Cr	NS
Cr (VI)	<0.900

UB-3

UB-3	Pace		Synergy	
5/23/18	1-1.5 ft	3.5-4 ft	1-1.5 ft	3.5-4 ft
Total Cr	23.3	23.5	10.6	20.6
Lab Limit	0.29	0.29	0.14	0.14
Cr (VI)	<0.715	<0.741	<0.64	<0.64
Lab LOD	0.715	0.741	0.64	0.64

SOIL ANALYTICAL RESULTS MAP WITH SELECT ISO-CONCENTRATION LINES SHOWING LATERAL DISTRIBUTION OF TOTAL CHROMIUM IMPACTS

Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Figure 5

Project 6486

Date:	6/29/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file: 6486-0740	

ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

No.	Date	Revision	Approved
1	7/3/18	Updates	WF

Legend

- Property boundary
- Underground gas utility line (GAS)
- Underground water utility line (WTR)
- Underground sanitary utility line (SAN)
- Fiber optics line (UGT)
- Underground storm utility line (STM)
- Pipe chase
- French drain and associated piping
- Sump
- Former Sump
- Floor drain
- Manhole
- Abandoned temporary well
- Monitoring well (Others)
- Abandoned monitoring well
- MW-4 Monitoring well (EnviroForensics)
- GP-36/TW-1 Temporary well New (EnviroForensics)
- Dairy tile floor

Analyte	Public Health Preventive Action Limit	Public Health Enforcement Standard
Cr	10	100
Cr (VI)	NE	NE

Note:
1. All groundwater samples were filtered and are representative of dissolved phase Cr and Cr (VI).
2. Bolded and orange shaded values exceed the Public Health Enforcement Standard
3. Bolded and blue shaded values exceed the Public Health Preventive Action Limit
4. Bolded values are above detection limits
5. J = Analyte concentration less that laboratory detection limits
6. Samples analyzed using EPA SW-846 Method 8260
7. All results reported in units of micrograms per liter (µg/L)
8. Cr (VI) = Hexavalent Chromium
9. Cr = Total Chromium
10. ND = Not detected
11. NA = Not analyzed
12. NE = Not established
13. Synergy = Synergy Environmental Laboratory, Inc.
14. Pace Analytical = Pace Analytical Services, LLC

- Area exceeding PAL for Total chromium >10 µg/L
- Area exceeding ES for Total chromium >100 µg/L
- Total chromium concentrations >5,000 µg/L
- Total chromium concentrations >25,000 µg/L
- Dashed boundaries are inferred

- MW-19 Water table observation well (with 10 foot screen length)
- MW-19A Piezometer (with 5 foot screen length set within the 30-40' depth interval)
- MW-1B Piezometer (with 5 foot screen length set within the 40-50' depth interval)

Russel Metals, Inc.
975 North Meade Street

Appvion, Inc.
714 East Hancock Street

Hancock Street

North Meade Street

Residential

Gravel

Asphalt

Concrete

Concrete (Former Transformer)

Concrete (Former Air Scrubber)

Concrete Basement

Former No. 2 Wire Plating Machine

Former No. 1 Wire Plating Machine

Former Air Scrubber

Grass

Sidewalk

820 Residence

814 Residence

802 Residence

MW-22	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-22A	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

GMW11	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**1.1**	**1.9**	**3.6**	**5.6**	**4.1**
Cr (VI)	<2	NA	<2.0	<0.002	<2.0

GMW10	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**0.5**	**0.6**	**11.0**	**0.5**	**2.6**
Cr (VI)	<2	NA	<2.0	<0.002	<2.0

GMW09	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**1.3**	**1.5**	**2.8**	**9.3**	**4.2**
Cr (VI)	<2	NA	<2.0	<0.002	<2.0

GMW08	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**0.4**	**1.4**	**489.0**	**8.6**	**101.0**
Cr (VI)	<2	NA	<2.0	<0.002	<2.0

MW-17A	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-17	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-26A	6/28/17	8/31/17
Cr	**7.9 J**	<2.5
Cr (VI)	<3.9	NA

MW-26	6/28/17	8/31/17
Cr	**72,900**	**84,500**
Cr (VI)	**82,500**	NA

B-3(TW)	6/5/85	1/24/86
Cr	**27,000**	**15,400**
Cr (VI)	**23,000**	**14,000**

MW-25A	6/28/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	<3.9	NA

MW-25	6/28/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	<3.9	NA

TW-5	7/16/18
Cr	**3.2 J**
Cr (VI)	NA

TW-1	7/16/18
Cr	<2.5
Cr (VI)	NA

MW-19A	6/29/17	8/31/17
Cr	**8.1 J**	**3.7 J**
Cr (VI)	<3.9	NA

MW-19	6/29/17	8/31/17
Cr	**23,600**	**13,600**
Cr (VI)	**25,000**	NA

TW-4	7/16/18	8/20/18	8/20/18
	Pace Analytical		Synergy
Cr	**196**	<2.5	<3.9
Cr (VI)	NA	NA	NA

TW-3	7/16/18
Cr	<2.5
Cr (VI)	NA

MW-19C	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	<3.9	NA

GP-7 (Temp)	5/12/14
Cr	**183**
Cr (VI)	**29**

MW-21	6/28/17	8/31/17
Cr	**16.1**	<2.5
Cr (VI)	<3.9	NA

MW-21A	6/28/17	8/31/17
Cr	**6.1 J**	<2.5
Cr (VI)	<3.9	NA

MW-29A	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	<3.9	NA

TW-3	7/16/18
Cr	<2.5
Cr (VI)	NA

MW-29	6/29/17	8/31/17
Cr	**951**	**228**
Cr (VI)	**1,000**	NA

MW-28	6/28/17	8/31/17
Cr	**3,890**	**390**
Cr (VI)	**3,200**	NA

TW-2	7/16/18
Cr	<2.5
Cr (VI)	NA

MW-28A	6/28/17	8/31/17
Cr	**8.4 J**	<2.5
Cr (VI)	**4.6 J**	NA

B-2(TW)	6/5/85
Cr	**8,400**
Cr (VI)	**8,400**

MW-2	6/29/17	8/31/17
Cr	**29.5**	<2.5
Cr (VI)	NA	NA

MW-2A	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

GMW02	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**5,700**	**6,355**	**6,115**	**7,040**	**6,600**
Cr (VI)	**4,700**	NA	**6,115**	**6,800**	**4,900**

GMW03	6/30/04	8/1/07	10/4/07	1/16/08	4/23/08
Cr	**5,000**	**4,790**	**3,545**	**4,550**	**3,320**
Cr (VI)	**4,700**	NA	**2,300**	**3,100**	**1,400**

GMW04	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**52**	**56**	**14**	**31**	**3.7**
Cr (VI)	**52**	NA	<2.0	<0.002	<2.0

MW-18	6/29/17	8/31/17
Cr	**3.5 J**	<2.5
Cr (VI)	NA	NA

MW-18A	6/29/17	8/31/17
Cr	ND	ND
Cr (VI)	NA	NA

MW-1	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-1B	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

GP-13 (Temp)	5/13/14
Cr	**2,991**
Cr (VI)	**1,600**

Manhole	6/15/17	8/9/17
Cr	**3,300**	**3,200**
Cr (VI)	**3,640**	NA

UB-1	6/19/17
Cr	**3.5 J**
Cr (VI)	NA

MW-23A	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-23	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-30A	6/28/17	8/31/17
Cr	**2.7 J**	<2.5
Cr (VI)	<19	NA

MW-30	6/28/17	8/31/17
Cr	**3,980**	**3,540**
Cr (VI)	**4,000**	NA

MW-20	6/28/17	8/31/17
Cr	**265,000**	**111,000**
Cr (VI)	**273,000**	NA

MW-20C	6/28/17	8/31/17
Cr	**10.0**	<2.5
Cr (VI)	<19	NA

MW-20A	6/28/17	8/31/17
Cr	**6.5 J**	**4.3 J**
Cr (VI)	<3.9	NA

MW-27B	6/28/17	8/31/17
Cr	**13.9**	<2.5
Cr (VI)	**7.4 J**	NA

Sump	6/15/17	8/9/17
Cr	**23,000**	**39,000**
Cr (VI)	**24,500**	NA

MW-27	6/28/17	8/31/17
Cr	**7,350**	**6,490**
Cr (VI)	**8,500**	NA

MW-10R	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-10B	6/29/17	8/31/17
Cr	**2.8 J**	<2.5
Cr (VI)	NA	NA

GMW07	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**0.8**	**1.7**	**2.3**	**13.0**	**3.1**
Cr (VI)	<2	NA	<2.0	<0.002	<2.0

GMW06	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**3.3**	**4.2**	**3.5**	**3.3**	**5.2**
Cr (VI)	<2	NA	<2.0	<0.002	<2.0

GMW05	6/30/04	8/1/04	10/24/07	1/16/08	4/23/08
Cr	**40**	**55**	**5.6**	**8.5**	**31.0**
Cr (VI)	**34**	NA	<2.0	<0.002	<2.0

B-1(TW)	6/5/85
Cr	**190**
Cr (VI)	**190**

GMW01	6/30/04	8/1/07	10/4/07	1/16/08	4/23/08
Cr	**5,300**	**8,490**	**3,085**	**3,820**	**2,001**
Cr (VI)	**5,100**	NA	**1,900**	**2,260**	**2,000**

MW-5	6/29/17	8/31/17
Cr	**120**	**256**
Cr (VI)	NA	NA

MW-24A	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-24	6/29/17	8/31/17
Cr	<2.5	**2.6 J**
Cr (VI)	NA	NA

MW-5A	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

MW-5C	6/29/17	8/31/17
Cr	<2.5	<2.5
Cr (VI)	NA	NA

UB-2	6/19/17
Cr	<2.5
Cr (VI)	NA

N

20 0 5 10 15 20

APPROXIMATE SCALE: 1" = 20'

Figure 6

Project 6486

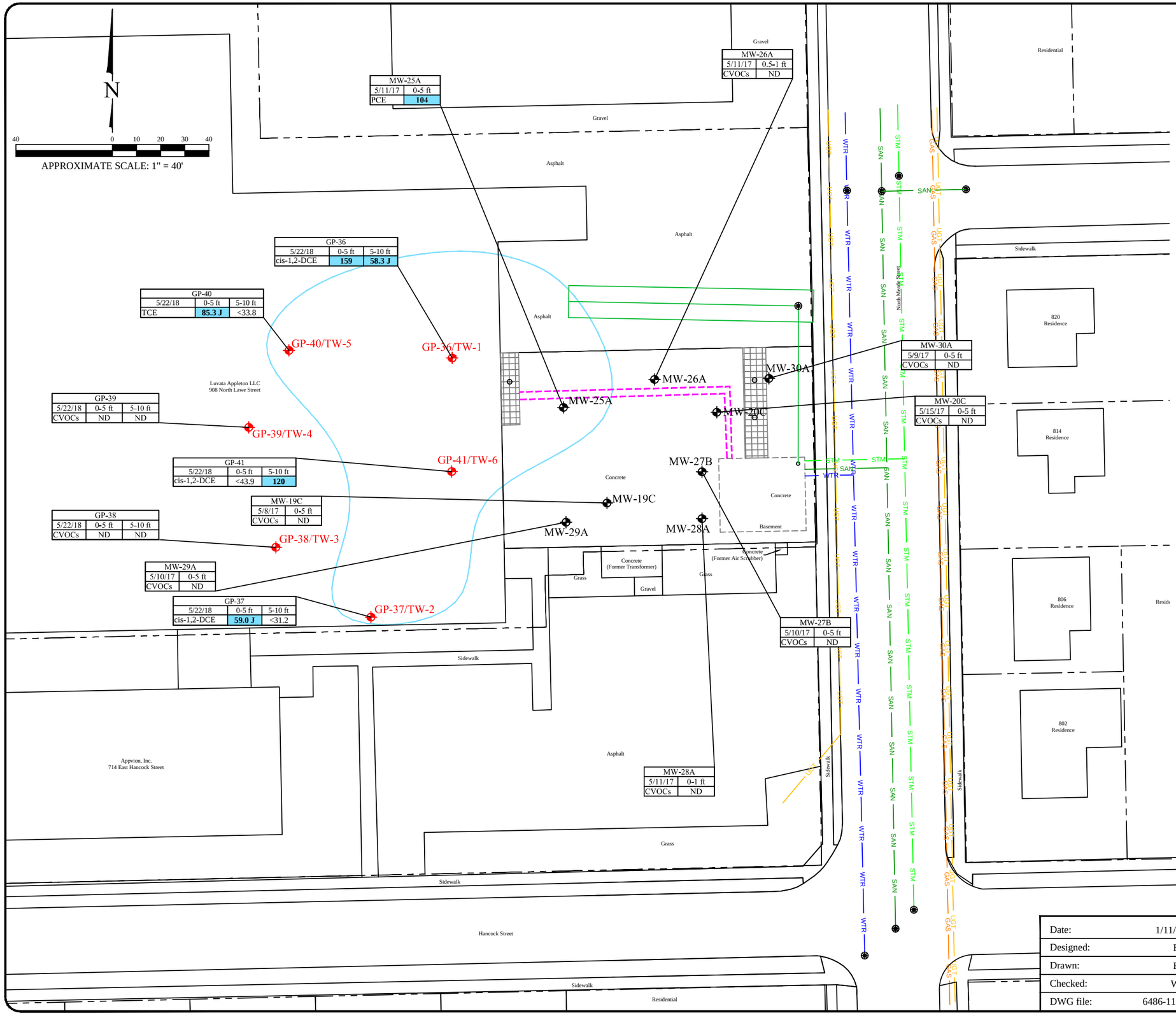
LATERAL DISTRIBUTION OF DISSOLVED CHROMIUM IN GROUNDWATER

Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date: 9/21/17
Designed: EB
Drawn: EB
Checked: WF
DWG file: 6486-0461

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

No.	Date	Revision	Approved



Legend

- Property boundary
- Underground gas utility line (GAS)
- Underground water utility line (WTR)
- Underground sanitary utility line (SAN)
- Fiber optics line (UGT)
- Underground storm utility line (STM)
- Pipe chase
- French drain and associated piping
- Sump
- Former Sump
- Floor drain
- Manhole
- MW-4 — Monitoring well
- GP-36/TW-1 — Soil boring/Temporary well (EnviroForensics)
- Dairy tile floor

Analyte	Soil to Groundwater Residual Contaminant Level	Non-Industrial Residual Contaminant Level	Industrial Residual Contaminant Level
PCE	**4.5**	**33,000**	**145,000**
TCE	**3.6**	**1,300**	**8,410**
cis-1,2-DCE	**41.2**	**156,000**	**2,340,000**

Note:

1. Bold shaded blue values exceed WDNR Soil to Groundwater Residual Contaminant Level
2. Results are reported in micrograms per kilogram (µg/kg)
3. PCE = Tetrachloroethene
4. TCE = Trichloroethene
5. cis-1,2-DCE = cis-1,2-Dichloroethene
6. CVOCs = Chlorinated Volatile Organic Compounds
7. ND = Not detected above laboratory detection limits

Extent of CVOC concentrations in soil exceeding a Soil to Groundwater Residual Contaminant Level

DETECTED CVOCs IN SOIL

Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	1/11/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-1142

ENVIROforensics
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EnviroForensics.com

Figure 7

Project 6486

MW-26	6/28/17	8/31/17
cis-1,2-DCE	**8.4**	**6.4 J**
trans-1,2-DCE	**1.3**	<2.6
MC	<0.23	**4.4 J**
Vinyl Chloride	**0.45 J**	<1.8

MW-26A	6/28/17
CVOCs	ND

MW-25	6/28/17	8/31/17
1,1-DCA	**3.3**	**3.7**
cis-1,2-DCE	**63.9**	**76.5**
trans-1,2-DCE	**6.1**	**5.3**
TCE	**0.34 J**	<0.33
Vinyl Chloride	**22.5**	**16.7**

MW-17	8/31/17
CVOCs	ND

Manhole	4/5/17
PCE	**0.79 J**
TCE	**3.3**
cis-1,2-DCE	**21.4**
trans-1,2-DCE	**0.58 J**

MW-25A	6/28/17
CVOCs	ND

TW-1	bailer	Low-Flow
	7/16/18	8/20/18
1,1-DCA	**6.6**	**4.9**
cis-1,2-DCE	**101**	**80.5**
trans-1,2-DCE	**7.3**	**5.8**
PCE	**49.8**	**61.4**
TCE	**60.3**	**51.7**
Vinyl Chloride	**0.38 J**	<0.17

TW-5	bailer	Low-Flow
	7/16/18	8/20/18
Chloromethane	**4.1**	<2.2
1,1-DCA	**0.45 J**	**0.42 J**
PCE	<0.50	**2.1**

TW-6	bailer	Low-Flow
	7/16/18	8/20/18
Benzene	<5.0	**1.0 J**
1,1-DCA	**3.4 J**	**2.5 J**
cis-1,2-DCE	**1,470**	**1,200**
trans-1,2-DCE	**69.0**	**60.7**
TCE	**4.0 J**	**3.4 J**
Vinyl Chloride	**146**	**87.8**

TW-4	bailer	Low-Flow
	7/16/18	8/20/18
cis-1,2-DCE	<0.26	**0.53 J**
PCE	<0.50	**0.36 J**

TW-3	bailer	Low-Flow
	7/16/18	8/20/18
Chloroethane	**0.58 J**	<1.3
Chloromethane	**8.0**	<2.2
1,1-DCA	**0.62 J**	**0.39 J**
cis-1,2-DCE	**0.61 J**	**0.28 J**
PCE	<0.5	**0.97 J**

MW-21	6/28/17	8/31/17
1,1-DCA	**3.5 J**	**3.6 J**
cis-1,2-DCE	**456**	**547**
trans-1,2-DCE	**52.3**	**43.3**
TCE	**3.9 J**	**2.0 J**
Vinyl Chloride	**6.8**	**5.2**

MW-29A	6/29/17
Chloromethane	**0.52 J**

MW-21A	6/28/17
CVOCs	ND

MW-29	6/29/17
Chloromethane	**0.52 J**
1,1,1-TCA	**0.55 J**

MW-2	8/31/17
CVOCs	ND

TW-2	bailer	Low-Flow
	7/16/18	8/20/18
Chloromethane	**5.4**	<2.2
1,1-DCA	**1.3 J**	**1.2**
cis-1,2-DCE	**127**	**131**
trans-1,2-DCE	**13.3**	**12.8**
PCE	<1.2	**2.6**
TCE	**4.0**	**3.9**
Vinyl Chloride	**1.7 J**	**1.9**

MW-19	6/29/17	8/31/17
Chloromethane	**0.55 J**	<0.50
1,1-DCE	<0.24	**0.28 J**
cis-1,2-DCE	**5.5**	**1.7**
trans-1,2-DCE	**0.55 J**	<0.26
PCE	**28.5**	**1.3**
1,1,1-TCA	**4.1**	**1.2**
TCE	**5.7**	**0.82 J**

MW-19A	6/29/17
VOCs	ND

MW-19C	6/29/17
Chloromethane	**2.1**

MW-5	8/31/17
CVOCs	ND

MW-30A	6/28/17
CVOCs	ND

MW-30	6/28/17
CVOCs	ND

MW-20	6/28/17	8/31/17
cis-1,2-DCE	**0.77 J**	<2.6
MC	<0.23	**3.8 J**

MW-20C	6/28/17
CVOCs	ND

MW-20A	6/28/17
CVOCs	ND

MW-10R	8/31/17
CVOCs	ND

Basement Sump	4/5/17
cis-1,2-DCE	**1.0**

MW-27B	6/28/17
CVOCs	ND

MW-27	6/28/17	8/31/17
Chloromethane	**0.84 J**	<0.50
cis-1,2-DCE	**0.45 J**	<0.26

MW-28	6/28/17	8/31/17
CVOCs	ND	ND

Legend

- Property boundary
- Underground gas utility line (GAS)
- Underground water utility line (WTR)
- Underground sanitary utility line (SAN)
- Fiber optics line (UGT)
- Underground storm utility line (STM)
- Pipe chase
- French drain and associated piping
- Sump
- Floor drain
- Manhole
- MW-1 — Monitoring well
- MW-5C — Abandoned monitoring well
- TW-1 — New temporary groundwater monitoring well
- Dairy tile floor

Analyte	Public Health Preventive Action Limit	Public Health Enforcement Standard
Chloromethane	**3**	**30**
1,1-DCA	**85**	**850**
cis-1,2-DCE	**7**	**70**
trans-1,2-DCE	**10**	**100**
PCE	**0.5**	**5**
1,1,1-TCA	**20**	**200**
TCE	**0.5**	**5**
Vinyl Chloride	**0.02**	**0.2**
MC	**0.5**	**5**

Note:

1. Bolded and orange shaded values exceed the Public Health Enforcement Standard
2. Bolded and blue shaded values exceed the Public Health Preventive Action Limit
3. Bolded values are above detection limits
4. J = Analyte concentration less that laboratory detection limits
5. Samples analyzed using EPA SW-846 Method 8260
6. All results reported in units of micrograms per liter (µg/L)
7. PCE = Tetrachloroethene
8. TCE = Trichloroethene
9. 1,1-DCA = 1,1-Dichloroethane
10. cis-1,2-DCE = cis-1,2-Dichloroethene
11. trans-1,2-DCE = trans-1,2-Dichloroethene
12. 1,1,1-TCA = 1,1,1-Tichloroethane
13. MC = Methylene Chloride
14. CVOCs = Chlorinated Volatile Organic Compounds
15. ND = Not detected above laboratory detection limits

- MW-19 — Water table observation well (with 10 foot screen length)
- MW-19A — Piezometer (with 5 foot screen length set within the 30-40' depth interval)
- MW-1B — Piezometer (with 5 foot screen length set within the 40-50' depth interval)
- Extent of CVOCs exceeding the groundwater enforcement standard

N

40 0 10 20 30 40

APPROXIMATE SCALE: 1" = 40'

DETECTED CVOCs IN GROUNDWATER

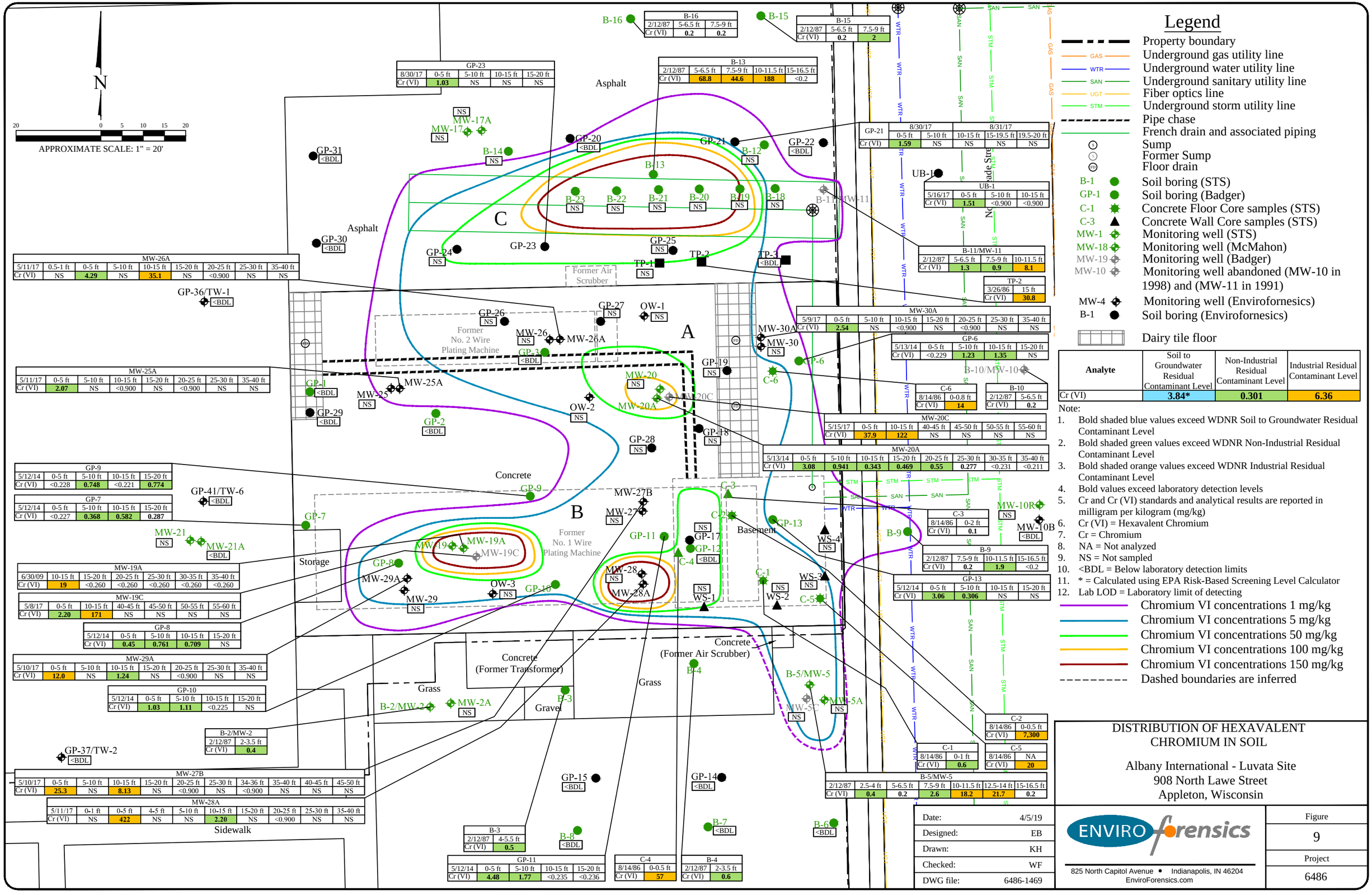
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	8/6/18
Designed:	EB
Drawn:	KH
Checked:	WF
DWG file:	6486-1158

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 8

Project 6486



MW-26A								
5/11/17	0.5-1 ft	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	NS	**4.29**	NS	**35.1**	NS	<0.900	NS	NS

MW-25A							
5/11/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	**2.07**	NS	<0.900	NS	<0.900	NS	NS

GP-9				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	<0.228	**0.748**	<0.221	**0.774**

GP-7				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	<0.227	**0.368**	**0.582**	**0.287**

MW-19A							
6/30/09	10-15 ft	15-20 ft	20-25 ft	25-30 ft	30-35 ft	35-40 ft
Cr (VI)	**19**	<0.260	<0.260	<0.260	<0.260	<0.260

MW-19C						
5/8/17	0-5 ft	10-15 ft	40-45 ft	45-50 ft	50-55 ft	55-60 ft
Cr (VI)	**2.20**	**171**	NS	NS	NS	NS

GP-8				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**0.45**	**0.761**	**0.709**	NS

MW-29A							
5/10/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	**12.0**	NS	**1.24**	NS	<0.900	NS	NS

GP-10				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**1.03**	**1.11**	<0.225	NS

B-2/MW-2	
2/12/87	2-3.5 ft
Cr (VI)	**0.4**

MW-27B										
5/10/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	34-36 ft	35-40 ft	40-45 ft	45-50 ft
Cr (VI)	**25.3**	NS	**8.13**	NS	<0.900	NS	<0.900	NS	NS	NS

MW-28A										
5/11/17	0-1 ft	0-5 ft	4-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	NS	**422**	NS	NS	**2.20**	NS	<0.900	NS	NS

B-16		
2/12/87	5-6.5 ft	7.5-9 ft
Cr (VI)	**0.2**	**0.2**

B-15		
2/12/87	5-6.5 ft	7.5-9 ft
Cr (VI)	**0.2**	**2**

B-13					
2/12/87	5-6.5 ft	7.5-9 ft	10-11.5 ft	15-16.5 ft
Cr (VI)	**68.8**	**44.6**	**188**	<0.2

GP-23					
8/30/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**1.03**	NS	NS	NS

GP-21	8/30/17			8/31/17	
	0-5 ft	5-10 ft	10-15 ft	15-19.5 ft	19.5-20 ft
Cr (VI)	**1.59**	NS	NS	NS	NS

UB-1				
5/16/17	0-5 ft	5-10 ft	10-15 ft
Cr (VI)	**1.51**	<0.900	<0.900

B-11/MW-11				
2/12/87	5-6.5 ft	7.5-9 ft	10-11.5 ft
Cr (VI)	**1.3**	**0.9**	**8.1**

TP-2	
3/26/86	15 ft
Cr (VI)	**30.8**

MW-30A							
5/9/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	**2.54**	NS	<0.900	NS	<0.900	NS	NS

GP-6					
5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	<0.229	**1.23**	**1.35**	NS

C-6	
8/14/86	0-0.8 ft
Cr (VI)	**14**

B-10	
2/12/87	5-6.5 ft
Cr (VI)	**0.2**

MW-20C							
5/15/17	0-5 ft	10-15 ft	40-45 ft	45-50 ft	50-55 ft	55-60 ft
Cr (VI)	**37.9**	**122**	NS	NS	NS	NS

MW-20A								
5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	30-35 ft	35-40 ft
Cr (VI)	**3.08**	**0.941**	**0.343**	**0.469**	**0.55**	**0.277**	<0.231	<0.211

C-3	
8/14/86	0-2 ft
Cr (VI)	**0.1**

B-9			
2/12/87	7.5-9 ft	10-11.5 ft	15-16.5 ft
Cr (VI)	**0.2**	**1.9**	<0.2

GP-13				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**3.06**	**0.306**	NS	NS

C-2	
8/14/86	0-0.5 ft
Cr (VI)	**7,300**

C-1	
8/14/86	0-1 ft
Cr (VI)	**0.6**

C-5	
8/14/86	NA
Cr (VI)	**20**

B-5/MW-5							
2/12/87	2.5-4 ft	5-6.5 ft	7.5-9 ft	10-11.5 ft	12.5-14 ft	15-16.5 ft
Cr (VI)	**0.4**	**0.2**	**2.6**	**18.2**	**21.7**	**0.2**

B-3	
2/12/87	4-5.5 ft
Cr (VI)	**0.5**

GP-11				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**4.48**	**1.77**	<0.235	<0.236

C-4	
8/14/86	0-0.5 ft
Cr (VI)	**57**

B-4		
2/12/87	2-3.5 ft
Cr (VI)	**0.6**

Legend

- Property boundary
- Underground gas utility line
- Underground water utility line
- Underground sanitary utility line
- Fiber optics line
- Underground storm utility line
- Pipe chase
- French drain and associated piping
- Sump
- Former Sump
- Floor drain
- B-1 Soil boring (STS)
- GP-1 Soil boring (Badger)
- C-1 Concrete Floor Core samples (STS)
- C-3 Concrete Wall Core samples (STS)
- MW-1 Monitoring well (STS)
- MW-18 Monitoring well (McMahon)
- MW-19 Monitoring well (Badger)
- MW-10 Monitoring well abandoned (MW-10 in 1998) and (MW-11 in 1991)
- MW-4 Monitoring well (Enviroforensics)
- B-1 Soil boring (Enviroforensics)
- Dairy tile floor

Analyte	Soil to Groundwater Residual Contaminant Level	Non-Industrial Residual Contaminant Level	Industrial Residual Contaminant Level
Cr (VI)	**3.84***	**0.301**	**6.36**

Note:

1. Bold shaded blue values exceed WDNR Soil to Groundwater Residual Contaminant Level
2. Bold shaded green values exceed WDNR Non-Industrial Residual Contaminant Level
3. Bold shaded orange values exceed WDNR Industrial Residual Contaminant Level
4. Bold values exceed laboratory detection levels
5. Cr and Cr (VI) standards and analytical results are reported in milligram per kilogram (mg/kg)
6. Cr (VI) = Hexavalent Chromium
7. Cr = Chromium
8. NA = Not analyzed
9. NS = Not sampled
10. <BDL = Below laboratory detection limits
11. * = Calculated using EPA Risk-Based Screening Level Calculator
12. Lab LOD = Laboratory limit of detecting

- Chromium VI concentrations 1 mg/kg
- Chromium VI concentrations 5 mg/kg
- Chromium VI concentrations 50 mg/kg
- Chromium VI concentrations 100 mg/kg
- Chromium VI concentrations 150 mg/kg
- Dashed boundaries are inferred

DISTRIBUTION OF HEXAVALENT CHROMIUM IN SOIL

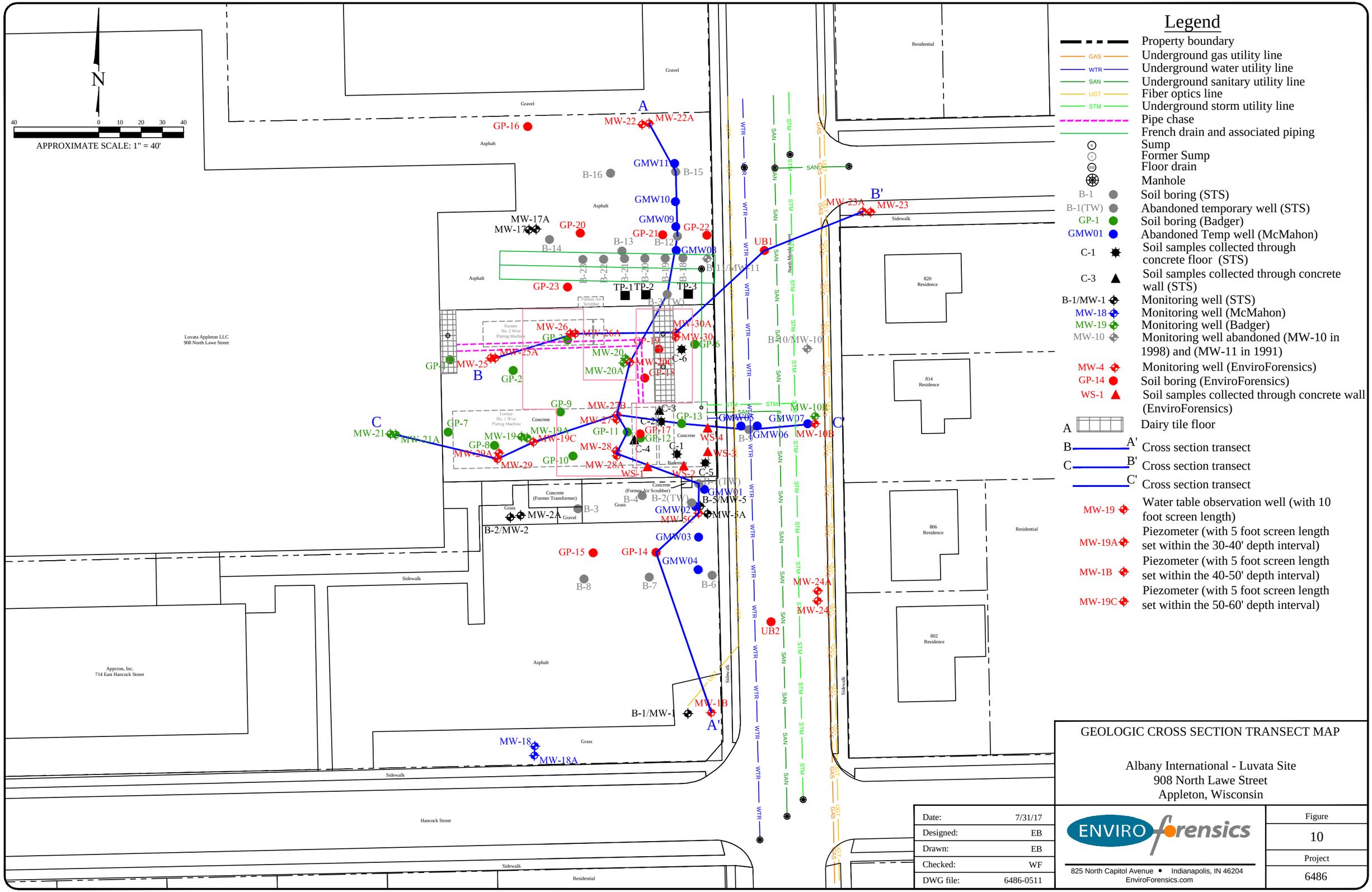
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	4/5/19
Designed:	EB
Drawn:	KH
Checked:	WF
DWG file:	6486-1469

ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 9

Project 6486



Legend

- Property boundary
- Underground gas utility line
- Underground water utility line
- Underground sanitary utility line
- Fiber optics line
- Underground storm utility line
- Pipe chase
- French drain and associated piping
- Sump
- Former Sump
- Floor drain
- Manhole
- B-1 — Soil boring (STS)
- B-1(TW) — Abandoned temporary well (STS)
- GP-1 — Soil boring (Badger)
- GMW01 — Abandoned Temp well (McMahon)
- C-1 — Soil samples collected through concrete floor (STS)
- C-3 — Soil samples collected through concrete wall (STS)
- B-1/MW-1 — Monitoring well (STS)
- MW-18 — Monitoring well (McMahon)
- MW-19 — Monitoring well (Badger)
- MW-10 — Monitoring well abandoned (MW-10 in 1998) and (MW-11 in 1991)
- MW-4 — Monitoring well (EnviroForensics)
- GP-14 — Soil boring (EnviroForensics)
- WS-1 — Soil samples collected through concrete wall (EnviroForensics)
- A — Dairy tile floor
- B — A' Cross section transect
- C — B' Cross section transect
- C' Cross section transect
- MW-19 — Water table observation well (with 10 foot screen length)
- MW-19A — Piezometer (with 5 foot screen length set within the 30-40' depth interval)
- MW-1B — Piezometer (with 5 foot screen length set within the 40-50' depth interval)
- MW-19C — Piezometer (with 5 foot screen length set within the 50-60' depth interval)

GEOLOGIC CROSS SECTION TRANSECT MAP

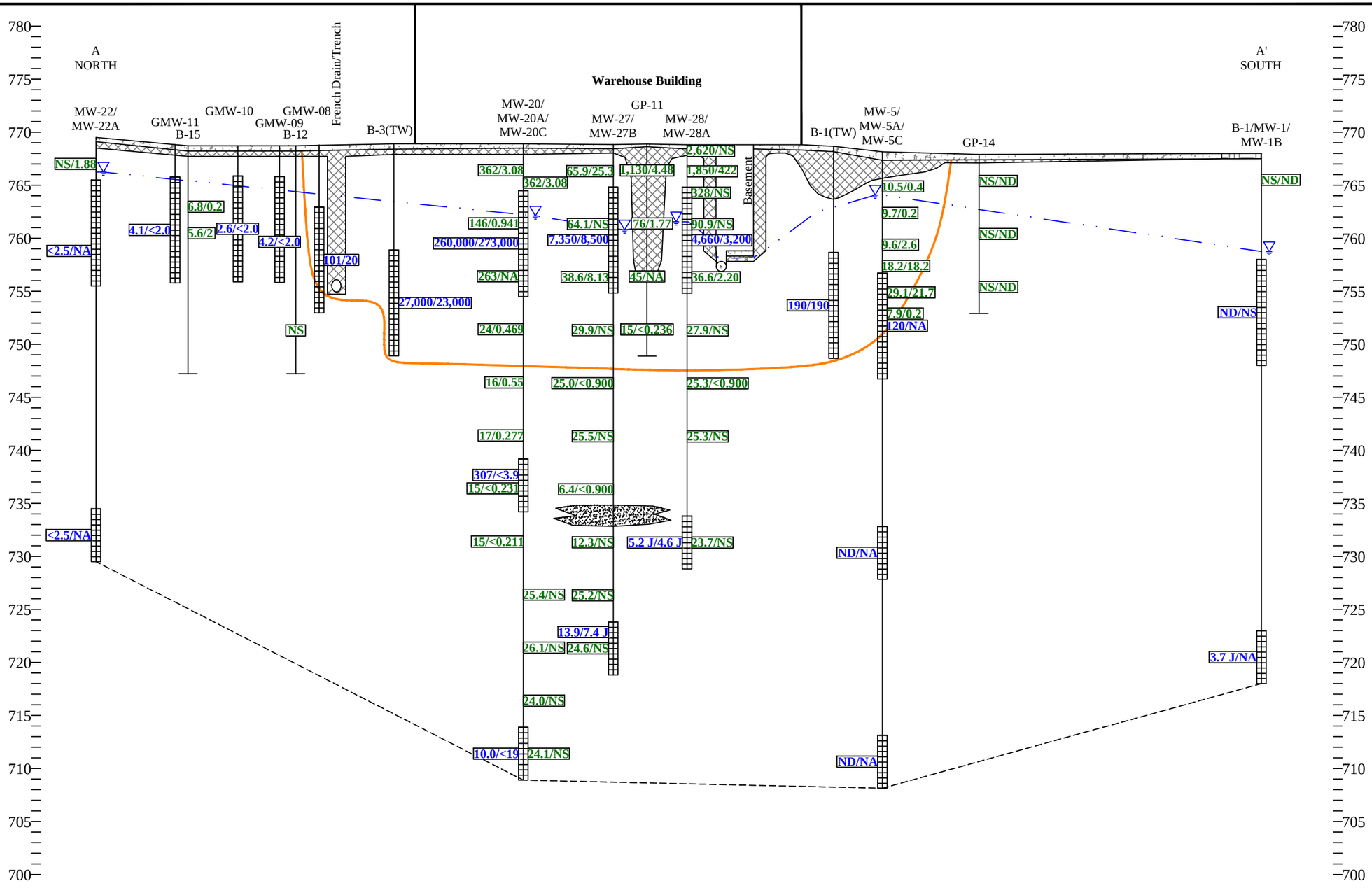
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	7/31/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-0511

ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 10

Project 6486



Legend

	Concrete
	Top Soil
	Fill (Sand and Gravel)
	Clayey Sand
	Clay

700/700 Total chromium/Hexavalent chromium concentration in soil sample (mg/kg)

700/700 Dissolved chromium/Dissolved Hexavalent chromium concentration in monitoring well sample (µg/L)

Observed groundwater elevation in monitoring well on 7/26/17

Monitoring well screen

Proposed depth of treatment

Dashed boundaries are inferred

⊙ Sump location (Approximate)

Note:

1. Soil units in milligrams per kilogram (mg/kg)
2. Groundwater units in micrograms per liter (µg/L)
3. Vertical positions of soil analytical results coincides with the depth at which samples were collected
4. ND = Not detected
5. NA = Not analyzed
6. NS = Not sampled

Horizontal Scale: 1" = 30'
Vertical Scale: 1" = 10'
VERTICAL EXAGGERATION: 3X

10 0 0 30 SCALE

GEOLOGIC CROSS SECTION A-A' SHOWING DISTRIBUTION OF HEXAVALENT CHROMIUM IN SOIL WITH PROPOSED DEPTH OF TREATMENT

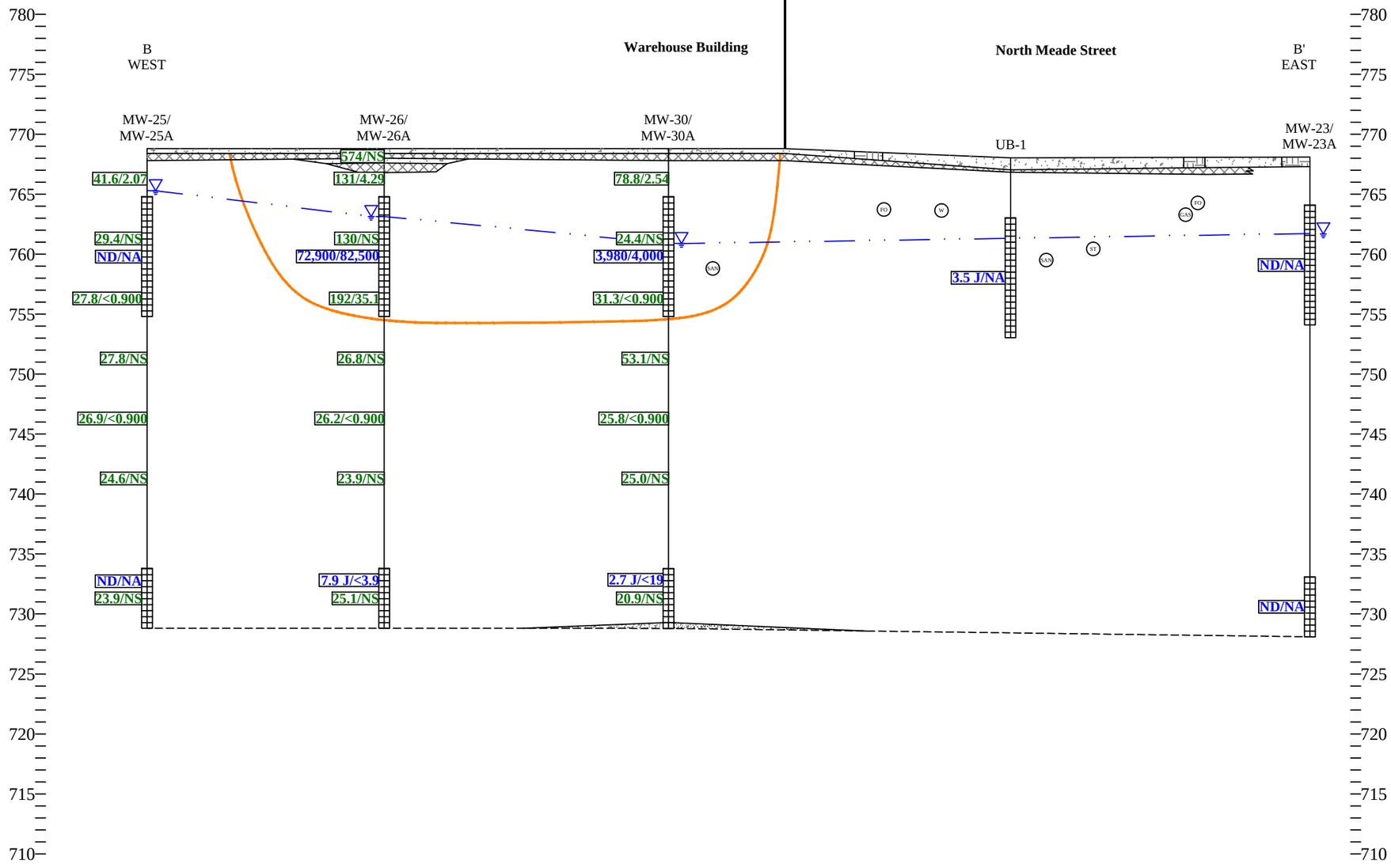
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	7/31/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-0511

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 11

Project 6486



Legend

	Concrete
	Top Soil
	Fill (Sand and Gravel)
	Clayey Sand
	Clay

700/700 Total chromium/Hexavalent chromium concentration in soil sample (mg/kg)

700/700 Dissolved chromium/Dissolved Hexavalent chromium concentration in monitoring well sample (µg/L)

Observed groundwater elevation in monitoring well on 7/26/17

Monitoring well screen

Proposed depth of treatment

Dashed boundaries are inferred

- Underground sanitary utility line
- Underground storm utility line
- Underground gas utility line
- Underground water utility line
- Fiber optics line

Note:

1. Soil units in milligrams per kilogram (mg/kg)
2. Groundwater units in micrograms per liter (µg/L)
3. Vertical positions of soil analytical results coincides with the depth at which samples were collected
4. ND = Not detected
5. NA = Not analyzed
6. NS = Not sampled

10
0
0 20
SCALE

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 10'
VERTICAL EXAGGERATION: 2X

GEOLOGIC CROSS SECTION B-B' SHOWING DISTRIBUTION OF HEXAVALENT CHROMIUM IN SOIL WITH PROPOSED DEPTH OF TREATMENT

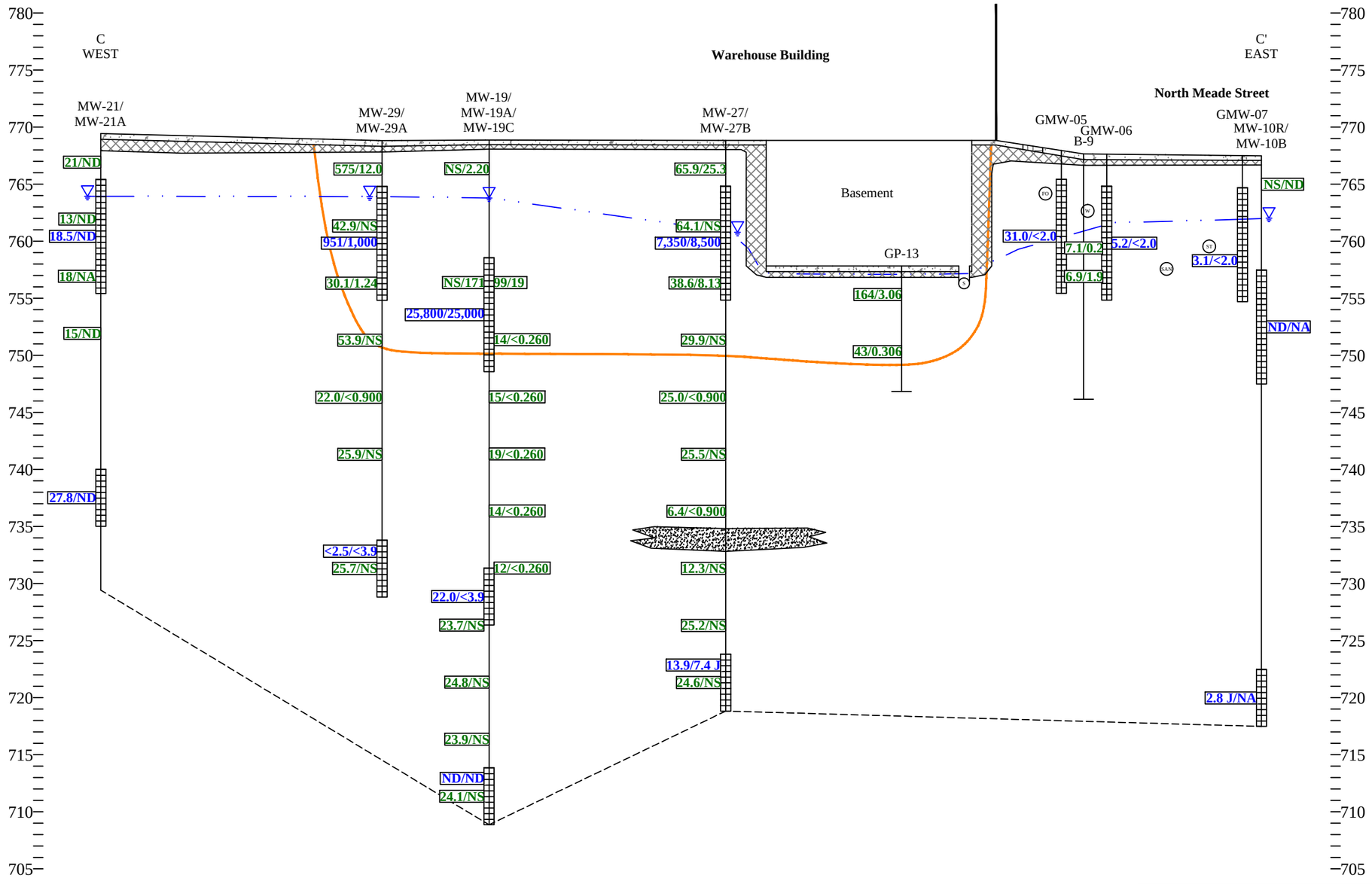
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	7/31/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-0511

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 12

Project 6486



Legend

	Concrete
	Top Soil
	Fill (Sand and Gravel)
	Clayey Sand
	Clay

- **700/700** — Total chromium/Hexavalent chromium concentration in soil sample (mg/kg)
- **700/700** — Dissolved chromium/Dissolved Hexavalent chromium concentration in monitoring well sample (µg/L)
- Observed groundwater elevation in monitoring well on 7/26/17
- Monitoring well screen
- Proposed depth of treatment
- Dashed boundaries are inferred

- Sump location (Approximate)
- Underground sanitary utility line
- Underground storm utility line
- Underground gas utility line
- Underground water utility line
- Fiber optics line

Note:

1. Soil units in milligrams per kilogram (mg/kg)
2. Groundwater units in micrograms per liter (µg/L)
3. Vertical positions of soil analytical results coincides with the depth at which samples were collected
4. ND = Not detected
5. NA = Not analyzed
6. NS = Not sampled

10
0
0 20
SCALE

Horizontal Scale: 1" = 20'
Vertical Scale: 1" = 10'
VERTICAL EXAGGERATION: 2X

GEOLOGIC CROSS SECTION C-C' SHOWNING DISTRIBUTION OF HEXAVALENT CHROMIUM IN SOIL WITH PROPOSED DEPTH OF TREATMENT

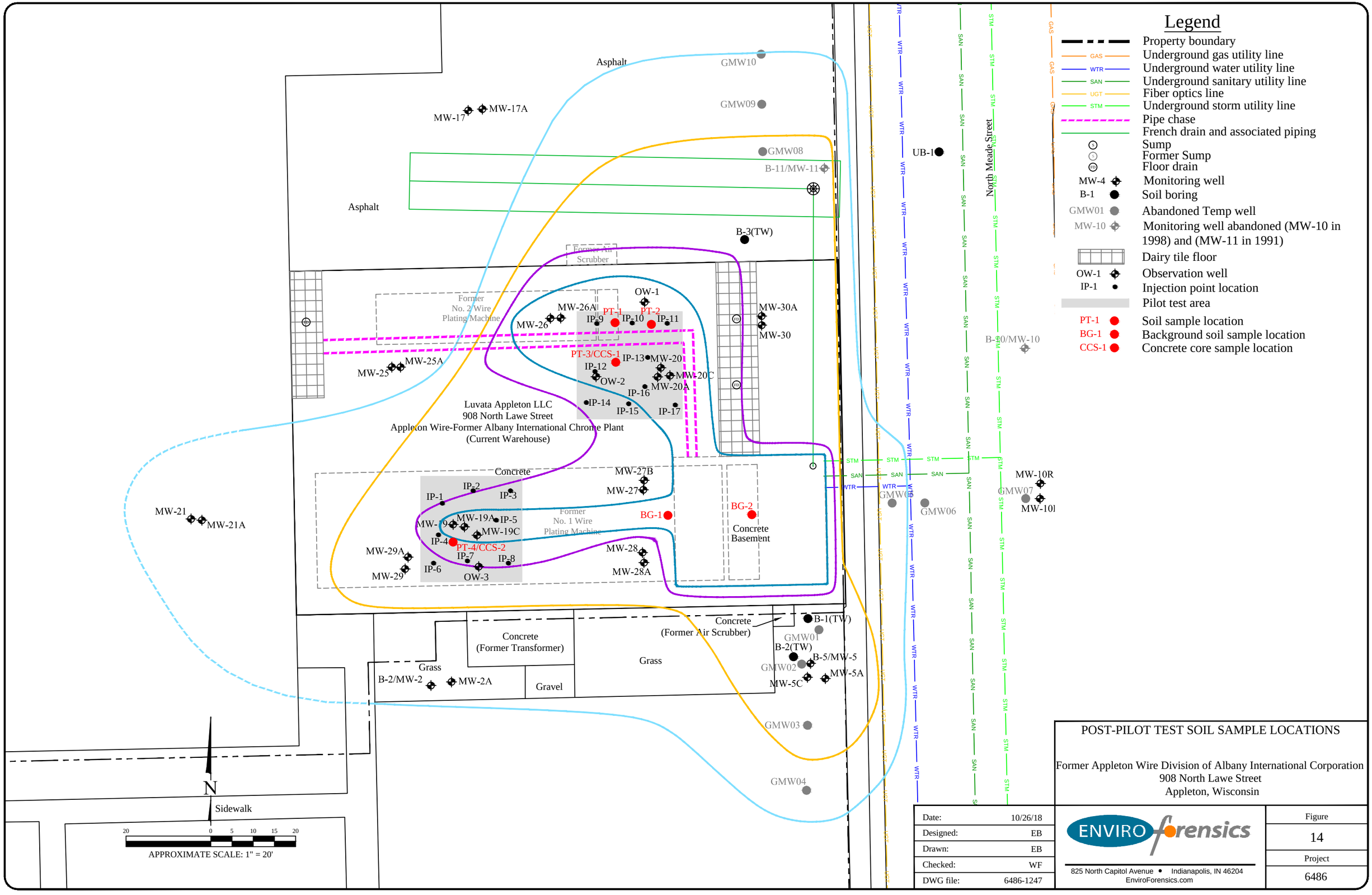
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	7/31/17
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-0511

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 13

Project 6486



Legend

- Property boundary
- Underground gas utility line (GAS)
- Underground water utility line (WTR)
- Underground sanitary utility line (SAN)
- Fiber optics line (UGT)
- Underground storm utility line (STM)
- Pipe chase
- French drain and associated piping
- Sump
- Former Sump
- Floor drain
- MW-4 — Monitoring well
- B-1 — Soil boring
- GMW01 — Abandoned Temp well
- MW-10 — Monitoring well abandoned (MW-10 in 1998) and (MW-11 in 1991)
- Dairy tile floor
- OW-1 — Observation well
- IP-1 — Injection point location
- Pilot test area
- PT-1 — Soil sample location
- BG-1 — Background soil sample location
- CCS-1 — Concrete core sample location

POST-PILOT TEST SOIL SAMPLE LOCATIONS

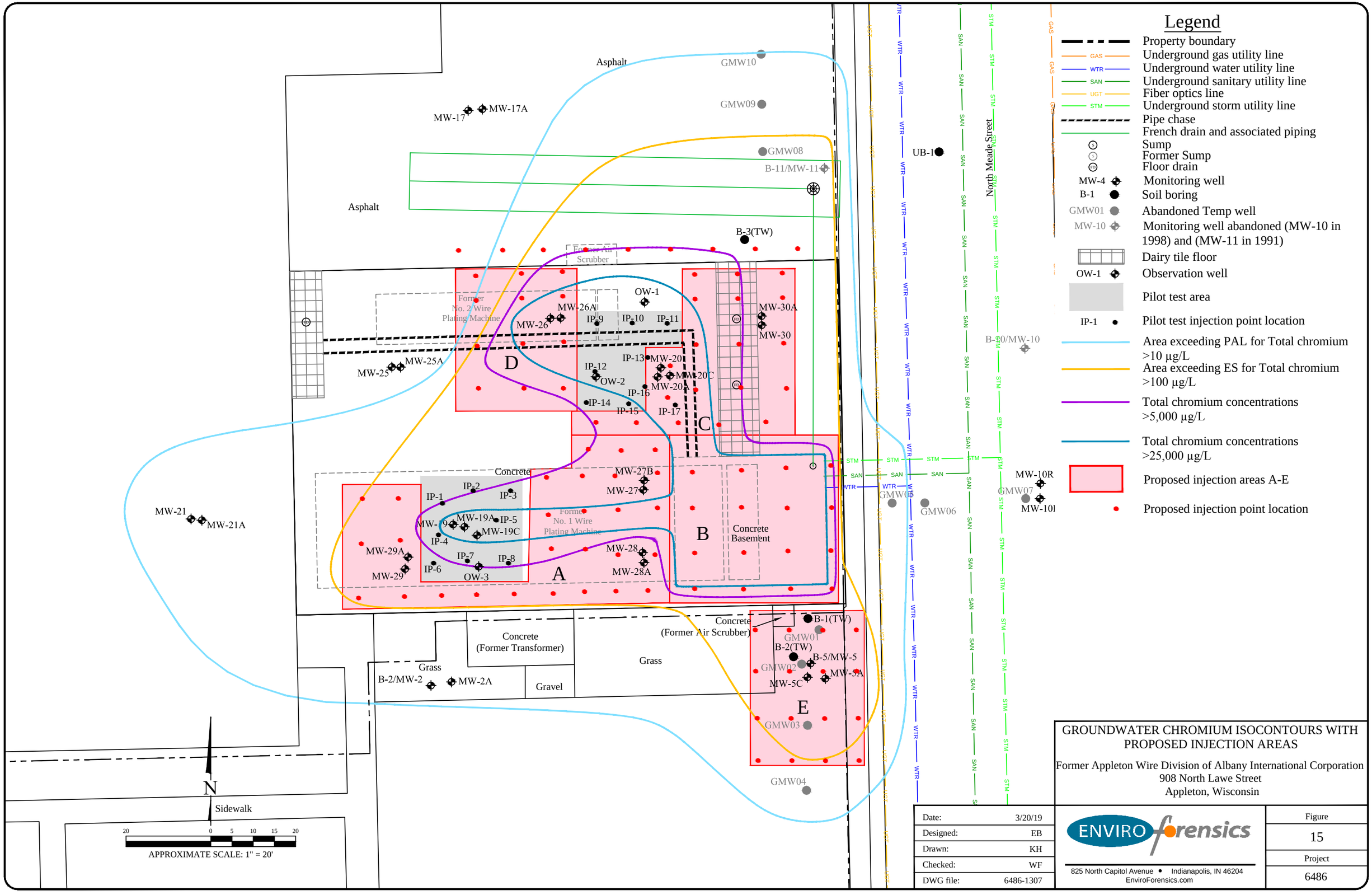
Former Appleton Wire Division of Albany International Corporation
908 North Lawe Street
Appleton, Wisconsin

Date:	10/26/18
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-1247

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 14

Project 6486



GROUNDWATER CHROMIUM ISOCONTOURS WITH PROPOSED INJECTION AREAS

Former Appleton Wire Division of Albany International Corporation
908 North Lawe Street
Appleton, Wisconsin

Date:	3/20/19
Designed:	EB
Drawn:	KH
Checked:	WF
DWG file:	6486-1307

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 15

Project 6486

N

20 0 5 10 15 20

APPROXIMATE SCALE: 1" = 20'

Legend

- Property boundary
- Underground gas utility line (GAS)
- Underground water utility line (WTR)
- Underground sanitary utility line (SAN)
- Fiber optics line (UGT)
- Underground storm utility line (STM)
- Pipe chase
- French drain and associated piping
- Sump
- Former Sump
- Floor drain
- B-1 Soil boring (STS)
- GP-1 Soil boring (Badger)
- C-1 Concrete Floor Core samples (STS)
- C-3 Concrete Wall Core samples (STS)
- MW-1 Monitoring well (STS)
- MW-18 Monitoring well (McMahon)
- MW-19 Monitoring well (Badger)
- MW-10 Monitoring well abandoned (MW-10 in 1998) and (MW-11 in 1991)
- MW-4 Monitoring well (Enviroforensics)
- B-1 Soil boring (Enviroforensics)
- Dairy tile floor

Analyte	Soil to Groundwater Residual Contaminant Level	Non-Industrial Residual Contaminant Level	Industrial Residual Contaminant Level
Cr (VI)	**3.84***	**0.301**	**6.36**

Note:

1. Bold shaded blue values exceed WDNR Soil to Groundwater Residual Contaminant Level
2. Bold shaded green values exceed WDNR Non-Industrial Residual Contaminant Level
3. Bold shaded orange values exceed WDNR Industrial Residual Contaminant Level
4. Bold values exceed laboratory detection levels
5. Cr and Cr (VI) standards and analytical results are reported in milligram per kilogram (mg/kg)
6. Cr (VI) = Hexavalent Chromium
7. Cr = Chromium
8. NA = Not analyzed
9. NS = Not sampled
10. <BDL = Below laboratory detection limits
11. * = Calculated using EPA Risk-Based Screening Level Calculator
12. Lab LOD = Laboratory limit of detecting

- Chromium VI concentrations 1 mg/kg
- Chromium VI concentrations 5 mg/kg
- Chromium VI concentrations 50 mg/kg
- Chromium VI concentrations 100 mg/kg
- Chromium VI concentrations 150 mg/kg
- Dashed boundaries are inferred
- Proposed soil blending zones A, B, and C

B-16		
2/12/87	5-6.5 ft	7.5-9 ft
Cr (VI)	**0.2**	**0.2**

B-15		
2/12/87	5-6.5 ft	7.5-9 ft
Cr (VI)	**0.2**	**2**

GP-23				
8/30/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**1.03**	NS	NS	NS

B-13					
2/12/87	5-6.5 ft	7.5-9 ft	10-11.5 ft	15-16.5 ft
Cr (VI)	**68.8**	**44.6**	**188**	<0.2

GP-21	8/30/17			8/31/17	
	0-5 ft	5-10 ft	10-15 ft	15-19.5 ft	19.5-20 ft
Cr (VI)	**1.59**	NS	NS	NS	NS

UB-1			
5/16/17	0-5 ft	5-10 ft	10-15 ft
Cr (VI)	**1.51**	<0.900	<0.900

B-11/MW-11			
2/12/87	5-6.5 ft	7.5-9 ft	10-11.5 ft
Cr (VI)	**1.3**	**0.9**	**8.1**

TP-2	
3/26/86	15 ft
Cr (VI)	**30.8**

MW-26A								
5/11/17	0.5-1 ft	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	NS	**4.29**	NS	**35.1**	NS	<0.900	NS	NS

MW-30A							
5/9/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	**2.54**	NS	<0.900	NS	<0.900	NS	NS

GP-6				
5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	<0.229	**1.23**	**1.35**	NS

C-6	
8/14/86	0-0.8 ft
Cr (VI)	**14**

B-10	
2/12/87	5-6.5 ft
Cr (VI)	**0.2**

MW-25A							
5/11/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	**2.07**	NS	<0.900	NS	<0.900	NS	NS

MW-20C							
5/15/17	0-5 ft	10-15 ft	40-45 ft	45-50 ft	50-55 ft	55-60 ft	
Cr (VI)	**37.9**	**122**	NS	NS	NS	NS	

MW-20A								
5/13/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	30-35 ft	35-40 ft
Cr (VI)	**3.08**	**0.941**	**0.343**	**0.469**	**0.55**	**0.277**	<0.231	<0.211

GP-9				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	<0.228	**0.748**	<0.221	**0.774**

GP-7				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	<0.227	**0.368**	**0.582**	**0.287**

MW-19A							
6/30/09	10-15 ft	15-20 ft	20-25 ft	25-30 ft	30-35 ft	35-40 ft	
Cr (VI)	**19**	<0.260	<0.260	<0.260	<0.260	<0.260	

MW-19C						
5/8/17	0-5 ft	10-15 ft	40-45 ft	45-50 ft	50-55 ft	55-60 ft
Cr (VI)	**2.20**	**171**	NS	NS	NS	NS

GP-8				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**0.45**	**0.761**	**0.709**	NS

MW-29A							
5/10/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft
Cr (VI)	**12.0**	NS	**1.24**	NS	<0.900	NS	NS

GP-10				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**1.03**	**1.11**	<0.225	NS

B-2/MW-2	
2/12/87	2-3.5 ft
Cr (VI)	**0.4**

MW-27B										
5/10/17	0-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	34-36 ft	35-40 ft	40-45 ft	45-50 ft
Cr (VI)	**25.3**	NS	**8.13**	NS	<0.900	NS	<0.900	NS	NS	NS

MW-28A										
5/11/17	0-1 ft	0-5 ft	4-5 ft	5-10 ft	10-15 ft	15-20 ft	20-25 ft	25-30 ft	35-40 ft	
Cr (VI)	NS	**422**	NS	NS	**2.20**	NS	<0.900	NS	NS	

B-3	
2/12/87	4-5.5 ft
Cr (VI)	**0.5**

GP-11				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**4.48**	**1.77**	<0.235	<0.236

C-4	
8/14/86	0-0.5 ft
Cr (VI)	**57**

B-4		
2/12/87	2-3.5 ft	
Cr (VI)	**0.6**	

C-3	
8/14/86	0-2 ft
Cr (VI)	**0.1**

B-9			
2/12/87	7.5-9 ft	10-11.5 ft	15-16.5 ft
Cr (VI)	**0.2**	**1.9**	<0.2

GP-13				
5/12/14	0-5 ft	5-10 ft	10-15 ft	15-20 ft
Cr (VI)	**3.06**	**0.306**	NS	NS

C-2	
8/14/86	0-0.5 ft
Cr (VI)	**7,300**

C-1	
8/14/86	0-1 ft
Cr (VI)	**0.6**

C-5	
8/14/86	NA
Cr (VI)	**20**

B-5/MW-5						
2/12/87	2.5-4 ft	5-6.5 ft	7.5-9 ft	10-11.5 ft	12.5-14 ft	15-16.5 ft
Cr (VI)	**0.4**	**0.2**	**2.6**	**18.2**	**21.7**	**0.2**

Asphalt

Former Air Scrubber

Former No. 2 Wire Plating Machine

Former No. 1 Wire Plating Machine

Former Basement

Concrete (Former Transformer)

Concrete (Former Air Scrubber)

Grass

Gravel

Storage

Sidewalk

PROPOSED SOIL BLENDING ZONES

Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	2/22/19
Designed:	EB
Drawn:	EB
Checked:	WF
DWG file:	6486-1299

ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure 16

Project 6486

N

20 0 5 10 15 20

APPROXIMATE SCALE: 1" = 20'

Asphalt

Asphalt

C

Former Air Scrubber

Former No. 2 Wire Plating Machine

A

Concrete

Former No. 1 Wire Plating Machine

B

Basement

Storage

Concrete (Former Air Scrubber)

Concrete (Former Transformer)

Grass

Gravel

Grass

Sidewalk

North Meade Street

Legend

- Property boundary
- Underground gas utility line
- Underground water utility line
- Underground sanitary utility line
- Fiber optics line
- Underground storm utility line
- Pipe chase
- French drain and associated piping
- Sump
- Floor drain
- Chromium VI concentrations 1 mg/kg
- Chromium VI concentrations 5 mg/kg
- Chromium VI concentrations 50 mg/kg
- Chromium VI concentrations 100 mg/kg
- Chromium VI concentrations 150 mg/kg
- Dashed boundaries are inferred
- Proposed soil blending areas A, B, and C
- Location of soil samples to evaluate remedial effectiveness
- Location of sidewall soil samples to determine remaining residual hexavalent chromium concentrations

PROPOSED SOIL SAMPLE LOCATIONS

Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	3/27/19
Designed:	EB
Drawn:	KH
Checked:	WF
DWG file:	6486-1414

ENVIRO forensics
825 North Capitol Avenue • Indianapolis, IN 46204
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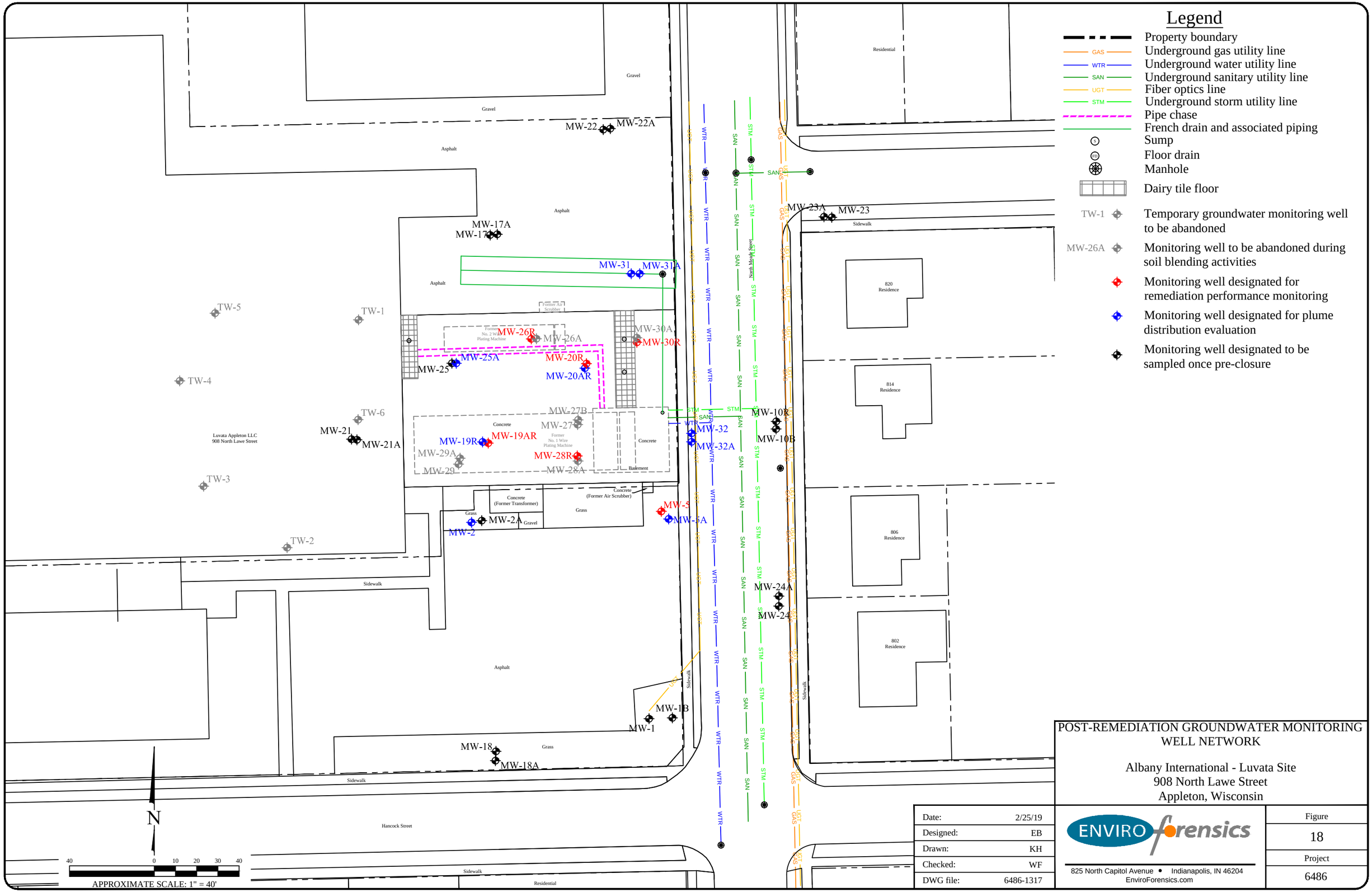
Figure 17

Project 6486



POST-REMEDIATION GROUNDWATER MONITORING WELL NETWORK

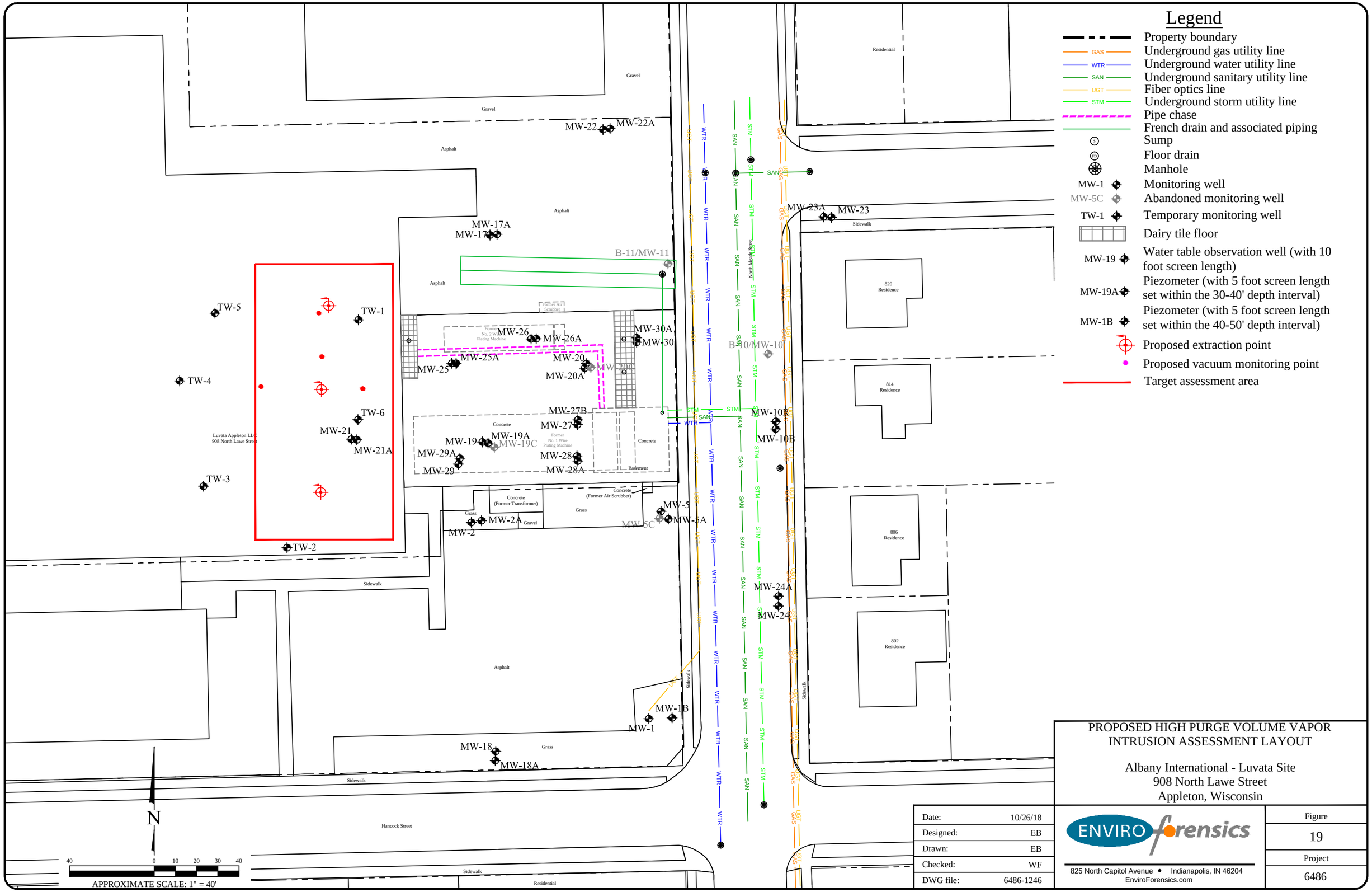
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin

Date:	2/25/19
Designed:	EB
Drawn:	KH
Checked:	WF
DWG file:	6486-1317

ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com

Figure
18

Project
6486


Legend
Property boundary
Underground gas utility line
Underground water utility line
Underground sanitary utility line
Fiber optics line
Underground storm utility line
Pipe chase
French drain and associated piping
Sump
Floor drain
Manhole
MW-1 Monitoring well
MW-5C Abandoned monitoring well
TW-1 Temporary monitoring well
Dairy tile floor
MW-19 Water table observation well (with 10 foot screen length)
MW-19A Piezometer (with 5 foot screen length set within the 30-40' depth interval)
MW-1B Piezometer (with 5 foot screen length set within the 40-50' depth interval)
Proposed extraction point
Proposed vacuum monitoring point
Target assessment area
Gravel
Asphalt
Residential
Sidewalk
Concrete
Grass
Basement
Former Air Scrubber
Former No. 2 Wire Plating Machine
Former No. 1 Wire Plating Machine
Former Transformer
Concrete (Former Air Scrubber)
820 Residence
814 Residence
806 Residence
802 Residence
Luvata Appleton LLC
908 North Lawe Street
Hancock Street
MW-22
MW-22A
MW-17A
MW-17
B-11/MW-11
TW-5
TW-1
TW-4
TW-6
MW-21
MW-21A
TW-3
TW-2
MW-26
MW-26A
MW-25
MW-25A
MW-20
MW-20A
MW-20C
MW-30A
MW-30
B-10/MW-10
MW-27B
MW-27
MW-19
MW-19A
MW-19C
MW-29A
MW-29
MW-28
MW-28A
MW-10B
MW-10A
MW-2
MW-2A
MW-5
MW-5A
MW-5C
MW-23A
MW-23
MW-24A
MW-24
MW-1B
MW-1
MW-18
MW-18A
N
40 0 10 20 30 40
APPROXIMATE SCALE: 1" = 40'
PROPOSED HIGH PURGE VOLUME VAPOR INTRUSION ASSESSMENT LAYOUT
Albany International - Luvata Site
908 North Lawe Street
Appleton, Wisconsin
Date: 10/26/18
Designed: EB
Drawn: EB
Checked: WF
DWG file: 6486-1246
ENVIROforensics
825 North Capitol Avenue • Indianapolis, IN 46204
EnviroForensics.com
Figure
19
Project
6486

APPENDIX A

Well Construction Logs

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION
Form 4400-113A Rev. 7-98

Facility/Project Name: Appleton Wire (former)	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: OW-1
Facility License, Permit or Monitoring No.: 02-45-000015	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. 44° 16' 09.97" Long. 88° 23' 42.79" or	Wis. Unique Well No.: _____ DNR Well ID No.: _____
Facility ID: 445035910	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 01/18/2018 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: SW 1/4 of NW 1/4 of Sec. 25, T. 21 N, R. 17 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Adam Sweet; Horizon Const. & Exploration
Distance from Waste/Source _____ ft.	Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known
		Gov. Lot Number: _____

A. Protective pipe, top elevation ___NA___ ft. MSL
B. Well casing, top elevation ___NA___ ft. MSL
C. Land surface elevation ___NA___ ft. MSL
D. Surface seal, bottom _____ ft. MSL or ___1___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☒ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ ____

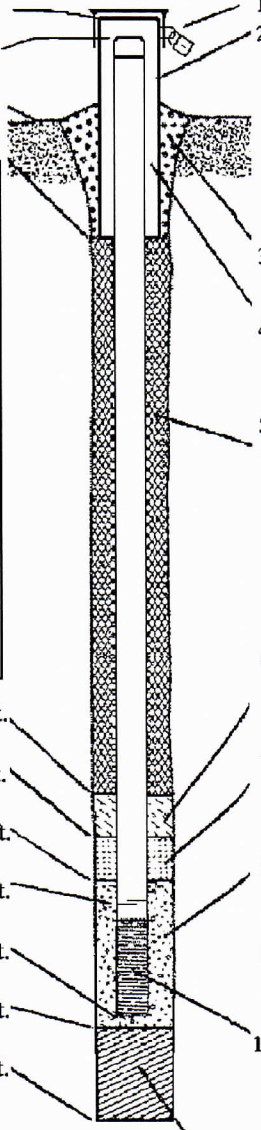
15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

E. Bentonite seal, top _____ ft. MSL or ___1___ ft.
F. Fine sand, top _____ ft. MSL or ___4___ ft.
G. Filter pack, top _____ ft. MSL or ___5___ ft.
H. Screen joint, top _____ ft. MSL or ___5___ ft.
I. Well bottom _____ ft. MSL or ___15___ ft.
J. Filter pack, bottom _____ ft. MSL or ___15___ ft.
K. Borehole, bottom _____ ft. MSL or ___15___ ft.
L. Borehole, diameter ___8___ in.
M. O.D. well casing ___2.3___ in.
N. I.D. well casing ___2.0___ in.



1. Cap and lock? ☐ Yes ☐ No
2. Protective cover pipe:
a. Inside diameter: ___10___ in.
b. Length: ___1___ ft.
c. Material: Steel ☒ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____
3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ ____
4. Material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ____
5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 0.9 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08
6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ ____
7. Fine sand material: Manufacturer, product name & mesh size
a. NSF
b. Volume added 0.3 ft^3
8. Filter pack material: Manufacturer, product name & mesh size
a. _____
b. Volume added 3.3 ft^3
9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____
10. Screen material: PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ____
b. Manufacturer MonoFlex
c. Slot size: 0.010 in.
d. Slotted length: ___10___ ft.
11. Backfill material (below filter pack): None ☒ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm EnviroForensics, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
Albany International Former Chrome	Outagamie	OW-1
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number** / **DNR Well ID Number**
	45	_____ / ___

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☒	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well 30 min.

4. Depth of well (from top of well casisng) 15.0 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 1.1 gal.

7. Volume of water removed from well 3.5 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added /

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 10.63 ft.	_____ ft.
Date	b. 02/12/2018 (m m d d y y y y)	__/__/____ (m m d d y y y y)
Time	c. 10:30 ☒ a.m. ☐ p.m.	___:___ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	___.__ inches
13. Water clarity	Clear ☐ 10 / Turbid ☒ 15	Clear ☐ 20 / Turbid ☐ 25
(Describe)	Dark Green	

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	/__ mg/l	____.__ mg/l
15. COD	/__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: John Last Name: Stoeger
Firm: Stoeger & Associates, LLC

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: JP Last Name: Hammerton
Facility/Firm: Albany International Corp
Street: 3601 Electric City Blvd
City/State/Zip: Kaukauna, WI 54130

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Print Name: John Stoeger
Firm: Stoeger & Associates LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

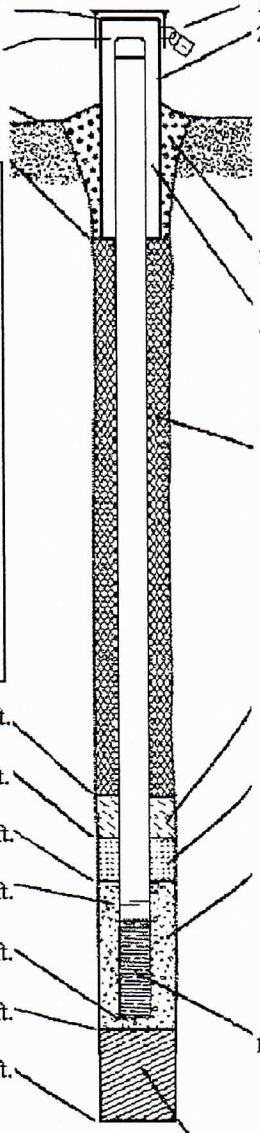
State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Appleton Wire (former)	Local Grid Location of Well: _____ ft. ☐N. ☐S. _____ ft. ☐E. ☐W.	Well Name: OW-2
Facility License, Permit or Monitoring No.: 02-45-000015	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. 44° 16' 09.92" Long. 88° 23' 43.11" or	Wis. Unique Well No.: _____ DNR Well ID No.: _____
Facility ID: 445035910	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 01/18/2018 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: SW 1/4 of NW 1/4 of Sec. 25, T. 21 N, R. 17 ☒E ☐W	Well Installed By: Name (first, last) and Firm: Adam Sweet; Horizon Const. & Exploration
Distance from Waste/Source _____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: _____



A. Protective pipe, top elevation ___NA___ ft. MSL

B. Well casing, top elevation ___NA___ ft. MSL

C. Land surface elevation ___NA___ ft. MSL

D. Surface seal, bottom _____ ft. MSL or ___1___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☒ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ ____

15. Drilling fluid used: Water ☐ 02 Air ☐ 01 Drilling Mud ☐ 03 None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

_____

E. Bentonite seal, top _____ ft. MSL or ____1 ft.

F. Fine sand, top _____ ft. MSL or ____4 ft.

G. Filter pack, top _____ ft. MSL or ____5 ft.

H. Screen joint, top _____ ft. MSL or ____5 ft.

I. Well bottom _____ ft. MSL or ___15 ft.

J. Filter pack, bottom _____ ft. MSL or ___15 ft.

K. Borehole, bottom _____ ft. MSL or ___15 ft.

L. Borehole, diameter ___8 in.

M. O.D. well casing ___2.3 in.

N. I.D. well casing ___2.0 in.

1. Cap and lock? ☐ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: __10 in.
b. Length: ___1 ft.
c. Material: Steel ☒ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 0.9 Ft³ volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐1/4 in. ☒3/8 in. ☐1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. NSF
b. Volume added 0.3 ft³

8. Filter pack material: Manufacturer, product name & mesh size
a. _____
b. Volume added 3.3 ft³

9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ____
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: __10 ft.

11. Backfill material (below filter pack): None ☒ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm EnviroForensics, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
Alben International Former Chrom	Outagamie	OW-2

Facility License, Permit or Monitoring Number	County Code	Wis. Unique Well Number	DNR Well ID Number
	45	_____	___

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☒	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well 45 min.

4. Depth of well (from top of well casisng) 15.0 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 0.8 gal.

7. Volume of water removed from well 5.5 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added /

10. Analysis performed on water added? ☐ Yes ☒ No (If yes, attach results)

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 8.50 ft.	____.__ ft.
Date	b. 02/12/2018 (m m d d y y y y)	__/__/____ (m m d d y y y y)
Time	c. 09:30 ☒ a.m. ☐ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	__.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Green	Clear ☐ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	/.__ mg/l	____.__ mg/l
15. COD	/.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: John Last Name: Stoeger
Firm: Stoeger & Associates, LLC

17. Additional comments on development:

Name and Address of Facility Contact/Owner/Responsible Party
First Name: JP Last Name: Hammerton
Facility/Firm: Alben International Corp
Street: 3601 Electric City Blvd
City/State/Zip: Kaukauna, WI 54130

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: [signature]
Print Name: John Stoeger
Firm: Stoeger & Associates, LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

State of Wisconsin
Department of Natural Resources

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

MONITORING WELL CONSTRUCTION

Form 4400-113A Rev. 7-98

Facility/Project Name: Appleton Wire (former)	Local Grid Location of Well: _____ ft. ☐ N. ☐ S. _____ ft. ☐ E. ☐ W.	Well Name: OW-3
Facility License, Permit or Monitoring No.: 02-45-000015	Local Grid Origin ☐ (estimated: ☐) or Well Location ☐ Lat. 44° 16' 09.35" Long. 88° 23' 43.51" or	Wis. Unique Well No.: _____ DNR Well ID No.: _____
Facility ID: 445035910	St. Plane _____ ft. N, _____ ft. E. S/C/N	Date Well Installed: 01/19/2018 (m m d d y y y y)
Type of Well: Well Code 11 / MW	Section Location of Waste/Source: SW 1/4 of NW 1/4 of Sec. 25, T. 21 N, R. 17 ☒ E ☐ W	Well Installed By: Name (first, last) and Firm: Adam Sweet; Horizon Const. & Exploration
Distance from Waste/Source _____ ft. Enf. Stds. Apply ☐	Location of Well Relative to Waste/Source: u ☐ Upgradient s ☐ Sidegradient d ☐ Downgradient n ☐ Not Known	Gov. Lot Number: _____

A. Protective pipe, top elevation ___NA___ ft. MSL

B. Well casing, top elevation ___NA___ ft. MSL

C. Land surface elevation ___NA___ ft. MSL

D. Surface seal, bottom _____ ft. MSL or ___1___ ft.

12. USCS classification of soil near screen:
GP ☐ GM ☐ GC ☐ GW ☐ SW ☐ SP ☐
SM ☐ SC ☐ ML ☒ MH ☐ CL ☒ CH ☐
Bedrock ☐

13. Sieve analysis performed? ☐ Yes ☒ No

14. Drilling method used: Rotary ☐ 50; Hollow Stem Auger ☒ 41; Other ☐ ____

15. Drilling fluid used: Water ☐ 02; Air ☐ 01; Drilling Mud ☐ 03; None ☒ 99

16. Drilling additives used? ☐ Yes ☒ No

Describe _____

17. Source of water (attach analysis, if required):

_____

E. Bentonite seal, top _____ ft. MSL or ___1___ ft.

F. Fine sand, top _____ ft. MSL or ___4___ ft.

G. Filter pack, top _____ ft. MSL or ___5___ ft.

H. Screen joint, top _____ ft. MSL or ___5___ ft.

I. Well bottom _____ ft. MSL or ___15___ ft.

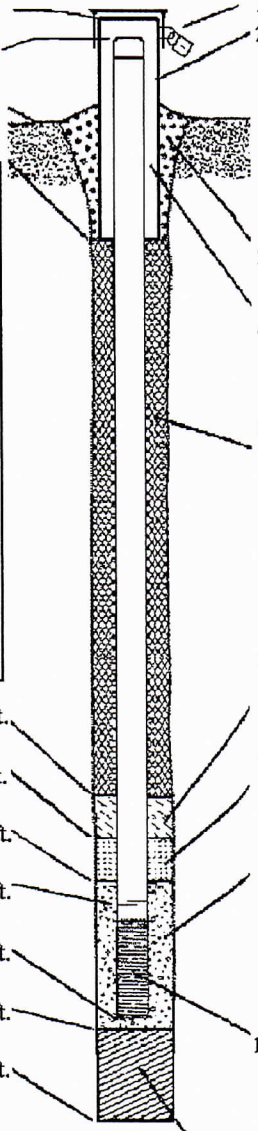
J. Filter pack, bottom _____ ft. MSL or ___15___ ft.

K. Borehole, bottom _____ ft. MSL or ___15___ ft.

L. Borehole, diameter ___8___ in.

M. O.D. well casing ___2.3___ in.

N. I.D. well casing ___2.0___ in.



1. Cap and lock? ☐ Yes ☐ No

2. Protective cover pipe:
a. Inside diameter: ___10___ in.
b. Length: ___1___ ft.
c. Material: Steel ☒ 04; Other ☐ ____
d. Additional protection? ☐ Yes ☒ No
If yes, describe: _____

3. Surface seal: Bentonite ☐ 30; Concrete ☒ 01; Other ☐ ____

4. Material between well casing and protective pipe: Bentonite ☒ 30; Other ☐ ____

5. Annular space seal: a. Granular/Chipped Bentonite ☒ 33
b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry ☐ 35
c. _____ Lbs/gal mud weight . . . . . Bentonite slurry ☐ 31
d. _____ % Bentonite . . . . . Bentonite-cement grout ☐ 50
e. 0.9 Ft^3 volume added for any of the above
f. How installed: Tremie ☐ 01; Tremie pumped ☐ 02; Gravity ☒ 08

6. Bentonite seal: a. Bentonite granules ☐ 33
b. ☐ 1/4 in. ☒ 3/8 in. ☐ 1/2 in. Bentonite chips ☒ 32
c. _____ Other ☐ ____

7. Fine sand material: Manufacturer, product name & mesh size
a. NSF
b. Volume added 0.3 ft^3

8. Filter pack material: Manufacturer, product name & mesh size
a. _____
b. Volume added 3.3 ft^3

9. Well casing: Flush threaded PVC schedule 40 ☒ 23; Flush threaded PVC schedule 80 ☐ 24; Other ☐ ____

10. Screen material: PVC
a. Screen type: Factory cut ☒ 11; Continuous slot ☐ 01; Other ☐ ____
b. Manufacturer Monoflex
c. Slot size: 0.010 in.
d. Slotted length: 10 ft.

11. Backfill material (below filter pack): None ☒ 14; Other ☐ ____

I hereby certify that the information on this form is true and correct to the best of my knowledge.

Signature _____ Firm EnviroForensics, LLC

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between $10 and $25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.

State of Wisconsin
Department of Natural Resources

MONITORING WELL DEVELOPMENT

Form 4400-113B Rev. 7-98

Route to: Watershed/Wastewater ☐ Waste Management ☐
Remediation/Redevelopment ☒ Other ☐ _____

Facility/Project Name	County Name	Well Name
Albany International Former Chem	Outagamie	OW-3
Facility License, Permit or Monitoring Number	**County Code**	**Wis. Unique Well Number**	**DNR Well ID Number**
	45	_____	_____

1. Can this well be purged dry? ☒ Yes ☐ No

2. Well development method

surged with bailer and bailed	☒	41
surged with bailer and pumped	☐	61
surged with block and bailed	☐	42
surged with block and pumped	☐	62
surged with block, bailed and pumped	☐	70
compressed air	☐	20
bailed only	☐	10
pumped only	☐	51
pumped slowly	☐	50
Other _____	☐	

3. Time spent developing well 60 min.

4. Depth of well (from top of well casisng) 15.1 ft.

5. Inside diameter of well 2.00 in.

6. Volume of water in filter pack and well casing 1.4 gal.

7. Volume of water removed from well 8.5 gal.

8. Volume of water added (if any) 0.0 gal.

9. Source of water added /

10. Analysis performed on water added? (If yes, attach results) ☐ Yes ☒ No

	Before Development	After Development
11. Depth to Water (from top of well casing)	a. 6.64 ft.	____.__ ft.
Date	b. 02/12/2018 (m m d d y y y y)	__/__/____ (m m d d y y y y)
Time	c. 1:00 ☐ a.m. ☒ p.m.	__:__ ☐ a.m. ☐ p.m.
12. Sediment in well bottom	0.0 inches	__.__ inches
13. Water clarity	Clear ☐ 10 Turbid ☒ 15 (Describe) Light Green	Clear ☐ 20 Turbid ☐ 25 (Describe)

Fill in if drilling fluids were used and well is at solid waste facility:

14. Total suspended solids	/__.__ mg/l	____.__ mg/l
15. COD	/__.__ mg/l	____.__ mg/l

16. Well developed by: Name (first, last) and Firm
First Name: John Last Name: Steeger
Firm: Steeger & Associates, LLC

17. Additional comments on development:

Name and Address of Facility Contact /Owner/Responsible Party
First Name: JP Last Name: Hemmerton
Facility/Firm: Albany International Corp
Street: 3601 Electric City Blvd
City/State/Zip: Kaukauna, WI 54130

I hereby certify that the above information is true and correct to the best of my knowledge.
Signature: _____
Print Name: John Steeger
Firm: Steeger & Associates, LLC

NOTE: See instructions for more information including a list of county codes and well type codes.

APPENDIX B

Borehole Abandonment Forms

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☒ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Outagamie	___ ___ ___ ___ ___	

Latitude / Longitude (see instructions)	Format Code	Method Code
44.269431 N	☒ DD	☐ GPS008
-88.395342 W	☐ DDM	☒ SCR002
		☐ OTH001

¼ / ¼	¼	Section	Township	Range
SW	NW	25	21 N	17 ☒ E ☐ W

or Gov't Lot #

Well Street Address: 908 N. Lawe St.

Well City, Village or Town	Well ZIP Code
Appleton	54911

Subdivision Name	Lot #

Reason for Removal from Service	WI Unique Well # of Replacement Well
	___ ___ ___ ___ ___

2. Facility / Owner Information

Facility Name: Appleton Wire (former)

Facility ID (FID or PWS): 445035910

License/Permit/Monitoring #:

Original Well Owner:

Present Well Owner:

Mailing Address of Present Owner:

City of Present Owner	State	ZIP Code

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well
☐ Water Well
☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/25/2018 – 04/27/2018

If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☒ Driven (Sandpoint) ☐ Dug
☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
20	

Lower Drillhole Diameter (in.)	Casing Depth (ft.)
2.3	

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown

If yes, to what depth (feet)?	Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	0.014	
Bentonite Chips	0.5	20	0.56	

6. Comments

Abandoned injection points IP-1 through IP-8

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
EnviroForensics, LLC		04/27/2018

Street or Route	Telephone Number
N16 W23390 Stone Ridge Dr. Suite G	(317) 972-7870

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Waukesha	WI	53188		4/30/18

DNR Use Only

Date Received	Noted By

Comments:

State of Wis., Dept. of Natural Resources
dnr.wi.gov

Well / Drillhole / Borehole Filling & Sealing Report

Form 3300-005 (R 4/2015)

Notice: Completion of this report is required by chs. 160, 281, 283, 289, 291-293, 295, and 299, Wis. Stats., and chs. NR 141 and 812, Wis. Adm. Code. In accordance with chs. 281, 289, 291-293, 295, and 299, Wis. Stats., failure to file this form may result in a forfeiture of between $10-25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on this form is not intended to be used for any other purpose. Return form to the appropriate DNR office and bureau. See instructions on reverse for more information.

☒ **Verification Only of Fill and Seal**

Route to DNR Bureau:
☐ Drinking Water ☐ Watershed/Wastewater ☒ Remediation/Redevelopment
☐ Waste Management ☐ Other: _____

1. Well Location Information

County	WI Unique Well # of Removed Well	Hicap #
Outagamie	_ _ _ _ _	

Latitude / Longitude (see instructions): 44.269294 N, -88.395437 W
Format Code: ☒ DD ☐ DDM
Method Code: ☐ GPS008 ☒ SCR002 ☐ OTH001

¼ / ¼	¼	Section	Township	Range	or Gov't Lot #
SW	NW	25	21 N	17 ☒ E ☐ W	

Well Street Address: 908 N. Lawe St.
Well City, Village or Town: Appleton
Well ZIP Code: 54911
Subdivision Name:
Lot #:
Reason for Removal from Service:
WI Unique Well # of Replacement Well: _ _ _ _ _

2. Facility / Owner Information

Facility Name: Appleton Wire (former)
Facility ID (FID or PWS): 445035910
License/Permit/Monitoring #:
Original Well Owner:
Present Well Owner:
Mailing Address of Present Owner:
City of Present Owner | State | ZIP Code:

3. Filled & Sealed Well / Drillhole / Borehole Information

☐ Monitoring Well ☐ Water Well ☒ Borehole / Drillhole

Original Construction Date (mm/dd/yyyy): 04/23/2018 - 04/25/2018
If a Well Construction Report is available, please attach.

Construction Type:
☐ Drilled ☒ Driven (Sandpoint) ☐ Dug ☐ Other (specify): _____

Formation Type:
☒ Unconsolidated Formation ☐ Bedrock

Total Well Depth From Ground Surface (ft.)	Casing Diameter (in.)
20	
Lower Drillhole Diameter (in.)	**Casing Depth (ft.)**
2.3	

Was well annular space grouted? ☐ Yes ☐ No ☐ Unknown
If yes, to what depth (feet)?
Depth to Water (feet)

4. Pump, Liner, Screen, Casing & Sealing Material

Pump and piping removed?	☐ Yes	☐ No	☒ N/A
Liner(s) removed?	☐ Yes	☐ No	☒ N/A
Liner(s) perforated?	☐ Yes	☐ No	☒ N/A
Screen removed?	☐ Yes	☐ No	☒ N/A
Casing left in place?	☐ Yes	☐ No	☒ N/A
Was casing cut off below surface?	☐ Yes	☐ No	☒ N/A
Did sealing material rise to surface?	☒ Yes	☐ No	☐ N/A
Did material settle after 24 hours?	☐ Yes	☒ No	☐ N/A
If yes, was hole retopped?	☐ Yes	☐ No	☒ N/A
If bentonite chips were used, were they hydrated with water from a known safe source?	☒ Yes	☐ No	☐ N/A

Required Method of Placing Sealing Material
☐ Conductor Pipe-Gravity ☐ Conductor Pipe-Pumped
☒ Screened & Poured (Bentonite Chips) ☐ Other (Explain): _____

Sealing Materials
☐ Neat Cement Grout ☒ Concrete
☐ Sand-Cement (Concrete) Grout ☐ Bentonite Chips

For Monitoring Wells and Monitoring Well Boreholes Only:
☐ Bentonite Chips ☐ Bentonite - Cement Grout
☐ Granular Bentonite ☐ Bentonite - Sand Slurry

5. Material Used to Fill Well / Drillhole

Material	From (ft.)	To (ft.)	No. Yards, Sacks Sealant or Volume (circle one)	Mix Ratio or Mud Weight
Concrete	Surface	0.5	0.014	
Bentonite Chips	0.5	2.3	0.64	

6. Comments

Abandoned injection points IP-9 through IP-17

7. Supervision of Work

Name of Person or Firm Doing Filling & Sealing	License #	Date of Filling & Sealing or Verification (mm/dd/yyyy)
EnviroForensics, LLC		04/27/2018

Street or Route	Telephone Number
N16 W23390 Stone Ridge Dr. Suite G	(317) 972-7870

City	State	ZIP Code	Signature of Person Doing Work	Date Signed
Waukesha	WI	53188		4/30/18

DNR Use Only

Date Received	Noted By

Comments:

APPENDIX C

Groundwater Analytical Laboratory Reports

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

May 02, 2018

Kyle Heimstead
EnviroForensics
N16 W23390 Stone Ridge Drive
Suite G
Waukesha, WI 53188

RE: Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Dear Kyle Heimstead:
Enclosed are the analytical results for sample(s) received by the laboratory on April 23, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Wayne Fassbender, Enviroforensics

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40167869001	**6486-OW-1**	Water	04/23/18 11:20	04/23/18 13:05
40167869002	**6486-OW-2**	Water	04/23/18 11:15	04/23/18 13:05
40167869003	**6486-OW-3**	Water	04/23/18 12:00	04/23/18 13:05
40167869004	**6486-MW-19**	Water	04/23/18 12:05	04/23/18 13:05
40167869005	**6486-MW-19A**	Water	04/23/18 12:10	04/23/18 13:05
40167869006	**6486-MW-20**	Water	04/23/18 11:05	04/23/18 13:05
40167869007	**6486-MW-20A**	Water	04/23/18 11:10	04/23/18 13:05
40167869008	**6486-DUP-1**	Water	04/23/18 00:00	04/23/18 13:05

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(920)469-2436

SAMPLE ANALYTE COUNT

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40167869001	**6486-OW-1**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40167869002	**6486-OW-2**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40167869003	**6486-OW-3**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40167869004	**6486-MW-19**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40167869005	**6486-MW-19A**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40167869006	**6486-MW-20**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40167869007	**6486-MW-20A**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40167869008	**6486-DUP-1**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40167869001	**6486-OW-1**					
EPA 6010	Chromium, Dissolved	200000	ug/L	100	04/26/18 12:25	P4
EPA 6010	Manganese, Dissolved	31.1J	ug/L	50.0	04/26/18 12:25	D3
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	207	mg/L	20.0	04/24/18 09:00	
40167869002	**6486-OW-2**					
EPA 6010	Chromium, Dissolved	25800	ug/L	100	04/26/18 12:27	P4
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	27.2	mg/L	2.5	04/24/18 09:00	
40167869003	**6486-OW-3**					
EPA 6010	Chromium, Dissolved	1050	ug/L	10.0	04/26/18 12:30	P4
EPA 6010	Manganese, Dissolved	22.3	ug/L	5.0	04/26/18 12:30	
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	1.1	mg/L	0.10	04/24/18 09:00	
40167869004	**6486-MW-19**					
EPA 6010	Chromium, Dissolved	18900	ug/L	100	04/26/18 12:32	P4
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	20.2	mg/L	2.5	04/24/18 09:00	
40167869005	**6486-MW-19A**					
EPA 6010	Manganese, Dissolved	26.2	ug/L	5.0	04/26/18 12:34	
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	0.0066J	mg/L	0.020	04/24/18 09:03	
40167869006	**6486-MW-20**					
EPA 6010	Chromium, Dissolved	296000	ug/L	100	04/26/18 12:37	P4
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	325	mg/L	20.0	04/24/18 09:00	
40167869007	**6486-MW-20A**					
EPA 6010	Manganese, Dissolved	24.5	ug/L	5.0	04/26/18 12:39	
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	0.14	mg/L	0.020	04/24/18 09:00	
40167869008	**6486-DUP-1**					
EPA 6010	Chromium, Dissolved	17800	ug/L	100	04/26/18 12:46	P4
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	19.0	mg/L	2.5	04/24/18 09:00	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-OW-1 **Lab ID: 40167869001** Collected: 04/23/18 11:20 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**200000**	ug/L	100	25.3	10		04/26/18 12:25	7440-47-3	P4
Iron, Dissolved	**<155**	ug/L	1000	155	10		04/26/18 12:25	7439-89-6	D3
Manganese, Dissolved	**31.1J**	ug/L	50.0	11.3	10		04/26/18 12:25	7439-96-5	D3
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**207**	mg/L	20.0	3.9	1000		04/24/18 09:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-OW-2 **Lab ID: 40167869002** Collected: 04/23/18 11:15 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**25800**	ug/L	100	25.3	10		04/26/18 12:27	7440-47-3	P4
Iron, Dissolved	**<155**	ug/L	1000	155	10		04/26/18 12:27	7439-89-6	D3
Manganese, Dissolved	**<11.3**	ug/L	50.0	11.3	10		04/26/18 12:27	7439-96-5	D3
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**27.2**	mg/L	2.5	0.48	125		04/24/18 09:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-OW-3 **Lab ID: 40167869003** Collected: 04/23/18 12:00 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**1050**	ug/L	10.0	2.5	1		04/26/18 12:30	7440-47-3	P4
Iron, Dissolved	**<15.5**	ug/L	100	15.5	1		04/26/18 12:30	7439-89-6	
Manganese, Dissolved	**22.3**	ug/L	5.0	1.1	1		04/26/18 12:30	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**1.1**	mg/L	0.10	0.019	5		04/24/18 09:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-MW-19 **Lab ID: 40167869004** Collected: 04/23/18 12:05 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**18900**	ug/L	100	25.3	10		04/26/18 12:32	7440-47-3	P4
Iron, Dissolved	**<155**	ug/L	1000	155	10		04/26/18 12:32	7439-89-6	D3
Manganese, Dissolved	**<11.3**	ug/L	50.0	11.3	10		04/26/18 12:32	7439-96-5	D3
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**20.2**	mg/L	2.5	0.48	125		04/24/18 09:00		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-MW-19A **Lab ID: 40167869005** Collected: 04/23/18 12:10 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		04/26/18 12:34	7440-47-3	P4
Iron, Dissolved	**<15.5**	ug/L	100	15.5	1		04/26/18 12:34	7439-89-6	
Manganese, Dissolved	**26.2**	ug/L	5.0	1.1	1		04/26/18 12:34	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**0.0066J**	mg/L	0.020	0.0039	1		04/24/18 09:03		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-MW-20 **Lab ID: 40167869006** Collected: 04/23/18 11:05 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**296000**	ug/L	100	25.3	10		04/26/18 12:37	7440-47-3	P4
Iron, Dissolved	**<155**	ug/L	1000	155	10		04/26/18 12:37	7439-89-6	D3
Manganese, Dissolved	**<11.3**	ug/L	50.0	11.3	10		04/26/18 12:37	7439-96-5	D3
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**325**	mg/L	20.0	3.9	1000		04/24/18 09:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-MW-20A **Lab ID: 40167869007** Collected: 04/23/18 11:10 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		04/26/18 12:39	7440-47-3	P4
Iron, Dissolved	**<15.5**	ug/L	100	15.5	1		04/26/18 12:39	7439-89-6	
Manganese, Dissolved	**24.5**	ug/L	5.0	1.1	1		04/26/18 12:39	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**0.14**	mg/L	0.020	0.0039	1		04/24/18 09:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Sample: 6486-DUP-1 **Lab ID: 40167869008** Collected: 04/23/18 00:00 Received: 04/23/18 13:05 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**17800**	ug/L	100	25.3	10		04/26/18 12:46	7440-47-3	P4
Iron, Dissolved	**<155**	ug/L	1000	155	10		04/26/18 12:46	7439-89-6	D3
Manganese, Dissolved	**<11.3**	ug/L	50.0	11.3	10		04/26/18 12:46	7439-96-5	D3
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**19.0**	mg/L	2.5	0.48	125		04/24/18 09:00		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

QC Batch: 287081 Analysis Method: EPA 6010
QC Batch Method: EPA 6010 Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40167869001, 40167869002, 40167869003, 40167869004, 40167869005, 40167869006, 40167869007, 40167869008

METHOD BLANK: 1679223 Matrix: Water
Associated Lab Samples: 40167869001, 40167869002, 40167869003, 40167869004, 40167869005, 40167869006, 40167869007, 40167869008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	04/26/18 11:53	
Iron, Dissolved	ug/L	18.7J	100	04/26/18 11:53	
Manganese, Dissolved	ug/L	<1.1	5.0	04/26/18 11:53	

LABORATORY CONTROL SAMPLE: 1679224

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	504	101	80-120	
Iron, Dissolved	ug/L	5000	4990	100	80-120	
Manganese, Dissolved	ug/L	500	484	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1679225 1679226

Parameter	Units	40168003016 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<2.5	500	500	489	482	98	96	75-125	2	20	
Iron, Dissolved	ug/L	3100	5000	5000	7860	7760	95	93	75-125	1	20	
Manganese, Dissolved	ug/L	2080	500	500	2510	2490	86	82	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

QC Batch: 286824 Analysis Method: SM 3500-Cr B (Online)
QC Batch Method: SM 3500-Cr B (Online) Analysis Description: Chromium, Dissolved Hexavalent by 3500
Associated Lab Samples: 40167869001, 40167869002, 40167869003, 40167869004, 40167869005, 40167869006, 40167869007, 40167869008

METHOD BLANK: 1677784 Matrix: Water
Associated Lab Samples: 40167869001, 40167869002, 40167869003, 40167869004, 40167869005, 40167869006, 40167869007, 40167869008

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	<0.0039	0.020	04/24/18 09:00	

LABORATORY CONTROL SAMPLE: 1677785

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	.3	0.30	99	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1677786 1677787

Parameter	Units	40167869001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	207	300	300	494	495	95	96	90-110	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
P4	Sample field preservation does not meet EPA or method recommendations for this analysis.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6486 ALBANY/LUVATA
Pace Project No.: 40167869

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40167869001	**6486-OW-1**	EPA 6010	287081		
40167869002	**6486-OW-2**	EPA 6010	287081		
40167869003	**6486-OW-3**	EPA 6010	287081		
40167869004	**6486-MW-19**	EPA 6010	287081		
40167869005	**6486-MW-19A**	EPA 6010	287081		
40167869006	**6486-MW-20**	EPA 6010	287081		
40167869007	**6486-MW-20A**	EPA 6010	287081		
40167869008	**6486-DUP-1**	EPA 6010	287081		
40167869001	**6486-OW-1**	SM 3500-Cr B (Online)	286824		
40167869002	**6486-OW-2**	SM 3500-Cr B (Online)	286824		
40167869003	**6486-OW-3**	SM 3500-Cr B (Online)	286824		
40167869004	**6486-MW-19**	SM 3500-Cr B (Online)	286824		
40167869005	**6486-MW-19A**	SM 3500-Cr B (Online)	286824		
40167869006	**6486-MW-20**	SM 3500-Cr B (Online)	286824		
40167869007	**6486-MW-20A**	SM 3500-Cr B (Online)	286824		
40167869008	**6486-DUP-1**	SM 3500-Cr B (Online)	286824		

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

4016 7869

Pace Analytical®
www.pacelabs.com

CHAIN OF CUSTODY

(Please Print Clearly)	
Company Name:	EnviroForensics, LLC
Branch/Location:	Waukesha, WI
Project Contact:	W. Fassbender
Phone:	(262) 290-4001
Project Number:	6486
Project Name:	Albany / Lovata
Project State:	Wisconsin
Sampled By (Print):	K. Vander Heiden
Sampled By (Sign):	
PO #:	2018-0565
Regulatory Program:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes

A = Air	W = Water
B = Biota	DW = Drinking Water
C = Charcoal	GW = Ground Water
O = Oil	SW = Surface Water
S = Soil	WW = Waste Water
SI = Sludge	WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: Hex. Chrome	Metals (total diss. Chrome)	Metals (total diss. Fe)	Metals (total diss. Mn)	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
001	6486-OW-1	4/23	1120	GW	N		x	x	x	x	2 250mL unpreserved vials for sample needs to be filtered before analysis.		
002	6486-OW-2	4/23	1115	GW	N		x	x	x	x			
003	6486-OW-3	4/23	1200	GW	N		x	x	x	x			
004	6486-MW-19	4/23	1205	GW	N		x	x	x	x			
005	6486-MW-19A	4/23	1210	GW	N		x	x	x	x			
006	6486-MW-20	4/23	1105	GW	N		x	x	x	x			
007	6486-MW-20A	4/23	1110	GW	N		x	x	x	x			
008	6486-DUP-1	4/23		GW	N		x	x	x	x			

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	4/23/18 1305	Wallace	4/23/18 1305

PACE Project No.: 40167869

Receipt Temp = 2.0 °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / ~~Not Present~~

Intact / Not Intact

Pace Container Order #356920

40167869

Addresses

Order By :		Ship To :		Return To:	
Company	Enviroforensics	Company	Enviroforensics	Company	Pace Analytical Green Bay
Contact	Heimstead, Kyle	Contact	Heimstead, Kyle	Contact	Milewsky, Dan
Email	kheimstead@enviroforensics.com	Email	kheimstead@enviroforensics.com	Email	dan.milewsky@pacelabs.com
Address	N16 W23390 Stone Ridge Drive	Address	N16 W23390 Stone Ridge Drive	Address	1241 Bellevue Street
Address 2	Suite G	Address 2	Suite G	Address 2	Suite 9
City	Waukesha	City	Waukesha	City	Green Bay
State	WI Zip 53188	State	WI Zip 53188	State	WI Zip 54302
Phone	262-510-0612	Phone	262-510-0612	Phone	(920)469-2436

Info

Project Name Appleton Site; PO 20180565 **Due Date** 04/20/2018 **Profile** **Quote**

Project Manager Milewsky, Dan **Return** **Carrier** Most Economical **Location**

Trip Blanks

- [ ] Include Trip Blanks

Bottle Labels

- [X] Blank
- [ ] Pre-Printed No Sample IDs
- [ ] Pre-Printed With Sample IDs

Bottles

- [ ] Boxed Cases
- [ ] Individually Wrapped
- [ ] Grouped By Sample

Return Shipping Labels

- [ ] No Shipper Number
- [ ] With Shipper Number

Misc

- [ ] Sampling Instructions
- [ ] Custody Seal
- [ ] Temp. Blanks
- [X] Coolers
- [ ] Syringes
- [ ] Extra Bubble Wrap
- [ ] Short Hold/Rush Stickers
- [ ] DI Water Liter(s)
- [ ] USDA Regulated Soils

COC Options

- [X] Number of Blanks 2
- [ ] Pre-Printed

# of Samples	Matrix	Test	Container	Total	# of QC	Lot #	Notes
16	WT	Hexavalent Chromium	250 mL Unpreserved	16	0	M-8-039-06BB	
16	WT	Metals	250mL plastic w/HNO3	16	0	M-8-054-04BB	

Hazard Shipping Placard In Place : NA

*Sample receiving hours are Monday through Friday 8:00 am to 6:00 pm and Saturday from 9:00 am to 12:00 pm unless special arrangements are made with your project manager.

*Pace Analytical reserves the right to return hazardous, toxic, or radioactive samples to you.

*Pace Analytical reserves the right to charge for unused bottles, as well as cost associated with sample storage and disposal.

*Payment term are net 30 days.

*Please include the proposal number on the chain of custody to insure proper billing.

Sample Notes

Ship Date :	04/19/2018
Prepared By:	Mai Yer Her
Verified By:	

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: EnviroForensics Project # 40167869

All containers needing preservation have been checked and noted below: □Yes □No ☑N/A

Lab Lot# of pH paper: Lab Std #ID of preservation (if pH adjusted): Initial when completed: Date/ Time:

	Glass							Plastic							Vials						Jars			General			VOA Vials (>6mm) *						
Pace Lab #	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN		H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
001											2																						2.5 / 5 / 10
002											2																						2.5 / 5 / 10
003											2																						2.5 / 5 / 10
004											2																						2.5 / 5 / 10
005											2																						2.5 / 5 / 10
006											2																						2.5 / 5 / 10
007											2																						2.5 / 5 / 10
008											2																						2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : □Yes □No ☑N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical™ 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 31Jan2018
	Document No.: **F-GB-C-031-rev.06**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO#: 40167869

40167869

Client Name: EnviroForensics

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☐ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

Thermometer Used SR - NA **Type of Ice:** (Wet) Blue Dry None ☐ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: /Corr: RO)

Temp Blank Present: ☐ yes ☐ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 4/23/18
Initials: CAS

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No ☐N/A	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☑Yes ☐No ☐N/A	6.
Rush Turn Around Time Requested:	☐Yes ☑No ☐N/A	7.
Sufficient Volume: ☑Yes ☐No ☐N/A MS/MSD	☐Yes ☑No ☐N/A	8.
Correct Containers Used:	☑Yes ☐No ☐N/A	9. added 250ml p HNO3 per sample point to filter in lab CAS 4/23/18
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No ☐N/A	10.
Filtered volume received for Dissolved tests	☐Yes ☑No ☐N/A	11. filter metals in lab CAS 4/23/18
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☐Yes ☐No ☑N/A	13.
Trip Blank Custody Seals Present	☐Yes ☐No ☑N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: returned 11 empty 250ml plastics HNO3 bottles CAS 4/23/18

Project Manager Review: AL for DM **Date:** 4/23/18

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

July 31, 2018

Wayne Fassbender
Enviroforensics
N16 W23390 Stone Ridge Drive
Suite G
Waukesha, WI 53188

RE: Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Dear Wayne Fassbender:
Enclosed are the analytical results for sample(s) received by the laboratory on July 16, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Kyle Heimstead, EnviroForensics

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40172529001	**6486-TW-1**	Water	07/16/18 11:12	07/16/18 17:49
40172529002	**6486-TW-2**	Water	07/16/18 11:33	07/16/18 17:49
40172529003	**6486-TW-3**	Water	07/16/18 11:47	07/16/18 17:49
40172529004	**6486-TW-4**	Water	07/16/18 12:07	07/16/18 17:49
40172529005	**6486-TW-5**	Water	07/16/18 12:19	07/16/18 17:49
40172529006	**6486-TW-6**	Water	07/16/18 10:50	07/16/18 17:49
40172529007	**6486-OW-1**	Water	07/16/18 14:15	07/16/18 17:49
40172529008	**6486-OW-2**	Water	07/16/18 14:57	07/16/18 17:49
40172529009	**6486-MW-20**	Water	07/16/18 14:38	07/16/18 17:49
40172529010	**6486-MW-26**	Water	07/16/18 15:15	07/16/18 17:49
40172529011	**6486-OW-3**	Water	07/16/18 16:15	07/16/18 17:49
40172529012	**6486-MW-19**	Water	07/16/18 15:47	07/16/18 17:49
40172529013	**6486-MW-29**	Water	07/16/18 15:30	07/16/18 17:49
40172529014	**6486-DUP-1**	Water	07/16/18 00:00	07/16/18 17:49
40172529015	**6486-DUP-2**	Water	07/16/18 00:00	07/16/18 17:49
40172529016	**6486-TB**	Water	07/16/18 00:00	07/16/18 17:49

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40172529001	**6486-TW-1**	EPA 6010	JLD	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40172529002	**6486-TW-2**	EPA 6010	JLD	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40172529003	**6486-TW-3**	EPA 6010	JLD	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40172529004	**6486-TW-4**	EPA 6010	AJT	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40172529005	**6486-TW-5**	EPA 6010	AJT	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40172529006	**6486-TW-6**	EPA 6010	JLD	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40172529007	**6486-OW-1**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529008	**6486-OW-2**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529009	**6486-MW-20**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529010	**6486-MW-26**	EPA 6010	AJT	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529011	**6486-OW-3**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529012	**6486-MW-19**	EPA 6010	AJT	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529013	**6486-MW-29**	EPA 6010	JLD	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529014	**6486-DUP-1**	EPA 8260	LAP	64	PASI-G
40172529015	**6486-DUP-2**	EPA 6010	AJT	3	PASI-G
		SM 3500-Cr B (Online)	DEY	1	PASI-G
40172529016	**6486-TB**	EPA 8260	LAP	64	PASI-G

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40172529001	**6486-TW-1**					
EPA 8260	1,1-Dichloroethane	6.6	ug/L	1.0	07/18/18 13:28	
EPA 8260	cis-1,2-Dichloroethene	101	ug/L	1.0	07/18/18 13:28	
EPA 8260	trans-1,2-Dichloroethene	7.3	ug/L	1.0	07/18/18 13:28	
EPA 8260	Tetrachloroethene	49.8	ug/L	1.0	07/18/18 13:28	
EPA 8260	Trichloroethene	60.3	ug/L	1.0	07/18/18 13:28	
EPA 8260	Vinyl chloride	0.38J	ug/L	1.0	07/18/18 13:28	
40172529002	**6486-TW-2**					
EPA 8260	Chloromethane	5.4	ug/L	2.5	07/18/18 12:43	
EPA 8260	1,1-Dichloroethane	1.3J	ug/L	2.5	07/18/18 12:43	
EPA 8260	cis-1,2-Dichloroethene	127	ug/L	2.5	07/18/18 12:43	
EPA 8260	trans-1,2-Dichloroethene	13.3	ug/L	2.5	07/18/18 12:43	
EPA 8260	Trichloroethene	4.0	ug/L	2.5	07/18/18 12:43	
EPA 8260	Vinyl chloride	1.7J	ug/L	2.5	07/18/18 12:43	
40172529003	**6486-TW-3**					
EPA 8260	Chloroethane	0.58J	ug/L	1.0	07/18/18 16:53	
EPA 8260	Chloromethane	8.0	ug/L	1.0	07/18/18 16:53	
EPA 8260	1,1-Dichloroethane	0.62J	ug/L	1.0	07/18/18 16:53	
EPA 8260	cis-1,2-Dichloroethene	0.61J	ug/L	1.0	07/18/18 16:53	
40172529004	**6486-TW-4**					
EPA 6010	Chromium, Dissolved	196	ug/L	10.0	07/27/18 13:15	
40172529005	**6486-TW-5**					
EPA 6010	Chromium, Dissolved	3.2J	ug/L	10.0	07/27/18 13:03	
EPA 8260	Chloromethane	4.1	ug/L	1.0	07/18/18 14:13	
EPA 8260	1,1-Dichloroethane	0.45J	ug/L	1.0	07/18/18 14:13	
40172529006	**6486-TW-6**					
EPA 8260	1,1-Dichloroethane	3.4J	ug/L	10.0	07/18/18 13:06	
EPA 8260	cis-1,2-Dichloroethene	1470	ug/L	10.0	07/18/18 13:06	
EPA 8260	trans-1,2-Dichloroethene	69.0	ug/L	10.0	07/18/18 13:06	
EPA 8260	Trichloroethene	4.0J	ug/L	10.0	07/18/18 13:06	
EPA 8260	Vinyl chloride	146	ug/L	10.0	07/18/18 13:06	
40172529007	**6486-OW-1**					
EPA 6010	Chromium, Dissolved	84.6	ug/L	10.0	07/17/18 13:43	
EPA 6010	Iron, Dissolved	28000	ug/L	100	07/17/18 13:43	
EPA 6010	Manganese, Dissolved	628	ug/L	5.0	07/17/18 13:43	
40172529008	**6486-OW-2**					
EPA 6010	Chromium, Dissolved	17.0	ug/L	10.0	07/17/18 13:46	
EPA 6010	Iron, Dissolved	188000	ug/L	100	07/17/18 13:46	
EPA 6010	Manganese, Dissolved	2680	ug/L	5.0	07/17/18 13:46	
40172529009	**6486-MW-20**					
EPA 6010	Chromium, Dissolved	161000	ug/L	100	07/17/18 13:49	
EPA 6010	Iron, Dissolved	929J	ug/L	1000	07/17/18 13:49	D3
EPA 6010	Manganese, Dissolved	99.1	ug/L	50.0	07/17/18 13:49	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40172529009	**6486-MW-20**					
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	166	mg/L	8.6	07/17/18 09:40	
40172529010	**6486-MW-26**					
EPA 6010	Chromium, Dissolved	21600	ug/L	10.0	07/27/18 13:18	
EPA 6010	Iron, Dissolved	3550	ug/L	100	07/27/18 13:18	
EPA 6010	Manganese, Dissolved	115	ug/L	5.5	07/27/18 13:18	
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	17.6	mg/L	4.3	07/17/18 09:40	
40172529011	**6486-OW-3**					
EPA 6010	Chromium, Dissolved	505	ug/L	10.0	07/18/18 16:37	
EPA 6010	Iron, Dissolved	299	ug/L	100	07/18/18 16:37	
EPA 6010	Manganese, Dissolved	158	ug/L	5.0	07/18/18 16:37	
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	0.33	mg/L	0.043	07/17/18 09:40	
40172529012	**6486-MW-19**					
EPA 6010	Chromium, Dissolved	172	ug/L	10.0	07/27/18 13:20	
EPA 6010	Iron, Dissolved	22400	ug/L	100	07/27/18 13:20	
EPA 6010	Manganese, Dissolved	948	ug/L	5.5	07/27/18 13:20	
40172529013	**6486-MW-29**					
EPA 6010	Chromium, Dissolved	220	ug/L	10.0	07/18/18 16:39	
EPA 6010	Iron, Dissolved	89.6J	ug/L	100	07/18/18 16:39	
EPA 6010	Manganese, Dissolved	13.1	ug/L	5.0	07/18/18 16:39	
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	0.25	mg/L	0.043	07/17/18 09:40	
40172529014	**6486-DUP-1**					
EPA 8260	Chloromethane	3.2	ug/L	1.0	07/18/18 14:36	
40172529015	**6486-DUP-2**					
EPA 6010	Chromium, Dissolved	165000	ug/L	50.0	07/30/18 12:18	
EPA 6010	Iron, Dissolved	1110	ug/L	100	07/27/18 13:23	
EPA 6010	Manganese, Dissolved	104	ug/L	5.5	07/27/18 13:23	
SM 3500-Cr B (Online)	Chromium, Hexavalent, Dissolved	162	mg/L	8.6	07/17/18 09:40	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-1 **Lab ID: 40172529001** Collected: 07/16/18 11:12 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		07/17/18 13:29	7440-47-3	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	71-43-2	
Bromobenzene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 13:28	108-86-1	
Bromochloromethane	**<0.34**	ug/L	1.0	0.34	1		07/18/18 13:28	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	75-27-4	
Bromoform	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	75-25-2	
Bromomethane	**<2.4**	ug/L	5.0	2.4	1		07/18/18 13:28	74-83-9	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	104-51-8	
sec-Butylbenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 13:28	135-98-8	
tert-Butylbenzene	**<0.18**	ug/L	1.0	0.18	1		07/18/18 13:28	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	56-23-5	
Chlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	108-90-7	
Chloroethane	**<0.37**	ug/L	1.0	0.37	1		07/18/18 13:28	75-00-3	
Chloroform	**<2.5**	ug/L	5.0	2.5	1		07/18/18 13:28	67-66-3	
Chloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	95-49-8	
4-Chlorotoluene	**<0.21**	ug/L	1.0	0.21	1		07/18/18 13:28	106-43-4	
1,2-Dibromo-3-chloropropane	**<2.2**	ug/L	5.0	2.2	1		07/18/18 13:28	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	124-48-1	
1,2-Dibromoethane (EDB)	**<0.18**	ug/L	1.0	0.18	1		07/18/18 13:28	106-93-4	
Dibromomethane	**<0.43**	ug/L	1.0	0.43	1		07/18/18 13:28	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	106-46-7	
Dichlorodifluoromethane	**<0.22**	ug/L	1.0	0.22	1		07/18/18 13:28	75-71-8	
1,1-Dichloroethane	**6.6**	ug/L	1.0	0.24	1		07/18/18 13:28	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		07/18/18 13:28	107-06-2	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		07/18/18 13:28	75-35-4	
cis-1,2-Dichloroethene	**101**	ug/L	1.0	0.26	1		07/18/18 13:28	156-59-2	
trans-1,2-Dichloroethene	**7.3**	ug/L	1.0	0.26	1		07/18/18 13:28	156-60-5	
1,2-Dichloropropane	**<0.23**	ug/L	1.0	0.23	1		07/18/18 13:28	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	142-28-9	
2,2-Dichloropropane	**<0.48**	ug/L	1.0	0.48	1		07/18/18 13:28	594-20-7	
1,1-Dichloropropene	**<0.44**	ug/L	1.0	0.44	1		07/18/18 13:28	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	10061-01-5	
trans-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 13:28	10061-02-6	
Diisopropyl ether	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	108-20-3	
Ethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	100-41-4	
Hexachloro-1,3-butadiene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 13:28	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	1.0	0.14	1		07/18/18 13:28	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	99-87-6	
Methylene Chloride	**<0.23**	ug/L	1.0	0.23	1		07/18/18 13:28	75-09-2	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		07/18/18 13:28	1634-04-4	
Naphthalene	**<2.5**	ug/L	5.0	2.5	1		07/18/18 13:28	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-1 **Lab ID: 40172529001** Collected: 07/16/18 11:12 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	103-65-1	
Styrene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 13:28	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.25**	ug/L	1.0	0.25	1		07/18/18 13:28	79-34-5	
Tetrachloroethene	**49.8**	ug/L	1.0	0.50	1		07/18/18 13:28	127-18-4	
Toluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	108-88-3	
1,2,3-Trichlorobenzene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 13:28	87-61-6	
1,2,4-Trichlorobenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 13:28	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		07/18/18 13:28	79-00-5	
Trichloroethene	**60.3**	ug/L	1.0	0.33	1		07/18/18 13:28	79-01-6	
Trichlorofluoromethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 13:28	75-69-4	
1,2,3-Trichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	96-18-4	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	108-67-8	
Vinyl chloride	**0.38J**	ug/L	1.0	0.18	1		07/18/18 13:28	75-01-4	
m&p-Xylene	**<1.0**	ug/L	2.0	1.0	1		07/18/18 13:28	179601-23-1	
o-Xylene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 13:28	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	102	%	70-130		1		07/18/18 13:28	460-00-4	
Dibromofluoromethane (S)	111	%	70-130		1		07/18/18 13:28	1868-53-7	
Toluene-d8 (S)	88	%	70-130		1		07/18/18 13:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-2 **Lab ID: 40172529002** Collected: 07/16/18 11:33 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		07/17/18 13:36	7440-47-3	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	71-43-2	
Bromobenzene	**<0.58**	ug/L	2.5	0.58	2.5		07/18/18 12:43	108-86-1	
Bromochloromethane	**<0.85**	ug/L	2.5	0.85	2.5		07/18/18 12:43	74-97-5	
Bromodichloromethane	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	75-27-4	
Bromoform	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	75-25-2	
Bromomethane	**<6.1**	ug/L	12.5	6.1	2.5		07/18/18 12:43	74-83-9	
n-Butylbenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	104-51-8	
sec-Butylbenzene	**<5.5**	ug/L	12.5	5.5	2.5		07/18/18 12:43	135-98-8	
tert-Butylbenzene	**<0.45**	ug/L	2.5	0.45	2.5		07/18/18 12:43	98-06-6	
Carbon tetrachloride	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	56-23-5	
Chlorobenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	108-90-7	
Chloroethane	**<0.94**	ug/L	2.5	0.94	2.5		07/18/18 12:43	75-00-3	
Chloroform	**<6.2**	ug/L	12.5	6.2	2.5		07/18/18 12:43	67-66-3	
Chloromethane	**5.4**	ug/L	2.5	1.2	2.5		07/18/18 12:43	74-87-3	
2-Chlorotoluene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	95-49-8	
4-Chlorotoluene	**<0.53**	ug/L	2.5	0.53	2.5		07/18/18 12:43	106-43-4	
1,2-Dibromo-3-chloropropane	**<5.4**	ug/L	12.5	5.4	2.5		07/18/18 12:43	96-12-8	
Dibromochloromethane	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	124-48-1	
1,2-Dibromoethane (EDB)	**<0.44**	ug/L	2.5	0.44	2.5		07/18/18 12:43	106-93-4	
Dibromomethane	**<1.1**	ug/L	2.5	1.1	2.5		07/18/18 12:43	74-95-3	
1,2-Dichlorobenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	95-50-1	
1,3-Dichlorobenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	541-73-1	
1,4-Dichlorobenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	106-46-7	
Dichlorodifluoromethane	**<0.56**	ug/L	2.5	0.56	2.5		07/18/18 12:43	75-71-8	
1,1-Dichloroethane	**1.3J**	ug/L	2.5	0.60	2.5		07/18/18 12:43	75-34-3	
1,2-Dichloroethane	**<0.42**	ug/L	2.5	0.42	2.5		07/18/18 12:43	107-06-2	
1,1-Dichloroethene	**<1.0**	ug/L	2.5	1.0	2.5		07/18/18 12:43	75-35-4	
cis-1,2-Dichloroethene	**127**	ug/L	2.5	0.64	2.5		07/18/18 12:43	156-59-2	
trans-1,2-Dichloroethene	**13.3**	ug/L	2.5	0.64	2.5		07/18/18 12:43	156-60-5	
1,2-Dichloropropane	**<0.58**	ug/L	2.5	0.58	2.5		07/18/18 12:43	78-87-5	
1,3-Dichloropropane	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	142-28-9	
2,2-Dichloropropane	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	594-20-7	
1,1-Dichloropropene	**<1.1**	ug/L	2.5	1.1	2.5		07/18/18 12:43	563-58-6	
cis-1,3-Dichloropropene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	10061-01-5	
trans-1,3-Dichloropropene	**<0.57**	ug/L	2.5	0.57	2.5		07/18/18 12:43	10061-02-6	
Diisopropyl ether	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	108-20-3	
Ethylbenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	100-41-4	
Hexachloro-1,3-butadiene	**<5.3**	ug/L	12.5	5.3	2.5		07/18/18 12:43	87-68-3	
Isopropylbenzene (Cumene)	**<0.36**	ug/L	2.5	0.36	2.5		07/18/18 12:43	98-82-8	
p-Isopropyltoluene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	99-87-6	
Methylene Chloride	**<0.58**	ug/L	2.5	0.58	2.5		07/18/18 12:43	75-09-2	
Methyl-tert-butyl ether	**<0.44**	ug/L	2.5	0.44	2.5		07/18/18 12:43	1634-04-4	
Naphthalene	**<6.2**	ug/L	12.5	6.2	2.5		07/18/18 12:43	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-2 **Lab ID: 40172529002** Collected: 07/16/18 11:33 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
n-Propylbenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	103-65-1	
Styrene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.45**	ug/L	2.5	0.45	2.5		07/18/18 12:43	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.62**	ug/L	2.5	0.62	2.5		07/18/18 12:43	79-34-5	
Tetrachloroethene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	127-18-4	
Toluene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	108-88-3	
1,2,3-Trichlorobenzene	**<5.3**	ug/L	12.5	5.3	2.5		07/18/18 12:43	87-61-6	
1,2,4-Trichlorobenzene	**<5.5**	ug/L	12.5	5.5	2.5		07/18/18 12:43	120-82-1	
1,1,1-Trichloroethane	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	71-55-6	
1,1,2-Trichloroethane	**<0.49**	ug/L	2.5	0.49	2.5		07/18/18 12:43	79-00-5	
Trichloroethene	**4.0**	ug/L	2.5	0.83	2.5		07/18/18 12:43	79-01-6	
Trichlorofluoromethane	**<0.46**	ug/L	2.5	0.46	2.5		07/18/18 12:43	75-69-4	
1,2,3-Trichloropropane	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	96-18-4	
1,2,4-Trimethylbenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	95-63-6	
1,3,5-Trimethylbenzene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	108-67-8	
Vinyl chloride	**1.7J**	ug/L	2.5	0.44	2.5		07/18/18 12:43	75-01-4	
m&p-Xylene	**<2.5**	ug/L	5.0	2.5	2.5		07/18/18 12:43	179601-23-1	
o-Xylene	**<1.2**	ug/L	2.5	1.2	2.5		07/18/18 12:43	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		2.5		07/18/18 12:43	460-00-4	
Dibromofluoromethane (S)	110	%	70-130		2.5		07/18/18 12:43	1868-53-7	
Toluene-d8 (S)	89	%	70-130		2.5		07/18/18 12:43	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-3 **Lab ID: 40172529003** Collected: 07/16/18 11:47 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		07/17/18 13:39	7440-47-3	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	71-43-2	
Bromobenzene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:53	108-86-1	
Bromochloromethane	**<0.34**	ug/L	1.0	0.34	1		07/18/18 16:53	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	75-27-4	
Bromoform	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	75-25-2	
Bromomethane	**<2.4**	ug/L	5.0	2.4	1		07/18/18 16:53	74-83-9	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	104-51-8	
sec-Butylbenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 16:53	135-98-8	
tert-Butylbenzene	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:53	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	56-23-5	
Chlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	108-90-7	
Chloroethane	**0.58J**	ug/L	1.0	0.37	1		07/18/18 16:53	75-00-3	
Chloroform	**<2.5**	ug/L	5.0	2.5	1		07/18/18 16:53	67-66-3	
Chloromethane	**8.0**	ug/L	1.0	0.50	1		07/18/18 16:53	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	95-49-8	
4-Chlorotoluene	**<0.21**	ug/L	1.0	0.21	1		07/18/18 16:53	106-43-4	
1,2-Dibromo-3-chloropropane	**<2.2**	ug/L	5.0	2.2	1		07/18/18 16:53	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	124-48-1	
1,2-Dibromoethane (EDB)	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:53	106-93-4	
Dibromomethane	**<0.43**	ug/L	1.0	0.43	1		07/18/18 16:53	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	106-46-7	
Dichlorodifluoromethane	**<0.22**	ug/L	1.0	0.22	1		07/18/18 16:53	75-71-8	
1,1-Dichloroethane	**0.62J**	ug/L	1.0	0.24	1		07/18/18 16:53	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		07/18/18 16:53	107-06-2	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		07/18/18 16:53	75-35-4	
cis-1,2-Dichloroethene	**0.61J**	ug/L	1.0	0.26	1		07/18/18 16:53	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/18/18 16:53	156-60-5	
1,2-Dichloropropane	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:53	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	142-28-9	
2,2-Dichloropropane	**<0.48**	ug/L	1.0	0.48	1		07/18/18 16:53	594-20-7	
1,1-Dichloropropene	**<0.44**	ug/L	1.0	0.44	1		07/18/18 16:53	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	10061-01-5	
trans-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:53	10061-02-6	
Diisopropyl ether	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	108-20-3	
Ethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	100-41-4	
Hexachloro-1,3-butadiene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 16:53	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	1.0	0.14	1		07/18/18 16:53	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	99-87-6	
Methylene Chloride	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:53	75-09-2	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		07/18/18 16:53	1634-04-4	
Naphthalene	**<2.5**	ug/L	5.0	2.5	1		07/18/18 16:53	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-3 **Lab ID: 40172529003** Collected: 07/16/18 11:47 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	103-65-1	
Styrene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:53	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.25**	ug/L	1.0	0.25	1		07/18/18 16:53	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	127-18-4	
Toluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	108-88-3	
1,2,3-Trichlorobenzene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 16:53	87-61-6	
1,2,4-Trichlorobenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 16:53	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		07/18/18 16:53	79-00-5	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		07/18/18 16:53	79-01-6	
Trichlorofluoromethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:53	75-69-4	
1,2,3-Trichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	96-18-4	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	108-67-8	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:53	75-01-4	
m&p-Xylene	**<1.0**	ug/L	2.0	1.0	1		07/18/18 16:53	179601-23-1	
o-Xylene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:53	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		07/18/18 16:53	460-00-4	
Dibromofluoromethane (S)	116	%	70-130		1		07/18/18 16:53	1868-53-7	
Toluene-d8 (S)	88	%	70-130		1		07/18/18 16:53	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-4 **Lab ID: 40172529004** Collected: 07/16/18 12:07 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Chromium, Dissolved	**196**	ug/L	10.0	2.5	1	07/26/18 06:16	07/27/18 13:15	7440-47-3	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	71-43-2	
Bromobenzene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:28	108-86-1	
Bromochloromethane	**<0.34**	ug/L	1.0	0.34	1		07/18/18 16:28	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	75-27-4	
Bromoform	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	75-25-2	
Bromomethane	**<2.4**	ug/L	5.0	2.4	1		07/18/18 16:28	74-83-9	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	104-51-8	
sec-Butylbenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 16:28	135-98-8	
tert-Butylbenzene	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:28	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	56-23-5	
Chlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	108-90-7	
Chloroethane	**<0.37**	ug/L	1.0	0.37	1		07/18/18 16:28	75-00-3	
Chloroform	**<2.5**	ug/L	5.0	2.5	1		07/18/18 16:28	67-66-3	
Chloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	95-49-8	
4-Chlorotoluene	**<0.21**	ug/L	1.0	0.21	1		07/18/18 16:28	106-43-4	
1,2-Dibromo-3-chloropropane	**<2.2**	ug/L	5.0	2.2	1		07/18/18 16:28	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	124-48-1	
1,2-Dibromoethane (EDB)	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:28	106-93-4	
Dibromomethane	**<0.43**	ug/L	1.0	0.43	1		07/18/18 16:28	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	106-46-7	
Dichlorodifluoromethane	**<0.22**	ug/L	1.0	0.22	1		07/18/18 16:28	75-71-8	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		07/18/18 16:28	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		07/18/18 16:28	107-06-2	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		07/18/18 16:28	75-35-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/18/18 16:28	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/18/18 16:28	156-60-5	
1,2-Dichloropropane	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:28	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	142-28-9	
2,2-Dichloropropane	**<0.48**	ug/L	1.0	0.48	1		07/18/18 16:28	594-20-7	
1,1-Dichloropropene	**<0.44**	ug/L	1.0	0.44	1		07/18/18 16:28	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	10061-01-5	
trans-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:28	10061-02-6	
Diisopropyl ether	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	108-20-3	
Ethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	100-41-4	
Hexachloro-1,3-butadiene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 16:28	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	1.0	0.14	1		07/18/18 16:28	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	99-87-6	
Methylene Chloride	**<0.23**	ug/L	1.0	0.23	1		07/18/18 16:28	75-09-2	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		07/18/18 16:28	1634-04-4	
Naphthalene	**<2.5**	ug/L	5.0	2.5	1		07/18/18 16:28	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-4 **Lab ID: 40172529004** Collected: 07/16/18 12:07 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	103-65-1	
Styrene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:28	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.25**	ug/L	1.0	0.25	1		07/18/18 16:28	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	127-18-4	
Toluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	108-88-3	
1,2,3-Trichlorobenzene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 16:28	87-61-6	
1,2,4-Trichlorobenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 16:28	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		07/18/18 16:28	79-00-5	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		07/18/18 16:28	79-01-6	
Trichlorofluoromethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:28	75-69-4	
1,2,3-Trichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	96-18-4	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	108-67-8	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		07/18/18 16:28	75-01-4	
m&p-Xylene	**<1.0**	ug/L	2.0	1.0	1		07/18/18 16:28	179601-23-1	
o-Xylene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 16:28	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		1		07/18/18 16:28	460-00-4	
Dibromofluoromethane (S)	113	%	70-130		1		07/18/18 16:28	1868-53-7	
Toluene-d8 (S)	88	%	70-130		1		07/18/18 16:28	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-5 **Lab ID: 40172529005** Collected: 07/16/18 12:19 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Chromium, Dissolved	**3.2J**	ug/L	10.0	2.5	1	07/26/18 06:16	07/27/18 13:03	7440-47-3	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	71-43-2	
Bromobenzene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:13	108-86-1	
Bromochloromethane	**<0.34**	ug/L	1.0	0.34	1		07/18/18 14:13	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	75-27-4	
Bromoform	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	75-25-2	
Bromomethane	**<2.4**	ug/L	5.0	2.4	1		07/18/18 14:13	74-83-9	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	104-51-8	
sec-Butylbenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 14:13	135-98-8	
tert-Butylbenzene	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:13	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	56-23-5	
Chlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	108-90-7	
Chloroethane	**<0.37**	ug/L	1.0	0.37	1		07/18/18 14:13	75-00-3	
Chloroform	**<2.5**	ug/L	5.0	2.5	1		07/18/18 14:13	67-66-3	
Chloromethane	**4.1**	ug/L	1.0	0.50	1		07/18/18 14:13	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	95-49-8	
4-Chlorotoluene	**<0.21**	ug/L	1.0	0.21	1		07/18/18 14:13	106-43-4	
1,2-Dibromo-3-chloropropane	**<2.2**	ug/L	5.0	2.2	1		07/18/18 14:13	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	124-48-1	
1,2-Dibromoethane (EDB)	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:13	106-93-4	
Dibromomethane	**<0.43**	ug/L	1.0	0.43	1		07/18/18 14:13	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	106-46-7	
Dichlorodifluoromethane	**<0.22**	ug/L	1.0	0.22	1		07/18/18 14:13	75-71-8	
1,1-Dichloroethane	**0.45J**	ug/L	1.0	0.24	1		07/18/18 14:13	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		07/18/18 14:13	107-06-2	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		07/18/18 14:13	75-35-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/18/18 14:13	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/18/18 14:13	156-60-5	
1,2-Dichloropropane	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:13	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	142-28-9	
2,2-Dichloropropane	**<0.48**	ug/L	1.0	0.48	1		07/18/18 14:13	594-20-7	
1,1-Dichloropropene	**<0.44**	ug/L	1.0	0.44	1		07/18/18 14:13	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	10061-01-5	
trans-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:13	10061-02-6	
Diisopropyl ether	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	108-20-3	
Ethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	100-41-4	
Hexachloro-1,3-butadiene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 14:13	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	1.0	0.14	1		07/18/18 14:13	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	99-87-6	
Methylene Chloride	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:13	75-09-2	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		07/18/18 14:13	1634-04-4	
Naphthalene	**<2.5**	ug/L	5.0	2.5	1		07/18/18 14:13	91-20-3	

REPORT OF LABORATORY ANALYSIS

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Green Bay, WI 54302
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-5 **Lab ID: 40172529005** Collected: 07/16/18 12:19 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	103-65-1	
Styrene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:13	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.25**	ug/L	1.0	0.25	1		07/18/18 14:13	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	127-18-4	
Toluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	108-88-3	
1,2,3-Trichlorobenzene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 14:13	87-61-6	
1,2,4-Trichlorobenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 14:13	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		07/18/18 14:13	79-00-5	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		07/18/18 14:13	79-01-6	
Trichlorofluoromethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:13	75-69-4	
1,2,3-Trichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	96-18-4	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	108-67-8	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:13	75-01-4	
m&p-Xylene	**<1.0**	ug/L	2.0	1.0	1		07/18/18 14:13	179601-23-1	
o-Xylene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:13	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		1		07/18/18 14:13	460-00-4	
Dibromofluoromethane (S)	113	%	70-130		1		07/18/18 14:13	1868-53-7	
Toluene-d8 (S)	89	%	70-130		1		07/18/18 14:13	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-6 **Lab ID: 40172529006** Collected: 07/16/18 10:50 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		07/17/18 13:41	7440-47-3	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	71-43-2	
Bromobenzene	**<2.3**	ug/L	10.0	2.3	10		07/18/18 13:06	108-86-1	
Bromochloromethane	**<3.4**	ug/L	10.0	3.4	10		07/18/18 13:06	74-97-5	
Bromodichloromethane	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	75-27-4	
Bromoform	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	75-25-2	
Bromomethane	**<24.3**	ug/L	50.0	24.3	10		07/18/18 13:06	74-83-9	
n-Butylbenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	104-51-8	
sec-Butylbenzene	**<21.9**	ug/L	50.0	21.9	10		07/18/18 13:06	135-98-8	
tert-Butylbenzene	**<1.8**	ug/L	10.0	1.8	10		07/18/18 13:06	98-06-6	
Carbon tetrachloride	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	56-23-5	
Chlorobenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	108-90-7	
Chloroethane	**<3.7**	ug/L	10.0	3.7	10		07/18/18 13:06	75-00-3	
Chloroform	**<25.0**	ug/L	50.0	25.0	10		07/18/18 13:06	67-66-3	
Chloromethane	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	74-87-3	
2-Chlorotoluene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	95-49-8	
4-Chlorotoluene	**<2.1**	ug/L	10.0	2.1	10		07/18/18 13:06	106-43-4	
1,2-Dibromo-3-chloropropane	**<21.6**	ug/L	50.0	21.6	10		07/18/18 13:06	96-12-8	
Dibromochloromethane	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	124-48-1	
1,2-Dibromoethane (EDB)	**<1.8**	ug/L	10.0	1.8	10		07/18/18 13:06	106-93-4	
Dibromomethane	**<4.3**	ug/L	10.0	4.3	10		07/18/18 13:06	74-95-3	
1,2-Dichlorobenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	95-50-1	
1,3-Dichlorobenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	541-73-1	
1,4-Dichlorobenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	106-46-7	
Dichlorodifluoromethane	**<2.2**	ug/L	10.0	2.2	10		07/18/18 13:06	75-71-8	
1,1-Dichloroethane	**3.4J**	ug/L	10.0	2.4	10		07/18/18 13:06	75-34-3	
1,2-Dichloroethane	**<1.7**	ug/L	10.0	1.7	10		07/18/18 13:06	107-06-2	
1,1-Dichloroethene	**<4.1**	ug/L	10.0	4.1	10		07/18/18 13:06	75-35-4	
cis-1,2-Dichloroethene	**1470**	ug/L	10.0	2.6	10		07/18/18 13:06	156-59-2	
trans-1,2-Dichloroethene	**69.0**	ug/L	10.0	2.6	10		07/18/18 13:06	156-60-5	
1,2-Dichloropropane	**<2.3**	ug/L	10.0	2.3	10		07/18/18 13:06	78-87-5	
1,3-Dichloropropane	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	142-28-9	
2,2-Dichloropropane	**<4.8**	ug/L	10.0	4.8	10		07/18/18 13:06	594-20-7	
1,1-Dichloropropene	**<4.4**	ug/L	10.0	4.4	10		07/18/18 13:06	563-58-6	
cis-1,3-Dichloropropene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	10061-01-5	
trans-1,3-Dichloropropene	**<2.3**	ug/L	10.0	2.3	10		07/18/18 13:06	10061-02-6	
Diisopropyl ether	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	108-20-3	
Ethylbenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	100-41-4	
Hexachloro-1,3-butadiene	**<21.1**	ug/L	50.0	21.1	10		07/18/18 13:06	87-68-3	
Isopropylbenzene (Cumene)	**<1.4**	ug/L	10.0	1.4	10		07/18/18 13:06	98-82-8	
p-Isopropyltoluene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	99-87-6	
Methylene Chloride	**<2.3**	ug/L	10.0	2.3	10		07/18/18 13:06	75-09-2	
Methyl-tert-butyl ether	**<1.7**	ug/L	10.0	1.7	10		07/18/18 13:06	1634-04-4	
Naphthalene	**<25.0**	ug/L	50.0	25.0	10		07/18/18 13:06	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TW-6 **Lab ID: 40172529006** Collected: 07/16/18 10:50 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
n-Propylbenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	103-65-1	
Styrene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.8**	ug/L	10.0	1.8	10		07/18/18 13:06	630-20-6	
1,1,2,2-Tetrachloroethane	**<2.5**	ug/L	10.0	2.5	10		07/18/18 13:06	79-34-5	
Tetrachloroethene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	127-18-4	
Toluene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	108-88-3	
1,2,3-Trichlorobenzene	**<21.3**	ug/L	50.0	21.3	10		07/18/18 13:06	87-61-6	
1,2,4-Trichlorobenzene	**<22.1**	ug/L	50.0	22.1	10		07/18/18 13:06	120-82-1	
1,1,1-Trichloroethane	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	71-55-6	
1,1,2-Trichloroethane	**<2.0**	ug/L	10.0	2.0	10		07/18/18 13:06	79-00-5	
Trichloroethene	**4.0J**	ug/L	10.0	3.3	10		07/18/18 13:06	79-01-6	
Trichlorofluoromethane	**<1.8**	ug/L	10.0	1.8	10		07/18/18 13:06	75-69-4	
1,2,3-Trichloropropane	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	96-18-4	
1,2,4-Trimethylbenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	95-63-6	
1,3,5-Trimethylbenzene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	108-67-8	
Vinyl chloride	**146**	ug/L	10.0	1.8	10		07/18/18 13:06	75-01-4	
m&p-Xylene	**<10.0**	ug/L	20.0	10.0	10		07/18/18 13:06	179601-23-1	
o-Xylene	**<5.0**	ug/L	10.0	5.0	10		07/18/18 13:06	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	100	%	70-130		10		07/18/18 13:06	460-00-4	
Dibromofluoromethane (S)	110	%	70-130		10		07/18/18 13:06	1868-53-7	
Toluene-d8 (S)	90	%	70-130		10		07/18/18 13:06	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-OW-1 **Lab ID: 40172529007** Collected: 07/16/18 14:15 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**84.6**	ug/L	10.0	2.5	1		07/17/18 13:43	7440-47-3	
Iron, Dissolved	**28000**	ug/L	100	15.5	1		07/17/18 13:43	7439-89-6	
Manganese, Dissolved	**628**	ug/L	5.0	1.1	1		07/17/18 13:43	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**<0.13**	mg/L	0.43	0.13	25		07/17/18 09:40		D3,M0

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-OW-2 **Lab ID: 40172529008** Collected: 07/16/18 14:57 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**17.0**	ug/L	10.0	2.5	1		07/17/18 13:46	7440-47-3	
Iron, Dissolved	**188000**	ug/L	100	15.5	1		07/17/18 13:46	7439-89-6	
Manganese, Dissolved	**2680**	ug/L	5.0	1.1	1		07/17/18 13:46	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**<0.26**	mg/L	0.86	0.26	50		07/17/18 09:40		D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-MW-20 **Lab ID: 40172529009** Collected: 07/16/18 14:38 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**161000**	ug/L	100	25.3	10		07/17/18 13:49	7440-47-3	
Iron, Dissolved	**929J**	ug/L	1000	155	10		07/17/18 13:49	7439-89-6	D3
Manganese, Dissolved	**99.1**	ug/L	50.0	11.3	10		07/17/18 13:49	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**166**	mg/L	8.6	2.6	500		07/17/18 09:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-MW-26 **Lab ID: 40172529010** Collected: 07/16/18 15:15 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Chromium, Dissolved	**21600**	ug/L	10.0	2.5	1	07/26/18 06:16	07/27/18 13:18	7440-47-3	
Iron, Dissolved	**3550**	ug/L	100	34.0	1	07/26/18 06:16	07/27/18 13:18	7439-89-6	
Manganese, Dissolved	**115**	ug/L	5.5	1.8	1	07/26/18 06:16	07/27/18 13:18	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**17.6**	mg/L	4.3	1.3	250		07/17/18 09:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-OW-3 **Lab ID: 40172529011** Collected: 07/16/18 16:15 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**505**	ug/L	10.0	2.5	1		07/18/18 16:37	7440-47-3	
Iron, Dissolved	**299**	ug/L	100	15.5	1		07/18/18 16:37	7439-89-6	
Manganese, Dissolved	**158**	ug/L	5.0	1.1	1		07/18/18 16:37	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**0.33**	mg/L	0.043	0.013	2.5		07/17/18 09:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-MW-19 **Lab ID: 40172529012** Collected: 07/16/18 15:47 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Chromium, Dissolved	**172**	ug/L	10.0	2.5	1	07/26/18 06:16	07/27/18 13:20	7440-47-3	
Iron, Dissolved	**22400**	ug/L	100	34.0	1	07/26/18 06:16	07/27/18 13:20	7439-89-6	
Manganese, Dissolved	**948**	ug/L	5.5	1.8	1	07/26/18 06:16	07/27/18 13:20	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**<1.3**	mg/L	4.3	1.3	250		07/17/18 09:40		D3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-MW-29 **Lab ID: 40172529013** Collected: 07/16/18 15:30 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**220**	ug/L	10.0	2.5	1		07/18/18 16:39	7440-47-3	
Iron, Dissolved	**89.6J**	ug/L	100	15.5	1		07/18/18 16:39	7439-89-6	
Manganese, Dissolved	**13.1**	ug/L	5.0	1.1	1		07/18/18 16:39	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**0.25**	mg/L	0.043	0.013	2.5		07/17/18 09:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-DUP-1 **Lab ID: 40172529014** Collected: 07/16/18 00:00 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	71-43-2	
Bromobenzene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:36	108-86-1	
Bromochloromethane	**<0.34**	ug/L	1.0	0.34	1		07/18/18 14:36	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	75-27-4	
Bromoform	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	75-25-2	
Bromomethane	**<2.4**	ug/L	5.0	2.4	1		07/18/18 14:36	74-83-9	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	104-51-8	
sec-Butylbenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 14:36	135-98-8	
tert-Butylbenzene	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:36	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	56-23-5	
Chlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	108-90-7	
Chloroethane	**<0.37**	ug/L	1.0	0.37	1		07/18/18 14:36	75-00-3	
Chloroform	**<2.5**	ug/L	5.0	2.5	1		07/18/18 14:36	67-66-3	
Chloromethane	**3.2**	ug/L	1.0	0.50	1		07/18/18 14:36	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	95-49-8	
4-Chlorotoluene	**<0.21**	ug/L	1.0	0.21	1		07/18/18 14:36	106-43-4	
1,2-Dibromo-3-chloropropane	**<2.2**	ug/L	5.0	2.2	1		07/18/18 14:36	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	124-48-1	
1,2-Dibromoethane (EDB)	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:36	106-93-4	
Dibromomethane	**<0.43**	ug/L	1.0	0.43	1		07/18/18 14:36	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	106-46-7	
Dichlorodifluoromethane	**<0.22**	ug/L	1.0	0.22	1		07/18/18 14:36	75-71-8	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		07/18/18 14:36	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		07/18/18 14:36	107-06-2	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		07/18/18 14:36	75-35-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/18/18 14:36	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/18/18 14:36	156-60-5	
1,2-Dichloropropane	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:36	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	142-28-9	
2,2-Dichloropropane	**<0.48**	ug/L	1.0	0.48	1		07/18/18 14:36	594-20-7	
1,1-Dichloropropene	**<0.44**	ug/L	1.0	0.44	1		07/18/18 14:36	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	10061-01-5	
trans-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:36	10061-02-6	
Diisopropyl ether	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	108-20-3	
Ethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	100-41-4	
Hexachloro-1,3-butadiene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 14:36	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	1.0	0.14	1		07/18/18 14:36	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	99-87-6	
Methylene Chloride	**<0.23**	ug/L	1.0	0.23	1		07/18/18 14:36	75-09-2	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		07/18/18 14:36	1634-04-4	
Naphthalene	**<2.5**	ug/L	5.0	2.5	1		07/18/18 14:36	91-20-3	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	103-65-1	
Styrene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:36	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-DUP-1 **Lab ID: 40172529014** Collected: 07/16/18 00:00 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.25**	ug/L	1.0	0.25	1		07/18/18 14:36	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	127-18-4	
Toluene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	108-88-3	
1,2,3-Trichlorobenzene	**<2.1**	ug/L	5.0	2.1	1		07/18/18 14:36	87-61-6	
1,2,4-Trichlorobenzene	**<2.2**	ug/L	5.0	2.2	1		07/18/18 14:36	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		07/18/18 14:36	79-00-5	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		07/18/18 14:36	79-01-6	
Trichlorofluoromethane	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:36	75-69-4	
1,2,3-Trichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	96-18-4	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	108-67-8	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		07/18/18 14:36	75-01-4	
m&p-Xylene	**<1.0**	ug/L	2.0	1.0	1		07/18/18 14:36	179601-23-1	
o-Xylene	**<0.50**	ug/L	1.0	0.50	1		07/18/18 14:36	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	101	%	70-130		1		07/18/18 14:36	460-00-4	
Dibromofluoromethane (S)	110	%	70-130		1		07/18/18 14:36	1868-53-7	
Toluene-d8 (S)	89	%	70-130		1		07/18/18 14:36	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-DUP-2 **Lab ID: 40172529015** Collected: 07/16/18 00:00 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010 Preparation Method: EPA 3010								
Chromium, Dissolved	**165000**	ug/L	50.0	12.7	5	07/26/18 06:16	07/30/18 12:18	7440-47-3	
Iron, Dissolved	**1110**	ug/L	100	34.0	1	07/26/18 06:16	07/27/18 13:23	7439-89-6	
Manganese, Dissolved	**104**	ug/L	5.5	1.8	1	07/26/18 06:16	07/27/18 13:23	7439-96-5	
Chromium, Dissolved Hexavalent	Analytical Method: SM 3500-Cr B (Online)								
Chromium, Hexavalent, Dissolved	**162**	mg/L	8.6	2.6	500		07/17/18 09:40		

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TB **Lab ID: 40172529016** Collected: 07/16/18 00:00 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	71-43-2	
Bromobenzene	**<0.23**	ug/L	1.0	0.23	1		07/19/18 12:34	108-86-1	
Bromochloromethane	**<0.34**	ug/L	1.0	0.34	1		07/19/18 12:34	74-97-5	
Bromodichloromethane	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	75-27-4	
Bromoform	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	75-25-2	
Bromomethane	**<2.4**	ug/L	5.0	2.4	1		07/19/18 12:34	74-83-9	
n-Butylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	104-51-8	
sec-Butylbenzene	**<2.2**	ug/L	5.0	2.2	1		07/19/18 12:34	135-98-8	
tert-Butylbenzene	**<0.18**	ug/L	1.0	0.18	1		07/19/18 12:34	98-06-6	
Carbon tetrachloride	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	56-23-5	
Chlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	108-90-7	
Chloroethane	**<0.37**	ug/L	1.0	0.37	1		07/19/18 12:34	75-00-3	
Chloroform	**<2.5**	ug/L	5.0	2.5	1		07/19/18 12:34	67-66-3	
Chloromethane	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	74-87-3	
2-Chlorotoluene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	95-49-8	
4-Chlorotoluene	**<0.21**	ug/L	1.0	0.21	1		07/19/18 12:34	106-43-4	
1,2-Dibromo-3-chloropropane	**<2.2**	ug/L	5.0	2.2	1		07/19/18 12:34	96-12-8	
Dibromochloromethane	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	124-48-1	
1,2-Dibromoethane (EDB)	**<0.18**	ug/L	1.0	0.18	1		07/19/18 12:34	106-93-4	
Dibromomethane	**<0.43**	ug/L	1.0	0.43	1		07/19/18 12:34	74-95-3	
1,2-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	95-50-1	
1,3-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	541-73-1	
1,4-Dichlorobenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	106-46-7	
Dichlorodifluoromethane	**<0.22**	ug/L	1.0	0.22	1		07/19/18 12:34	75-71-8	
1,1-Dichloroethane	**<0.24**	ug/L	1.0	0.24	1		07/19/18 12:34	75-34-3	
1,2-Dichloroethane	**<0.17**	ug/L	1.0	0.17	1		07/19/18 12:34	107-06-2	
1,1-Dichloroethene	**<0.41**	ug/L	1.0	0.41	1		07/19/18 12:34	75-35-4	
cis-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/19/18 12:34	156-59-2	
trans-1,2-Dichloroethene	**<0.26**	ug/L	1.0	0.26	1		07/19/18 12:34	156-60-5	
1,2-Dichloropropane	**<0.23**	ug/L	1.0	0.23	1		07/19/18 12:34	78-87-5	
1,3-Dichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	142-28-9	
2,2-Dichloropropane	**<0.48**	ug/L	1.0	0.48	1		07/19/18 12:34	594-20-7	
1,1-Dichloropropene	**<0.44**	ug/L	1.0	0.44	1		07/19/18 12:34	563-58-6	
cis-1,3-Dichloropropene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	10061-01-5	
trans-1,3-Dichloropropene	**<0.23**	ug/L	1.0	0.23	1		07/19/18 12:34	10061-02-6	
Diisopropyl ether	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	108-20-3	
Ethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	100-41-4	
Hexachloro-1,3-butadiene	**<2.1**	ug/L	5.0	2.1	1		07/19/18 12:34	87-68-3	
Isopropylbenzene (Cumene)	**<0.14**	ug/L	1.0	0.14	1		07/19/18 12:34	98-82-8	
p-Isopropyltoluene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	99-87-6	
Methylene Chloride	**<0.23**	ug/L	1.0	0.23	1		07/19/18 12:34	75-09-2	
Methyl-tert-butyl ether	**<0.17**	ug/L	1.0	0.17	1		07/19/18 12:34	1634-04-4	
Naphthalene	**<2.5**	ug/L	5.0	2.5	1		07/19/18 12:34	91-20-3	
n-Propylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	103-65-1	
Styrene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.18**	ug/L	1.0	0.18	1		07/19/18 12:34	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Sample: 6486-TB **Lab ID: 40172529016** Collected: 07/16/18 00:00 Received: 07/16/18 17:49 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.25**	ug/L	1.0	0.25	1		07/19/18 12:34	79-34-5	
Tetrachloroethene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	127-18-4	
Toluene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	108-88-3	
1,2,3-Trichlorobenzene	**<2.1**	ug/L	5.0	2.1	1		07/19/18 12:34	87-61-6	
1,2,4-Trichlorobenzene	**<2.2**	ug/L	5.0	2.2	1		07/19/18 12:34	120-82-1	
1,1,1-Trichloroethane	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	71-55-6	
1,1,2-Trichloroethane	**<0.20**	ug/L	1.0	0.20	1		07/19/18 12:34	79-00-5	
Trichloroethene	**<0.33**	ug/L	1.0	0.33	1		07/19/18 12:34	79-01-6	
Trichlorofluoromethane	**<0.18**	ug/L	1.0	0.18	1		07/19/18 12:34	75-69-4	
1,2,3-Trichloropropane	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	96-18-4	
1,2,4-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	95-63-6	
1,3,5-Trimethylbenzene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	108-67-8	
Vinyl chloride	**<0.18**	ug/L	1.0	0.18	1		07/19/18 12:34	75-01-4	
m&p-Xylene	**<1.0**	ug/L	2.0	1.0	1		07/19/18 12:34	179601-23-1	
o-Xylene	**<0.50**	ug/L	1.0	0.50	1		07/19/18 12:34	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	92	%	70-130		1		07/19/18 12:34	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		1		07/19/18 12:34	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		07/19/18 12:34	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

QC Batch: 294675 Analysis Method: EPA 6010
QC Batch Method: EPA 6010 Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40172529001, 40172529002, 40172529003, 40172529006, 40172529007, 40172529008, 40172529009

METHOD BLANK: 1723042 Matrix: Water
Associated Lab Samples: 40172529001, 40172529002, 40172529003, 40172529006, 40172529007, 40172529008, 40172529009

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	07/17/18 12:43	
Iron, Dissolved	ug/L	22.8J	100	07/17/18 12:43	
Manganese, Dissolved	ug/L	<1.1	5.0	07/17/18 12:43	

LABORATORY CONTROL SAMPLE: 1723043

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	497	99	80-120	
Iron, Dissolved	ug/L	5000	5010	100	80-120	
Manganese, Dissolved	ug/L	500	493	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1723044 1723045

Parameter	Units	40172166001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<2.5	500	500	506	495	101	99	75-125	2	20	
Iron, Dissolved	ug/L	<15.5	5000	5000	5240	5020	105	100	75-125	4	20	
Manganese, Dissolved	ug/L	<1.1	500	500	503	492	101	98	75-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

QC Batch: 294839 Analysis Method: EPA 6010
QC Batch Method: EPA 6010 Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40172529011, 40172529013

METHOD BLANK: 1723950 Matrix: Water
Associated Lab Samples: 40172529011, 40172529013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	07/18/18 15:53	
Iron, Dissolved	ug/L	<15.5	100	07/18/18 15:53	
Manganese, Dissolved	ug/L	<1.1	5.0	07/18/18 15:53	

LABORATORY CONTROL SAMPLE: 1723951

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	508	102	80-120	
Iron, Dissolved	ug/L	5000	5000	100	80-120	
Manganese, Dissolved	ug/L	500	502	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1723952 1723953

Parameter	Units	40172593005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<2.5	500	500	526	511	105	102	75-125	3	20	
Iron, Dissolved	ug/L	<15.5	5000	5000	5080	5040	102	101	75-125	1	20	
Manganese, Dissolved	ug/L	5.3	500	500	526	513	104	102	75-125	3	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

QC Batch: 295499 Analysis Method: EPA 6010
QC Batch Method: EPA 3010 Analysis Description: 6010 MET Dissolved
Associated Lab Samples: 40172529004, 40172529005, 40172529010, 40172529012, 40172529015

METHOD BLANK: 1727465 Matrix: Water
Associated Lab Samples: 40172529004, 40172529005, 40172529010, 40172529012, 40172529015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	07/27/18 12:58	
Iron, Dissolved	ug/L	<34.0	100	07/27/18 12:58	
Manganese, Dissolved	ug/L	<1.8	5.5	07/27/18 12:58	

LABORATORY CONTROL SAMPLE: 1727466

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	511	102	80-120	
Iron, Dissolved	ug/L	5000	5100	102	80-120	
Manganese, Dissolved	ug/L	500	498	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1727467 1727468

Parameter	Units	40172529005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	3.2J	500	500	516	503	103	100	75-125	2	20	
Iron, Dissolved	ug/L	1900	5000	5000	6950	6780	101	98	75-125	3	20	
Manganese, Dissolved	ug/L	112	500	500	616	605	101	99	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

QC Batch: 294653 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 40172529001, 40172529002, 40172529003, 40172529004, 40172529005, 40172529006, 40172529014

METHOD BLANK: 1722895 Matrix: Water
Associated Lab Samples: 40172529001, 40172529002, 40172529003, 40172529004, 40172529005, 40172529006, 40172529014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.18	1.0	07/18/18 08:39	
1,1,1-Trichloroethane	ug/L	<0.50	1.0	07/18/18 08:39	
1,1,2,2-Tetrachloroethane	ug/L	<0.25	1.0	07/18/18 08:39	
1,1,2-Trichloroethane	ug/L	<0.20	1.0	07/18/18 08:39	
1,1-Dichloroethane	ug/L	<0.24	1.0	07/18/18 08:39	
1,1-Dichloroethene	ug/L	<0.41	1.0	07/18/18 08:39	
1,1-Dichloropropene	ug/L	<0.44	1.0	07/18/18 08:39	
1,2,3-Trichlorobenzene	ug/L	<2.1	5.0	07/18/18 08:39	
1,2,3-Trichloropropane	ug/L	<0.50	1.0	07/18/18 08:39	
1,2,4-Trichlorobenzene	ug/L	<2.2	5.0	07/18/18 08:39	
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	07/18/18 08:39	
1,2-Dibromo-3-chloropropane	ug/L	<2.2	5.0	07/18/18 08:39	
1,2-Dibromoethane (EDB)	ug/L	<0.18	1.0	07/18/18 08:39	
1,2-Dichlorobenzene	ug/L	<0.50	1.0	07/18/18 08:39	
1,2-Dichloroethane	ug/L	<0.17	1.0	07/18/18 08:39	
1,2-Dichloropropane	ug/L	<0.23	1.0	07/18/18 08:39	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	07/18/18 08:39	
1,3-Dichlorobenzene	ug/L	<0.50	1.0	07/18/18 08:39	
1,3-Dichloropropane	ug/L	<0.50	1.0	07/18/18 08:39	
1,4-Dichlorobenzene	ug/L	<0.50	1.0	07/18/18 08:39	
2,2-Dichloropropane	ug/L	<0.48	1.0	07/18/18 08:39	
2-Chlorotoluene	ug/L	<0.50	1.0	07/18/18 08:39	
4-Chlorotoluene	ug/L	<0.21	1.0	07/18/18 08:39	
Benzene	ug/L	<0.50	1.0	07/18/18 08:39	
Bromobenzene	ug/L	<0.23	1.0	07/18/18 08:39	
Bromochloromethane	ug/L	<0.34	1.0	07/18/18 08:39	
Bromodichloromethane	ug/L	<0.50	1.0	07/18/18 08:39	
Bromoform	ug/L	<0.50	1.0	07/18/18 08:39	
Bromomethane	ug/L	<2.4	5.0	07/18/18 08:39	
Carbon tetrachloride	ug/L	<0.50	1.0	07/18/18 08:39	
Chlorobenzene	ug/L	<0.50	1.0	07/18/18 08:39	
Chloroethane	ug/L	<0.37	1.0	07/18/18 08:39	
Chloroform	ug/L	<2.5	5.0	07/18/18 08:39	
Chloromethane	ug/L	<0.50	1.0	07/18/18 08:39	
cis-1,2-Dichloroethene	ug/L	<0.26	1.0	07/18/18 08:39	
cis-1,3-Dichloropropene	ug/L	<0.50	1.0	07/18/18 08:39	
Dibromochloromethane	ug/L	<0.50	1.0	07/18/18 08:39	
Dibromomethane	ug/L	<0.43	1.0	07/18/18 08:39	
Dichlorodifluoromethane	ug/L	0.23J	1.0	07/18/18 08:39	
Diisopropyl ether	ug/L	<0.50	1.0	07/18/18 08:39	
Ethylbenzene	ug/L	<0.50	1.0	07/18/18 08:39	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

METHOD BLANK: 1722895 Matrix: Water
Associated Lab Samples: 40172529001, 40172529002, 40172529003, 40172529004, 40172529005, 40172529006, 40172529014

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	<2.1	5.0	07/18/18 08:39	
Isopropylbenzene (Cumene)	ug/L	<0.14	1.0	07/18/18 08:39	
m&p-Xylene	ug/L	<1.0	2.0	07/18/18 08:39	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	07/18/18 08:39	
Methylene Chloride	ug/L	<0.23	1.0	07/18/18 08:39	
n-Butylbenzene	ug/L	<0.50	1.0	07/18/18 08:39	
n-Propylbenzene	ug/L	<0.50	1.0	07/18/18 08:39	
Naphthalene	ug/L	<2.5	5.0	07/18/18 08:39	
o-Xylene	ug/L	<0.50	1.0	07/18/18 08:39	
p-Isopropyltoluene	ug/L	<0.50	1.0	07/18/18 08:39	
sec-Butylbenzene	ug/L	<2.2	5.0	07/18/18 08:39	
Styrene	ug/L	<0.50	1.0	07/18/18 08:39	
tert-Butylbenzene	ug/L	<0.18	1.0	07/18/18 08:39	
Tetrachloroethene	ug/L	<0.50	1.0	07/18/18 08:39	
Toluene	ug/L	<0.50	1.0	07/18/18 08:39	
trans-1,2-Dichloroethene	ug/L	<0.26	1.0	07/18/18 08:39	
trans-1,3-Dichloropropene	ug/L	<0.23	1.0	07/18/18 08:39	
Trichloroethene	ug/L	<0.33	1.0	07/18/18 08:39	
Trichlorofluoromethane	ug/L	<0.18	1.0	07/18/18 08:39	
Vinyl chloride	ug/L	<0.18	1.0	07/18/18 08:39	
4-Bromofluorobenzene (S)	%	96	70-130	07/18/18 08:39	
Dibromofluoromethane (S)	%	104	70-130	07/18/18 08:39	
Toluene-d8 (S)	%	91	70-130	07/18/18 08:39	

LABORATORY CONTROL SAMPLE: 1722896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	57.9	116	70-133	
1,1,2,2-Tetrachloroethane	ug/L	50	44.7	89	67-130	
1,1,2-Trichloroethane	ug/L	50	48.1	96	70-130	
1,1-Dichloroethane	ug/L	50	59.0	118	70-134	
1,1-Dichloroethene	ug/L	50	59.6	119	75-132	
1,2,4-Trichlorobenzene	ug/L	50	47.5	95	68-130	
1,2-Dibromo-3-chloropropane	ug/L	50	43.3	87	60-126	
1,2-Dibromoethane (EDB)	ug/L	50	47.1	94	70-130	
1,2-Dichlorobenzene	ug/L	50	47.5	95	70-130	
1,2-Dichloroethane	ug/L	50	57.7	115	73-134	
1,2-Dichloropropane	ug/L	50	56.5	113	79-128	
1,3-Dichlorobenzene	ug/L	50	47.2	94	70-130	
1,4-Dichlorobenzene	ug/L	50	47.9	96	70-130	
Benzene	ug/L	50	59.1	118	69-137	
Bromodichloromethane	ug/L	50	51.6	103	70-130	
Bromoform	ug/L	50	47.2	94	64-133	
Bromomethane	ug/L	50	36.3	73	29-123	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

LABORATORY CONTROL SAMPLE: 1722896

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	50	59.1	118	73-142	
Chlorobenzene	ug/L	50	50.2	100	70-130	
Chloroethane	ug/L	50	58.1	116	59-133	
Chloroform	ug/L	50	57.3	115	80-129	
Chloromethane	ug/L	50	39.5	79	27-125	
cis-1,2-Dichloroethene	ug/L	50	57.2	114	70-134	
cis-1,3-Dichloropropene	ug/L	50	54.4	109	70-130	
Dibromochloromethane	ug/L	50	49.2	98	70-130	
Dichlorodifluoromethane	ug/L	50	28.8	58	12-127	
Ethylbenzene	ug/L	50	50.6	101	86-127	
Isopropylbenzene (Cumene)	ug/L	50	52.0	104	70-130	
m&p-Xylene	ug/L	100	103	103	70-131	
Methyl-tert-butyl ether	ug/L	50	50.8	102	65-136	
Methylene Chloride	ug/L	50	57.0	114	72-133	
o-Xylene	ug/L	50	51.8	104	70-130	
Styrene	ug/L	50	51.4	103	70-130	
Tetrachloroethene	ug/L	50	50.5	101	70-130	
Toluene	ug/L	50	49.8	100	84-124	
trans-1,2-Dichloroethene	ug/L	50	59.2	118	70-133	
trans-1,3-Dichloropropene	ug/L	50	48.6	97	67-130	
Trichloroethene	ug/L	50	54.8	110	70-130	
Trichlorofluoromethane	ug/L	50	58.1	116	69-147	
Vinyl chloride	ug/L	50	54.2	108	48-134	
4-Bromofluorobenzene (S)	%			100	70-130	
Dibromofluoromethane (S)	%			108	70-130	
Toluene-d8 (S)	%			94	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1722897 1722898

Parameter	Units	40172499004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	<0.50	50	50	58.6	60.2	117	120	70-136	3	20	
1,1,2,2-Tetrachloroethane	ug/L	<0.25	50	50	45.1	44.9	90	90	67-133	0	20	
1,1,2-Trichloroethane	ug/L	<0.20	50	50	48.0	46.9	96	94	70-130	2	20	
1,1-Dichloroethane	ug/L	<0.24	50	50	60.1	59.3	120	119	70-139	1	20	
1,1-Dichloroethene	ug/L	<0.41	50	50	62.5	62.7	125	125	72-137	0	20	
1,2,4-Trichlorobenzene	ug/L	<2.2	50	50	42.0	41.6	83	83	68-130	1	20	
1,2-Dibromo-3-chloropropane	ug/L	<2.2	50	50	45.2	43.9	90	88	60-130	3	21	
1,2-Dibromoethane (EDB)	ug/L	<0.18	50	50	48.3	47.3	97	95	70-130	2	20	
1,2-Dichlorobenzene	ug/L	<0.50	50	50	44.0	44.7	88	89	70-130	2	20	
1,2-Dichloroethane	ug/L	<0.17	50	50	59.0	59.3	118	119	71-137	0	20	
1,2-Dichloropropane	ug/L	<0.23	50	50	55.1	56.5	110	113	78-130	3	20	
1,3-Dichlorobenzene	ug/L	<0.50	50	50	44.2	44.6	88	89	70-130	1	20	
1,4-Dichlorobenzene	ug/L	<0.50	50	50	44.3	45.2	89	90	70-130	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1722897 1722898

Parameter	Units	40172499004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	<0.50	50	50	58.9	60.0	118	120	66-143	2	20	
Bromodichloromethane	ug/L	<0.50	50	50	50.5	52.3	101	105	70-130	3	20	
Bromoform	ug/L	<0.50	50	50	48.6	46.7	97	93	64-134	4	20	
Bromomethane	ug/L	<2.4	50	50	39.0	44.4	78	89	29-136	13	25	
Carbon tetrachloride	ug/L	<0.50	50	50	61.2	62.1	122	124	73-142	1	20	
Chlorobenzene	ug/L	<0.50	50	50	49.5	48.6	99	97	70-130	2	20	
Chloroethane	ug/L	<0.37	50	50	60.1	58.8	120	118	58-138	2	20	
Chloroform	ug/L	<2.5	50	50	58.2	59.0	116	118	80-131	1	20	
Chloromethane	ug/L	<0.50	50	50	42.9	41.7	86	83	24-125	3	20	
cis-1,2-Dichloroethene	ug/L	<0.26	50	50	57.6	55.8	115	112	68-137	3	22	
cis-1,3-Dichloropropene	ug/L	<0.50	50	50	52.3	53.8	105	108	70-130	3	20	
Dibromochloromethane	ug/L	<0.50	50	50	49.4	48.7	99	97	70-131	1	20	
Dichlorodifluoromethane	ug/L	<0.22	50	50	31.9	31.3	64	63	10-127	2	20	
Ethylbenzene	ug/L	<0.50	50	50	50.3	51.7	101	103	81-136	3	20	
Isopropylbenzene (Cumene)	ug/L	<0.14	50	50	52.7	53.5	105	107	70-132	1	20	
m&p-Xylene	ug/L	<1.0	100	100	105	107	105	107	70-135	1	20	
Methyl-tert-butyl ether	ug/L	<0.17	50	50	52.3	53.0	105	106	58-142	1	23	
Methylene Chloride	ug/L	<0.23	50	50	60.2	60.0	120	120	69-137	0	20	
o-Xylene	ug/L	<0.50	50	50	53.1	53.0	106	106	70-132	0	20	
Styrene	ug/L	<0.50	50	50	52.3	52.5	105	105	70-130	0	20	
Tetrachloroethene	ug/L	<0.50	50	50	49.5	47.8	99	96	70-132	3	20	
Toluene	ug/L	<0.50	50	50	48.4	47.8	97	96	81-130	1	20	
trans-1,2-Dichloroethene	ug/L	<0.26	50	50	62.1	60.9	124	122	70-136	2	20	
trans-1,3-Dichloropropene	ug/L	<0.23	50	50	48.0	47.8	96	96	67-130	0	20	
Trichloroethene	ug/L	<0.33	50	50	54.4	54.7	109	109	70-131	1	20	
Trichlorofluoromethane	ug/L	<0.18	50	50	61.9	62.8	124	126	66-150	1	20	
Vinyl chloride	ug/L	<0.18	50	50	57.4	54.2	115	108	46-134	6	20	
4-Bromofluorobenzene (S)	%						104	105	70-130			pH
Dibromofluoromethane (S)	%						110	112	70-130			
Toluene-d8 (S)	%						92	89	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

QC Batch: 294877 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 40172529016

METHOD BLANK: 1724295 Matrix: Water
Associated Lab Samples: 40172529016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.18	1.0	07/19/18 07:50	
1,1,1-Trichloroethane	ug/L	<0.50	1.0	07/19/18 07:50	
1,1,2,2-Tetrachloroethane	ug/L	<0.25	1.0	07/19/18 07:50	
1,1,2-Trichloroethane	ug/L	<0.20	1.0	07/19/18 07:50	
1,1-Dichloroethane	ug/L	<0.24	1.0	07/19/18 07:50	
1,1-Dichloroethene	ug/L	<0.41	1.0	07/19/18 07:50	
1,1-Dichloropropene	ug/L	<0.44	1.0	07/19/18 07:50	
1,2,3-Trichlorobenzene	ug/L	<2.1	5.0	07/19/18 07:50	
1,2,3-Trichloropropane	ug/L	<0.50	1.0	07/19/18 07:50	
1,2,4-Trichlorobenzene	ug/L	<2.2	5.0	07/19/18 07:50	
1,2,4-Trimethylbenzene	ug/L	<0.50	1.0	07/19/18 07:50	
1,2-Dibromo-3-chloropropane	ug/L	<2.2	5.0	07/19/18 07:50	
1,2-Dibromoethane (EDB)	ug/L	<0.18	1.0	07/19/18 07:50	
1,2-Dichlorobenzene	ug/L	<0.50	1.0	07/19/18 07:50	
1,2-Dichloroethane	ug/L	<0.17	1.0	07/19/18 07:50	
1,2-Dichloropropane	ug/L	<0.23	1.0	07/19/18 07:50	
1,3,5-Trimethylbenzene	ug/L	<0.50	1.0	07/19/18 07:50	
1,3-Dichlorobenzene	ug/L	<0.50	1.0	07/19/18 07:50	
1,3-Dichloropropane	ug/L	<0.50	1.0	07/19/18 07:50	
1,4-Dichlorobenzene	ug/L	<0.50	1.0	07/19/18 07:50	
2,2-Dichloropropane	ug/L	<0.48	1.0	07/19/18 07:50	
2-Chlorotoluene	ug/L	<0.50	1.0	07/19/18 07:50	
4-Chlorotoluene	ug/L	<0.21	1.0	07/19/18 07:50	
Benzene	ug/L	<0.50	1.0	07/19/18 07:50	
Bromobenzene	ug/L	<0.23	1.0	07/19/18 07:50	
Bromochloromethane	ug/L	<0.34	1.0	07/19/18 07:50	
Bromodichloromethane	ug/L	<0.50	1.0	07/19/18 07:50	
Bromoform	ug/L	<0.50	1.0	07/19/18 07:50	
Bromomethane	ug/L	<2.4	5.0	07/19/18 07:50	
Carbon tetrachloride	ug/L	<0.50	1.0	07/19/18 07:50	
Chlorobenzene	ug/L	<0.50	1.0	07/19/18 07:50	
Chloroethane	ug/L	<0.37	1.0	07/19/18 07:50	
Chloroform	ug/L	<2.5	5.0	07/19/18 07:50	
Chloromethane	ug/L	<0.50	1.0	07/19/18 07:50	
cis-1,2-Dichloroethene	ug/L	<0.26	1.0	07/19/18 07:50	
cis-1,3-Dichloropropene	ug/L	<0.50	1.0	07/19/18 07:50	
Dibromochloromethane	ug/L	<0.50	1.0	07/19/18 07:50	
Dibromomethane	ug/L	<0.43	1.0	07/19/18 07:50	
Dichlorodifluoromethane	ug/L	<0.22	1.0	07/19/18 07:50	
Diisopropyl ether	ug/L	<0.50	1.0	07/19/18 07:50	
Ethylbenzene	ug/L	<0.50	1.0	07/19/18 07:50	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

METHOD BLANK: 1724295 Matrix: Water
Associated Lab Samples: 40172529016

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Hexachloro-1,3-butadiene	ug/L	<2.1	5.0	07/19/18 07:50	
Isopropylbenzene (Cumene)	ug/L	<0.14	1.0	07/19/18 07:50	
m&p-Xylene	ug/L	<1.0	2.0	07/19/18 07:50	
Methyl-tert-butyl ether	ug/L	<0.17	1.0	07/19/18 07:50	
Methylene Chloride	ug/L	<0.23	1.0	07/19/18 07:50	
n-Butylbenzene	ug/L	<0.50	1.0	07/19/18 07:50	
n-Propylbenzene	ug/L	<0.50	1.0	07/19/18 07:50	
Naphthalene	ug/L	<2.5	5.0	07/19/18 07:50	
o-Xylene	ug/L	<0.50	1.0	07/19/18 07:50	
p-Isopropyltoluene	ug/L	<0.50	1.0	07/19/18 07:50	
sec-Butylbenzene	ug/L	<2.2	5.0	07/19/18 07:50	
Styrene	ug/L	<0.50	1.0	07/19/18 07:50	
tert-Butylbenzene	ug/L	<0.18	1.0	07/19/18 07:50	
Tetrachloroethene	ug/L	<0.50	1.0	07/19/18 07:50	
Toluene	ug/L	<0.50	1.0	07/19/18 07:50	
trans-1,2-Dichloroethene	ug/L	<0.26	1.0	07/19/18 07:50	
trans-1,3-Dichloropropene	ug/L	<0.23	1.0	07/19/18 07:50	
Trichloroethene	ug/L	0.37J	1.0	07/19/18 07:50	
Trichlorofluoromethane	ug/L	<0.18	1.0	07/19/18 07:50	
Vinyl chloride	ug/L	<0.18	1.0	07/19/18 07:50	
4-Bromofluorobenzene (S)	%	91	70-130	07/19/18 07:50	
Dibromofluoromethane (S)	%	96	70-130	07/19/18 07:50	
Toluene-d8 (S)	%	102	70-130	07/19/18 07:50	

LABORATORY CONTROL SAMPLE: 1724296

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	47.1	94	70-133	
1,1,2,2-Tetrachloroethane	ug/L	50	49.3	99	67-130	
1,1,2-Trichloroethane	ug/L	50	51.4	103	70-130	
1,1-Dichloroethane	ug/L	50	48.1	96	70-134	
1,1-Dichloroethene	ug/L	50	48.9	98	75-132	
1,2,4-Trichlorobenzene	ug/L	50	51.8	104	68-130	
1,2-Dibromo-3-chloropropane	ug/L	50	46.9	94	60-126	
1,2-Dibromoethane (EDB)	ug/L	50	49.6	99	70-130	
1,2-Dichlorobenzene	ug/L	50	52.8	106	70-130	
1,2-Dichloroethane	ug/L	50	46.9	94	73-134	
1,2-Dichloropropane	ug/L	50	50.6	101	79-128	
1,3-Dichlorobenzene	ug/L	50	52.3	105	70-130	
1,4-Dichlorobenzene	ug/L	50	53.3	107	70-130	
Benzene	ug/L	50	47.0	94	69-137	
Bromodichloromethane	ug/L	50	46.9	94	70-130	
Bromoform	ug/L	50	51.1	102	64-133	
Bromomethane	ug/L	50	31.8	64	29-123	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

LABORATORY CONTROL SAMPLE: 1724296

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Carbon tetrachloride	ug/L	50	48.3	97	73-142	
Chlorobenzene	ug/L	50	54.2	108	70-130	
Chloroethane	ug/L	50	44.4	89	59-133	
Chloroform	ug/L	50	47.1	94	80-129	
Chloromethane	ug/L	50	31.6	63	27-125	
cis-1,2-Dichloroethene	ug/L	50	44.2	88	70-134	
cis-1,3-Dichloropropene	ug/L	50	47.4	95	70-130	
Dibromochloromethane	ug/L	50	51.8	104	70-130	
Dichlorodifluoromethane	ug/L	50	21.6	43	12-127	
Ethylbenzene	ug/L	50	53.5	107	86-127	
Isopropylbenzene (Cumene)	ug/L	50	56.3	113	70-130	
m&p-Xylene	ug/L	100	110	110	70-131	
Methyl-tert-butyl ether	ug/L	50	40.1	80	65-136	
Methylene Chloride	ug/L	50	46.4	93	72-133	
o-Xylene	ug/L	50	55.6	111	70-130	
Styrene	ug/L	50	56.1	112	70-130	
Tetrachloroethene	ug/L	50	55.0	110	70-130	
Toluene	ug/L	50	53.6	107	84-124	
trans-1,2-Dichloroethene	ug/L	50	47.9	96	70-133	
trans-1,3-Dichloropropene	ug/L	50	51.1	102	67-130	
Trichloroethene	ug/L	50	49.8	100	70-130	
Trichlorofluoromethane	ug/L	50	46.6	93	69-147	
Vinyl chloride	ug/L	50	41.0	82	48-134	
4-Bromofluorobenzene (S)	%			97	70-130	
Dibromofluoromethane (S)	%			95	70-130	
Toluene-d8 (S)	%			104	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1724677 1724678

Parameter	Units	40172582002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	<0.50	50	50	45.5	52.0	91	104	70-136	13	20	
1,1,2,2-Tetrachloroethane	ug/L	<0.25	50	50	50.1	54.5	100	109	67-133	8	20	
1,1,2-Trichloroethane	ug/L	<0.20	50	50	49.6	52.5	99	105	70-130	6	20	
1,1-Dichloroethane	ug/L	<0.24	50	50	45.8	50.9	92	102	70-139	10	20	
1,1-Dichloroethene	ug/L	<0.41	50	50	45.6	54.9	91	110	72-137	19	20	
1,2,4-Trichlorobenzene	ug/L	<2.2	50	50	52.6	55.9	105	112	68-130	6	20	
1,2-Dibromo-3-chloropropane	ug/L	<2.2	50	50	48.0	57.0	96	114	60-130	17	21	
1,2-Dibromoethane (EDB)	ug/L	<0.18	50	50	49.0	52.1	98	104	70-130	6	20	
1,2-Dichlorobenzene	ug/L	<0.50	50	50	51.6	54.5	103	109	70-130	5	20	
1,2-Dichloroethane	ug/L	<0.17	50	50	44.9	49.0	90	98	71-137	9	20	
1,2-Dichloropropane	ug/L	<0.23	50	50	49.6	54.4	99	109	78-130	9	20	
1,3-Dichlorobenzene	ug/L	<0.50	50	50	50.7	53.7	101	107	70-130	6	20	
1,4-Dichlorobenzene	ug/L	<0.50	50	50	51.4	54.6	103	109	70-130	6	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1724677 1724678

Parameter	Units	40172582002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Benzene	ug/L	<0.50	50	50	46.0	49.4	92	99	66-143	7	20	
Bromodichloromethane	ug/L	<0.50	50	50	45.3	51.2	91	102	70-130	12	20	
Bromoform	ug/L	<0.50	50	50	49.8	53.9	100	108	64-134	8	20	
Bromomethane	ug/L	<2.4	50	50	30.8	38.2	62	76	29-136	22	25	
Carbon tetrachloride	ug/L	<0.50	50	50	45.9	54.0	92	108	73-142	16	20	
Chlorobenzene	ug/L	<0.50	50	50	52.5	55.3	105	111	70-130	5	20	
Chloroethane	ug/L	<0.37	50	50	44.6	48.0	89	96	58-138	7	20	
Chloroform	ug/L	<2.5	50	50	45.3	49.5	91	99	80-131	9	20	
Chloromethane	ug/L	<0.50	50	50	29.5	33.9	59	68	24-125	14	20	
cis-1,2-Dichloroethene	ug/L	<0.26	50	50	42.6	46.8	85	94	68-137	9	22	
cis-1,3-Dichloropropene	ug/L	<0.50	50	50	47.3	52.4	95	105	70-130	10	20	
Dibromochloromethane	ug/L	<0.50	50	50	51.5	54.1	103	108	70-131	5	20	
Dichlorodifluoromethane	ug/L	<0.22	50	50	19.3	25.0	39	50	10-127	26	20	R1
Ethylbenzene	ug/L	<0.50	50	50	51.9	57.2	104	114	81-136	10	20	
Isopropylbenzene (Cumene)	ug/L	<0.14	50	50	53.8	59.9	108	120	70-132	11	20	
m&p-Xylene	ug/L	<1.0	100	100	106	116	106	116	70-135	10	20	
Methyl-tert-butyl ether	ug/L	<0.17	50	50	39.4	44.1	79	88	58-142	11	23	
Methylene Chloride	ug/L	<0.23	50	50	45.7	51.0	91	102	69-137	11	20	
o-Xylene	ug/L	<0.50	50	50	53.7	58.4	107	117	70-132	8	20	
Styrene	ug/L	<0.50	50	50	53.6	58.3	107	117	70-130	8	20	
Tetrachloroethene	ug/L	<0.50	50	50	52.8	56.7	106	113	70-132	7	20	
Toluene	ug/L	<0.50	50	50	51.8	54.7	104	109	81-130	5	20	
trans-1,2-Dichloroethene	ug/L	<0.26	50	50	45.6	51.0	91	102	70-136	11	20	
trans-1,3-Dichloropropene	ug/L	<0.23	50	50	51.0	53.1	102	106	67-130	4	20	
Trichloroethene	ug/L	<0.33	50	50	48.5	55.1	97	110	70-131	13	20	
Trichlorofluoromethane	ug/L	<0.18	50	50	44.1	54.8	88	110	66-150	22	20	R1
Vinyl chloride	ug/L	<0.18	50	50	39.1	45.7	78	91	46-134	16	20	
4-Bromofluorobenzene (S)	%						95	99	70-130			
Dibromofluoromethane (S)	%						96	94	70-130			
Toluene-d8 (S)	%						105	102	70-130			

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

QC Batch: 294638 Analysis Method: SM 3500-Cr B (Online)
QC Batch Method: SM 3500-Cr B (Online) Analysis Description: Chromium, Dissolved Hexavalent by 3500
Associated Lab Samples: 40172529007, 40172529008, 40172529009, 40172529010, 40172529011, 40172529012, 40172529013, 40172529015

METHOD BLANK: 1722851 Matrix: Water
Associated Lab Samples: 40172529007, 40172529008, 40172529009, 40172529010, 40172529011, 40172529012, 40172529013, 40172529015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Hexavalent	mg/L	<0.0051	0.017	07/17/18 09:40	

LABORATORY CONTROL SAMPLE: 1722852

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Hexavalent	mg/L	.3	0.32	105	90-110	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1722853 1722854

Parameter	Units	40172529007 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Hexavalent	mg/L	<0.13	7.5	7.5	6.2	6.2	83	83	90-110	0	20	M0

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

D3	Sample was diluted due to the presence of high levels of non-target analytes or other matrix interference.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
R1	RPD value was outside control limits.
pH	Post-analysis pH measurement indicates insufficient VOA sample preservation.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6486 ALBANY INTERNATIONAL
Pace Project No.: 40172529

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40172529004	**6486-TW-4**	EPA 3010	295499	EPA 6010	295602
40172529005	**6486-TW-5**	EPA 3010	295499	EPA 6010	295602
40172529010	**6486-MW-26**	EPA 3010	295499	EPA 6010	295602
40172529012	**6486-MW-19**	EPA 3010	295499	EPA 6010	295602
40172529015	**6486-DUP-2**	EPA 3010	295499	EPA 6010	295602
40172529001	**6486-TW-1**	EPA 6010	294675		
40172529002	**6486-TW-2**	EPA 6010	294675		
40172529003	**6486-TW-3**	EPA 6010	294675		
40172529006	**6486-TW-6**	EPA 6010	294675		
40172529007	**6486-OW-1**	EPA 6010	294675		
40172529008	**6486-OW-2**	EPA 6010	294675		
40172529009	**6486-MW-20**	EPA 6010	294675		
40172529011	**6486-OW-3**	EPA 6010	294839		
40172529013	**6486-MW-29**	EPA 6010	294839		
40172529001	**6486-TW-1**	EPA 8260	294653		
40172529002	**6486-TW-2**	EPA 8260	294653		
40172529003	**6486-TW-3**	EPA 8260	294653		
40172529004	**6486-TW-4**	EPA 8260	294653		
40172529005	**6486-TW-5**	EPA 8260	294653		
40172529006	**6486-TW-6**	EPA 8260	294653		
40172529014	**6486-DUP-1**	EPA 8260	294653		
40172529016	**6486-TB**	EPA 8260	294877		
40172529007	**6486-OW-1**	SM 3500-Cr B (Online)	294638		
40172529008	**6486-OW-2**	SM 3500-Cr B (Online)	294638		
40172529009	**6486-MW-20**	SM 3500-Cr B (Online)	294638		
40172529010	**6486-MW-26**	SM 3500-Cr B (Online)	294638		
40172529011	**6486-OW-3**	SM 3500-Cr B (Online)	294638		
40172529012	**6486-MW-19**	SM 3500-Cr B (Online)	294638		
40172529013	**6486-MW-29**	SM 3500-Cr B (Online)	294638		
40172529015	**6486-DUP-2**	SM 3500-Cr B (Online)	294638		

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www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

RnR

40172529

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	Enviroforensics
Branch/Location:	Waukesha, WI
Project Contact:	Wayne Fassbender
Phone:	414-982-3988
Project Number:	6486
Project Name:	Albany International
Project State:	WI
Sampled By (Print):	Nathan Duda
Sampled By (Sign):	
PO #:	2018-0968
Regulatory Program:	

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	SAME
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☒ NOT needed on your sample

Matrix Codes
A = Air, W = Water
B = Biota, DW = Drinking Water
C = Charcoal, GW = Ground Water
O = Oil, SW = Surface Water
S = Soil, WW = Waste Water
SI = Sludge, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO)	PRESERVATION (CODE)*	Analyses Requested: VOC	Dis. Hx Chromium	Dis. Chromium trivalent	Dis. Chromium	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					Y/N	Pick Letter	N	Y	Y	Y			
001	6486-TW-1	7/16/18	1112	GW		B	X			X			
002	6486-TW-2	7/16/18	1133	GW			X			X			
003	6486-TW-3	7/16/18	1147	GW			X			X			
004	6486-TW-4	7/16/18	1207	GW			X			X			
005	6486-TW-5	7/16/18	1219	GW			X			X			
006	6486-TW-6	7/16/18	1050	GW			X			X			
007	6486-OW-1	7/16/18	1415	GW		A		X	X				
008	6486-OW-2	7/16/18	1457	GW				X	X				
009	6486 ~~OW-3~~ MW-20	7/16/18	1438	GW				X	X				
010	6486-MW-26	7/16/18	1515	GW				X	X				
011	6486-OW-3	7/16/18	1615	GW				X	X				
012	6486-MW-19	7/16/18	1547	GW				X	X				
013	6486-MW-29	7/16/18	1530	GW				X	X				

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	7-16-18	Sarah Kuhn Pace	7/16/18 1749
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No.: 40172529

Receipt Temp = ROT °C

Sample Receipt pH: ~~OK~~ / Adjusted

Cooler Custody Seal: Present / ~~Not Present~~

Intact / Not Intact

C019a(27Jun2006)

Version 6.0 06/14/06

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

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CHAIN OF CUSTODY

40172529

(Please Print Clearly)	
Company Name:	Enviroforensics
Branch/Location:	Waukesha, WI
Project Contact:	Wayne Fassbender
Phone:	414-882-3788
Project Number:	6486
Project Name:	Albany International
Project State:	WI
Sampled By (Print):	Nathan Dudey
Sampled By (Sign):	N Dud
PO #:	2018-0968
Regulatory Program:	

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

Quote #:	
Mail To Contact:	
Mail To Company:	
Mail To Address:	SAME
Invoice To Contact:	
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☒ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	FILTERED? (YES/NO) Y/N	PRESERVATION (CODE)* Pick Letter	Analyses Requested: VOC	Dis Hex. Chromium	Dis Chromium Prepare Fe	CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					N	B		Y	Y			
014	6486 - DUP-1	7/14/18		GW			X					
015	6486 - DUP-2	7/16/18		GW			~~X~~	X	X	NO VOC		
016	6486 - TB			GW			X					

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
N Dud	7-16-18 1740	Susan K Myer	7/16/18 1749
		Stas	

PACE Project No. 40172529

Receipt Temp: ROF °C

Sample Receipt pH: (OK) / Adjusted

Cooler Custody Seal: Present / ~~Not Present~~

Intact / Not Intact

C019a(27Jun2006)

Version 6.0 06/14/06

Client Name: Envirofforensics

Sample Preservation Receipt Form

Project # 40172529

Pace Analytical Services,
1241 Bellevue Street, Su
Green Bay, WI 54

All containers needing preservation have been checked and noted below: ☐Yes ☐No ☐N/A

Lab Lot# of pH paper: 10US078I Lab Std #ID of preservation (if pH adjusted):

Initial when completed: SCW Date/ Time:

Pace Lab #	Glass							Plastic							Vials						Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN							
001													1					3															2.5 / 5 / 10
002													1					3															2.5 / 5 / 10
003													1					3															2.5 / 5 / 10
004													1					3															2.5 / 5 / 10
005													1					3															2.5 / 5 / 10
006													1					3															2.5 / 5 / 10
007													1					3															2.5 / 5 / 10
008											1		1																				2.5 / 5 / 10
009											1		1																				2.5 / 5 / 10
010											1		1																				2.5 / 5 / 10
011											1		1																				2.5 / 5 / 10
012											1		1																				2.5 / 5 / 10
013											1		1																				2.5 / 5 / 10
014											1		1																				2.5 / 5 / 10
015																		3															2.5 / 5 / 10
016										1			1																				2.5 / 5 / 10
017																		1															2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☑N/A *If yes look in headspace column

AG1U	1 liter amber glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP2N	500 mL plastic HNO3
BP2Z	500 mL plastic NaOH, Znact
BP3U	250 mL plastic unpres
BP3C	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

DG9A	40 mL amber ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres

SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN:	

Pace Analytical™ 1241 Bellevue Street, Green Bay, WI 54302	Document Name: Sample Condition Upon Receipt (SCUR)	Document Revised: 25Apr2018
	Document No.: F-GB-C-031-Rev.07	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: Enviro Forensics

Project #: WO# : 40172529

40172529

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☒ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☒ Bubble Bags ☐ None ☐ Other _____

Thermometer Used SR - N/A **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: R01 /Corr: _____

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 7-16-18
Initials: SN

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☑Yes ☐No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☐No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☐N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☑Yes ☐No ☐N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☑Yes ☐No ☐N/A	13.
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution:
Person Contacted: _____ Date/Time: _____ If checked, see attached form for additional comments ☐
Comments/ Resolution: _____

Project Manager Review: RMR for PM **Date:** 7/16/18

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

August 29, 2018

Wayne Fassbender
Enviroforensics
N16 W23390 Stone Ridge Drive
Suite G
Waukesha, WI 53188

RE: Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Dear Wayne Fassbender:
Enclosed are the analytical results for sample(s) received by the laboratory on August 23, 2018. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Kyle Heimstead, EnviroForensics

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
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(920)469-2436

CERTIFICATIONS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

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SAMPLE SUMMARY

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40174512001	**6486-TW-1**	Water	08/20/18 11:07	08/23/18 09:20
40174512002	**6486-TW-2**	Water	08/20/18 10:29	08/23/18 09:20
40174512003	**6486-TW-3**	Water	08/20/18 10:37	08/23/18 09:20
40174512004	**6486-TW-4**	Water	08/20/18 11:23	08/23/18 09:20
40174512005	**6486-TW-5**	Water	08/20/18 10:09	08/23/18 09:20
40174512006	**6486-TW-6**	Water	08/20/18 10:53	08/23/18 09:20
40174512007	**6486-OW-1**	Water	08/20/18 12:50	08/23/18 09:20
40174512008	**6486-OW-2**	Water	08/20/18 12:03	08/23/18 09:20
40174512009	**6486-OW-3**	Water	08/20/18 13:46	08/23/18 09:20
40174512010	**6486-MW-19**	Water	08/20/18 12:59	08/23/18 09:20
40174512011	**6486-MW-20**	Water	08/20/18 14:02	08/23/18 09:20
40174512012	**6486-MW-26**	Water	08/20/18 13:52	08/23/18 09:20
40174512013	**6486-MW-29**	Water	08/20/18 13:11	08/23/18 09:20
40174512014	**6486-DUP-1**	Water	08/20/18 00:00	08/23/18 09:20
40174512015	**6486-TB**	Water	08/20/18 00:00	08/23/18 09:20

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SAMPLE ANALYTE COUNT

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40174512001	**6486-TW-1**	EPA 8260	LAP	64	PASI-G
40174512002	**6486-TW-2**	EPA 8260	LAP	64	PASI-G
40174512003	**6486-TW-3**	EPA 8260	LAP	64	PASI-G
40174512004	**6486-TW-4**	EPA 6010	AJT	1	PASI-G
		EPA 8260	LAP	64	PASI-G
40174512005	**6486-TW-5**	EPA 8260	LAP	64	PASI-G
40174512006	**6486-TW-6**	EPA 8260	LAP	64	PASI-G
40174512007	**6486-OW-1**	EPA 6010	AJT	3	PASI-G
40174512008	**6486-OW-2**	EPA 6010	AJT	3	PASI-G
40174512009	**6486-OW-3**	EPA 6010	AJT	3	PASI-G
40174512010	**6486-MW-19**	EPA 6010	AJT	3	PASI-G
40174512011	**6486-MW-20**	EPA 6010	AJT	3	PASI-G
40174512012	**6486-MW-26**	EPA 6010	AJT	3	PASI-G
40174512013	**6486-MW-29**	EPA 6010	AJT	1	PASI-G
40174512014	**6486-DUP-1**	EPA 8260	LAP	64	PASI-G
40174512015	**6486-TB**	EPA 8260	LAP	64	PASI-G

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40174512001	**6486-TW-1**					
EPA 8260	1,1-Dichloroethane	4.9	ug/L	1.0	08/24/18 11:11	
EPA 8260	cis-1,2-Dichloroethene	80.5	ug/L	1.0	08/24/18 11:11	
EPA 8260	trans-1,2-Dichloroethene	5.8	ug/L	3.6	08/24/18 11:11	
EPA 8260	Tetrachloroethene	61.4	ug/L	1.1	08/24/18 11:11	
EPA 8260	Trichloroethene	51.7	ug/L	1.0	08/24/18 11:11	
40174512002	**6486-TW-2**					
EPA 8260	1,1-Dichloroethane	1.2	ug/L	1.0	08/28/18 10:49	
EPA 8260	cis-1,2-Dichloroethene	131	ug/L	1.0	08/28/18 10:49	
EPA 8260	trans-1,2-Dichloroethene	12.8	ug/L	3.6	08/28/18 10:49	
EPA 8260	Tetrachloroethene	2.6	ug/L	1.1	08/28/18 10:49	
EPA 8260	Trichloroethene	3.9	ug/L	1.0	08/28/18 10:49	
EPA 8260	Vinyl chloride	1.9	ug/L	1.0	08/28/18 10:49	
40174512003	**6486-TW-3**					
EPA 8260	1,1-Dichloroethane	0.39J	ug/L	1.0	08/24/18 14:40	
EPA 8260	cis-1,2-Dichloroethene	0.28J	ug/L	1.0	08/24/18 14:40	
EPA 8260	Tetrachloroethene	0.97J	ug/L	1.1	08/24/18 14:40	
40174512004	**6486-TW-4**					
EPA 8260	cis-1,2-Dichloroethene	0.53J	ug/L	1.0	08/24/18 15:02	
EPA 8260	Tetrachloroethene	0.36J	ug/L	1.1	08/24/18 15:02	
40174512005	**6486-TW-5**					
EPA 8260	1,1-Dichloroethane	0.42J	ug/L	1.0	08/24/18 15:25	
EPA 8260	Tetrachloroethene	2.1	ug/L	1.1	08/24/18 15:25	
40174512006	**6486-TW-6**					
EPA 8260	Benzene	1.0J	ug/L	4.0	08/28/18 11:34	
EPA 8260	1,1-Dichloroethane	2.5J	ug/L	4.0	08/28/18 11:34	
EPA 8260	cis-1,2-Dichloroethene	1200	ug/L	10.0	08/28/18 13:29	
EPA 8260	trans-1,2-Dichloroethene	60.7	ug/L	14.5	08/28/18 11:34	
EPA 8260	Trichloroethene	3.4J	ug/L	4.0	08/28/18 11:34	
EPA 8260	Vinyl chloride	87.8	ug/L	4.0	08/28/18 11:34	
40174512007	**6486-OW-1**					
EPA 6010	Chromium, Dissolved	16.6	ug/L	10.0	08/28/18 12:32	
EPA 6010	Iron, Dissolved	19200	ug/L	100	08/27/18 18:42	
EPA 6010	Manganese, Dissolved	338	ug/L	5.0	08/27/18 18:42	
40174512008	**6486-OW-2**					
EPA 6010	Chromium, Dissolved	5.9J	ug/L	10.0	08/28/18 12:34	
EPA 6010	Iron, Dissolved	24100	ug/L	100	08/27/18 18:44	
EPA 6010	Manganese, Dissolved	398	ug/L	5.0	08/27/18 18:44	
40174512009	**6486-OW-3**					
EPA 6010	Chromium, Dissolved	13.8	ug/L	10.0	08/28/18 12:37	
EPA 6010	Iron, Dissolved	2940	ug/L	100	08/27/18 18:52	
EPA 6010	Manganese, Dissolved	133	ug/L	5.0	08/27/18 18:52	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40174512010	**6486-MW-19**					
EPA 6010	Chromium, Dissolved	97.6	ug/L	10.0	08/28/18 12:39	
EPA 6010	Iron, Dissolved	88200	ug/L	100	08/27/18 18:54	
EPA 6010	Manganese, Dissolved	1640	ug/L	5.0	08/27/18 18:54	
40174512011	**6486-MW-20**					
EPA 6010	Chromium, Dissolved	174000	ug/L	50.0	08/28/18 13:36	
EPA 6010	Iron, Dissolved	156	ug/L	100	08/28/18 12:42	B
EPA 6010	Manganese, Dissolved	73.1	ug/L	50.0	08/27/18 18:57	
40174512012	**6486-MW-26**					
EPA 6010	Chromium, Dissolved	17100	ug/L	10.0	08/28/18 12:44	
EPA 6010	Manganese, Dissolved	15.6	ug/L	5.0	08/28/18 12:44	
40174512013	**6486-MW-29**					
EPA 6010	Chromium, Dissolved	380	ug/L	10.0	08/28/18 12:46	
40174512014	**6486-DUP-1**					
EPA 8260	Benzene	1.1J	ug/L	2.5	08/28/18 11:11	
EPA 8260	1,1-Dichloroethane	2.8	ug/L	2.5	08/28/18 11:11	
EPA 8260	cis-1,2-Dichloroethene	1350	ug/L	10.0	08/28/18 13:06	
EPA 8260	trans-1,2-Dichloroethene	66.4	ug/L	9.1	08/28/18 11:11	
EPA 8260	Tetrachloroethene	1.1J	ug/L	2.7	08/28/18 11:11	
EPA 8260	Trichloroethene	4.9	ug/L	2.5	08/28/18 11:11	
EPA 8260	Vinyl chloride	108	ug/L	2.5	08/28/18 11:11	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-1 **Lab ID: 40174512001** Collected: 08/20/18 11:07 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		08/24/18 11:11	71-43-2	
Bromobenzene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 11:11	108-86-1	
Bromochloromethane	**<0.36**	ug/L	5.0	0.36	1		08/24/18 11:11	74-97-5	
Bromodichloromethane	**<0.36**	ug/L	1.2	0.36	1		08/24/18 11:11	75-27-4	
Bromoform	**<4.0**	ug/L	13.2	4.0	1		08/24/18 11:11	75-25-2	
Bromomethane	**<0.97**	ug/L	5.0	0.97	1		08/24/18 11:11	74-83-9	
n-Butylbenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 11:11	104-51-8	
sec-Butylbenzene	**<0.85**	ug/L	5.0	0.85	1		08/24/18 11:11	135-98-8	
tert-Butylbenzene	**<0.30**	ug/L	1.0	0.30	1		08/24/18 11:11	98-06-6	
Carbon tetrachloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 11:11	56-23-5	
Chlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 11:11	108-90-7	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		08/24/18 11:11	75-00-3	
Chloroform	**<1.3**	ug/L	5.0	1.3	1		08/24/18 11:11	67-66-3	
Chloromethane	**<2.2**	ug/L	7.3	2.2	1		08/24/18 11:11	74-87-3	
2-Chlorotoluene	**<0.93**	ug/L	5.0	0.93	1		08/24/18 11:11	95-49-8	
4-Chlorotoluene	**<0.76**	ug/L	2.5	0.76	1		08/24/18 11:11	106-43-4	
1,2-Dibromo-3-chloropropane	**<1.8**	ug/L	5.9	1.8	1		08/24/18 11:11	96-12-8	
Dibromochloromethane	**<2.6**	ug/L	8.7	2.6	1		08/24/18 11:11	124-48-1	
1,2-Dibromoethane (EDB)	**<0.83**	ug/L	2.8	0.83	1		08/24/18 11:11	106-93-4	
Dibromomethane	**<0.94**	ug/L	3.1	0.94	1		08/24/18 11:11	74-95-3	
1,2-Dichlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 11:11	95-50-1	
1,3-Dichlorobenzene	**<0.63**	ug/L	2.1	0.63	1		08/24/18 11:11	541-73-1	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		08/24/18 11:11	106-46-7	
Dichlorodifluoromethane	**<0.50**	ug/L	5.0	0.50	1		08/24/18 11:11	75-71-8	
1,1-Dichloroethane	**4.9**	ug/L	1.0	0.27	1		08/24/18 11:11	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 11:11	107-06-2	
1,1-Dichloroethene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 11:11	75-35-4	
cis-1,2-Dichloroethene	**80.5**	ug/L	1.0	0.27	1		08/24/18 11:11	156-59-2	
trans-1,2-Dichloroethene	**5.8**	ug/L	3.6	1.1	1		08/24/18 11:11	156-60-5	
1,2-Dichloropropane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 11:11	78-87-5	
1,3-Dichloropropane	**<0.83**	ug/L	2.8	0.83	1		08/24/18 11:11	142-28-9	
2,2-Dichloropropane	**<2.3**	ug/L	7.6	2.3	1		08/24/18 11:11	594-20-7	
1,1-Dichloropropene	**<0.54**	ug/L	1.8	0.54	1		08/24/18 11:11	563-58-6	
cis-1,3-Dichloropropene	**<3.6**	ug/L	12.1	3.6	1		08/24/18 11:11	10061-01-5	
trans-1,3-Dichloropropene	**<4.4**	ug/L	14.6	4.4	1		08/24/18 11:11	10061-02-6	
Diisopropyl ether	**<1.9**	ug/L	6.3	1.9	1		08/24/18 11:11	108-20-3	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/24/18 11:11	100-41-4	
Hexachloro-1,3-butadiene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 11:11	87-68-3	
Isopropylbenzene (Cumene)	**<0.39**	ug/L	2.7	0.39	1		08/24/18 11:11	98-82-8	
p-Isopropyltoluene	**<0.80**	ug/L	2.7	0.80	1		08/24/18 11:11	99-87-6	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		08/24/18 11:11	75-09-2	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		08/24/18 11:11	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 11:11	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	5.0	0.81	1		08/24/18 11:11	103-65-1	
Styrene	**<0.47**	ug/L	1.6	0.47	1		08/24/18 11:11	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.27**	ug/L	1.0	0.27	1		08/24/18 11:11	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-1 **Lab ID: 40174512001** Collected: 08/20/18 11:07 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 11:11	79-34-5	
Tetrachloroethene	**61.4**	ug/L	1.1	0.33	1		08/24/18 11:11	127-18-4	
Toluene	**<0.17**	ug/L	5.0	0.17	1		08/24/18 11:11	108-88-3	
1,2,3-Trichlorobenzene	**<0.63**	ug/L	5.0	0.63	1		08/24/18 11:11	87-61-6	
1,2,4-Trichlorobenzene	**<0.95**	ug/L	5.0	0.95	1		08/24/18 11:11	120-82-1	
1,1,1-Trichloroethane	**<0.24**	ug/L	1.0	0.24	1		08/24/18 11:11	71-55-6	
1,1,2-Trichloroethane	**<0.55**	ug/L	5.0	0.55	1		08/24/18 11:11	79-00-5	
Trichloroethene	**51.7**	ug/L	1.0	0.26	1		08/24/18 11:11	79-01-6	
Trichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/24/18 11:11	75-69-4	
1,2,3-Trichloropropane	**<0.59**	ug/L	5.0	0.59	1		08/24/18 11:11	96-18-4	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		08/24/18 11:11	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		08/24/18 11:11	108-67-8	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 11:11	75-01-4	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		08/24/18 11:11	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 11:11	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	90	%	70-130		1		08/24/18 11:11	460-00-4	
Dibromofluoromethane (S)	97	%	70-130		1		08/24/18 11:11	1868-53-7	
Toluene-d8 (S)	104	%	70-130		1		08/24/18 11:11	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-2 **Lab ID: 40174512002** Collected: 08/20/18 10:29 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		08/28/18 10:49	71-43-2	
Bromobenzene	**<0.24**	ug/L	1.0	0.24	1		08/28/18 10:49	108-86-1	
Bromochloromethane	**<0.36**	ug/L	5.0	0.36	1		08/28/18 10:49	74-97-5	
Bromodichloromethane	**<0.36**	ug/L	1.2	0.36	1		08/28/18 10:49	75-27-4	
Bromoform	**<4.0**	ug/L	13.2	4.0	1		08/28/18 10:49	75-25-2	
Bromomethane	**<0.97**	ug/L	5.0	0.97	1		08/28/18 10:49	74-83-9	
n-Butylbenzene	**<0.71**	ug/L	2.4	0.71	1		08/28/18 10:49	104-51-8	
sec-Butylbenzene	**<0.85**	ug/L	5.0	0.85	1		08/28/18 10:49	135-98-8	
tert-Butylbenzene	**<0.30**	ug/L	1.0	0.30	1		08/28/18 10:49	98-06-6	
Carbon tetrachloride	**<0.17**	ug/L	1.0	0.17	1		08/28/18 10:49	56-23-5	
Chlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/28/18 10:49	108-90-7	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		08/28/18 10:49	75-00-3	
Chloroform	**<1.3**	ug/L	5.0	1.3	1		08/28/18 10:49	67-66-3	
Chloromethane	**<2.2**	ug/L	7.3	2.2	1		08/28/18 10:49	74-87-3	
2-Chlorotoluene	**<0.93**	ug/L	5.0	0.93	1		08/28/18 10:49	95-49-8	
4-Chlorotoluene	**<0.76**	ug/L	2.5	0.76	1		08/28/18 10:49	106-43-4	
1,2-Dibromo-3-chloropropane	**<1.8**	ug/L	5.9	1.8	1		08/28/18 10:49	96-12-8	
Dibromochloromethane	**<2.6**	ug/L	8.7	2.6	1		08/28/18 10:49	124-48-1	
1,2-Dibromoethane (EDB)	**<0.83**	ug/L	2.8	0.83	1		08/28/18 10:49	106-93-4	
Dibromomethane	**<0.94**	ug/L	3.1	0.94	1		08/28/18 10:49	74-95-3	
1,2-Dichlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/28/18 10:49	95-50-1	
1,3-Dichlorobenzene	**<0.63**	ug/L	2.1	0.63	1		08/28/18 10:49	541-73-1	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		08/28/18 10:49	106-46-7	
Dichlorodifluoromethane	**<0.50**	ug/L	5.0	0.50	1		08/28/18 10:49	75-71-8	
1,1-Dichloroethane	**1.2**	ug/L	1.0	0.27	1		08/28/18 10:49	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		08/28/18 10:49	107-06-2	
1,1-Dichloroethene	**<0.24**	ug/L	1.0	0.24	1		08/28/18 10:49	75-35-4	
cis-1,2-Dichloroethene	**131**	ug/L	1.0	0.27	1		08/28/18 10:49	156-59-2	
trans-1,2-Dichloroethene	**12.8**	ug/L	3.6	1.1	1		08/28/18 10:49	156-60-5	
1,2-Dichloropropane	**<0.28**	ug/L	1.0	0.28	1		08/28/18 10:49	78-87-5	
1,3-Dichloropropane	**<0.83**	ug/L	2.8	0.83	1		08/28/18 10:49	142-28-9	
2,2-Dichloropropane	**<2.3**	ug/L	7.6	2.3	1		08/28/18 10:49	594-20-7	
1,1-Dichloropropene	**<0.54**	ug/L	1.8	0.54	1		08/28/18 10:49	563-58-6	
cis-1,3-Dichloropropene	**<3.6**	ug/L	12.1	3.6	1		08/28/18 10:49	10061-01-5	
trans-1,3-Dichloropropene	**<4.4**	ug/L	14.6	4.4	1		08/28/18 10:49	10061-02-6	
Diisopropyl ether	**<1.9**	ug/L	6.3	1.9	1		08/28/18 10:49	108-20-3	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/28/18 10:49	100-41-4	
Hexachloro-1,3-butadiene	**<1.2**	ug/L	5.0	1.2	1		08/28/18 10:49	87-68-3	
Isopropylbenzene (Cumene)	**<0.39**	ug/L	5.0	0.39	1		08/28/18 10:49	98-82-8	
p-Isopropyltoluene	**<0.80**	ug/L	2.7	0.80	1		08/28/18 10:49	99-87-6	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		08/28/18 10:49	75-09-2	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		08/28/18 10:49	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		08/28/18 10:49	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	5.0	0.81	1		08/28/18 10:49	103-65-1	
Styrene	**<0.47**	ug/L	1.6	0.47	1		08/28/18 10:49	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.27**	ug/L	1.0	0.27	1		08/28/18 10:49	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-2 **Lab ID: 40174512002** Collected: 08/20/18 10:29 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.28**	ug/L	1.0	0.28	1		08/28/18 10:49	79-34-5	
Tetrachloroethene	**2.6**	ug/L	1.1	0.33	1		08/28/18 10:49	127-18-4	
Toluene	**<0.17**	ug/L	5.0	0.17	1		08/28/18 10:49	108-88-3	
1,2,3-Trichlorobenzene	**<0.63**	ug/L	5.0	0.63	1		08/28/18 10:49	87-61-6	
1,2,4-Trichlorobenzene	**<0.95**	ug/L	5.0	0.95	1		08/28/18 10:49	120-82-1	
1,1,1-Trichloroethane	**<0.24**	ug/L	1.0	0.24	1		08/28/18 10:49	71-55-6	
1,1,2-Trichloroethane	**<0.55**	ug/L	5.0	0.55	1		08/28/18 10:49	79-00-5	
Trichloroethene	**3.9**	ug/L	1.0	0.26	1		08/28/18 10:49	79-01-6	
Trichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/28/18 10:49	75-69-4	
1,2,3-Trichloropropane	**<0.59**	ug/L	5.0	0.59	1		08/28/18 10:49	96-18-4	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		08/28/18 10:49	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		08/28/18 10:49	108-67-8	
Vinyl chloride	**1.9**	ug/L	1.0	0.17	1		08/28/18 10:49	75-01-4	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		08/28/18 10:49	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		08/28/18 10:49	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	95	%	70-130		1		08/28/18 10:49	460-00-4	
Dibromofluoromethane (S)	100	%	70-130		1		08/28/18 10:49	1868-53-7	
Toluene-d8 (S)	107	%	70-130		1		08/28/18 10:49	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-3 **Lab ID: 40174512003** Collected: 08/20/18 10:37 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		08/24/18 14:40	71-43-2	
Bromobenzene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 14:40	108-86-1	
Bromochloromethane	**<0.36**	ug/L	5.0	0.36	1		08/24/18 14:40	74-97-5	
Bromodichloromethane	**<0.36**	ug/L	1.2	0.36	1		08/24/18 14:40	75-27-4	
Bromoform	**<4.0**	ug/L	13.2	4.0	1		08/24/18 14:40	75-25-2	
Bromomethane	**<0.97**	ug/L	5.0	0.97	1		08/24/18 14:40	74-83-9	
n-Butylbenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 14:40	104-51-8	
sec-Butylbenzene	**<0.85**	ug/L	5.0	0.85	1		08/24/18 14:40	135-98-8	
tert-Butylbenzene	**<0.30**	ug/L	1.0	0.30	1		08/24/18 14:40	98-06-6	
Carbon tetrachloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 14:40	56-23-5	
Chlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 14:40	108-90-7	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		08/24/18 14:40	75-00-3	
Chloroform	**<1.3**	ug/L	5.0	1.3	1		08/24/18 14:40	67-66-3	
Chloromethane	**<2.2**	ug/L	7.3	2.2	1		08/24/18 14:40	74-87-3	
2-Chlorotoluene	**<0.93**	ug/L	5.0	0.93	1		08/24/18 14:40	95-49-8	
4-Chlorotoluene	**<0.76**	ug/L	2.5	0.76	1		08/24/18 14:40	106-43-4	
1,2-Dibromo-3-chloropropane	**<1.8**	ug/L	5.9	1.8	1		08/24/18 14:40	96-12-8	
Dibromochloromethane	**<2.6**	ug/L	8.7	2.6	1		08/24/18 14:40	124-48-1	
1,2-Dibromoethane (EDB)	**<0.83**	ug/L	2.8	0.83	1		08/24/18 14:40	106-93-4	
Dibromomethane	**<0.94**	ug/L	3.1	0.94	1		08/24/18 14:40	74-95-3	
1,2-Dichlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 14:40	95-50-1	
1,3-Dichlorobenzene	**<0.63**	ug/L	2.1	0.63	1		08/24/18 14:40	541-73-1	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		08/24/18 14:40	106-46-7	
Dichlorodifluoromethane	**<0.50**	ug/L	5.0	0.50	1		08/24/18 14:40	75-71-8	
1,1-Dichloroethane	**0.39J**	ug/L	1.0	0.27	1		08/24/18 14:40	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 14:40	107-06-2	
1,1-Dichloroethene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 14:40	75-35-4	
cis-1,2-Dichloroethene	**0.28J**	ug/L	1.0	0.27	1		08/24/18 14:40	156-59-2	
trans-1,2-Dichloroethene	**<1.1**	ug/L	3.6	1.1	1		08/24/18 14:40	156-60-5	
1,2-Dichloropropane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 14:40	78-87-5	
1,3-Dichloropropane	**<0.83**	ug/L	2.8	0.83	1		08/24/18 14:40	142-28-9	
2,2-Dichloropropane	**<2.3**	ug/L	7.6	2.3	1		08/24/18 14:40	594-20-7	
1,1-Dichloropropene	**<0.54**	ug/L	1.8	0.54	1		08/24/18 14:40	563-58-6	
cis-1,3-Dichloropropene	**<3.6**	ug/L	12.1	3.6	1		08/24/18 14:40	10061-01-5	
trans-1,3-Dichloropropene	**<4.4**	ug/L	14.6	4.4	1		08/24/18 14:40	10061-02-6	
Diisopropyl ether	**<1.9**	ug/L	6.3	1.9	1		08/24/18 14:40	108-20-3	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/24/18 14:40	100-41-4	
Hexachloro-1,3-butadiene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 14:40	87-68-3	
Isopropylbenzene (Cumene)	**<0.39**	ug/L	2.7	0.39	1		08/24/18 14:40	98-82-8	
p-Isopropyltoluene	**<0.80**	ug/L	2.7	0.80	1		08/24/18 14:40	99-87-6	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		08/24/18 14:40	75-09-2	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		08/24/18 14:40	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 14:40	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	5.0	0.81	1		08/24/18 14:40	103-65-1	
Styrene	**<0.47**	ug/L	1.6	0.47	1		08/24/18 14:40	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.27**	ug/L	1.0	0.27	1		08/24/18 14:40	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-3 **Lab ID: 40174512003** Collected: 08/20/18 10:37 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 14:40	79-34-5	
Tetrachloroethene	**0.97J**	ug/L	1.1	0.33	1		08/24/18 14:40	127-18-4	
Toluene	**<0.17**	ug/L	5.0	0.17	1		08/24/18 14:40	108-88-3	
1,2,3-Trichlorobenzene	**<0.63**	ug/L	5.0	0.63	1		08/24/18 14:40	87-61-6	
1,2,4-Trichlorobenzene	**<0.95**	ug/L	5.0	0.95	1		08/24/18 14:40	120-82-1	
1,1,1-Trichloroethane	**<0.24**	ug/L	1.0	0.24	1		08/24/18 14:40	71-55-6	
1,1,2-Trichloroethane	**<0.55**	ug/L	5.0	0.55	1		08/24/18 14:40	79-00-5	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 14:40	79-01-6	
Trichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/24/18 14:40	75-69-4	
1,2,3-Trichloropropane	**<0.59**	ug/L	5.0	0.59	1		08/24/18 14:40	96-18-4	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		08/24/18 14:40	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		08/24/18 14:40	108-67-8	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 14:40	75-01-4	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		08/24/18 14:40	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 14:40	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		08/24/18 14:40	460-00-4	
Dibromofluoromethane (S)	105	%	70-130		1		08/24/18 14:40	1868-53-7	
Toluene-d8 (S)	104	%	70-130		1		08/24/18 14:40	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-4 **Lab ID: 40174512004** Collected: 08/20/18 11:23 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		08/27/18 18:39	7440-47-3	
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		08/24/18 15:02	71-43-2	
Bromobenzene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 15:02	108-86-1	
Bromochloromethane	**<0.36**	ug/L	5.0	0.36	1		08/24/18 15:02	74-97-5	
Bromodichloromethane	**<0.36**	ug/L	1.2	0.36	1		08/24/18 15:02	75-27-4	
Bromoform	**<4.0**	ug/L	13.2	4.0	1		08/24/18 15:02	75-25-2	
Bromomethane	**<0.97**	ug/L	5.0	0.97	1		08/24/18 15:02	74-83-9	
n-Butylbenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 15:02	104-51-8	
sec-Butylbenzene	**<0.85**	ug/L	5.0	0.85	1		08/24/18 15:02	135-98-8	
tert-Butylbenzene	**<0.30**	ug/L	1.0	0.30	1		08/24/18 15:02	98-06-6	
Carbon tetrachloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 15:02	56-23-5	
Chlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 15:02	108-90-7	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		08/24/18 15:02	75-00-3	
Chloroform	**<1.3**	ug/L	5.0	1.3	1		08/24/18 15:02	67-66-3	
Chloromethane	**<2.2**	ug/L	7.3	2.2	1		08/24/18 15:02	74-87-3	
2-Chlorotoluene	**<0.93**	ug/L	5.0	0.93	1		08/24/18 15:02	95-49-8	
4-Chlorotoluene	**<0.76**	ug/L	2.5	0.76	1		08/24/18 15:02	106-43-4	
1,2-Dibromo-3-chloropropane	**<1.8**	ug/L	5.9	1.8	1		08/24/18 15:02	96-12-8	
Dibromochloromethane	**<2.6**	ug/L	8.7	2.6	1		08/24/18 15:02	124-48-1	
1,2-Dibromoethane (EDB)	**<0.83**	ug/L	2.8	0.83	1		08/24/18 15:02	106-93-4	
Dibromomethane	**<0.94**	ug/L	3.1	0.94	1		08/24/18 15:02	74-95-3	
1,2-Dichlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 15:02	95-50-1	
1,3-Dichlorobenzene	**<0.63**	ug/L	2.1	0.63	1		08/24/18 15:02	541-73-1	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		08/24/18 15:02	106-46-7	
Dichlorodifluoromethane	**<0.50**	ug/L	5.0	0.50	1		08/24/18 15:02	75-71-8	
1,1-Dichloroethane	**<0.27**	ug/L	1.0	0.27	1		08/24/18 15:02	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 15:02	107-06-2	
1,1-Dichloroethene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 15:02	75-35-4	
cis-1,2-Dichloroethene	**0.53J**	ug/L	1.0	0.27	1		08/24/18 15:02	156-59-2	
trans-1,2-Dichloroethene	**<1.1**	ug/L	3.6	1.1	1		08/24/18 15:02	156-60-5	
1,2-Dichloropropane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 15:02	78-87-5	
1,3-Dichloropropane	**<0.83**	ug/L	2.8	0.83	1		08/24/18 15:02	142-28-9	
2,2-Dichloropropane	**<2.3**	ug/L	7.6	2.3	1		08/24/18 15:02	594-20-7	
1,1-Dichloropropene	**<0.54**	ug/L	1.8	0.54	1		08/24/18 15:02	563-58-6	
cis-1,3-Dichloropropene	**<3.6**	ug/L	12.1	3.6	1		08/24/18 15:02	10061-01-5	
trans-1,3-Dichloropropene	**<4.4**	ug/L	14.6	4.4	1		08/24/18 15:02	10061-02-6	
Diisopropyl ether	**<1.9**	ug/L	6.3	1.9	1		08/24/18 15:02	108-20-3	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/24/18 15:02	100-41-4	
Hexachloro-1,3-butadiene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 15:02	87-68-3	
Isopropylbenzene (Cumene)	**<0.39**	ug/L	2.7	0.39	1		08/24/18 15:02	98-82-8	
p-Isopropyltoluene	**<0.80**	ug/L	2.7	0.80	1		08/24/18 15:02	99-87-6	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		08/24/18 15:02	75-09-2	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		08/24/18 15:02	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 15:02	91-20-3	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-4 **Lab ID: 40174512004** Collected: 08/20/18 11:23 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
n-Propylbenzene	**<0.81**	ug/L	5.0	0.81	1		08/24/18 15:02	103-65-1	
Styrene	**<0.47**	ug/L	1.6	0.47	1		08/24/18 15:02	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.27**	ug/L	1.0	0.27	1		08/24/18 15:02	630-20-6	
1,1,2,2-Tetrachloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 15:02	79-34-5	
Tetrachloroethene	**0.36J**	ug/L	1.1	0.33	1		08/24/18 15:02	127-18-4	
Toluene	**<0.17**	ug/L	5.0	0.17	1		08/24/18 15:02	108-88-3	
1,2,3-Trichlorobenzene	**<0.63**	ug/L	5.0	0.63	1		08/24/18 15:02	87-61-6	
1,2,4-Trichlorobenzene	**<0.95**	ug/L	5.0	0.95	1		08/24/18 15:02	120-82-1	
1,1,1-Trichloroethane	**<0.24**	ug/L	1.0	0.24	1		08/24/18 15:02	71-55-6	
1,1,2-Trichloroethane	**<0.55**	ug/L	5.0	0.55	1		08/24/18 15:02	79-00-5	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 15:02	79-01-6	
Trichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/24/18 15:02	75-69-4	
1,2,3-Trichloropropane	**<0.59**	ug/L	5.0	0.59	1		08/24/18 15:02	96-18-4	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		08/24/18 15:02	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		08/24/18 15:02	108-67-8	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 15:02	75-01-4	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		08/24/18 15:02	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 15:02	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	92	%	70-130		1		08/24/18 15:02	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		08/24/18 15:02	1868-53-7	
Toluene-d8 (S)	105	%	70-130		1		08/24/18 15:02	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-5 **Lab ID: 40174512005** Collected: 08/20/18 10:09 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		08/24/18 15:25	71-43-2	
Bromobenzene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 15:25	108-86-1	
Bromochloromethane	**<0.36**	ug/L	5.0	0.36	1		08/24/18 15:25	74-97-5	
Bromodichloromethane	**<0.36**	ug/L	1.2	0.36	1		08/24/18 15:25	75-27-4	
Bromoform	**<4.0**	ug/L	13.2	4.0	1		08/24/18 15:25	75-25-2	
Bromomethane	**<0.97**	ug/L	5.0	0.97	1		08/24/18 15:25	74-83-9	
n-Butylbenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 15:25	104-51-8	
sec-Butylbenzene	**<0.85**	ug/L	5.0	0.85	1		08/24/18 15:25	135-98-8	
tert-Butylbenzene	**<0.30**	ug/L	1.0	0.30	1		08/24/18 15:25	98-06-6	
Carbon tetrachloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 15:25	56-23-5	
Chlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 15:25	108-90-7	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		08/24/18 15:25	75-00-3	
Chloroform	**<1.3**	ug/L	5.0	1.3	1		08/24/18 15:25	67-66-3	
Chloromethane	**<2.2**	ug/L	7.3	2.2	1		08/24/18 15:25	74-87-3	
2-Chlorotoluene	**<0.93**	ug/L	5.0	0.93	1		08/24/18 15:25	95-49-8	
4-Chlorotoluene	**<0.76**	ug/L	2.5	0.76	1		08/24/18 15:25	106-43-4	
1,2-Dibromo-3-chloropropane	**<1.8**	ug/L	5.9	1.8	1		08/24/18 15:25	96-12-8	
Dibromochloromethane	**<2.6**	ug/L	8.7	2.6	1		08/24/18 15:25	124-48-1	
1,2-Dibromoethane (EDB)	**<0.83**	ug/L	2.8	0.83	1		08/24/18 15:25	106-93-4	
Dibromomethane	**<0.94**	ug/L	3.1	0.94	1		08/24/18 15:25	74-95-3	
1,2-Dichlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 15:25	95-50-1	
1,3-Dichlorobenzene	**<0.63**	ug/L	2.1	0.63	1		08/24/18 15:25	541-73-1	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		08/24/18 15:25	106-46-7	
Dichlorodifluoromethane	**<0.50**	ug/L	5.0	0.50	1		08/24/18 15:25	75-71-8	
1,1-Dichloroethane	**0.42J**	ug/L	1.0	0.27	1		08/24/18 15:25	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 15:25	107-06-2	
1,1-Dichloroethene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 15:25	75-35-4	
cis-1,2-Dichloroethene	**<0.27**	ug/L	1.0	0.27	1		08/24/18 15:25	156-59-2	
trans-1,2-Dichloroethene	**<1.1**	ug/L	3.6	1.1	1		08/24/18 15:25	156-60-5	
1,2-Dichloropropane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 15:25	78-87-5	
1,3-Dichloropropane	**<0.83**	ug/L	2.8	0.83	1		08/24/18 15:25	142-28-9	
2,2-Dichloropropane	**<2.3**	ug/L	7.6	2.3	1		08/24/18 15:25	594-20-7	
1,1-Dichloropropene	**<0.54**	ug/L	1.8	0.54	1		08/24/18 15:25	563-58-6	
cis-1,3-Dichloropropene	**<3.6**	ug/L	12.1	3.6	1		08/24/18 15:25	10061-01-5	
trans-1,3-Dichloropropene	**<4.4**	ug/L	14.6	4.4	1		08/24/18 15:25	10061-02-6	
Diisopropyl ether	**<1.9**	ug/L	6.3	1.9	1		08/24/18 15:25	108-20-3	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/24/18 15:25	100-41-4	
Hexachloro-1,3-butadiene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 15:25	87-68-3	
Isopropylbenzene (Cumene)	**<0.39**	ug/L	2.7	0.39	1		08/24/18 15:25	98-82-8	
p-Isopropyltoluene	**<0.80**	ug/L	2.7	0.80	1		08/24/18 15:25	99-87-6	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		08/24/18 15:25	75-09-2	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		08/24/18 15:25	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 15:25	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	5.0	0.81	1		08/24/18 15:25	103-65-1	
Styrene	**<0.47**	ug/L	1.6	0.47	1		08/24/18 15:25	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.27**	ug/L	1.0	0.27	1		08/24/18 15:25	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-5 **Lab ID: 40174512005** Collected: 08/20/18 10:09 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 15:25	79-34-5	
Tetrachloroethene	**2.1**	ug/L	1.1	0.33	1		08/24/18 15:25	127-18-4	
Toluene	**<0.17**	ug/L	5.0	0.17	1		08/24/18 15:25	108-88-3	
1,2,3-Trichlorobenzene	**<0.63**	ug/L	5.0	0.63	1		08/24/18 15:25	87-61-6	
1,2,4-Trichlorobenzene	**<0.95**	ug/L	5.0	0.95	1		08/24/18 15:25	120-82-1	
1,1,1-Trichloroethane	**<0.24**	ug/L	1.0	0.24	1		08/24/18 15:25	71-55-6	
1,1,2-Trichloroethane	**<0.55**	ug/L	5.0	0.55	1		08/24/18 15:25	79-00-5	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 15:25	79-01-6	
Trichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/24/18 15:25	75-69-4	
1,2,3-Trichloropropane	**<0.59**	ug/L	5.0	0.59	1		08/24/18 15:25	96-18-4	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		08/24/18 15:25	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		08/24/18 15:25	108-67-8	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 15:25	75-01-4	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		08/24/18 15:25	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 15:25	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	90	%	70-130		1		08/24/18 15:25	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		08/24/18 15:25	1868-53-7	
Toluene-d8 (S)	102	%	70-130		1		08/24/18 15:25	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-6 **Lab ID: 40174512006** Collected: 08/20/18 10:53 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**1.0J**	ug/L	4.0	0.99	4		08/28/18 11:34	71-43-2	
Bromobenzene	**<0.96**	ug/L	4.0	0.96	4		08/28/18 11:34	108-86-1	
Bromochloromethane	**<1.4**	ug/L	20.0	1.4	4		08/28/18 11:34	74-97-5	
Bromodichloromethane	**<1.5**	ug/L	4.8	1.5	4		08/28/18 11:34	75-27-4	
Bromoform	**<15.9**	ug/L	53.0	15.9	4		08/28/18 11:34	75-25-2	
Bromomethane	**<3.9**	ug/L	20.0	3.9	4		08/28/18 11:34	74-83-9	
n-Butylbenzene	**<2.8**	ug/L	9.4	2.8	4		08/28/18 11:34	104-51-8	
sec-Butylbenzene	**<3.4**	ug/L	20.0	3.4	4		08/28/18 11:34	135-98-8	
tert-Butylbenzene	**<1.2**	ug/L	4.1	1.2	4		08/28/18 11:34	98-06-6	
Carbon tetrachloride	**<0.66**	ug/L	4.0	0.66	4		08/28/18 11:34	56-23-5	
Chlorobenzene	**<2.8**	ug/L	9.5	2.8	4		08/28/18 11:34	108-90-7	
Chloroethane	**<5.4**	ug/L	20.0	5.4	4		08/28/18 11:34	75-00-3	
Chloroform	**<5.1**	ug/L	20.0	5.1	4		08/28/18 11:34	67-66-3	
Chloromethane	**<8.8**	ug/L	29.2	8.8	4		08/28/18 11:34	74-87-3	
2-Chlorotoluene	**<3.7**	ug/L	20.0	3.7	4		08/28/18 11:34	95-49-8	
4-Chlorotoluene	**<3.0**	ug/L	10.1	3.0	4		08/28/18 11:34	106-43-4	
1,2-Dibromo-3-chloropropane	**<7.1**	ug/L	23.5	7.1	4		08/28/18 11:34	96-12-8	
Dibromochloromethane	**<10.4**	ug/L	34.7	10.4	4		08/28/18 11:34	124-48-1	
1,2-Dibromoethane (EDB)	**<3.3**	ug/L	11.1	3.3	4		08/28/18 11:34	106-93-4	
Dibromomethane	**<3.7**	ug/L	12.5	3.7	4		08/28/18 11:34	74-95-3	
1,2-Dichlorobenzene	**<2.8**	ug/L	9.4	2.8	4		08/28/18 11:34	95-50-1	
1,3-Dichlorobenzene	**<2.5**	ug/L	8.4	2.5	4		08/28/18 11:34	541-73-1	
1,4-Dichlorobenzene	**<3.8**	ug/L	12.6	3.8	4		08/28/18 11:34	106-46-7	
Dichlorodifluoromethane	**<2.0**	ug/L	20.0	2.0	4		08/28/18 11:34	75-71-8	
1,1-Dichloroethane	**2.5J**	ug/L	4.0	1.1	4		08/28/18 11:34	75-34-3	
1,2-Dichloroethane	**<1.1**	ug/L	4.0	1.1	4		08/28/18 11:34	107-06-2	
1,1-Dichloroethene	**<0.98**	ug/L	4.0	0.98	4		08/28/18 11:34	75-35-4	
cis-1,2-Dichloroethene	**1200**	ug/L	10.0	2.7	10		08/28/18 13:29	156-59-2	
trans-1,2-Dichloroethene	**60.7**	ug/L	14.5	4.4	4		08/28/18 11:34	156-60-5	
1,2-Dichloropropane	**<1.1**	ug/L	4.0	1.1	4		08/28/18 11:34	78-87-5	
1,3-Dichloropropane	**<3.3**	ug/L	11.0	3.3	4		08/28/18 11:34	142-28-9	
2,2-Dichloropropane	**<9.1**	ug/L	30.2	9.1	4		08/28/18 11:34	594-20-7	
1,1-Dichloropropene	**<2.2**	ug/L	7.2	2.2	4		08/28/18 11:34	563-58-6	
cis-1,3-Dichloropropene	**<14.5**	ug/L	48.4	14.5	4		08/28/18 11:34	10061-01-5	
trans-1,3-Dichloropropene	**<17.5**	ug/L	58.3	17.5	4		08/28/18 11:34	10061-02-6	
Diisopropyl ether	**<7.6**	ug/L	25.2	7.6	4		08/28/18 11:34	108-20-3	
Ethylbenzene	**<0.87**	ug/L	4.0	0.87	4		08/28/18 11:34	100-41-4	
Hexachloro-1,3-butadiene	**<4.7**	ug/L	20.0	4.7	4		08/28/18 11:34	87-68-3	
Isopropylbenzene (Cumene)	**<1.6**	ug/L	20.0	1.6	4		08/28/18 11:34	98-82-8	
p-Isopropyltoluene	**<3.2**	ug/L	10.7	3.2	4		08/28/18 11:34	99-87-6	
Methylene Chloride	**<2.3**	ug/L	20.0	2.3	4		08/28/18 11:34	75-09-2	
Methyl-tert-butyl ether	**<5.0**	ug/L	16.6	5.0	4		08/28/18 11:34	1634-04-4	
Naphthalene	**<4.7**	ug/L	20.0	4.7	4		08/28/18 11:34	91-20-3	
n-Propylbenzene	**<3.2**	ug/L	20.0	3.2	4		08/28/18 11:34	103-65-1	
Styrene	**<1.9**	ug/L	6.2	1.9	4		08/28/18 11:34	100-42-5	
1,1,1,2-Tetrachloroethane	**<1.1**	ug/L	4.0	1.1	4		08/28/18 11:34	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TW-6 **Lab ID: 40174512006** Collected: 08/20/18 10:53 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<1.1**	ug/L	4.0	1.1	4		08/28/18 11:34	79-34-5	
Tetrachloroethene	**<1.3**	ug/L	4.4	1.3	4		08/28/18 11:34	127-18-4	
Toluene	**<0.69**	ug/L	20.0	0.69	4		08/28/18 11:34	108-88-3	
1,2,3-Trichlorobenzene	**<2.5**	ug/L	20.0	2.5	4		08/28/18 11:34	87-61-6	
1,2,4-Trichlorobenzene	**<3.8**	ug/L	20.0	3.8	4		08/28/18 11:34	120-82-1	
1,1,1-Trichloroethane	**<0.98**	ug/L	4.0	0.98	4		08/28/18 11:34	71-55-6	
1,1,2-Trichloroethane	**<2.2**	ug/L	20.0	2.2	4		08/28/18 11:34	79-00-5	
Trichloroethene	**3.4J**	ug/L	4.0	1.0	4		08/28/18 11:34	79-01-6	
Trichlorofluoromethane	**<0.86**	ug/L	4.0	0.86	4		08/28/18 11:34	75-69-4	
1,2,3-Trichloropropane	**<2.4**	ug/L	20.0	2.4	4		08/28/18 11:34	96-18-4	
1,2,4-Trimethylbenzene	**<3.4**	ug/L	11.2	3.4	4		08/28/18 11:34	95-63-6	
1,3,5-Trimethylbenzene	**<3.5**	ug/L	11.6	3.5	4		08/28/18 11:34	108-67-8	
Vinyl chloride	**87.8**	ug/L	4.0	0.70	4		08/28/18 11:34	75-01-4	
m&p-Xylene	**<1.9**	ug/L	8.0	1.9	4		08/28/18 11:34	179601-23-1	
o-Xylene	**<1.0**	ug/L	4.0	1.0	4		08/28/18 11:34	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	94	%	70-130		4		08/28/18 11:34	460-00-4	
Dibromofluoromethane (S)	104	%	70-130		4		08/28/18 11:34	1868-53-7	
Toluene-d8 (S)	109	%	70-130		4		08/28/18 11:34	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-OW-1 **Lab ID: 40174512007** Collected: 08/20/18 12:50 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**16.6**	ug/L	10.0	2.5	1		08/28/18 12:32	7440-47-3	
Iron, Dissolved	**19200**	ug/L	100	15.5	1		08/27/18 18:42	7439-89-6	
Manganese, Dissolved	**338**	ug/L	5.0	1.1	1		08/27/18 18:42	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-OW-2 **Lab ID: 40174512008** Collected: 08/20/18 12:03 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**5.9J**	ug/L	10.0	2.5	1		08/28/18 12:34	7440-47-3	
Iron, Dissolved	**24100**	ug/L	100	15.5	1		08/27/18 18:44	7439-89-6	
Manganese, Dissolved	**398**	ug/L	5.0	1.1	1		08/27/18 18:44	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-OW-3 **Lab ID: 40174512009** Collected: 08/20/18 13:46 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**13.8**	ug/L	10.0	2.5	1		08/28/18 12:37	7440-47-3	
Iron, Dissolved	**2940**	ug/L	100	15.5	1		08/27/18 18:52	7439-89-6	
Manganese, Dissolved	**133**	ug/L	5.0	1.1	1		08/27/18 18:52	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-MW-19 **Lab ID: 40174512010** Collected: 08/20/18 12:59 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**97.6**	ug/L	10.0	2.5	1		08/28/18 12:39	7440-47-3	
Iron, Dissolved	**88200**	ug/L	100	15.5	1		08/27/18 18:54	7439-89-6	
Manganese, Dissolved	**1640**	ug/L	5.0	1.1	1		08/27/18 18:54	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-MW-20 **Lab ID: 40174512011** Collected: 08/20/18 14:02 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**174000**	ug/L	50.0	12.6	5		08/28/18 13:36	7440-47-3	
Iron, Dissolved	**156**	ug/L	100	15.5	1		08/28/18 12:42	7439-89-6	B
Manganese, Dissolved	**73.1**	ug/L	50.0	11.3	10		08/27/18 18:57	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-MW-26 **Lab ID: 40174512012** Collected: 08/20/18 13:52 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**17100**	ug/L	10.0	2.5	1		08/28/18 12:44	7440-47-3	
Iron, Dissolved	**<15.5**	ug/L	100	15.5	1		08/28/18 12:44	7439-89-6	
Manganese, Dissolved	**15.6**	ug/L	5.0	1.1	1		08/28/18 12:44	7439-96-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-MW-29 **Lab ID: 40174512013** Collected: 08/20/18 13:11 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**380**	ug/L	10.0	2.5	1		08/28/18 12:46	7440-47-3	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-DUP-1 **Lab ID: 40174512014** Collected: 08/20/18 00:00 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**1.1J**	ug/L	2.5	0.62	2.5		08/28/18 11:11	71-43-2	
Bromobenzene	**<0.60**	ug/L	2.5	0.60	2.5		08/28/18 11:11	108-86-1	
Bromochloromethane	**<0.91**	ug/L	12.5	0.91	2.5		08/28/18 11:11	74-97-5	
Bromodichloromethane	**<0.91**	ug/L	3.0	0.91	2.5		08/28/18 11:11	75-27-4	
Bromoform	**<9.9**	ug/L	33.1	9.9	2.5		08/28/18 11:11	75-25-2	
Bromomethane	**<2.4**	ug/L	12.5	2.4	2.5		08/28/18 11:11	74-83-9	
n-Butylbenzene	**<1.8**	ug/L	5.9	1.8	2.5		08/28/18 11:11	104-51-8	
sec-Butylbenzene	**<2.1**	ug/L	12.5	2.1	2.5		08/28/18 11:11	135-98-8	
tert-Butylbenzene	**<0.76**	ug/L	2.5	0.76	2.5		08/28/18 11:11	98-06-6	
Carbon tetrachloride	**<0.41**	ug/L	2.5	0.41	2.5		08/28/18 11:11	56-23-5	
Chlorobenzene	**<1.8**	ug/L	5.9	1.8	2.5		08/28/18 11:11	108-90-7	
Chloroethane	**<3.4**	ug/L	12.5	3.4	2.5		08/28/18 11:11	75-00-3	
Chloroform	**<3.2**	ug/L	12.5	3.2	2.5		08/28/18 11:11	67-66-3	
Chloromethane	**<5.5**	ug/L	18.2	5.5	2.5		08/28/18 11:11	74-87-3	
2-Chlorotoluene	**<2.3**	ug/L	12.5	2.3	2.5		08/28/18 11:11	95-49-8	
4-Chlorotoluene	**<1.9**	ug/L	6.3	1.9	2.5		08/28/18 11:11	106-43-4	
1,2-Dibromo-3-chloropropane	**<4.4**	ug/L	14.7	4.4	2.5		08/28/18 11:11	96-12-8	
Dibromochloromethane	**<6.5**	ug/L	21.7	6.5	2.5		08/28/18 11:11	124-48-1	
1,2-Dibromoethane (EDB)	**<2.1**	ug/L	6.9	2.1	2.5		08/28/18 11:11	106-93-4	
Dibromomethane	**<2.3**	ug/L	7.8	2.3	2.5		08/28/18 11:11	74-95-3	
1,2-Dichlorobenzene	**<1.8**	ug/L	5.9	1.8	2.5		08/28/18 11:11	95-50-1	
1,3-Dichlorobenzene	**<1.6**	ug/L	5.2	1.6	2.5		08/28/18 11:11	541-73-1	
1,4-Dichlorobenzene	**<2.4**	ug/L	7.9	2.4	2.5		08/28/18 11:11	106-46-7	
Dichlorodifluoromethane	**<1.2**	ug/L	12.5	1.2	2.5		08/28/18 11:11	75-71-8	
1,1-Dichloroethane	**2.8**	ug/L	2.5	0.68	2.5		08/28/18 11:11	75-34-3	
1,2-Dichloroethane	**<0.70**	ug/L	2.5	0.70	2.5		08/28/18 11:11	107-06-2	
1,1-Dichloroethene	**<0.61**	ug/L	2.5	0.61	2.5		08/28/18 11:11	75-35-4	
cis-1,2-Dichloroethene	**1350**	ug/L	10.0	2.7	10		08/28/18 13:06	156-59-2	
trans-1,2-Dichloroethene	**66.4**	ug/L	9.1	2.7	2.5		08/28/18 11:11	156-60-5	
1,2-Dichloropropane	**<0.71**	ug/L	2.5	0.71	2.5		08/28/18 11:11	78-87-5	
1,3-Dichloropropane	**<2.1**	ug/L	6.9	2.1	2.5		08/28/18 11:11	142-28-9	
2,2-Dichloropropane	**<5.7**	ug/L	18.9	5.7	2.5		08/28/18 11:11	594-20-7	
1,1-Dichloropropene	**<1.4**	ug/L	4.5	1.4	2.5		08/28/18 11:11	563-58-6	
cis-1,3-Dichloropropene	**<9.1**	ug/L	30.2	9.1	2.5		08/28/18 11:11	10061-01-5	
trans-1,3-Dichloropropene	**<10.9**	ug/L	36.4	10.9	2.5		08/28/18 11:11	10061-02-6	
Diisopropyl ether	**<4.7**	ug/L	15.7	4.7	2.5		08/28/18 11:11	108-20-3	
Ethylbenzene	**<0.55**	ug/L	2.5	0.55	2.5		08/28/18 11:11	100-41-4	
Hexachloro-1,3-butadiene	**<3.0**	ug/L	12.5	3.0	2.5		08/28/18 11:11	87-68-3	
Isopropylbenzene (Cumene)	**<0.98**	ug/L	12.5	0.98	2.5		08/28/18 11:11	98-82-8	
p-Isopropyltoluene	**<2.0**	ug/L	6.7	2.0	2.5		08/28/18 11:11	99-87-6	
Methylene Chloride	**<1.5**	ug/L	12.5	1.5	2.5		08/28/18 11:11	75-09-2	
Methyl-tert-butyl ether	**<3.1**	ug/L	10.4	3.1	2.5		08/28/18 11:11	1634-04-4	
Naphthalene	**<2.9**	ug/L	12.5	2.9	2.5		08/28/18 11:11	91-20-3	
n-Propylbenzene	**<2.0**	ug/L	12.5	2.0	2.5		08/28/18 11:11	103-65-1	
Styrene	**<1.2**	ug/L	3.9	1.2	2.5		08/28/18 11:11	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.67**	ug/L	2.5	0.67	2.5		08/28/18 11:11	630-20-6	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-DUP-1 **Lab ID: 40174512014** Collected: 08/20/18 00:00 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.69**	ug/L	2.5	0.69	2.5		08/28/18 11:11	79-34-5	
Tetrachloroethene	**1.1J**	ug/L	2.7	0.82	2.5		08/28/18 11:11	127-18-4	
Toluene	**<0.43**	ug/L	12.5	0.43	2.5		08/28/18 11:11	108-88-3	
1,2,3-Trichlorobenzene	**<1.6**	ug/L	12.5	1.6	2.5		08/28/18 11:11	87-61-6	
1,2,4-Trichlorobenzene	**<2.4**	ug/L	12.5	2.4	2.5		08/28/18 11:11	120-82-1	
1,1,1-Trichloroethane	**<0.61**	ug/L	2.5	0.61	2.5		08/28/18 11:11	71-55-6	
1,1,2-Trichloroethane	**<1.4**	ug/L	12.5	1.4	2.5		08/28/18 11:11	79-00-5	
Trichloroethene	**4.9**	ug/L	2.5	0.64	2.5		08/28/18 11:11	79-01-6	
Trichlorofluoromethane	**<0.54**	ug/L	2.5	0.54	2.5		08/28/18 11:11	75-69-4	
1,2,3-Trichloropropane	**<1.5**	ug/L	12.5	1.5	2.5		08/28/18 11:11	96-18-4	
1,2,4-Trimethylbenzene	**<2.1**	ug/L	7.0	2.1	2.5		08/28/18 11:11	95-63-6	
1,3,5-Trimethylbenzene	**<2.2**	ug/L	7.3	2.2	2.5		08/28/18 11:11	108-67-8	
Vinyl chloride	**108**	ug/L	2.5	0.44	2.5		08/28/18 11:11	75-01-4	
m&p-Xylene	**<1.2**	ug/L	5.0	1.2	2.5		08/28/18 11:11	179601-23-1	
o-Xylene	**<0.65**	ug/L	2.5	0.65	2.5		08/28/18 11:11	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	98	%	70-130		2.5		08/28/18 11:11	460-00-4	
Dibromofluoromethane (S)	102	%	70-130		2.5		08/28/18 11:11	1868-53-7	
Toluene-d8 (S)	106	%	70-130		2.5		08/28/18 11:11	2037-26-5	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TB **Lab ID: 40174512015** Collected: 08/20/18 00:00 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
Benzene	**<0.25**	ug/L	1.0	0.25	1		08/24/18 10:48	71-43-2	
Bromobenzene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 10:48	108-86-1	
Bromochloromethane	**<0.36**	ug/L	5.0	0.36	1		08/24/18 10:48	74-97-5	
Bromodichloromethane	**<0.36**	ug/L	1.2	0.36	1		08/24/18 10:48	75-27-4	
Bromoform	**<4.0**	ug/L	13.2	4.0	1		08/24/18 10:48	75-25-2	
Bromomethane	**<0.97**	ug/L	5.0	0.97	1		08/24/18 10:48	74-83-9	
n-Butylbenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 10:48	104-51-8	
sec-Butylbenzene	**<0.85**	ug/L	5.0	0.85	1		08/24/18 10:48	135-98-8	
tert-Butylbenzene	**<0.30**	ug/L	1.0	0.30	1		08/24/18 10:48	98-06-6	
Carbon tetrachloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 10:48	56-23-5	
Chlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 10:48	108-90-7	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		08/24/18 10:48	75-00-3	
Chloroform	**<1.3**	ug/L	5.0	1.3	1		08/24/18 10:48	67-66-3	
Chloromethane	**<2.2**	ug/L	7.3	2.2	1		08/24/18 10:48	74-87-3	
2-Chlorotoluene	**<0.93**	ug/L	5.0	0.93	1		08/24/18 10:48	95-49-8	
4-Chlorotoluene	**<0.76**	ug/L	2.5	0.76	1		08/24/18 10:48	106-43-4	
1,2-Dibromo-3-chloropropane	**<1.8**	ug/L	5.9	1.8	1		08/24/18 10:48	96-12-8	
Dibromochloromethane	**<2.6**	ug/L	8.7	2.6	1		08/24/18 10:48	124-48-1	
1,2-Dibromoethane (EDB)	**<0.83**	ug/L	2.8	0.83	1		08/24/18 10:48	106-93-4	
Dibromomethane	**<0.94**	ug/L	3.1	0.94	1		08/24/18 10:48	74-95-3	
1,2-Dichlorobenzene	**<0.71**	ug/L	2.4	0.71	1		08/24/18 10:48	95-50-1	
1,3-Dichlorobenzene	**<0.63**	ug/L	2.1	0.63	1		08/24/18 10:48	541-73-1	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		08/24/18 10:48	106-46-7	
Dichlorodifluoromethane	**<0.50**	ug/L	5.0	0.50	1		08/24/18 10:48	75-71-8	
1,1-Dichloroethane	**<0.27**	ug/L	1.0	0.27	1		08/24/18 10:48	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 10:48	107-06-2	
1,1-Dichloroethene	**<0.24**	ug/L	1.0	0.24	1		08/24/18 10:48	75-35-4	
cis-1,2-Dichloroethene	**<0.27**	ug/L	1.0	0.27	1		08/24/18 10:48	156-59-2	
trans-1,2-Dichloroethene	**<1.1**	ug/L	3.6	1.1	1		08/24/18 10:48	156-60-5	
1,2-Dichloropropane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 10:48	78-87-5	
1,3-Dichloropropane	**<0.83**	ug/L	2.8	0.83	1		08/24/18 10:48	142-28-9	
2,2-Dichloropropane	**<2.3**	ug/L	7.6	2.3	1		08/24/18 10:48	594-20-7	
1,1-Dichloropropene	**<0.54**	ug/L	1.8	0.54	1		08/24/18 10:48	563-58-6	
cis-1,3-Dichloropropene	**<3.6**	ug/L	12.1	3.6	1		08/24/18 10:48	10061-01-5	
trans-1,3-Dichloropropene	**<4.4**	ug/L	14.6	4.4	1		08/24/18 10:48	10061-02-6	
Diisopropyl ether	**<1.9**	ug/L	6.3	1.9	1		08/24/18 10:48	108-20-3	
Ethylbenzene	**<0.22**	ug/L	1.0	0.22	1		08/24/18 10:48	100-41-4	
Hexachloro-1,3-butadiene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 10:48	87-68-3	
Isopropylbenzene (Cumene)	**<0.39**	ug/L	2.7	0.39	1		08/24/18 10:48	98-82-8	
p-Isopropyltoluene	**<0.80**	ug/L	2.7	0.80	1		08/24/18 10:48	99-87-6	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		08/24/18 10:48	75-09-2	
Methyl-tert-butyl ether	**<1.2**	ug/L	4.2	1.2	1		08/24/18 10:48	1634-04-4	
Naphthalene	**<1.2**	ug/L	5.0	1.2	1		08/24/18 10:48	91-20-3	
n-Propylbenzene	**<0.81**	ug/L	5.0	0.81	1		08/24/18 10:48	103-65-1	
Styrene	**<0.47**	ug/L	1.6	0.47	1		08/24/18 10:48	100-42-5	
1,1,1,2-Tetrachloroethane	**<0.27**	ug/L	1.0	0.27	1		08/24/18 10:48	630-20-6	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Sample: 6486-TB **Lab ID: 40174512015** Collected: 08/20/18 00:00 Received: 08/23/18 09:20 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260								
1,1,2,2-Tetrachloroethane	**<0.28**	ug/L	1.0	0.28	1		08/24/18 10:48	79-34-5	
Tetrachloroethene	**<0.33**	ug/L	1.1	0.33	1		08/24/18 10:48	127-18-4	
Toluene	**<0.17**	ug/L	5.0	0.17	1		08/24/18 10:48	108-88-3	
1,2,3-Trichlorobenzene	**<0.63**	ug/L	5.0	0.63	1		08/24/18 10:48	87-61-6	
1,2,4-Trichlorobenzene	**<0.95**	ug/L	5.0	0.95	1		08/24/18 10:48	120-82-1	
1,1,1-Trichloroethane	**<0.24**	ug/L	1.0	0.24	1		08/24/18 10:48	71-55-6	
1,1,2-Trichloroethane	**<0.55**	ug/L	5.0	0.55	1		08/24/18 10:48	79-00-5	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 10:48	79-01-6	
Trichlorofluoromethane	**<0.21**	ug/L	1.0	0.21	1		08/24/18 10:48	75-69-4	
1,2,3-Trichloropropane	**<0.59**	ug/L	5.0	0.59	1		08/24/18 10:48	96-18-4	
1,2,4-Trimethylbenzene	**<0.84**	ug/L	2.8	0.84	1		08/24/18 10:48	95-63-6	
1,3,5-Trimethylbenzene	**<0.87**	ug/L	2.9	0.87	1		08/24/18 10:48	108-67-8	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		08/24/18 10:48	75-01-4	
m&p-Xylene	**<0.47**	ug/L	2.0	0.47	1		08/24/18 10:48	179601-23-1	
o-Xylene	**<0.26**	ug/L	1.0	0.26	1		08/24/18 10:48	95-47-6	
Surrogates									
4-Bromofluorobenzene (S)	93	%	70-130		1		08/24/18 10:48	460-00-4	
Dibromofluoromethane (S)	103	%	70-130		1		08/24/18 10:48	1868-53-7	
Toluene-d8 (S)	103	%	70-130		1		08/24/18 10:48	2037-26-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

QC Batch: 298351 Analysis Method: EPA 6010
QC Batch Method: EPA 6010 Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40174512004, 40174512007, 40174512008, 40174512009, 40174512010, 40174512011, 40174512012, 40174512013

METHOD BLANK: 1742605 Matrix: Water
Associated Lab Samples: 40174512004, 40174512007, 40174512008, 40174512009, 40174512010, 40174512011, 40174512012, 40174512013

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	08/28/18 12:15	
Iron, Dissolved	ug/L	20.8J	100	08/27/18 18:03	
Manganese, Dissolved	ug/L	<1.1	5.0	08/27/18 18:03	

LABORATORY CONTROL SAMPLE: 1742606

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	483	97	80-120	
Iron, Dissolved	ug/L	5000	5000	100	80-120	
Manganese, Dissolved	ug/L	500	519	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1742607 1742608

Parameter	Units	40174172001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<2.5	500	500	598	502	120	100	75-125	17	20	
Iron, Dissolved	ug/L	1220	5000	5000	6090	6140	97	99	75-125	1	20	
Manganese, Dissolved	ug/L	59.7	500	500	571	569	102	102	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

QC Batch: 298121 Analysis Method: EPA 8260
QC Batch Method: EPA 8260 Analysis Description: 8260 MSV
Associated Lab Samples: 40174512001, 40174512002, 40174512003, 40174512004, 40174512005, 40174512006, 40174512014, 40174512015

METHOD BLANK: 1741056 Matrix: Water
Associated Lab Samples: 40174512001, 40174512002, 40174512003, 40174512004, 40174512005, 40174512006, 40174512014, 40174512015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
1,1,1,2-Tetrachloroethane	ug/L	<0.27	1.0	08/24/18 07:14	
1,1,1-Trichloroethane	ug/L	<0.24	1.0	08/24/18 07:14	
1,1,2,2-Tetrachloroethane	ug/L	<0.28	1.0	08/24/18 07:14	
1,1,2-Trichloroethane	ug/L	<0.55	5.0	08/24/18 07:14	
1,1-Dichloroethane	ug/L	<0.27	1.0	08/24/18 07:14	
1,1-Dichloroethene	ug/L	<0.24	1.0	08/24/18 07:14	
1,1-Dichloropropene	ug/L	<0.54	1.8	08/24/18 07:14	
1,2,3-Trichlorobenzene	ug/L	<0.63	5.0	08/24/18 07:14	
1,2,3-Trichloropropane	ug/L	<0.59	5.0	08/24/18 07:14	
1,2,4-Trichlorobenzene	ug/L	<0.95	5.0	08/24/18 07:14	
1,2,4-Trimethylbenzene	ug/L	<0.84	2.8	08/24/18 07:14	
1,2-Dibromo-3-chloropropane	ug/L	<1.8	5.9	08/24/18 07:14	
1,2-Dibromoethane (EDB)	ug/L	<0.83	2.8	08/24/18 07:14	
1,2-Dichlorobenzene	ug/L	<0.71	2.4	08/24/18 07:14	
1,2-Dichloroethane	ug/L	<0.28	1.0	08/24/18 07:14	
1,2-Dichloropropane	ug/L	<0.28	1.0	08/24/18 07:14	
1,3,5-Trimethylbenzene	ug/L	<0.87	2.9	08/24/18 07:14	
1,3-Dichlorobenzene	ug/L	<0.63	2.1	08/24/18 07:14	
1,3-Dichloropropane	ug/L	<0.83	2.8	08/24/18 07:14	
1,4-Dichlorobenzene	ug/L	<0.94	3.1	08/24/18 07:14	
2,2-Dichloropropane	ug/L	<2.3	7.6	08/24/18 07:14	
2-Chlorotoluene	ug/L	<0.93	5.0	08/24/18 07:14	
4-Chlorotoluene	ug/L	<0.76	2.5	08/24/18 07:14	
Benzene	ug/L	<0.25	1.0	08/24/18 07:14	
Bromobenzene	ug/L	<0.24	1.0	08/24/18 07:14	
Bromochloromethane	ug/L	<0.36	5.0	08/24/18 07:14	
Bromodichloromethane	ug/L	<0.36	1.2	08/24/18 07:14	
Bromoform	ug/L	<4.0	13.2	08/24/18 07:14	
Bromomethane	ug/L	<0.97	5.0	08/24/18 07:14	
Carbon tetrachloride	ug/L	<0.17	1.0	08/24/18 07:14	
Chlorobenzene	ug/L	<0.71	2.4	08/24/18 07:14	
Chloroethane	ug/L	<1.3	5.0	08/24/18 07:14	
Chloroform	ug/L	<1.3	5.0	08/24/18 07:14	
Chloromethane	ug/L	<2.2	7.3	08/24/18 07:14	
cis-1,2-Dichloroethene	ug/L	<0.27	1.0	08/24/18 07:14	
cis-1,3-Dichloropropene	ug/L	<3.6	12.1	08/24/18 07:14	
Dibromochloromethane	ug/L	<2.6	8.7	08/24/18 07:14	
Dibromomethane	ug/L	<0.94	3.1	08/24/18 07:14	
Dichlorodifluoromethane	ug/L	<0.50	5.0	08/24/18 07:14	
Diisopropyl ether	ug/L	<1.9	6.3	08/24/18 07:14	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

METHOD BLANK: 1741056 Matrix: Water

Associated Lab Samples: 40174512001, 40174512002, 40174512003, 40174512004, 40174512005, 40174512006, 40174512014, 40174512015

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Ethylbenzene	ug/L	<0.22	1.0	08/24/18 07:14	
Hexachloro-1,3-butadiene	ug/L	<1.2	5.0	08/24/18 07:14	
Isopropylbenzene (Cumene)	ug/L	<0.39	5.0	08/24/18 07:14	
m&p-Xylene	ug/L	<0.47	2.0	08/24/18 07:14	
Methyl-tert-butyl ether	ug/L	<1.2	4.2	08/24/18 07:14	
Methylene Chloride	ug/L	<0.58	5.0	08/24/18 07:14	
n-Butylbenzene	ug/L	<0.71	2.4	08/24/18 07:14	
n-Propylbenzene	ug/L	<0.81	5.0	08/24/18 07:14	
Naphthalene	ug/L	<1.2	5.0	08/24/18 07:14	
o-Xylene	ug/L	<0.26	1.0	08/24/18 07:14	
p-Isopropyltoluene	ug/L	<0.80	2.7	08/24/18 07:14	
sec-Butylbenzene	ug/L	<0.85	5.0	08/24/18 07:14	
Styrene	ug/L	<0.47	1.6	08/24/18 07:14	
tert-Butylbenzene	ug/L	<0.30	1.0	08/24/18 07:14	
Tetrachloroethene	ug/L	<0.33	1.1	08/24/18 07:14	
Toluene	ug/L	<0.17	5.0	08/24/18 07:14	
trans-1,2-Dichloroethene	ug/L	<1.1	3.6	08/24/18 07:14	
trans-1,3-Dichloropropene	ug/L	<4.4	14.6	08/24/18 07:14	
Trichloroethene	ug/L	<0.26	1.0	08/24/18 07:14	
Trichlorofluoromethane	ug/L	<0.21	1.0	08/24/18 07:14	
Vinyl chloride	ug/L	<0.17	1.0	08/24/18 07:14	
4-Bromofluorobenzene (S)	%	93	70-130	08/24/18 07:14	
Dibromofluoromethane (S)	%	102	70-130	08/24/18 07:14	
Toluene-d8 (S)	%	106	70-130	08/24/18 07:14	

LABORATORY CONTROL SAMPLE: 1741057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
1,1,1-Trichloroethane	ug/L	50	46.9	94	70-133	
1,1,2,2-Tetrachloroethane	ug/L	50	50.5	101	67-130	
1,1,2-Trichloroethane	ug/L	50	53.1	106	70-130	
1,1-Dichloroethane	ug/L	50	48.5	97	70-134	
1,1-Dichloroethene	ug/L	50	48.5	97	75-132	
1,2,4-Trichlorobenzene	ug/L	50	51.3	103	68-130	
1,2-Dibromo-3-chloropropane	ug/L	50	47.9	96	60-126	
1,2-Dibromoethane (EDB)	ug/L	50	51.5	103	70-130	
1,2-Dichlorobenzene	ug/L	50	53.0	106	70-130	
1,2-Dichloroethane	ug/L	50	46.7	93	73-134	
1,2-Dichloropropane	ug/L	50	50.5	101	79-128	
1,3-Dichlorobenzene	ug/L	50	52.3	105	70-130	
1,4-Dichlorobenzene	ug/L	50	53.1	106	70-130	
Benzene	ug/L	50	46.9	94	69-137	
Bromodichloromethane	ug/L	50	45.2	90	70-130	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

LABORATORY CONTROL SAMPLE: 1741057

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Bromoform	ug/L	50	53.2	106	64-133	
Bromomethane	ug/L	50	28.3	57	29-123	
Carbon tetrachloride	ug/L	50	47.5	95	73-142	
Chlorobenzene	ug/L	50	54.7	109	70-130	
Chloroethane	ug/L	50	44.7	89	59-133	
Chloroform	ug/L	50	46.2	92	80-129	
Chloromethane	ug/L	50	26.1	52	27-125	
cis-1,2-Dichloroethene	ug/L	50	43.4	87	70-134	
cis-1,3-Dichloropropene	ug/L	50	47.4	95	70-130	
Dibromochloromethane	ug/L	50	52.9	106	70-130	
Dichlorodifluoromethane	ug/L	50	13.6	27	12-127	
Ethylbenzene	ug/L	50	55.4	111	86-127	
Isopropylbenzene (Cumene)	ug/L	50	57.9	116	70-130	
m&p-Xylene	ug/L	100	116	116	70-131	
Methyl-tert-butyl ether	ug/L	50	42.1	84	65-136	
Methylene Chloride	ug/L	50	46.3	93	72-133	
o-Xylene	ug/L	50	57.6	115	70-130	
Styrene	ug/L	50	58.5	117	70-130	
Tetrachloroethene	ug/L	50	53.6	107	70-130	
Toluene	ug/L	50	54.4	109	84-124	
trans-1,2-Dichloroethene	ug/L	50	47.1	94	70-133	
trans-1,3-Dichloropropene	ug/L	50	53.6	107	67-130	
Trichloroethene	ug/L	50	48.7	97	70-130	
Trichlorofluoromethane	ug/L	50	46.2	92	69-147	
Vinyl chloride	ug/L	50	37.6	75	48-134	
4-Bromofluorobenzene (S)	%			103	70-130	
Dibromofluoromethane (S)	%			100	70-130	
Toluene-d8 (S)	%			109	70-130	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1741138 1741139

Parameter	Units	40174512001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,1,1-Trichloroethane	ug/L	<0.24	50	50	47.7	46.5	95	93	70-136	3	20	
1,1,2,2-Tetrachloroethane	ug/L	<0.28	50	50	52.3	53.7	105	107	67-133	3	20	
1,1,2-Trichloroethane	ug/L	<0.55	50	50	50.9	53.4	102	107	70-130	5	20	
1,1-Dichloroethane	ug/L	4.9	50	50	53.4	52.7	97	96	70-139	1	20	
1,1-Dichloroethene	ug/L	<0.24	50	50	49.4	48.1	99	96	72-137	3	20	
1,2,4-Trichlorobenzene	ug/L	<0.95	50	50	51.9	53.9	104	108	68-130	4	20	
1,2-Dibromo-3-chloropropane	ug/L	<1.8	50	50	51.2	52.1	102	104	60-130	2	21	
1,2-Dibromoethane (EDB)	ug/L	<0.83	50	50	49.8	51.2	100	102	70-130	3	20	
1,2-Dichlorobenzene	ug/L	<0.71	50	50	52.4	52.8	105	106	70-130	1	20	
1,2-Dichloroethane	ug/L	<0.28	50	50	45.5	45.1	91	90	71-137	1	20	
1,2-Dichloropropane	ug/L	<0.28	50	50	50.9	50.1	102	100	78-130	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1741138 1741139

Parameter	Units	40174512001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
1,3-Dichlorobenzene	ug/L	<0.63	50	50	51.4	51.7	103	103	70-130	1	20	
1,4-Dichlorobenzene	ug/L	<0.94	50	50	53.1	53.7	106	107	70-130	1	20	
Benzene	ug/L	<0.25	50	50	47.3	46.1	95	92	66-143	2	20	
Bromodichloromethane	ug/L	<0.36	50	50	46.4	46.2	93	92	70-130	0	20	
Bromoform	ug/L	<4.0	50	50	51.2	55.0	102	110	64-134	7	20	
Bromomethane	ug/L	<0.97	50	50	30.6	30.1	61	60	29-136	2	25	
Carbon tetrachloride	ug/L	<0.17	50	50	48.5	47.2	97	94	73-142	3	20	
Chlorobenzene	ug/L	<0.71	50	50	53.5	54.9	107	110	70-130	3	20	
Chloroethane	ug/L	<1.3	50	50	45.5	43.6	91	87	58-138	4	20	
Chloroform	ug/L	<1.3	50	50	46.1	44.5	92	89	80-131	3	20	
Chloromethane	ug/L	<2.2	50	50	26.5	25.3	53	51	24-125	5	20	
cis-1,2-Dichloroethene	ug/L	80.5	50	50	118	118	76	76	68-137	0	22	
cis-1,3-Dichloropropene	ug/L	<3.6	50	50	48.5	48.3	97	97	70-130	0	20	
Dibromochloromethane	ug/L	<2.6	50	50	51.5	53.6	103	107	70-131	4	20	
Dichlorodifluoromethane	ug/L	<0.50	50	50	14.4	13.5	29	27	10-127	6	20	
Ethylbenzene	ug/L	<0.22	50	50	53.3	55.0	107	110	81-136	3	20	
Isopropylbenzene (Cumene)	ug/L	<0.39	50	50	55.9	57.0	112	114	70-132	2	20	
m&p-Xylene	ug/L	<0.47	100	100	111	114	111	114	70-135	3	20	
Methyl-tert-butyl ether	ug/L	<1.2	50	50	43.7	43.9	87	88	58-142	0	23	
Methylene Chloride	ug/L	<0.58	50	50	46.7	46.0	93	92	69-137	2	20	
o-Xylene	ug/L	<0.26	50	50	55.3	56.5	111	113	70-132	2	20	
Styrene	ug/L	<0.47	50	50	56.0	57.0	112	114	70-130	2	20	
Tetrachloroethene	ug/L	61.4	50	50	108	115	93	108	70-132	7	20	
Toluene	ug/L	<0.17	50	50	52.8	54.9	106	110	81-130	4	20	
trans-1,2-Dichloroethene	ug/L	5.8	50	50	53.1	52.0	94	92	70-136	2	20	
trans-1,3-Dichloropropene	ug/L	<4.4	50	50	52.4	53.9	105	108	67-130	3	20	
Trichloroethene	ug/L	51.7	50	50	97.1	99.8	91	96	70-131	3	20	
Trichlorofluoromethane	ug/L	<0.21	50	50	47.2	45.5	94	91	66-150	4	20	
Vinyl chloride	ug/L	<0.17	50	50	36.7	37.8	73	76	46-134	3	20	
4-Bromofluorobenzene (S)	%						99	101	70-130			
Dibromofluoromethane (S)	%						96	96	70-130			
Toluene-d8 (S)	%						106	108	70-130			

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor and percent moisture.

LOQ - Limit of Quantitation adjusted for dilution factor and percent moisture.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G	Pace Analytical Services - Green Bay

ANALYTE QUALIFIERS

B	Analyte was detected in the associated method blank.

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6486 ALBANY INTL.-LUVATA SITE
Pace Project No.: 40174512

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40174512004	**6486-TW-4**	EPA 6010	298351		
40174512007	**6486-OW-1**	EPA 6010	298351		
40174512008	**6486-OW-2**	EPA 6010	298351		
40174512009	**6486-OW-3**	EPA 6010	298351		
40174512010	**6486-MW-19**	EPA 6010	298351		
40174512011	**6486-MW-20**	EPA 6010	298351		
40174512012	**6486-MW-26**	EPA 6010	298351		
40174512013	**6486-MW-29**	EPA 6010	298351		
40174512001	**6486-TW-1**	EPA 8260	298121		
40174512002	**6486-TW-2**	EPA 8260	298121		
40174512003	**6486-TW-3**	EPA 8260	298121		
40174512004	**6486-TW-4**	EPA 8260	298121		
40174512005	**6486-TW-5**	EPA 8260	298121		
40174512006	**6486-TW-6**	EPA 8260	298121		
40174512014	**6486-DUP-1**	EPA 8260	298121		
40174512015	**6486-TB**	EPA 8260	298121		

4017452

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

wpt

Page: 1 of 2

Section A Required Client Information:

Company:	Enviroforensics
Address:	N16W23390 Stoneridge Dr
	Waukesha, WI 53188
Email To:	wfassbender@enviroforensics.com
Phone: 414-982-5988	Fax:
Requested Due Date/TAT:	

Section B Required Project Information:

Report To:	Wayne Fassbender
Copy To:	
Purchase Order No.:	2018-1139
Project Name:	Albany International - Lot-to-site
Project Number:	6486

Section C Invoice Information:

Attention:	
Company Name:	
Address:	
Pace Quote Reference:	
Pace Project Manager:	
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER _____

Site Location STATE: WI

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE)

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N: VOC	Dissolved Cr	Dissolved Cr, Fe, Mn	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	6486 - TW-1	WT	G	8-20	1107				3				X					X				001
2	6486 - TW-2	WT	G	8-20	1029				3				X					X				002
3	6486 - TW-3	WT	G	8-20	1037				3				X					X				003
4	6486 - TW-4	WT	G	8-20	1123				4			X	X					X	X			004
5	6486 - TW-5	WT	G	8-20	1009				3				X					X				005
6	6486 - TW-6	WT	G	8-20	1053				3				X					X				006
7	6486 - OW-1	WT	G	8-20	1250				1			X							X			007
8	6486 - OW-2	WT	G	8-20	1207				1			X							X			008
9	6486 - OW-3	WT	G	8-20	1346				1			X							X			009
10	6486 - MW-19	WT	G	8-20	1259				1			X							X			010
11	6486 - MW-20	WT	G	8-20	1402				1			X							X			011
12	6486 - MW-26	WT	G	8-20	1752				1			X							X			012

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		8-22-18	1316		8/22/18	1316	
		8/22/18	1545				
		8/23/18	0920		8/23/18	0920	ROI Y Y X

SAMPLER NAME AND SIGNATURE: Nathan Dudek

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER: | DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 2

Section A Required Client Information:

Company: Enviroforensics
Address: N16W23390 Stoneridge Dr
Waukesha, WI 53188
Email To: wfassbender@enviroforensics.com
Phone: 414-982-3986 Fax:
Requested Due Date/TAT:

Section B Required Project Information:

Report To: Wayne Fassbender
Copy To:
Purchase Order No.: 2016-1139
Project Name: Albany International-Lavanta Site
Project Number: 6486

Section C Invoice Information:

Attention:
Company Name:
Address:
Pace Quote Reference:
Pace Project Manager:
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☐ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: WI

Section D Required Client Information

SAMPLE ID
(A-Z, 0-9 / ,-)
Sample IDs MUST BE UNIQUE

Matrix Codes MATRIX / CODE

Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Tissue	TS
Other	OT

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Dissolved Cr	VOC	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	6486-MW-29	WT	G	8-20	1311				1			X						X				013
2	6486-DUP-1	WT	G	8-20					3				X						X			014
3	6486-TB	WT	G	8-20					1				X						X			015
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
		8/22/18	1316	Mary Fassi	8/22/18	1316	
	Mary Fassi	8/22/18	1540				
	CS Logistics	8/23/18	0920	Susan Lifeland	8/23/18	0920	ROI Y Y Y

SAMPLER NAME AND SIGNATURE: Nathan Rude
PRINT Name of SAMPLER:
SIGNATURE of SAMPLER: DATE Signed (MM/DD/YY):

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Sample Preservation Receipt Form

Client Name: Enviroforensics Project # 401743/2

All containers needing preservation have been checked and noted below: ☐Yes ☐No ~~☐N/A~~ 8/23/18 SW

Lab Lot# of pH paper: 10US078I Lab Std #ID of preservation (if pH adjusted):

Initial when completed: SW Date/ Time:

Pace Lab #	Glass							Plastic							Vials						Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN							
001																		3															2.5 / 5 / 10
002																		3															2.5 / 5 / 10
003																		3															2.5 / 5 / 10
004													1					3													X		2.5 / 5 / 10
005																		3															2.5 / 5 / 10
006																		3															2.5 / 5 / 10
007													1																		X		2.5 / 5 / 10
008													1																		X		2.5 / 5 / 10
009													1																		X		2.5 / 5 / 10
010													1																		X		2.5 / 5 / 10
011													1																		X		2.5 / 5 / 10
012													1																		X		2.5 / 5 / 10
013													1																		X		2.5 / 5 / 10
014																		3															2.5 / 5 / 10
015																		1															2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																																	2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																																	2.5 / 5 / 10

Exceptions to preservation check: VOA, Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☐N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

Pace Analytical 1241 Bellevue Street, Green Bay, WI 54302	Document Name: **Sample Condition Upon Receipt (SCUR)**	Document Revised: 25Apr2018
	Document No.: **F-GB-C-031-Rev.07**	Issuing Authority: Pace Green Bay Quality Office

Sample Condition Upon Receipt Form (SCUR)

Client Name: Enviroforensics

Project #: WO# : 40174512

Courier: ☑ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☐ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☑ yes ☐ no Seals intact: ☑ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☑ no Seals intact: ☐ yes ☐ no

Packing Material: ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

Thermometer Used SR - N/A **Type of Ice:** (Wet) Blue Dry None ☑ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROT /Corr: _____

Temp Blank Present: ☐ yes ☑ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 8-23-18 SW
Initials: _____

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	8-23-18 SW ☐Yes ☑No ☐N/A	2. No Invoice, Filtered, invoice info
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3. 8-23-18 SW
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☐Yes ☐No ☑N/A	11.
Sample Labels match COC:	☑Yes ☐No ☐N/A	12.
-Includes date/time/ID/Analysis Matrix: W		
Trip Blank Present:	☑Yes ☐No ☐N/A	13.
Trip Blank Custody Seals Present	☐Yes ☑No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: RNR for RM **Date:** 9/23/18

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

January 28, 2019

Wayne Fassbender
Enviroforensics
N16 W23390 Stone Ridge Drive
Suite G
Waukesha, WI 53188

RE: Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Dear Wayne Fassbender:
Enclosed are the analytical results for sample(s) received by the laboratory on January 21, 2019. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Dan Milewsky
dan.milewsky@pacelabs.com
(920)469-2436
Project Manager

Enclosures

cc: Kyle Heimstead, EnviroForensics

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

CERTIFICATIONS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Green Bay Certification IDs

1241 Bellevue Street, Green Bay, WI 54302
Florida/NELAP Certification #: E87948
Illinois Certification #: 200050
Kentucky UST Certification #: 82
Louisiana Certification #: 04168
Minnesota Certification #: 055-999-334
New York Certification #: 12064
North Dakota Certification #: R-150
Virginia VELAP ID: 460263
South Carolina Certification #: 83006001
Texas Certification #: T104704529-14-1
Wisconsin Certification #: 405132750
Wisconsin DATCP Certification #: 105-444
USDA Soil Permit #: P330-16-00157
Federal Fish & Wildlife Permit #: LE51774A-0

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE SUMMARY

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Lab ID	Sample ID	Matrix	Date Collected	Date Received
40182324001	**6486-MW-19**	Water	01/21/19 12:10	01/21/19 15:30
40182324002	**6486-MW-20**	Water	01/21/19 14:07	01/21/19 15:30
40182324003	**6486-MW-26**	Water	01/21/19 13:29	01/21/19 15:30
40182324004	**6486-MW-29**	Water	01/21/19 12:52	01/21/19 15:30
40182324005	**6486-OW-1**	Water	01/21/19 11:07	01/21/19 15:30
40182324006	**6486-OW-2**	Water	01/21/19 09:51	01/21/19 15:30
40182324007	**6486-OW-3**	Water	01/21/19 10:31	01/21/19 15:30

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SAMPLE ANALYTE COUNT

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
40182324001	**6486-MW-19**	EPA 6010	TXW	3	PASI-G
40182324002	**6486-MW-20**	EPA 6010	TXW	3	PASI-G
40182324003	**6486-MW-26**	EPA 6010	TXW	3	PASI-G
40182324004	**6486-MW-29**	EPA 6010	TXW	3	PASI-G
40182324005	**6486-OW-1**	EPA 6010	TXW	3	PASI-G
40182324006	**6486-OW-2**	EPA 6010	TXW	3	PASI-G
40182324007	**6486-OW-3**	EPA 6010	TXW	3	PASI-G

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

SUMMARY OF DETECTION

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
40182324001	**6486-MW-19**					
EPA 6010	Chromium, Dissolved	16.1	ug/L	10.0	01/23/19 16:24	
EPA 6010	Iron, Dissolved	12200	ug/L	118	01/23/19 16:24	
EPA 6010	Manganese, Dissolved	608	ug/L	5.0	01/23/19 16:24	
40182324002	**6486-MW-20**					
EPA 6010	Chromium, Dissolved	179000	ug/L	50.0	01/24/19 12:20	
EPA 6010	Manganese, Dissolved	37.1	ug/L	25.0	01/24/19 12:20	
40182324003	**6486-MW-26**					
EPA 6010	Chromium, Dissolved	26700	ug/L	10.0	01/24/19 12:25	
EPA 6010	Manganese, Dissolved	1.5J	ug/L	5.0	01/24/19 12:25	
40182324004	**6486-MW-29**					
EPA 6010	Chromium, Dissolved	376	ug/L	10.0	01/23/19 16:31	
40182324005	**6486-OW-1**					
EPA 6010	Iron, Dissolved	2620	ug/L	118	01/23/19 16:33	
EPA 6010	Manganese, Dissolved	27.7	ug/L	5.0	01/23/19 16:33	
40182324006	**6486-OW-2**					
EPA 6010	Chromium, Dissolved	4.0J	ug/L	10.0	01/23/19 16:36	
EPA 6010	Iron, Dissolved	22100	ug/L	118	01/23/19 16:36	
EPA 6010	Manganese, Dissolved	209	ug/L	5.0	01/23/19 16:36	
40182324007	**6486-OW-3**					
EPA 6010	Chromium, Dissolved	100	ug/L	10.0	01/23/19 16:38	
EPA 6010	Iron, Dissolved	158	ug/L	118	01/23/19 16:38	
EPA 6010	Manganese, Dissolved	34.8	ug/L	5.0	01/23/19 16:38	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Sample: 6486-MW-19 **Lab ID: 40182324001** Collected: 01/21/19 12:10 Received: 01/21/19 15:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**16.1**	ug/L	10.0	2.5	1		01/23/19 16:24	7440-47-3	
Iron, Dissolved	**12200**	ug/L	118	35.4	1		01/23/19 16:24	7439-89-6	
Manganese, Dissolved	**608**	ug/L	5.0	1.1	1		01/23/19 16:24	7439-96-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Sample: 6486-MW-20 **Lab ID: 40182324002** Collected: 01/21/19 14:07 Received: 01/21/19 15:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**179000**	ug/L	50.0	12.6	5		01/24/19 12:20	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		01/24/19 12:23	7439-89-6	
Manganese, Dissolved	**37.1**	ug/L	25.0	5.6	5		01/24/19 12:20	7439-96-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Sample: 6486-MW-26 **Lab ID: 40182324003** Collected: 01/21/19 13:29 Received: 01/21/19 15:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**26700**	ug/L	10.0	2.5	1		01/24/19 12:25	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		01/24/19 12:25	7439-89-6	
Manganese, Dissolved	**1.5J**	ug/L	5.0	1.1	1		01/24/19 12:25	7439-96-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Sample: 6486-MW-29 **Lab ID: 40182324004** Collected: 01/21/19 12:52 Received: 01/21/19 15:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**376**	ug/L	10.0	2.5	1		01/23/19 16:31	7440-47-3	
Iron, Dissolved	**<35.4**	ug/L	118	35.4	1		01/23/19 16:31	7439-89-6	
Manganese, Dissolved	**<1.1**	ug/L	5.0	1.1	1		01/23/19 16:31	7439-96-5	

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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Sample: 6486-OW-1 **Lab ID: 40182324005** Collected: 01/21/19 11:07 Received: 01/21/19 15:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**<2.5**	ug/L	10.0	2.5	1		01/23/19 16:33	7440-47-3	
Iron, Dissolved	**2620**	ug/L	118	35.4	1		01/23/19 16:33	7439-89-6	
Manganese, Dissolved	**27.7**	ug/L	5.0	1.1	1		01/23/19 16:33	7439-96-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Sample: 6486-OW-2 **Lab ID: 40182324006** Collected: 01/21/19 09:51 Received: 01/21/19 15:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**4.0J**	ug/L	10.0	2.5	1		01/23/19 16:36	7440-47-3	
Iron, Dissolved	**22100**	ug/L	118	35.4	1		01/23/19 16:36	7439-89-6	
Manganese, Dissolved	**209**	ug/L	5.0	1.1	1		01/23/19 16:36	7439-96-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Sample: 6486-OW-3 **Lab ID: 40182324007** Collected: 01/21/19 10:31 Received: 01/21/19 15:30 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6010 MET ICP, Dissolved	Analytical Method: EPA 6010								
Chromium, Dissolved	**100**	ug/L	10.0	2.5	1		01/23/19 16:38	7440-47-3	
Iron, Dissolved	**158**	ug/L	118	35.4	1		01/23/19 16:38	7439-89-6	
Manganese, Dissolved	**34.8**	ug/L	5.0	1.1	1		01/23/19 16:38	7439-96-5	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

QC Batch: 312077 Analysis Method: EPA 6010
QC Batch Method: EPA 6010 Analysis Description: ICP Metals, Trace, Dissolved
Associated Lab Samples: 40182324001, 40182324002, 40182324003, 40182324004, 40182324005, 40182324006, 40182324007

METHOD BLANK: 1819869 Matrix: Water
Associated Lab Samples: 40182324001, 40182324002, 40182324003, 40182324004, 40182324005, 40182324006, 40182324007

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chromium, Dissolved	ug/L	<2.5	10.0	01/23/19 15:53	
Iron, Dissolved	ug/L	<35.4	118	01/23/19 15:53	
Manganese, Dissolved	ug/L	<1.1	5.0	01/23/19 15:53	

LABORATORY CONTROL SAMPLE: 1819870

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chromium, Dissolved	ug/L	500	486	97	80-120	
Iron, Dissolved	ug/L	5000	4930	99	80-120	
Manganese, Dissolved	ug/L	500	471	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1819871 1819872

Parameter	Units	40182112001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chromium, Dissolved	ug/L	<2.5	500	500	497	499	99	100	75-125	0	20	
Iron, Dissolved	ug/L	3510	5000	5000	8450	8530	99	100	75-125	1	20	
Manganese, Dissolved	ug/L	158	500	500	626	628	94	94	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALIFIERS

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above LOD.

J - Estimated concentration at or above the LOD and below the LOQ.

LOD - Limit of Detection adjusted for dilution factor, percent moisture, initial weight and final volume.

LOQ - Limit of Quantitation adjusted for dilution factor, percent moisture, initial weight and final volume.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected at or above the adjusted LOD.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

LABORATORIES

PASI-G Pace Analytical Services - Green Bay

Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 6486 FORMER APPLETON WIRE
Pace Project No.: 40182324

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
40182324001	**6486-MW-19**	EPA 6010	312077		
40182324002	**6486-MW-20**	EPA 6010	312077		
40182324003	**6486-MW-26**	EPA 6010	312077		
40182324004	**6486-MW-29**	EPA 6010	312077		
40182324005	**6486-OW-1**	EPA 6010	312077		
40182324006	**6486-OW-2**	EPA 6010	312077		
40182324007	**6486-OW-3**	EPA 6010	312077		

Pace Analytical®
www.pacelabs.com

UPPER MIDWEST REGION
MN: 612-607-1700 WI: 920-469-2436

Page 1 of 1

40182324

CHAIN OF CUSTODY

*Preservation Codes
A=None B=HCL C=H2SO4 D=HNO3 E=DI Water F=Methanol G=NaOH
H=Sodium Bisulfate Solution I=Sodium Thiosulfate J=Other

(Please Print Clearly)	
Company Name:	Enviroforensics
Branch/Location:	Waukesha, WI
Project Contact:	W. Fassbender / N. Duda
Phone:	414-982-3988
Project Number:	6486
Project Name:	Former Appleton Wire
Project State:	WI
Sampled By (Print):	Nathan Duda
Sampled By (Sign):	
PO #:	2018-1606
Regulatory Program:	

Quote #:	
Mail To Contact:	Same
Mail To Company:	
Mail To Address:	
Invoice To Contact:	Same
Invoice To Company:	
Invoice To Address:	
Invoice To Phone:	

Data Package Options (billable)
☐ EPA Level III
☐ EPA Level IV

MS/MSD
☐ On your sample (billable)
☐ NOT needed on your sample

Matrix Codes
A = Air, B = Biota, C = Charcoal, O = Oil, S = Soil, SI = Sludge, W = Water, DW = Drinking Water, GW = Ground Water, SW = Surface Water, WW = Waste Water, WP = Wipe

PACE LAB #	CLIENT FIELD ID	COLLECTION DATE	COLLECTION TIME	MATRIX	Analyses Requested: FILTERED? (YES/NO) Y/N	Y	N							CLIENT COMMENTS	LAB COMMENTS (Lab Use Only)	Profile #
					PRESERVATION (CODE)* Pick Letter	D	B									
						Dis. Cr, Fe, Mn	Dis chromium									
001	6486-MW-19	1/21	1210	GW		X										
002	6486-MW-20	1/21	1407	GW		X										
003	6486-MW-26	1/21	1329	GW		X										
004	6486-MW-29	1/21	1252	GW		X										
005	6486-OW-1	1/21	1107	GW		X										
006	6486-OW-2	1/21	951	GW		X										
007	6486-OW-3	1/21	1031	GW		X										
008	6486-TB	—	—	—			X									

Rush Turnaround Time Requested - Prelims
(Rush TAT subject to approval/surcharge)
Date Needed:

Transmit Prelim Rush Results by (complete what you want):

Email #1:	
Email #2:	
Telephone:	
Fax:	

Samples on HOLD are subject to special pricing and release of liability

Relinquished By:	Date/Time:	Received By:	Date/Time:
	1/21/19 1530	Susan K Uffie Pace	1-21-19 1530
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:

PACE Project No. 40182324

Receipt Temp = ROI °C

Sample Receipt pH OK / Adjusted

Cooler Custody Seal Present / ~~Not Present~~ Intact / Not Intact

Version 6.0 06/14/06

C019a(27Jun2006)

ORIGINAL

Pace Analytical Services, LL
1241 Bellevue Street Suite
Green Bay, WI 5430

Sample Preservation Receipt Form

Client Name: Enviroforensics Project # 401823 24

All containers needing preservation have been checked and noted below: ☑Yes ☐No ☐N/A

Lab Lot# of pH paper: 10452681 Lab Std #ID of preservation (if pH adjusted):

Initial when completed: CW Date/ Time:

Pace Lab #	Glass							Plastic							Vials						Jars			General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP2N	BP2Z	BP3U	BP3C	BP3N	BP3S	DG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	WGFU	WPFU	SP5T	ZPLC	GN							
001													1																	X		2.5 / 5 / 10
002													1																	X		2.5 / 5 / 10
003													1																	X		2.5 / 5 / 10
004													1																	X		2.5 / 5 / 10
005													1																	X		2.5 / 5 / 10
006													1																	X		2.5 / 5 / 10
007													1																	X		2.5 / 5 / 10
008																		1														2.5 / 5 / 10
009																																2.5 / 5 / 10
010																																2.5 / 5 / 10
011																																2.5 / 5 / 10
012																																2.5 / 5 / 10
013																																2.5 / 5 / 10
014																																2.5 / 5 / 10
015																																2.5 / 5 / 10
016																																2.5 / 5 / 10
017																																2.5 / 5 / 10
018																																2.5 / 5 / 10
019																																2.5 / 5 / 10
020																																2.5 / 5 / 10

Exceptions to preservation check: (VOA), Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other: _____ Headspace in VOA Vials (>6mm) : ☐Yes ☐No ☑N/A ***If yes look in headspace column**

AG1U	1 liter amber glass	BP1U	1 liter plastic unpres	DG9A	40 mL amber ascorbic	JGFU	4 oz amber jar unpres
AG1H	1 liter amber glass HCL	BP2N	500 mL plastic HNO3	DG9T	40 mL amber Na Thio	WGFU	4 oz clear jar unpres
AG4S	125 mL amber glass H2SO4	BP2Z	500 mL plastic NaOH, Znact	VG9U	40 mL clear vial unpres	WPFU	4 oz plastic jar unpres
AG4U	120 mL amber glass unpres	BP3U	250 mL plastic unpres	VG9H	40 mL clear vial HCL		
AG5U	100 mL amber glass unpres	BP3C	250 mL plastic NaOH	VG9M	40 mL clear vial MeOH	SP5T	120 mL plastic Na Thiosulfate
AG2S	500 mL amber glass H2SO4	BP3N	250 mL plastic HNO3	VG9D	40 mL clear vial DI	ZPLC	ziploc bag
BG3U	250 mL clear glass unpres	BP3S	250 mL plastic H2SO4			GN:	

1540

Sample Condition Upon Receipt Form (SCUR)

Project #:

WO# : 40182324

40182324

Client Name: Enviroforensics

Courier: ☐ CS Logistics ☐ Fed Ex ☐ Speedee ☐ UPS ☐ Waltco ☒ Client ☐ Pace Other: _____

Tracking #: _____

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Custody Seal on Samples Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☒ None ☐ Other _____

Thermometer Used SR - N/A **Type of Ice:** (Wet) Blue Dry None ☒ Samples on ice, cooling process has begun

Cooler Temperature Uncorr: ROI /Corr:

Temp Blank Present: ☐ yes ☒ no **Biological Tissue is Frozen:** ☐ yes ☐ no

Temp should be above freezing to 6°C.
Biota Samples may be received at ≤ 0°C.

Person examining contents:
Date: 1-21-19
Initials:

Chain of Custody Present:	☑Yes ☐No ☐N/A	1.
Chain of Custody Filled Out:	☑Yes ☐No ☐N/A	2.
Chain of Custody Relinquished:	☑Yes ☐No ☐N/A	3.
Sampler Name & Signature on COC:	☑Yes ☐No ☐N/A	4.
Samples Arrived within Hold Time:	☑Yes ☐No	5.
- VOA Samples frozen upon receipt	☐Yes ☐No	Date/Time:
Short Hold Time Analysis (<72hr):	☐Yes ☑No	6.
Rush Turn Around Time Requested:	☐Yes ☑No	7.
Sufficient Volume: For Analysis: ☑Yes ☐No MS/MSD: ☐Yes ☑No ☐N/A		8.
Correct Containers Used:	☑Yes ☐No	9.
-Pace Containers Used:	☑Yes ☐No ☐N/A	
-Pace IR Containers Used:	☐Yes ☐No ☑N/A	
Containers Intact:	☑Yes ☐No	10.
Filtered volume received for Dissolved tests	☑Yes ☐No ☐N/A	11.
Sample Labels match COC: -Includes date/time/ID/Analysis Matrix: W	☑Yes ☐No ☐N/A	12.
Trip Blank Present:	☑Yes ☐No ☐N/A	13. Not applicable for requested analysis
Trip Blank Custody Seals Present	☑Yes ☐No ☐N/A	
Pace Trip Blank Lot # (if purchased): _____		1-21-19 SW

Client Notification/ Resolution: If checked, see attached form for additional comments ☐

Person Contacted: _____ Date/Time: _____

Comments/ Resolution: _____

Project Manager Review: RMR for DM **Date:** 01/21/19

APPENDIX D

SPLP and Concrete TCLP Analytical Laboratory Reports

Synergy Environmental Lab, INC

1990 Prospect Ct., Appleton, WI 54914 *P 920-830-2455 * F 920-733-0631

WAYNE FASSBENDER
ENVIROFORENSICS
N16 W 23390 STONERIDGE DR
WAUKESHA WI 53188

Report Date *07-Feb-19*

Project Name LUVATA
Project # 6486 PO#2018-1604
Invoice # E35737

Lab Code 5035737A
Sample ID 6486-PT-1 1-3
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	85.7	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	523	mg/kg	32	106.5	50	7196A		1/29/2009	ESC	1 64
SPLP Chromium	14700	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	3470	mg/Kg	0.4	1.3	5	6010B		1/30/2019	CWT	1 49

Lab Code 5035737B
Sample ID 6486-PT-1 3-5
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	80.3	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	390	mg/kg	32	106.5	50	7196A		1/29/2009	ESC	1
SPLP Chromium	10300	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	3800	mg/Kg	0.4	1.3	5	6010B		1/30/2019	CWT	1 49

Project Name LUVATA **Invoice #** E35737
Project # 6486 PO#2018-1604

Lab Code 5035737C
Sample ID 6486-PT-2 1-3
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	73.5	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	11.2	mg/kg	0.64	2.13	1	7196A		1/29/2009	ESC	1
SPLP Chromium	89.0	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	510	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Lab Code 5035737D
Sample ID 6486-PT-2 3-5
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	83.3	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	1.44 "J"	mg/kg	0.64	2.13	1	7196A		1/29/2009	ESC	1
SPLP Chromium	9.2	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	463	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Lab Code 5035737E
Sample ID 6486-PT-3 1-3
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	84.9	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	< 0.64	mg/kg	0.64	2.13	1	7196A		1/29/2009	ESC	1
SPLP Chromium	< 3.9	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	24.3	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Project Name LUVATA **Invoice #** E35737
Project # 6486 PO#2018-1604

Lab Code 5035737F
Sample ID 6486-PT-3 3-5
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	84.5	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	3.17	mg/kg	0.64	2.13	1	7196A		1/29/2009	ESC	1
SPLP Chromium	214	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	570	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Lab Code 5035737G
Sample ID 6486-PT-4 1-3
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	86.6	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	76.3	mg/kg	3.2	10.65	5	7196A		1/29/2009	ESC	1
SPLP Chromium	3090	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	718	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Lab Code 5035737H
Sample ID 6486-PT-4 3-5
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	91.9	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	13.8	mg/kg	0.64	2.13	1	7196A		1/29/2009	ESC	1
SPLP Chromium	173	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	143	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Project Name LUVATA **Invoice #** E35737
Project # 6486 PO#2018-1604

Lab Code 5035737I
Sample ID 6486-BG-1 1-5
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	97.7	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	31.4	mg/kg	0.64	2.13	1	7196A		1/29/2009	ESC	1
SPLP Chromium	1810	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	55.7	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Lab Code 5035737J
Sample ID 6486-BG-2 1-3
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	80.6	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	170	mg/kg	3.2	10.65	5	7196A		1/29/2009	ESC	1
SPLP Chromium	2010	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	2070	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Lab Code 5035737K
Sample ID 6486-BG-2 3-5
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
General										
General										
Solids Percent	83.7	%			1	5021		1/23/2019	NJC	1
Inorganic										
Metals										
Chromium, Hexavalent	< 0.64	mg/kg	0.64	2.13	1	7196A		1/29/2009	ESC	1
SPLP Chromium	315	ug/L	3.9	12.8	1	200.7		2/6/2019	CWT	1
Chromium, Total	609	mg/Kg	0.08	0.26	1	6010B		1/30/2019	CWT	1

Lab Code 5035737L
Sample ID 6486-CCS-1
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic										
Metals										
TCLP Chromium	< 0.1	mg/l		0.1	1	6010B		1/31/2019	ESC	1

Project Name LUVATA **Invoice #** E35737
Project # 6486 PO#2018-1604

Lab Code 5035737M
Sample ID 6486-CCS-2
Sample Matrix Soil
Sample Date 1/21/2019

	Result	Unit	LOD	LOQ	Dil	Method	Ext Date	Run Date	Analyst	Code
Inorganic Metals										
TCLP Chromium	< 0.1	mg/l		0.1	1	6010B		1/31/2019	ESC	1

"J" Flag: Analyte detected between LOD and LOQ LOD Limit of Detection LOQ Limit of Quantitation

Code	*Comment*
1	Laboratory QC within limits.
49	Sample diluted to compensate for matrix interference.
64	Spike recovery failed due to matrix interference.

CWT denotes sub contract lab - Certification #445126660

ESC denotes sub contract lab - Certification #998093910

All solid sample results reported on a dry weight basis unless otherwise indicated. All LOD's and LOQ's are adjusted for dilutions but not dry weight. Subcontracted results are denoted by SUB in the analyst field.

Authorized Signature

CHAIN OF CUSTODY RECORD

PO # 2018-1604

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 3651

Page 1 of 2

Sample Handling Request
____ Rush Analysis Date Required ____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #	
Account No. :	Quote No.:
Project #: 6486	
Sampler: (signature)	
Project (Name / Location): Albany-Lovata / Appleton	
Reports To: K. VanderHeiden / W. Fassbender	Invoice To:
Company EnviroForensics, LLC	Company
Address N16 W23390 Stone Ridge Dr Suite G	Address
City State Zip Waukesha, WI 53188	City State Zip
Phone (262) 290-4001	Phone
FAX	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation	DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	8-RCRA METALS	Total chromium	Hexavalent chromium	Leachable chromium PAL					PID/ FID
0357371	6486-PT-1(1-3)	1/21	1315	X		N	2	S	-															X	X	X					
B	6486-PT-1(3-5)	1/21	1335	X		N	2	S	-															X	X	X					
C	6486-PT-2(1-3)	1/21	1500	X		N	2	S	-															X	X	X					
D	6486-PT-2(3-5)	1/21	1525	X		N	2	S	-															X	X	X					
E	6486-PT-3(1-3)	1/21	1120	X		N	2	S	-															X	X	X					
F	6486-PT-3(3-5)	1/21	1135	X		N	2	S	-															X	X	X					
G	6486-PT-4(1-3)	1/21	1640	X		N	2	S	-															X	X	X					
H	6486-PT-4(3-5)	1/21	1700	X		N	2	S	-															X	X	X					
I	6486-BG-1(1-3)	1/22	1150	X		N	2	S	-															X	X	X					
	~~6486-BG-1(3-5)~~	1/21		X		N	2	S	-																						

Analysis Requested | Other Analysis

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Sample Integrity - To be completed by receiving lab.
Method of Shipment:
Temp. of Temp. Blank ____ °C On Ice: X
Cooler seal intact upon receipt: X Yes ____ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	1405	1/22/19			

Received in Laboratory By: Time: 2:10 Date: 1/22/19

CHAIN OF CUSTODY RECORD

PO# 2018-1604

Synergy Environmental Lab, Inc.

1990 Prospect Ct. • Appleton, WI 54914
920-830-2455 • FAX 920-733-0631

Chain # No 36[illegible]0

Page 2 of 2

Sample Handling Request
____ Rush Analysis Date Required ____
(Rushes accepted only with prior authorization)
X Normal Turn Around

Lab I.D. #	
Account No. :	Quote No.:
Project #: 6486	
Sampler: (signature)	
Project (Name / Location): Albany - Luvata / Appleton	
Reports To: K. Vander Heiden / W. Fassbender	Invoice To:
Company EnviroForensics, LLC	Company
Address N16 W23390 Stone Ridge Dr	Address
City State Zip Suite G Waukesha, WI 53188	City State Zip
Phone (262) 290-4031	Phone
FAX	FAX

Lab I.D.	Sample I.D.	Collection Date	Collection Time	Comp	Grab	Filtered Y/N	No. of Containers	Sample Type (Matrix)*	Preservation
635737									
J	6486-BG-2(1-3)	1/22	1220	X		N	2	S	—
K	6486-BG-2(3-5)	1/22	1230	X		N	2	S	—
L	6486-CCS-1	1/22	0930	X		N	1	S	—
M	6486-CCS-2	1/22	1030	X		N	1	S	—

Analysis Requested

DRO (Mod DRO Sep 95)	GRO (Mod GRO Sep 95)	LEAD	NITRATE/NITRITE	OIL & GREASE	PAH (EPA 8270)	PCB	PVOC (EPA 8021)	PVOC + NAPHTHALENE	SULFATE	TOTAL SUSPENDED SOLIDS	VOC DW (EPA 524.2)	VOC (EPA 8260)	8-RCRA METALS	Total Chromium	Hexavalent Chromium	Leachable chromium	TCLP chromium				PID/ FID
														X	X	X					
														X	X	X					
														X	X	X					
																	X				
																	X				

Other Analysis

Comments/Special Instructions (*Specify groundwater "GW", Drinking Water "DW", Waste Water "WW", Soil "S", Air "A", Oil, Sludge etc.)

Sample Integrity - To be completed by receiving lab.
Method of Shipment: Client
Temp. of Temp. Blank ___ °C On Ice: X
Cooler seal intact upon receipt: X Yes ___ No

Relinquished By: (sign)	Time	Date	Received By: (sign)	Time	Date
	1405	1/22/19			

Received in Laboratory By: Client Time: 2:10 Date: 1/22/19

APPENDIX E

Sub-slab Vapor Intrusion Sampling Procedures

High Purge Volume Vapor Intrusion Assessment Procedures
Albany International, Appleton, Wisconsin

Extraction Point Installation

These instructions apply to each extraction point.

1. Core a 2-inch diameter hole through the concrete floor.
2. Remove soil to a depth of 1-foot below the slab using a hand auger and/or vacuum.
3. Cut an 8-inch piece of slotted PVC well screen and add a slip cap to one end
4. Use a coupler to connect a 12-inch long piece of PVC riser to the screen (do not glue)
5. Place the screen and riser assembly in the hole and backfill with sand to the bottom of the slab.
6. Add hydraulic cement around the riser, filling the gap from the top of sand to the top of the floor slab.
7. Allow the cement to cure

Sub-Slab Vapor Sampling

1. Install Vapor Pins for sub-slab vacuum measurements as prescribed in the Work Scope.
2. Ensure that the connections on the High Volume Purge Apparatus (shown on **Figure 1**) are as tight as possible.
3. Connect the apparatus to the riser pipe (do not glue).
4. Start the vacuum check for leaks along the entire sample train (i.e. from the floor slab seal to the vacuum itself) using a smoke pen and visual observation.
    a. Take photos of the leak test procedure.
    b. If leaks are detected (i.e. if smoke is visibly sucked in to the sample train), shut down the vacuum and make the necessary repairs or seals.
5. After the leak test is completed, record initial measurements on the field data collection sheet (**attached**). Data to be recorded consists of:
    a. Time
    b. System vacuum (gauge reading)
    c. Flow rate (anemometer measurement)
    d. PID reading from Tedlar bag
    e. Oxygen and carbon dioxide readings from Tedlar bag
    f. Vacuum at Vapor Pins
6. Connect a 6-liter Summa canister to the sampling port using new LDPE tubing and a 200 ml/min regulator.
7. Perform a negative pressure test to confirm there are no leaks in the canister connections.
8. Open the canister valve to start sampling – the canister should fill in approximately 30 minutes.
9. Record measurements on the data collection form every 5 minutes during sample collection
10. Stop sample collection when the Summa canister gauge reaches 2-3 in Hg.
11. Collect a final set of operational measurements.
12. Shut down vacuum and repeat the process at the next extraction point.

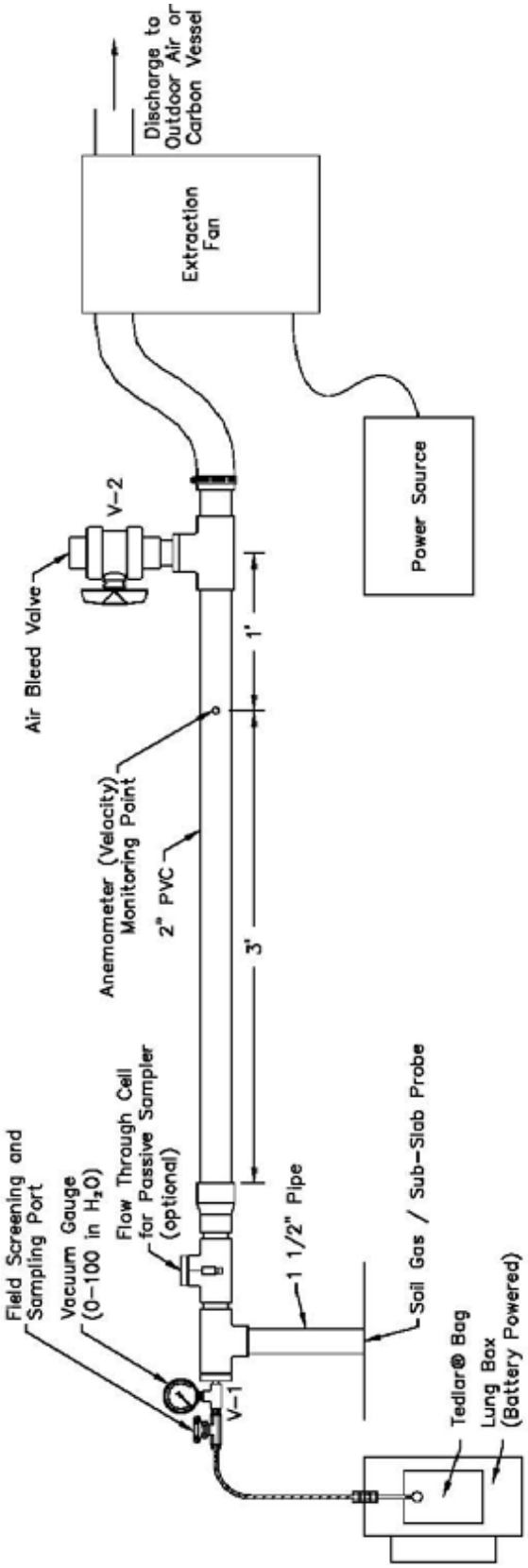

Figure 1 - High Volume Purge Apparatus Diagram

High Purge Volume Vapor Intrusion Assessment - Data Collection Form

Albany International

Extraction Point	Time (hh:mm)	Flow Rate (fpm)	PID Reading (ppm)	O2 (%)	CO2 (%)	Vacuum (in H_2O)								Notes
						VP-1	VP-2	VP-3	VP-4	VP-	VP-	VP-	VP-	
HPV-1														
														Initial Canister Vac:
														Final Canister Vac:
														Canister ID:
														Flow Controller ID:
HPV-2														
														Initial Canister Vac:
														Final Canister Vac:
														Canister ID:
														Flow Controller ID:
HPV-3														
														Initial Canister Vac:
														Final Canister Vac:
														Canister ID:
														Flow Controller ID: