BROWNFIELDS ASSESSMENT REPORT

UNITED METAL FINISHING
GREENSBORO, NORTH CAROLINA

Prepared for:

UNITED METAL FINISHING, INC.
GREENSBORO, NORTH CAROLINA

Prepared by:

ECS CAROLINAS, LLP
GREENSBORO, NORTH CAROLINA

February 17, 2012

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February 17, 2012

Mr. Claude Church
United Metal Finishing, Inc.
133 Blue Bell Road
Greensboro, North Carolina 27406

Reference: Brownfields Assessment Report
United Metal Finishing, Inc.
133/137 Blue Bell Road
Greensboro, Guilford County, North Carolina
Brownfields Project Number – 15002-11-41
ECS Project 09.11981E

Dear Mr. Church:

As authorized by your acceptance of our Proposal 09.17497-PR, dated June 20, 2011, ECS Carolinas, LLP (ECS) is pleased to submit our Brownfields Assessment Report of the United Metal Finishing, Inc.'s operations located at 133 and 137 Blue Bell Road, Greensboro, Guilford County North Carolina.

We appreciate this opportunity to provide our environmental related services on this project. Please contact us if you have any questions

Sincerely,

ECS CAROLINAS, LLP

Toby S. Benfield
Environmental Manager

John M. Stewart, P. G.
Principal Geologist

NORTH CAROLINA LICENSED GEOLOGIST SEAL 1046 JOHN M. STEWART
2/17/2012

Cc: Mr. George House, Brooks Pierce
Ms. Sharon Eckard – NCDENR - North Carolina Brownfields Program
Mr. Scott Lowrie
Ms. Mindy Lepard, Guilford County Department of Environmental Health

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1.0 SITE DESCRIPTION

The site is located at 133 and 137 Bluebell Road in Greensboro, North Carolina (Figure 1). The site contains an office and warehouse building that is located at 137 Bluebell Road and three process buildings that are located at 133 Bluebell Road. Several storage buildings are located on the north side of the office/warehouse building. The processes that take place in the three buildings consist of plating, anodizing, and electrolysis of various metal parts. Various types of chrome plating take place in the plating building and nickel and zinc anodizing and electrolysis take place in the other two buildings. The area around and between the buildings is covered by asphalt, whereas the area east of the warehouse is covered with gravel. Grass lawn, trees, and landscape plants are located along the south side of the property between the buildings and street. The building locations are shown on Plate 1.

ECS previously prepared a Phase I ESA of the site (ECS Report No. 09.11981 dated January 20, 2006). According to the Phase I ESA, the site has been occupied by a steel manufacturing company, an ammunitions manufacturer, and a plating facility. An on-site reconnaissance of the facility revealed that the concrete floors in the processing buildings were stained and covered with pools of liquid mixtures containing various substances including, but not limited to, nickel, methyl ethyl ketones, sulfuric acid and alodine.

Based on the findings of the Phase I ESA, ECS performed a Phase II Environmental Site Assessment (ECS Report No. 09.11981A dated March 5, 2007) at the site in February 2007. Soil borings were drilled inside and north of the processing/plating building as well as surrounding the hazardous material storage and containment area. Temporary groundwater monitoring wells were installed north of the processing/plating building, south of the anodizing/electrolysis building and along the eastern property boundary. Elevated levels of chromium were identified in the soils beneath the floor slab in the vicinity of the electroplating baths and to the north of the plating building and in groundwater just north of the processing building. The results of the soil and groundwater sampling are included in Tables 1 and 2.

Based on the findings of the Phase II ESA, an application for admission into the North Carolina Brownfields Program was submitted on January 24, 2011. On March 9, 2011, the North Carolina Department of Environment and Natural Resources (NCDENR) issued a notice stating the project was eligible for entry into the North Carolina Brownfields Program for continued evaluation for a Brownfields Agreement on a conditional basis. According to the notice, the purpose of the assessment was to establish a statistical representative base line of suspected contaminants in the soil based on current and past uses so that it would be possible to evaluate potential future impact at the site from proposed building expansion and expansion of the existing operations. A work plan dated August 31, 2011 to assess the various areas of concern was developed and approved by the NCDENR Brownfields Section.

It was the purpose of this study to establish current levels of metals and volatile organic compounds (VOCs) in the soil in the current manufacturing areas, proposed development areas, and groundwater. Because of the current and proposed use of the process buildings, the metals of concern were cadmium, chromium (both trivalent and hexavalent), copper, lead, nickel, tin, and zinc. Mr. Lowrie confirmed that the remaining metals identified on the Priority Pollutant metal screen (arsenic, beryllium, mercury, selenium, and thallium) would not be used in future operations at the site. Soil sample locations were established using Pacific Northwest National Laboratory's Visual Sampling Plan (VSP) Version 6.0 software. VSP selects the appropriate number and location of environmental samples to ensure that the results of statistical tests performed to provide input to risk decisions have the required confidence and performance (VSP). VSP provides sample size equations needed by specific statistical tests appropriate for specific environmental sampling objectives (VSP). It also provides data quality assessment and statistical analysis functions to support evaluation of the data and determine whether the data support decisions regarding sites suspected of contamination (VSP).

In developing the sampling plan, we selected a plan which would calculate a two-side confidence interval for the population median. The site survey was downloaded into the program and five areas were selected: chromium plating, nickel anodizing, zinc plating, and two proposed development areas. Input parameters included a 95 percent confidence interval, the data would not be normally distributed, and the plan would use ordinary sampling. The sample locations were selected in random mode. As a result, several sample locations in each of the operational buildings fell in areas occupied by existing structures such as plating tanks. For these locations, the locations were moved to the closest accessible point. In addition to the randomly selected sampling locations, several sample locations in each building were selected (judgmental) based on the regulatory agency's request. Information regarding the each sampling plan is included in Appendix A.

2.0 FIELD INVESTIGATION

2.1 Soil Assessment

An ECS professional mobilized to the site on June 7, 2001 to perform shallow soil borings in the chromium plating building, anodizing building, and on undeveloped portion of the property using a decontaminated hand auger.

An ECS professional met Probe Technology, Inc. at the site between August 15 and 19, 2011 to drill soil borings using a Geoprobe® drill rig or decontaminated hand auger.

2.1.1 Chromium Plating Building

On June 7, 2011, an ECS professional cored through the concrete floor slab using a core drill to expose the subgrade in three locations. Soil borings (HA-1 through HA-3) were drilled using a decontaminated hand auger to depths of two to five feet below ground surface (bgs). Soil collected with the hand auger was placed in a stainless steel bowl and mixed thoroughly with a stainless steel spoon. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the total chromium and hexavalent chromium (Cr^{+6}). The approximate boring locations are shown on Figure 2.

On August 15, 2011, Probe Technology, Inc. drilled seventeen soil borings (GP-26 through GP-42) through the concrete floor slab in the chromium plating building (Figure 2). The direct push rig was used to core through the concrete where possible. A macrocore sampler was pushed to a depth of two feet bgs in areas adjacent to floor trenches and three feet bgs in areas adjacent to sumps. The bottom twelve inches of soil collected in the macrocore tube was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. If the Geoprobe could not be used due to access restrictions, a decontaminated hand auger was used to collect the sample. Prior to collecting the sample, a hole was cored through the concrete floor with a core drill. The sample collection procedures were the same. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and hexavalent chromium (Cr^{+6}).

2.1.2 Anodizing Building

On June 7, 2011, an ECS professional cored through the concrete floor slab using a core drill to expose the subgrade in one location. The soil boring (HA-4) was drilled using a decontaminated hand auger to a depth of two feet bgs. Soil collected with the hand auger was placed in a stainless steel bowl and mixed thoroughly with a stainless steel spoon. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the total chromium and hexavalent chromium (Cr^{+6}). The approximate boring locations are shown on Figure 3.

On August 15, 2011, Probe Technology, Inc. drilled seventeen soil borings (GP-9 through GP-25) through the concrete floor slab in the anodizing building (Figure 3). The direct push rig was used to core through the concrete where possible. A macrocore sampler was pushed to a depth of two feet bgs in areas adjacent to floor trenches and three feet bgs in areas adjacent to sumps. The bottom twelve inches of soil collected in the macrocore tube was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. If the Geoprobe could not be used due to access restrictions, a decontaminated hand auger was used to collect the sample. Prior to collecting the sample, a hole was cored through the concrete floor with a core drill. The sample collection procedures were the same. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and Cr^{+6}.

2.1.3 Electrolysis Building

On August 19, 2011, Probe Technology, Inc. drilled sixteen soil borings (GP-43 through GP-58) through the concrete floor slab in the zinc plating building (Figure 4). The direct push rig was used to core through the concrete where possible. A macrocore sampler was pushed to a depth of two feet bgs in areas adjacent to floor trenches and three feet bgs in areas adjacent to sumps. The bottom twelve inches of soil collected in the macrocore tube was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. If the Geoprobe could not be used due to access restrictions, a decontaminated hand auger was used to collect the sample. Prior to collecting the sample, a hole was cored through the concrete floor with a core drill. The sample collection procedures were the same. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and Cr^{+6}.

2.1.4 Proposed Development Area

On August 15, 2011, Probe Technology, Inc. drilled eight soil borings (GP-1 through GP-8) through the gravel of the two proposed development area (Figures 5 and 6). A macrocore sampler was pushed to a depth of two feet bgs. The bottom twelve inches of soil collected in the macrocore tube was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and Cr^{+6}. Prior to placing the sample in the bowl, a portion of the sample was collected as soon as possible for volatile hydrocarbon analysis. The sample was collected with a Terracore sampler and placed in laboratory supplied bottles. The samples were analyzed using EPA Method 8260.

2.1.5 Background Soil Sampling

On June 7, 2011, an ECS professional drilled one soil boring (BKG) in an undeveloped portion of the site using a decontaminated hand auger to a depth of three feet bgs. Soil collected with the hand auger was placed in a stainless steel bowl and mixed thoroughly with a stainless steel spoon. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the total chromium and hexavalent chromium (Cr^{+6}).

On August 15, 2011, Probe Technology, Inc. drilled four soil borings (BKG-1 through BKG-4) in undeveloped portions of the site to determine background levels to compare to analytical results from within the target areas. The sample locations are shown on Figure 7. A macrocore sampler was pushed to a depth of two feet bgs. The bottom twelve inches of soil collected in the macrocore tube was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and Cr^{+6}. Prior to placing the sample in the bowl, a portion of the sample was collected as soon as possible for volatile hydrocarbon analysis. The sample was collected with a Terracore sampler and placed in laboratory supplied bottles. The samples were analyzed using EPA Method 8260.

2.1.6 Waste Water Treatment Area

On August 19, 2011, Probe Technology, Inc. drilled one soil boring (GP-58) in the waste water treatment area. The sample location is shown on Figure 2. The direct push rig was used to core through the concrete and the macrocore sampler was pushed to a depth of three feet bgs. The bottom twelve inches of soil collected in the macrocore tube was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and Cr^{+6}.

2.1.7 Drainage Ditch

On August 17, 2011, an ECS professional drilled three soil borings in the drainage ditch (DD-1 through DD-3) located behind the zinc and nickel buildings using a decontaminated hand auger (Figures 3 and 4). The flow direction of the drainage ditch based on surface topography is from east to west. The borings were augered to a depth of two feet bgs The bottom twelve inches of soil collected in the auger was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. A portion of the composite sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and Cr^{+6}.

2.1.8 Dust Collector

On August 19, 2011, an ECS professional drilled three soil borings (DC-1 through DC-3) in the area around the dust collector using a decontaminated hand auger. The approximate boring locations are shown on Figure 2. The borings were augered to a depth of one-foot bgs. The soil collected in the augers was placed in a stainless steel bowl and thoroughly mixed with a stainless steel spoon. A portion of the composite sample was placed in a laboratory-supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for TCLP RCRA metals.

2.2 Groundwater Assessment

Five permanent groundwater monitoring wells were installed on August 25, 2011 and a sixth monitoring well was installed on September 26, 2011 to assess groundwater quality at the site. The soil borings to install the wells were drilled using the Geoprobe® equipped with 4.0-inch O.D augers. The borings were drilled to an approximate depth of 20 feet. Soil samples were obtained starting at the land surface with a split spoon sampler to boring termination. The soil in each boring was classified and described on a boring log. The approximate locations are shown on Figure 7. A monitoring well constructed of 2-inch diameter Schedule 40 PVC screen and riser was installed in each boring. The wells were constructed with 10 feet of machine slotted PVC screen (0.01 inch slot) positioned to intersect the water table at the time of drilling. A clean sand filter pack was placed around the screen. The sand pack was capped with at least a two foot bentonite seal. The remaining well annulus was filled with cement grout. A protective steel cover was installed over each well with an approximate 1-foot by 1-foot concrete pad. A copy of the boring logs and well construction diagrams are included in Appendix B.

The depth to groundwater from the top of the PVC casing was measured to the nearest 0.01 foot using an electronic water level meter. The wells were purged and sampled using low flow techniques. Geochemical parameters (pH, temperature, dissolved oxygen, ORP, and specific conductivity) were recorded. The groundwater sample from each well was appropriately packaged and submitted to a North Carolina certified laboratory to be analyzed for 13 priority pollutant metals plus tin (Sn), hexavalent chromium (Cr^{+6}) and for volatile hydrocarbons using EPA Method 8260.

A North Carolina licensed surveyor surveyed the top of well casing (TOC) and land surface elevation of the newly installed monitoring wells. The well locations were located relative to site landmarks and placed on the site survey (Plate 1). Investigative derived waste (IDW) including;

drill cuttings and development and decontamination water was placed in 55-gallon drums and stored in a centralized location on site for later disposal.

2.3 Investigative Derived Waste (IDW) Disposal Services

Soil cuttings, decon water, and groundwater generated during the soil borings and construction of the groundwater monitoring wells were placed in NCDOT 55-gallon steel drums for disposal. The drums were left in a centralized location on-site for disposal. ECS contracted with a waste disposal contractor qualified to dispose of the investigative derived waste generated during soil and groundwater investigation. A copy of the disposal manifest is included in Appendix C.

2.4 Quality Assurance/Quality Control

To monitor field collection techniques and internal laboratory quality controls the following quality control measures were conducted:

To help determine that the primary samples were not contaminated during transport, a trip blank was included in the collection of groundwater samples submitted for analysis of volatile hydrocarbons.

Laboratory MS/MSD samples were analyzed for the same constituents being analyzed for in the investigation.

Duplicate samples were collected on August 16 from soil boring GP-3 and on August 19 from soil boring GP-49. A portion of the sample was placed in a laboratory supplied bottle, logged onto a chain-of-custody, placed in a cooler, and delivered to a North Carolina certified laboratory to be analyzed for the 13 Priority Pollutant Metals, tin, and Cr^{+6}.

Because of the truncated hold time of groundwater samples to be analyzed for Cr^{+6} and the scheduling of laboratory couriers to collect groundwater samples within the hold time allowed, groundwater duplicates were not collected.

Generally, the samples arrived at the laboratory within the proper temperature and hold times. However, in several instances, the temperature in the cooler was 2 to 3 degrees above the recommended NELAC range of 4 degrees plus or minus 2 degrees. The temperatures measured by the laboratory in these three cases ranged between 6.4 and 7.1 (reported in the case narrative as 16 degrees) degrees. Based on follow-up discussions with the laboratory, the slightly elevated temperatures should not affect the concentration of metals in soil.

On several occasions, the laboratory reported numerous data qualifiers associated with the analysis of the matrix spike, matrix spike duplicate, and post spike samples. These qualifiers included estimated concentrations above the calibration range (E), sample concentrations too high for recovery evaluation (MC), and matrix spike outside of the control limits – matrix interference suspected (MI). Follow-up discussion with the laboratory indicated that these issues did not affect the quality of the reported data and the MI flag is not unusual for analysis of metals in soil samples.

2.5 Receptor Survey

To identify potential receptors within one mile of the site, a Brownfields receptor survey was completed.

2.6 Soil Gas Survey

2.6.1 Number and Sample Location

The chrome plating building includes an area approximately 9,600 square feet (80 feet by 120 feet). The northern portion of the building is occupied by plating tanks and the water treatment plant, while the southern portion of the building includes offices, restrooms, storage, and shipping and receiving. Samples were collected from two locations, one near the south end of the area and one near the north end of the area close to the west side of the area (away from the plating tanks). The approximate locations of the samples are shown on Figure 8.

2.6.2 Probe Placement and Sample Collection

Temporary sub-slab vapor probes were placed by drilling a hole through the floor slab at each location. Prior to drilling the probe holes, the floor was inspected for cracks, joints, and other floor penetrations. The holes were placed at least three feet from any of these penetrations, if possible. The holes were 3/8 - inch in diameter and extended through the slab and into the sub-grade material approximately two to three inches. The soil vapor probes were placed in the holes. The probes were constructed of a three-foot length of dedicated ¼ - inch high density polyethylene (HDPE) tubing. The tubing was sealed at the floor surface with a flexible non-VOC emitting material such as pizza dough.

A vacuum pump (Gilean pump) was connected to the tubing to purge the tubing. Three volumes of the tubing was purged prior to sample collection (0.010 liters per foot). Following purging and leak detection, the tubing was connected to a six-liter Summa canister using pressure fittings. The Summa canisters were fitted with a flow regulator. The flow rate for both purging and sample collection was 0.2 liters per minute (30 minutes total sample time). The pressure in the canister was recorded before and after sample collection.

The probes were removed and the holes filled with cement grout following sample collection.

2.6.3 Leak Detection

Prior to collecting the soil vapor samples, laboratory grade helium gas was used as a quality assurance control measure to confirm the integrity of the probe seal. The original work plan called for the use of a plastic sheet to cover the probe location; however, it was decided to use a weighted plastic container because the quality of floor was poor and we were not sure we could obtain a good seal with tape. Therefore, a plastic concrete sample cylinder (approximately 1.75 quarts) was placed and sealed over the sampling point and purged with laboratory grade helium. The probe point tubing and tracer gas tubing were placed through the cylinder wall via 3/16-inch rubber grommets. The cylinder was placed on a 4-inch rubber gasket and held securely to the floor with a heavy weight. During the purging stage, the cylinder was flooded with helium via the hose placed through the cylinder wall. A Model MGD-2002 Multi-Gas Leak detector was connected to the probe tube and the air stream being purged was measured for helium. A helium concentration of less than five percent helium was considered acceptable. If concentrations greater than five percent helium were measured, the probe tube seal was reseated and the leak detection process was repeated.

2.6.4 Sample Analysis

Following sample collection, the canisters were labeled and maintained under chain-of-custody until delivered to Con-test Analytical Laboratory in East Longmeadow, Massachusetts. A Chain-of-Custody document was utilized throughout the collection and transportation of the samples. Each sample was analyzed using EPA Method TO-15. The work plan also called for the samples to be analyzed for radon; however, at the time the samples were collected, a laboratory which could analyze the samples for radon had not been identified.

3.0 RESULTS

3.1 Soil Assessment

3.1.1 Chrome Plating Building

The analysis of samples collected from hand auger samples (HA-1 through HA-3) collected in June 2011 detected concentrations of trivalent chromium (Cr^{+3}) ranging from 13 to 2,200 parts per million (ppm) and hexavalent chromium (Cr^{+6}) ranging from 0.563 to 57.5 ppm. Analysis of the background sample detected 6.1 and 0.537 ppm of Cr^{+3} and Cr^{+6}, respectively. The data are summarized in Table 1.

Analysis of samples collected from the borings drilled in the chrome plating building in August 2011 detected arsenic in one sample above the IHSB's industrial health-based PSRG and the maximum site background concentration. Neither Cr +3 nor Cr +6 were detected above the IHSB's industrial health-based PSRGs. No beryllium, tin, or zinc was detected above the IHSB's industrial health-based PSRGs or maximum background concentration. Lead, silver, selenium, and thallium were detected in one or two location above the maximum background concentration and cadmium, copper, chromium +3 and chromium +6 were detected in five to six locations above the maximum background concentration. Nickel was detected in 12 locations above the maximum background concentration. The sample collected from GP-28 had the highest number of metals above the maximum background concentration and concentrations of most of the metals were generally higher than the other sample locations. Boring location GP-28 was the only sample location which had a metal concentration (As) above the IHSB's Health-based PSRG. The four sample locations (GP-28, GP-29B, GP-31, and GP-34) with the highest chromium +3 are located either near the floor trench, sump, or sump line to the waste water treatment collection sump.

The soil sample locations are shown on Figure 2. The soil analytical results are summarized in Table 3 and the laboratory results are included in Appendix D.

3.1.2 Anodizing Building

Hexavalent chromium was detected above the IHSB's industrial health-based PSRGs and background concentrations in the hand auger sample HA-4 collected in June 2011. The results are summarized in Table 1.

Analysis of samples collected from the borings drilled in August 2011 in the anodizing building detected selenium in two samples and thallium in three samples, and zinc in one sample above the maximum background concentrations. Nickel was detected in eight samples above the maximum background concentration. Hexavalent chromium (Cr^{+6}) was detected above the IHSB's industrial health-based PSRGs and maximum background concentration in the sample collected from GP-25. Arsenic, beryllium, cadmium, copper, lead, tin and chromium +3 were not detected above the IHSB's industrial health-based PSRGs or maximum background concentrations. The sample from GP-25 had the highest concentration of chromium +6 and zinc. It was located near a floor trench in the southeast corner of the building.

The soil sample locations are shown on Figure 3. The soil analytical results are summarized in Table 4 and the laboratory results are included in Appendix D.

3.1.3 Electrolysis Building

Analysis of samples collected from the borings drilled in August 2011 in the zinc plating building detected cadmium, chromium +3, copper, lead, and nickel in samples above the maximum background concentration. Hexavalent chromium (Cr^{+6}) was detected above the IHSB's industrial health-based PSRGs in three samples and above maximum background concentration in a fourth sample. Arsenic, beryllium, zinc, silver, selenium, tin, and thallium were not detected above the IHSB's industrial health-based PSRGs or maximum background concentration. The chromium +6 was detected in three samples all located around tanks (T48) located in the south central portion of the building and the highest concentration of nickel were detected in samples collected around tanks T44 and T45 and the sump near tank T45 in the northeast corner of the building.

The soil sample locations are shown on Figure 4. The soil analytical results are summarized in Table 5 and the laboratory results are included in Appendix D.

3.1.4 Proposed Development Area

Analysis of samples collected from the borings drilled in the proposed development areas did not detect any metals above the IHSB's health-based PSRGs. Copper was detected in one sample above the maximum background concentrations and lead was detected in four samples above the maximum background concentrations. The remaining metals were all detected below the maximum background concentrations. The analysis did not detect any volatile organic compounds (VOCs) above the laboratory method detection limits. The soil sample locations are shown on Figures 5 and 6. The soil analytical results are summarized in Table 6 and the laboratory results are included in Appendix D.

3.1.5 Background Soil Sampling

Soil samples collected from borings drilled in areas considered as background appeared generally consistent with regard to soil classification, grain size, material composition, texture and color to soil samples collected in other areas of the site. Analysis of samples collected from the borings drilled in areas considered as background did not detect any volatile organic compounds (VOCs) above the laboratory method detection limits. The minimum and maximum laboratory results for each specific compound detected in background soil samples were listed to provide a range value for comparison. The soil sample locations are shown on Figure 7. The soil analytical results are summarized in Table 6 and the laboratory results are included in Appendix D.

3.1.6 Waste Water Treatment Area

Analysis of the sample collected from the boring drilled in the waste water treatment area (GP-58) did not detect any metals above the IHSB's health-based PSRGs or above the maximum background concentrations. The soil sample location is shown on Figure 2. The soil analytical results are summarized in Table 5 and the laboratory results are included in Appendix D.

3.1.7 Drainage Ditch

Analysis of samples collected from the borings drilled in the drainage ditch behind the anodizing and electrolysis buildings detected lead and tin in two samples and nickel, zinc and chromium +3 in all three samples above the maximum background concentrations. The remaining metals were detected below the maximum background concentrations. Hexavalent chromium (Cr^{+6}) was detected above the IHSB's industrial health-based PSRGs and maximum background concentration in one sample. The drainage ditch appears to flow from east to west behind the buildings and the ditch receives surface runoff from the parking lot along the west side of the property and electrolysis building. Drums and buckets of plating material were reportedly stored in this area and likely contributed to the high metals concentrations detected in sample DD-3. The soli sample locations are shown on Figures 3 and 4. The soil analytical results are summarized in Table 6 and the laboratory results are included in Appendix D.

3.1.8 Dust Collector

Soil samples collected from the vicinity of the dust collector were analyzed for RCRA metals using the Toxicity Characteristic Leaching Procedure (TCLP). Analysis of samples collected from the borings drilled adjacent to the dust collector detected cadmium in sample DC-2 above the maximum TCLP limit of 1.0 ppm. Soil removed from this area should be considered hazardous and handled accordingly. The soil sample locations are shown on Figure 2. The soil analytical results are summarized in Table 6 and the laboratory results are included in Appendix D.

3.2 Quality Assurance/Quality Control Samples

Analysis of the trip blanks did not detect any VOCs above the laboratory method detection limits and analysis of the duplicate soil sample for GP-3detected metals at similar concentrations;

however, the analysis of the duplicate sample for GP-49 detected considerably more cadmium and nickel and no Cr +6, which was detected in GP-49.

3.3 Groundwater Assessment

3.3.1 Groundwater Flow Direction

The top of casing elevation for monitoring wells MW-1 through MW-5 were measured to the nearest 0.01 feet using by a registered land surveyor. The top of casing elevation for each well and the depth to groundwater as measured from the top of the well casing were used to determine the elevation of the water table at each well location (Table 7). The measurements were used to prepare a top of water table map, which resulted in a shallow groundwater gradient of 0.0053 ft/ft to the north-northwest as measured between MW-5 and MW-1 (Figure 9).

3.3.2 Groundwater Sample Results

The analysis of the groundwater samples detected concentrations of tetrachloroethene (PCE) in all the samples except for monitoring well MW-6 (located on the northern property boundary behind the anodizing and zinc plating buildings) in excess of the NCDENR 2L Groundwater Quality Standards (2L Standards). The concentrations of PCE in MW-2 and MW-5 are also above the IHSB's industrial/commercial vapor intrusion screening level of 29 ppb.

Low concentrations of chloroform, MTBE, 1,1,1-trichloroethane, 1,1-dichloroethane, 1,2-dichloroethane, and acetone were also detected in several of the samples. The concentrations were generally below the North Carolina groundwater quality standards. Bromodichloromethane and dichlorodiflouromethane were detected on two samples and likely represent a laboratory or sampling artifact.

The analysis detected antimony in MW-1 and MW-3 and nickel in MW-2, MW-4 and MW-6 above the 2L groundwater standards, and total chromium and chromium +6 above the standards in all the wells except MW-6.

The results are summarized in Table 8 and shown on Figures 10 and 11. The laboratory report is included in Appendix D. The groundwater field parameters are recorded on the well construction diagrams included in Appendix B.

Note: Laboratory analysis of groundwater samples collected from MW-2, MW-3, MW-4 and MW-5 detected concentrations of Cr +6 in excess of concentrations of total chromium (though the difference are small). Samples were analyzed for Cr +6 by Gulf Coast Analytical Laboratories of Baton Rouge, Louisiana, a subcontracted laboratory by Prism Laboratories, Inc (Prism). According to Prism, when concentrations of Cr +6 exceed the concentration of total chromium, the excess is generally attributed to sampling methods, turbidity, laboratory artifacts, interference in the sampling process or other undetermined factors and the results as reported by the laboratory should be reviewed accordingly. According to Prism Laboratories' quality control supervisor, the concentrations of Cr +6 in excess of total chromium should be disregarded and the concentration of Cr +6 should be adjusted accordingly. Because the analysis was conducted by two different laboratories might also factor into the differences between the total and chromium +6 concentrations.

3.4 Visual Sampling Plan

3.4.1 Chrome Plating Building

The original sampling plan called for the collection of fifteen randomly selected samples. After meeting with staff from the Brownfields Section, it was decided that two additional samples would be selected from potential source areas (judgmental samples). One of the sampling plan sample locations was deleted from the plan because of access constraints. The two judgmental samples include samples collected from boring locations GP-27 and GP-29. In addition to the two judgmental samples, three previously collected samples, HA-1, HA-2, and HA-3 were included in the data. The samples from the HA-1 through HA-3 were only analyzed for trivalent and hexavalent chromium. Metals concentrations from the non-biased (15 samples) and biased (17-20 samples) data points were entered into the VSP program and analyzed.

The Visual Sampling Plan (VSP) was used to calculate a two-sided confidence interval for the population median. The non-biased data analysis achieved a 96.9% percent confidence and the biased data analysis achieved a 95.1 % confidence. .Generally the median values between the non-biased and biased data were same or very close to the same as were the lower and upper confidence intervals. The program determined that the data (excluding the suspected outliers) were mostly not normally distributed because the maximum value was considered an outlier.

A copy of the VSP results for both the biased and non-biased data sets are included in Appendix E and statistical results are summarized in Table 9.

3.4.2 Anodizing Building

The original sampling plan called for the collection of fifteen randomly selected samples. After meeting with staff from the Brownfields Section, it was decided that two additional samples would be selected from potential source areas (judgmental samples). The two judgmental samples include samples collected from boring locations GP-19 and GP-23. In addition to the two judgmental samples, one previously collected sample, HA-4 was included in the data. The sample from HA-4 was only analyzed for trivalent and hexavalent chromium. Metals concentrations from the non-biased (15 samples) and biased (17-18 samples) data points were entered into the VSP program and analyzed.

The Visual Sampling Plan (VSP) was used to calculate a two-sided confidence interval for the population median. The non-biased data analysis achieved a 96.5% percent confidence and the biased data analysis achieved either a 95.1% or 96.9% confidence. Generally the median values between the non-biased and biased data were same or very close to the same as were the lower and upper confidence intervals. The only exception was the data for the trivalent chromium biased data set. Analysis of the hand auger sample detected 1,500 ppm of chromium, which skewed the data on the high side. The program determined that the data (excluding the suspected outliers) were mostly not normally distributed because the maximum value was considered an outlier.

A copy of the VSP results for both the biased and non-biased data sets are included in Appendix E and statistical results are summarized in Table 10.

3.4.3 Electrolysis Building

The original sampling plan called for the collection of fifteen randomly selected samples. However, one of the sample locations could not be reached. After meeting with staff from the Brownfields Section, it was decided that one additional sample would be selected from potential source areas (judgmental samples). The judgmental sample includes samples collected from boring locations GP-47.

Metals concentrations from the non-biased (14 samples) and biased (15 samples) data points were entered into the VSP program and analyzed.

The Visual Sampling Plan (VSP) was used to calculate a two-sided confidence interval for the population median. The non-biased data analysis achieved either a 96.5% or 98.7% percent confidence and the biased data analysis achieved 96.5% confidence. Generally, the median values between the non-biased and biased data were same or very close to the same as were the lower and upper confidence intervals. The program determined that the data (excluding the suspected outliers) were mostly not normally distributed because the maximum value was considered an outlier.

A copy of the VSP results for both the biased and non-biased data sets are included in Appendix E and statistical results are summarized in Table 11.

3.5 Soil Gas Survey

Analysis of the soil gas samples detected a number of volatile organic compounds. Chloroform and tetrachloroethene (PCE) were detected above the IHSB's Industrial/Commercial Vapor Intrusion Screening levels for soil gas samples in the sample collected from vapor point SG-2 and 1,2,4-trimethylbenzene was detected above the screening levels in vapor point SG-1. The results are summarized in Table 12 and the laboratory results are included in Appendix D.

4.0 CONCLUSIONS

Based on the investigations conducted to date at the site, ECS has the following conclusions:

- Analysis of samples collected from the chrome plating building detected a number metals, some of which are above the natural background concentrations. Only arsenic and chromium +6 were detected above the IHSB's Health-based PSRGs. The sample collected from GP-28 had the highest number of metals above the maximum background concentration and concentrations of most of the metals were generally higher than the other sample locations. Boring location GP-28 was the only sample location which had a metal concentration (As) above the IHSB's Health-based PSRG. The four sample locations (GP-28, GP-29B, GP-31, and GP-34) with the highest chromium +3 are located either near the floor trench, sump, or sump line to the waste water treatment collection sump. Three of these four samples also had elevated concentrations of chromium +6, cadmium, and nickel.

- Analysis of samples collected from the anodizing building detected a number metals, some of which are above the natural background concentrations. Only chromium +6 was detected above the IHSB's Health-based PSRGs. Analysis of samples detected selenium in two samples and thallium in three samples, and zinc in one sample above the maximum background concentrations. Nickel was detected in eight samples above the maximum background concentration. Hexavalent chromium was detected above the IHSB's industrial health-based PSRGs and maximum background concentration in the samples collected from GP-25 and HA-4. Arsenic, beryllium, cadmium, copper, lead, tin and chromium +3 were not detected above the IHSB's industrial health-based PSRGs or maximum background concentrations. The sample from GP-25 had the highest concentration of chromium +6 and zinc. It was located near a floor trench drain in the southeast corner of the building.

- Analysis of samples collected from the electrolysis building detected a number metals, some of which are above the natural background concentrations. Cadmium, chromium +3, copper, lead, and nickel were detected in samples above the maximum background concentration. Hexavalent chromium was detected above the IHSB's industrial health-based PSRGs in three samples and above maximum background concentration in a fourth sample. Arsenic, beryllium, zinc, silver, selenium, tin, and thallium were not detected above the IHSB's industrial health-based PSRGs or maximum background concentration. The chromium +6 was detected in samples located around a tank (T48) located in the south central portion of the building and the highest concentrations of nickel were detected in samples collected around tanks T44 and T45 and the sump near tank T45 in the northeast corner of the building.

- Chromium +3, lead, nickel, tin, and zinc were detected above the maximum background concentrations in the samples collected from the drainage ditch located behind the electrolysis building. One of the samples had concentrations of chromium +6 above the IHSB's Health-based PSRG. The source of the chromium +6 is believed to be from a one time spill from some buckets stored near the southwest corner of the electrolysis building and not from an ongoing release.

- The concentration of cadmium in one of the samples collected near the dust collector is above the TCLP level. This material is consider a hazardous material and will need to be handled accordingly.

- The analysis of the groundwater samples detected concentrations of tetrachloroethene (PCE) in all the samples except for monitoring well MW-6 in excess of the NCDENR 2L Groundwater Quality Standards (2L Standards). The concentrations of PCE in MW-2 and MW-5 are also above the IHSB's industrial/commercial vapor intrusion screening levles. The analysis detected antimony in MW-1 and MW-3 and nickel in MW-2, MW-4 and MW-6 above the 2L groundwater standards, and total chromium and chromium +6 above the standards in all the wells except MW-6. The pH of the water samples averaged around 5, which is slightly acidic for the groundwater in the Piedmont area.

- Groundwater was determined to be flowing to the north-northwest under a shallow gradient.

- Chloroform, 1,2,4-trimethylbenzene, and tetrachloroethene (PCE) were detected above the IHSB's Industrial/Commercial Vapor Intrusion Screening levels for soil gas samples.

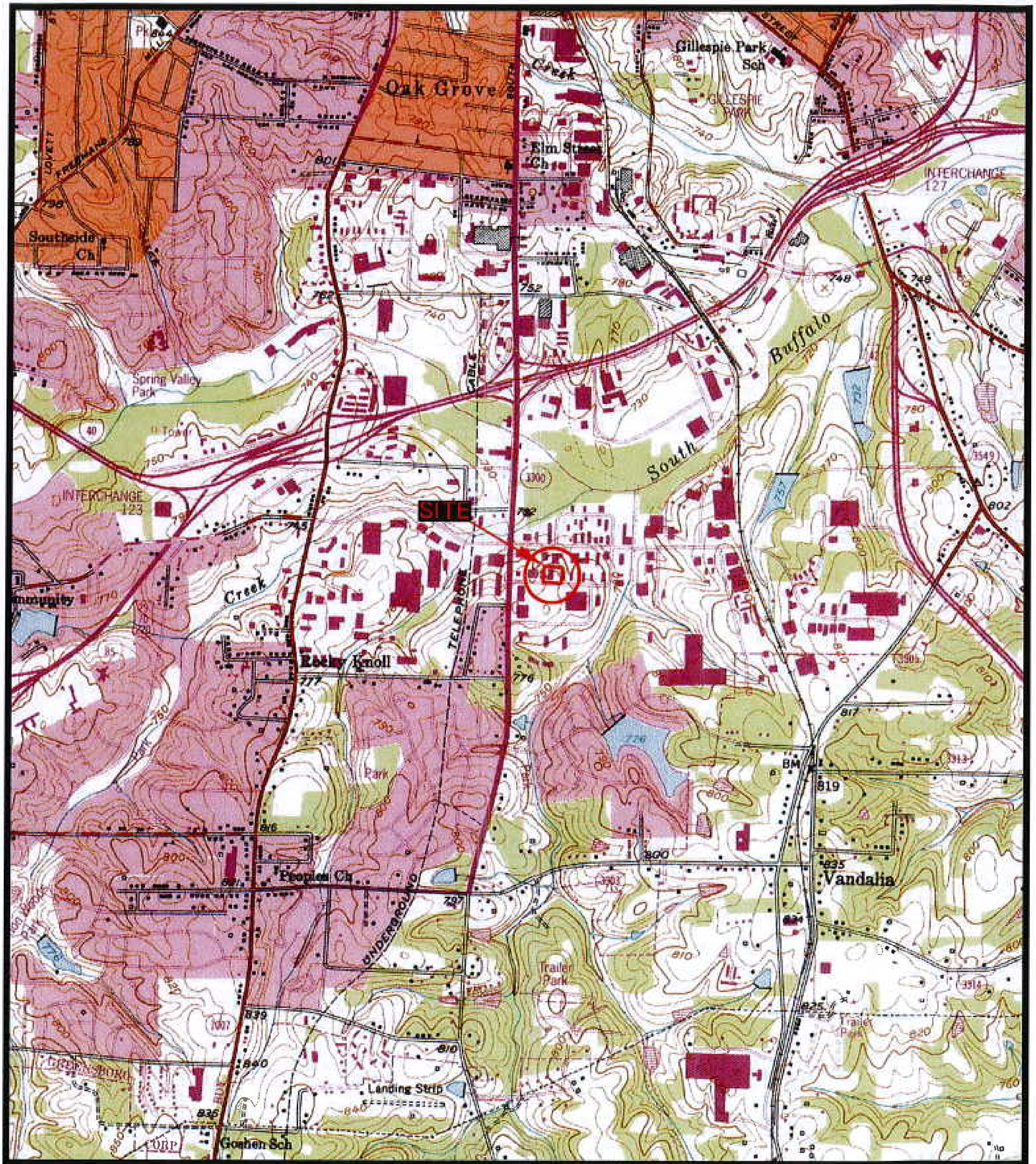
- Fifty-three samples were collected from the three production buildings and analyzed for metals. An additional eight samples were collected from the proposed development areas. In most locations, the concentration of metals was below either detection limits or the maximum background concentrations, and in many cases, the concentrations were slightly above the natural maximum background concentrations. Where a metal exceeded the PSRG, the exceedance was localized and not widespread. There was generally one area in each building where the elevated concentrations of metals could possibly be attributed to production issue, such as a leaking trench or sump. Therefore, ECS believes that the number of samples collected provides a reasonable baseline of the existing metal concentrations in the soils at the site.

5.0 RECEPTOR SURVEY

The receptor survey did not identify any receptors within the search radius of the Brownfields receptor form. The form is included as Appendix F.

6.0 REFERENCES

Visual Sampling Plan (VSP) Version 6.0, June 2010, Pacific Northwest National Laboratory. Prepared for the U.S. Department of Energy under contract DE-AC05-76RL01830.



SCALE (IN FEET)

1000 2000

2000 0

REFERENCE:
USGS TOPOGRAPHIC MAP
GREENSBORO, NC QUADRANGLE
DATED 1951 PHOTOREVISED 1994

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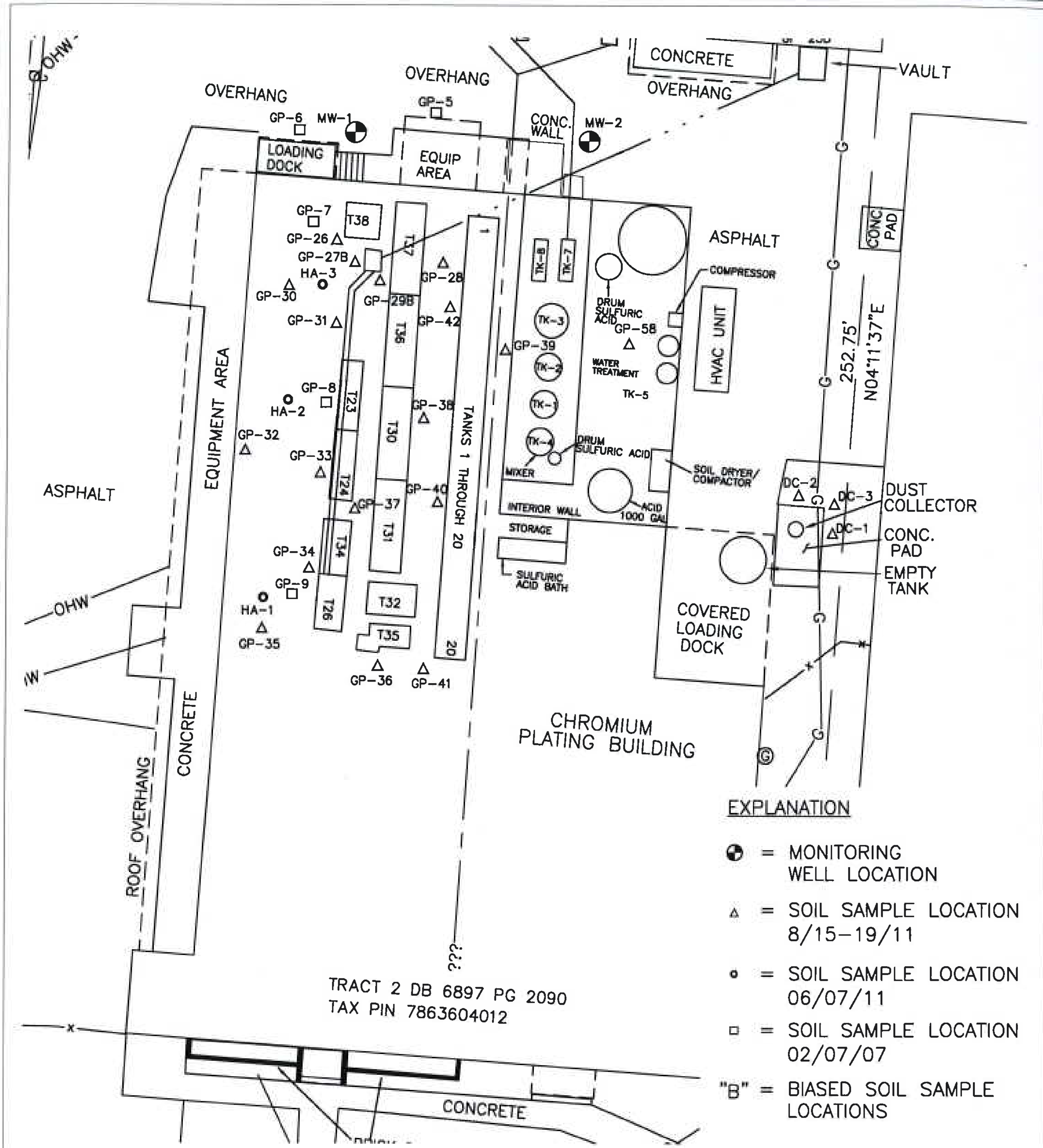
FIGURE 1

SITE LOCATION MAP
UNITED METAL FINISHING, INC.
133 BLUE BELL ROAD
GREENSBORO, NORTH CAROLINA

ECS PROJECT 09.11981E



EXPLANATION

- ● = MONITORING WELL LOCATION
- △ = SOIL SAMPLE LOCATION 8/15-19/11
- ○ = SOIL SAMPLE LOCATION 06/07/11
- □ = SOIL SAMPLE LOCATION 02/07/07
- "B" = BIASED SOIL SAMPLE LOCATIONS

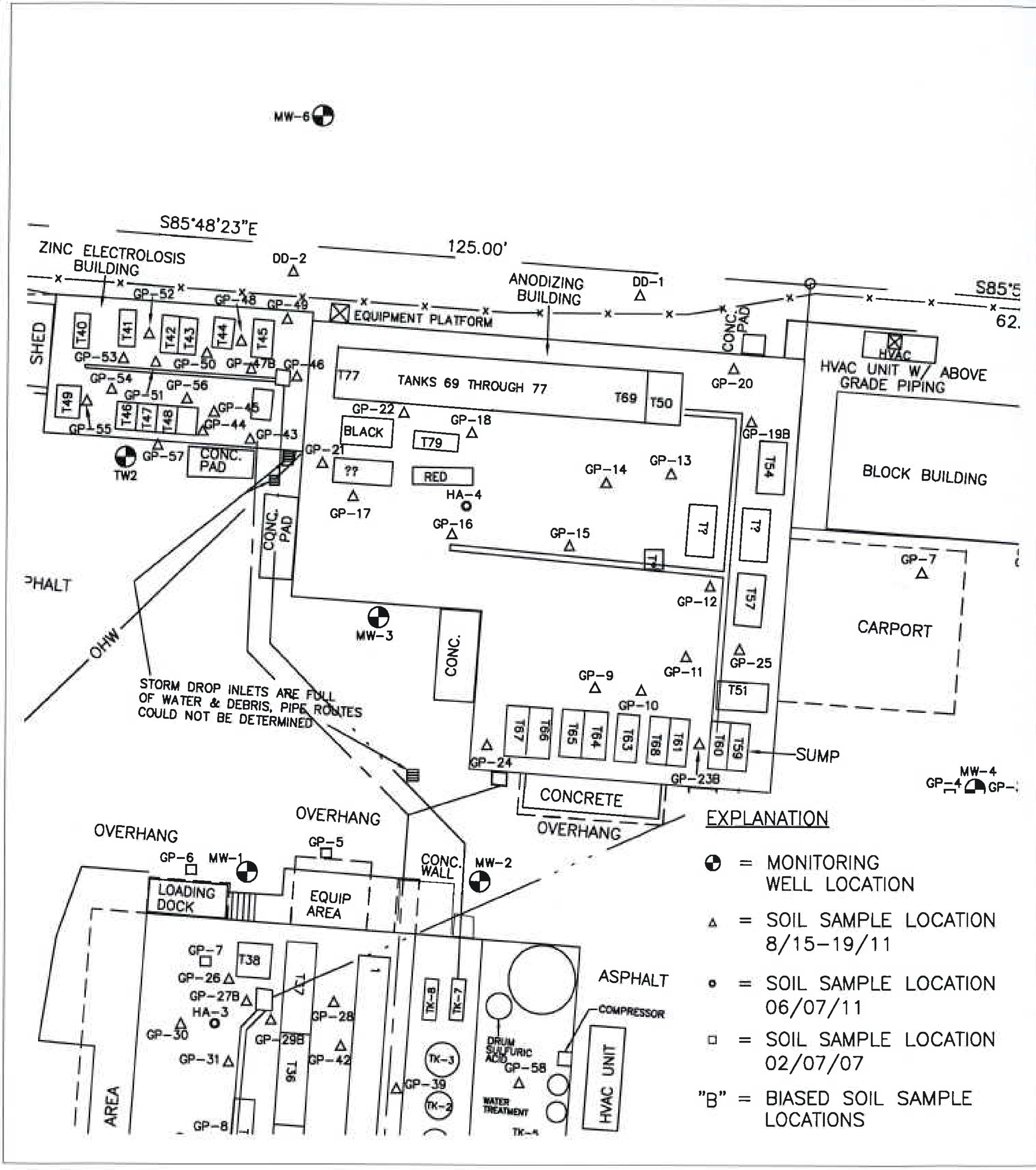
SCALE (1"=20')

REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

ECS LLP CAROLINAS

FIGURE 2
SOIL BORING LOCATION MAP
CHROMIUM PLATING BUILDING

UNITED METAL FINISHING
133 BLUEBELL ROAD
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



SCALE (1"=20')

10 20

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REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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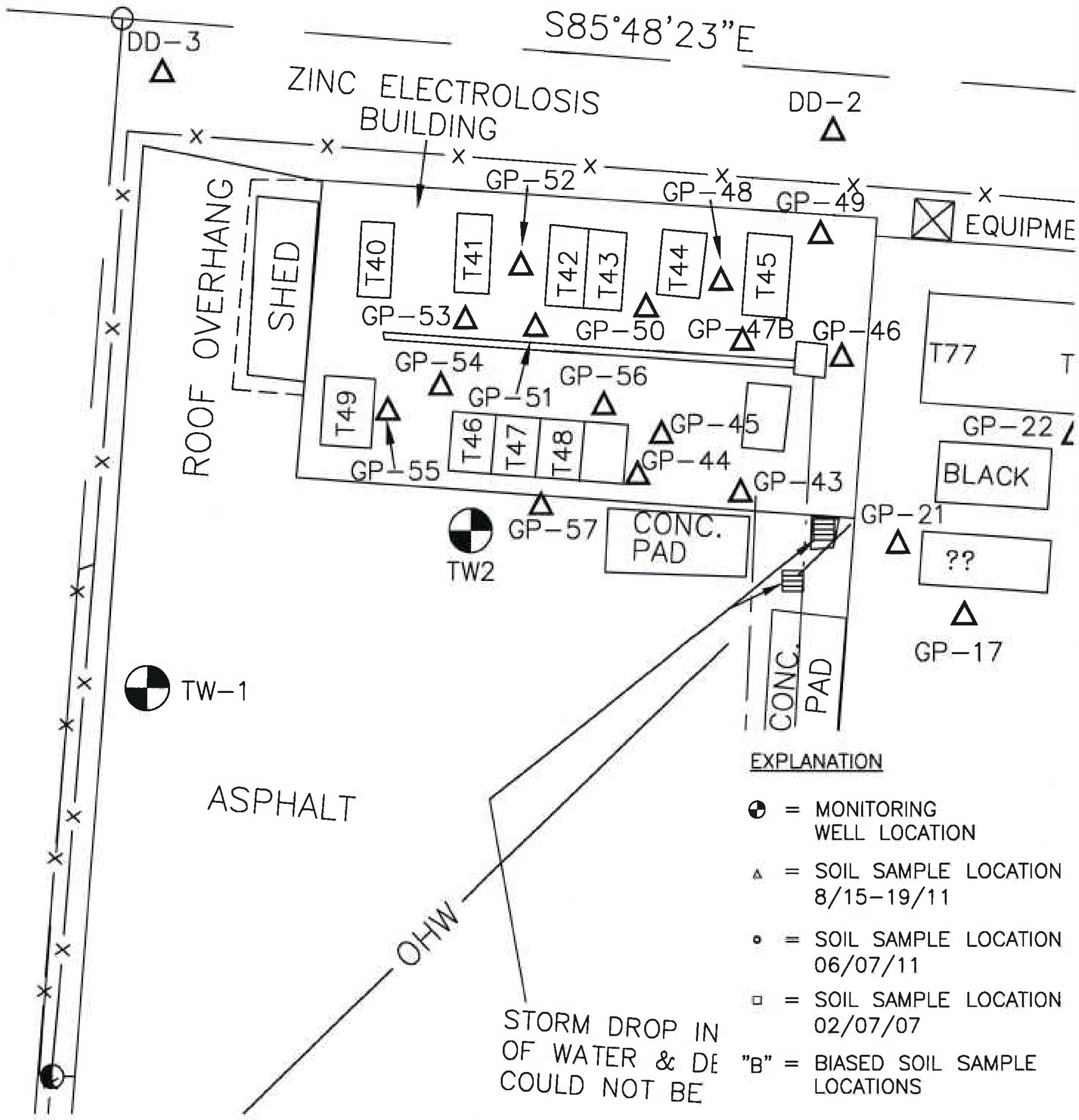
FIGURE 3

SOIL BORING LOCATION MAP
ANODIZING BUILDING

UNITED METAL FINISHING
133 BLUEBELL ROAD
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



EXPLANATION

= MONITORING WELL LOCATION

= SOIL SAMPLE LOCATION 8/15-19/11

= SOIL SAMPLE LOCATION 06/07/11

= SOIL SAMPLE LOCATION 02/07/07

"B" = BIASED SOIL SAMPLE LOCATIONS

SCALE (1"=10')

10 5 0 10

REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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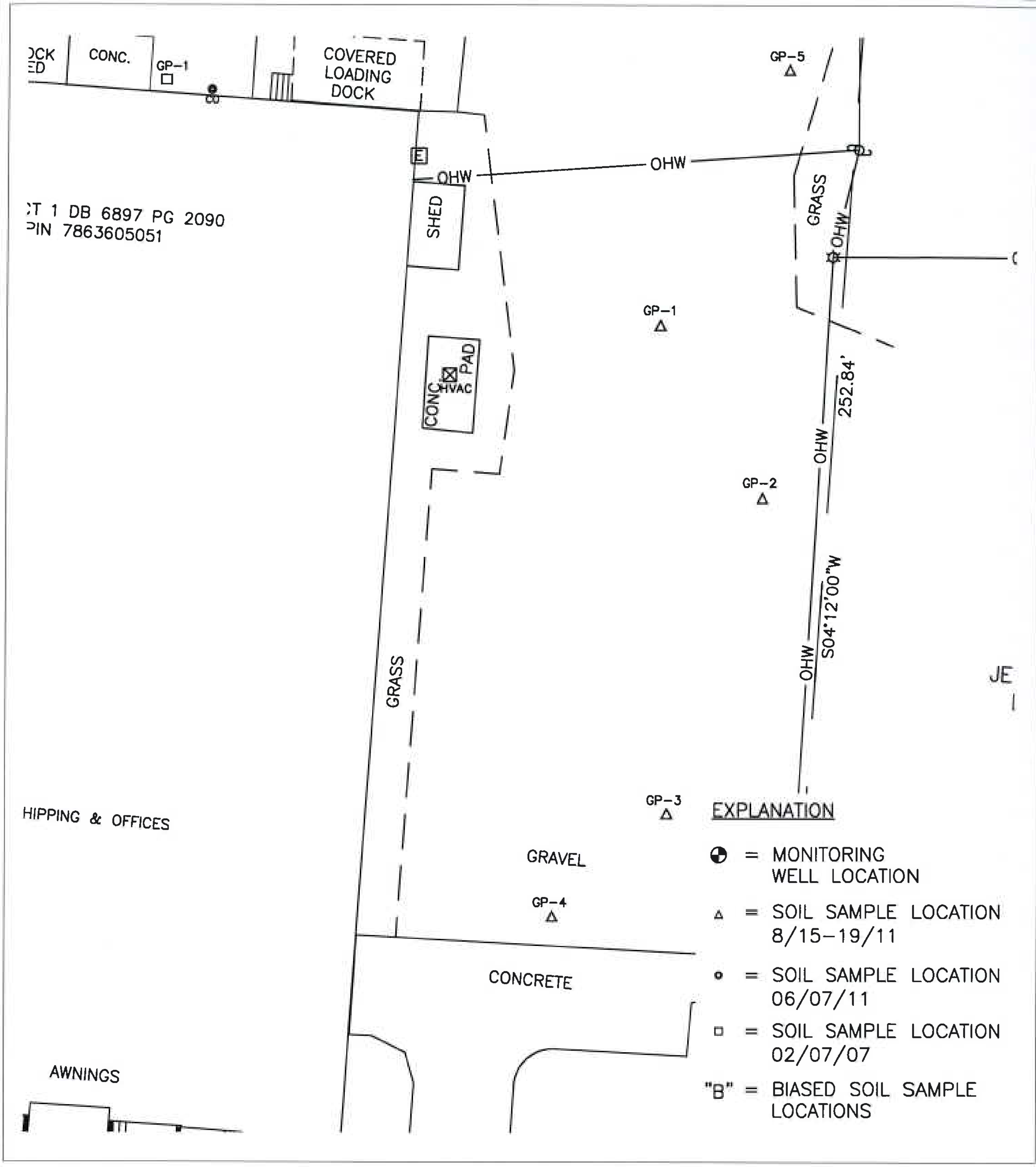
FIGURE 4
SOIL BORING LOCATION MAP
ELECTROLYSIS BUILDING

UNITED METAL FINISHING
133 BLUEBELL ROAD
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



SCALE (1"=20')

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20 0

REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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FIGURE 5

SOIL BORING LOCATION MAP
PROPOSED DEVELOPMENT AREA 1

UNITED METAL FINISHING
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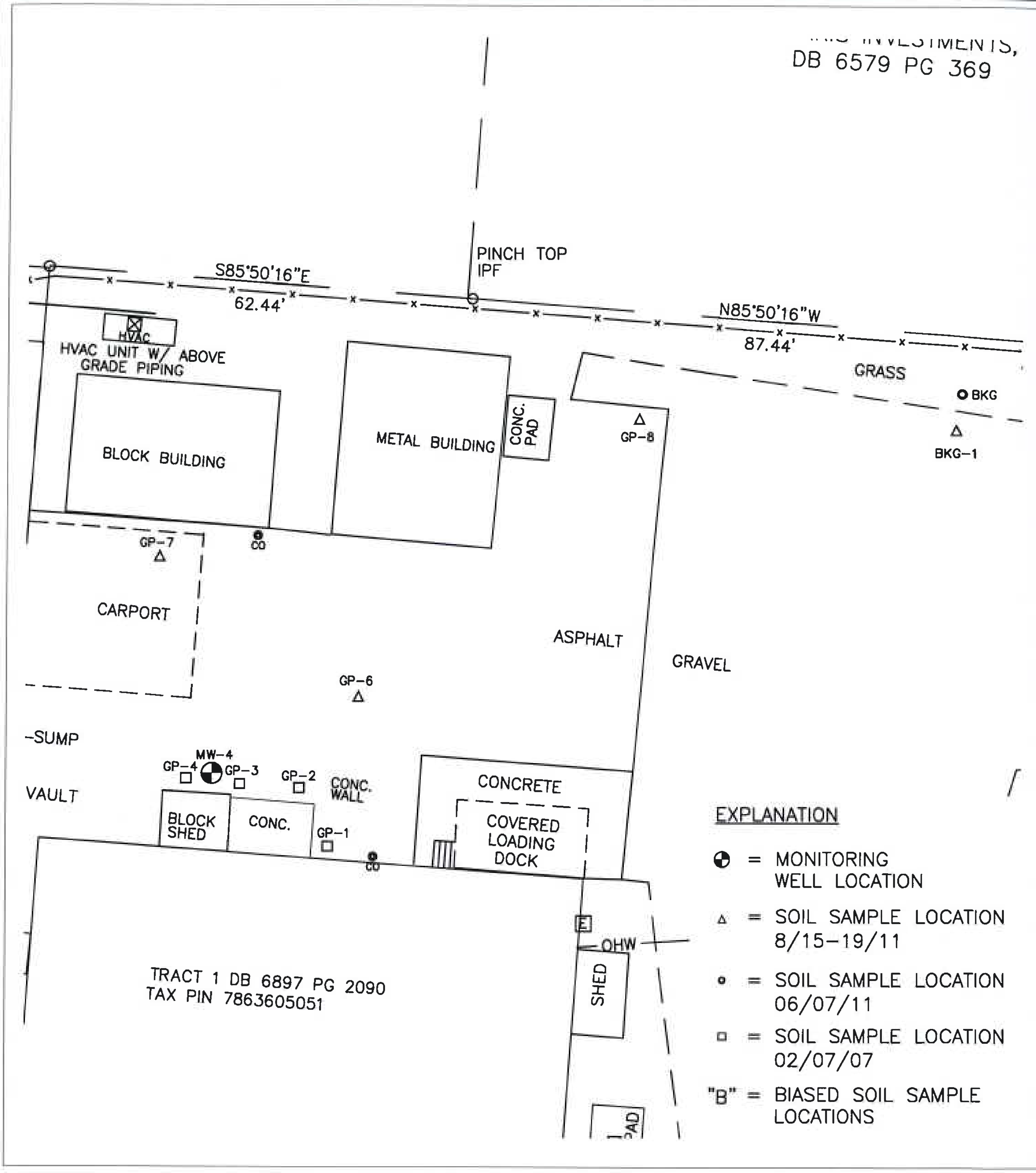
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



SCALE (1"=20')

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20 0

REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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FIGURE 6
SOIL BORING LOCATION MAP
PROPOSED DEVELOPMENT AREA 2

UNITED METAL FINISHING
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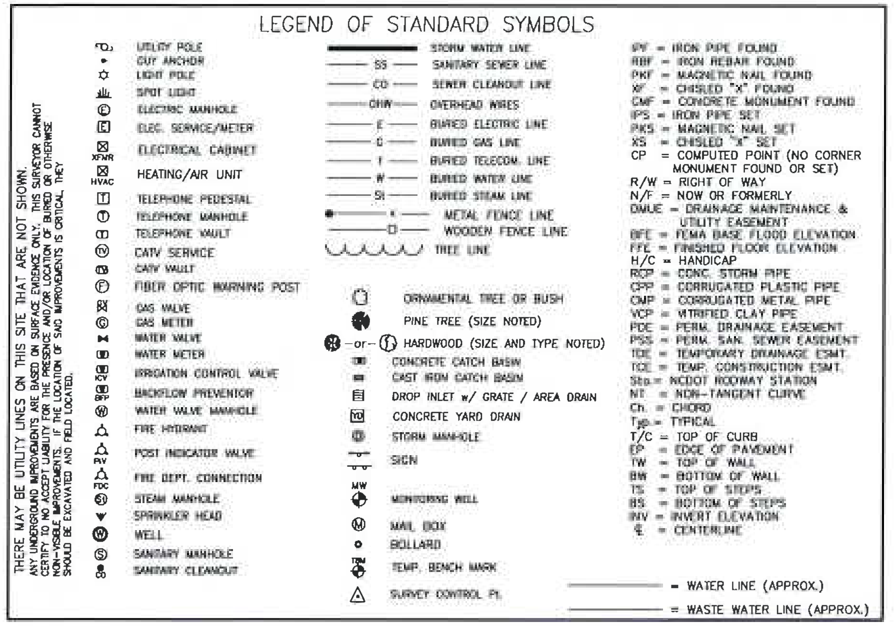
GREENSBORO, NC
ECS PROJECT NO. 09.11981E

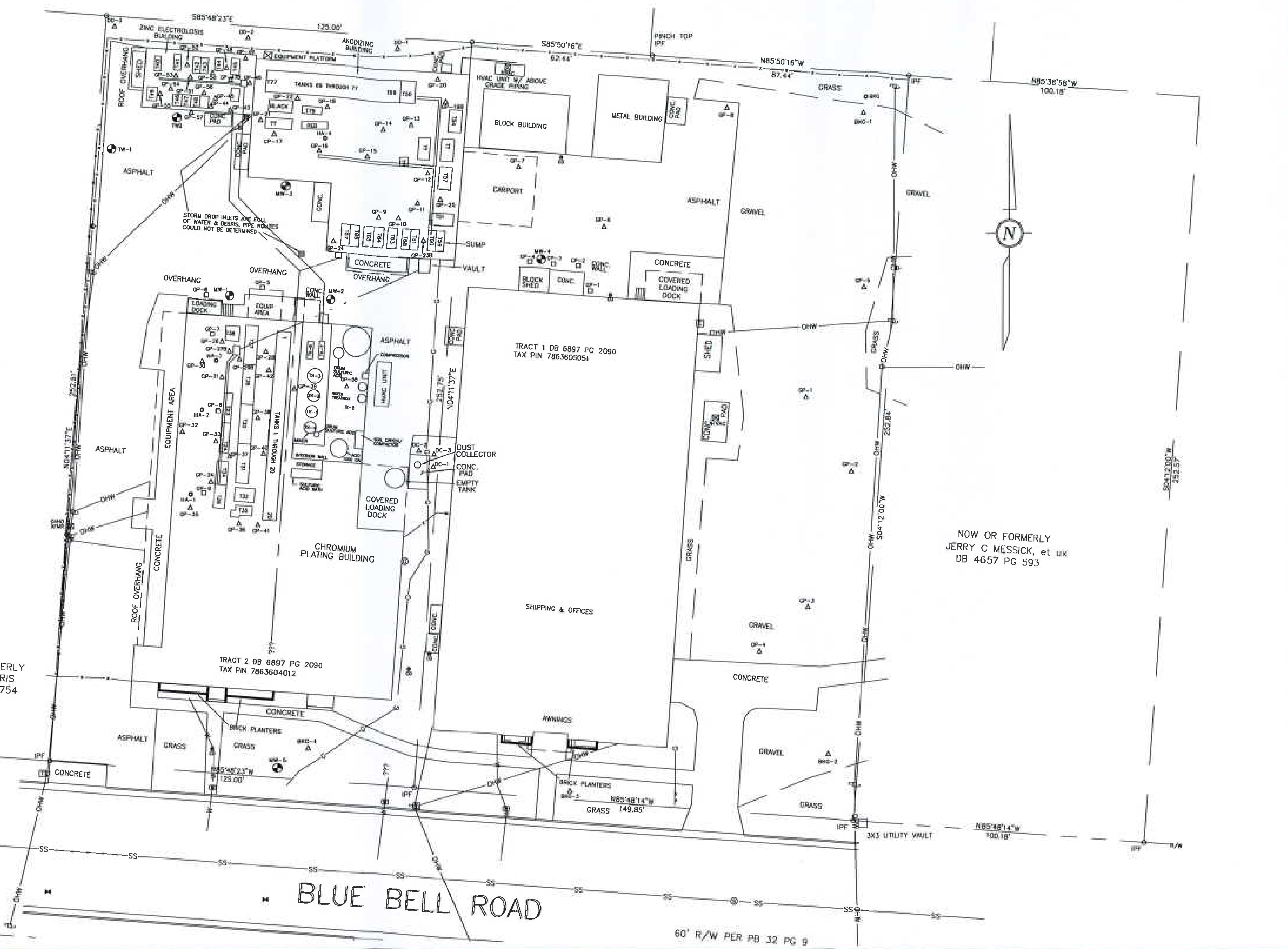


UNITED METAL FINISHING - TANK ID AND CONTENT LIST

TANK ID	CONTENTS or PURPOSE	TANK ID	CONTENTS or PURPOSE	TANK ID	CONTENTS or PURPOSE	TANK ID	CONTENTS or PURPOSE
Tank 1	Soak Cleaner	Tank 26	Unknown	Tank 51	Rinse	Tank 76	Rinse
Tank 2	Electro Cleaner	Tank 27	Unknown	Tank 52	Unknown	Tank 77	Hot Rinse
Tank 3	Rinse	Tank 28	Unknown	Tank 53	Unknown	Tank 78	Black
Tank 4	Rinse	Tank 29	Unknown	Tank 54	Desmut	Tank 79	Blue
Tank 5	Acid	Tank 30	Zinc	Tank 55	Unknown	Tank 80	Black
Tank 6	Rinse	Tank 31	Zinc	Tank 56	Unknown	Tank 81	Red
Tank 7	Rinse	Tank 32	Zinc	Tank 57	Rinse		
Tank 8	Nickel	Tank 33	Unknown	Tank 58	Rinse		
Tank 9	Unknown	Tank 34	Acid	Tank 59	Rinse		
Tank 10	Nickel	Tank 35	Chromate	Tank 60	Rinse		
Tank 11	Acid	Tank 36	Nickel	Tank 61	Unknown		
Tank 12	Rinse	Tank 37	Cleaner	Tank 62	Unknown		
Tank 13	Rinse	Tank 38	Cleaner	Tank 63	Hot Rinse		
Tank 14	Rinse	Tank 39	Unknown	Tank 64	Rinse		
Tank 15	Rinse	Tank 40	Cleaner	Tank 65	Yellow Chromate		
Tank 16	Rinse	Tank 41	Rinse	Tank 66	Rinse		
Tank 17	Unknown	Tank 42	Acid	Tank 67	Cleaner		
Tank 18	Rinse	Tank 43	Rinse	Tank 68	Clear Chromate		
Tank 19	Chloride Zinc	Tank 44	Unknown	Tank 69	Unknown		
Tank 20	Hot Rinse	Tank 45	Electroless Nickel	Tank 70	Unknown		
Tank 21	Unknown	Tank 46	Clear Chromate	Tank 71	Rinse		
Tank 22	Unknown	Tank 47	Rinse	Tank 72	Rinse		
Tank 23	Unknown	Tank 48	Hot Rinse	Tank 73	Cleaner		
Tank 24	Unknown	Tank 49	Phosphate	Tank 74	Rinse		
Tank 25	Unknown	Tank 50	Cleaner	Tank 75	Nitric Acid		

EXPLANATION

- = MONITORING WELL LOCATION
- = SOIL SAMPLE LOCATION 8/15–19/11
- = SOIL SAMPLE LOCATION 06/07/11
- = SOIL SAMPLE LOCATION 02/07/07
- "B" = BIASED SOIL SAMPLE LOCATIONS



SCALE (1"=40')

20 40

40 0

REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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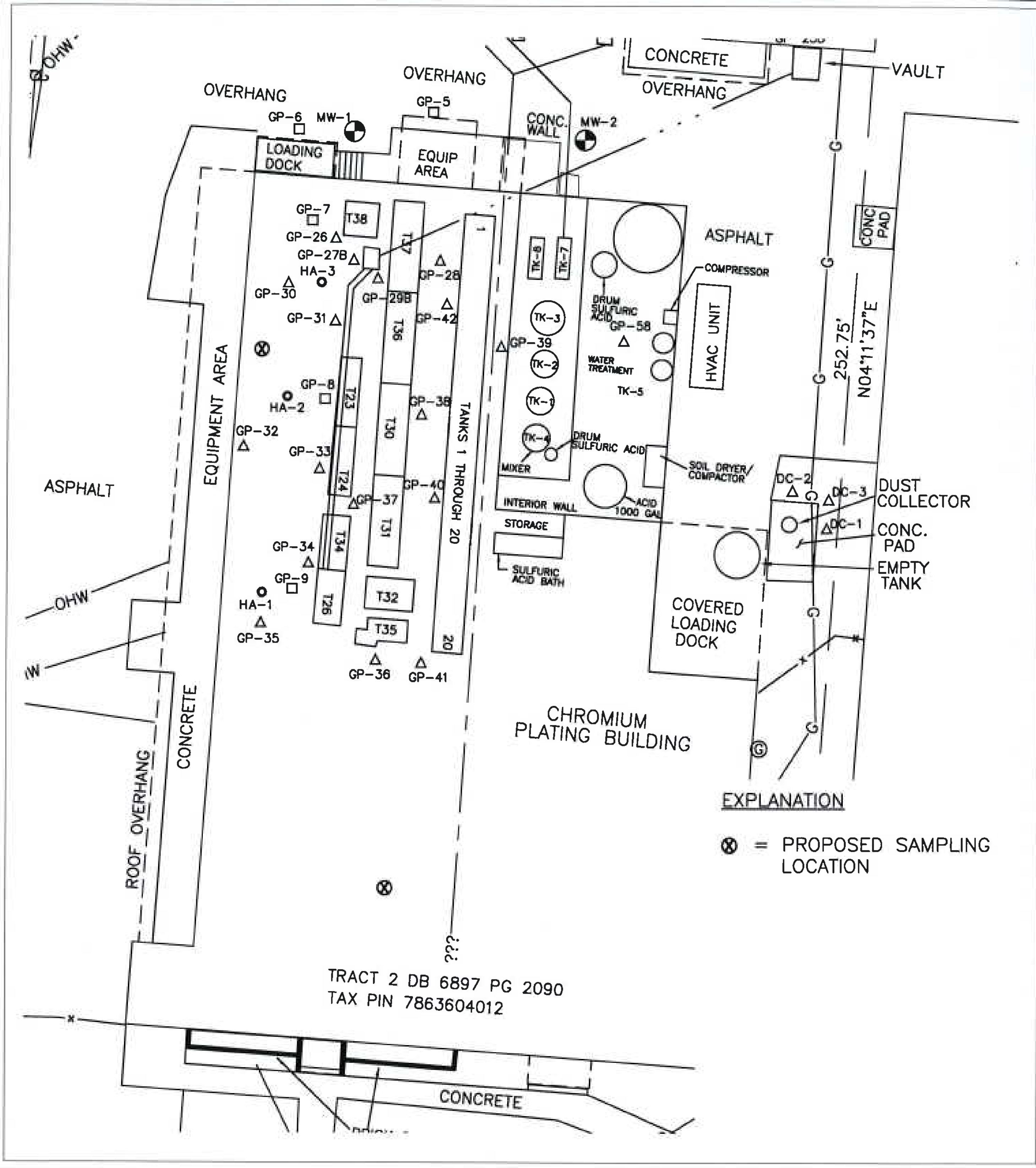
FIGURE 7
MONITORING WELL LOCATION MAP

UNITED METAL FINISHING
133 BLUEBELL ROAD
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



SCALE (1"=20')

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20 0

REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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FIGURE 8

SOIL GAS SAMPLE LOCATIONS
CHROMIUM PLATING BUILDING

UNITED METAL FINISHING
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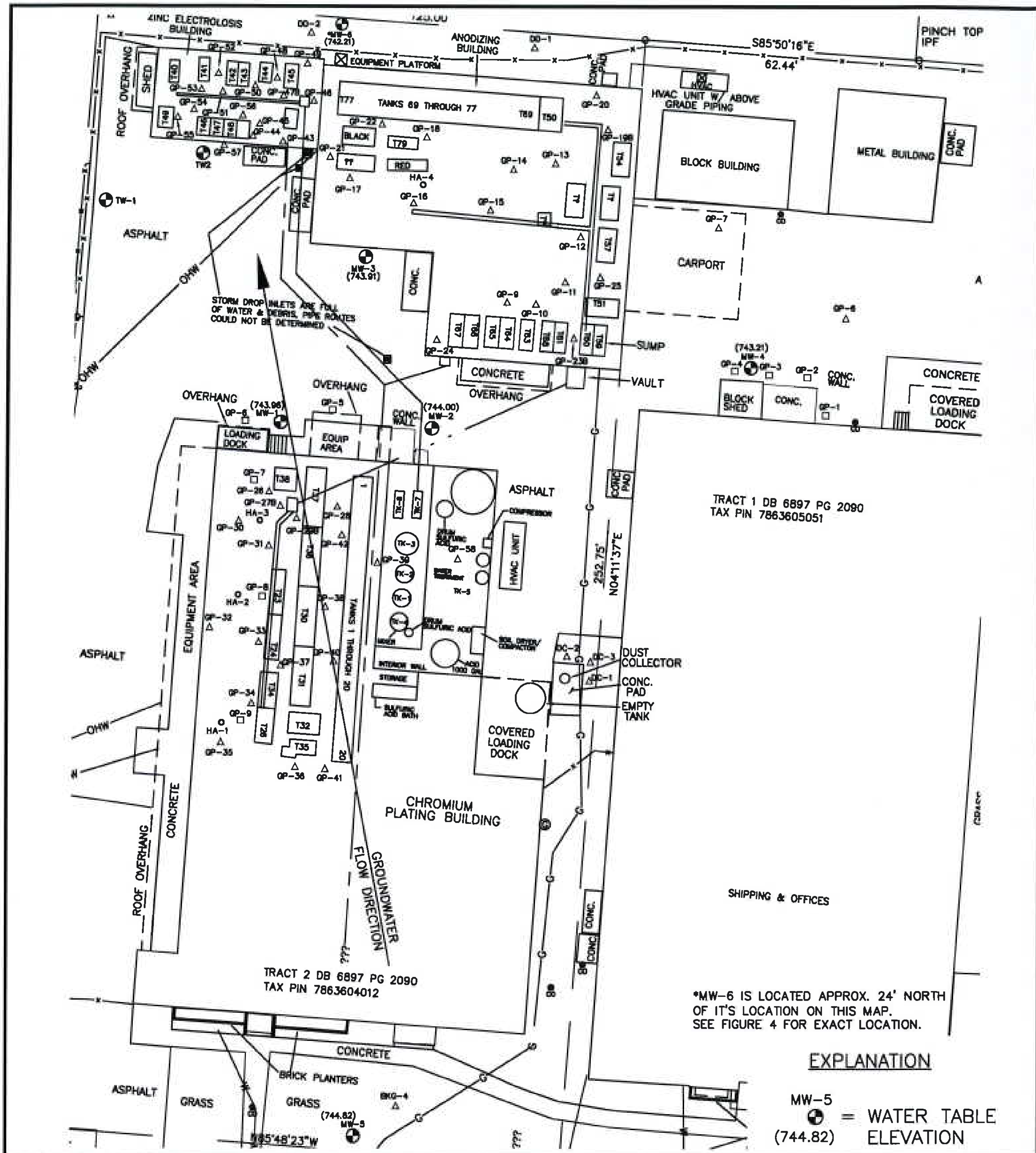
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



SCALE (1"=30')

15 30

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REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
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FIGURE 9
GROUNDWATER ELEVATION AND POTENTIOMETRIC MAP

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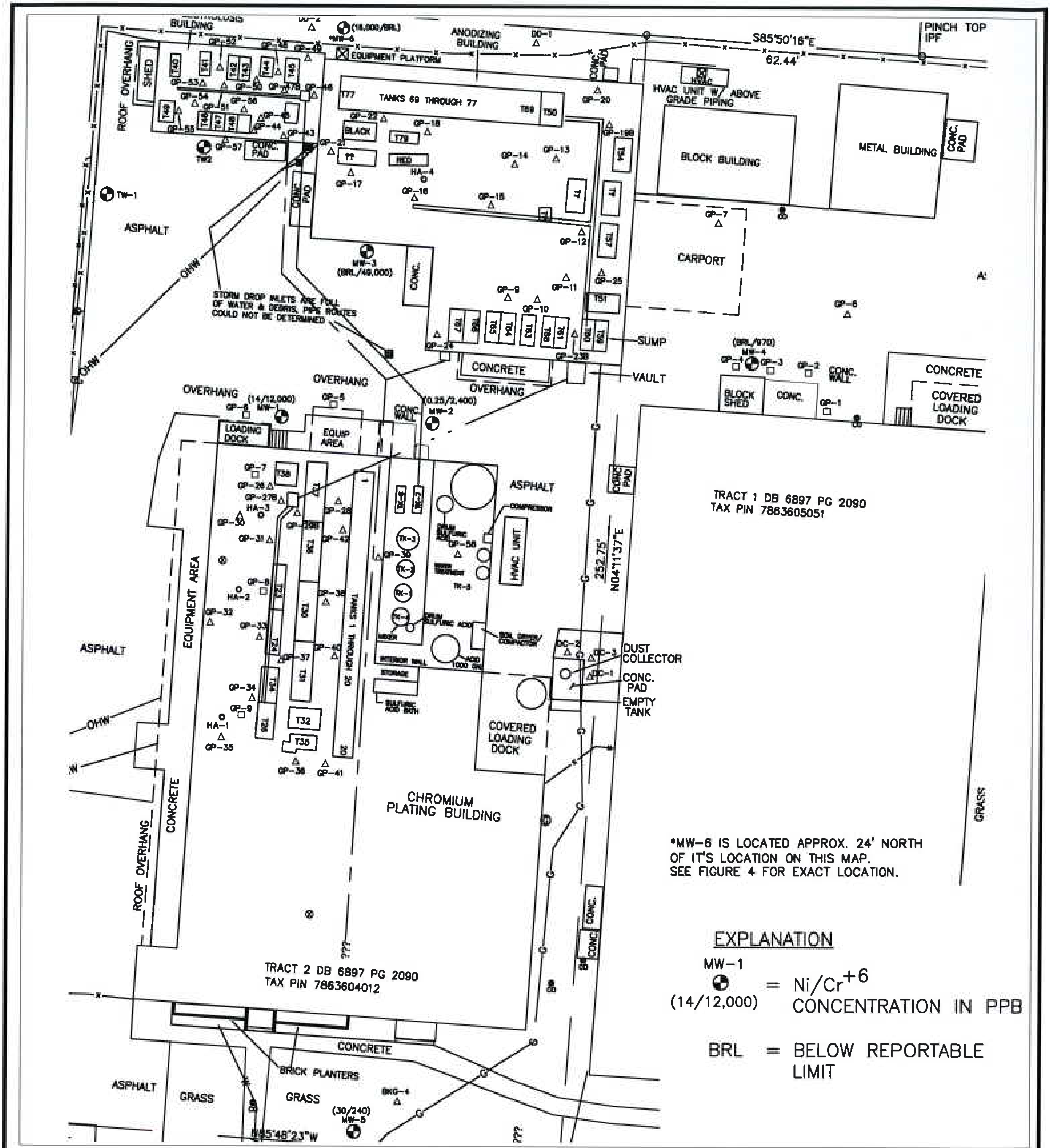
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



SCALE (1"=30')

15 30

30 0

REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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FIGURE 10
Ni/Cr^{+6} ISOCONCENTRATION MAP

UNITED METAL FINISHING
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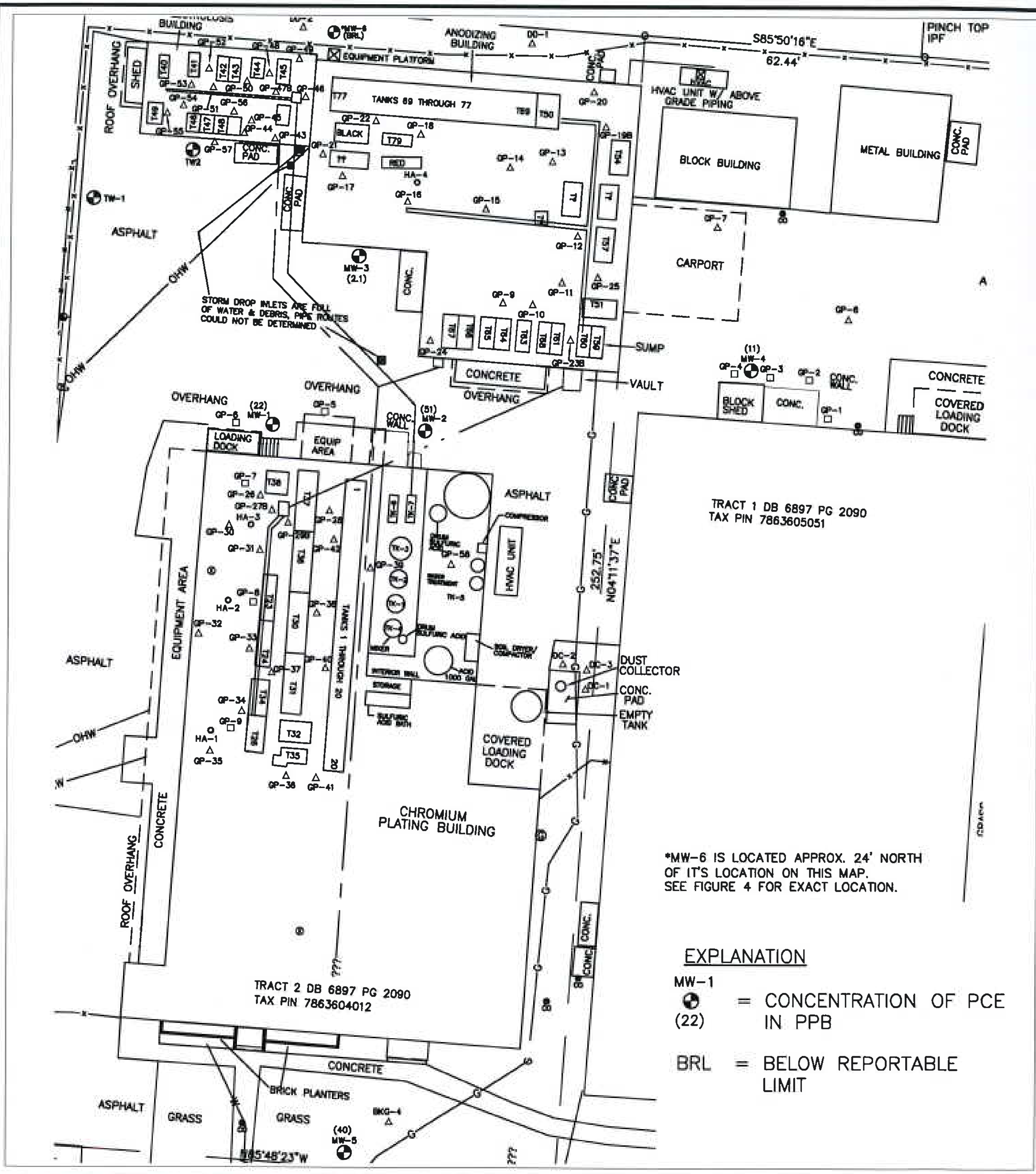
GREENSBORO, NC
ECS PROJECT NO. 09.11981E



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REFERENCE:
PACIFIC NORTHWEST NATIONAL LABORATORIES
MODIFIED VISUAL SAMPLING PLAN
VERSION 6.0

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FIGURE 11
PCE ISOCONCENTRATION MAP

UNITED METAL FINISHING
133 BLUEBELL ROAD
GREENSBORO, NC
ECS PROJECT NO. 09.11981E

TABLE 1: SOIL SAMPLE RESULTS - FEBRUARY 2007 AND JUNE 2011 INVESTIGATIONS

Parameter	**ANALYTICAL RESULTS**														**Comparison Criteria**
Location	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	GP-9	HA-1-4	HA-2-2	HA-3-3	HA-4-2	BKG-3	
Date Collected	02/07/07	02/07/07	02/07/07	02/07/07	02/07/07	02/07/07	02/07/07	02/07/07	02/07/07	06/07/11	06/07/11	06/07/11	06/07/11	06/07/11	**IHSB - Industrial Health-Based PSRG**
p-Isopropyltoluene	**0.027**	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	--	--	--	--	--	NE
1,3,5,-Trimethylbenzene	0.031	BRL	BRL	BRL	BRL	BRL	BRL	BRL	BRL	--	--	--	--	--	1,600
Barium	166	74.4	171	184	92.2	98.3	119	80.3	82.5	--	--	--	--	--	3,800
Cadmium	BRL	BRL	0.255	BRL	BRL	BRL	BRL	1.54	BRL	--	--	--	--	--	160
Chromium (Total)	BRL	BRL	BRL	6.34	33.8	21.1	33.6	115	25	--	--	--	--	--	NE
Chromium III	--	--	--	--	--	--	--	--	--	2,200	67	13	1,500	6.1	100,000
Chromium VI	--	--	--	--	--	--	--	--	--	**57.5**	1.4	0.563	**43.3**	0.537	5.6

Notes:

Concentrations are presented in parts per million

PSRG = Preliminary Soil Remediation Goal - August 2011

NE = No standard established

Bold = Concentration exceeds the IHSB Industrial Health-Based PSRG

BRL = Below the reporting limit of the method of analysis

TABLE 2: HISTORICAL GROUNDWATER SAMPLE RESULTS - FEBRUARY 2007 INVESTIGATION

Parameter	**ANALYTICAL RESULTS**			**2L Standards**
Location	TW-1	TW-2	TW-3	
Date Sampled	2/7/07	2/7/07	2/7/07	
MTBE	**21**	**16**	BRL	20
Arsenic	BRL	BRL	**128**	10
Barium	181	**1,750**	527	700
Cadmium	1.08	**11.5**	BRL	2
Chromium (Total)	BRL	BRL	**27,600**	10

Notes:

Concentrations are presented in micrograms per liter, analagous to parts per billion
2L Standard = 15 A NCAC 2L.0202 Water Quality Standard - January 1, 2010
Bold = Concentration exceeds the 2L Standard
BRL = Below the reporting limit of the method of analysis

TABLE 3: SOIL SAMPLE RESULTS - CHROMIUM PLATING BUILDING

Parameter	ANALYTICAL RESULTS										IHSB - Industrial Health-Based PSRG	Background Sample Results (Min - Max)
Location	HA-1-4	HA-2-2	HA-3-3	GP-26	GP-27B	GP-28	GP-29B	GP-30	GP-31	GP-32		
Date Collected	6/7/2011	6/7/2011	6/7/2011	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11		
Arsenic	NA	NA	NA	0.67	0.71	**18**	1.5	<0.68	0.81	<0.063	1.6	<0.069-1.6
Beryllium	NA	NA	NA	0.54	0.5	0.36	1.1	0.55	0.89	0.45	400	0.49-1.3
Cadmium	NA	NA	NA	<0.032	**3.7**	**24**	**11**	**2.6**	<0.032	<0.030	160	<0.029-<0.035
Copper	NA	NA	NA	**83**	60	**97**	65	**92**	72	38	8,200	1.6-76
Lead	NA	NA	NA	0.58	0.78	**140**	1.5	0.31	1.7	0.75	800	1.7-2.4
Nickel	NA	NA	NA	**33**	**51**	**140**	**84**	**46**	**41**	19	4,000	1.7-19
Zinc	NA	NA	NA	26	40	150	120	39	100	23	62,000	26-190
Silver	NA	NA	NA	<0.030	<0.031	**2**	<0.036	<0.031	<0.031	<0.029	1,000	<0.029-<0.034
Selenium	NA	NA	NA	3.2	3.5	**8.7**	**7.1**	4.1	0.84	0.99	1,000	2.2-5.7
Tin	NA	NA	NA	<0.53	<0.53	<0.55	<0.63	<0.53	<0.53	<0.50	100,000	<0.49-<0.59
Thallium	NA	NA	NA	<0.12	<0.12	1	1.1	<0.60	**1.7**	0.86	2	0.85-1.6
Chromium (Total)	NA	NA	NA	39	40	5,200	87	44	68	36	NE	0.85-50
Chromium III	**2,200**	**67**	13	39	39.43	**5,198**	**87**	44	**66.33**	34.14	100,000	0.486-48.4
Chromium VI	**57.5**	**1.4**	0.563	<0.298	0.566	**1.75**	<0.351	<0.311	**1.67**	**1.86**	5.6	0.326-1.6

Location	GP-33	GP-34	GP-35	GP-36	GP-37	GP-38	GP-39	GP-40	GP-41	GP-42	IHSB - Industrial Health-Based PSRG	Background Sample Results (Min - Max)
Date Collected	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11	08/16/11		
Arsenic	<0.067	<0.071	<0.069	<0.067	0.68	<0.066	<0.59	0.74	<0.57	<0.068	1.6	<0.069-1.6
Beryllium	0.61	0.4	0.41	0.51	0.6	0.51	0.47	0.5	0.4	0.53	400	0.49-1.3
Cadmium	**4.9**	**9.9**	<0.032	<0.032	<0.032	<0.031	**3.2**	<0.030	<0.030	<0.032	160	<0.029-<0.035
Copper	**86**	53	45	64	50	61	68	42	48	75	8,200	1.6-76
Lead	1.1	2.2	0.96	0.78	1.4	0.78	1.2	0.65	0.67	0.88	800	1.7-2.4
Nickel	**29**	**84**	**31**	7.8	6.5	**26**	**49**	5	7.6	**29**	4,000	1.7-19
Zinc	44	93	40	31	70	34	40	20	30	24	62,000	26-190
Silver	<0.030	<0.032	<0.031	<0.030	<0.031	<0.030	<0.030	<0.029	<0.029	<0.031	1,000	<0.029-<0.034
Selenium	1.4	1.9	1.4	1.5	1.3	0.94	1.3	7.2	1.1	1.7	1,000	2.2-5.7
Tin	<0.53	<0.55	<0.54	<0.53	<0.54	<0.52	<0.53	<0.51	<0.50	<0.54	100,000	<0.49-<0.59
Thallium	<0.11	0.68	<0.12	<0.11	0.64	0.77	<0.11	**1.7**	<0.11	<0.12	2	0.85-1.6
Chromium (Total)	46	110	36	5.9	13	30	37	3.9	20	46	NE	0.85-50
Chromium III	43.89	**108**	36	5.9	12.52	29.5	35.03	3.59	20	46	100,000	0.486-48.4
Chromium VI	**2.11**	**2.03**	<0.303	<0.298	0.481 J	0.519J	**1.97**	0.303 J	<0.292	<0.303	5.6	0.326-1.6

Notes:

Concentrations are presented in parts per million

PSRG = Preliminary Soil Remediation Goal - August 2011

NE = No standard established

Bold = Concentration exceeds the maximum background concentration

Red = Concentration exceeds the IHSB Preliminary Inductrial Health Based SRG

J = Estimated concentration above method detection limits and below reportable concentrations

B = Judgmental sample as requested by NCDENR

TABLE 4: SOIL SAMPLE RESULTS - ANODIZING BUILDING

Parameter	**ANALYTICAL RESULTS**									**IHSB - Industrial Health-Based PSRG**	**Background Sample Results (Min - Max)**
Location	GP-9	GP-10	GP-11	GP-12	GP-13	GP-14	GP-15	GP-16	GP-17		
Date Collected	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11		
Arsenic	<0.072	<0.060	<0.065	<0.061	<0.060	0.87	<0.063	0.91	<0.070	1.6	<0.069-1.6
Beryllium	0.65	<0.045	0.34	<0.046	<0.045	0.47	<0.047	<0.048	<0.052	400	0.49-1.3
Cadmium	<0.034	<0.028	<0.030	<0.029	<0.028	<0.031	<0.030	<0.030	<0.033	160	<0.029-<0.035
Copper	19	15	37	14	36	13	31	63	23	8,200	1.6-76
Lead	1	0.34	0.94	0.62	0.41	1	0.28	0.58	0.43	800	1.7-2.4
Nickel	13	7.4	3.6	3.8	**48**	**22**	19	**39**	9.7	4,000	1.7-19
Zinc	36	35	44	29	32	36	26	36	23	62,000	26-190
Silver	<0.033	<0.027	<0.029	<0.028	<0.027	<0.032	<0.028	<0.029	<0.031	1,000	<0.029-<0.034
Selenium	0.75	<0.11	<0.12	3.2	3.6	**8.8**	3.6	**8.4**	3.7	1,000	2.2-5.7
Tin	<0.57	<0.47	<0.51	<0.48	<0.47	<0.55	<0.50	<0.50	<0.55	100,000	<0.49-<0.59
Thallium	<0.12	<0.10	<0.11	0.72	0.8	**2.8**	0.97	**2.5**	<0.12	2	0.85-1.6
Chromium (Total)	7.2	3.3	4.1	7.5	4.4	22	30	26	13	NE	0.85-50
Chromium III	6.04	3.3	4.1	7.5	4.4	22	29.6	26	11.75	100,000	0.486-48.4
Chromium VI	1.16	<0.268	<0.316	<0.278	<0.271	<0.299	0.442	<0.331	1.25	5.6	0.326-1.6

Location	GP-18	GP-19B	GP-20	GP-21	GP-22	GP-23B	GP-24	GP-25	HA-4-2	**IHSB - Industrial Health-Based PSRG**	**Background Sample Results (Min - Max)**
Date Collected	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	06/07/11		
Arsenic	<0.074	<0.060	<0.062	<0.075	0.74	<0.071	<0.067	<0.061	NA	1.6	<0.069-1.6
Beryllium	<0.055	0.26	0.47	0.42	0.41	0.49	0.57	0.43	NA	400	0.49-1.3
Cadmium	<0.035	<0.028	1.5	<0.035	<0.033	<0.033	<0.032	5.2	NA	160	<0.029-<0.035
Copper	3.5	51	57	26	30	25	76	41	NA	8,200	1.6-76
Lead	0.39	0.37	4	1.6	2.4	0.54	0.78	0.9	NA	800	1.7-2.4
Nickel	3.3	**130**	**63**	**29**	**36**	6.4	**28**	6.4	NA	4,000	1.7-19
Zinc	27	30	52	45	20	41	32	**200**	NA	62,000	26-190
Silver	<0.033	<0.027	<0.028	<0.034	<0.032	<0.032	<0.030	<0.027	NA	1,000	<0.029-<0.034
Selenium	3.3	<0.11	2.4	3.6	5.5	2.4	3.1	2.4	NA	1,000	2.2-5.7
Tin	<0.58	<0.47	<0.49	<0.59	<0.55	<0.55	<0.53	<0.48	NA	100,000	<0.49-<0.59
Thallium	0.7	<0.10	0.81	1	**1.8**	1	0.97	<0.10	NA	2	0.85-1.6
Chromium (Total)	3.2	13	23	43	20	3.5	29	25	NA	NE	0.85-50
Chromium III	3.2	13	21.52	43	19.67	3.17	29	7.1	**1,500**	100,000	0.486-48.4
Chromium VI	<0.315	<0.315	1.48	<0.326	0.335 J	0.328 J	<0.293	**17.9**	**43.3**	5.6	0.326-1.6

Notes:

Concentrations are presented in parts per million

PSRG = Preliminary Soil Remediation Goal August 2011

NE = No standard established

Bold = Concentration exceeds the maximum background concentration

Red = Concentration exceeds the IHSB Preliminary Inductrial Health Based SRG

J = Estimated concentration above method detection limits and below reportable concentrations

B = Judgmental sample as requested by NCDENR

TABLE 5: SOIL SAMPLE RESULTS - ELECTROLYSIS BUILDING

Parameter	ANALYTICAL RESULTS									IHSB - Industrial Health-Based PSRG	Background Sample Results (Min - Max)
Location	GP-43	GP-44	GP-45	GP-46	GP-47B	GP-48	GP-49	GP-50	GP-51		
Date Collected	08/19/11	08/19/11	08/19/11	08/19/11	08/19/11	08/19/11	08/19/11	08/19/11	08/19/11		
Arsenic	0.66	<0.072	<0.073	<0.071	<0.065	<0.069	<0.069	<0.070	<0.067	1.6	<0.069-1.6
Beryllium	0.43	0.96	0.65	0.79	0.36	0.76	0.57	0.77	0.58	400	0.49-1.3
Cadmium	<0.031	<0.034	<0.034	<0.033	**1.9**	<0.032	**0.95**	<0.033	**0.62**	160	<0.029-<0.035
Copper	14	42	47	**80**	31	36	21	33	55	8,200	1.6-76
Lead	1.1	1.5	1.4	1.7	1.2	1.8	1.6	**5.3**	**15**	800	1.7-2.4
Nickel	5.7	7.5	14	**200**	**130**	**97**	**300**	**240**	19	4,000	1.7-19
Zinc	30	44	49	43	65	39	65	51	71	62,000	26-190
Silver	<0.030	<0.032	<0.033	<0.032	<0.029	<0.031	<0.031	<0.032	<0.030	1,000	<0.029-<0.034
Selenium	1.7	3	3.4	4.2	2.1	5.7	3.7	4.2	3.2	1,000	2.2-5.7
Tin	<0.51	<0.56	<0.57	<0.56	<0.51	<0.54	<0.54	<0.55	<0.53	100,000	<0.49-<0.59
Thallium	<0.11	<0.12	<0.12	<0.12	<0.11	<0.12	<0.12	<0.12	<0.11	2	0.85-1.6
Chromium (Total)	9.6	33	25	38	6.5	21	8	26	89	NE	0.85-50
Chromium III	9.1	15.9	25	38	6.5	21	4.19	23.67	**89**	100,000	0.486-48.4
Chromium VI	0.491 J	**17.1**	<0.343	<0.311	<0.299	<0.320	**3.81**	2.33	<0.331	5.6	0.326-1.6

Location	GP-52	GP-53	GP-54	GP-55	GP-56	GP-57	GP-58	Duplicate*	IHSB - Industrial Health-Based PSRG	Background Sample Results (Min - Max)
Date Collected	08/19/11	08/16/11	08/16/11	08/19/11	08/19/11	08/19/11	08/19/11	08/19/11		
Arsenic	0.69	1	0.79	<0.075	0.73	0.81	<0.067	<0.074	1.6	<0.069-1.6
Beryllium	0.78	0.79	0.68	0.79	0.73	0.68	0.36	0.63	400	0.49-1.3
Cadmium	<0.035	<0.034	<0.035	<0.035	<0.034	<0.032	<0.031	**3.2**	160	<0.029-<0.035
Copper	50	52	40	16	23	35	8.3	47	8,200	1.6-76
Lead	2.4	**3.4**	2.1	**3.4**	1.7	1.3	0.98	1.9	800	1.7-2.4
Nickel	16	17	14	13	15	9	2.9	**1,100**	4,000	1.7-19
Zinc	58	39	39	51	75	65	24	130	62,000	26-190
Silver	<0.033	<0.033	<0.033	<0.034	<0.032	<0.031	<0.030	<0.034	1,000	<0.029-<0.034
Selenium	4.7	2.6	2	4.6	4.5	3	1.6	4.1	1,000	2.2-5.7
Tin	<0.58	<0.58	<0.58	<0.59	<0.56	<0.54	<0.53	<0.59	100,000	<0.49-<0.59
Thallium	<0.13	<0.13	<0.13	<0.13	<0.12	0.69	<0.11	<0.13	2	0.85-1.6
Chromium (Total)	17	14	14	19	58	93	3.6	12	NE	0.85-50
Chromium III	16.47	14	14	19	43	24.2	3.6	12	100,000	0.486-48.4
Chromium VI	0.53 J	<0.330	<0.326	<0.337	**15**	**68.8**	<0.307	<0.335	5.6	0.326-1.6

Notes:

Concentrations are presented in parts per million

PSRG = Preliminary Soil Remediation Goal - August 2011

NE = No standard established

Bold = Concentration exceeds the maximum background concentration

Red = Concentration exceeds the IHSB Preliminary Inductrial Health Based SRG

J = Estimated concentration above method detection limits and below reportable concentrations

B = Judgmental sample as requested by NCDENR

* Duplicate of GP-49

TABLE 6: SOIL SAMPLE RESULTS - PROPOSED DEVELOPMENT, BACKGROUND, DRAINAGE DITCH, AND DUST COLLECTOR AREAS

Parameter	ANALYTICAL RESULTS												IHSB - Industrial Health-Based PSRG	Background Sample Results (Min - Max)
Location	Proposed Development Areas								Background Samples					
	GP-1	GP-2	GP-3	GP-4	GP-5	GP-6	GP-7	GP-8	BKG-1	BKG-2	BKG-3	BKG-4		
Date Collected	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11	08/15/11		
Acetone	<0.002	<0.0024	<0.0015	<0.002	0.0044 J	0.005 J	<0.0018	0.0085 J	0.018	0.01 J	0.027	0.036	NE	0.01-0.036
Methyl Ethyl Ketone	<0.0014	<0.0016	<0.0013	<0.0013	<0.0014	<0.0013	<0.0012	<0.0013	0.003 J	0.017	<0.0017	<0.0016	28,000	<0.0017-0.017
Arsenic	<0.065	<0.073	<0.065	<0.065	<0.063	<0.065	<0.060	<0.065	0.72	1.6	<0.069	1	1.6	<0.069-1.6
Beryllium	0.45	0.8	0.93	0.66	0.34	0.37	<0.045	0.92	0.73	1.3	0.49	1.1	400	0.49-1.3
Cadmium	<0.030	<0.034	<0.031	<0.030	<0.030	<0.03	<0.028	<0.030	<0.029	<0.035	<0.032	<0.030	8,200	<0.029-<0.035
Copper	29	15	**81**	38	12	40	46	38	2.3	76	1.6	50	160	1.6-76
Lead	**2.9**	**3.8**	**4.6**	2.1	**5.6**	0.66	1.4	2	2.4	2.4	1.7	2.1	160	1.7-2.4
Nickel	9	6.1	7.7	1.3	8.1	6.5	4.5	6.8	3.8	19	1.7	10	800	1.7-19
Zinc	56	72	44	30	24	55	20	89	190	80	26	52	130	26-190
Selenium	<0.12	<0.64	<0.12	<0.12	1.2	<0.12	<0.11	<0.12	2.2	5.7	5.2	4.3	62,000	2.2-5.7
Silver	<0.029	<0.033	<0.030	<0.029	<0.028	<0.29	<0.027	<0.029	<0.028	<0.034	<0.031	<0.029	1,000	<0.029-<0.034
Thallium	<0.11	<0.64	<0.11	<0.11	<0.11	<0.11	<0.10	0.67	1.6	1.5	1.6	0.85	100,000	0.85-1.6
Tin	<0.51	<0.57	<0.51	<0.51	<0.50	<0.51	<0.47	<0.51	<0.49	<0.59	<0.54	<0.50	2	<0.49-<0.59
Chromium (Total)	7.2	4.3	2.8	0.8	7.6	5.4	8.6	5.6	2.9	50	0.85	11	NE	0.85-50
Chromium III	6.537	4.3	2.8	0.8	7.6	5.4	8.6	5.6	2.574	48.4	0.486	10.411	100,000	0.486-48.4
Chromium VI	0.663	<0.322	<0.285	<0.327	<0.293	<0.286	<0.262	0.33	<0.326	1.6	0.364	0.589	5.6	0.326-1.6

Location			Dust Collector**				Drainage Ditch				Disposal***		IHSB - Industrial Health-Based PSRG	Background Sample Results (Min - Max)
	Duplicate*		DC-1	DC-2	DC-3		DD-1	DD-2	DD-3		Disposal-1			
Date Collected	08/15/11		08/17/11	08/17/11	08/17/11		08/17/11	08/17/11	08/17/11		08/16/11			
Acetone	0.0039 J		-	-	-		-	-	-		-		NE	0.01-0.036
Methyl Ethyl Ketone	<0.0013		-	-	-		-	-	-		-		28,000	<0.0017-0.017
Arsenic	<0.070		<0.010	<0.010	<0.010		1.2	1.4	7.7		<0.010		1.6	<0.069-1.6
Beryllium	0.62		-	-	-		0.44	0.65	0.7		-		400	0.49-1.3
Copper	13		-	-	-		120	97	550		-		8,200	1.6-76
Cadmium	BRL		0.09	12	0.18		81	43	91		<0.00043		160	<0.029-<0.035
Mercury	<0.0029		<0.000014	<0.000014	<0.000014		0.29	<0.0033	0.066		<0.000014		160	1.7-2.4
Lead	2.7		<0.0038	<0.0038	<0.0038		**77**	15	**180**		2.7		800	1.7-2.4
Nickel	4.8		-	-	-		**310**	**280**	**860**		-		130	1.7-19
Zinc	46		-	-	-		**380**	**320**	**800**		-		62,000	26-190
Selenium	<0.12		<0.012	<0.012	<0.012		3.1	3.7	5.1		<0.012		62,000	2.2-5.7
Silver			<0.0017	<0.0017	<0.0017		<0.034	<0.035	0.98				1,000	<0.029-<0.034
Tin	<0.55		-	-	-		**32**	<0.61	**18**		-		100,000	<0.49-<0.59
Thallium	<0.12		-	-	-		<0.13	<0.13	<0.16		-		2	0.85-1.6
Chromium (Total)	3.7		<0.00085	<0.00085	<0.00085		320	69	3,600		<0.00085		NE	0.85-50
Chromium III	2.6		-	-	-		**318**	**69**	**3,593**		<0.00085		100,000	0.486-48.4
Chromium VI	1.1		-	-	-		1.41	<0.345	**6.27**		<0.00085		5.6	0.326-1.6

Notes:

Concentrations are presented in parts per million

PSRG = Preliminary Soil Remediation Goal - August 2011

NE = No standard established

Bold = Concentration exceeds the maximum background concentration

Red = Concentration exceeds the IHSB Preliminary Inductrial Health Based SRG

Blue = Concentration exceeds the TCLP Limit

J = Estimated concentration above method detection limits and below reportable concentrations

DD = Ditch sample

DC = Dust collector sample

B = Judgmental sample as requested by NCDENR

* Duplicate of GP-3

** Soil samples analyzed for TCLP RCRA Metals only

*** Soil samples analyzed for Total RCRA Metals only

TABLE 7: SUMMARY OF MONITORING WELL AND GROUNDWATER ELEVATION DATA

Well No.	Elevation [1]				Depth of Well [2]	August/September 2011 Static Water Level[3]	
	Land Surface	Top of Casing	Bottom of Screen	Top of Screen		Depth	Elevation
MW-1	756.81	756.38	746.38	736.38	20.0	12.42	743.96
MW-2	756.65	756.21	746.21	736.21	20.0	12.21	744.00
MW-3	755.71	755.36	745.36	735.36	20.0	11.45	743.91
MW-4	755.38	754.99	744.99	734.99	20.0	11.78	743.21
MW-5	758.68	758.22	748.22	738.22	20.0	13.40	744.82
MW-6	747.85	747.95	732.85	722.85	15.0	5.74	742.21

Notes:

All data in feet (ft)

[1] Elevations surveyed from NAV 88 Geoid 09

[2] Depth of well measured from land surface

[3] Static water level measured from top of casing

TABLE 8: GROUNDWATER SAMPLE RESULTS - AUGUST 2011 SAMPLING EVENT

Parameter	ANALYTICAL RESULTS						2L Standards
Location	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	
Date Sampled	8/25/11	8/25/11	8/25/11	8/25/11	8/25/11	9/27/11	
Chloroform	6	9.1	4	<0.089	0.51	1	70
MTBE	1.1	<0.070	0.58	<0.070	<0.070	<0.070	20
Tetrachloroethylene	**22**	**51**	**2.1**	**11**	**40**	<0.069	0.7
1,1,1-Trichloroethane	<0.063	<0.063	<0.63	2.4	<0.063	<0.063	200
1,1-Dichloroethane	<0.096	<0.096	<0.96	2.2	<0.096	<0.096	6
1,2-Dichloroethane	<0.14	**0.51**	<0.14	<0.14	<0.14	<0.14	0.4
Acetone	<0.62	3.9 J	<0.62	<0.62	<0.62	<0.62	6,000
Bromodichloromethane	<0.062	**0.99**	0.51	<0.62	<0.62	<0.62	0.6
Dichlorodiflouromethane	<0.11	0.54 J	BRL	<0.11	<0.11	<0.11	1,000
Antimony	**14**	<0.6	**54**	<0.6	<0.6	<0.6	1
Beryllium	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	4
Cadmium	<0.086	<0.086	<0.086	<0.86	<0.86	<0.86	2
Copper	17	<0.68	<0.68	150	32	<0.68	1,000
Lead	<0.77	<0.77	<0.77	<0.77	<0.77	9.2	15
Nickel	14	**250**	<0.35	**160**	30	**16,000**	100
Zinc	<0.83	<0.83	<0.83	<0.83	34	120	1,000
Total Chromium	**12,000**	**2,000**	**47,000**	**770**	**33**	<1.7	10
Hexavalant Chromium	**12,000**	**2,400***	**49,000***	**970***	**240***	<1.7	10

Notes:
Concentrations are presented in micrograms per liter, analagous to parts per billion
2L Standard = 15 A NCAC 2L.0202 Water Quality Standard - January 1, 2010
Bold = Concentration exceeds the 2L Standard
BRL = Below the reporting limit of the method of analysis
NE = No established standard
J = Estimated concentration above method detection limits and below reportable concentrations
* = Concentrations in excess of total chromium should be attributed to turbidity, laboratory artifacts, interference in the sampling process or undetermined factors.

TABLE 9: RESULTS OF VSP ANALYSIS - CHROME BUILDING

METAL	STATISTICAL PARAMETERS													
	Number of Samples	Mean	Minimum	Maximum	Variance	StdDev	Std Error	Skewness	Lower 95% [a]	Median	Upper 95% [b]	Normally Distributed	Outliers Present	Achieved Confidence
Cadmium	15	2.9838	0.0150	24.00	41.53	6.4470	1.6600	2.8800	0.0150	0.0160	4.9000	No	Max Value	96.50%
Cadmium Biased	17	3.5059	0.0150	24.00	40.05	6.3284	1.5349	2.4795	0.0150	0.0160	4.9000	No	Max Value	95.10%
Trivalent Chromium	15	381.46	3.59	5198.00	17761.00	1332.700	344.100	3.870	12.52	36.00	66.33	No	Max Value	96.50%
Trivalent Chromium Biased	20	406.420	3.59	5198.00	15052.00	1226.900	274.330	3.680	20.00	39.22	67.00	No	Max Value	95.90%
Hexavalant Chromium	15	0.9679	0.292	2.11	0.64	0.7984	0.2060	0.4850	0.298	0.4810	1.97	Yes	None	96.50%
Hexavalant Chromium Biased	20	3.7449	0.292	57.50	160.60	12.6730	2.8338	4.4484	0.303	0.5410	1.88	No	Max Value	95.90%
Copper	15	64.93	38.00	97.00	357.78	18.915	4.884	0.243	45.00	64.00	86.00	Yes	None	96.50%
Copper Biased	17	64.65	38.00	97.00	314.49	17.734	4.301	0.307	48.00	64.00	83.00	Yes	None	95.10%
Lead	15	10.2640	0.31	140.00	1288.30	35.8940	9.2677	3.8718	0.65	0.88	1.70	No	Max Value	96.50%
Lead Biased	17	9.1906	0.31	140.00	1136.50	33.7120	8.1764	4.1218	0.67	0.88	1.50	No	Max Value	95.10%
Nickel	15	36.93	5.00	140.00	1239.70	35.209	9.091	2.045	7.60	29.00	49.00	No	Max Value	96.50%
Nickel Biased	17	40.52	5.00	140.00	1221.80	34.955	8.477	1.623	7.80	31.00	51.00	No	Max Value	95.10%
Tin	15	0.2643	0.250	0.275	0.0001	0.0077	0.0020	-0.6714	0.255	0.265	0.270	Yes	None	96.50%
Tin Biased	17	0.2605	0.250	0.270	0.00004	0.0064	0.0015	-0.0406	0.260	0.260	0.270	Yes	None	95.10%
Zinc	15	39.000	20.00	150.00	1356.50	36.931	9.510	1.747	24.00	39.00	93.00	No	Max Value	96.50%
Zinc Biased	17	54.350	20.00	150.00	1480.10	38.472	9.331	1.422	26.00	40.00	93.00	No	Max Value	95.10%

Notes:

[a] Upper 95% Two-Sided Confidence Interval on the Median

[b] Lower 95% Two-Sided Confidence Interval on the Median

To Determine Presence of Outliers VSP Used Dixon's Extreme Value Test

To Determine Distribution of Data VSP Used the Shaprio-Wilk Normality Test at 5% signicance

TABLE 10: RESULTS OF VSP ANALYSIS - ANODIZING BUILDING

METAL	STATISTICAL PARAMETERS												
	Number of Samples	Mean	Minimum	Maximum	Variance	StdDev	Std Error	Skewness	Lower 95% [a]	Median	Upper 95% [b]	Normally Distributed	Outliers Present	Achieved Confidence
Cadmium	15	0.4696	0.0140	5.20	1.85	1.3630	0.3519	3.4400	0.0145	0.0165	0.1550	No	Max Value	96.50%
Cadmium Biased	17	0.4079	0.0140	5.20	1.65	1.2861	0.0312	3.6775	0.0145	0.0160	0.0175	No	Max Value	95.10%
Trivalent Chromium	15	22.08	3.30	63.00	331.73	18.213	4.703	0.890	3.80	19.00	39.00	Yes	None	96.50%
Trivalent Chromium Biased	18	97.464	3.17	1500.00	12265.00	350.220	82.547	4.235	12.38	4.10	29.00	No	Max Value	96.90%
Hexavalant Chromium	15	1.5791	0.133	17.90	20.61	4.5393	1.1720	3.8037	0.135	0.1630	1.25	No	Max Value	96.50%
Hexavalant Chromium Biased	18	3.7739	0.158	43.30	114.40	10.6960	2.5210	3.4579	0.157	0.1745	1.25	No	Max Value	96.90%
Copper	15	32.30	3.50	76.00	408.56	20.213	5.219	0.823.	14.00	30.00	57.00	Yes	None	96.50%
Copper Biased	17	32.97	3.50	76.00	382.20	19.550	4.742	0.723	15.00	30.00	51.00	Yes	None	95.10%
Lead	15	1.2207	0.28	4.00	1.41	1.1878	0.3067	1.6158	0.37	0.78	2.40	No	Max Value	96.50%
Lead Biased	17	0.9752	0.28	4.00	0.89	0.9453	0.2292	2.4524	0.39	0.62	1.00	No	Max Value	95.10%
Nickel	15	22.08	3.30	63.00	331.73	18.213	4.703	0.890	3.80	19.00	39.00	Yes	None	96.50%
Nickel Biased	18	27.506	3.30	130.00	1002.30	31.659	7.678	2.354	6.40	19.00	39.00	No	Max Value	95.10%
Tin	15	0.2607	0.235	0.295	0.0004	0.0206	0.0053	0.2931	0.240	0.255	0.285	Yes	None	96.50%
Tin Biased	17	0.2600	0.235	0.295	0.0004	0.0206	0.0050	0.2486	0.240	0.255	0.275	Yes	None	95.10%
Zinc	15	44.867	20.00	200.00	1914.70	43.757	11.298	3.624	26.00	35.00	45.00	No	Max Value	96.50%
Zinc Biased	17	43.765	20.00	200.00	1688.80	41.095	9.967	3.848	27.00	35.00	44.00	No	Max Value	95.10%

Notes:
[a] Upper 95% Two-Sided Confidence Interval on the Median
[b] Lower 95% Two-Sided Confidence Interval on the Median
To Determine Presence of Outliers VSP Used Dixon's Extreme Value Test
To Determine Distribution of Data VSP Used the Shaprio-Wilk Normality Test at 5% signicance

TABLE 11: RESULTS OF VSP ANALYSIS - ELECTROYSIS BUILDING

METAL	STATISTICAL PARAMETERS												
	Number of Samples	Mean	Minimum	Maximum	Variance	StdDev	Std Error	Skewness	Lower 95% [a]	Median	Upper 95% [b]	Normally Distributed	Outliers Present	Achieved Confidence
Cadmium	14	0.1265	0.0155	0.95	0.08	0.2863	0.0765	2.5320	0.0160	0.0170	0.6200	No	Max Value	96.50%
Cadmium Biased	15	0.2463	0.0017	1.90	0.29	0.5339	0.1378	2.5879	0.0160	0.0175	0.6200	No	Max Value	96.50%
Trivalent Chromium	14	24.47	4.19	89.00	440.29	20.983	5.608	2.378	9.10	20.00	43.00	Yes	None	96.50%
Trivalent Chromium Biased	15	24.202	4.19	89.00	432.82	20.804	5.372	2.389	9.10	19.00	38.00	No	Max Value	96.50%
Hexavalant Chromium	14	7.8000	0.155	68.80	339.97	18.4380	4.9270	3.2070	0.160	0.3310	17.10	No	Max Value	96.50%
Hexavalent Chromium Biase	15	7.2565	0.149	68.80	320.09	17.8910	4.6195	3.3218	0.160	0.1720	15.00	No	Max Value	96.50%
Copper	14	38.0000	14.000	80.00	336.15	18.3340	4.9001	0.6780	16.000	38.0000	55.00	No	None	98.70%
Copper Biased	15	38.33	14.00	80.00	296.67	17.224	4.440	0.755	21.00	36.00	52.00	Yes	None	96.50%
Lead	14	3.1214	1.10	15.00	12.97	3.6020	0.9626	3.1682	1.30	1.75	5.30	No	Max Value	98.70%
Lead Biased	15	2.9933	1.10	15.00	12.29	3.5062	0.9053	3.2675	1.30	1.70	3.40	Yes	None	96.50%
Nickel	14	69.09	5.70	300.00	10158.00	100.790	26.936	1.558	7.50	15.50	240.00	Yes	None	96.50%
Nickel Biased	15	73.147	5.70	300.00	9679.60	98.385	25.403	1.415	9.00	16.00	200.00	Yes	None	96.50%
Tin	14	0.2754	0.250	0.295	0.0002	0.0144	0.0038	-0.4600	0.255	0.278	0.290	Yes	None	96.50%
Tin Biased	15	0.2760	0.255	0.290	0.00014	0.0117	0.0030	-0.5493	0.265	0.280	0.290	Yes	None	96.50%
Zinc	14	50.000	30.00	75.00	213.80	14.622	3.907	0.240	30.00	50.00	71.00	No	Max Value	96.50%
Zinc Biased	15	51.400	30.00	75.00	212.69	14.584	3.766	0.074	39.00	51.00	65.00	No	Max Value	96.50%

Notes:

[a] Upper 95% Two-Sided Confidence Interval on the Median

[b] Lower 95% Two-Sided Confidence Interval on the Median

To Determine Presence of Outliers VSP Used Dixon's Extreme Value Test

To Determine Distribution of Data VSP Used the Shaprio-Wilk Normality Test at 5% signicance

TABLE 12: SUMMARY OF SOIL GAS ANALYTICAL RESULTS

Parameter	ANALYTICAL RESULTS		Acceptable Industrial Soil Gas Concentrations (µg/m3)
Location	SG-1	SG-2	
Date Sampled	1/30/2012	1/30/2012	
Acetone	210	31	280,000
Benzene	150	2.3	160
Bromodichloroethane	ND	5.9	33
2-Butanone (MEK)	41	2.7	44,000
Carbon Disulfide	0.3	ND	6,200
Carbon Tetrachloride	0.44	0.33	82
Chloroethane	0.52	ND	NS
Chloroform	ND	**200**	53
Chloromethane	2.50	1	780
Cyclohexane	110	ND	NS
1,4-Dichlorobenzene	ND	0.3	110
Dichlorodifluoromethane (Freon 12)	9.9	350	880
1,1-Dichloroethane	3.2	ND	770
1,2-Dichloroethane	2	ND	47
Ethanol	480	11	NS
Ethylbenzene	89	8	190
4-Ethyltoluene	36	11	NS
Heptane	220	5	NS
Hexane	590	8.4	6,200
Isopropanol		1.3	NS
Methylene Chloride	ND	1.3	2,600
Naphthalene	1.4	1.6	26
Propene	16	2.4	NS
Styrene	1.8	0.8	8,800
Tetrachloroethene (PCE)	8.2	**1,400**	210
Tetrahydrofuran	57	0.9	NS
Toluene	550	22	44,000
Trichloroethylene	ND	0.6	610
Trichlorofluromethane (Freon 11)	1.3	1.3	6,200
1,1,2-Trichloro-trifluoroethane (Freon	0.5	0.6	NS
1,2,4-Trimethylbenzene	**110**	50	62
1,3,5-Trimethylbenzene	42	13	NS
m&p-Xylenes	270	37	880
0-Xylene	120	16	880

Notes:
Concentrations are presented in micrograms per cubic meter (µg/m3)
Bold = Concentration exceeds the IHSB's Industrial Vapor Intrusion Screening Level - August 2011
ND = Not Detected (Below the reporting limit of the method of analysis)
NS = No Standard