LABELLA Associates, D.P.C.
Engineering
Architecture
Environmental
Planning

Remedial Investigation Work Plan

BCP Site #C828113

Location:

32 East Buffalo Street
Churchville, New York

Prepared for:

Alantic Funding & Real Estate, LLC
PO Box 26350
Rochester, New York 14626

LaBella Project No. 2170239

February 2017
Revised August 2017

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
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August 17, 2017

Mr. S. Ram Shrivastava, PE
Lotus Green Development, LLC
700 West Metro Park
Rochester, New York 14623

Dear Mr. Shrivastava:

Re: Luster-Coate, Site #C828113
Remedial Investigation Work Plan, August 2017
Churchville (V), Monroe County

The New York State Departments of Environmental Conservation and Health (collectively "the Departments"), have completed their review of the document entitled *Remedial Investigation Work Plan* (the Work Plan) dated August 2017 for the Luster-Coate site located in the Village of Churchville. In accordance with 6 NYCRR Part 375-1.6, the Departments have determined that the Work Plan, with modifications, substantially address the requirements of the Brownfield Cleanup Agreement. The modifications are outlined as follows:

1. **Section 6.1.7:** A tracer gas evaluation will be conducted at all soil vapor sample locations.

With the understanding that the above noted modifications are agreed to, the Work Plan is hereby approved. If you choose not to accept these modifications, you are required to notify this office within 20 days after receipt of this letter and prior to the start of field activities. In this event, I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

Please notify me at least 7 days in advance of the start of field activities.

We look forward to working together to bring this site back into productive use. If you have questions or concerns on this matter, please contact me at 585-226-5357.

Sincerely,

Frank Sowers

Frank Sowers, P.E.
Professional Engineer 1

ec:
Al Spaziano
Megan Denner
Patrick Fitzgerald
Dan Noll
Melissa Doroski
Wade Silkworth
Bernette Schilling

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300 State Street
Rochester, New York 14614

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CERTIFICATIONS

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

081996	8/8/2017	
NYS Professional Engineer #	Date	Signature

1.0 Introduction

LaBella Associates, D.P.C. (LaBella) is pleased to submit this Remedial Investigation Work Plan (RIWP) to conduct additional investigation at 32 East Buffalo Street, Village of Churchville, Monroe County, New York, herein after referred to as the "Site." The Site was entered into the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) in May 2006 as Site #C828113 and is considered a Volunteer. A Site Location Map is included as Figure 1. LaBella is submitting this RI Work Plan on behalf of Alantic Funding & Real Estate, LLC (Alantic) to further define the nature and extent of contamination at the Site.

Information gathered from previous investigations has identified the presence of volatile organic compounds, semi volatile organic compounds, metals, and polychlorinated biphenyls (PCBs). Implementation of this RIWP will support existing information and fill in data gaps to identify the nature and extent at and emanating from the Site in all media to determine remediation that is warranted. The activities in this RIWP will be carried out in accordance with the NYSDEC's Department of Environmental Remedial (DER)-10 (Technical Guidance for Site Investigation and Remediation*)* issued May 3, 2010. Furthermore, the scope identified here is based on the NYSDEC December 19, 2014 letter (refer to Appendix 5.

2.0 Site Description and History

2.1 Site Description and Surrounding Properties

The BCP Site boundary, herein after referred to as "the Site", is comprised of an approximate 4.05 acres. Figure 1 attached illustrates the location and surrounding area of the Site. The Site is currently undeveloped. Remnants of a razed industrial complex are visible and include but are not limited to concrete slabs and foundations, former wash pits, residual piping and wastewater infrastructure. The remainder of the Site is utilized as a parking lot and landscaped areas. Black Creek, a NYSDEC regulated wetland, is located adjacent to the west of the Site. A figure depicting the wetland delineation, performed by LaBella in December 2016, is included as Figure 5. The wetland delineation completed by LaBella, in its entirety, will be included as part of Task 6 (see below for details).

The Site is bounded by East Buffalo Street to the south, residential properties to the north, northeast, southeast, and southwest. The Site is also bounded by Black Creek to the west.

2.2 Site History

The Site has been developed since at least the early 1800s and has been utilized for manufacturing and industrial purposes, including but not limited to condiment bottle processing, wooden toy manufacturing, metalizing, painting, and plating operations. Luster Coate Metalizing Corporation, historical tenant of note, occupied the Site from an unknown time to approximately 2007. The Site was purchased by Lotus Green Development, LLC in 2002. Since that time, the Site has remained undeveloped and vacant.

2.3 Site Geology and Hydrogeology

Previous investigations have identified soils at the Site as primarily sand and silt to depths of up to 30-ft. below ground surface (bgs). Terminal depths of soil borings ranged from 16 to 24-ft. bgs; shallow surface samples were obtained from 0-2-ft. bgs. Groundwater was typically encountered at depths beginning at 3 to 14-ft. bgs and appears to flow west and towards Black Creek.

3.0 Previous Investigations

The following environmental reports exist for the Site:

Site assessment investigations of the Site have been completed previously and these are identified below.

- Site Assessment prepared by Secor International in 1998
- Site Assessment prepared by ENSR International (on behalf of a third party) in 2001
- US EPA Waste Characterization and Inventory dated September 2004
- Preliminary Site Assessment (PSA) prepared by Shaw Environmental & Infrastructure Engineering of New York, P.C. (Shaw) dated November 9, 2005
- Soil Removal Report prepared by Empire Geo Services – DRAFT – dated September 2006
- Soil Removal Report prepared by Empire Geo Services – dated 2014
- Interim Remedial Measures (IRM) Work Plan for Self-Implementing Cleanup and Disposal of PCBs prepared by Larsen Engineers dated November 1, 2016

The information detailing the previous investigation was obtained from the 2005 Shaw Environmental & Infrastructure Engineering of New Your, P.C. (Shaw) "Preliminary Site Assessment Report". LaBella was not provided with copies of the Secor International report, USEPA Waste Characterization and Inventory Report, or Soil Removal Report prepared by Empire Geo Services dated 2014, and as such, these reports were not summarized.

LaBella reviewed and utilized the following reports in developing this RI Work Plan:

Limited Phase II Site Assessment prepared by ENSR International – 2001

As summarized by ENSR International, *"A Phase I Environmental Assessment Report (ESA) was prepared for the site by Secor International Inc. (Secor) in August 1998. Below is a summary of the pertinent Phase I EA findings:*

The site consisted of a main building constructed beginning in the 1800s, and four warehouse buildings built in the 1970s. The site was being used by Luster-Coate as an industrial facility that applied metal film and paint coatings to plastic materials manufactured off-site. Prior to this use, the site was reportedly used for a variety of industrial purposes including condiment bottle processing, canary propagation, and wooden toy manufacturing. Areas of potential environmental concern identified in the Secor report included a spray paint booth area in the northern portion of the main building, a chemical storage area in the western portion of the main building, a waste storage area in the northern portion of Building C, a ventilation system sump in the northwestern comer of the main building, a caustic rinse sump in the western portion of the main building, a SPDES outfall by which non-contact cooling water is discharged to Black Creek, a 500-gallon gasoline AST in the eastern portion of the site, two removed 500-gallon ASTs, and an off-site suspected gasoline UST (also referred to by Secor as a possible fuel oil UST) which had been inactive since circa 1977 to the east of the paved service entrance to the site. No off-site concerns were identified as a result of the

database search performed by Secor. Secor concluded that there was no past or ongoing evidence of contamination, and recommended no further inquiry.

A Summary of ENSR's Limited Phase II ESA is detailed below:

On September 4, 2001, ENSR advanced three soil borings (SB-1 through SB-3) and installed temporary wells in four additional borings (TW-1 through TW-4) at the subject site using a hydraulic GeoprobeTU system. The boring locations are illustrated on Figure 2 included in Attachment A. Groundwater was successfully encountered in TW-1 and TW-4; however, despite field indications of groundwater during installation, TW-2 and TW-3 were dry upon attempts to sample them.

- *Boring SB-1 was advanced along the northeast comer of the main building, near the location of two former aboveground storage tanks (ASTs) which had reportedly never been used. Soil samples from boring SB-I were collected continuously in 4-foot intervals to a depth of 16 feet below ground surface (bgs). The soil samples were field screened for volatile organic compounds (VOCs) with a photoionization detector (PID). No elevated headspace readings were detected in any of these soil samples. Therefore, the sample collected at a depth between 3 and 4 feet bgs (just above the observed water table) was selected for laboratory analysis.*
- *Boring SB-2 was advanced along the northwest corner of the main building, near the paint booth ventilation system sump. Soil samples from boring SB-2 were collected continuously in 4-foot intervals to a depth of 16 feet bgs. The soil samples were field screened for VOCs with a PID. VOCs were detected at a concentration of 1 part per million (ppm) in the soil sample collected from the 4 to 8 foot interval; in addition, the soil in that sample exhibited dark staining with silver-colored reflective particles. Therefore, the sample collected at a depth between 7 and 8 feet bgs (where the staining was observed) was selected for laboratory analysis.*
- *Boring SB-3 was advanced along the western side of the main building, near the caustic rinse sump. Soil samples from boring SB-3 were collected continuously to a depth of 3.5 feet bgs, the depth at which refusal on possible concrete was encountered in multiple attempts at this area. The soil samples were field screened for VOCs with a PID. The sample collected at a depth between 2 and 3 feet bgs (just above refusal, and the approximate depth of the base of the sump) was selected for laboratory analysis.*
- *Boring W-1 was advanced in the paved service entrance, near a suspect gasoline or fuel oil underground storage tank (UST) on the abutting property to the east. Soil samples from boring W-1 were collected continuously in 4-foot intervals to a depth of 15 feet bgs (8 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. VOCs were detected at concentrations of 16 ppm, 180 ppm and 50 ppm in the soil samples collected from the 4 to 8 foot, 8 to 12 foot and 12 to 15 foot intervals respectively. In addition; the soil between 8 and 15 bgs exhibited a dark staining with a petroleum odor. Therefore, the sample collected at a depth between 9 and 10 feet bgs, which exhibited the highest PID reading and the heaviest staining, was selected for laboratory analysis.*
- *Following the collection of the soil samples, boring TW-1 was completed as a temporary well with a 1-inch diameter PVC riser screened between 5 and 15 bgs surrounded by a sandpack to 4 feet bgs, sealed with bentonite.*
- *Boring TW-2 was advanced along the eastern side of the subject site, adjacent to and downgradient of a 500-gallon gasoline AST. Soil samples from boring TW-2 were collected continuously in 4-foot intervals to a depth of 15.5 feet bgs (8 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. VOCs were detected at a concentration of 1 ppm in the soil sample collected from the 8 to 12 foot interval. Therefore, the sample collected at a depth between 10 and 11 feet bgs was selected for laboratory analysis.*

- *Following the collection of the soil samples, boring TW-2 was completed as a temporary well with a 1-inch diameter PVC riser screened between 5.5 and 15.5 feet bgs surrounded by a sandpack to 4.5 feet bgs, sealed with bentonite.*
- *Boring W-3 was advanced near the northwest corner of Building C, near the waste storage area. Soil samples from boring TW-3 were collected continuously in 4-f00t intervals to a depth of 16 feet bgs (10 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. No VOCs were detected in the soil samples. Therefore, the sample collected at a depth between 3 and 4 feet bgs (just above the observed water table) was selected for laboratory analysis.*
- *Following the collection of the soil samples, boring TW-3 was completed as a temporary well with a 1-inch diameter PVC riser screened between 6 and 16 feet bgs surrounded by a sandpack to 5 feet bgs, sealed with bentonite.*
- *Boring TW-4 was advanced along the west side of the main building, near the interior chemical storage area. Soil samples from boring TW-4 were collected continuously in 4- foot intervals to a depth of 16 feet bgs (10 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. No VOCs were detected in the soil samples, and no soil samples from this boring were submitted for analysis. Following the collection of the soil samples, boring TW-4 was completed as a temporary well with a 1-inch diameter PVC riser screened between 6 and 16 feet bgs surrounded by a sandpack to 5 feet bgs, sealed with bentonite. ENSR collected groundwater samples from temporary wells TW-1 and TW-4, and from the two (2) pre-existing cooling water supply wells along the west side of the main building, one from the interior of the building (IN-WELL) and one located along the building's exterior (OUT- WELL). The depth of the interior and exterior water supply wells are 50-55 feet bgs and 70 feet bgs respectively. The groundwater was collected using disposable polyethylene bailers attached to polyethylene twine.*
- *Groundwater was not able to be collected from temporary wells TW-2 and TW-3 due to the lack of water in these wells.*

Laboratory Data Summary:

- *Several petroleum-related VOCs, along with the SVOC naphthalene were detected at concentrations exceeding NYSDEC guidance values in the soil sample collected from boring TW-1. The concentration of zinc detected in the soil sample collected from boring TW-3 exceeded its NYSDEC guidance value. Mercury was detected at a concentration exceeding its NYSDEC guidance value in the soil sample collected from SB-2. Fluoranthene, benzo(a)anthracene, chrysene, pyrene, benzo(b)fluoranthene, benzo(k) fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, ideno(1,2,3-cd)pyrene, nickel and zinc were detected at concentrations exceeding their NYSDEC guidance values in the soil sample collected from SB-3. No other target compounds were detected above NYSDEC Guidance values in the soil samples analyzed. The soil analytical results are summarized in Tables 1-5.*

Petroleum-related VOCs and the SVOC naphthalene were detected at concentrations exceeding NYSDEC guidance values in the groundwater sample collected from temporary well TW-1. Cis-1,2-dichloroethene and vinyl chloride were detected at concentrations exceeding their NYSDEC guidance values in the groundwater sample collected from temporary well TW-4. Cis-l,2-dichloroethene, vinyl chloride, 1,1-trichloroethane, 1,1 dichloroethene, 1,1,1 - trichloroethane, trichloroethene and thallium were detected at concentrations exceeding their NYSDEC guidance values in the groundwater sample collected from the exterior water supply well OUT-WELL. Thallium was detected at a concentration exceeding its NYSDEC guidance value in the groundwater sample collected from the interior water supply well IN-WELL.
No other target compounds were detected above NYSDEC guidance values in the groundwater samples analyzed. The groundwater analytical results are summarized in Tables 6-9.

Conclusions:

- Petroleum impacts in soil and groundwater indicate a historical release from a suspected nearby UST along the driveway of the Site
- Elevated metals including Thallium, and SVOCs in the soil borings on the northwestern corner of the Site appear to be as a result of the on-site plating and painting operations and as the result of utilizing the on-site caustic rinse sump
- Chlorinated solvents as associated breakdown products detected on-site are most likely from the plating/painting operations and other historical operations. The source of the impacts appears to be located in the vicinity of the former caustic rinse sump.

A portion of this report is included in Appendix 5; a complete copy of this report is on file with the NYSDEC submitted by others.

Preliminary Site Assessment – Shaw 2005

As summarized by Shaw, *"Shaw conducted the PSA field investigation between October 25, 2004 and December 3, 2004 on behalf of the New York State Department of Environmental Conservation (NYSDEC). The PSA field investigation included the sampling and analysis of the following matrices: soil gas, surface soils, subsurface soils, groundwater, and sediment. Impacts were reported in four separate media (soil vapor, groundwater, surface soils and sediments) across the property. Volatile organic compounds (VOCs), predominately those used as solvents, were identified in the soil vapor and groundwater downgradient west of the main facility building. The occurrence of these impacts indicates that a source area could remain beneath the building slab. Polychlorinated biphenyls (PCBs) were reported in the surface soils throughout and off the property and in sediments in the Black Creek bordering the facility. The frequency, distribution, and concentrations of PCBs observed in the shallow intervals indicate that PCB containing oils may have been used historically for dust control in unpaved portions of the site. Semi-volatile organic compounds (SVOCs), predominantly those associated with poly aromatic hydrocarbons (PAHs), were identified in the surface soils north of the building near a culvert which drains the paved portion of the site.*

An additional area of concern observed during this investigation is indicative of an off-site historic fuel oil release. These impacts are relatively isolated to the driveway accessing the site. The sampling locations displaying these impacts are downgradient of the suspected location of an off-site underground storage tank (UST). This area, although addressed in this PSA, is not actually part of the Site.

Historical records indicate that the Site has been utilized as an industrial facility since at least 1929. Some of the reported usages of the site are the manufacturing of wooden toys, condiment bottle processing, canary propagation, bird seed distribution, and most recently metalizing (application of a metal film and paint coatings to plastic materials). Housekeeping practices of the most recent occupant, Luster-Coate Metalizing, were reported (either through documentation or interviews) to be poor and possibly suspect. Further delineation of the media and constituents of concern is recommended before formulating a course of remedial action for the site.".

It should be noted that Shaw identified a NYSDEC Spill (#03070107) which LaBella subsequently submitted a FOIL request for. This caller of the Spill indicated that one (1) 500-gallon mercury UST and one (1) 500-gallon lead based paint UST released an unknown amount of product onto site media during an apparent flood event. No further pertinent information was obtained as a result of the review of this Spill Report Form. Additionally, LaBella received a partial FOIL denial associated with this record. The NYSDEC stated that "The Department has determined that releasing information could endanger the life or safety of persons or the security of critical infrastructure (Public Officers Law Sections 86.5, 87.2(f), 89.5(a)(1)(1-a))."

No further information has been obtained by LaBella regarding this Spill. The authenticity of this information could not be confirmed and it is unknown if these USTs were/are present.

Figures 3a, 3b, and 3c summarize the data for the Site. A portion of this report is included in Appendix 5; a complete copy of this report is on file with the NYSDEC submitted by others.

Empire Geo Services Soil Removal Report – DRAFT – September 2006

As summarized by Empire Geo Services, *"The goal of the soil removal was to excavate and dispose of soil with PCB concentrations greater than 1,000 parts per billion (ppb; equivalent to 1 milligram per kilogram [mg/kg]). The removal areas were based on soil sampling locations where PCB concentrations in soil exceeded 1,000 ppb, as summarized in Empire's February 2006 work plan. In addition to the Luster Coate property, PCB-contaminated soil was present on residential properties located at 34, 36, and 40 East Buffalo Street. The removal of off-site PCBs was handled under a separate supplemental investigation. This additional investigation is not included for review for the purposes of this RI.*

Site activities were initiated on May 24, 2006. The soil removal consisted of three (3) main components:

1. *Soil removal and confirmation sampling*
2. *Air monitoring*
3. *Site restoration*

Soil removal was initiated on May 24, 2006 and continued through June 26, 2006. Per NYSDEC direction, no excavation was performed in areas covered by concrete, asphalt, or structures. A portion of this report is included in Appendix 5; a complete copy of this report is on file with the NYSDEC submitted by others.

1. Soil Removal and Confirmation Sampling

- *Excavation Area A*

This area is located on the southern property line of the Luster Coate facility, at the north property lines of 34 and 36 East Buffalo Street. A total of four sidewall samples and two floor confirmation samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between 40 and 620 ppb. Sidewall confirmation samples were not collected adjacent to the Luster Coate concrete sidewalk.

- *Excavation Area B*

This area is located west of the Luster Coate driveway and extends on to the 36 East Buffalo Street property. A total of 10 sidewall samples (including one duplicate) and five floor confirmation samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between 120 and 1,000 ppb. Sidewall confirmation samples were not collected adjacent to the sidewalk to the south, the Luster Coate driveway to the east, or the asphalt area to the north.

- *Excavation Area C*

This area is located east of the Luster Coate driveway and extends on to the 40 East Buffalo Street property. A total of nine sidewall samples and four floor confirmation samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between zero and 530 ppb. Sidewall confirmation samples were not collected along the north and south sides of either of the two garages located in the removal area, or along the Luster Coate driveway to the west.

- *Excavation Area D*

This area is located east of the Luster Coate driveway and south of the 40 East Buffalo Street driveway. A total of three sidewall samples and one floor confirmation samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between zero and 410 ppb. No sidewall confirmation sample was collected along the Luster Coate driveway to the west.

In summary, soil removal was performed in four discrete areas of the site. A total of 26 sidewall and 12 floor confirmation samples were collected with PCB-concentrations of 1,000 ppb or less. In all instances where a confirmation sample had a PCB concentration greater than 1,000 ppb, additional soil was excavated and confirmation sampling performed until the PCB concentration was reduced to 1,000 ppb or less. A total of approximately 700 tons of non-hazardous PCB-contaminated soil were removed from the site. This waste was transported to Waste Management's Mill Seat Landfill in Bergen, New York, for disposal. A total of approximately 80 tons classified as TSCA hazardous waste due to PCB concentrations greater than 50 mg/kg (50,000 ppb) were removed from the site. This material was removed from a portion of Excavation Area B. This waste was hauled to Waste Management's Model City Landfill in Model City, New York for disposal.

2. Air Monitoring

Air monitoring was conducted in accordance with the New York State Department of Health's Generic Community Air Monitoring Plan (CAMP). Monitoring of volatile organic compound (VOC) concentrations in air was performed using two RAE Systems MiniRAE 2000 photoionization detectors (PID) with data logging capabilities. Monitoring of airborne particulate concentrations was performed using two TSI DustTrak Model 8520 Aerosol Monitors with data logging capabilities. Monitoring was performed at any time soil removal or excavation backfilling was being conducted, except on days where rainfall would naturally mitigate VOC vapors or particulates in the air. If visible dust was evident, a water spray was used to wet the dust source and reduce airborne particulate concentrations to meet the CAMP requirements.

The monitors were generally set up on the east and west sides of the area in which soil removal or backfilling activities were being performed. As soil removal progressed over time, the monitors were relocated in an effort to most accurately reflect VOC and particulate concentrations in the air. The data logging capabilities of both meters were utilized to collect data. Airborne VOC concentrations were recorded by the PIDs at five minute intervals. Airborne particulate concentrations were recorded by the aerosol monitors at one minute intervals. Empire also manually recorded the instrument readings throughout the project. The manual measurements were used as backup in case the instrument data logging failed. The only day during which persistent, elevated VOC concentrations were detected was June 2, 2006. On this date, a former gasoline underground storage tank was removed from the property at 40 East Buffalo Street. Petroleum-contaminated soils exposed at the surface were kept covered with plastic or sand to reduce VOC concentrations in the air. A water spray was also utilized to mitigate VOC vapors in the air. Air monitoring for VOC concentrations was discontinued on June 22, 2006. A water spray was utilized on roadways and soil removal areas throughout the project to minimize airborne particulates and visible dust. Persistent, elevated particulate concentrations and visible dust were generally not present during the project. The average daily particulate concentrations were less than 0.150 milligrams per cubic meter (mg/m^3) on each day of monitoring. Average daily particulate concentration exceeded 0.100 mg/m^3 only on May 31 (east and west monitors), June 1 (east and west monitors), and June 7 (east monitor). Average daily particulate concentrations were otherwise generally less than 0.050 mg/m^3. Monitoring for airborne particulate concentrations was discontinued on July 6, 2006.

3. Site Restoration

The majority of the site restoration consisted of backfilling excavated areas. Clean sand fill was used to backfill all excavations to a depth of about 1 foot below the previously existing ground surface. Approximately 556 tons of sand backfill was used. The sand backfill was obtained from Elam Sand and Gravel in West Bloomfield, New York. Screened topsoil was placed above the sand backfill to reestablish the grade that existed prior to the soil removal. Approximately 150 tons of topsoil was placed over excavated

areas. The topsoil was obtained from American Green Landscape in Spencerport, New York. Excavated areas were subsequently seeded and watered to restore grass.

A portion of this report is included in Appendix 5; a complete copy of this report is on file with the NYSDEC submitted by others.

Interim Remedial Measures (IRM) Work Plan for Self-Implementing Cleanup and Disposal of PCBs - Larsen Engineers 2016

As summarized by Larsen Engineers, *"This IRM Work Plan was developed in accordance with NYSDEC Division of Environmental Remediation's DER-10 "Technical Guidance for Site Investigation and Remediation", and CP-51 Soil Cleanup Guidance documents. This plan was approved in early 2016 with the understanding that sampling and testing will be followed by removing the surface soils with PCB concentrations above 10 ppm from a small area along the creek. United States Environmental Protection Agency (USEPA) guidance indicated that there was a need to increase the number of samples in the source area to one sample per 100 square feet (sf) and defer the excavation work to post characterization. The NYSDEC required that three (3) samples be taken at each location to determine the PCB concentrations at 0-2 inch, 2inch to 12 inch and 12 to 24 inch depth. Soil cleanup goals are 1 ppm PCB in surface soils and 10 ppm PCB in subsurface soils.*

The objective of the proposed remedial action will be to comply with Track 4 or NYSDEC approved Track by excavating and disposing of PCB contaminated soils above CP-51 cleanup thresholds, which are as follows:

- *Areas (if any) with values of PCB above 50 ppm will be separated so such soils are disposed at an approved hazardous waste landfill.*
- *Based on the proposed future use of this site as a Restricted-Residential development (as defined in 6NYCRR Part 375-1.8) the 1 ppm cleanup goal must be achieved in the top two feet of exposed soil and 10 ppm in all other soils.*

The proposed IRM activities for the Site include:

- *Excavation and Disposal of PCB contaminated soils with concentrations exceeding 10 ppm based on historic sampling results.*
- *Confirmatory sampling of excavation areas to determine compliance with the CP- 51 guidance document.*
- *Sampling of historically identified PCB impacted soil areas where concentration were detected at greater than 1 ppm to determine compliance with the CP-51 guidance document.*

Soils will be excavated from 10 foot by 10 foot areas to a depth of 1 foot surrounding the following sample areas (Figure 6):

- *Excavation Area A – Former sampling location SS-133*
- *Excavation Area B – Former sampling locations SS-02 and SS-116*
- *Excavation Area C – Former sampling location SA-3*
- *Excavation Area D – Former sampling location SA-4A*

Soils will be staged on polyethylene sheeting and securely covered to prevent run-off, prior to off-site disposal. On-Site soil staging areas will be determined with approval by the NYSDEC. The limits of the excavations will be located using a handheld global positioning system (GPS) and/or through survey.

USEPA protocol will be followed to take sufficient samples so that remedial activity at these sites achieves the soil clean up goals and provide the replacement clean soil cover.

Following the excavation of contaminated soil areas, confirmation samples will be collected in accordance with the QA/QC Plan and with NYSDEC protocols in DER-10 Section 5.5(b)(4)(iv). This includes the collection of a minimum of 5 soil samples, consisting of four (4) sidewall samples and one (1) floor sample per 15 feet of excavation trench. Samples will be analyzed for PCBs (EPA Method 8021). Analytical results will be evaluated with respect to NYSDEC's CP-51 guidance to determine the completeness of the IRM.

All decontamination will be performed in accordance with NYSDEC approved procedures. Sampling methods and equipment have been chosen to minimize decontamination requirements and prevent the possibility of cross-contamination. Excavated PCB impacted soils will be transported to an NYSDEC approved off-Site disposal facility permitted to accept such wastes. Prior to transport, waste characterization samples will be collected for laboratory analysis, as required by the disposal facility. IRM-generated wastes will be staged on-Site for appropriate waste characterization and disposal unless it is loaded out as it is generated. All waste containers will be labeled and secured. Waste manifests or bill of ladings will be used for all off-Site shipments and included in the report. Once the IRM has been determined to be complete through the review and approval of confirmation samples by the NYSDEC, site restoration will be performed in accordance with DER-10 Section 5.4(d). Any imported backfill will be sampled in accordance with DER-10 Table 5.4(e)10. Disturbed soils will be seeded and mulched to re-establish vegetation. In addition, excavations may remain open until such time that cover is proposed and approved for placement as a part of the final remedy for the site.".

This work is currently underway by the property owner. The results of the IRM will be included in a Construction Completion Report (CCR) and also in the RI Report. A complete copy of the IRM Work Plan is included in Appendix 5.

*Revised original report "Site Investigations and Interim Remedial Measures (IRM) Work Plan" dated March 2015 and October 2015.

**Laboratory reports for these aforementioned investigations are on file with the NYSDEC prepared and submitted by others.

4.0 Standards, Criteria and Guidelines

This section identifies the Standards, Criteria and Guidelines (SCGs) for the Site. The SCGs identified are used in order to quantify the extent of contamination at the Site that require remedial work based on the cleanup goal. The SCGs to be utilized as part of the implementation of this IRM Work Plan are identified below:

Soil SCGs: The following SCGs for soil were used in developing this RI Work Plan:

- NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (RPSCOs) for the Protection of Groundwater;
- NYCRR Subpart 375-6 Remedial Program Soil Cleanup Objectives (RPSCOs) for Restricted Residential;
- NYCRR Subpart 375-6 RPSCOs for the Protection of Public Health/Unrestricted Use; and
- NYSDEC Commissioner Policy (CP)-51 Soil Cleanup Guidance

Groundwater and Surface Water SCGs: The following SCGs for groundwater were used in developing this IRM Work Plan:

- NYSDEC Part 703 Surface Water and Groundwater Standards
- Technical and Operational Guidance Series (TOGS) 1.1.1 Water Quality Standards and Guidance Values

Soil Gas SCGs: Currently, no state regulatory (NYSDEC or NYSDOH) guidance values exist for soil gas.

5.0 Objectives and Rationale

The objective of this RI is to determine the aerial and vertical extent of the contamination at and emanating from all media at the Site and the nature of that contamination. In addition, the BCP general requirements (e.g., "full suite" testing, surface soil sampling, quality assurance/ quality control (QA/QC), etc.) will also be fulfilled.

The Site is currently a vacant and razed former industrial complex. Soil and groundwater sampling has been conducted at the Site and results are included on Figures 2-4 representing SVOCs, VOCs, Metals, and PCBs in soil and groundwater.

Areas of Concern

Testing completed to date indicates that chlorinated volatile organic compounds (CVOCs), metals, VOCs, PCBs, and SVOCs are present in soil and groundwater at the Site at levels that exceed NYSDEC standards. The exact source is unknown; however, two (2) areas of concern (AOC) have been identified based on the current information for the Site. It should be noted that the delineation of PCBs is being completed by the owner as part of the Interim Remedial Measures (IRM) Work Plan for Self-Implementing Cleanup and Disposal of PCBs prepared by Larsen Engineers and dated November 1, 2016. As such, additional AOCs that may be present associated with PCBs will be updated when these findings and conclusions become available. The AOCs associated with historical site operations is attributed to the following:

- **Previous Owners/Operators**- The Site was formerly occupied by various manufacturing, plating and machining operations since at least the early 1800s. It is LaBella's understanding that historical uses include the use of solvents, specifically trichloroethene (TCE) and 1,1,1-trichloroethane (TCA) which were both reportedly utilized in the spray booth area. Metal exceedances encountered throughout the Site may be the result of on-site painting and metalizing operations. Additionally, PCBs in the form of a spray were reportedly applied to the now paved asphalt driveway as a dust control measure. The previous notable occupant includes Luster Coate Metalizing Corporation (Luster Coate). Figures 2a and 2b depict locations of notable previous operations associated with these AOCs.

Based on the above, historical Site diagrams obtained from previous reports (Refer to Appendix 6) and information provided by the NYSDEC and Larsen Engineers, the following AOCs were retained for evaluation as part of this RI:

- AOC 1- Generalized Industrial Use
- AOC 2- This work is being done under IRM Work Plan for Self-Implementing Cleanup and Disposal of PCBs (reportedly completed December 2016). As such, AOC 2 is handled under that IRM Work Plan.

Locations where contaminants are known or suspected to have been discharged were selected for AOCs.

6.0 Remedial Investigation Scope

The proposed remedial investigation field activities to be completed as part of the work plan have been separated into tasks and are presented in this section. A list with contact information of the anticipated personnel involved with the project is included in Appendix 6. Qualifications for the personnel are also included.

During all ground intrusive work conducted at the Site, air monitoring will be conducted in accordance with the NYSDOH Generic Community Air Monitoring Plan (CAMP). A copy of this plan is included as Appendix 1. All exterior monitoring wells will be surveyed using a GPS, including elevation measurements in accordance with the QCP included as Appendix 3.

6.1 Remedial Investigation Tasks

The RI Field Plan is detailed below:

Task 1: Surface Soil Sampling- This task is a program requirement to assess surface soils at the Site to ensure surface soils are in compliance with the proposed use (i.e., Restricted Residential) of the Site. It should be noted that a significant portion of the Site is covered with asphalt and/or concrete slabs from former buildings and it is currently anticipated that a Site Management Plan will be put in place to address cover requirements for future development. This task includes collecting surface soil samples from an area of an eight (8) inch culvert, located in the northern portion of the Site, identified in the Shaw RI Report (refer to Figure 4). It should be noted that this culvert was not observed during recent site visits and may be buried under concrete rubble. This task will include measures to attempt to locate the culvert discharge point.

Task 2: Overburden Soil and Groundwater Sampling– This task is proposed to better define the potential sources of soil impacts at the Site. In addition, this task is intended to complete the NYSDEC testing requirements. Additionally, LaBella will conduct a visual assessment in and in the immediate vicinity of former building slabs for evidence related to underground storage tanks. This evidence includes but is not necessarily limited to the following: residual piping and suspect fill ports and/or vent pipes.

Task 3: Shallow Groundwater Sampling- This task is proposed to evaluate the groundwater conditions at the Site.

Task 4: Fish and Wildlife Resources Impact Analysis (FWRIA) Part 1: Resource Characterization- A Site characterization will be conducted to identify all fish and wildlife resources in accordance with DER-10 Section 3.10.1.

Task 5: Soil Gas with Co-located Groundwater VOC Sampling - This task is included per NYSDEC request. This task will assess soil vapor and groundwater in proximity to residential properties.

Sampling procedures that require full suite parameters will include the following analysis:

- USEPA Target Compound List (TCL) VOCs including tentatively identified compounds (TICs) using United States Environmental Protection Agency (USEPA) Method 8260;
- USEPA TCL SVOCs including TICs using USEPA Method 8270;
- Target Analyte List (TAL) metals using USEPA Methods 6010/7470/7471;
- Cyanide using USEPA Method 9012;
- PCBs using USEPA Method 8082; and
- Pesticides using USEPA Method 8081.

QA/QC samples will also be collected and analyzed (e.g., trip blank, duplicate sample, matrix spike/ matrix spike duplicate (MS/MSD)). The specific QA/QC program is detailed in section 6.4. The soil samples will be

delivered under chain of custody procedures to an Environmental Laboratory Approval Program (ELAP) certified laboratory. The laboratory will provide a NYSDEC Analytical Services Protocol (ASP) Category B Deliverables data package and a Data Usability Summary Report (DUSR) will be completed and the Electronic Data Deliverable submitted to the NYSDEC.

6.1.1 Task 1: Surface Soil Sampling

A program requirement of the BCP is the collection and analysis of surface soil samples to assess the conditions of the subsurface soil relative to the use of the property. The BCP Site is comprised of razed concrete slabs and asphalt parking lots with the remaining portions of the BCP Site vegetated (approximately 26% or 32,234 square feet). Based on the limited vegetated area, it is proposed that six (6) additional surface soil samples be collected, in addition to the surface soil samples being collected in the area of PCBs as part of the Self-Implementing Cleanup.

The surface soil samples are divided into two (2) areas with separate sampling parameters as detailed below:

- Three (3) surface soil samples analyzed for TCL VOCs, TCL SVOCs, TAL Metals, Pesticides, and PCBs from the northwestern portion of the Site along a former drainage path from an eight (8) inch culvert pipe. This culvert pipe was reportedly the discharge point for drainage from a catch basin to the east in an asphalt area. LaBella's recent site visits did not locate this pipe and it may be buried under masonry debris from the building demolition work. LaBella will attempt to locate the discharge point by use of a metal detector and if necessary introduce water into the catch basin to the east. Subsequent to determining the location and drainage path from the culvert, the three (3) soil samples will be collected. One (1) sample will be from the discharge point and the second will be downgradient equidistant between the discharge point and the property line. The third sample will be at the property line.
- Three (3) surface soil samples for PCBs beneath the southern driveway where PCB impacts were noted previously.

It should be noted the December 19, 2014 letter the NYSDEC also requested surface soil samples for PCBs along the western side of the Site; however, that work is being completed by the owner under the IRM Work Plan and Self-Implementing Cleanup.

The proposed surface soil sample locations are shown on Figure 2. These locations were selected to evaluate the limited surface soils across the Site and are based on a NYSDEC request, which includes the grass covered area in the northwestern portion of the Site near the former drainage pipe, and beneath an asphalt driveway area where previous PCB impacts were identified. The following methods will be used to collect surface soil samples:

- The surface soil sample will be collected using new sterile sampling spoons or decontaminated between samples to prevent cross-contamination from a depth of 0 to 2-in. and 2-12-in. bgs. Soils from each sample interval will be placed in a plastic Ziploc bag to collect headspace readings, with the exception of the VOC sample which will be immediately containerized to eliminate potential volatilization.
- The sample will be thoroughly mixed within the bag and allowed to reach ambient temperature.
- The soil will then be screened using a PID and the readings will be recorded.
- Additionally, olfactory indications of impairment will be observed during surface soil sampling.

6.1.4 Task 2: Overburden Soil Sampling

This task will involve collection of overburden soil samples to further delineate the horizontal and vertical extent of subsurface soil contamination. This work will be completed in accordance with NYSDEC DER-10 as well as Section 5 and 6 of the Quality Control Plan (QCP) included as Appendix 3. A total of twelve (12) overburden soil borings will be advanced, five (5) of which will be converted to groundwater monitoring wells (refer to Task 3 for groundwater evaluation). Overburden soil borings/groundwater monitoring wells will be advanced in the following locations:

<u>Shallow overburden borings/ wells:</u>

- Five (5) overburden borings with samples from 0-2' under asphalt parking lot, located to the east to the main building
- Two (2) overburden soil borings located in the southern asphalt parking lot
- Five (5) overburden soil boring/ groundwater monitoring wells
  - One (1) located in the southern asphalt parking lot
  - One (1) located on the eastern central portion of the Site near a former waste storage area
  - Two (2) located in the central portion of the former Site building and in the vicinity of the former chemical storage area
  - One (1) located in the vicinity of the former driveway area south of the former main building

Refer to Figures 3 and 4 for proposed soil boring and monitoring well locations. Locations may vary slightly based on field conditions. Any significant alterations will be discussed with the NYSDEC.

The following methods will be followed to complete this task:

- A Dig Safely New York stakeout will be conducted at the Site to locate any subsurface utilities in the areas where the subsurface assessment and delineation will take place. In addition, utility drawings provided by the owner will be reviewed to identify any subsurface utilities located within the footprint of the Site buildings. In the event that utilities appear to represent a subsurface issue, compressed air may be utilized to remove subsurface material up to 4-ft. bgs.
- Borings will be advanced with a "Geoprobe" direct push sampling system. The use of direct push technology allows for rapid sampling, observation, and characterization of relatively shallow overburden soils. The Geoprobe utilizes a four-foot macrocore sampler, with disposable polyethylene sleeves. Soil cores will be retrieved in 4-ft. sections, and can be easily cut from the polyethylene sleeves for observation and sampling.
- Each boring implemented at the Site will be advanced until equipment refusal is encountered, although attempts will be made to reach bedrock (estimated to be approximately 30-ft. bgs at the deepest point based on previous borings) in locations where impacts are identified. Approximate proposed soil boring locations are depicted on Figure 2b. These locations may vary slightly based on field conditions.
- Drilling equipment will be decontaminated prior to use and between boring locations, using an Alconox and potable water solution. Refer to Section 12 of the QCP included and Appendix 3 for additional details regarding decontamination procedures.
- Soils from the borings will be continuously screened in the field for visible impairment, olfactory indications of impairment, evidence of NAPLs, and/or indication of detectable VOCs with a PID collectively referred to as "evidence of impairment." Field screening findings will be recorded soil boring logs and included in the RI Report.
- Soil generated during soil sampling activities will be containerized in 55-gallon drums,

characterized, and disposed of off-Site in accordance with applicable regulations. Refer to Section 11 of the QCP included as Appendix 3 for additional details regarding the management of investigation-derived waste.

- LaBella will conduct a visual assessment in and in the immediate vicinity of former building slabs for evidence related to underground storage tanks. This evidence includes but is not necessarily limited to the following: residual piping and suspect fill ports and/or vent pipes. In the event a suspect tank is encountered, LaBella will submit an addendum to the Work Plan to further evaluate such suspect tanks per NYSDEC DER-10.
- The following soil and groundwater samples will be collected (one (1) soil sample per boring) and analyzed for the below mentioned parameters:
    - Five (5) overburden soil borings located east of the main building. Note these samples are planned to be from 0-2'-bgs
        - TCL SVOCS: USPEA Method 8270
        - TAL Metals: USEPA Method 6010C/7471
        - PCBs: USEPA Method 8082A
    - Two (2) overburden soil samples from the southern parking lot
        - TCL SVOCS: USPEA Method 8270
        - TAL Metals: USEPA Method 6010C/7471
        - PCBs: USEPA Method 8082A
        - Pesticides: USEPA Method 8081
    - Five (5) overburden soil boring/ groundwater monitoring wells
        - One (1) located in the southern asphalt parking lot
            - TCL SVOCS: USPEA Method 8270
            - TCL VOCs: USEPA Methods 8260B
            - TAL Metals: USEPA Methods 6010C/7471A
            - PCBs: USEPA Method 8082A
            - Pesticides: USEPA Method 8081
            - 1,4-Dioxane*: USEPA Method 8270
        - One (1) located on the eastern central portion of the Site
            - TCL SVOCS: USPEA Method 8270
            - TCL VOCs: USEPA Methods 8260B
            - TAL Metals: USEPA Method 6010C
            - PCBs: USEPA Method 8082A
            - Pesticides: USEPA Method 8081
            - 1,4-Dioxane*: USEPA Method 8270
        - Two (2) located in the central portion of the former Site building and in the vicinity of the former chemical storage area
            - TCL VOCs: USEPA Methods 8260B
            - TAL Metals: USEPA Methods 6010C/7470A/7471A
            - 1,4-Dioxane*: USEPA Method 8270
        - One (1) located in the southern asphalt parking lot
            - TCL VOCs: USEPA Methods 8260B
            - TCL SVOCS: USPEA Method 8270
            - 1,4-Dioxane*: USEPA Method 8270
- Monitoring wells are proposed in five (5) boreholes (refer to Figure 2b). Wells will be completed with 1-in or 2-in diameter PVC wells. Monitoring wells will be constructed using a 5-ft. to 10-ft. long 0.010-inch slotted PVC well screen finished with a PVC riser to the ground surface. The screened section will be placed at the depth of the worst case impacts identified within the boring. In the event that impacts are not observed, the screened section will be

placed at the same depth as the nearest well with impacts. The annulus will be filled with sand to approximately 1-ft above the top of the screen, and filled with bentonite to the ground surface.

Groundwater development procedures are as follows:

- Wells will be developed until dry; field parameters have stabilized consistent with the specifications provided in 6.1.5 below, or until at least ten (10) well volumes have been removed using a dedicated bailer or peristaltic pump. In addition, any water introduced during drilling will be removed, although none is anticipated. Development water will be containerized in 55-gallon drums, characterized, and disposed of off-Site in accordance with applicable regulations. Refer to Section 11 of the QCP included as Appendix 3 for additional details regarding the management of investigation-derived waste.

  *Per the NYSDEC, the detection limit for 1,4-dioxane should be no higher than 0.28 µg/l (ppb). ELAP offers certification for 1,4-dioxane for both 8260 and 8270, specifically including the ability to run in "selective ion monitoring" (SIM) mode. Method 8270 is preferred because it provides a more robust extraction procedure, uses larger sample volume, is less vulnerable to interference from chlorinated solvents, and generally provides lower detection limits. Method 8260 can be accepted when justified. All data qualifiers will be reported for all analyses completed on environmental samples along with ASP-Category B deliverables and DUSRs.

6.1.5 Task 3: Groundwater Monitoring

- Following development, the wells will be allowed to recharge for a minimum of two (2) weeks prior to sampling. Samples from wells will be collected using low-flow techniques using a bladder pump (all compounds) or peristaltic pump (all compounds except VOCs) or an alternative method approved by the NYSDEC project manager. During sampling, the following parameters will be measured and recorded at three (3) to five (5) minute intervals from exterior wells:
  - Water level drawdown (<0.3')
  - Temperature (+/- 3%)
  - pH (+/- 0.1 unit)
  - Dissolved oxygen (+/- 10%)
  - Specific conductance (+/- 3%)
  - Oxidation reduction potential (+/- 10 millivolts)
  - Turbidity (+/- 10%, <50 NTU for metals)

All existing and accessible wells will be surveyed (latitude, longitude, and elevation) following installation of proposed wells in Task 5 and Task 6. Each of the new wells will be analyzed for "Full Suite" parameters. Perfluorinated Compound sampling and analysis will be addressed in a separate Work Plan Addendum.

6.1.6 Task 4: Fish and Wildlife Resources Impact Analysis (FWRIA) Part 1: Resource Characterization

Black Creek runs along the western Site border of the BCP Site and; as such, a Site characterization will be conducted to identify all fish and wildlife resources within 0.25 miles of the Site in accordance with DER-10 Section 3.10.1(c). Resources will be depicted on a map to be included in the Remedial Investigation Report. The required maps will be generated in accordance with DER-10 Section 3.10.1(c) and included in the RI Report. A copy of the LaBella generated wetland delineation figure is included as Figure 5.

In addition, contaminant migration pathways and contaminants of ecological concern will be identified, and conclusions will be made as to the potential adverse effects to fish and wildlife.

6.1.7 Task 5: Soil Gas with Collocated Groundwater VOC Sampling

Five (5) soil gas sampling points will be installed for collection of soil gas samples. The following methods will be utilized to collect soil gas samples:

- Sampling points will consist of 1-inch PVC well screen or stainless steel screen installed using direct push technology to approximately 5-feet bgs.
- A porous, inert backfill material (e.g., glass beads or coarse sand) will be used to create a sampling zone of 1 to 2 feet in length. The soil gas sampling points will be constructed of 1-inch PVC well screen connected to a riser pipe or will be constructed of inert tubing (e.g., polyethylene, stainless steel, or Teflon®) of the appropriate size (typically 1/8 inch to 1/4 inch diameter) and of laboratory or food grade quality to the surface.
- The annulus of the borehole will be backfilled with glass beads or coarse sand in the sampling zone. The soil vapor probes will be sealed above the sampling zone with a minimum 3-feet of bentonite slurry.
- The sampling points will be sealed and finished with curb boxes to prevent infiltrations of water or outdoor air.
- After installation of the probes, one (1) to three (3) volumes (i.e., the volume of the sample probe and tube) will be purged prior to collecting the samples to ensure samples collected are representative.
- Flow rates for purging will not exceed 0.2 liters per minute to minimize the ambient air infiltration during sampling.
- During purging of the sample point, a tracer gas evaluation will also be conducted in one sample location to verify the integrity of the sub-slab soil vapor probe seal. An appropriate tracer gas will be used (e.g., sulfur hexafluoride (SF7), helium, etc.). An enclosure will be constructed around the soil gas sampling point (e.g., plastic bag, plastic bucket, etc.) and sealed around the sample point casing. Subsequently, the enclosure will be enriched with the tracer gas. The purged soil gas will then be tested for the tracer gas by an appropriate meter (i.e., a meter capable of measuring the concentration of 10% or greater).
- Soil gas samples will be collected using one (1) liter Summa Canisters® equipped with pre-calibrated laboratory supplied flow regulators set for a sampling time of six (6) hours. The Summa Canisters® will be certified clean by the laboratory. The Summa Canister® will be connected to the soil gas sampling point via inert tubing (e.g., polyethylene, stainless steel, or Teflon®).
- Samples will be submitted to an analytical laboratory for analysis of the full list of VOCs by USEPA Method TO-15 with a minimum detection limit of 1 $\mu g/m^3$ with 0.25 $\mu g/m^3$ for TCE and vinyl chloride.
- In addition, in the same borehole or in an adjacent borehole, a groundwater sample will be collected, as required by the NYSDEC. These collocated groundwater samples will be collected utilizing a Geoprobe® Screen Point 16 (“SP16”) groundwater sampler. Details on the use of the SP16 sampler are included in Appendix 7, which includes sample collection options. It should be noted that soil samples will not be collected.

6.2 Health and Safety and Community Air Monitoring

LaBella's Health and Safety Plan (HASP) for this project is included as Appendix 2. The NYSDOH Generic Community Air Monitoring Plan (CAMP) and Fugitive Dust and Particulate Monitoring will be utilized for this RI and is included as Appendix 1.

6.3 Housekeeping and Investigation Derived Waste

Good housekeeping practices will be followed to prevent leaving contaminated material on the ground surface (e.g., precautions will be taken to prevent impacts to the ground surface due to material spilled during soil sampling, etc.). Any material that does spill on to the ground surface will be promptly picked up and placed in an appropriate location and the ground surface will be cleaned.
Waste materials anticipated to be generated during the implementation of this RI Work Plan include soil generated from soil borings and groundwater generated from development and sampling of the wells. These waste materials will be containerized in 55-gallon drums and stored at the Site in a secure location for characterization and future disposal. Drums containing highly contaminated liquid waste, including but not limited to non-aqueous phase liquid (NAPL) will have secondary containment. Additional information regarding Investigation Derived Waste is included in Section 11 of the QCP, included in Appendix 3.

6.4 Quality Assurance/Quality Control Plan

Activities completed at the Site will be managed under LaBella's Quality Control Program, which is included in Appendix 3. Laboratory QA/QC sampling will include analysis of one (1) trip blank and one (1) duplicate sample for each matrix type (i.e., soil and groundwater) at a rate of one per 20 samples collected for each parameter group, or one per shipment, whichever is greater. Additionally, one (1) Matrix Spike/Matrix Spike Duplicate (MS/MSD) will be collected and analyzed for each twenty samples collected for each parameter group, or one per shipment, whichever is greater. The MS/MSD will be analyzed for the same parameters as that of the field samples. The samples will be delivered under Chain of Custody procedures to an ELAP-certified laboratory. The laboratory will provide a NYSDEC ASP Category B Deliverables data package for all samples except the TO-15 samples (indoor air, outdoor air, sub-slab soil vapor). For the TO-15 samples, the laboratory will provide a data package using the ASP Category B format. A DUSR will be completed for all ASP-B and ASP-B format laboratory data packages per DER-10. The DUSRs will include the laboratory data summary pages showing corrections made by the data validator and each page will be initialed by the data validator. The laboratory data summary pages will be included even if no changes were made.

7.0 RI Schedule and Reporting – Deliverables

The information and laboratory analytical data obtained during the RI will be included in a RI Report, completed in accordance with DER-10. Implementation of the RI Work Plan will begin within 60 days after NYSDEC approval of this work plan and the standard three-day Dig Safely New York waiting period. The field work is to be completed within 2 months of approval of the RI Work Plan. The RI Report will be submitted within two (2) months of receipt of DUSRs. The RI Report will also include information on the IRM which will be further detailed in a Construction Completion Report (CCR). The above schedule assumes that an addendum to the RI Work Plan will not be required. If an RI Work Plan Addendum is required, it will be submitted within 30 days of being requested as the need is identified and it will include a revised schedule. All data will also be submitted in the NYSDEC-approved EDD format. Moreover, the data will be submitted on a continuous basis immediately after data validation occurs, but in no event more than 90 days after the data has been submitted to the remedial party or its consultant(s).

LaBella Associates, D.P.C.
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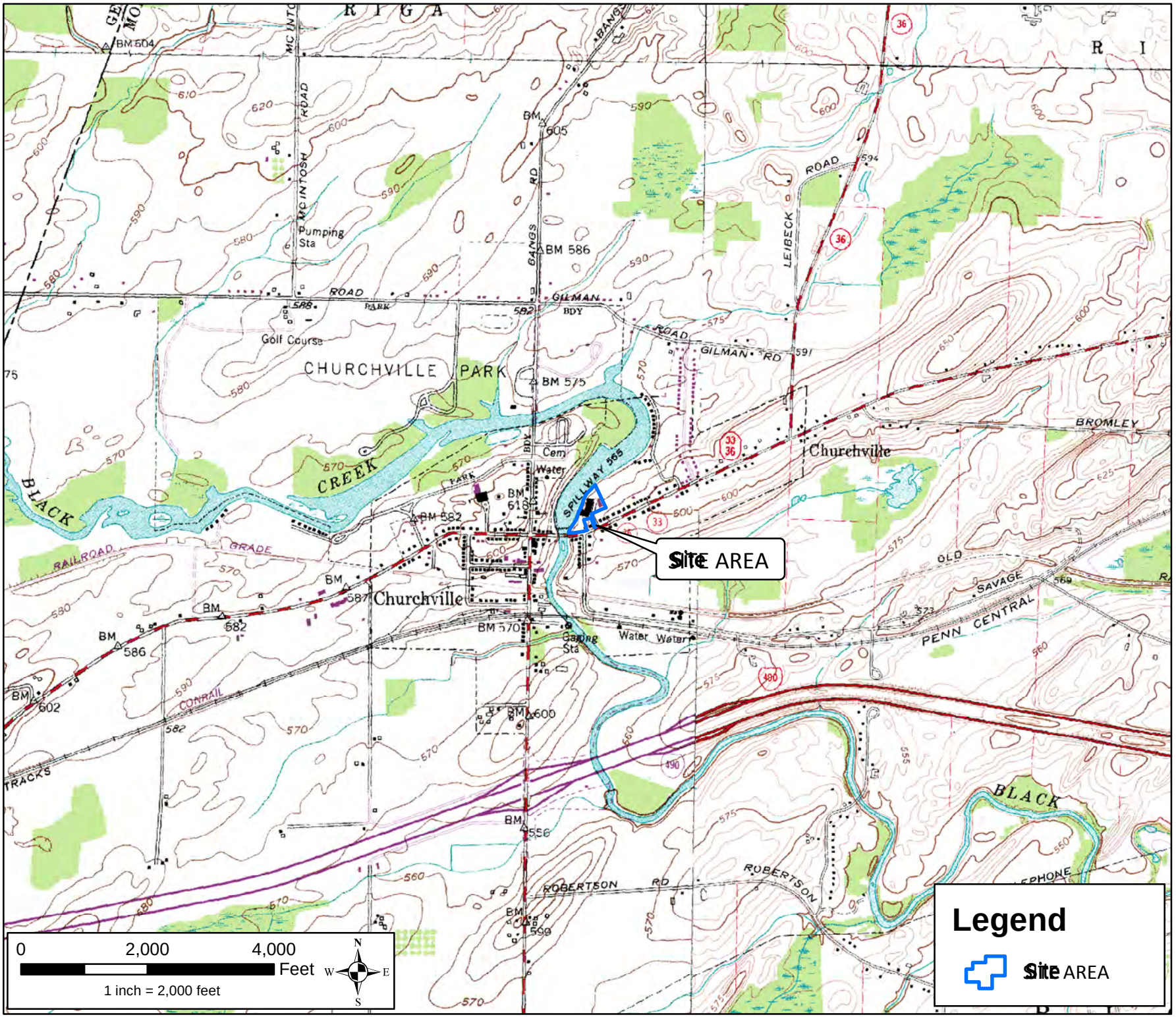
Figures



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PROJECT/CLIENT

32 EAST BUFFALO STREET
VILLAGE OF CHURCHVILLE,
MONROE COUNTY, NY

CLIENT: ALANTIC FUNDING &
REAL ESTATE, LLC

DRAWING TITLE

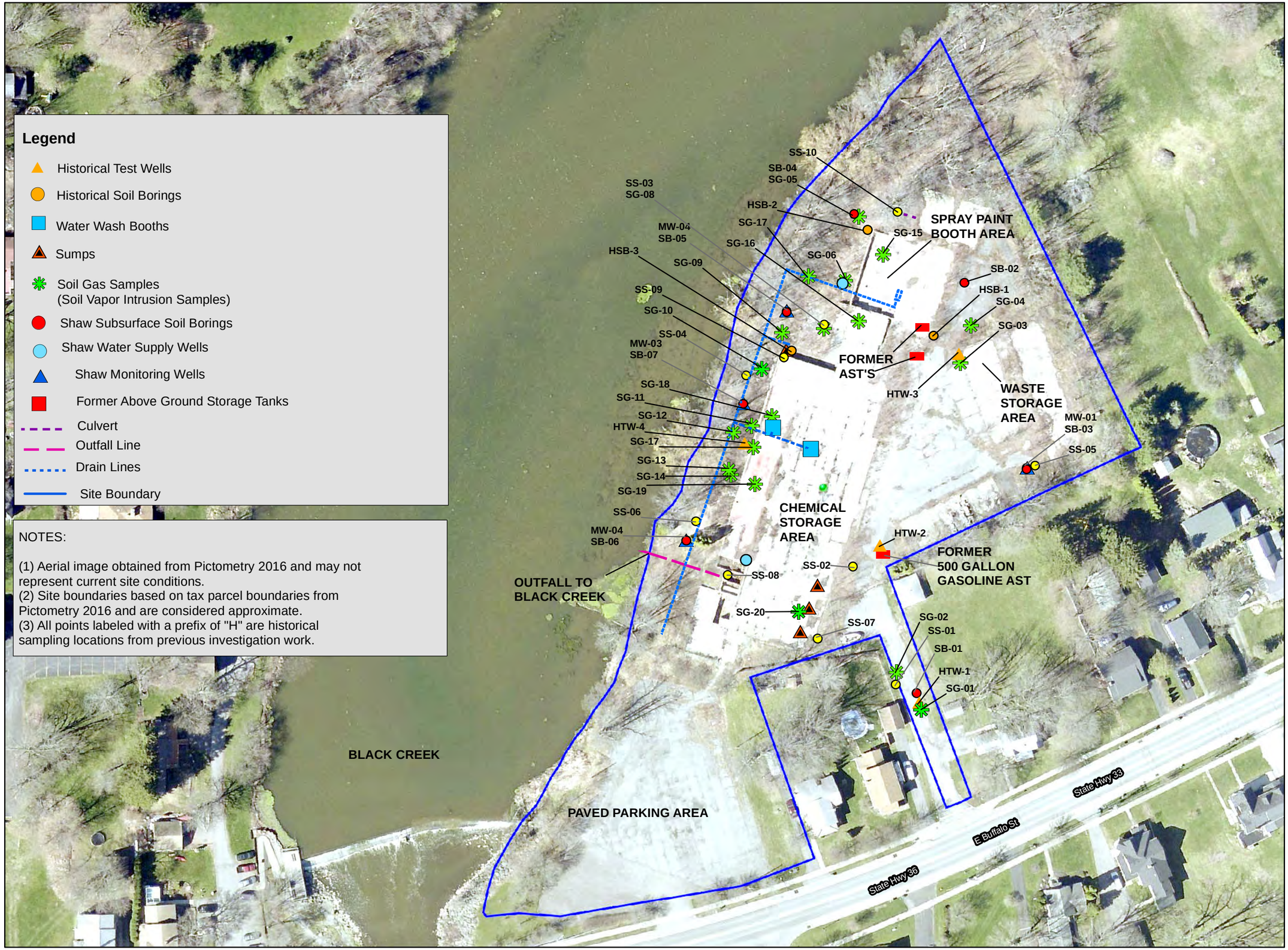
STUDY AREA LOCATION MAP WITH
USGS 7.5-MINUTE TOPOGRAPHIC
QUADRANGLE

ISSUED FOR: FINAL
DATE: 12/29/2016
DESIGNED BY: JPJ
DRAWN BY: JPJ
REVIEWED BY: JPJ

PROJECT/DRAWING NUMBER

2170239

FIGURE 1



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0 20 40 80
Feet
1 inch = 80 feet

INTENDED TO PRINT AS: 11" X 17"

CLIENT:

Alantic Funding & Real Estate, LLC

Remedial Investigation Work Plan:
Pre-existing Sampling Locations

32 East Buffalo St.
Churchville, NY

PROJECT/DRAWING NUMBER:

2170239

FIGURE 2A

Prepared: January, 2017

Path: \\projects1\ProjectsAM\Atlantic Funding & Real Estate LLC\2170239 - 32 E Buffalo St Wetland Delin\Reports\RI WP\appendix\fig 2a MD.mxd

Legend

- NYSDEC Proposed Soil Gas & Collocated Groundwater Sample
- NYSDEC Proposed Surface Soil Sample
- NYSDEC Proposed Sub-surface sample 0-2' beneath pavement
- NYSDEC Proposed Groundwater Sample & Soil Sample
- NYSDEC Proposed Soil Boring
- Water Wash Booths
- Sumps
- Former Above Ground Storage Tanks
- Culvert
- Outfall Line
- Drain Lines
- Site Boundary

NOTES:

(1) Aerial image obtained from Pictometry 2016 and may not represent current site conditions.
(2) Site boundaries based on tax parcel boundaries from Pictometry 2016 and are considered approximate.
(3) All points labeled with a prefix of "H" are historical sampling locations from previous investigation work.

SURFACE SOIL SAMPLE 0"-2" and 2"-12" FOR:
TCL SVOCS: USEPA Method 8270
TCL VOCS: USEPA Method 8260
TAL Metals: USEPA Method 6010C/7471
PCBs: USEPA Method 8082A
Pesticides: USEPA Method: 8081
Actual locations to vary based on culvert location and flow path

SPRAY PAINT BOOTH AREA

SUBSURFACE SOIL AND GROUNDWATER FOR:
TCL SVOCS: USEPA Method 8270
TCL VOCs: USEPA Methods 8260
TAL Metals: USEPA Method 6010C/7471
PCBs: USEPA Method 8082A
Pesticides: USEPA Method 8081
1,4-Dioxane: USEPA Method 8270 (SIM)

SUBSURFACE SOIL AND GROUNDWATER SAMPLES FOR:
TCL VOCs: USEPA Methods 8260
TAL Metals: USEPA Methods 6010C/7471
1,4-Dioxane: USEPA Method 8270 (SIM)

FORMER AST'S

WASTE STORAGE AREA

SOIL SAMPLE 0'-2' FOR:
TCL SVOCS: USEPA Method 8270
TCL VOCs: USEPA Methods 8260
PCBs: USEPA Method 8082A

OUTFALL TO BLACK CREEK

CHEMICAL STORAGE AREA

SOIL GAS AND COLLOCATED GROUNDWATER SAMPLE FOR:
TCL VOCs: USEPA Methods 8260/TO-15

SUBSURFACE SOIL AND GROUNDWATER FOR:
TCL SVOCS: USEPA Method 8270
TCL VOCs: USEPA Methods 8260
TAL Metals: USEPA Methods 6010C/7471
PCBs: USEPA Method 8082A
Pesticides: USEPA Method 8081
1,4-Dioxane: USEPA Method 8270 (SIM)

SOIL GAS AND COLLOCATED GROUNDWATER SAMPLE FOR:
TCL VOCs: USEPA Methods 8260/TO-15

FORMER 500 GALLON GASOLINE AST

SUBSURFACE SOIL SAMPLES:
TCL SVOCS: USEPA Method 8270
TAL Metals: USEPA Method 6010C/7471
PCBs: USEPA Method 8082A
Pesticides: USEPA Method 8081

SUBSURFACE SOIL AND GROUNDWATER SAMPLE 0"-2" and 2'-12" FOR:
TCL SVOCS: USEPA Method 8270
TCL VOCs: USEPA Methods 8260

PAVED PARKING AREA

State Hwy 39

E Buffalo St

State Hwy 33

SUBSURFACE SOIL AND GROUNDWATER FOR:
TCL SVOCS: USEPA Method 8270
TCL VOCs: USEPA Methods 8260
1,4-Dioxane: USEPA Method 8270 (SIM)

Baker St

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Feet

1 inch = 83 feet

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CLIENT:

Alantic Funding & Real Estate, LLC

Remedial Investigation Work Plan: Proposed Sampling Locations

32 East Buffalo St.
Churchville, NY

PROJECT/DRAWING NUMBER:

2170239

FIGURE 2b

Prepared: January, 2017

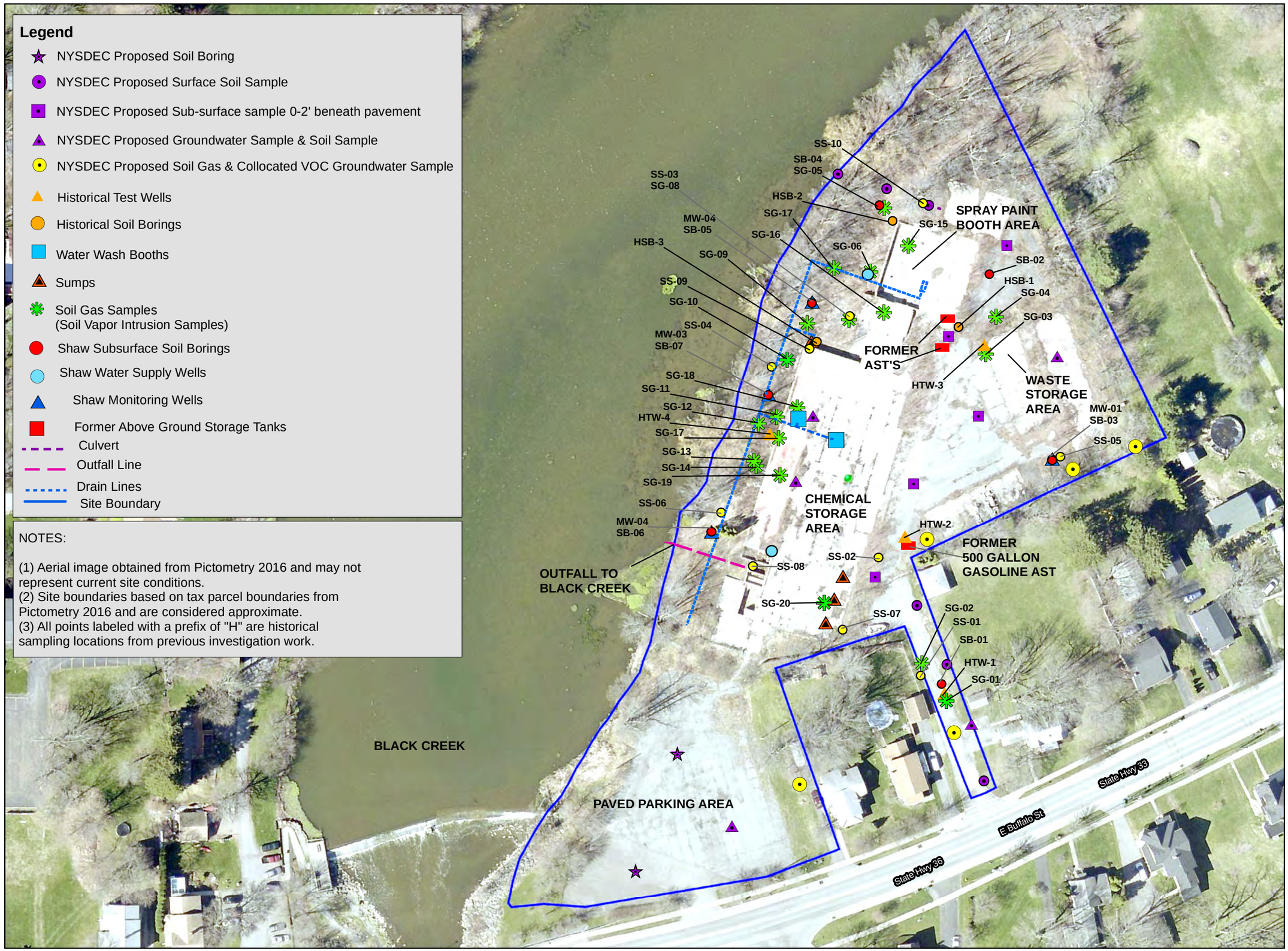
Path: \\projects1\ProjectsAM\Atlantic Funding & Real Estate LLC\2170239 - 32 E Buffalo St Wetland Delin\Reports\RI WP\appendix\fig 2b MD.mxd

Legend

- NYSDEC Proposed Soil Boring
- NYSDEC Proposed Surface Soil Sample
- NYSDEC Proposed Sub-surface sample 0-2' beneath pavement
- NYSDEC Proposed Groundwater Sample & Soil Sample
- NYSDEC Proposed Soil Gas & Collocated VOC Groundwater Sample
- Historical Test Wells
- Historical Soil Borings
- Water Wash Booths
- Sumps
- Soil Gas Samples (Soil Vapor Intrusion Samples)
- Shaw Subsurface Soil Borings
- Shaw Water Supply Wells
- Shaw Monitoring Wells
- Former Above Ground Storage Tanks
- Culvert
- Outfall Line
- Drain Lines
- Site Boundary

NOTES:

(1) Aerial image obtained from Pictometry 2016 and may not represent current site conditions.
(2) Site boundaries based on tax parcel boundaries from Pictometry 2016 and are considered approximate.
(3) All points labeled with a prefix of "H" are historical sampling locations from previous investigation work.



LABELLA Associates, D.P.C.
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Engineering
Architecture
Environmental
Planning

N
W E
S

0 20 40 80
Feet
1 inch = 80 feet

INTENDED TO PRINT AS: 11" X 17"

CLIENT:

Alantic Funding & Real Estate, LLC

Remedial Investigation Work Plan:
Pre-existing and Proposed Sampling Locations

32 East Buffalo St.
Churchville, NY

PROJECT/DRAWING NUMBER:

2170239

FIGURE 2c

Prepared: August, 2017

Path: \\projects1\ProjectsAM\Atlantic Funding & Real Estate LLC\2170239 - 32 E Buffalo St Wetland Delin\Reports\RI WP\appendix\fig 2c MD.mxd

LaBella Figure 3a

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D2

Xref:
Image:

L:\project\DEC\CHURCHVILLE\109220D2.dwg
Plot Date/Time: 09/15/05 02:11pm
Plotted by: Samuel.Shkolnik

NYS GRID NAD 27

FROM DIGITAL TAX MAP

EDGE OF WATER

BLACK CREEK

DAM

N.Y.S. RTE. 33

BAKER STREET

EAST BUFFALO STREET

SG-07 10/25/04 52.3
SG-08 10/25/04 151.0
SG-09 10/26/04 0.0 10/27/04 845
SG-10 10/25/04 25.7
SG-11 10/25/04 21.0
SG-12 10/25/04 14.5
SG-17 10/26/04 1,550 10/27/04 15,990,400
SG-13 10/25/04 13.6
SG-14 10/26/04 0.0 10/27/04 256.4
SG-19 10/26/04 68.9
SG-20 10/26/04 0.0
SG-05 10/25/04 28.2
SG-06 10/25/04 26.2
SG-15 10/26/04 25.6
SG-16 10/26/04 10.6
SG-18 10/26/04 68.9 10/27/04 15,738
SG-04 10/25/04 6.3
SG-03 10/25/04 74.6
SG-02 10/25/04 0.0
SG-01 10/25/04 0.0

MW-01 MW-02 MW-03 MW-04
WSW-01 WSW-02

6" CULVERT
DOOR
NON CONTACT COOLING WATER
CAUSTIC RINSE SUMP
WATER WASH BOOTHS
MASONRY BUILDING
4" SEWER CLEANOUT
OUTFALL TO BLACK CREEK (SPDES POC)
POTW-MH C
REST ROOMS
ELEVATED TRANSFORMER PAD ON POLES
SOUTHEAST CORNER SUMPS
FORMER 500 GALLON GASOLINE AST
FORMER AST'S (NEVER USED)
ASPHALT
GRASS
METAL BUILDING
SUSPECTED GASOLINE UST FEATURES (VENT. FILL)
DRIVEWAY
HIGHWAY BOUNDARY FROM DIGITAL TAX MAP
CURBING
IPF

LEGEND

- SG-05 — SOIL VAPOR SAMPLE LOCATION
- WSW-01 — WATER SUPPLY WELL
- MW-01 — MONITOR WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB — CATCH BASIN

SG-17	SAMPLE LOCATION
10/27/04	DATE
1,550	PID READING (ppmv)
10/27/04	DATE
15,990,400	TOTAL VOC (ug/m^3)

SG-04	SAMPLE LOCATION
10/25/04	DATE
6.3	PID READING (ppmv)

APPROXIMATE SCALE
0 40 80 120 FEET

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 3
SOIL VAPOR SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

LaBella Figure 3b

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D1

Xref:

Image:

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Plot Date/Time: 09/15/05 01:18pm
Plotted by: Samuil.Shkolnik

NTS GRID
NAD 27

FROM DIGITAL TAX MAP
EDGE OF WATER
6" CULVERT
SS-10
10/26/04
787,240
209,993.37
110
NS
DOOR
NON CONTACT COOLING WATER
WSW-01
ASPHALT
GRASS
SS-09
10/26/04
175
177,813.39
NS
NS
MW-04
SS-03
SS-03
10/25/04
1,493
107,357.01
4,500
NS
SS-04
10/25/04
522
185,042.68
130
ND
SS-09
CAUSTIC RINSE SUMP
SS-04
DOOR
MW-03
WATER WASH BOOTHS
FORMER AST'S (NEVER USED)
METAL BUILDING
METAL BUILDING
ASPHALT
MW-01
SS-05
SS-06
10/25/04
50,912
94,475.56
6,200
NS
SS-05
MW-02
4" SEWER CLEANOUT
WSW-02
SS-08
10/26/04
82
207,738,54
NS
NS
OUTFALL TO BLACK CREEK (SPDES POC)
POTW-MH
MASONRY BUILDING
METAL BUILDING
SS-02
ELEVATED TRANSFORMER PAD ON POLES
FORMER 500 GALLON GASOLINE AST
SOUTHEAST CORNER SUMPS
SS-02
10/25/04
153,210
192,487.54
15,000
312
SS-07
SS-07
10/28/04
270
140,912,315
NS
NS
IPF
REST ROOMS
SS-01
SS-01
10/25/04
37,100
148,924,608
320,000
661
SUSPECTED GASOLINE UST FEATURES (VENT. FILL)
DRIVEWAY
DRIVEWAY
BLACK CREEK
DAM
ASPHALT
HIGHWAY BOUNDARY FROM DIGITAL TAX MAP
CURBING
EAST BUFFALO STREET
N.Y.S. RTE. 33
BAKER STREET

APPROXIMATE SCALE
0 40 80 120 FEET

LEGEND

- SS-07 — SURFACE SOIL SAMPLE LOCATION
- WSW-01 — WATER SUPPLY WELL
- MW-01 — MONITOR WELL
- P.L. — APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB — CATCH BASIN

SS-05	SAMPLE LOCATION
10/25/04	DATE
2,901	TOTAL SVOC (ug/kg or ppb)
128,735.47	TOTAL METALS (mg/kg or ppm)
NS	TOTAL PCB (ug/kg or ppb)
NS	TOTAL PESTICIDES (ug/kg or ppb)
ND	NOT DETECTED
NS	NOT SAMPLED

NOTE: SS-07 TAKEN AT A DEPTH OF 6'-8' BELOW GROUND SURFACE.

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 4
SURFACE SOIL SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

LaBella Figure 3c

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D3

Xref:
Image:

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Plot Date/Time: 09/15/05 01:39pm
Plotted by: Samuil.Shkolnik

NYS GRID NAD 27

FROM DIGITAL TAX MAP

EDGE OF WATER

8" CULVERT

SB-04
10/27/04
10'-12'
14
190
75,515.50
ND
ND

SB-05
10/28/04
3
326
539
125,854.03
NS
NS

SB-02
10/26/04
8'-10'
10
110
61,262.86
NS
NS

SB-07
10/28/04
ND
14'-20'
43
1,000
63,956.24
ND

SB-03
10/26/04
28'-29'
13
170
289,111.04
NS
NS

SB-06
10/28/04
4'-6'
102
370
32,690.81
NS
NS

SB-06
11/10/04
20'-24.2'
ND
420
175,089.34
NS
NS

SB-01
10/29/04
6'-14'
55,403
2,680
125,856.82
510
ND

NON CONTACT COOLING WATER

WSW-01

WSW-02

SB-01

SB-02

SB-03

SB-04

SB-05

SB-06

SB-07

DOOR

CAUSTIC RINSE SUMP

WATER WASH BOOTHS

MASONRY BUILDING

FORMER AST'S (NEVER USED)

METAL BUILDING

METAL BUILDING

METAL BUILDING

ASPHALT

GRASS

ASPHALT

OUTFALL TO BLACK CREEK (SPDES POC)

POTW-MH

BLACK CREEK

REST ROOMS

ELEVATED TRANSFORMER PAD ON POLES

SOUTHEAST CORNER SUMPS

FORMER 500 GALLON GASOLINE AST

SUSPECTED GASOLINE UST FEATURES (VENT. FILL)

DRIVEWAY

DRIVEWAY

EAST BUFFALO STREET

DAM

ASPHALT

HIGHWAY BOUNDARY FROM DIGITAL TAX MAP

CURBING

N.Y.S. RTE. 33

BAKER STREET

APPROXIMATE SCALE
0 40 80 120 FEET

LEGEND

- SB-01 ⊙ SUBSURFACE SOIL LOCATION
- WSW-01 WATER SUPPLY WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB CATCH BASIN

SB-02	SAMPLE LOCATION
10/26/04	DATE
8'-10'	DEPTH
10	TOTAL VOC (ug/kg or ppb)
110	TOTAL SVOC (ug/kg or ppb)
61,262.86	TOTAL METALS (mg/kg or ppm)
NS	TOTAL PCB (ug/kg or ppb)
NS	TOTAL PESTICIDES (ug/kg or ppb)
ND	NOT DETECTED
NS	NOT SAMPLED

NOTE:
SB-01, SB-03 AND SB-06 FINISHED AS PIEZOMETERS.

REFERENCE:

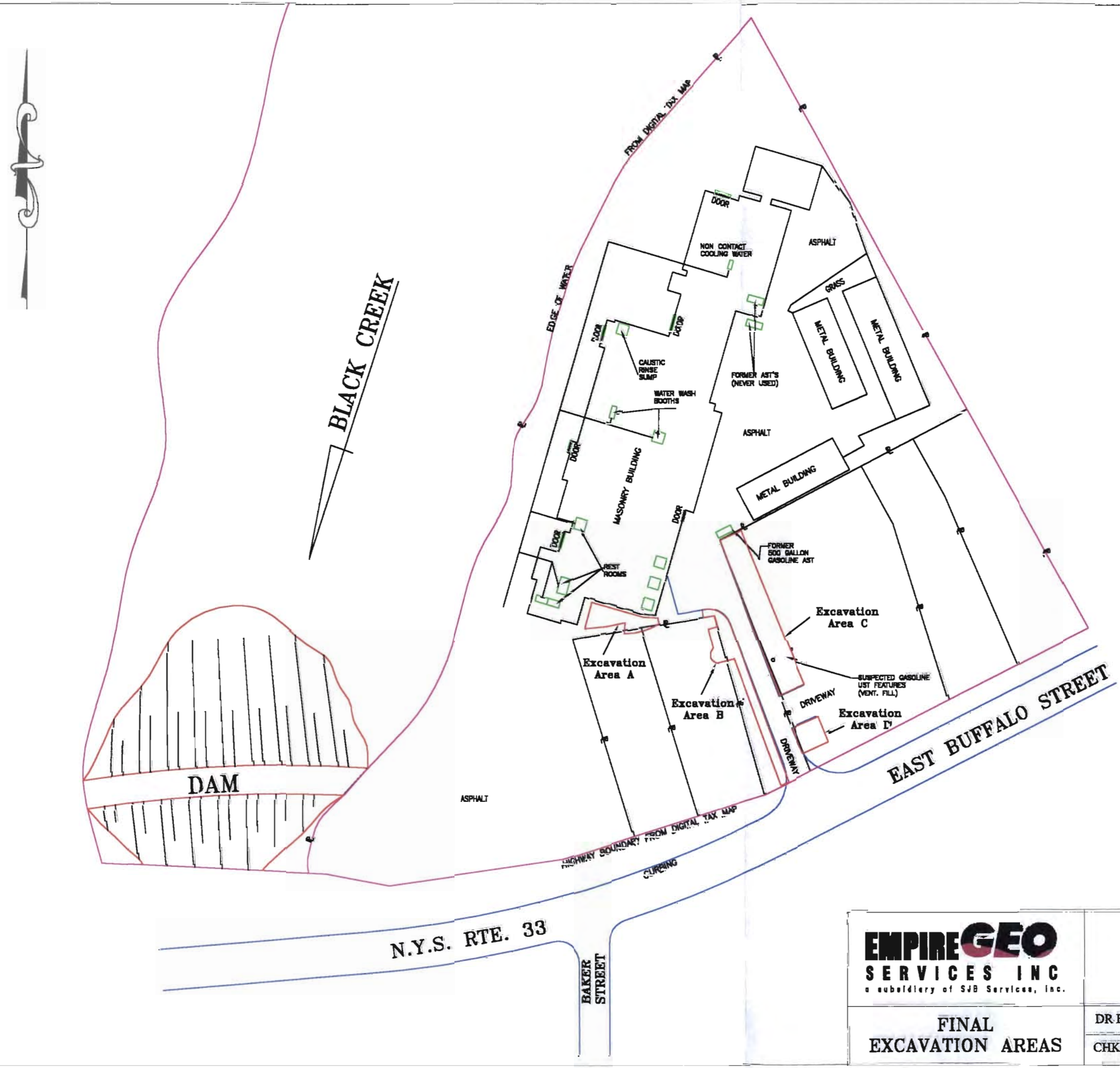
BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 5
SUBSURFACE SOIL SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

LaBella Figure 3d



EMPIRE GEO SERVICES INC
a subsidiary of SJB Services, Inc.

LUSTER COATE METALLIZING SITE

FINAL EXCAVATION AREAS

DR BY: YD	SCALE: 1"=40'	PROJ NO.:
CHKD BY:	DATE: 12/02/05	FIGURE NO: 3

LaBella Figure 4

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D4

NYS GRID NAD 27

EDGE OF WATER

FROM DIGITAL TAX MAP

WSW-01
12/01/04
1
ND
246,060.78
ND
ND

MW-04
12/01/04
377
ND
265,519.80
ND
ND

MW-03
12/02/04
2,966
ND
288,851.16
ND
ND

MW-02
12/02/04
39
ND
402,795.49
ND
ND

WSW-02
11/30/04
1
ND
204,771.91
ND
ND

PZ-01
12/02/04
11,836
231
329,221.21
ND
ND

MW-01
12/01/04
1
ND
246,060.78
ND
ND

8" CULVERT

DOOR

CB

NON CONTACT COOLING WATER

ASPHALT

GRASS

METAL BUILDING

METAL BUILDING

CAUSTIC RINSE SUMP

WATER WASH BOOTHS

FORMER AST'S (NEVER USED)

MASONRY BUILDING

METAL BUILDING

OUTFALL TO BLACK CREEK (SPDES POC)

POTW-MH

ELEVATED TRANSFORMER PAD ON POLES

FORMER 500 GALLON GASOLINE AST

SOUTHEAST CORNER SUMPS

REST ROOMS

SUSPECTED GASOLINE UST FEATURES (VENT. FILL)

DRIVEWAY

DRIVEWAY

BLACK CREEK

DAM

ASPHALT

HIGHWAY BOUNDARY FROM DIGITAL TAX MAP

CURBING

EAST BUFFALO STREET

N.Y.S. RTE. 33

BAKER STREET

APPROXIMATE SCALE
0 40 80 120 FEET

LEGEND

PZ-01	PIEZOMETER
WSW-01	WATER SUPPLY WELL
MW-01	MONITOR WELL
	APPROXIMATE PROPERTY LINE
	ORNAMENTAL TREES
CB	CATCH BASIN

MW-01	SAMPLE LOCATION
12/01/04	DATE
1	TOTAL VOC (ug/L or ppb)
ND	TOTAL SVOC (ug/L or ppb)
246,060.78	TOTAL METALS (ug/L or ppb)
ND	TOTAL PCB (ug/L or ppb)
ND	TOTAL PESTICIDES (ug/L or ppb)
ND	NOT DETECTED

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 6
MONITORING WELL SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

Xref:
Image:

L:\project\DEC\CHURCHVILLE\109220D4.dwg
Plot Date/Time: 09/28/05 11:15am
Plotted by: Samuil Shkolnik

ID	Type	Acreage in Study Area
NYSDEC Freshwater Wetland RH-14	Open Water/PFO	0.316
NYSDEC 100' Adjacent Area	upland	1.884

Notes:

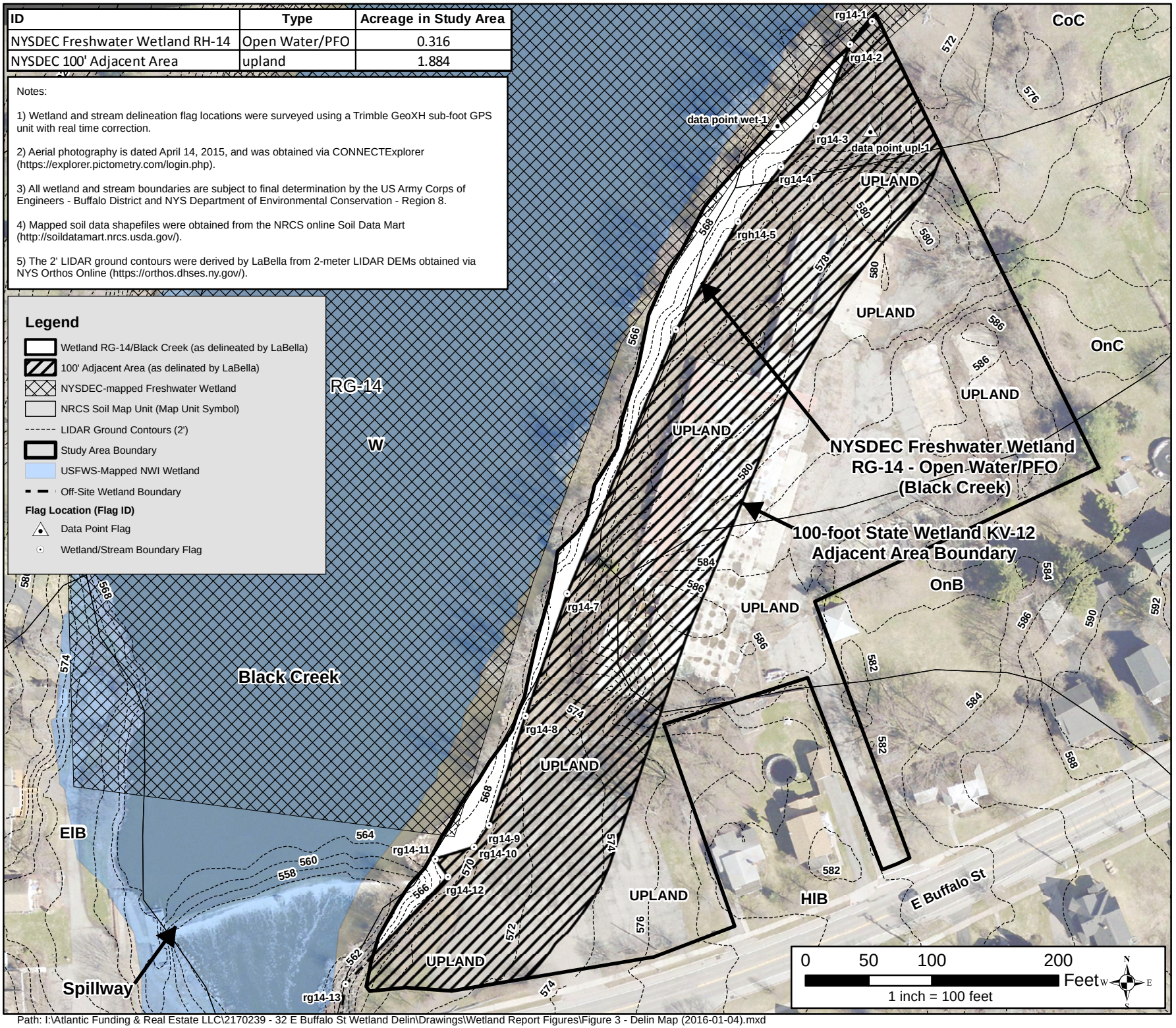
1) Wetland and stream delineation flag locations were surveyed using a Trimble GeoXH sub-foot GPS unit with real time correction.

2) Aerial photography is dated April 14, 2015, and was obtained via CONNECTExplorer (https://explorer.pictometry.com/login.php).

3) All wetland and stream boundaries are subject to final determination by the US Army Corps of Engineers - Buffalo District and NYS Department of Environmental Conservation - Region 8.

4) Mapped soil data shapefiles were obtained from the NRCS online Soil Data Mart (http://soildatamart.nrcs.usda.gov/).

5) The 2' LIDAR ground contours were derived by LaBella from 2-meter LIDAR DEMs obtained via NYS Orthos Online (https://orthos.dhses.ny.gov/).



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PROJECT/DELIVERY
WETLAND AND STREAM DELINEATION REPORT

32 EAST BUFFALO STREET
VILLAGE OF CHURCHVILLE,
MONROE COUNTY, NY

CLIENT: ALANTIC FUNDING & REAL ESTATE, LLC

DRAWING TITLE
WETLAND AND STREAM DELINEATION SURVEY MAP

ISSUED FOR: FINAL
DESIGNED BY: JPJ
DRAWN BY: JPJ
REVIEWED BY: JPJ
DATE: 01/4/2017

PROJECT/DRAWING NUMBER
2170239

FIGURE 5

Path: I:\Atlantic Funding & Real Estate LLC\2170239 - 32 E Buffalo St Wetland Delin\Drawings\Wetland Report Figures\Figure 3 - Delin Map (2016-01-04).mxd

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 1

Community Air Monitoring

APPENDIX 1A

New York State Department of Health
Generic Community Air Monitoring Plan

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

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical- specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

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

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

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

- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

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

Particulate Monitoring, Response Levels, and Actions

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

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 2

Health and Safety Plan

Site Health and Safety Plan

Location:

32 East Buffalo Street
Churchville, New York

Prepared For:

Alantic Funding & Real Estate, LLC
PO Box 26350
Rochester, New York 14626

LaBella Project No. 2170239

January 2017

Site Health and Safety Plan

Location:

32 East Buffalo Street
Churchville, New York

Prepared For:

Alantic Funding & Real Estate, LLC
PO Box 26350
Rochester, New York 14626

LaBella Project No. 2170239

January 2017

Table of Contents

Tables

SITE HEALTH AND SAFETY PLAN

Project Title:	Luster Coate Brownfield Cleanup Program
Project Number:	2170239
Project Location (Site):	32 East Buffalo Street, Churchville, New York, 14428
Environmental Director:	Gregory Senecal, CHMM
Project Manager:	Dan Noll, P.E.
Plan Review Date:	February 6, 2017
Plan Approval Date:	February 6, 2017
Plan Approved By:	Mr. Richard Rote, CIH
Site Safety Supervisor:	Alex Brett
Site Contact:	Al Spaziano
Safety Director:	Rick Rote, CIH
Proposed Date(s) of Field Activities:	To Be Determined
Site Conditions:	4.05 acres; former buildings have been razed and concrete slab foundations and asphalt parking lots remain.
Site Environmental Information Provided By:	❑ Limited Phase II ESA prepared by ENSR International dated 2001 ❑ Preliminary Site Assessment (PSA) prepared by Shaw Environmental & Infrastructure Engineering of New York, P.C. (Shaw) dated November 9, 2005 ❑ Soil Removal Report prepared by Empire Geo Services – DRAFT – dated September 2006 ❑ Interim Remedial Measures (IRM) Work Plan for Self-Implementing Cleanup and Disposal of PCBs prepared by Larsen Engineers dated November 1, 2016
Air Monitoring Provided By:	LaBella Associates, P.C.

Site Control Provided By: Contractor(s)

EMERGENCY CONTACTS

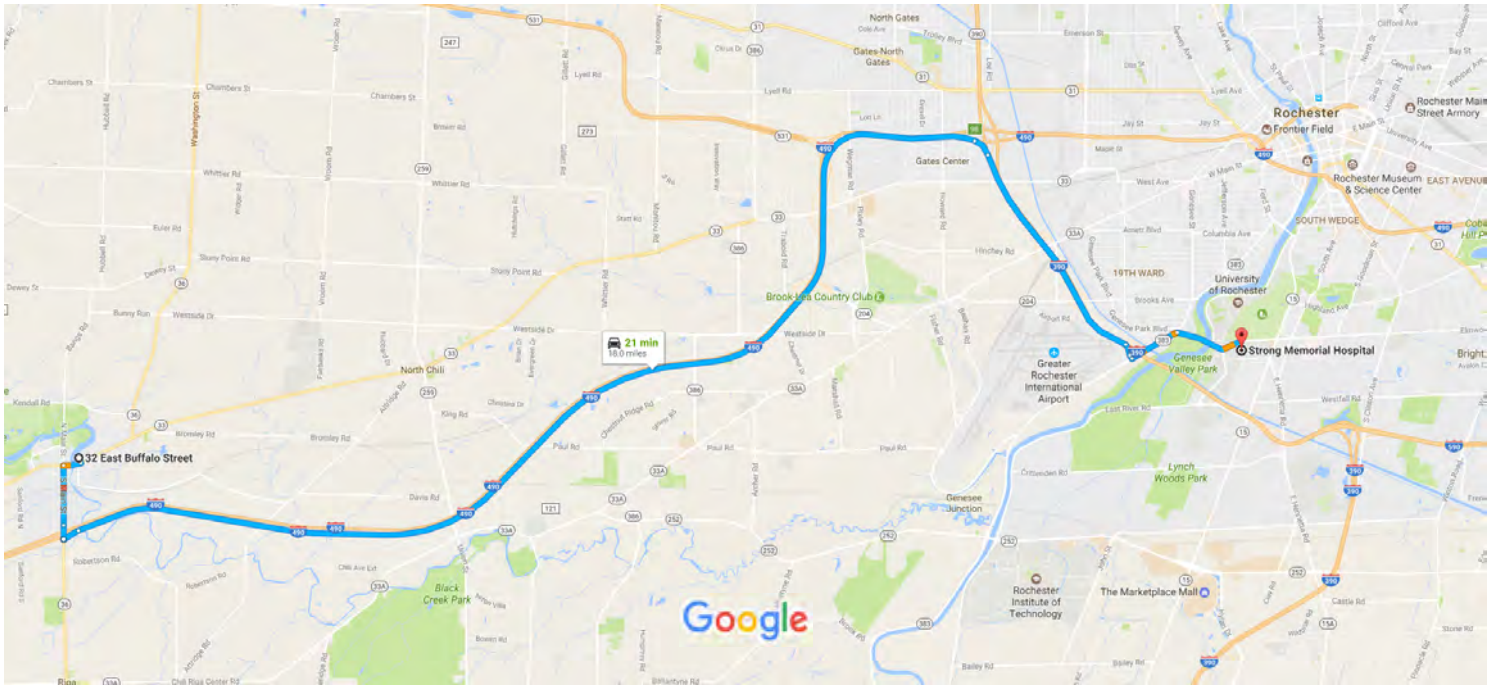
	Name	Phone Number
Ambulance:	As Per Emergency Service	911
Hospital Emergency:	Strong Memorial Hospital	585-275-2100
Poison Control Center:	Upstate New York Poison Control Center	315-464-5425
Police (local, state):	Monroe County Sheriff	911
Fire Department:	Churchville Fire Department	911
Site Contact:	Al Spaziano	Cell: 585-943-4204
Agency Contact:	NYSDEC – Frank Sowers NYSDOH – Bridget Callahan Upstate New York Poison Control MCDOH – John Frazer	585-226-5357 518-402-7860 315-464-5425 585-274-6904
Environmental Director:	Greg Senecal, CHMM	Direct: 585-295-6243 Cell: 585-752-6480
Project Manager:	Dan Noll, P.E.	Direct: 585-295-6611 Cell: 585-301-8458
Site Safety Supervisor:	Alex Brett	Cell: 585-709-0761
Safety Director	Rick Rote, CIH	Direct: 585-295-6241

MAP AND DIRECTIONS TO THE MEDICAL FACILITY
STONG MEMORIAL HOSPITAL

Google Maps

32 East Buffalo Street, Churchville, NY to Strong Memorial Hospital, 601 Elmwood Ave

Drive 18.0 miles, 21 min



Map data ©2017 Google 1 mi

32 E Buffalo St
Churchville, NY 14428

Get on I-490 E from S Main St

3 min (1.2 mi)

1. Head west on E Buffalo St toward Baker St
0.2 mi
2. Turn left onto S Main St
0.7 mi
3. Continue onto Churchville Riga Rd
0.2 mi
4. Turn left to merge onto I-490 E
0.2 mi

Continue on I-490 E to Chili. Take exit 17 from I-390 S

15 min (15.4 mi)

5. Merge onto I-490 E
12.4 mi
6. Take exit 9B for I-390 S toward Airport
0.2 mi
7. Continue onto I-390 S
2.7 mi
8. Take exit 17 for Scottsville Rd/NY-383
0.1 mi

9. Keep left at the fork, follow signs for Rochester and merge onto NY-383 N/Scottsville Rd

223 ft

Drive to Elmwood Ave in Rochester

4 min (1.4 mi)

10. Merge onto NY-383 N/Scottsville Rd

0.6 mi

11. Continue straight onto Elmwood Ave

0.8 mi

Strong Memorial Hospital

601 Elmwood Ave, Rochester, NY 14642

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

1.0 Introduction

The purpose of this Health and Safety Plan (HASP) is to provide guidelines for responding to potential health and safety issues that may be encountered during the Remedial Investigation (RI) at 32 East Buffalo Street, Village of Churchville, Monroe County, New York (Site). This HASP only reflects the policies of LaBella Associates P.C. The requirements of this HASP are applicable to all approved LaBella personnel at the work site. This document's project specifications, and the Community Air Monitoring Plan (CAMP), are to be consulted for guidance in preventing and quickly abating any threat to human safety or the environment. The provisions of the HASP do not replace or supersede any regulatory requirements of the USEPA, NYSDEC, OSHA or other regulatory bodies.

2.0 Responsibilities

This HASP presents guidelines to minimize the risk of injury to project personnel, and to provide rapid response in the event of injury. The HASP is applicable only to activities of approved LaBella personnel and their authorized visitors. The Project Manager shall implement the provisions of this HASP for the duration of the project. It is the responsibility of LaBella employees to follow the requirements of this HASP, and all applicable company safety procedures.

3.0 Activities Covered

The activities covered under this HASP are limited to the following:

- Management of environmental investigation and remediation activities
- Environmental Monitoring
- Collection of samples
- Management of excavated soil and fill

4.0 Work Area Access and Site Control

The contractor(s) will have primary responsibility for work area access and site control.

5.0 Potential Health and Safety Hazards

This section lists some potential health and safety hazards that project personnel may encounter at the project site and some actions to be implemented by approved personnel to control and reduce the associated risk to health and safety. This is not intended to be a complete listing of any and all potential health and safety hazards. New or different hazards may be encountered as site environmental and site work conditions change. The suggested actions to be taken under this plan are not to be substituted for good judgment on the part of project personnel. At all times, the Site Safety Officer has responsibility for site safety and his instructions must be followed.

5.1 Hazards Due to Heavy Machinery

Potential Hazard:
Heavy machinery including trucks, excavators, backhoes, etc will be in operation at the site. The presence of such equipment presents the danger of being struck or crushed. Use caution when working near heavy machinery.

Protective Action:
Make sure that operators are aware of your activities, and heed operator's instructions and warnings. Wear bright colored clothing and walk safe distances from heavy equipment. A hard hat, safety glasses and steel toe shoes are required.

5.2 Excavation Hazards

Potential Hazard:
Excavations and trenches can collapse, causing injury or death. Edges of excavations can be unstable and collapse. Toxic and asphyxiant gases can accumulate in confined spaces and trenches. Excavations that require working within the excavation will require air monitoring in the breathing zone (refer to Section 9.0).

Excavations left open create a fall hazard which can cause injury or death.

Protective Action:
Personnel must receive approval from the Project Manager to enter an excavation for any reason. Subsequently, approved personnel are to receive authorization for entry from the Site Safety Officer. Approved personnel are not to enter excavations over 4 feet in depth unless excavations are adequately sloped. Additional personal protective equipment may be required based on the air monitoring.

Personnel should exercise caution near all excavations at the site as it is expected that excavation sidewalls will be unstable. Do not proceed closer than 3 feet to an unsupported or non-sloped excavation side wall.

Fencing and/or barriers accompanied by "no trespassing" signs should be placed around all excavations when left open for any period of time when work is not being conducted.

5.3 Cuts, Punctures and Other Injuries

Potential Hazard:
In any excavation and construction work site there is the potential for the presence of sharp or jagged edges on rock, metal materials, and other sharp objects. Serious cuts and punctures can result in loss of blood and infection.

Protective Action:
The Project Manager is responsible for making First Aid supplies available at the work site to treat minor injuries. The Site Safety Officer is responsible for arranging the transportation of authorized on-site personnel to medical facilities when First Aid treatment in not sufficient. Do not move seriously injured workers. All injuries requiring treatment are to be reported to the Project Manager. Serious injuries are to be reported immediately to the Site Safety Officer

5.4 Injury Due to Exposure of Chemical Hazards

Potential Hazards:
Contaminants identified in testing locations at the Site include various chlorinated solvents including but not limited to trichloroethene (TCE), 1,1,1 – trichlorethane (TCA), vinyl chloride, polychlorinated biphenyls (PCBs), acetone, methylene chloride, BTEX, and some metals have also been identified. Volatile organic vapors, chlorinated solvents or other chemicals may be encountered during excavation activities at the project work site. Inhalation of high concentrations of volatile organic vapors can cause headache, stupor, drowsiness, confusion and other health effects. Skin contact can cause irritation, chemical burn, or dermatitis.

Protective Action:
The presence of organic vapors may be detected by their odor and by monitoring instrumentation. Approved employees will not work in environments where hazardous concentrations of organic vapors are present. Air monitoring (refer to Section 9.0) of the work area will be performed at least every 60 minutes or more often using a Photoionization Detector (PID). Personnel are to leave the work area whenever PID measurements of ambient air exceed 25 ppm consistently for a 5 minute period. In the event that sustained total volatile organic compound (VOC) readings of 25 ppm are encountered personnel should upgrade personal protective equipment to Level C (refer to Section 8.0) and an Exclusion Zone should be established around the work area to limit and monitor access to this area (refer to Section 6.0).

5.5 Injuries due to extreme hot or cold weather conditions

Potential Hazards:
Extreme hot weather conditions can cause heat exhaustion, heat stress and heat stroke or extreme cold weather conditions can cause hypothermia.

Protective Action:
Precaution measures should be taken such as dress appropriately for the weather conditions and drink plenty of fluid. If personnel should suffer from any of the above conditions, proper techniques should be taken to cool down or heat up the body and taken to the nearest hospital if needed.

6.0 Work Zones

In the event that conditions warrant establishing various work zones (i.e., based on hazards - Section 5.4), the following work zones should be established:

Exclusion Zone (EZ):
The EZ will be established in the immediate vicinity and adjacent downwind direction of site activities that elevate breathing zone VOC concentrations to unacceptable levels based on field screening. These site activities include contaminated soil excavation and soil sampling activities. If access to the site is required to accommodate non-project related personnel then an EZ will be established by constructing a barrier around the work area (yellow caution tape and/or construction fencing). The EZ barrier shall encompass the work area and any equipment staging/soil staging areas necessary to perform the associated work. The contractor(s) will be

responsible for establishing the EZ and limiting access to approved personnel. Depending on the condition for establishing the EZ, access to the EZ may require adequate PPE (e.g., Level C).

Contaminant Reduction Zone (CRZ):
The CRZ will be the area where personnel entering the EZ will don proper PPE prior to entering the EZ and the area where PPE may be removed. The CRZ will also be the area where decontamination of equipment and personnel will be conducted as necessary.

7.0 Decontamination Procedures

Upon leaving the work area, approved personnel shall decontaminate footwear as needed. Under normal work conditions, detailed personal decontamination procedures will not be necessary. Work clothing may become contaminated in the event of an unexpected splash or spill or contact with a contaminated substance. Minor splashes on clothing and footwear can be rinsed with clean water. Heavily contaminated clothing should be removed if it cannot be rinsed with water. Personnel assigned to this project should be prepared with a change of clothing whenever on site.

Personnel will use the contractor's disposal container for disposal of PPE.

8.0 Personal Protective Equipment

Generally, site conditions at this work site require level of protection of Level D or modified Level D; however, air monitoring will be conducted to determine if up-grading to Level C PPE is required (refer to Section 9.0). Descriptions of the typical safety equipment associated with Level D and Level C are provided below:

Level D:
Hard hat, safety glasses, rubber nitrile sampling gloves, steel toe construction grade boots, etc.

Level C:
Level D PPE and full or ½-face respirator and tyvek suit (if necessary). [*Note: Organic vapor cartridges are to be changed after each 8-hours of use or more frequently.*]

9.0 Air Monitoring

According to 29 CFR 1910.120(h), air monitoring shall be used to identify and quantify airborne levels of hazardous substances and health hazards in order to determine the appropriate level of employee protection required for personnel working onsite. Air monitoring will consist at a minimum of the procedure listed below. Air monitoring instruments will be calibrated and maintained in accordance with the manufacturer's specifications.

The Air Monitor will utilize a photoionization detector (PID) to screen the ambient air in the work areas (excavation, soil staging, and soil grading areas) for total Volatile Organic Compounds (VOCs) and a DustTrak tm Model 8520 aerosol monitor or equivalent for measuring particulates. Work area ambient air will generally be monitored in the work area and downwind of the work area. Air monitoring of the work areas and downwind of the work areas will be performed at least every 60 minutes using a PID and the DustTrak meter.

If sustained PID readings of greater than 25 ppm are recorded in the breathing zone, either personnel are to leave the work area until satisfactory readings are obtained or approved personnel may re-enter the work areas wearing at a minimum a ½ face respirator with organic vapor cartridges for an 8-hour duration (i.e., upgrade to Level C PPE). Organic vapor cartridges are to be changed after each 8-hour use or more frequently, if necessary. If PID readings are sustained, in the work area, at levels above 50 ppm for a 5 minute average, work will be stopped immediately until safe levels of VOCs are encountered or additional PPE will be required (i.e., Level B).

If downwind PID measurements reach or exceed 25 ppm consistently for a 5 minute period downwind of the work area, PID readings will be taken within the buildings (if occupied) on Site to ensure that the vapors are not penetrating any occupied building and effecting the personnel working within. If the PID measurements reach or exceed 25 ppm within the nearby buildings, the personnel should be evacuated via a route in which they would not encounter the work area. The building should then be ventilated until the PID measurements within the building are at or below background levels.

10.0 Emergency Action Plan

In the event of an emergency, employees are to turn off and shut down all powered equipment and leave the work areas immediately. Employees are to walk or drive out of the Site as quickly as possible, wait at the assigned 'safe area' and follow the instructions of the Site Safety Officer.

Employees are not authorized or trained to provide rescue and medical efforts. Rescue and medical efforts will be provided by local authorities.

11.0 Medical Surveillance

Medical surveillance will be provided to all employees who are injured due to overexposure from an emergency incident involving hazardous substances at this site.

12.0 Employee Training

Personnel who are not familiar with this site plan will receive training on its entire content and organization before working at the Site.

Individuals involved with the remedial investigation must be 40-hour OSHA HAZWOPER trained with current 8-hour refresher certification.

Table 1
Exposure Limits and Recognition Qualities

Compound	PEL-TWA (ppm)(b)(d)	TLV-TWA (ppm)(c)(d)	STEL (ppm)(b)	LEL (%)(e)	UEL (%)(f)	IDLH (ppm)(g)(d)	Odor	Odor Threshold (ppm)	Ionization Potential
Acetone	750	500	NA	2.15	13.2	20,000	Sweet	4.58	9.69
Anthracene	.2	.2	NA	NA	NA	NA	Faint aromatic	NA	NA
Benzene	1	0.5	5	1.3	7.9	3000	Pleasant	8.65	9.24
Benzo (a) pyrene (coal tar pitch volatiles)	0.2	0.1	NA	NA	NA	700	NA	NA	NA
Benzo (a)anthracene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (b) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (g,h,i)perylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo (k) Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	10.88
Carbon Disulfide	20	1	NA	1.3	50	500	Odorless or strong garlic type	.096	10.07
Chlorobenzene	75	10	NA	1.3	9.6	2,400	Faint almond	0.741	9.07
Chloroform	50	2	NA	NA	NA	1,000	ethereal odor	11.7	11.42
Chrysene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethylene	200	200	NA	9.7	12.8	400	Acrid	NA	9.65
1,2-Dichlorobenzene	50	25	NA	2.2	9.2		Pleasant		9.07
Ethyl Alcohol	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	100	100	NA	1.0	6.7	2,000	Ether	2.3	8.76
Fluoranthene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropyl Alcohol	400	200	500	2.0	12.7	2,000	Rubbing alcohol	3	10.10
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene Chloride	500	50	NA	12	23	5,000	Chloroform-like	10.2	11.35
Naphthalene	10, Skin	10	NA	0.9	5.9	250	Moth Balls	0.3	8.12
n-propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phosphoric Acid	1	1	3	NA	NA	10,000	NA	NA	NA
Polychlorinated Biphenyl	NA	0.5 mg/m^3	0.001 mg/m^3	NA	NA	5 mg/m^3	Mild hydrocarbon odor	NA	Unknown
Potassium Hydroxide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethane	NA	NA	NA	NA	NA	NA	Sweet	NA	NA
Toluene	100	100	NA	0.9	9.5	2,000	Sweet	2.1	8.82
Trichloroethylene	100	50	NA	8	12.5	1,000	Chloroform	1.36	9.45
1,2,4-Trimethylbenzene	NA	25	NA	0.9	6.4	NA	Distinct	2.4	NA
1,3,5-Trimethylbenzene	NA	25	NA	NA	NA	NA	Distinct	2.4	NA
Vinyl Chloride	1	1	NA	NA	NA	NA	NA	NA	NA
Xylenes (o,m,p)	100	100	NA	1	7	1,000	Sweet	1.1	8.56
Metals									
Arsenic	0.01	0.2	NA	NA	NA	100, Ca	NA	NA	NA
Cadmium	0.2	0.5	NA	NA	NA	NA	NA	NA	NA
Calcium	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	1	0.5	NA	NA	NA	NA	NA	NA	NA
Iron	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead	0.05	0.15	NA	NA	NA	700	NA	NA	NA
Mercury	0.05	0.05	NA	NA	NA	28	NA	NA	NA
Selenium	0.2	0.02	NA	NA	NA	Unknown	NA	NA	NA

(a) Skin = Skin Absorption
(b) OSHA-PEL Permissible Exposure Limit (flame weighted average, 8-hour): NIOSH Guide, June 1990
(c) ACGIH – 8 hour time weighted average from Threshold Limit Values and Biological Exposure Indices for 2003.
(d) Metal compounds in mg/m3
(e) Lower Exposure Limit (%)
(f) Upper Exposure Limit (%)
(g) Immediately Dangerous to Life or Health Level: NIOSH Guide, June 1990.

Notes:
1. All values are given in parts per million (PPM) unless otherwise indicated.
2. Ca = Possible Human Carcinogen, no IDLH information.

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 3

Quality Control Plan

Quality Assurance Project Plan

Location:

32 East Buffalo Street
Churchville, New York

Prepared For:

Alantic Funding & Real Estate, LLC
PO Box 26350
Rochester, New York 14626

LaBella Project No. 2170239

January 2017

Quality Assurance Project Plan

Location:

32 East Buffalo Street
Churchville, New York

Prepared For:

Alantic Funding & Real Estate, LLC
PO Box 26350
Rochester, New York 14626

LaBella Project No. 2170239

January 2017

LaBella Associates, D.P.C.
300 State Street
Rochester, New York 14614

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1. Introduction

The Quality Assurance Project Plan (QAPP) contains procedures which provide for collected data to be properly evaluated, and document that quality control (QC) procedures have been followed in the collection of samples. The quality control program represents the methodology and measurement procedures used in collecting quality field data. This methodology includes the proper use of equipment, documentation of sample collection, and sample handling practices.

Procedures used in the firm's QAPP are compatible with federal, state, and local regulations, as well as, appropriate professional and technical standards.

This QAPP has been organized into the following areas:

- Quality Control Objectives and Checks
- Field Equipment, Handling, and Calibration
- Sampling Techniques
- Sample Handling and Packaging

It should be noted that project-related documents may have project specific details that will differ from the procedures in this QAPP. In such cases, the project-related documents should be followed (subsequent to regulatory approval). Furthermore, this QAPP may include procedures that are not proposed as part of a site specific investigation; however, these are included in the event the procedure is needed at some point during the investigation.

The NYSDEC DER-10 identifies two data deliverables for laboratory data:

a) DEC Analytical Services Protocol Category A Data Deliverables:

1. A Category A Data Deliverable as described in the most current DEC Analytical Services Protocol (ASP) includes:

   i. a Sample Delivery Group Narrative;
   ii. contract Lab Sample Information sheets;
   iii. DEC Data Package Summary Forms;
   iv. chain-of-custody forms; and
   v. test analysis results (including tentatively identified organic compounds for analysis of volatile and semi-volatile organic compounds)

2. For a DEC Category A Data Deliverable, a data applicability report may be requested, in which case it will be prepared, to the extent possible, in accordance with the DUSR guidance detailed below.

b) DEC Analytical Services Protocol Category B Data Deliverables

1. A Category B Data Deliverable includes the information provided for the Category A Data Deliverable, identified in subdivision (a) above, plus related QA/QC information and documentation consisting of:

i. Calibration standards;
ii. Surrogate recoveries
iii. Blank results
iv. Spike recoveries
v. Duplicate recoveries
vi. Confirmation (lab check/QC) samples
vii. Internal standard area and retention time summary;
viii. Chromatograms
ix. Raw data files; and
x. Other specific information as described in the most current DEC ASP.

2. A DEC Category B Data Deliverable is required for the development of a Data Usability Summary Report (DUSR).

All measurements will be made to provide that analytical results are representative of the media and conditions measured. Unless otherwise specified, all data will be calculated and reported in units consistent with other organizations reporting similar data to allow comparability of data bases among organizations. Data will be reported in µg/L or mg/L for aqueous samples, and µg/kg or mg/kg (dry weight) for soils, or otherwise as applicable.

The characteristics of major importance for the assessment of generated data are accuracy, precision, completeness, representativeness, and comparability. Application of these characteristics to specific projects is addressed later in this document. The characteristics are defined below.

1.1. Accuracy

Accuracy is the degree of agreement of a measurement or average of measurements with an accepted reference or "true" value and is a measure of bias in the system.

1.2. Precision

Precision is the degree of mutual agreement among individual measurements of a given parameter.

1.3. Completeness

Completeness is a measure of the amount of valid data obtained from a measurement system compared to the amount expected to be obtained under correct normal conditions.

1.4. Comparability

Comparability expresses the confidence with which one data set can be compared to another. The data sets may be inter- or intra- laboratory.

1.5. Representativeness

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition.

2. Measurement of Data Quality

2.1. Accuracy

Accuracy of a particular analysis is measured by assessing its performance with "known" samples. These "knowns" take the form of EPA standard reference materials, or laboratory prepared solutions of target analytes spiked into a pure water or sample matrix. In the case of GC or GC/MS analyses, solutions of surrogate compounds, which can be spiked into every sample and are designed to mimic the behavior of target analytes without interfering with their determination, are used.

In each case the recovery of the analyte is measured as a percentage, correcting for analytes known to be present in the original sample if necessary, as in the case of a matrix spike analysis. For EPA supplied known solutions, this recovery is compared to the published data that accompany the solution. For surrogate compounds, recoveries are compared to EPA CLP acceptable recovery tables.

If recoveries do not meet required criteria, then the analytical data for the batch (or, in the case of surrogate compounds, for the individual sample) are considered potentially inaccurate. The laboratory technician or their supervisor must initiate an investigation of the cause of the problem and take corrective action. This can include recalibration of the instrument, reanalysis of the QC sample, reanalysis of the samples in the batch, or flagging the data as suspect if the problems cannot be resolved. For highly contaminated samples, recovery of the matrix spike may depend on sample homogeneity. As a rule, analyses are not corrected for recovery of matrix spike or surrogate compounds.

2.2. Precision

Precision of a particular analysis is measured by assessing its performance with duplicate or replicate samples. Duplicate samples are pairs of samples taken in the field and transported to the laboratory as distinct samples. Their identity as duplicates is sometimes not known to ASC and usually not known to bench analysts, so their usefulness for monitoring analytical precision at bench level is limited. For most purposes, precision is determined by the analysis of replicate pairs (i.e., two samples prepared at the laboratory from one original sample). Often in replicate analysis the sample chosen for replication does not contain target analytes so that quantitation of precision is impossible. For ASP analyses, replicate pairs of spiked samples, known as matrix spike/matrix spike duplicate samples, are used for precision studies. This has the advantage that two real positive values for a target analyte can be compared.

Precision is calculated in terms of Relative Percent Difference (RPD).

- Where X_1 and X_2 represent the individual values found for the target analyte in the two replicate analyses or in the matrix spike/matrix spike duplicate analyses.
- RPDs must be compared to the method RPD for the analysis. The laboratory technician or their supervisor must investigate the cause of RPDs outside stated acceptance limits. This may include a visual inspection of the sample for non homogeneity, analysis of check samples, etc. Follow-up action may include sample reanalysis or flagging of the data as suspect if problems cannot be resolved.
- During the data review and validation process (see Section 19), field duplicate RPDs are assessed as a measure of the total variability of both field sampling and laboratory analysis.

2.3. Completeness

Completeness for each parameter is calculated as follows:

- The firm's target value for completeness for all parameters is 100%. A completeness

value of 95% will be considered acceptable. Incomplete results will be reported in the DUSRs (see section 19).

2.4. Representativeness

The characteristic of representativeness is not quantifiable. Subjective factors to be taken into account are as follows:

- The degree of homogeneity of a site;
- The degree of homogeneity of a sample taken from one point in a site; and,
- The available information on which a sampling plan is based.

To maximize representativeness of results, sampling techniques and sample locations will be carefully chosen so that they provide laboratory samples representative of the site and the specific area. Within the laboratory, precautions are taken to extract from the sample bottle an aliquot representative of the whole sample.

3. Quality Control Targets

Target values for detection limit, percent spike recovery and percent "true" value of known check standards, and RPD of duplicates/replicates are included in the QCP, Analytical Procedures. Note that tabulated values are not always attainable. Instances may arise where high sample concentrations, non homogeneity of samples, or matrix interferences preclude achievement of target detection limits or other quality control criteria.

4. Sampling Procedures

This section describes the sampling procedures to be utilized for each environmental medium that will be collected and analyzed in accordance with appropriate state and federal requirements. All procedures described are consistent with EPA sampling procedures as described in SW-846, third edition, September 1986 and any subsequent updates. All samples will be delivered to the laboratory within 24 to 48 hours of collection.

5. Soil & Groundwater Investigation

The groundwater sampling plan outlined in this subsection has been prepared in general accordance with RCRA Groundwater Monitoring Technical Enforcement Guidance Document 9950.1 (September 1986), Office of Solid Waste and Emergency Response.

Prior to drilling, all drill sites will be cleared with appropriate utility companies to avoid potential accidents relating to underground utilities.

5.1. Test Borings and Well Installation

5.1.1. Drilling Equipment

Direct Push “Geo-Probe” Soil Borings:

Soil borings and monitoring wells will be advanced with a Geoprobe direct push sampling system. The

use of direct push technology allows for rapid sampling, observation, and characterization of relatively shallow overburden soils. The Geoprobe utilizes a four-foot macro-core sampler, with disposable polyethylene sleeves. Soil cores will be retrieved in four-foot or five-foot sections, and can be easily cut from the polyethylene sleeves for observation and sampling. The macro-core sampler will be decontaminated between borings using an alconox and water solution.

Drill Rig Advanced Soil Borings:

The drilling and installation of monitoring wells will be performed using a direct push rig as described above or rotary drill rig depending on project conditions. The rotary drill rig will have sufficient capacity to perform hollow-stem auger drilling in the overburden, retrieve split-spoon samples, and perform necessary rock coring to provide a minimum 3-inch diameter core, known in the industry as "NX."

Prior to initiating drilling activities, the Geo-probe, macro cores, drive rods, and other pertinent equipment will be steam cleaned or washed with an alconox and water solution followed by a potable water rinse. This cleaning procedure will also be used between each boring. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided.

5.1.2. Drilling Techniques

Direct Push "Geo-Probe" Advanced Borings:

Test borings will be advanced with 2-inch direct push macro-cores through overburden soils. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative.

Drill Rig Advanced Borings:

Test borings will be advanced with appropriately sized hollow stem augers based on the project objectives driven by truck-, track-, or trailer-mounted drilling equipment. Alternative methods of drilling or equipment may be allowed or requested for site-specific criteria. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative. One sample from each drilling water source may be analyzed for full TCL.

Bedrock Wells:

Where bedrock wells are required, test borings may be advanced into rock with NX or HQ coring tools. Only water from an approved source shall be used in rock coring. An environmental monitor shall monitor and record the petrology, core recovery, fractures, rate of advance, water levels, and water lost or produced in each test boring. The Rock Quality Determination (RQD) value shall be calculated for each 5-foot core retrieved. All core samples shall be retained and stored in wooden core boxes for a period of not less than one year.

Bedrock well installation may involve construction of a rock socket. If utilized, the socket will be drilled into the top of rock at each bedrock well location to allow a permanent casing to be grouted securely in place prior to completion of the well. The purpose for this is to provide a seal at the overburden/bedrock interface and into the upper bedrock surface, to prevent the entrance of overburden water into the

bedrock.

When a rock socket is constructed, a core hole will be reamed out to the diameter needed for the well planned and set into bedrock. The depth to rock will depend on the competency of the rock and project objectives. The method selected may be percussion or rotary drilling at the option of the subcontractor. The method and equipment selected must be capable of penetrating the bedrock at each well location to a depth required by the work plan.

A cement grout will be tremied into the bedrock socket. Once sufficient grout has been place, the casing will be lowered into the bedrock socket. Once the casing is in place, the augers can be removed and the remaining grout should be added. After the grout and casing have set up for a minimum of 24 hours, the remaining amount of bedrock can be cored through the casing to the depth required for the project objective.

5.1.3. Well Casing (Riser)

Direct Push Geo-Probe Groundwater Monitoring Wells:

Direct Push Geo-Probe advanced groundwater-monitoring wells shall utilize 1.25-inch threaded flush joint PVC pipe.

Drill Rig Advanced Groundwater Monitoring Wells:

The well riser shall consist of 2-inch or greater, threaded flush-joint PVC or stainless steel pipe. All well risers will conform to the requirements of ASTM-D 1785 Schedule 40 pipe. All materials used to construct the wells will be NSF/ASTM approved.

5.1.4. Well Screen

Direct Push Geo-Probe Groundwater Monitoring Wells:

Direct Push Geoprobe advanced groundwater-monitoring wells will utilize 1.25-inch diameter well screen. Groundwater-monitoring wells will be set to intersect the monitoring elevation of the project objective. Each geo-probe advanced well will be equipped with an appropriate length (based on anticipated groundwater level, bedrock depth, and project objectives) of .010 inch slotted PVC screen connected to an appropriate length of PVC riser to complete the well installation. For Sites with non-aqueous phase liquid (NAPL) concerns, 0.02-inch slotted pipe may be used.

Drill Rig Advanced Groundwater Monitoring Wells:

Drill rig advanced groundwater monitoring wells will utilize 2-inch or greater diameter well screen. Groundwater-monitoring wells will be set to intersect the monitoring elevation of the project objective. Each well will be equipped with an appropriate length (based on anticipated groundwater level, bedrock depth, and project objectives) of .010 inch slotted PVC screen connected to an appropriate length of PVC riser to complete the well installation. For Sites with non-aqueous phase liquid (NAPL) concerns, 0.02-inch slotted pipe may be used. The bottom of the screen shall be sealed with a cap or plug.

5.1.5. Artificial Sand Pack

Granular backfill will be chemically and texturally clean, inert, siliceous, and of appropriate grain size for the screen slot size and the host environment. Sand pack grain size will be selected based on

subsurface conditions and well screen size. The well screen and casing will be installed, and the sand pack placed around the screen and casing to a depth extending at least 25 percent of the screen length above the top of the screen.

5.1.6. Bentonite Seal

A minimum 1-foot thick seal of bentonite pellets will be placed directly on top of the sand pack, and care will be taken to avoid bridging.

5.1.7. Grout Mixture

Upon completion of the bentonite seal, the well will be grouted with a non-shrinking cement grout mix to be placed from the top of the bentonite seal to the ground surface. The cement grout shall consist of a mixture of Portland cement (ASTM C 150) and water, in the proportion of not more than 7 gallons of clean water per bag of cement (1 cubic foot or 94 pounds). Additionally, 3% by weight of bentonite powder shall be added, if permitted.

5.1.8 Surface Protection

At all times during the progress of the work, precautions shall be used to prevent tampering with or the entrance of foreign material into the well. Based upon project objectives and the anticipated duration for the use of the well, wells may be completed with a suitable lockable cap to prevent material from entering the well. Permanent wells will generally be protected by a flush mounted road box or stick-up casing set into a concrete pad. A concrete pad, sloped away from the well, shall be constructed around the flush mount road box or stick-up casing at ground level.

Any well that is to be temporarily removed from service or left incomplete due to delay in construction shall be capped with a watertight cap.

5.1.9. Surveying

Coordinates and elevations will be established for each monitoring well and sampling location, if possible. Elevations to the closest 0.01 foot shall be used for the survey. These elevations shall be referenced to a regional, local, or project-specific datum. The location, identification, coordinates, and elevations of the wells will be plotted on maps with a scale large enough to show their location with reference to other structures at each site.

5.1.10. Well Development

After completion of the well, but not sooner than 24 hours after grouting is completed, development will be accomplished using pumping, bailing, or surge blocking. No dispersing agents, acids, disinfectants, or other additives will be used during development or introduced into the well at any other time.

Development water will be either properly contained and treated as waste until the results of chemical analysis of samples are obtained or discharged on site as determined by the site-specific work plans and/or consultation with the NYSDEC representatives on site.

6. Geologic Logging and Sampling

At each investigative location, the boring will be advanced through overburden using either a drill rig and hollow-stem auger or direct push technology; soils will be visually inspected and monitored with a PID to help determine potential for vertical migration of contaminants. Soil samples will be collected as

specified in the project specific plan. Soil samples will be screened in the field for volatile organic vapors using a PID, classified in accordance with Unified Soil Classification System (USCS) specifications, and logged.

Drilling logs will be prepared by a Qualified Environmental Professional who will be present during all drilling operations. The RQD value shall be calculated for each 5-foot section. Information provided in the logs shall include, but not be limited to, the following:

- Date, test hole identification, and project identification;
- Name of individual developing the log;
- Name of driller;
- Drill, make and model, auger size;
- Identification of alternative drilling methods used and justification thereof (e.g., rotary drilling with a specific bit type to remove material from within the hollow stem augers);
- Standard penetration test (ASTM D-1586) blow counts, if collected;
- Field diagram of each monitoring well installed with the depth to bottom of screen, top of screen, and pack, bentonite seal, etc.;
- Reference elevation for all depth measurements;
- Depth of each change of stratum;
- Identification of the material of which each stratum is composed, according to the USCS system or standard rock nomenclature, as appropriate;
- Depth interval from which each sample was taken;
- Depth at which hole diameters (bit sizes) change;
- Depth at which groundwater is encountered;
- Depth to static water level and changes in static water level with well depth;
- Total depth of completed well;
- Depth or location of any loss of tools or equipment;
- Location of any fractures, joints, faults, cavities, or weathered zones;
- Depth of any grouting or sealing;
- Nominal hole diameters;
- Depth and type of well casing;
- Description of well screen (to include depth, length, location, diameter, slot sizes, material);
- Any sealing-off of water-bearing strata;
- Static water level before and after development;
- Drilling date or dates;
- Construction details of well; and
- An explanation of any variations from the work plan.

7. Groundwater Sampling Procedures

The groundwater in all new monitoring wells will be allowed to stabilize for 7 days following development. Water levels will be measured to within 0.01 foot prior to purging and sampling. Sampling of each well will be accomplished in one of two ways.

Active Sampling:

Purging will be completed prior to active sampling. In general, wells will be purged until the pH, conductivity, temperature, and turbidity of the water being pumped from the well have stabilized. Groundwater samples will be collected via active methods (i.e., purging) according to the following procedures and in the volumes specified in Table 11-1:

- Water clarity will be quantified during sampling with a turbidity meter;
- When transferring water from the bailer or pump line to sample containers, care will be taken to avoid agitating the sample, since agitation promotes the loss of volatile constituents;
- Any observable physical characteristics of the groundwater (e.g., color, sheen, odor, turbidity) at the time of sampling will be recorded; and
- Weather conditions (i.e., air temperature, sky condition, recent heavy rainfall, drought conditions) at the time of sampling will be recorded.

Passive Sampling:

Groundwater samples that are collected via passive methods (i.e., no-purge) will be collected according to the following procedures and in the volumes specified in Table 11-1:

- Samples will be collected via passive diffusion bag (PDB) samplers. PDB samplers are made of low-density polyethylene plastic tubing (typically 4 mil), filled with laboratory grade (ASTM Type II) deionized water and sealed at both ends.
- PDB samplers will only be used to collect groundwater samples which will be analyzed for VOCs and in general only for chlorinated VOCs.
- PDB samplers will be deployed by hanging in the well at the middle of the well screen unless a low water table, need to deploy multiple samplers or the targeting of a specific depth interval is identified. The PDB samplers will be deployed at least 14 days prior to sampling.
- The PDB samplers will be deployed using a Teflon® coated string or synthetic rope.
- When transferring water from the PDB to sample containers, care will be taken to avoid agitating the sample, since agitation promotes the loss of volatile constituents;
- Any observable physical characteristics of the groundwater (e.g., color, sheen, odor, turbidity) at the time of sampling will be recorded; and
- Weather conditions (i.e., air temperature, sky condition, recent heavy rainfall, drought conditions) at the time of sampling will be recorded.

8. Management of Investigative-Derived Waste

Purpose:

The purposes of these guidelines are to ensure the proper holding, storage, transportation, and disposal of materials that may contain hazardous wastes. Investigation-derived waste (IDW) included the following:

- Drill cuttings, discarded soil samples, drilling mud solids, and used sample containers;
- Well development and purge waters and discarded groundwater samples;
- Decontamination waters and associated solids;
- Soiled disposable personal protective equipment (PPE);
- Used disposable sampling equipment;
- Used plastic sheeting and aluminum foil;
- Other equipment or materials that either contain or have been in contact with potentially-impacted environmental media.
- Because these materials may contain regulated chemical constituents, they must be managed as a solid waste. This management may be terminated if characterization analytical results indicate the absence of these constituents.

Procedure:

1. Contain all investigation-derived wastes in New York State Department of Transportation (NYSDOT)-approved 55-gallon drums, roll-off boxes, or other containers suitable for the wastes.
2. Contain wastes from separate borings or wells in separate containers (i.e. do not combine wastes from several borings/wells in a single container, unless it is a container used specifically for transfer purposes, or unless specific permission to do so has been provided by the LaBella Project Manager. Unused samples from surface sample locations within a given area may be combined.
3. To the extent practicable, separate solids from drilling muds, decontamination waters, and similar liquids. Place solids within separate containers.
4. Transfer all waste containers to a staging area. Access to this area will be controlled. Waste containers must be transferred to the staging area as soon as practicable after the generating activity is complete.
5. Pending transfer, all containers will be covered and secured when not immediately attended,
6. Label all containers with regard to contents, origin, and date of generation. Use indelible ink for all labeling.
7. Collect samples for waste characterization purposes, use boring/well sample analytical data for characterization.
8. For wastes determined to be hazardous in character, be aware on accumulation time limitations. Coordinate the disposal of these wastes with the Owner and NYSDEC.
9. Dispose of investigation-derived wastes as follows;
    - Soil, water, and other environmental media for which analysis does not detect organic constituents, and for which inorganic constituents are at levels consistent with background, may be spread on-site (pending NYSDEC approval) or otherwise treated as a non-waste material.
    - Soils, water, and other environmental media in which organic compounds are detected or metals are present above background will be disposed as industrial waste. Alternate disposition must be consistent with applicable State and Federal laws.
    - Personal protective equipment, disposable bailers, and similar equipment may be disposed as municipal waste, unless waste characterization results mandate disposal as industrial wastes

9. Decontamination

Sampling methods and equipment have been chosen to minimize decontamination requirements and to prevent the possibility of cross-contamination. Decontamination of equipment will be performed between discrete sampling locations. Equipment used to collect samples between composite sample locations will not require decontamination between collection of samples. All drilling equipment will be decontaminated prior to drilling, between each boring or monitoring well, and after the completion of all drilling. Special attention will be given to the drilling assembly, augers, etc.

Drilling decontamination will consist of:

- Steam cleaning or alconox wash;

- Scrubbing with brushes, if soil remains on equipment; and
- Steam rinse or potable water rinse.

Split spoons and other non-disposable equipment will be decontaminated between each sampling location. The sampler will be cleaned prior to each use, by one of the following procedures:

- Initially cleaned of all foreign matter;
- Sanitized with a steam cleaner;

OR

- Initially cleaned of all foreign matter;
- Scrubbed with brushes in alconox solution;
- Triple rinsed with potable water; and
- Allowed to air dry.

10. Sample Containers

The volumes and containers required for the sampling activities are included in pre-washed sample containers will be ordered directly from a laboratory or firm, which prepares the containers in accordance with EPA bottle washing procedures.

Table 10-1
Water Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Volatile Organics	40-ml glass vial with Teflon-backed septum	Two (2); fill completely, no air space	Cool to 4° C (ice in cooler), Hydrochloric acid to pH <2	7 days
Semivolatile Organics	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Pesticides	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
PCBs	1,000-ml amber glass jar	One (1); fill completely	Cool to 4° C (ice in cooler)	7/40 days
Metals	500-ml polyethylene	One (1); fill completely	Cool to 4° C (Nitric acid to pH <2	6 months

* Holding time is starts at the time of sample collection.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures.

TABLE 10-2
Soil Samples

Type of Analysis	Type and Size of Container	Number of Containers and Sample Volume (per sample)	Preservation	Maximum Holding Time
Volatile Organics	**40 mL preserved glass vials	**Three (3), fill with dedicated laboratory-provided syringe	Cool to 4° C (ice in cooler)	7 days
Volatile Organics, Semivolatile Organics, PCBs, and Pesticides	8-oz, glass jar with Teflon-lined cap	Two (2), fill as completely as possible (i.e., zero headspace)	Cool to 4° C (ice in cooler)	7 days
RCRA Characterization	8-oz. glass jar with Teflon-lined cap	One (1); fill completely	Cool to 4° C (ice in cooler)	Must be extracted within 10 days; analyzed with 30 days

* Holding time is based on the times from verified time of sample collection.
** Preservative and number of containers are laboratory-specific.

Note: All sample bottles will be prepared in accordance with USEPA bottle washing procedures.

11. Sample Custody

This section describes standard operating procedures for sample identification and chain-of-custody to be utilized for all field activities. The purpose of these procedures is to ensure that the quality of the samples is maintained during their collection, transportation, and storage through analysis. All chain-of-custody requirements comply with standard operating procedures indicated in EPA sample handling protocol.

Sample identification documents must be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include:

- Field notebooks,
- Sample label,
- Custody seals, and
- Chain-of-custody records.

12. Chain-of-Custody

The primary objective of the chain-of-custody procedures is to provide an accurate written or computerized record that can be used to trace the possession and handling of a sample from collection to completion of all required analyses. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secured area that is restricted to authorized personnel.

12.1. Field Custody Procedures

- As few persons as possible should handle samples.
- Sample bottles will be obtained from approved laboratories. Coolers or boxes containing cleaned bottles should be sealed with a custody tape seal during transport to the field or while in storage prior to use.
- The sample collector is personally responsible for the care and custody of samples collected until they are transferred to another person or dispatched properly under chain-of-custody rules.
- The sample collector will record sample data in the notebook.

12.2. Sample Labels

Sample labels attached to or affixed around the sample container must be used to properly identify all samples collected in the field. The sample labels are to be placed on the bottles so as not to obscure any QC lot numbers on the bottles; sample information must be printed in a legible manner using waterproof ink (e.g., Sharpie). Field identification must be sufficient to enable cross-reference with the logbook. For chain-of-custody purposes, all QC samples are subject to exactly the same custodial procedures and documentation as "real" samples.

12.3. Transfer of Custody and Shipment

- The coolers in which the samples are packed must be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them must sign, date, and note the time on the chain-of-custody record. This record documents sample custody transfer.
- Shipping containers must be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information are documented on the chain-of-custody record.
- All shipments must be accompanied by the chain-of-custody record identifying their contents. The original record accompanies the shipment. The other copies are distributed appropriately to the site manager.

12.4. Chain-of-Custody Record

The chain-of-custody record must be fully completed. Black carbon paper should be used where possible; however, copies of chain-of-custody prior to shipment are acceptable. The field technician is responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (e.g., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints on the chain of custody.

12.5. Laboratory Custody Procedures

A designated sample custodian accepts custody of the shipped samples and verifies that the sample identification number matches that on the chain-of-custody record if required.

12.6. Custody Seals

Custody seals are preprinted adhesive-backed seals with security slots designed to break if the seals are disturbed. Sample shipping containers (coolers, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before use. Tape placed entirely around the cooler lid is also acceptable. On receipt at the laboratory, the custodian must check (and certify, by completing the package receipt log) that seals on boxes and bottles are intact. Strapping tape should be placed over the seals to ensure that seals are not accidentally broken during shipment.

13. Documentation

13.1. Sample Identification

All containers of samples collected from a project will be identified by a unique identification number and placed on the sample label fixed to the sample container. An example identification system is below for reference:

XX-YY-O/D

- XX This set of initials indicates the specific sampling project
- YY These initials identify the sample location. Actual sample locations will be recorded in the task log.
- O/D An "O" designates an original sample; "D" identifies it as a duplicate.

Each sample will be labeled, chemically preserved, if required and sealed immediately after collection.

To minimize handling of sample containers, labels will be filled out prior to sample collection. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers and protected with Mylar tape. The sample label will give the following information:

- Name of sampler,
- Date and time of collection,
- Sample number,
- Analysis required,
- pH, and
- Preservation.

13.2. Daily Logs

Daily logs and data forms are necessary to provide sufficient data and observations to enable participants to reconstruct event that occurred during the project and to refresh the memory of the field personnel if called upon to give testimony during legal proceedings. If possible, all daily logs will be kept in a bound waterproof notebook containing numbered pages or on a separate sheet. All entries will be made in waterproof ink, dated, and signed. No pages will be removed for any reason. Corrections will be made according to the procedures given at the end of this section.

The logs will include:

- Name of person making entry (signature).
- Names of team members on-site.
- Change in level of personal protection, and reasons for changes.
- Time spent collecting samples.
- Documentation on samples taken, including:
  - Sampling location and depth station numbers;
  - Sampling date and time, sampling personnel;
  - Type of sample (grab, composite, etc.); and
  - Sample matrix.
- On-site measurement data.
- Field observations and remarks.
- Weather conditions, wind direction, etc.
- Unusual circumstances or difficulties.
- Initials of person recording the information.

14. Corrections to Documentation

14.1. Notebook

As with any data logbooks, no pages will be removed for any reason. If corrections are necessary, these must be made by drawing a single line through the original entry (so that the original entry can still be read) and writing the corrected entry alongside. The correction must be initialed and dated. Most corrected errors will require a footnote explaining the correction.

14.2. Sampling Forms

As previously stated, all sample identification labels, chain-of-custody records, and other forms must be written in waterproof ink. None of these documents are to be destroyed or thrown away, even if they are

illegible or contain inaccuracies that require a replacement document.

If an error is made on a document assigned to one individual, that individual may make corrections simply by crossing a line through the error and entering the corrected information. The incorrect information should not be obliterated. Any subsequent error discovered on a document should be corrected by the person who made the entry. All corrections must be initialed and dated.

14.3. Photographs

Photographs will be taken as directed by the site manager or as required in the project plan. Documentation of a photograph is crucial to its validity as a representation of an existing situation. The following information will be noted in the photograph log:

- Date, time, location photograph was taken;
- Weather conditions; and
- Description of photograph taken.

All photos will be stored electronically and select photos will be included in photo logs as part of the final reporting for the project.

15. Sample Handling, Packaging, and Shipping

The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the United States Department of Transportation (DOT) in the Code of Federal Regulation, 49 CFR 171 through 177.

All chain-of-custody requirements must comply with standard operating procedures in the EPA sample handling protocol. All sample control and chain-of-custody procedures applicable to the Consultant are presented in the Field Personnel Chain-of-Custody Documentation and Quality Control Procedures Manual, January 1992.

15.1. Sample Packaging

Samples must be packaged carefully to avoid breakage or contamination and must be shipped to the laboratory at proper temperatures. The following sample packaging requirements will be followed:

- Sample bottle lids must never be mixed. All sample lids must stay with the original containers.
- Shipping coolers must be partially filled with packing materials and ice when required, to prevent the bottles from moving during shipment.
- The sample bottles must be placed in the cooler with packaging material (e.g., plastic bubble wrap) in such a way as to ensure that they do not touch one another.
- The environmental samples are to be cooled as required by the analytical method.
- Any remaining space in the cooler should be filled with inert packing material. Under no circumstances should material such as sawdust, sand, etc., be used.

- A duplicate custody record and traffic reports, if required must be placed in a plastic bag on top of the packed cooler or taped to the bottom of the cooler lid. Custody seals are affixed to the sample cooler.

15.2. Shipping Containers

Shipping containers are to be custody-sealed for shipment as appropriate. The container custody seal will consist of tape wrapped around the package at least twice and custody seals affixed in such a way that access to the container can be gained only by cutting the tape and breaking a seal.

Field personnel will make arrangements for transportation of samples to the lab. When custody is relinquished to a shipper, field personnel will telephone the lab custodian to inform him of the expected time of arrival of the sample shipment and to advise him of any time constraints on sample analysis. The lab must be notified as early in the week as possible, and in no case later than 3 p.m. (EST) on Thursday, regarding samples intended for Saturday delivery.

16. Calibration Procedures and Frequency

All instruments and equipment used during sampling and analysis will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations as well as criteria set forth in the applicable analytical methodology references. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Documentation of all routine and special maintenance and calibration information will be maintained in an appropriate logbook or reference file, and will be available on request. Section 18 lists the major instruments to be used for sampling and analysis. Brief descriptions of calibration procedures for major field and laboratory instruments follow.

17. Field Instrumentation

17.1. Photovac/MiniRae Photoionization Detector (PID)

Standard operating procedures for the PID require that routine maintenance and calibration be performed every six months. Field calibration will be performed on a daily basis. The packages used for calibration are non-toxic analyzed gas mixtures available in pressurized containers. All calibration procedures will follow the manufacturer recommendations.

17.2. Conductance, Temperature, and pH Tester

Temperature and conductance instruments are factory calibrated. Temperature accuracy can be checked against an NBS certified thermometer prior to field use if necessary. Conductance accuracy may be checked with a solution of known conductance and recalibration can be instituted, if necessary.

17.3. 0_2/Explosimeter

The specific meter used at the time of work shall be calibrated in accordance with manufacturer recommendations. The model 260 O_2/ Explosimeter is described below.

The primary maintenance item of the Model 260 is the rechargeable 2.4 volt (V) nickel cadmium battery. The battery is recharged by removing the screw cap covering receptacle and connecting one end of the charging cable to the instrument and the other end to a 115V AC outlet.

The battery can also be recharged using a 12V DC source. An accessory battery charging cable is available, one end of which plugs into the Model 260 while the other end is fitted with an automobile cigarette lighter plug.

Recommended charging time is 16 hours.

Before the calibration of the combustible gas indicator can be checked, the Model 260 must be in operating condition. Calibration check-adjustment is made as follows:

1. Attach the flow control to the recommended calibration gas tank.
2. Connect the adapter-hose to the flow control.
3. Open flow control valve.
4. Connect the adapter-hose fitting to the inlet of the instrument; after about 15 seconds the LEL meter pointer should be stable and within the range specified on the calibration sheet accompanying the calibration equipment. If the meter pointer is not in the correct range, stop the flow; remove the right hand side cover. Turn on the flow and adjust the "S" control with a small screwdriver to obtain a reading as specified on the calibration sheet.
5. Disconnect the adapter-hose fitting from the instrument.
6. Close the flow control valve.
7. Remove the adapter-hose from the flow control.
8. Remove the flow control from the calibration gas tank.
9. Replace the side cover on the Model 260.

CAUTION: Calibration gas tank contents are under pressure. Use no oil, grease, or flammable solvents on the flow control or the calibration gas tank. Do not store calibration gas tank near heat or fire or in rooms used for habitation. Do not throw in fire, incinerate, or puncture. Keep out of reach of children. It is illegal and hazardous to refill this tank. Do not attach the calibration gas tank to any other apparatus than described above. Do not attach any gas tank other than MSA calibration tanks to the regulator.

17.4. Nephelometer (Turbidity Meter)

LaMotte 2020WE Turbidity Meter is calibrated before each use. The default units are set to NTU and the default calibration curve is formazin. A 0 NTU Standard (Code 1480) is included with the meter. To calibrate, rinse a clean tube three times with the blank. Fill the tube to the fill line with the blank. Insert the tube into the chamber, close the lid, and select “scan blank”.

TABLE 17-4
List of Major Instruments for Sampling and Analysis

- MSA 360 0_2 /Explosimeter
- Geotech Geopump II AC/DC Peristaltic Pump
- QED MP50 Controller and QED Sample Pro MicroPurge Bladder Pimp
- Horiba U-53 Multi-Parameter Water Quality Meter
- LaMotte 2020WE Turbidity Meter
- EM-31 Geomics Electromagnetic Induction Device
- Mini Rae Photoionization Detectors (3,000, ppbRAE, etc.)

18. Laboratory Quality Controls

QC data are necessary to determine precision and accuracy and to demonstrate the absence of interferences and/or contamination of field equipment. Field duplicates and field blanks will be analyzed by the laboratory as samples and will not necessarily be identified to the laboratory as duplicates or blanks. For each matrix, field duplicates will be provided at a rate of one per 20 samples collected or one per shipment, whichever is greater. Field blanks which consist of trip blank and field and will be provided at a rate of one per 20 samples collected for each parameter group, or one per shipment, whichever is greater.

Calculations will be performed for recoveries and standard deviations along with review of retention times, response factors, chromatograms, calibration, tuning, and all other QC information generated. QC records will be retained and results reported with sample data and utilized by the Data Validator.

18.1. Field Blanks

Various types of blanks are used to check the cleanliness of field handling methods. The following types of blanks may be used: the trip blank, the routine field blank, and the field equipment blank. They are analyzed in the laboratory as samples, and their purpose is to assess the sampling and transport procedures as possible sources of sample contamination. Field staff may add blanks if field circumstances are such that they consider normal procedures are not sufficient to prevent or control sample contamination, or at the direction of the project manager. Rigorous documentation of all blanks in the site logbooks is mandatory.

- **Routine Field Blanks** or bottle blanks are blank samples prepared in the field to access ambient field conditions. They will be prepared by filling empty sample containers with deionized water and any necessary preservatives. They will be handled like a sample and shipped to the laboratory for analysis.
- **Trip Blanks** are similar to routine field blanks with the exception that they are **not** exposed to field conditions. Their analytical results give the overall level of contamination from everything except ambient field conditions. Trip blanks are typically collected with every batch of water samples for volatile organic analysis. If utilized, each trip blank will be prepared by filling a 40-ml vial with deionized water prior to the sampling trip, transported to the site, handled like a sample, and returned to the laboratory for analysis without being opened in the field.
- **Field Equipment Blanks** are blank samples (sometimes called transfer blanks or rinsate blanks) designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use, and that cleaning procedures between samples are sufficient to minimize cross contamination. If a sampling team is familiar with a particular site, they may be able to predict which areas or samples are likely to have the highest concentration of contaminants. Unless other constraints apply, these samples should be taken last to avoid excessive contamination of sampling equipment.

18.2. Field Duplicates

Field duplicate samples consist of a set of two samples collected independently at a sampling location during a single sampling event. In some instances the field duplicate can be a blind duplicate, i.e.,

indistinguishable from other analytical samples so that personnel performing the analyses are not able to determine which samples are field duplicates. Field duplicates are designed to assess the consistency of the overall sampling and analytical system.

18.3. Representativeness

Careful choice and use of appropriate methods in the field will ensure that samples are representative. This is relatively easy with water or air samples since these components are homogeneously dispersed. In soil and sediment, contaminants are unlikely to be evenly distributed, and thus it is important for the sampler and analyst to exercise good judgment when removing a sample.

NYSDEC DER-10 DUSR requirements are as follows:

a) Background. The Data Usability Summary Report (DUSR) provides a thorough evaluation of analytical data with the primary objective to determine whether or not the data, as presented, meets the site/project specific criteria for data quality and data use.

    1. The development of the DUSR must be carried out by an experienced environmental scientists, such as the project Quality Assurance Officer, who is fully capable of conducting a full data validation. The DUSR is developed from:

        i. A DEC ASP Category B Data Deliverable; or
        ii. The *USEPA Contract Laboratory Program National Functional Data Validation Standard Operating Procedures for Data Evaluation and Validation.*

    2. The DUSR and the data deliverables package will be reviewed by DER staff. If full third party data validation is found to be necessary (e.g. pending litigation) this can be carried out at a later data on the same data package used for the development of the DUSR.

b) Personnel Requirements. The person preparing the DUSR must be pre-approved by DER. The person must submit their qualifications to DER documenting experience in analysis and data validation. Data validator qualifications are available on DEC's website identified in the table of contents.
c) Preparation of a DUSR. The DUSR is developed by reviewing and evaluating the analytical data package. In order for the DUSR to be acceptable, during the course of this review the following questions applicable to the analysis being reviewed must be answered in the affirmative.

        1. Is the data package complete as defined under the requirements for the most current DEC ASP Category B or USEPA CLP data deliverables?
        2. Have all holding times been met?
        3. Do all the QC data; blanks, instrument tunings, calibration standards, calibration verifications, surrogate recoveries, spike recoveries, replicate analyses, laboratory controls and sample data fall within the protocol required limits and specifications?
        4. Have all of the data been generated using established and agreed upon analytical protocols?
        5. Does an evaluation of the raw data confirm the results provided in the data summary sheets and quality control verification forms?
        6. Have the correct data qualifiers been used and are they consistent with the most current DEC ASP?
        7. Have any quality control (QC) exceedances been specifically noted in the DUSR and

have the corresponding QC summary sheets from the data package been attached to the DUSR?

d) Documenting the validation process in the DUSR. Once the data package has been reviewed and the above questions asked and answered the DUSR proceeds to describe the samples and the analytical parameters, including data deficiencies, analytical protocol deviations and quality control problems are identified and their effect on the data is discussed.

\\PROJECTS1\PROJECTSAM\ATLANTIC FUNDING & REAL ESTATE LLC\2170239 - 32 E BUFFALO ST WETLAND DELIN\REPORTS\RI WP\QAPP.DOC

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 4

Laboratory Reports

On file with the NYSDEC by Others

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 5

Previous Reports

New York State Department of Environmental Conservation
Division of Hazardous Waste Remediation
6274 East Avon Lima Road, Avon, NY 14414
Phone: (585) 226-5353• **Fax:** (585) 226-8139
Website:www.dec.ny.gov

Joe Martens
Commissioner

December 19, 2014

Ram Shrivastava
Larsen Engineers
700 West Metro Park
Rochester, NY 14623

Re: Luster-Coate Metallizing Corporation
NYSDEC Site # C828113
Churchville (V), Monroe County

Dear Mr. Shrivastava:

The New York State Department of Environmental Conservation (Department) has reviewed the current status of the Remedial Investigation Work Plan (RIWP) for the Luster-Coate Metallizing Corporation site (Luster-Coate). The NYSDEC has provided, as an attachment to this letter, the minimum actions required of an RIWP for this site in order to move this project forward with the Brownfield Cleanup Program (BCP). The structure of the RIWP shall comply with the provisions of NYSDEC's DER-10 guidance document. Please review this information and provide me with a revised RIWP by March 2, 2014. The NYSDEC currently has an acceptable Health & Safety Plan and Citizen's Participation Plan for this site. In previous discussions on the implementation of an Interim Remedial Measures (IRM) work plan the NYSDEC stated that a 45 day public comment period would be required prior to implementation of that work plan. The Department has determined that if an acceptable IRM work plan is received, the public comment period will be waived until a Decision Document is issued for this site. Please not that surface soil samples for PCBs proposed for west side of the site may be included as part of the IRM work plan to further delineate the extent of PCB soil contamination within this area.

Please contact me at 585-226-5308 or mpgillet@dec.ny.gov with any questions regarding this letter.

Sincerely,

Matthew P. Gillette, PE
Project Manager

ec: M. Menetti DOH
B. Putzig
File


Groundwater Well
Surface Soil Sample
Test Pit/sub-surface soil sample
Include PID Screening of Soil Samples
TCL SVOCS/TAL Metals/ PCBs
Full TCL/TAL/ PCBs/Pests Soil and GW
TCL VOCs/TAL Metals Soil and GW
Soil Boring/Monitoring Well
RI PCB Sampling or IRM Pre-Characterization PCBs Only
Test pit/Soil Bor
TCL SVOCs/TAL Metals/PCBs 0-2 ft beneath pavement.
PCBs only, surface soils beneath pavement
TCL SVOCs/PCBs/ TAL Metals/ Pesticides
Surface Soil
36
Buffalo St
Full TCL VOC-SVOCs/TAL Metals/PCBs/Pests Soil and GW
TCL VOCs/SVOCs soil and GW

NYSDEC SPILL REPORT FORM

DEC REGION: 8 **SPILL NUMBER:** 0370107

SPILL NAME: FORMER LUSTERCOAT **DEC LEAD:** CAHETTEN

SPILL DATE: 05/20/2003 **SPILL TIME:** 12:00 pm

CALL RECEIVED DATE: 05/21/2003 **RECEIVED TIME:** 2:02 pm

SPILL LOCATION

PLACE: FORMER LUSTERCOAT **COUNTY:** Monroe

STREET: 32 East Buffalo Street **TOWN/CITY:** Riga

COMMUNITY: Churchville

CONTACT: **CONTACT PHONE:**

CONT. FACTOR: Unknown **SPILL REPORTED BY:** Citizen

FACILITY TYPE: Commercial/Industrial **WATERBODY:** BLACK CREEK

CALLER REMARKS:

CALLER STATES THAT AT THE SITE OF A FORMER LUSTERCOAT, ONE 500 UNDERGROUND TANK OF MERCURY AND ONE 500 GALLON UNDERGROUND TANK OF LEAD PAINT ARE STILL IN PLACE . THE TANKS WERE NEVER CAPPED OFF. THE FLOOR AT THE FORMER LUSTERCOAT WAS UNDER WATER AND LEAD AND MERCURY HAVE FLOWED INTO BLACK CREEK. CALLER STATES THAT THIS HAPPENED THIS WINTER . COPY TO LAW ENFORCEMENT. FAXED TO MCHD ON 05/21/2003 AT 1434 HRS.

MATERIAL	CLASS	SPILLED	RECOVERED	RESOURCES AFFECTED
lead	Hazardous Material	0 G	0 G	SW,
mercury	Hazardous Material	0 G	0 G	SW,

POTENTIAL SPILLERS

COMPANY	ADDRESS	CONTACT
FORMER LUSTERCOAT	32 EAST BUFFALO STREET CHURCHVILLE ZZ	

Tank No.	Tank Size	Material	Cause	Source	Test Method	Leak Rate	Gross Failure

DEC REMARKS:

05/27/2003 MCHD TO REVIEW FILES AND TRY TO INSPECT SITE .

03/18/05: SITE REMEDIATION IS BEING OVERSEEN BY HAZ WASTE REMEDIATION . NO FURTHER ACTION IS NECESSARY BY SPILLS.

10/24/07: PAPER FILE REMOVED PER FILE RETENTION POLICY.

PIN **T & A** **COST CENTER**

CLASS: B2 **CLOSE DATE:** 03/18/2005 **MEETS STANDARDS:** False

Created On: 05/21/2003

Date Printed: 1/27/2017 Last Updated: 05/27/2008

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Region 8 – Avon
Spills/Bulk Storage
6274 East Avon-Lima Road
Avon, NY 14414
P: 585 226-5428 | F: 585 226-8139
www.dec.ny.gov

January 27, 2017

Ms. Megan Denner
Labella Associates
300 State Street
Suite 201
Rochester, New York 14614

Re: FOIL ID No. W017127-012017

Dear Ms. Denner:

Be advised that Spill No. 0370107 responsive documents or portions thereof are withheld from disclosure in accordance with one or more of the following provisions of the Public Officers Law (POL):

> *The Department has determined that releasing information could endanger the life or safety of persons or the security of critical infrastructure (Public Officers Law Sections 86.5, 87.2(f), 89.5(a)(1)(1-a)).*

If you wish, you may appeal the denial of access to these records. Any such appeal must be submitted in writing and within thirty days. Please direct any appeal, in writing, to:

Foil Appeals Officer
Office of General Counsel
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1500

Please reference **FOIL ID No. W017127-012017** in all future correspondence concerning this request.

Sincerely,

Marcia Persson

Marcia Persson
Secretary 1
Spills/Bulk Storage

LARSEN ENGINEERS

CIVIL • ENVIRONMENTAL
SURVEY • PLANNING
ENERGY CONSERVATION

November 1, 2016

Name Judith Enck,
Regional Administrator
US EPA Region 2
290 Broadway, 26th Floor
New York, New York 10007-1866

RE: NYSDEC site # C828113: Self implementing Cleanup and Disposal of small Quantity of PCB (under 50 PPM) containing soils By Volunteer Brownfield cleanup program at Luster Coate site (4 acres) in Churchville NY.

Dear Ms. Enck:

Larsen Engineers on behalf of the Lotus Green Development LLC (Site Owner), has prepared this notification letter pursuant to 40 CFR Part 761.61(a)(3)(i) in regards to the self-implementing on-site topsoil removal and disposal of a small quantity of soil with low concentration of PCB at the Monroe County Landfill located on Route 490 East, in the Town of Riga, Monroe County, New York.

The final status of the property after the proposed remediation shall be restricted, high density residential/commercial located on the demolished portion of disturbed land. Open land area along the creek will not have any development, where residual contamination is planned to be remediated. The sampling, testing and removal-disposal of contaminated soils will be done by the same companies that had done work on this site under the DEC project prior to our taking ownership.

This notification letter follows the EPA 761.61(a)(3)check list and includes the following items in the attached work plan document:

1. Background information and history of completed demolition & cleanup activities in the past.
2. Nature of Contamination - the current site conditions, extent of residual contaminated area, site soil removal plan, and a written certification.
3. Summary of Standard operating procedures
4. Site maps of sample area locations and previous PCB values
5. Copies of previous test results for 2005 and 2014.
6. QA/QC plan with gathering accurate data for PCB approved by DEC

The self-implementing cleanup by the Owner of the site will follow our testing for PCB in the area where high values of PCB above 1 ppm were observed in the past. One sample per 100 SF shall be taken to characterize the contaminated area on the site for determining the excavation boundaries and quantities to reach NYSDEC soil cleanup goals of 1 ppm PCB in surface soils and 10 ppm in subsurface soils below 2 ft.

The remedial action will involve the excavation and off-site disposal, at a permitted facility, of PCB contaminated soil at concentrations equal to or greater than 50 parts per million (ppm) PCBs. The PCB contaminated soil will be disposed within the limit of the existing landfill waste mass. The site cleanup is being managed under the oversight of the New York State Department of Environmental Conservation (NYSDEC) through their Brownfield Volunteer cleanup program.

The Owner shall ensure that no remediation work occurs on the site until written approval is obtained from EPA.

This site was remediated under the DEC program around 2005-2006 when most of the areas with over 50PPM PCB were removed and disposed off at regulated landfills. The area along the Creek was originally planned as part of DEC project but not cleaned. The site building structures were demolished and site has been made ready for future high density restricted housing development. The remaining contaminated soil area has been studied and now is planned to be remediated under the volunteer Brownfield program.

Contingency Plan: While we have observed that the test results in 2014 show PCB values to be below 15 ppm, it is possible that the 2016 test results will find higher values above 50 PPM of PCB. In this case the soil removal area will expand and cost of remote disposal will be incurred by the Developer. The practical and expedient remedy for the small quantity of soil anticipated at this site is removal from the existing location and restoring the area with clean fill. It is our intention to only remove the soils above 10 ppm in the 2 ft deep area at previously identified contaminated soil sampling areas.

There is no need to cap the site because the soil cleanup goals for PCB shall be achieved by excavation of contaminated soils. The existing soil contaminated areas are all located along the creek where no construction is planned above these soils. Development plans show that the existing walkways or trails will be restored and graded with clean crushed material providing an additional 9 to 12 inches of material on top of existing ground on an as needed basis.

The Owner shall follow the required notifications to comply with the EPA and DEC requirements before proceeding with the sampling and other tasks as outlined in the work plan. The notification parties include the County Health Department, the Village, and Town Board, the public library etc.

The project related information is provided here in a summary format.

Background

A Remedial Investigation/Feasibility Study (RI/FS) of the Luster Coate site Owned by Lotus Green Development LLC was completed, and an Interim Remedial Investigation Report was submitted in spring of 2015. Clean up activities at this site were initially started and substantially completed by NYSDEC with USEPA assistance for removal of waste industrial materials and removal/landfill disposal of PCB containing soils above 50 PPM concentrations.

One small area (along the creek) remained, and this area is now included as part of the sampling testing and soil removal activities proposed at this site.

All of the above ground building structures and related materials were demolished, and disposed of under NYSDEC guidance under an Empire State Development funded project, by 2012.

Nature of Contamination

Previous studies conducted at this site identified some areas where surface soils had detected PCB and in some area exceeded the limit of 50 PPM. These areas were remediated by NYSDEC but one small area remained requiring removal and disposal of these soils (10 to 20 CY) at the same landfill where past disposal was accomplished. The current plan includes testing some additional areas to assure that no PCB contamination exists on the site above the 50 PPM level.

The recent test results from 2014 sampling show significant reduction in PCB concentrations. The values are now less than 15 ppm in the areas of proposed testing and remediation. Detailed testing under the proposed plan shall confirm the actual values at this time and will be the basis of a soil removal plan.

Site Characterization and Extent of Contaminated Area

The sampling and testing plan (see the Work Plan) shows the locations of the areas where surface soils will be tested to identify where soil removal and offsite disposal is necessary. The surface areas of these locations is small and therefore, the total quantity of soil requiring landfill disposal will be only a few truck loads. Previous testing of ground water monitoring wells does not indicate any significant contamination on this site, a result of previous cleanup efforts. The area with residual contaminants shall be cleaned by removing the contaminated soils in the top 2 ft zone to achieve the soil cleanup goal.

Site Cleanup Plan

The self-implementing cleanup will involve the excavation of approximately 10-20 cubic yards (estimated 15-30 tons) of PCB contaminated soil at concentrations equal to or greater than 50 parts per million (ppm) PCBs, and the transportation and off-site disposal of the PCB contaminated soil will be at a Monroe County Landfill site permitted to accept this type of waste. This volume is based on removing the PCB contaminated soil(above 50ppm) to a depth of 2-3 inches below grade over an approximate 1,000-2000 square feet area.

The concepts/procedures for the site cleanup plan for the known area of PCB impacted soils at 50 ppm or greater are as follows:

- Prior to any work, clearing or excavation of soil in the PCB contaminated soil area, an exclusion zone will be established around the area to restrict access and the potential spread of PCBs. A separate, temporary personal decontamination area and equipment decontamination pad for decontamination of the equipment that comes into contact with the PCB contaminated soil will also be constructed.

- Prior to removal of the PCB contaminated soil, temporary erosion and sediment controls will be installed along the creek bank.

- The PCB contaminated soil will be excavated and either directly loaded into transportation vehicles that have been lined with polyethylene sheeting and covered with a tarp or temporarily staged on-site until

disposal off-site. If staged on-site, the soil will be containerized in labeled NYSDOT approved containers (roll-off, etc.) that have been lined with polyethylene sheeting and have a liquid tight cover, or stockpiled on and covered with two layers of 6 mil polyethylene.

- At completion of the PCB contaminated soil removal work, the construction equipment or portions thereof that come into contact with PCB contaminated soil will be decontaminated. The decontamination pad materials of construction and personal protective equipment (PPE) generated during the excavation of PCB contaminated soil will be disposed of with the last load of PCB contaminated soil. Decontamination liquids generated will be sampled, characterized and properly disposed of off-site at a permitted treatment facility.

This work will be undertaken by the Owner. The same companies, who have done similar work at this site under the previous NYSDEC program, will be utilized as sub-contractors.

Written Certification

All of the test data and related reports are available at the NYSDEC region 8 office in Avon, NY and at Larsen Engineer's office at 700 West Metro Park, Rochester, NY 14623.

The site demolition and cleanup work has been substantially completed over last 10 years and this remaining effort is to test the site soils and ground water, remove a small quantity (less than 20 Cu Yd) of PCB contaminated soil, and safely dispose of it at County landfill.

We look forward to your response and should you require further information, please do not hesitate to contact me at (585) 272-7310.

Respectfully Submitted,

S. Ram Shrivastava, P.E.

President of Larsen Engineers

Attachment- Site map showing the testing and removal areas for PCB containing soils.

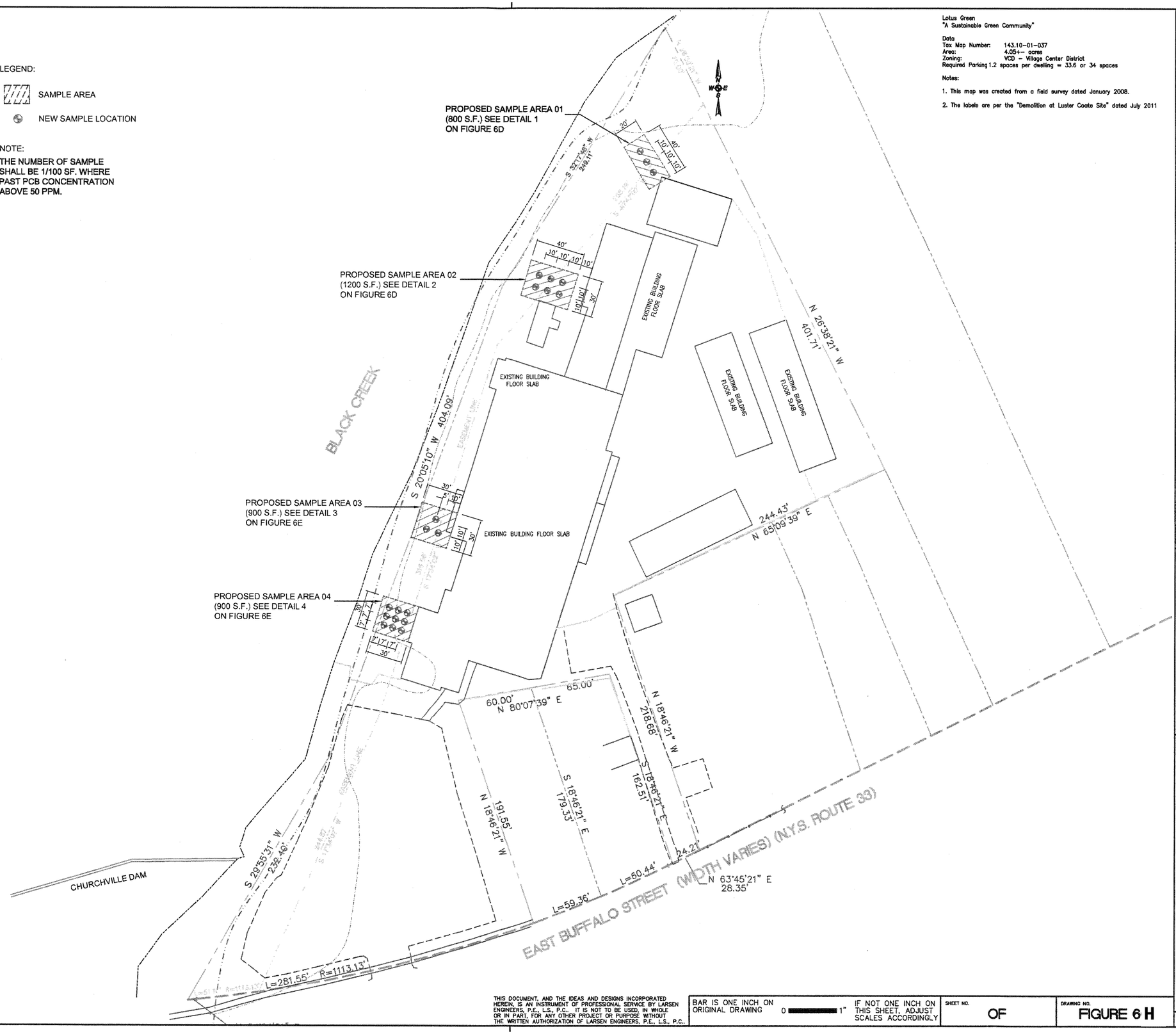
LEGEND:

SAMPLE AREA

NEW SAMPLE LOCATION

NOTE:

THE NUMBER OF SAMPLE SHALL BE 1/100 SF. WHERE PAST PCB CONCENTRATION ABOVE 50 PPM.



Lotus Green
"A Sustainable Green Community"

Data
Tax Map Number: 143.10-01-037
Area: 4.05+- acres
Zoning: VCD - Village Center District
Required Parking 1.2 spaces per dwelling = 33.6 or 34 spaces

Notes:

1. This map was created from a field survey dated January 2008.

2. The labels are per the "Demolition at Luster Coate Site" dated July 2011

NO.	REVISIONS	BY	DATE
01	NEW SAMPLING POINT AREA	JC	10/16

PROJECT MANAGER

FIRM PRINCIPAL

PROJECT ENGINEER: ——

DRAFTED BY: KMS

CHECKED BY: ——

SCALE: 1"=40'

DATE: DECEMBER 2012

LARSEN ENGINEERS
700 WEST METRO PARK, ROCHESTER, NEW YORK 14623-2678
(585)272-7310 FAX:(585)272-1519
www.larsen-engineers.com

PROJECT: LOTUS GREEN
a Sustainable Green Community
VILLAGE OF CHURCHVILLE, TOWN OF RIGA,
COUNTY OF MONROE, STATE OF NEW YORK

TITLE: EXISTING SITE PLAN
PROPOSE SAMPLE POINT AREA

PROJECT NO.: 03-3-5978

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NO. OF

DRAWING NO. FIGURE 6 H

Remedial Investigation & Action Work Plan

Luster Coate Metallizing Corporation

NYSDEC Site Number C828113

Village of Churchville, Monroe County

Prepared For:

Lotus Green Development LLC

Prepared By:

Larsen Engineers
700 West Metro Park
Rochester, NY 14623

November 1, 2016

LARSEN ENGINEERS

Table of Contents

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List of Appendices

1. Introduction

Lotus Green Development LLC, is submitting this work plan to the NYSDEC for the completion of Interim Remedial Measures (IRMs) at the Luster Coate Metallizing Corporation site (NYSDEC Site #C828113). The Luster Coate site property consists of approximately 4.5 acres at 32 East Buffalo Street in the Village of Churchville, Town of Riga, Monroe County, New York. The tax map designation is 143.10-1-37. Residential properties border the site to the south and east along Buffalo Street. Black Creek is located along the west and northwest portions of the site. The site was accepted in to the Brownfield Cleanup Program on May 8, 2006 and under BCP Regulations the applicant is considered a volunteer. See Figures 1 and 2/2.1. Figures 2 and 2.1 show aerial photos of the site in its prior and existing conditions, following the recent demolition of on-site structures.

This IRM Work Plan was developed in accordance with New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation's DER-10 "Technical Guidance for Site Investigation and Remediation", and CP-51 Soil Cleanup Guidance documents. This plan was approved in early 2016 with the understanding that sampling and testing will be followed by removing the surface soils with PCB concentrations above 10 ppm from a small area (sample area 4, 4a) along the creek. This sampling now awaits the EPA approval since the tests in 2005 did indicate some samples to exceed 500ppm of PCB. We have received guidance from EPA to increase the number of samples in the source area to one sample per 100SF and defer the excavation work to post characterization. DEC has required that three samples be taken at each location to determine the PCB concentrations at 0-2 inch, 2inch to 12 inch and 12 to 24 inch depth. Soil cleanup goals are 1 PPM PCB in surface soils and 10 ppm PCB in subsurface soils.

An interim sampling collection was performed in summer of 2014 to assess the current level of contamination and monitor the progress of natural attenuation. The test results indicated (see exhibit 2) that significant reduction has already taken place and all of the samples contained PCB values below 15 ppm, which is expected to be confirmed under the proposed sampling in December 2016. This site had been remediated before 2005 by NYSDEC and EPA programs and only one area was note done at that time. The same remaining area has now shown lower level of PCB which are planned to be now removed based on the sampling to characterize the current conditions.

Considering the current level of contaminant values and the location of remaining contaminants limited to a narrow area along the creek, the Developer has initiated the development plan and located the proposed residential buildings on previous industrial facility land. The timing and deadlines for compliance make it now possible to plan the Remedial Investigation in the specific area of concerns where PCB remediation is planned to get the site ready for development.

As defined within DER-10, an IRM was an action taken to mitigate environmental or human exposures before the completion of the remedial investigation and remedial

alternative selection. Demolition of the industrial facilities and removal of all hazardous materials within the structures in 2012 has made the site cleaner and safer to develop. Continued natural remediation has brought the contaminant values closer to soil cleanup goals. Therefore the planned IRMs include the removal of small quantity (20 CY) to reach surface values of less than 1 ppm of PCB and subsurface values of 10 ppm.

Since there are no other areas of concern after the cleanup of area 4 & 4a we have reviewed all of the remedial alternatives and decided to continue the DEC remedy selection of "soil removal" made prior to 2005.This is the most cost effective and expedient measure considering the PCB contaminant values of less than 10 ppm.

The use of a non-emergency IRM is encouraged when a source of contamination or exposure pathway can be effectively addressed prior to completion of the investigation and remedy selection process.

2. Site History

Based on the results of previous sampling, PCB impacted soils exist on-site that exceed the CP-51 soil cleanup guidance. A summary of these previous sampling events is listed below:

- Preliminary Site Assessment (PSA) prepared by Shaw Environmental & Infrastructure Engineering of New York, P.C. (Shaw) dated November 9, 2005;
- Soil Sampling Report by Empire Geo Services (EGS) dated February 2006;
- Soil Removal Report by EGS dated September 2006;
- Soil Sampling by EGS for Lotus Green Development, LLC dated June 2014.

Shaw PSA

PSA performed on behalf of the NYSDEC. Sampling identified PCB detections in six (6) surface soil samples. PCBs were detected above 10 ppm in surface soil samples SS-01 and SS-02. PCBs were detected above 1 ppm in surface soil samples SS-03 and SS-06. (Figure 3)

2006 EGS Soil Sampling Report

Sampling performed on behalf of the NYSDEC to further identify the extent of PCB contamination in surface soil. PCBs were detected in 41 samples collected from both on and off the property (Figure 3). Two (2) on-site samples exceeded 10 ppm; SS-116 and SS-133. SS-133 exceeded the PCB hazardous waste threshold of 50 ppm with a concentration of 145.8 ppm.

2006 EGS Soil Removal Report

Based on the results of the previous EGS sampling, soil removal was directed by NYSDEC to excavate and dispose of PCB contaminated soils exceeding 1 ppm from both on and off the site property (Figure 4). Eight (8) areas were identified for soil removal. The soil excavation work addressed primarily off sites areas and did not complete excavation and removal of PCB contaminated soils from on-site areas 1, 2, 3, and the onsite portion of Area 5.

2014 EGS Soil Sampling

Investigation work performed by EGS for Lotus Green Development LLC identified PCBs in four surface samples (Figure 5). Samples SA-3 and SA-4A exceeded 10 ppm. Sample SA-5 exceeded 1 ppm.

3. Scope of Work

The IRM excavation, disposal, and sampling activities will be performed by appropriately qualified and licensed subcontractor(s) ("subcontractor") to be selected by Lotus Green Development, LLC and approved by NYSDEC. All sampling and testing as shown on Figure 6c of the attachments and IRM activities will be observed by NYSDEC. Additional samples in the specified areas of concern sample area 01,02, 03 and area 04 will be taken based on 1 sample per 100 SF of area to characterize the contaminant values and determine what area needs to be excavated where the surface values of PCB exceed 1 ppm and subsurface values above 10 ppm. Total 21 sample locations are planned to comply with EPA requirements. Based on the results of 2014 PCB values, the area 03 and 04 have higher PCB concentrations so at each location three samples will be collected at surface, mid point and about 2 ft below ground level to determine the depth of excavation for soil removal above the soil clean up goals.

Areas (if any) with values of PCB above 50 ppm will be separated so such soils are disposed at DEC approved hazardous Modern landfill in Buffalo area.

The objective of the proposed remedial action will be to comply with Track 4 or DEC approved Track by excavating and disposing of PCB contaminated soils above CP-51 cleanup thresholds, which are as follows:

- 1 ppm in surface soils and 10 ppm in subsurface soils.

Based on the proposed future use of this site as a Restricted-Residential development (as defined in 6NYCRR Part 375-1.8) the 1 ppm cleanup goal must be achieved in the top two feet of exposed soil and 10 ppm in all other soils.

The proposed IRM activities for the Site include:

- Excavation and Disposal of Polychlorinated Biphenyl (PCB) contaminated soils with concentrations exceeding 10 ppm based on historic sampling results;
- Confirmatory sampling of excavation areas to determine compliance with the CP-51 guidance document.
- Sampling of historically identified PCB impacted soil areas where concentration were detected at greater than 1 ppm to determine compliance with the CP-51 guidance document.

3.1 Site Control

The proposed IRM work will require Site controls to ensure the safety of Site workers and the public. Site controls will include fencing of the area where the work will be performed, including equipment staging areas and any temporary stockpiling locations. Access to the Site will be limited to project workers only. The public will not be permitted to enter within the fenced areas. All IRM activities are to be contained within the Site boundaries.

3.2 Alternative evaluation for Remedial Action

This site has undergone cleanup activities since the closure of the industrial plant and DEC /EPA involvement during 2005-2006. Subsequently demolition of all above first floor structures was completed in 2012 including removal of asbestos containing roofing material, any waste materials within the plant, electronic ballasts, lighting fixtures and other building materials that were recycled. Crushed blocks and other concrete was spread to grade the outside area adjacent to the buildings. Additional sampling and testing was undertaken by the Owner to assess the current values of contaminants in 2014.
A residential development project planning is underway to expedite the construction of high density rental apartments at this site starting in 2017. Therefore any remedial action must be fast and offer highest safety to the future residents.
The removal of source area contaminated soils and offsite disposal, as an Interim remedy was selected by DEC in 2005-2006. The only known contaminated soils are in the originally planned area and "removal of source contaminated soil" still offers the best alternative when we consider the small quantity, expedient remediation by source removal and costs for disposal. All other options are not valid in this case due to the reasons explained above.

3.3 Selection of Remedial Action

A review of all the past testing data and completed clean up measures indicates that this site now has a very limited area remaining to be cleaned and it is located in the area where no residential construction is planned as restricted area. Majority of this site is built up area where paved parking lots and concrete foundation slabs exists for incorporation in future building plans. Future housing units are planned to be located in these restricted areas away from any past contaminated soils.
The main factors for selecting remedial actions are the small size of the area left to be cleaned and time pressure to get the project completed as soon as possible. Some other technologies such as soil stabilization with cement and other immobilizing agents and avoid the transport of PCB soils may be possible but not practical due to small quantities of soils requiring remediation. The best practical and time expedient option is therefore "source soil removal" to meet the soil cleanup goals for Track 4 or any other track determined by DEC to be applicable to this project.

Restricted Use Considerations: We believe that the sampling and testing to be completed at this site shall confirm that no contaminants exists on the site in ground water or surface soils to pose any danger to the future residents. Therefore the only restricted use applies to the area planned to be left undeveloped along the Black creek eastern shore line. This area is also in flood plain. These restrictions will be incorporated in site design and enforce by the Village review process and building permit requirements.

3.4 Soil Removal

EPA requires that first the required number of samples be taken to cover the defined areas of concern (1 sample per 100 SF) and excavation be planned after the results are known to focus on the specific areas where PCB are above the cleanup goal of 10ppm in soils within 2 ft depth. The test results will govern the scope of soil removal and shall be preapproved before excavating and disposing the soils at designated landfills.

Soils will be excavated from 10 foot by 10 foot areas to a depth of 1 foot surrounding the following sample areas (Figure 6):

- Excavation Area A – Former sampling location SS-133
- Excavation Area B – Former sampling locations SS-02 and SS-116
- Excavation Area C – Former sampling location SA-3
- Excavation Area D – Former sampling location SA-4A

Soils will be staged on polyethylene sheeting and securely covered to prevent run-off, prior to off-site disposal. An on-Site soil staging areas will be determined with approval by the NYSDEC.

The limits of the excavations will be located using a handheld global positioning system (GPS) and/or through survey.

3.4.1 Confirmation Samples

EPA protocol will be followed to take sufficient samples so that remedial activity at these sites achieves the soil clean up goals and provide the replacement clean soil cover.

Following the excavation of contaminated soil areas, confirmation samples will be collected in accordance with the QA/QC Plan and with NYSDEC protocols in DER-10 Section 5.5(b)(4)(iv). This includes the collection of a minimum of 5 soil samples, consisting of four (4) sidewall samples and one (1) floor sample per 15 feet of excavation trench.

Samples will be analyzed for:

- PCBs (EPA Method 8021)

Analytical results will be evaluated with respect to NYSDEC's CP-51 guidance to determine the completeness of the IRM.

3.4.2 Decontamination Procedures

To eliminate the tracking of petroleum-contaminated soils, the drivers will follow designated truck routes to contain traffic within a limited area. If materials accumulate outside the excavation and staging areas, they will be addressed to the satisfaction of the Field Team Leader.

All decontamination will be performed in accordance with NYSDEC-approved procedures. Sampling methods and equipment have been chosen to minimize decontamination requirements and prevent the possibility of cross-contamination.

Any non-disposable sampling equipment (ex. stainless steel spoons) will be decontaminated using the following procedure:

- Initially cleaning equipment of all foreign matter;
- Scrubbing equipment with brushes in Alconox solution;
- Rinsing equipment with distilled water;
- Triple-rinsing equipment with distilled water; and
- Allowing equipment to air dry.

A temporary decontamination pool will be established in a secure area on site using 6-ml polyethylene sheeting. Fluids generated during decontamination will be collected in the plastic-lined pool. Prior to completion of the work activities, the contractor will remove the decontamination facilities and associated materials, decontamination fluids, equipment, etc. Decontamination wastes exhibiting signs of contamination shall be collected and containerized in 55 gallon drums for proper disposal.

3.4.3 Disposal of IRM-Derived Wastes

The following IRM-derived wastes are anticipated for this project:

- PCB impacted soils; and
- Decontamination wastes (if applicable).

Decontamination water will be containerized and staged on-Site. Final disposal of decontamination water will be dependent on the results of water analyses and waste characterization samples. Decontamination water exhibiting no signs of contamination will be discharged to the ground surface, allowing for infiltration.

Excavated PCB impacted soils will be transported to an NYSDEC approved off-Site disposal facility permitted to accept such wastes. Prior to transport, waste characterization samples will be collected for laboratory analysis, as required by the disposal facility.

IRM-generated wastes will be staged on-Site for appropriate waste characterization and

disposal unless it is loaded out as it is generated. All waste containers will be labeled and secured. Waste manifests or bill of ladings will be used for all off-Site shipments and included in the report.

3.4.4 Site Restoration

Once the IRM has been determined to be complete through the review and approval of confirmation samples by NYSDEC, site restoration will be performed in accordance with DER-10 Section 5.4(d). Any imported backfill will sampled in accordance with DER-10 Table 5.4(e)10. Disturbed soils will be seeded and mulched to re-establish vegetation. In addition, excavations may remain open until such time that cover is proposed and approved for placement as a part of the final remedy for the site.

3.5 Additional Surface Soil Sampling for PCBs

The number of samples in each area shall comply with one sample per 100 SF area requirements where the previously tested surface spoil PCB values were above 50 PPM

Surface soil samples will be collected from previously identified areas where PCB soil contamination has been identified above 1 ppm to determine compliance with CP-51 (Figure 6). Two Surface soil samples will be collected from each of Sampling Areas A through D as indicated on Figure 7. Samples will be analyzed for PCBs using the same procedures as indicated for the confirmatory samples in Section 2.2.1.

4. QA/QC Protocols

Larsen Engineers is responsible for the project management, coordination and scheduling, subcontracting, and quality assurance/quality control (QA/QC) of IRM activities. General QA/QC procedures, including sample preparation and holding times, are described in the Quality Assurance Project Plan (Appendix c).

Analytical work will be performed by an appropriately qualified New York State Department of Health (NYSDOH) Environmental Laboratory Approval Plan (ELAP) Contract Laboratory Protocol (CLP) certified subcontracted laboratory. Analytical methods reflect the requirements of the NYSDEC Analytical Services Protocol (ASP), Revised June 2000.

All analytical data for the samples collected during this IRM will be reported by the laboratory with NYSDEC ASP Category B deliverables.

A Data Usability Summary Report (DUSR) will be generated for all data.

5 . Reporting and Schedule

Upon receipt and review of all necessary data, a Construction Completion report will be prepared including:

- A discussion of the IRM work completed;
- A Site Plan with location of the removed soils;
- Extent of soil removal;
- Manifests for all off-Site disposal of waste materials;
- Photographs;
- Post excavation soil sampling results; and
- Laboratory analytical reports and chain-of-custody.

Confirmatory samples will be compared to the NYSDEC Cleanup Standards in 6 NYCRR Part 375.

The projected schedule for conducting the tasks identified in this Work Plan is:

Site soil sampling and testing	December 1-10, 2016
Evaluate Analytical Laboratory Testing results	December 10 to 15, 2016
Site surface soil excavation and restoration and IRM Reporting	December 20-25 , 2016.

Progress reports will be submitted to NYSDEC and include a description of work completed during the reporting period, problems encountered, sampling results, and any changes to the scope of work.

All data will be reported in electronic format to the NYSDEC's EQUIS database.

6. Health and Safety

A Site specific Health and Safety Plan (HASP) has been prepared for this project and is included as Appendix A of this Work Plan. The HASP will be reviewed by all employees before starting site work. Monitoring of the work area will be conducted throughout duration of IRM activities using the following (or equivalent) instrumentation:

- aerosol particulate meter

Air monitoring at the site for particulates will be continuous during ground intrusive activities. Air monitoring will be periodic during all non-intrusive activities.

A generic Community Air Monitoring Plan is provided as Appendix B of this Work Plan.

Larsen Engineers' employees and the subcontractor on-Site will have completed the OSHA 40-hour HAZWOPER training with current refresher courses. A copy of the HASP will be available on-Site at all times during the IRM and field investigations.

7. Citizen Participation

A Citizen Participation (CP) Plan has been developed for this project and is provided under separate cover. This work plan will be made available for review in the document repository. A Fact Sheet will be prepared and distributed which explains the proposed IRM activities.

8 . Professional Engineering and Environmental Oversight Team

This project will be overseen with staff resources from Larsen Engineers and Labella which is affiliated with the Developer (Lotus Green Development LLC) as a Consultant.

The Developer will retain the services of SJB Environmental/Empire GEO Services, with past work experience at this site, as a subcontractor to provide necessary excavation, disposal, and restoration for the project.

Larsen engineering and Labella support team for the project includes the following staff;
S. Ram Shrivastava, P.E. Principal In charge
Newt Green, P.E., Project manager
Dan Knolls, P.E. Environmental advisor, Labella
Carol Zimberlin, Environmental Analyst
Jorge Cidel, AutoCAD maps and development plans

Figure 1. Project Location Map

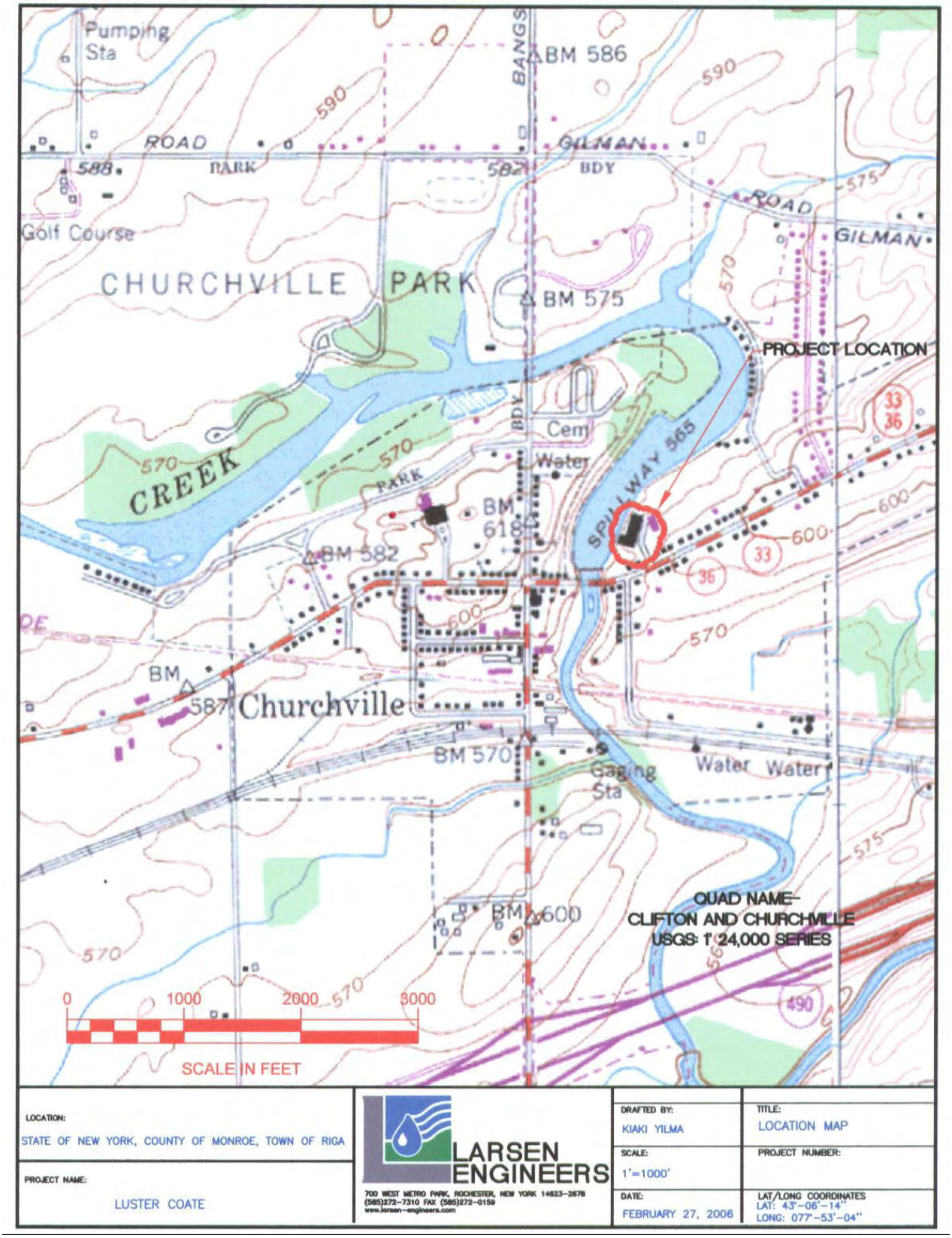
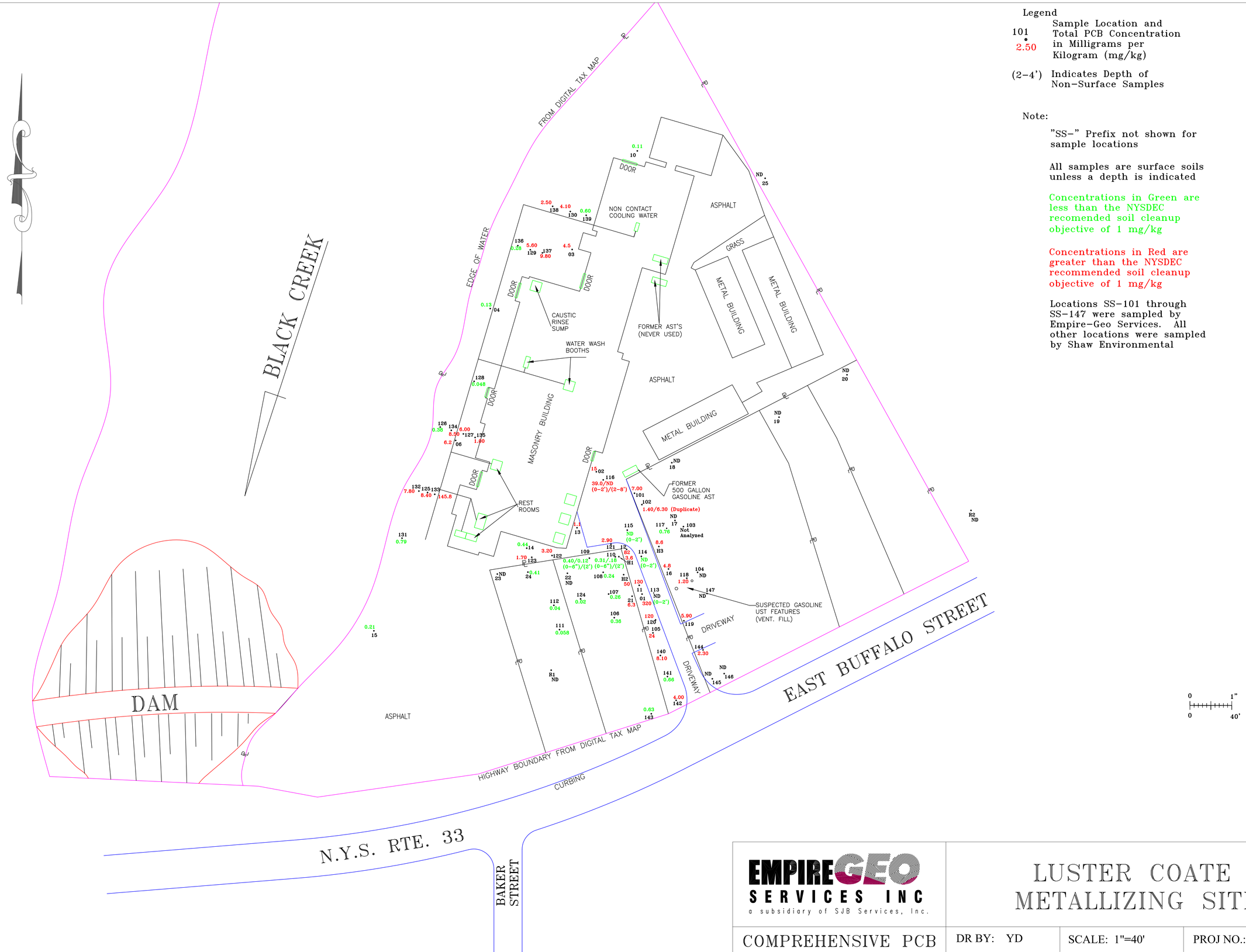


Figure 2. Aerial Image Showing Before Demolition Conditions

Figure 2.1. Aerial Image Showing After Demolition Conditions



Legend

101 • 2.50 — Sample Location and Total PCB Concentration in Milligrams per Kilogram (mg/kg)

(2-4') — Indicates Depth of Non-Surface Samples

Note:

"SS-" Prefix not shown for sample locations

All samples are surface soils unless a depth is indicated

Concentrations in Green are less than the NYSDEC recomended soil cleanup objective of 1 mg/kg

Concentrations in Red are greater than the NYSDEC recommended soil cleanup objective of 1 mg/kg

Locations SS-101 through SS-147 were sampled by Empire-Geo Services. All other locations were sampled by Shaw Environmental

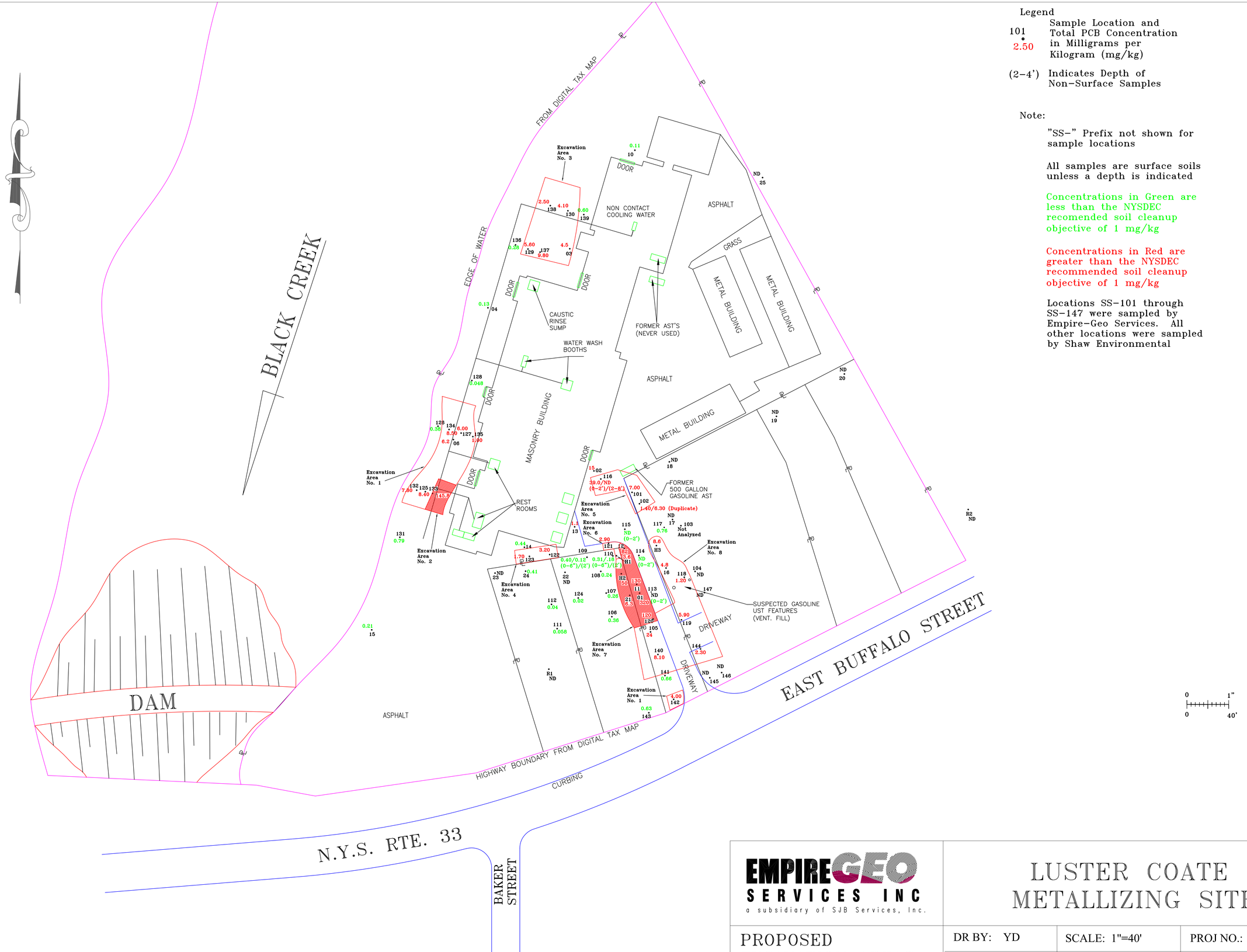
0 1" 0 40'

EMPIRE GEO SERVICES INC
a subsidiary of SJB Services, Inc.

LUSTER COATE METALLIZING SITE

COMPREHENSIVE PCB CONCENTRATION MAP

DR BY: YD	SCALE: 1"=40'	PROJ NO.:
CHKD BY:	DATE: 12/02/05	FIGURE NO: 3



Legend

101 Sample Location and
2.50 Total PCB Concentration in Milligrams per Kilogram (mg/kg)

(2-4') Indicates Depth of Non-Surface Samples

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Concentrations in Red are greater than the NYSDEC recommended soil cleanup objective of 1 mg/kg

Locations SS-101 through SS-147 were sampled by Empire-Geo Services. All other locations were sampled by Shaw Environmental

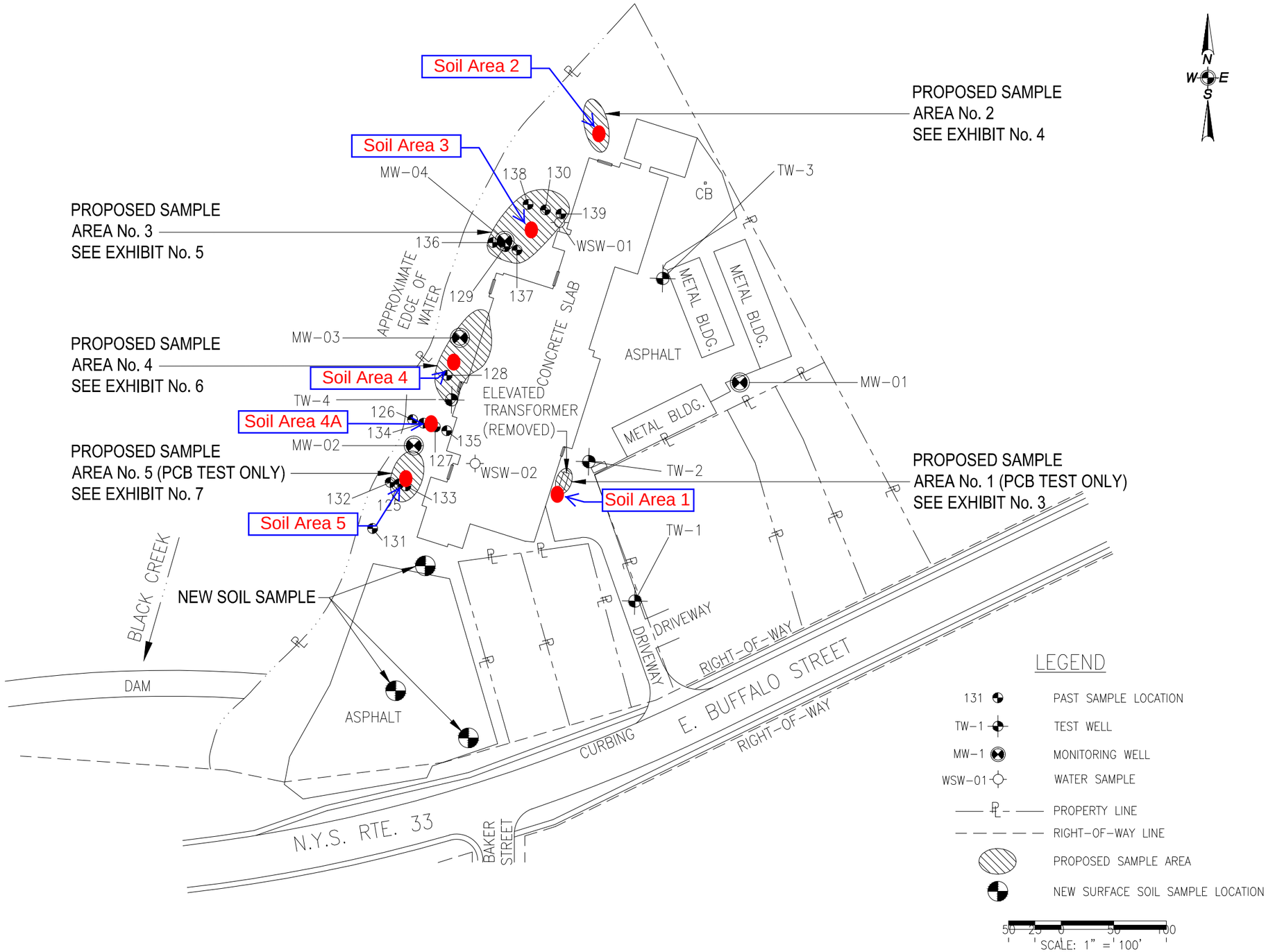
EMPIRE GEO SERVICES INC
a subsidiary of SJB Services, Inc.

LUSTER COATE METALLIZING SITE

PROPOSED EXCAVATION AREAS

DR BY: YD	SCALE: 1"=40'	PROJ NO.:
CHKD BY:	DATE: 12/02/05	FIGURE NO: 4

Figure 5



LEGEND

131	PAST SAMPLE LOCATION
TW-1	TEST WELL
MW-1	MONITORING WELL
WSW-01	WATER SAMPLE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	PROPOSED SAMPLE AREA
	NEW SURFACE SOIL SAMPLE LOCATION

50 25 0 50 100
SCALE: 1" = 100'

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NO. 2

DRAWING NO. EXHIBIT 2

PROJECT NO.: 3-3-5978

PROJECT ENGINEER: S.R.S.
DRAFTED BY: S.B.S.
CHECKED BY: S.R.S.
SCALE: 1" = 100'
DATE: MAY 2014

LARSEN ENGINEERS
700 WEST METRO PARK, ROCHESTER, NEW YORK 14623-2678
(585)272-7310 FAX (585)272-0159
www.larsen-engineers.com

PROJECT: LUSTER-COATE SAMPLE DETAILS
32 E. BUFFALO ST., CHURCHVILLE, N.Y.

TITLE: OVERALL SITE PROPOSED SAMPLE AREAS

Figure 5 A

JULY 2014 Sampling -
Performed by Paradigm
Environmental

Area 2 Soil:
PCB - ND
SVO-PAH <340 to 385 ppb
Vol Org. <8.10 ppb

Area 3 Soil:
PCB <0.378 to 7.19 ppm
SVO-PAH - ND
Vol Org. <6.58 ppb

MW-04:
PCB <1 ppb
SVO-PAH - ND
Vol Org.<2 ppb

Area 4 Soil:
PCB - ND
SVO-PAH - ND
Vol Org. <8.24 ppb

MW-03:
PCB <1 ppb
SVO-PAH <10 ppb each
Vol Org.<2 ppb

Area 4A Soil:
PCB <1.77 to 11.2 ppm
SVO-PAH <292 to 3780 ppb
SVO-PAH total 24,842 ppb
Vol Org. <7.89 ppb

MW-02:
PCB <1 ppb
SVO-PAH <10 ppb each
Vol Org.<2 ppb

Area 5 Soil:
PCB <0.390 to 1.15 ppm
SVO-PAH <308 to 1660 ppb
SVO-PAH total 10,282 ppb
Vol Org. <8.50 ppb

Soil Area 2
Soil Area 3
Soil Area 4
Soil Area 4A
Soil Area 5
Soil Area 1

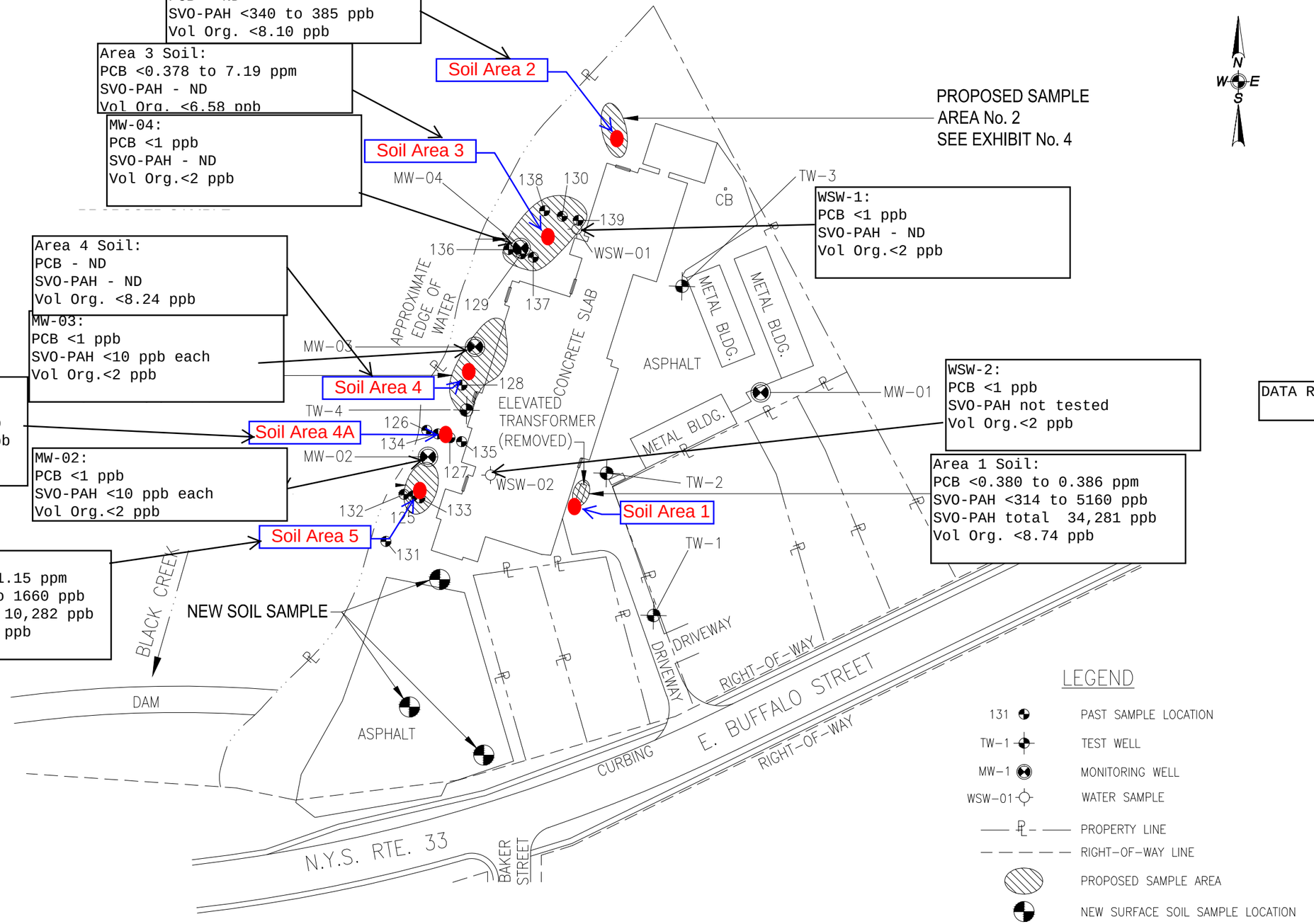
PROPOSED SAMPLE
AREA No. 2
SEE EXHIBIT No. 4

WSW-1:
PCB <1 ppb
SVO-PAH - ND
Vol Org.<2 ppb

WSW-2:
PCB <1 ppb
SVO-PAH not tested
Vol Org.<2 ppb

Area 1 Soil:
PCB <0.380 to 0.386 ppm
SVO-PAH <314 to 5160 ppb
SVO-PAH total 34,281 ppb
Vol Org. <8.74 ppb

DATA REVISED ON 10/20/16



LEGEND

131	PAST SAMPLE LOCATION
TW-1	TEST WELL
MW-1	MONITORING WELL
WSW-01	WATER SAMPLE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	PROPOSED SAMPLE AREA
	NEW SURFACE SOIL SAMPLE LOCATION

50 25 0 50 100
SCALE: 1" = 100'

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NO. 2

DRAWING NO. EXHIBIT 2

PROJECT ENGINEER: S.R.S.
DRAFTED BY: S.B.S.
CHECKED BY: S.R.S.
SCALE: 1" = 100'
DATE: MAY 2014

LARSEN ENGINEERS
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www.larsen-engineers.com

PROJECT: LUSTER-COATE SAMPLE DETAILS
32 E. BUFFALO ST., CHURCHVILLE, N.Y.

TITLE: OVERALL SITE
PROPOSED SAMPLE AREAS

PROJECT NO.: 3-3-5978

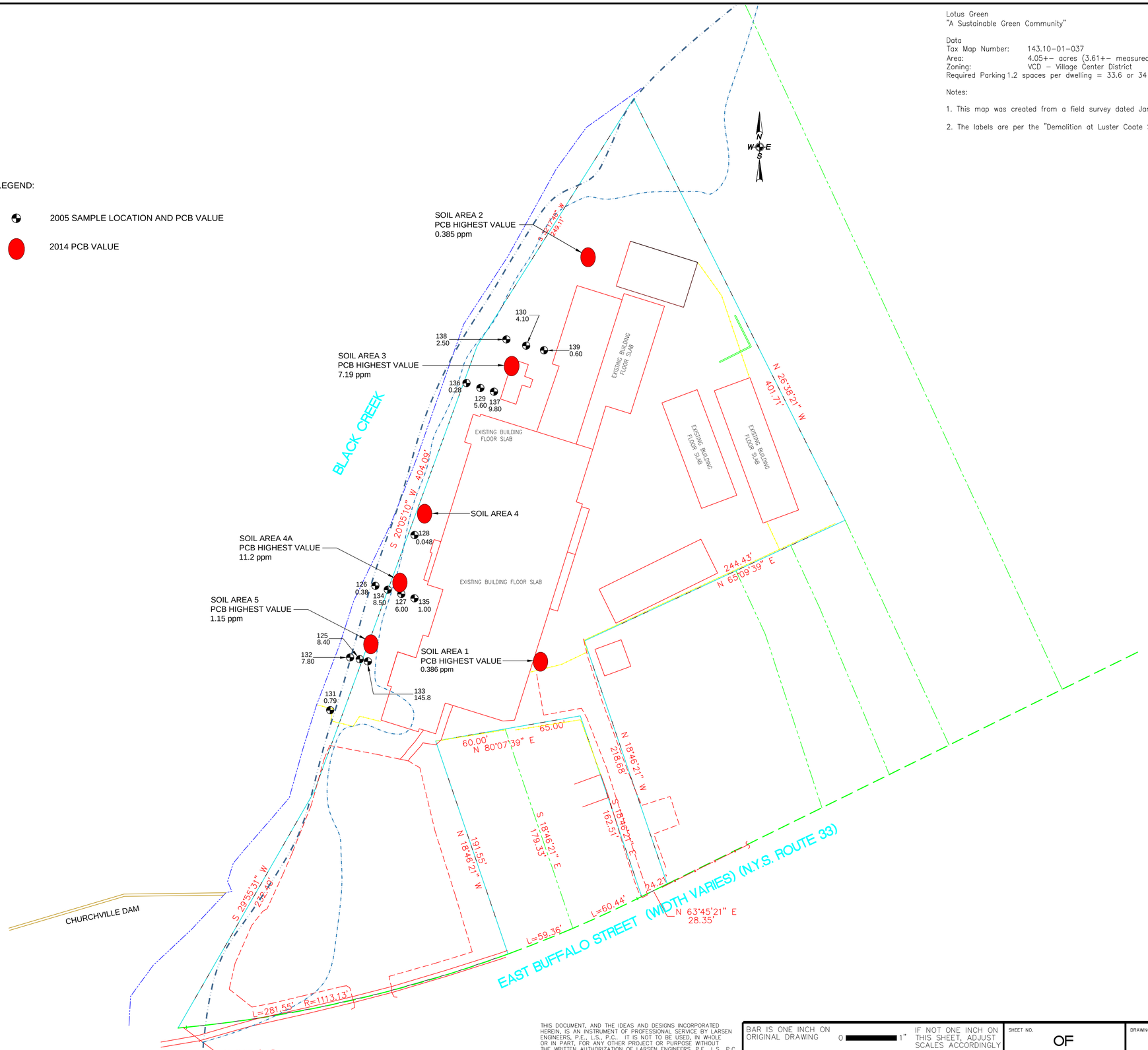
Plot Date: May 07, 2014

Cadd File: \Churchville-Village\Lustercoate\Lotus Green\CAD\May 2014 Soil Cleanup Areas\Luster Coate S 2014.dwg

LEGEND:

2005 SAMPLE LOCATION AND PCB VALUE

2014 PCB VALUE



Lotus Green
"A Sustainable Green Community"

Data
Tax Map Number: 143.10-01-037
Area: 4.05+- acres (3.61+- measured to R.O.W. line)
Zoning: VCD – Village Center District
Required Parking 1.2 spaces per dwelling = 33.6 or 34 spaces

Notes:

1. This map was created from a field survey dated January 2008.

2. The labels are per the "Demolition at Luster Coate Site" dated July 2011

NO.	REVISIONS	BY	DATE
01	COMPARISON OF PCB VALUES	JC	10/16

PROJECT MANAGER

FIRM PRINCIPAL

PROJECT ENGINEER: ----

DRAFTED BY: KMS/JC

CHECKED BY: ----

SCALE: 1"=40'

DATE: DECEMBER 2012

LARSEN ENGINEERS
700 WEST METRO PARK, ROCHESTER, NEW YORK 14623-2678
(585)272-7310 FAX (585)272-0159
www.larsen-engineers.com

PROJECT: LOTUS GREEN
a Sustainable Green Community
VILLAGE OF CHURCHVILLE, TOWN OF RIGA,
COUNTY OF MONROE, STATE OF NEW YORK

TITLE: EXISTING SITE PLAN
COMPARISON OF PCB VALUES
2005 vs 2014

PROJECT NO.: 03-3-5978

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NO. OF

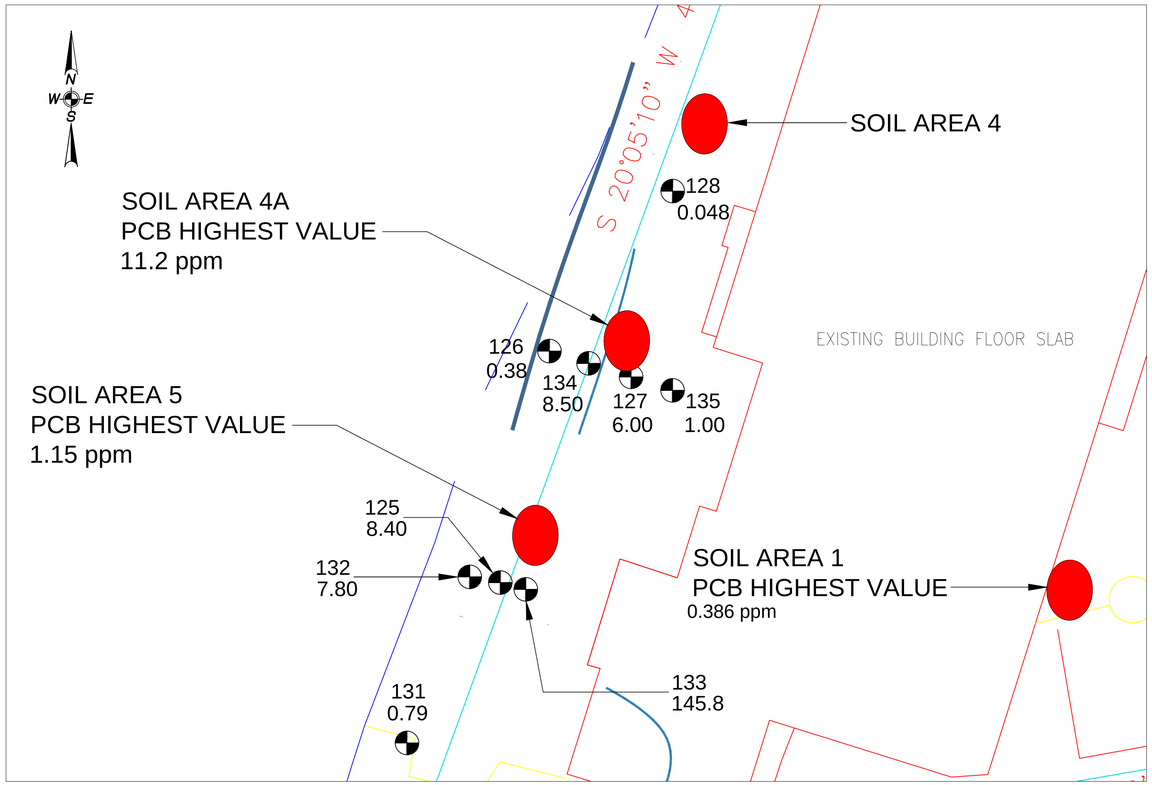
DRAWING NO. FIGURE 6F

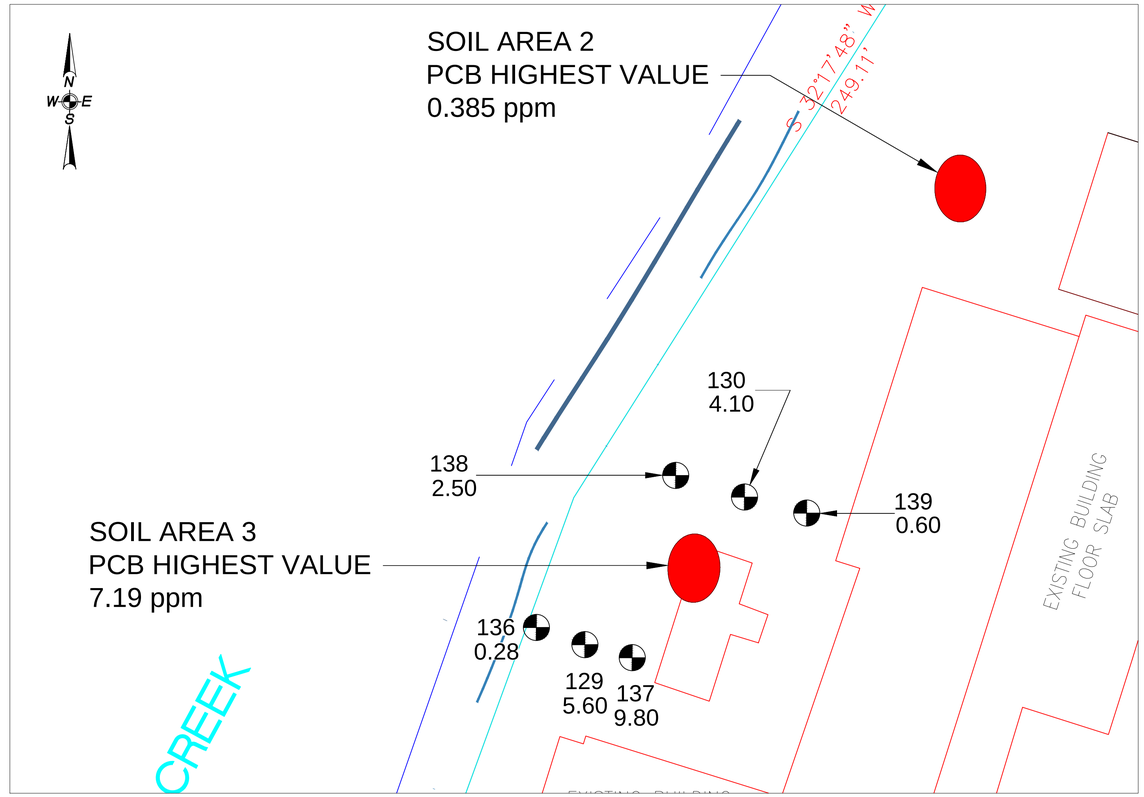
Cadd File: H:\Churchville-Village\Lustercoate\Lotus Green\CAD\DESIGN - REF DWGS\LG dwg\Propose sampling point site.dwg
Plot Date: Oct 24, 2016

LEGEND:

2005 SAMPLE LOCATION AND PCB VALUE

2014 PCB VALUE





NO.	REVISIONS	BY	DATE
01	2005 vs 2014 SAMPLING POINTS	JC	10/16

PROJECT MANAGER

FIRM PRINCIPAL

PROJECT ENGINEER: ---
DRAFTED BY: KMS/JC
CHECKED BY: ---
SCALE: N.T.S.
DATE: DECEMBER 2012

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NO. OF

DRAWING NO. FIGURE 6G

LARSEN ENGINEERS
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www.larsen-engineers.com

PROJECT: LOTUS GREEN
a Sustainable Green Community
VILLAGE OF CHURCHVILLE, TOWN OF RIGA, COUNTY OF MONROE, STATE OF NEW YORK

TITLE: PCB VALUES 2005 vs 2014

PROJECT NO.: 03-3-5978

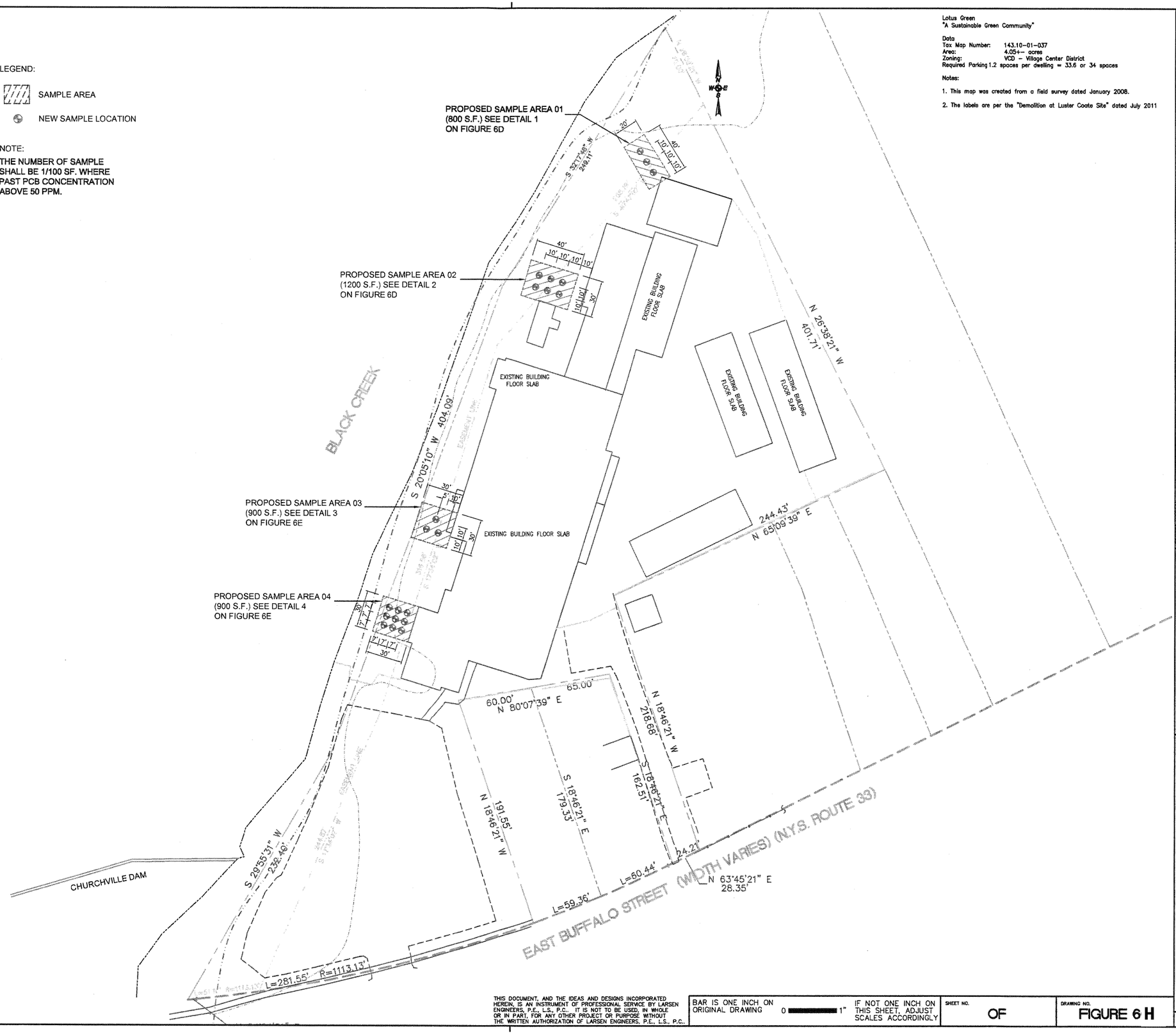
LEGEND:

SAMPLE AREA

NEW SAMPLE LOCATION

NOTE:

THE NUMBER OF SAMPLE SHALL BE 1/100 SF. WHERE PAST PCB CONCENTRATION ABOVE 50 PPM.



Lotus Green
"A Sustainable Green Community"

Data
Tax Map Number: 143.10-01-037
Area: 4.05+- acres
Zoning: VCD - Village Center District
Required Parking 1.2 spaces per dwelling = 33.6 or 34 spaces

Notes:

1. This map was created from a field survey dated January 2008.

2. The labels are per the "Demolition at Luster Coate Site" dated July 2011

NO.	REVISIONS	BY	DATE
01	NEW SAMPLING POINT AREA	JC	10/16

PROJECT MANAGER

FIRM PRINCIPAL

PROJECT ENGINEER: ——

DRAFTED BY: KMS

CHECKED BY: ——

SCALE: 1"=40'

DATE: DECEMBER 2012

LARSEN ENGINEERS
700 WEST METRO PARK, ROCHESTER, NEW YORK 14623-2678
(585)272-7310 FAX:(585)272-1519
www.larsen-engineers.com

PROJECT: LOTUS GREEN
a Sustainable Green Community
VILLAGE OF CHURCHVILLE, TOWN OF RIGA,
COUNTY OF MONROE, STATE OF NEW YORK

TITLE: EXISTING SITE PLAN
PROPOSE SAMPLE POINT AREA

PROJECT NO.: 03-3-5978

BAR IS ONE INCH ON ORIGINAL DRAWING 0 1" IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

SHEET NO. OF

DRAWING NO. FIGURE 6 H

APPENDIX A

Site- Specific Health and Safety Plan
(Previously submitted and applied during the Demolition Phase)

HEALTH AND SAFETY PLAN
FOR THE LUSTER-COATE BROWNFIELDS SITE
CHURCHVILLE, NEW YORK

1.0 INTRODUCTION

1.1 GENERAL

This Health and Safety Plan (HASP) addresses the specific health and safety practices and procedures associated with the remediation of approximately *4.5* acres of a brownfield site at 32 East Buffalo Street in the Village of Churchville, Town of Riga, and Monroe County, New York, The HASP details information and procedures, the assignment of responsibilities, work practices and emergency response procedures, and personnel protection requirements for employees of Larsen, P.E., L.S., P.C. (herein referred to as "Larsen") who will be on site to observe field activities. This document is based on an assessment of potential health hazards at the site, using past studies and other historical information. Environmental monitoring will be performed during the course of field activities to provide real-time data for an on-going assessment of potential hazards.

All Larsen employees involved with the remediation will be required to comply with this HASP. Construction contractors and subcontractors will be required to provide a Health and Safety Plan equivalent or more stringent than that presented in this plan. Larsen accepts no responsibility for the health and safety of personnel other than its employees.

Adherence to this HASP will be required for all Larsen employees who are on site during any field operations. The Larsen Project Manager, Project Coordinator, Corporate Health and Safety Officer, Site Health and Safety Officer, and Site Health and Safety Coordinator (or his designee) are identified below and will determine and enforce compliance.

Principal in Charge -

Name:	Ram Shrivastava, P.E.
Phone:	Office: 585-272-7310
	Home: 585-223-1788
	Cell: 585-303-2417

Project Coordinator

Name:	Bill Bastuk
Phone:	Office: 585-272-7310
	Home: 585-342-1375
	Cell: 585-503-6826

Corporate Health and Safety- Project Manager

Name:	Scott Fonte, P.E.
Phone:	Office: 585-272-7310
	Home: 585-367-2002
	Cell: 585- 746-6883

This HASP addresses the requirements set forth in the OSHA regulations contained in 29 CFR Parts 1910 and 1926. An emergency response plan has been included as Attachment 2 to the HASP, and can be readily detached for use in the event of an emergency requiring site evacuation, need for medical treatment.

1.2 BACKGROUND

The 4.5 acre Brownfield site is surrounded by residential homes and some commercial property along Buffalo Street, west of the site. Black Creek is located along the west and northwest portions of the site.

Note- The remedial work plan contains detailed background information.

Previous Environmental Studies

Note- The remedial work plan contains detailed background information on summary of previous studies.

Shaw Environmental Preliminary Site Assessment (November 9, 2005)

1.3 REMEDIATION OBJECTIVES FOR THE SITE

The primary objective of this brownfield remediation project is to evaluate current environmental conditions, identify areas and implement corrective action now so that the site can be redeveloped for high density residential use. The remedial actions include restoration and grading of the surface of the site consistent with all state, town and village requirements necessary to provide a site which meets the guidelines for a Planned Unit District as described in the Village of Churchville, New York zoning regulations. The residential units plan to meet the New York State and National Green Building Council guidelines for LEED certification.

1.4 SCOPE OF ACTIVITIES

Larsen employees will be on site to observe any of the field activities as part of the brownfield remediation project.

- Cleaning, grubbing and regrading of existing cover soils. Excavation of test pit areas and filling of excavated pits with clean fill material.
- Demolition of existing structures and removal of debris from the site – already accomplished.
- Collection of samples for on site field testing and by the certified Lab.

2.0 HAZARD EVALUATION

2.1 SUMMARY OF PROJECTED RISKS

The work completed prior to building demolition by NYSDEC and during the demploition phase has resulted in majority of the contaminants to be removed from this site and properly disposed off site. Only a small area with PCB contaminated surface soils remains and soils on some areas of the project site contains certain metals above the limits but would not represent risk to the residents due to the new ground cover placed on top of it as site grading work is completed. Ground water VOC values were low about 10 years ago and now they are not expected to have any VOC's above acceptable levels. This water is not be used form water supply so the risk to the resident would not be present.

Due to the possibility of certain contaminants at the brownfield site, workers may be exposed to hazardous substances during field activities. The primary points of exposure may be through direct contact with contaminated surface and subsurface soil and groundwater, or through the inhalation of contaminated vapors or other particles.
The use of large and heavy construction equipment (if used) on-site will also present conditions for potential physical injury to field workers. Additionally, as a result of work taking place outdoors, the potential exists for heat/cold stress to workers, especially those wearing protective equipment and clothing.

Reasonable and well thought out precautions will be implemented to provide adequate protection for employees of Larsen as well as all contractors and sub-contractors working on the site. Procedures and precautions will include worker training relative to chemical hazards, safe work practices, proper personal protection, environmental monitoring, work zones and site control. Medical examinations, appropriate decontamination procedures and contingency planning will minimize the chance for unnecessary exposures and physical injuries.

2.2 CHEMICAL HAZARDS (Not applicable to current site conditions)

With respect to the anticipated remediation activities defined in Section 1.4, possible routes of exposure to the above-mentioned contaminants are presented in Table 2-3.

The use of proper respiratory equipment, as outlined in Section 7.0, will minimize the potential for exposure to airborne contamination. Further, exposure to contaminants through dermal and other routes will also be minimized through the use of protective clothing (Section 7.0), safe work practices (Section 6.0), and proper decontamination procedures (Section 11.0).

2.3 PHYSICAL HAZARDS

Remedial construction activities at the Luster-Coate site may present the following physical hazards:

- The potential for physical injury during heavy construction equipment use, such as backhoes and bulldozers
- The potential for heat/cold stress to employees during the summer/winter months (see Section 9.0)
- The potential for slip and fall injuries due to rough, uneven terrain
- The potential for injury due to fire/explosion if the methane gas is released during construction operations (see Section 8.0 for Environmental Monitoring Requirements)

These hazards represent only some of the possible means of injury which may be present during sampling, remediation and construction activities at the Luster-Coate site. Since it is impossible to list all potential sources of injury, it shall be the responsibility of each individual to exercise proper care and caution during all phases of the work.

Table 2

LUSTER-COATE BROWNFIELD REMEDIAL MEASURES *Potential Routes of Exposure to Contaminants-of-Concern*				
Type of Contact	Direct Contact with Soil	Direct Contact with Surface Water	Direct Contact with Groundwater	Inhalation of Vapors/Dust Particles

3.0 RESPONSIBILITIES OF SAFETY PERSONNEL

The following roles have been identified for Larsen Engineers project personnel.

Project Manager - The Project Manager has complete responsibility for complementing and executing an effective employee protection and accident prevention program. He may delegate authority to expedite any application of the health and safety program.

Project Coordinator - The Project Coordinator will assist the Project Manager in carrying out and monitoring the application of the program, including assisting in effective communication among all project personnel.

Corporate Health and Safety Manager - The Corporate Health and Safety Manager serves as the administrator of the corporation's health and safety program. He is responsible for ensuring the Larsen field personnel are properly trained, that they have obtained medical clearance to wear respiratory protection, per 29 CFR Part 1910.134b(b)(l0), and that they are properly trained in the selection , use and maintenance of personal protective equipment, including respirator fit testing.

This person will also serve as scientific advisor for the duration of the project, providing guidance on data interpretation and the determination of appropriate levels of worker protection.

Site Health and Safety Officer - The Site Health and Safety Officer is knowledgeable in safety and worker protection techniques as they relate to the project. Responsibilities include the development of the specific provisions of this HASP, including the level of personnel protection to be employed, identification of emergency procedures, and personnel/equipment decontamination procedures. This individual will provide assistance to project management on problems relating to industrial hygiene and site worker safety.

Health and safety briefings required during the course of the project will be conducted by the Site Health and Safety Officer. Examples of briefings might include accident prevention, respirator refresher courses or current issues such as the demolition schedule. The frequency of safety briefings will be based on the potential hazards specific to the designated work tasks and any new information relative to such hazards which are discovered during the project.

Site Health and Safety Coordinator - The Site Health and Safety Coordinator or his designee will be responsible for enforcement of this HASP for Larsen at the site and for monitoring the personal exposures of employees to hazardous substances contained in air, soil or water during site operations. This will consist of spot checking work place air sampling performed by the contractor such as organic vapor monitoring and the documentation of such data. The Site Health and Safety Coordinator will communicate directly with the Site Health and Safety Officer on a regular basis to advise him of monitoring results and any unexpected conditions found at the site. As data are received and evaluated, the Site Health and Safety Officer will adapt this HASP to fit the current employee protection needs at the site. All Larsen employees and the subcontractor's designated Site Health and Safety Officer will be informed of the air sampling results.

The Site Health and Safety Coordinator is authorized to order site personnel to stop work when unsafe work conditions are identified. Resolution of all on-site health and safety problems will be coordinated through the Corporate Health and Safety Manager with assistance from the Site Health and Safety Officer as well as the contractor's and subcontractors designated health and safety personnel.

4.0 MEDICAL SURVEILLANCE

Medical monitoring, including initial employment, annual and employment termination examinations are provided to Larsen employees whose work may result in potential chemical exposure or present unusual physical demands. Medical evaluations are performed by an occupational physician designated by Larsen. The medical evaluations are conducted according to Larsen's Medical Monitoring Program and include an evaluation of the workers' ability to use respiratory protective equipment (as per 29 CFR 1910). The examination includes:

- Occupational history
- Medical history
- Medical review
- Medical certification of physical requirements (sight, hearing, muscular-skeletal, cardiovascular) for safe job performance
- Laboratory testing to include a complete blood count, white cell differential count, blood chemistry and urinalysis

Medical evaluations are performed to: (1) determine fitness for duty on hazardous waste sites (such an evaluation is based upon the employee's occupational and medical history, a comprehensive physical examination and an evaluation of the ability to work while wearing protective equipment); and (2) establish baseline medical data.

Supplemental examinations may be performed whenever there is an actual or suspected excessive exposure to chemical contaminants or upon experience of exposure symptoms, or following injuries or temperature stresses.

In conformance with OSHA regulations, Larsen will maintain and preserve medical records for a period of 30 years following termination of employment. All employees will have access to the results of medical testing and to full medical records and analyses.

5.0 EMPLOYEE TRAINING PROGRAM

All employees who may be exposed to hazardous substances, health hazards, or safety hazards are adequately trained prior to engaging in any on-site work activities. At a minimum, such training includes an initial 40-hour Hazardous Waste Site Worker Protection course, an 8-hour Annual Refresher Course subsequent to the initial 40-hour training, and three (3) days of actual field experience under the direct supervision of a trained, experienced supervisor (i.e., the Site Health and Safety Coordinator or his/her designee). This training is conducted by a qualified instructor

and is specifically designed to meet the requirements of OSHA Standard 29 CFR 1910.120(e)(2). At a minimum, the initial 40-hour training course includes the following:

Topics

- OSHA/SARA/EPA/RCRA/HCS Requirements
- Decontamination of Personnel and Equipment
- Fire, Explosion and Accident Prevention
- Respiratory Protection Selection and Use
- Preparation of Health and Safety Plans
- Emergency Preparedness and Escape
- Protective Clothing Use and Selection
- Air Monitoring and Surveillance
- Work Practices to Minimize Risk
- Waste Site Safety
- Hazard Recognition
- Medical Surveillance
- Cold and Heat Stress
- Site Entry and Set-up
- Permissible Exposure Limits
- Site Control and Work Zones
- Chemical and Physical Hazards
- Confined Space Entry

Workshops/Exercises

- Self-contained Breathing Apparatus
- Air Monitoring Equipment Workshop
- Air Purifying Respirator Workshop
- Decontamination
- Qualitative/Quantitative Fit Test
- Level A/B Field Exercise
- Level B/C Field Exercise
- Air Tank Refilling Workshop

Records and certifications received from the course instructor documenting each employee's successful completion of the training identified above are maintained on file in Larsen's Rochester, New York corporate office. Subcontractors are required to provide similar documentation of training for all their personnel who will be involved in on-site work activities.

Any employee who has not received adequate training and has been so certified is prohibited from engaging in any on-site work activities that may involve exposure to hazardous substances, health hazards or safety hazards.

Periodic health and safety briefings will be conducted by Larsen's Site Health and Safety Officer for Larsen employees on an as-needed basis. Problems relative to respiratory protection, inclement weather, heat/cold stress or the interpretation of newly-available environmental monitoring data are examples of topics which might be covered during these briefings.

6.0 SAFE WORK PRACTICES

All Larsen employees shall conform to the following safe work practices during all on-site work activities conducted within the exclusion zone:

General

- Eating, drinking, chewing gum or tobacco, smoking, or any practice which increases the probability of hand-to-mouth transfer of contaminated material is strictly prohibited.

- The hands and face must be thoroughly washed upon leaving the work area and prior to engaging in any activity indicated above. Each individual must shower at facilities provided by the Contractor as soon as possible after the removal of protective clothing and equipment after the completion of the daily field activities.
- Any required respiratory protective equipment and clothing **must** be worn by all personnel going on-site. Excessive facial hair, i.e., beards, long mustaches or sideburns, which interferes with the satisfactory respirator-to-face seal is prohibited.
- Contact with surfaces/materials either suspected or known to be contaminated will be avoided to minimize the potential for transfer to personnel, cross-contamination and need for decontamination. Medicine and alcohol can potentiate the effects of exposure to toxic chemicals. Due to possible contraindications, use of prescribed drugs should be reviewed with the Larsen occupational physician. Alcoholic beverage and illegal drug intake are strictly forbidden during site work activities.
- All personnel shall be familiar with standard operating safety procedures and additional instructions contained in this Health and Safety Plan.
- On-site personnel shall use the "buddy" system. No one may work alone, i.e., out of earshot or visual contact with other workers in the exclusion zone.
- Personnel and equipment in the contaminated area shall be minimized, consistent with effective site operations.
- All employees have the obligation to correct or report unsafe work conditions.
- Use of contact lenses on-site will not be permitted. Spectacle kits for insertion into full-face respirators will be provided for Larsen employees, as required.

The recommended specific safety practices for working around the contractor's equipment (e.g., backhoes and bulldozers) are as follows:

- Although the Contractor is responsible for his equipment and the safe operation of the site, Larsen personnel are also responsible for their own safety.
- Drilling and excavation will not be initiated without first cleaning underground services such as hydro, gas, water, telephone, sewer and cable television.
- Heavy equipment should not be operated within 20 feet of overhead sires. This distance may be increased if windy conditions are anticipated.
- Care should be taken to avoid overhead wires when moving heavy equipment from location to location.
- Hard hats and safety boots must be worn at all times in the vicinity of heavy equipment. Hearing protection is also recommended. Safety glasses are necessary.
- Slippage is one of the most common causes of accidents around heavy equipment. Drainage should be provided to divert mud and water away from the construction site.

- The Contractor should keep the construction site safe and tidy. This will prevent personnel from tripping and will allow for fast emergency exit from the site.
- Proper lighting must be provided if working at night.
- Construction activities should be discontinued during an electrical storm.
- The presence of combustible gases should be checked before igniting any open flame (.e.g., during welding).
- Personnel stall stand upwind of any construction operation when not immediately involved in sampling/logging/observing activities.
- Personnel will not enter trenches.
- Personnel will not approach the edge of an unsecured trench closer than two (2) feet.

7.0 PERSONAL PROTECTIVE EQUIPMENT

7.1 PROTECTION LEVELS

Personnel must wear protective equipment when work activities involve known or suspected atmospheric contamination; when vapors, gases or particulates may be generated; or when direct contact with dermal-active substances may occur. Respirators can protect the lungs; the gastrointestinal tract and the eyes against air toxicants. Chemical-resistant clothing can protect the skin from contact with skin-destructive and skin-absorbable chemicals. Good personal hygiene and safe work practices, as identified in Section 6.0, are also necessary to limit or prevent the ingestion of potentially harmful substances.

Based upon current information regarding both the contaminants suspected to be present at the Luster-Coate site and the various tasks that are included in the demolition activities, the minimum required Levels of Protection shall be as identified The Site Health and Safety Coordinator will monitor the use of personal protective equipment (PPE) during extreme temperature conditions.

8.0 ENVIRONMENTAL MONITORING

8.1 GENERAL APPROACH

The level of protection established, for Larsen employees will initially be based upon qualitative and quantitative determinations of the contaminants present in the work environment. Concentrations of contaminants known to be present in the groundwater and the soil at the site have been used to determine the minimum required levels of personal protection described in Section 7.0. Based upon the existing database, some organic vapors may be encountered during intrusive construction activities. Ambient breathing zone concentrations may, at times, exceed the permissible exposure limits (PEL) established by OSHA for the individual compounds in which case respiratory protection will be required. Respiratory and dermal protection may be modified (upgraded or downgraded) based upon real-time field monitoring data.

8.1.1 Remediation Activities

Real time monitoring will be conducted by the remediation contractors on a daily basis during all intrusive remediation phases such as excavation, demolition, removal and/or treatment of contaminants. The work area will be monitored at regular intervals using a photo-ionization detector (PID) or similar organic vapor analyzer. Observed values will be recorded and maintained as part of the permanent field record.

A combustible gas meter and photo-ionization detector may be utilized by Larsen personnel to verify field conditions during construction inspection activities. Monitoring instruments will be protected from surface contamination during the use to allow for each decontamination. The monitoring instruments will be placed on plastic sheeting, whenever possible, to avoid direct surface contact. Additional monitoring instruments may be added if the situations or conditions change.

8.1.2 Off-site Community Monitoring (Not applicable under current conditions)

. Pertinent emergency response information, including the telephone number and address of the Fire Department, are included in **Emergency Response Plan**.

8.2 MONITORING ACTION LEVELS

8.2.1 On-site Levels

The PID or other appropriate instrument(s) will be used by either Larsen personnel or the remediation contractor to monitor organic vapor concentrations as specified in this plan and in the construction contractor's Health and Safety Plan. Fugitive dust/particulate concentrations will be monitored using a real-time particulate monitor as specified in this plan and in the construction contractor's Health and Safety Plan.

Readings obtained in the breathing zone may be interpreted (with regard to other site conditions) as follows for on-site Larsen personnel:

- Total atmospheric concentrations of unidentified vapors ranging from 0 to background on the PD - Continue operations under Level D (**see Attachment 1**).
- Total atmospheric concentrations of unidentified vapors yielding sustained readings above background to 5 ppm on the PID (vapors not suspected of containing high levels of chemicals toxic to the skin) - Continue operations under Level C (**see Attachment 1**).
- Total atmospheric concentrations of unidentified vapors yielding sustained readings of *5* to 50 ppm above background on the PID - Continue operations under Level B (**see Attachment 1**), re-evaluate and alter (if possible) construction methods to achieve lower vapor concentrations.

- Total atmospheric concentrations of unidentified vapors above 50 ppm on the PID - Discontinue operations and exit the work zone immediately.

The explosimeter will be used to monitor levels of both combustible gases and oxygen during construction activities. Action levels based on the instrument readings shall be as follows:

- Less than 10% LEL - Continue engineering operations with caution.
- 10-25% LEL - Continuous monitoring with extreme caution, determine source/cause of elevated reading.
- Greater than 25% LEL - Explosion hazard, evaluate source and leave the work zone.
- Less than 19.5% oxygen - Leave work zone immediately.
- 19.5-25% oxygen - Continue engineering operations with caution.
- Greater than 25% oxygen - Fire hazard potential, leave work zone immediately.

The particulate monitor will be used to monitor respirable dust concentrations during all intrusive activities. Action levels based on the instrument readings shall be as follows:

- Less than 50 mg/m^3 - Continue field operations.
- 50-150 mg/ m^3 - Don dust/particulate mask or equivalent. Initiate engineering controls (viz., wetting of excavated soils or tools at discretion of Site Health and Safety Officer).
- Greater than 150 mg/ m^3 - Don dust/particulate mask or equivalent. Initiate engineering controls to reduce respirable dust concentration (viz., wetting of excavated soils or tools as discretion of Site Health and Safety Officer).

Readings with the explosimeter, particulate monitor and organic vapor analyzers will be recorded and documented in the Health and Safety Logbook. All instruments will be calibrated before use and the procedure will be documented in the Health and Safety Logbook.

8.2.2 Community Monitoring Levels (Not applicable under current conditions)

The following personnel are to be notified in the listed sequence in the event that a Major Vapor Emission condition is identified:

Responsible Person	Contact	Location / Phone
Site Health and Safety Officer	Police	911
Site Health and Safety Officer	Monroe County DOH (Joe Albert)	585-274-6904

Site Health and Safety Officer	State Emergency Response Hotline	(800) 457-7362

9.0 HEATSTRESS MONITORING

Most of the work activities at the Luster-Coate site will be scheduled for summer and completed within a week.Measures will be taken to minimize heat stress to Larsen employees. Larsen's Site Health and Safety coordinator, or his/her designee, will be responsible for monitoring Larsen employees and field workers for symptoms of heat stress.

9.1
9.2.1 Monitoring

Start (oral) temperature recording at the job site:

- At the Site Health and Safety Coordinator's discretion, when suspicion is based on changes in a worker's performance or metal status.
- At a worker's request.
- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind chill less than 20 degrees Fahrenheit, or wind chill less than 30 degrees Fahrenheit with precipitation). As a screening, measuring whenever any one worker on the site develops hypothermia.

Any person developing moderate hypothermia (a core temperature of 92 degrees Fahrenheit) cannot return to work for 48 hours.

10.0 WORK ZONES AND SITE CONTROL

Work zones around the areas designated for remediation activities will be established by the remediation contractor on a daily basis and communicated to all employees and other site users (i.e., firemen and police) by the remediation contractor's Site Health and Safety Officer. It shall be the remediation contractor's Site Health and Safety Officer's responsibility to ensure that all site workers are aware of the work zone boundaries and to enforce proper procedures in each area. The zones will include:

• **Exclusion Zone ("Hot Zone")** — The area where contaminated materials may be exposed, excavated or handled and all areas where contaminated equipment or personnel may travel. The zone will be delineated by flagging tape. All personnel entering the Exclusion Zone must wear the prescribed level of personal protective equipment identified in Section 6.2.

• **Contamination Reduction Zone** — The zone where decontamination of personnel and equipment takes place. Any potentially contaminated clothing, equipment and samples must remain in the Contamination Reduction Zone until decontaminated.

• **Support Zone** — The part of the site which is considered non-contaminated or "clean." Support equipment will be located in this zone, and personnel may wear normal work clothes within this zone.

Access of non-essential personnel to the Exclusion and Contamination Reduction Zones will be

strictly controlled by the construction contractor. Only personnel who are essential to the completion of the task will be allowed access to these areas and only if they are wearing the prescribed level of protection. Entrance of all personnel must be approved by the construction contractor's Site Health and Safety Officer.
A Health and Safety Logbook containing the names of workers and their level of protection will be maintained by the construction contractor(s).
The zone boundaries may be changed by the Site Health and Safety Officer as environmental conditions warrant, and to respond to the necessary changes in work locations on site.

11.0 DECONTAMINATION PROCEDURES (if required)

The degree of decontamination required is a function of both a particular task and the physical environment within which it takes place. The following decontamination procedure, although somewhat specific to the tasks described herein, will remain flexible, thereby allowing the decontamination crew to respond appropriately to the changing environmental conditions which may arise at the site. The procedure shall be followed by all Larsen and remediation personnel who are on the site.
Station I Equipment Drop Deposit equipment used on site (tools, containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross-contamination.
Station 2 Boots and Gloves Scrub outer boots and outer gloves with decon solution or Wash and Rinse detergent water. Rinse off using copious amounts of
water.
Station 3 Tape, Outer Boots and Remove tape, outer boots and gloves. Deposit tape and Glove Removal gloves in container provided by construction contractor.
Station 4 Canister or If worker leaves exclusive zone to change canister (or Mask Change mask), this is the last step in the decontamination
procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, and worker returns to duty.
Station *5* Outer Garment Protective suit removed and deposited in separate
Removal container provided by construction contractor.
Station 6 Face Piece, Hard Hat and Face piece or goggles removed (if used). Avoid touching Safety Goggles Removal face with fingers. Face-piece and/or goggles deposited on
plastic sheet. Hard hat removed and placed on plastic
sheet.
Station 7 Inner Glove Removal Inner gloves are the last personal protective equipment to be removed. Avoid touching the outside of the gloves with bare fingers. Dispose of these gloves in contained provided by construction contractor.
Station 8 Field Wash Proceed to personnel decontamination facility provided by construction contractor. A shower will be required.

11.2 DECONTAMINATION FOR MEDICAL EMERGENCIES(if required)

In the event of a minor, non-life threatening injury, personnel should follow the decontamination

procedures as defined, and then administer first-aid.
In the event of a major injury or other serious medical concern (i.e., heat stroke), immediate first-aid is to be administered and the victim transported to the hospital in lieu of further decontamination efforts unless exposure to a site contaminant would be considered "Immediately Dangerous to Life or Health."

11.3 DECONTAMINATION OF FIELD EQUIPMENT (if required)

Decontamination of heavy equipment will be conducted by the construction contractor in accordance with his approved Health and Safety Plan in the Contamination Reduction Zone. Decontamination of all tools used for sample collection purposes will be conducted by Larsen personnel. It is expected that all tools will be constructed of nonporous, nonabsorbent materials (i.e., metal) which will aid in the decontamination effort. Any tool or part of a tool which is made of porous, absorbent material (i.e., wood) will be placed into suitable containers and prepared for disposal.
Decontamination of all bailers, split-spoons, spatula knives and other tools used for multi-media environmental sampling and examination shall be as follows:
• Disassemble the equipment.
• Water wash to remove all visible foreign matter.
• Rinse equipment with clean water.
• Pressurized steam clean equipment (inside and outside).
If samples are to be collected for analytical purposes, each tool used for sampling shall be cleaned as follows:
• Disassemble the equipment.
• Water wash to remove all visible foreign matter.
• Wash with detergent.
• Rinse all parts with distilled-de-ionized water.
• Rinse all parts with pesticide-grade isopropanol.
• Rinse all parts with distilled-dc-ionized water.
• Allow to air dry.
• Wrap all parts in aluminum foil or polyethylene to prevent contamination of clean equipment.

12.0 FIRE PREVENTION AND PROTECTION (If required)

12.1 GENERAL APPROACH

Recommended practices and standards of the National Fire Protection Association (NFPA) and other applicable regulations will be followed in the development and application of Project Fire Protection Programs. When required by regulatory (NYSDEC) authorities, the project management will prepare and submit a Fire Protection Plan for the approval of the contracting officers, authorized representative or other designated official. Essential considerations for the Fire Protection Plan will include:
• Proper site preparation and safe storage of combustible and flammable materials.
• Availability of coordination with private and public fire authorities.
• Adequate job-site fire protection and inspections for fire prevention.
• Adequate indoctrination and training of employees.

12.2 EQUIPMENT AND REQUIREMENTS

• Fire extinguishers will be provided by the remediation contractor.
• Fire extinguishers will be inspected, serviced and maintained in accordance with the manufacturer's instructions. As a minimum, all extinguishers shall be checked monthly and weighed semi-annually, and recharged if necessary.
• Immediately after each use, fire extinguishers will be either recharged or replaced.

12.3 FLAMMABLE AND COMBUSTIBLE SUBSTANCES

• All storage, handling or use of flammable and/or combustible substances will be under the supervision of qualified person.
• All tanks, containers and pumping equipment, whether portable or stationary, which are used for the storage and handling of flammable and combustible liquids, will meet the recommendations of the national Fire Protection Association.
• If the LEL exceeds 10% for any compound, fans will be used to dissipate volatile/combustible gases and to minimize the explosion hazard during drilling/excavation activities. In addition % 02/explosive gas monitoring will be conducted throughout the drilling/excavation operations.

13.0 CONFINED SPACE ENTRY (Not applicable under current conditions).

The possible installation of the passive gas vents and other activity at the Luster-Coate site may require confined space entry into deep excavations. This section is intended to provide guidelines for safe entry into any confined space. Larsen's Site Health and Safety Coordinator is responsible for adapting these guidelines to fit specific Larsen employee protection needs.

13.1 CLASSIFICATION

In accordance with OSHA 29 CFR 19 10.146, a confined space refers to a space which is large enough and so configured that an employee can bodily enter and do assigned work, has limited or restricted means for entry and exit, and is not intended for continuous employee occupancy. Confined spaces include, but are not limited to, trenches, storage tanks, process vessels, pits, sewers, tunnels, underground utility vaults, pipelines, sumps, wells and excavations.
In OSHA 29 CFR 19 10.146, two classifications of confined spaces have been established; non-permit required and permit required. A non-permit required confined space is a confined space that, with respect to atmospheric hazards, does not contain or have the potential to contain any hazard that can cause death or serious physical harm. A permit required confined space is a confined space that has any one.of the following characteristics:
• Contains or has a potential to contain a hazardous atmosphere.
• Contains a material with the potential for engulfment of an entrant.
• Has an internal shape such that an entrant could be trapped or asphyxiated by inwardly converging walls, or a floor that slopes downward and tapers to a small cross-section.
• Contains any other recognized serious safety and health hazard such as moving machinery or the potential for the release of thermal energy.

13.2 CONFINED SPACE ENTRY TEAM (Not applicable under current conditions)

A confined space entry team consists of properly trained employees performing duties divided among the following three job titles: ENTRANT, ATTENDANT and ENTRY SUPERVISOR.

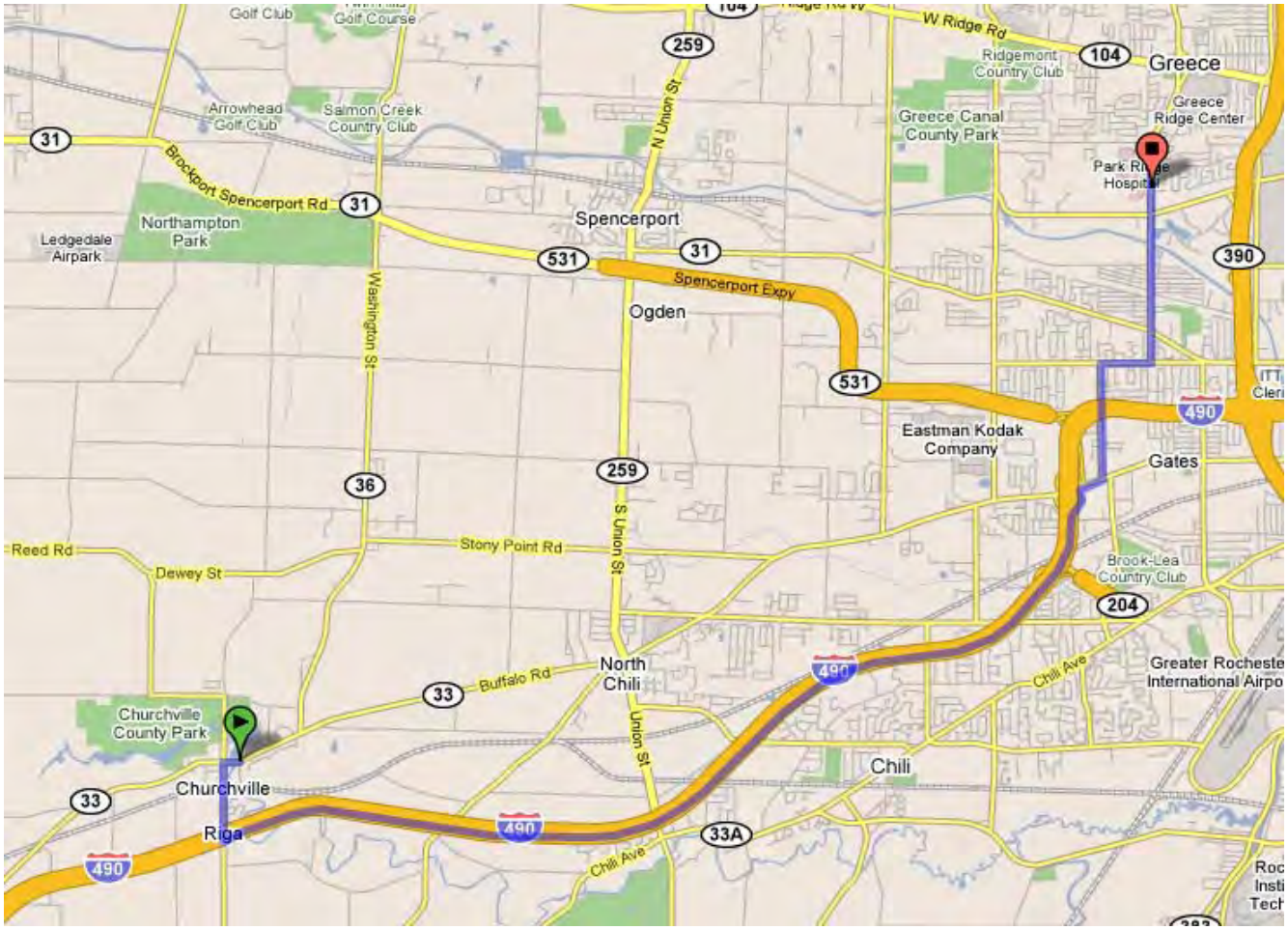
13.3 CONFINED SPACE ENTRY PROCEDURES (Not applicable under present conditions)

EMERGENCY PLAN

In accordance with OSHA 29 CFR Part 1910, an Emergency Response Plan is shown below as part of the HASP

Police and Fire Emergency, call **911**

Routes to Strong Memorial Hospital and Park Ridge Hospital are shown below.



Appendix B

Community Air Monitoring Plan

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for VOCs and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate DEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. Periodic monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a continuous basis or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions, particularly if wind direction changes. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

1. If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.

2. If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less - but in no case less than 20 feet, is below 5 ppm over

background for the 15-minute average.

3. If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

4. All 15-minute readings must be recorded and be available for State (DEC and NYSDOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

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

1. If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m^3 above the upwind level and provided that no visible dust is migrating from the work area.

2. If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m^3 of the upwind level and in preventing visible dust migration.

3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

Brownfield Cleanup Program
Luster Coate Metallizing Corporation
NYSDEC Site (#C828113)

Village of Churchville
Monroe County, New York

Quality Assurance Project Plan

Prepared For:

Lotus Green Development LLC

Prepared By:

Larsen Engineers
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June 2015

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continued

1.1 Introduction

This Quality Assurance Project Plan (QAPP) was prepared as an integral part of Work Plans prepared for the Luster Coate Metallizing Corporation site (Luster Coate), NYSDEC site number C828113, located in the Village of Churchville, Monroe County. This plan is subject to the review and approval by the New York State Department of Environmental Conservation (NYSDEC). The project work will be performed by Larsen Engineers, or conducted under their discretion by NYSDEC-approved contractors. Project- specific descriptions can be found in the RI Work Plan.

This QAPP presents the policies, organization, objectives, functional activities, and specific quality assurance (QA) and quality control (QC) activities that will be implemented by Larsen Engineers for this project. This QAPP is designed to ensure that all technical data generated by Larsen Engineers is accurate, representative, and will ultimately withstand judicial scrutiny.

All QA/QC procedures are implemented in accordance with applicable professional technical standards, NYSDEC and Environmental Protection Agency (EPA) requirements, government regulations and guidelines, and specific project goals and requirements. This QAPP is prepared in accordance with all NYSDEC and EPA QAPP guidance documents.

This QAPP incorporates the following activities:

- Sample management and chain of custody;
- Document control;
- Laboratory quality control; and
- Review of project deliverables.

Analytical samples will be collected in the field utilizing standard operating procedures (SOPs) and sent to the contracted New York State Department of Health (NYSDOH) Environmental Laboratory Approval Plan (ELAP) Contract Laboratory Protocol (CLP) certified laboratory for analysis. Field data compilation, tabulation, and analysis will be checked for accuracy. Calculations and other post-field tasks will be reviewed by field personnel and the project manager.

Equipment used to take field measurements will be maintained and calibrated in accordance with established procedures. Records of calibration and maintenance will be kept by assigned personnel. Field testing and data acquisition will be performed in standard fashion following strict guidelines.

Document control procedures will be used to coordinate the distribution, coding, storage, retrieval, and review of all data collected during all sampling tasks. These include, but are not limited to, the sampling of soil/sediment, groundwater, and wastes. In addition, the laboratory has developed SOPs for individual analytical methods and internal QC procedures. These documents are an important aspect of their QA program and are available for review upon request.

2.0 Project Objectives

The intent of this project is to delineate the nature and extent of contamination at the Luster Coate site and to perform excavation and removal of contaminated soils. Sampling of soil, sediment, and groundwater will be used to identify potential exposure pathways and evaluate the Site for future use. The identification of significant Site characteristics, extent of contamination, and exposure pathways (if completed exposure pathways are indicated) will provide the basis for developing remedial alternatives. The scope of work is described in the Remedial Investigation (RI) and Interim Remedial Measures (IRM) Work Plans.

3.1 Project Organization and Responsibility

In accordance with Larsen Engineers' quality assurance (QA) program, experienced senior technical staff will be assigned to the project QA/QC functions. The management structure provides for direct and constant operational responsibility, clear lines of authority, and the integration of QA activities. The various QA functions are explained below.

QA contacts include Larsen Engineers' Project Manager and Quality Assurance Officer. Qualifications of key personnel are included in the RI and IRM Work Plans.

A NYSDOH ELAP-CLP certified laboratory will provide analytical services for the project. A list of their certifications and accreditations will be provided when the laboratory is selected.

Project Director
The project director for this project will be Ram Shrivastava . As project director, will have overall responsibility for ensuring that the project meets client objectives and Larsen Engineer's quality standards. In addition, the project director will be responsible for technical quality control and project oversight and will provide the project manager with access to upper management.

Project Manager
The project manager for this project will be Ram Shrivastava . As project manager, they will be responsible for implementing the project and will have the authority to commit the resources necessary to meet project objectives and requirements. The project manager's primary function is to ensure that technical, financial, and scheduling objectives are achieved. The project manager will provide the major point of contact and control for matters concerning the project. The project manager will:

- Work directly with the NYSDEC Regional Office to complete and implement a work plan for the project;
- Define project objectives and schedule;

- Establish project policy and procedures to address the specific needs of the project as a whole, as well as the objectives of each task;
- Acquire and apply technical managerial resources as needed to ensure performance within budget and schedule constraints;
- Orient all staff concerning the project's special considerations;
- Develop and meet ongoing project and/or task staffing requirements, including mechanisms to review and evaluate each task product;
- Review the work performed on each task to ensure its quality, responsiveness, and timeliness;
- Review and analyze overall task performance with respect to planned requirements and authorizations;
- Approve all external reports (deliverables) before their submission to the client;
- Ultimately be responsible for the preparation and quality of interim and final reports; and
- Represent the project team at meetings.

Quality Assurance Officer (QAO)

The QA officer is will be a person from TriTech Environmental Health and Safety Inc's staff . This individual will be responsible for maintaining QA for a specific program and the projects within that program. Specific functions and duties include:

- Providing an external and, thereby, independent QA function to the project;
- Responsibility for field and sampling audits conducted by qualified QA personnel;
- Coordinating with client personnel, project manager, laboratory management, and staff to ensure that QA objectives appropriate to the project are set and that personnel are aware of these objectives;
- Coordinating with project management and personnel to ensure that QC procedures appropriate to demonstrating data validity sufficient to meet QA objectives are developed and in place;
- Interfacing with the data validator (if necessary) and development of a project specific data usability report;
- Coordinating with QA personnel to ensure that QC procedures are followed and documented;
- Requiring and/or reviewing corrective actions taken in the event of QC failures;
- Reporting non-conformance with QC criteria or QA objectives, including an assessment of the impact on data quality or project objectives, to the project manager.

Technical Staff
The technical staff (team members) for this project will be drawn from Larsen Engineers staff. The technical team staff will be utilized to gather and analyze data and to prepare various task reports and support materials. All of the designated technical team members are experienced professionals who possess the degree of specialization, training and technical competence required to effectively and efficiently perform the required work.

Data Validation & QA Staff
The data validation and QA staff will include data validation chemists, QA auditors, and other technical specialists who remain independent of the laboratory and project management. The staff will independently validate analytical data to assess and summarize their accuracy, precision, and reliability and determine their usability. The staff will also perform audits and document the historical record of project activities, including any factors affecting data usability, such as data discrepancies and deviations from standard practices. The staff will act under the direction of the QA officer and project manager in accordance with specific project requirements.

Third party data validation will be performed by an appropriately qualified subcontracted firm. Resumes of the data validation staff will be obtained and available upon request.

4.0 Sampling Procedures

4.1 Sampling Design

The sampling design for this project is focused on the identified areas of concern in the RI and IRM work plans. Soil (surface and sub-surface) and groundwater sampling will be conducted during the RI. Surface soil samples as well as waste characterization samples will be collected during the investigation and interim remedial measure (IRM) activities. Sampling procedures will follow the work plan and the requirements of this QAPP.

4.2 QC Samples

Various types of field QC samples are used to check the cleanliness and effectiveness of field handling methods. They are analyzed in the laboratory as samples, and their purpose is to assess the sampling and transport procedures as possible sources of sample contamination and document overall sampling and analytical precision. Rigorous documentation of all field QC samples in the Site logbooks is mandatory.

- **Trip Blanks** are similar to field blanks with the exception that they are not exposed to field conditions. Their analytical results give the overall level of contamination from everything except ambient field conditions. Trip blanks are prepared at the lab prior to the sampling event and shipped with the sample bottles. Trip blanks are prepared by adding organic-free water to a 40-milliliter (ml) volatile organic analysis (VOA) vial. One trip blank will be used with every batch of water samples shipped for volatile organic analysis. Each trip blank will be transported to the sampling location, handled like a sample, and returned to the laboratory for analysis without being opened in the field.

    - **Field Equipment/Rinsate Blanks** are blank samples designed to demonstrate that sampling equipment has been properly prepared and cleaned before field use and that cleaning procedures between samples are sufficient to minimize cross-contamination. Rinsate blanks are prepared by passing analyte-free water over sampling equipment and analyzing the samples for all applicable parameters. If a sampling team is familiar with a particular site, its members may be able to predict which areas or samples are likely to have the highest concentration of contaminants. Unless other constraints apply, these samples should be taken last to avoid excessive contamination of sampling equipment.

    - **Field Duplicates** consist of a set of two (2) samples collected independently at a sampling location during a single sampling event. Field duplicates can be sent to the laboratory so that they are indistinguishable from other analytical samples and personnel performing the analysis are not able to determine which of the samples are field duplicates. Field duplicates are designed to assess the consistency of the overall sampling and analytical system.

Field QC samples and the frequency of analysis for this project are summarized in Table 4.1.

4.3 Decontamination Procedures

All decontamination will be performed in accordance with NYSDEC-approved procedures. Sampling methods and equipment have been chosen to minimize decontamination requirements and prevent the possibility of cross-contamination. All drilling equipment will be decontaminated prior to drilling, after drilling each boring/monitoring well, and after the completion of all drilling. Special attention will be given to the drilling assembly, augers, split-spoons, and polyethylene casing. Split-spoons will be decontaminated prior to and following each use.

Split-spoons and other non-disposable sampling equipment, including bailers and stainless steel spoons will be decontaminated using the following procedure:

- Initially cleaning equipment of all foreign matter;
- Scrubbing equipment with brushes in Alconox solution;
- Rinsing equipment with distilled water;
- Triple-rinsing equipment with distilled water; and
- Allowing equipment to air dry.

A temporary decontamination pool will be established in a secure area on site using 6-ml polyethylene sheeting. Fluids generated during decontamination will be collected in the plastic-lined pool. Prior to completion of the project, all decontamination wastes will be transferred into drums for appropriate staging and disposal.

Table 4.1
Sampling and Analysis Summary

Sample Type	Sample Location	Analytical Parameter	Analytical Method	Reporting Level	# Field Samples	Field Duplicates	Blanks			MS/ MSD	Total
							Field	Trip	Equipment		
Surface Soils	RI - 3 IRM – 26	VOCs + 30 TICs SVOCs+ 30TICs TAL Metals PCBs Pesticides	8260 8270 6010B 8082 8081A	Category B (Level III)	29	1 RI 1IRM	1RI 1 IRM		1 RI 1 IRM	2/2 1 RI 1 IRM	**37** **RI and IRM**
Subsurface Soils	15	VOC+ 30 TICs SVOC+ 30 TICs TAL Metals PCBs Pesticides	8260 8270 6010B 8082 8081A		**15**	**1**	**1**			**1/1**	**18**
Groundwater	Monitoring Wells 5 New 4 Existing	VOC + 30 TICs SVOC + 30 TICs Metals PCBs Pesticides	8260 8270 6010B 8082 8081A		9	**1**	**1**	**1**		**1/1**	**12**

4.4 Sampling Methods

This section describes the sampling procedures to be utilized for each environmental medium that will be collected and analyzed in accordance with the RI Work Plan and Tables 4.1 and 5.1 of this Plan. All sampling procedures described are consistent with USEPA sampling procedures as described in SW-846, third edition and the NYSDEC ASP, or equivalent.

4.4.1 Surface Soil Sampling

Surface soil samples will be collected from grid-based sample locations across the property as indicated on the Sample Location Plan (Figure 3). Samples will be taken from 0 to 2 inches below vegetative cover with a stainless steel hand auger, trowel, or spoon and transferred to the appropriate clean glass containers. Sufficient sample volume (as specified by the laboratory) will be collected to fill the sample bottles. All tools to be used will be decontaminated according to procedures outlined in Section 4.3 prior to and between usages. A rinsate/equipment blank will be collected after the final decontamination of the sampling equipment has been performed.

Any observable physical characteristics of the soil as it is being sampled (e.g., color, odor, physical state) will be recorded on Surface Soil Sample Logs.

4.4.2 Subsurface Soil Samples

Soil borings will be advanced using direct push (Geoprobe®) equipment. Samples will be collected in disposable sampling tubes in continuous 4-foot intervals. Non-disposable sampling equipment will be decontaminated between sampling locations.

Decontamination will be accomplished by washing the parts in an Alconox solution to remove debris, and rinsing with distilled water. Each soil sample will be described at the time it is retrieved, and a subsurface log will be produced by an on-Site geologist based upon visual examination and other field observations. Soil descriptions will be based on either the Unified or Burmister Soil Classification System.

All soil samples will be screened for the presence of VOCs with a PID. VOC measurements will be entered on the boring log. The field geologist will also evaluate soil samples for the presence of staining or other unusual observations. Samples noted to have these characteristics may require analysis even though no PID readings may have been observed.

4.4.3 Groundwater Investigation

The groundwater sampling plan outlined in this subsection has been prepared in general accordance with RCRA Groundwater Monitoring Technical Enforcement Guidance Document 9950.1 (September 1986), Office of Solid Waste and Emergency Response as modified by NYSDEC-specific request.

Well Installation

Prior to initiating drilling activities, the drilling rig, augers, rods, split spoons, pertinent equipment, well pipe and screens will be steam cleaned. These activities will be performed prior to arrival at the Site. Throughout and after the cleaning processes, direct contact between the equipment and the ground surface will be avoided. The drilling rig and all

equipment will be steam cleaned upon completion of the investigation and prior to leaving the Site.

Test borings will be advanced with 4.25 inch ID hollow stem augers through overburden, driven by truck-, track-, or trailer-mounted drilling equipment. Alternative methods of drilling or equipment may be allowed or requested for site-specific criteria, but must be approved by NYSDEC. Drilling fluids, other than water from a NYSDEC-approved source, will not be allowed without special consideration and agreement from NYSDEC. The use of lubricants is also not allowed unless approved by the NYSDEC representative. During the drilling, a portable VOC monitor (i.e., PID), and an O_2/explosimeter will be used to monitor the gases exiting the hole.

Well Casing (Riser)
The well riser shall consist of 2-inch diameter, threaded flush-joint polyvinyl chloride (PVC) pipe. All well risers will conform to the requirements of ASTM-D 1785 Schedule 40 pipe, and shall bear markings that will identify the material as that which is specified. All materials used to construct the wells will be NSF International (a division of American National Standards Institute (ANSI)/American Society of Testing and Materials (ASTM)) approved.

Well Screen
Generally, wells will be constructed with 10-foot machine-slotted screens, unless otherwise specified in the RI Work Plan or dictated by field conditions (e.g., screens of less than 10 feet in length may be used, depending on the characteristics of the well).

Screen and riser sections shall be joined by flush-threaded coupling to form watertight unions that retain 100% of the strength of the casing. Solvent PVC glues shall not be used at any time in the construction of the wells. The bottom of the screen shall be sealed with a treated cap or plug. No lead shot or lead wool is to be employed in sealing the bottom of the well or for sealant at any point in the well.

All risers and screens shall be set round, plumb, and true to line.

Artificial Sand Pack
Granular backfill will be chemically and texturally clean inert, siliceous, and of appropriate grain size for the screen slot size and the host environment. The well screen and riser casing will be installed, and the sand pack placed around the screen and casing to a depth approximately 2 feet above the top of the well screen.

Bentonite Seal
A minimum 2-foot thick seal of bentonite pellets/chips and water slurry will be placed directly on top of the sand pack, and care will be taken to avoid bridging. The seal will be measured immediately after placement, without allowance for swelling.

Grout Mixture
Upon completion of the bentonite seal, the well will be grouted with a non-shrinking cement grout mix to be placed from the top of the bentonite seal to the ground surface. The cement grout shall consist of a mixture of Portland cement (ASTM C 150) and water, in the proportion of not more than 7 gallons of clean water per bag of cement (1 cubic foot or 94

pounds). Additionally, 3% by weight of bentonite powder shall be added, if permitted.

Surface Protection

At all times during the progress of the work, precautions shall be used to prevent tampering with or the entrance of foreign material into the well. Upon completion of the well, a suitable vented cap shall be installed to prevent material from entering the well. For on-Site wells, the PVC well riser shall be surrounded by a steel casing rising 24 to 36 inches above ground level and set into a concrete pad. A concrete pad, sloped away from the well, shall be constructed around the well casing. The ground immediately around the top of the well shall be sloped away from the well. There shall be an opening in the protective casing wall at the top of the cement pad to allow for internal drainage. On-Site wells, located on the southern portion of the Site and any off-Site wells will be installed flush mounted.

Any well that is to be temporarily removed from service or left incomplete due to delay in construction, shall be capped with a watertight cap and equipped with a "vandal-proof" cover, satisfying applicable NYSDEC regulations or recommendations.

Surveying

Coordinates and elevations will be established by a New York State licensed land surveyor for each monitoring well location. A map of each Site will be prepared for inclusion into the final report for each Site.

Elevations (0.010 foot) will be established for the ground surface at each monitoring well, the top of each monitoring well inner casing (TOC), and at least one other permanent object (i.e., property corner markers, corners of buildings, bridges, etc.) in the vicinity of the wells. Elevations will be provided using the NAD 83 UTM Zone 18 (NYTM) coordinate system. Soil borings and other sample locations will be established using a Trimble hand-held global positioning system (GPS) unit capable of achieving sub-metes accuracy.

Unsurveyed data, (i.e., approximate site and property boundaries), developed through the use of current tax maps and initial Site visits, also will be shown on the survey map. The location and extent of filled areas, buried tanks and drums, other items pertinent to Site usage will be indicated on the survey maps based on the best available data.

Well Development

After completion of the well, but not sooner than 48 hours after grouting is completed, development will be accomplished by pumping or bailing. No dispersing agents, acids, disinfectants, or other additives will be used during development nor be introduced into the well at any other time. During development, water will be removed throughout the entire water column by periodically lowering and raising the pump intake (or bailer stopping point).

Well development will include washing the entire well cap and the interior of the well casing above the water table, using only water from the well itself. As a result of the operation, the well casing will be free of extraneous materials (grout, bentonite, and sand) inside the riser, well cap, and blank casing between top of the well casing and water table. This washing will be conducted before and/or during development; not after development. Development water will be discharged on Site as determined by the Site-specific work plans and/or consultation with the NYSDEC representatives on Site.

The development process will continue until a stabilization of pH, specific conductance, temperature, and clarity (goal of <50 NTUs) of the discharge is achieved or for a maximum of two hours. If, after two hours, substantial improvement has been noted through the development process but the goal of 50 NTUs has not been met, an additional one to two hours may be authorized by the NYSDEC on-Site representative to achieve the 50 NTU goal. Prior to the commencement of this additional development, entries will be made detailing the request in the Site project logbook and countersigned by both NYSDEC's on-Site representative and Larsen Engineers' Field Team Leader.

Geologic Logging and Sampling

At each well location, the boring will be advanced through overburden using a drill rig and hollow-stem auger, and soils will be visually inspected for stains and monitored with a PID. Soil samples will be collected continuously over the entire depth of the well. The sampling device will be decontaminated according to procedures outlined in Section 4.3.

The split-spoon sampler will be driven into the soil using a 140-pound safety hammer and allowed to free-fall 30 inches, in accordance with ASTM-D 1586-84 specifications. The number of blows required to drive the sampler each 6 inches of penetration will be recorded. Soil samples will be screened in the field for volatile organic vapors using a PID, and will be classified in accordance with Unified or Burmeister Soil Classification System specifications, and logged. Samples will be stored in glass jars until they are needed for testing or the project is complete.

Information regarding analytical requirements for soil borings can be found the RI Work Plan.

Monitoring well borings will be installed to a depth determined through the examination of boring logs and water levels encountered as well as on-Site discussions and agreement between the NYSDEC representative and Larsen Engineers' Field Team Leader. All significant discrepancies between the prepared Work Plan and actual Site conditions will be noted and countersigned by both parties in the project's on-Site logbook.

If hydrogeologic conditions are favorable for well installation at a depth less than design, the well will be installed at the boring or coring termination depth. In the event that maximum design depth is reached and hydrogeologic conditions are not suitable for well installation, the maximum drilling depth will be revised. Hydrogeologic suitability for well emplacement will be determined by the supervising geologist in consultation with NYSDEC, based on thickness and estimated hydraulic conductivity to the saturated zone encountered. If necessary, the borehole will be advanced to water or abandoned.

Drilling logs will be prepared by an experienced geologist who will be present during all drilling operations. One copy of each field boring log, well construction log, and groundwater data will be submitted as part of the report. Information provided in the logs shall include, but not be limited to, the following:

- Date, test hole identification, and project identification;
- Name of individual developing the log;
- Name of driller and assistant(s);
- Drill, make and model, auger size;

- Identification of alternative drilling methods used and justification thereof (i.e., rotary drilling with a specific bit type to remove material from within the hollow stem augers);
- Standard penetration test (ASTM D-1586) blow counts;
- Field diagram of each monitoring well installed with the depth to bottom of screen, top of screen, and pack, bentonite seal, etc.;
- Reference elevation for all depth measurements;
- Depth of each change of stratum;
- Thickness of each stratum;
- Identification of the material of which each stratum is composed, according to the USCS system or standard rock nomenclature, as appropriate;
- Depth interval from which each sample was taken;
- Depth at which hole diameters (bit sizes) change;
- Depth at which groundwater is encountered;
- Depth to static water level;
- Total depth of completed well;
- Depth or location of any loss of tools or equipment;
- Location of any fractures, joints, faults, cavities, or weathered zones;
- Depth of any grouting or sealing;
- Nominal hole diameters;
- Amount of cement used for grouting or sealing;
- Depth and type of well casing;
- Description of well screen (to include depth, length, location, diameter, slot sizes, material, and manufacturer);
- Any sealing-off of water-bearing strata;
- Static water level upon completion of the well and after development;
- Drilling date or dates;
- Construction details of well; and
- An explanation of any variations from the RI Work Plan.

Groundwater Sampling Procedures

Static water levels will be measured to within 0.01 foot prior to purging and sampling. Purging and sampling of each well will be accomplished using precleaned dedicated polyethylene bailers on new polypropylene line. All wells will be purged a minimum of three (3) volumes of water standing in the casing or to dryness. Temperature, pH, conductivity, and turbidity will be measured and recorded during purging.

After purging, the turbidity of each well will be measured. If the well water exhibits turbidity above the 50 NTU limit, sampling of the well water for metals only will be delayed for 24 hours. Sample volumes for all other parameters will be collected immediately following purging, with the volatile sample collected first. Upon returning to the well, the turbidity will be remeasured and recorded. No additional purging will be performed.

Groundwater samples will be collected according to the following procedures.

- Water clarity will be quantified during sampling with a turbidity meter;
- When transferring water from the bailer to sample containers, care will be taken to avoid agitating the sample, since agitation promotes the loss of volatile constituents;

- Any observable physical characteristics of the groundwater (i.e., color, sheen, odor, turbidity) at the time of sampling will be recorded; and
- Weather conditions (i.e., air temperature, sky condition, recent heavy rainfall, drought conditions) at the time of sampling will be recorded.

All groundwater samples and their accompanying QA/QC samples will be analyzed as specified in the RI Work Plan.

4.5 Sample Documentation

4.5.1 Logbooks

All field activities will be documented in a field logbook. This logbook will provide a record of activities conducted at the Site. All entries will be signed and dated at the end of each day of fieldwork. The field logbook will include the following: date and time of all entries; names of all personnel on Site; weather conditions (temperature, precipitation, etc.); location of activity; and description of activity.

In addition, Larsen Engineers will complete the following standard field forms as necessary:

- Test boring/probing log
- Groundwater sampling logs and well development records
- Field sampling record
- Chain of custody for all analytical laboratory sampling

As with any data logbooks, no pages will be removed for any reason. If corrections are necessary, these must be made by drawing a single line through the original entry (so that the original entry can still be read) and writing the corrected entry alongside it. The correction must be initialed and dated.

4.5.2 Sample Identification

All containers of samples collected by Larsen Engineers from the project will be identified using a format identified in the field on a label affixed to the sample container (labels are to be covered with Mylar tape). Sample bottles will be labeled prior to sampling to ensure reliable identification. Generally, the format will include the following.

- Two letters identifying the Site (CS- Clarkson Site);
- Two letters identifying the type of sample:

  GP- geoprobe soil sample
  TP- tank pit sample
  MW- groundwater sample
  WB- well boring soil sample
  SV- soil vapor sample
  SD- sediment soil sample
- Two numbers identifying a sample location (01-99);
- Two numbers identifying a sample depth (in feet). Note: if the sample is taken as a composite for an interval, the bottom depth should be used for the sample ID.
- Additional letters identifying special parameters, if applicable.

D – Field Duplicate
MS – Matrix Spike
MD- Matrix Spike Duplicate

Example: CS-GP-05-06D a duplicate soil sample collected from a depth of six (6) feet below ground surface (bgs) at GP-05.

Each sample will be labeled and sealed immediately after collection. The sample label will be filled out using waterproof ink and will be firmly affixed to the sample containers and protected with Mylar tape. The sample label will give the sample number, the date of the collection, analysis required, and pH and preservation, if appropriate.

The laboratory sample number will appear on a barcode label affixed to each sample, extract, or digestate.

4.6 Field Instrumentation

All instruments and equipment used during sampling and analysis will be operated, calibrated and maintained according to manufacturer's guidelines and recommendations. Operation, calibration, and maintenance will be performed by personnel properly trained in these procedures. Documentation of calibration information will be maintained in the appropriate logbook or reference file and will be available upon request. Instruments will be calibrated before each use.

5.1 Sample Handling and Custody

This section describes procedures for sample handling and chain-of-custody to be followed by Larsen Engineers sampling personnel and the analytical laboratory. The purpose of these procedures is to ensure that the integrity of the samples is maintained during their collection, transportation, storage, and analysis. All chain-of-custody requirements comply with SOPs indicated in EPA sample-handling protocol.

Sample identification documents will be carefully prepared so that sample identification and chain-of-custody can be maintained and sample disposition controlled. Sample identification documents include field notebooks, sample labels, custody seals, chain-of-custody records, and laboratory sample log-in and tracking forms.

The primary objective of the chain-of-custody procedures is to provide an accurate written record that can be used to trace the possession and handling of a sample from the moment of its collection through it analyses. A sample is in custody if it is:

- In someone's physical possession;
- In someone's view;
- Locked up; or
- Kept in a secured area that is restricted to authorized personnel.

5.1 Sample Containers and Preservation

For sampling performed, prewashed sample containers obtained from a reliable supplier will be provided by the analytical laboratory. All containers provided by the laboratory are precleaned (Level 1), with certificates of analysis available for each bottle type. Certifications of Analysis provided by the vendor are kept on file by the laboratory.

All samples will be stored on ice pending delivery to the laboratory. In addition, all water samples for volatile analysis will be preserved with hydrochloric acid (HCl) to a pH of less than 2.0. All water samples for metals analysis will be preserved with nitric acid until the sample pH is lowered to 2.0 standard units or less. Sample pH will be checked in the field using indicator paper. A list of preservatives and holding times for each type of analysis is included in the following Table.

Table 5.1 Sample Preservation and Holding Times

Parameter	Method Number	Container Type and Size	Preservation	Holding Time*
Soil and Sediment Samples				
TCL VOCs + 30 TICs	8260C	2 x 4 oz. glass jar	Cool to 4°C; minimize headspace	14 days
SVOCs + 30 TICs	8270C	2 x 4 oz. glass jar	Cool to 4°C	12 days to extract; analyze 40 days from extraction
TAL Metals	200.7/ 6010B	2 x 4 oz. glass jar	None required (cool to 4°C preferred)	6 months
PCBs	8082	2 x 4 oz. glass jar	Cool to 4°C	12 days to extract; analyze 40 days from extraction
Pesticides	8081A	2 x 4 oz. glass jar	Cool to 4°C	12 days to extract; analyze 40 days from extraction
Groundwater				
TCL VOCs + 30 TICs	8260C	3 x 40-ml. VOA	Cool to 4°C; minimize headspace; HCl to pH<2	5 days unpreserved / 12 days preserved
SVOCs + 30 TICs	8270C	2 x ½ L. amber bottles	Cool to 4°C	5 days to extract; analyze 40 days from extraction
TAL Metals	200.7/ 6010B	1 x 250 ml. glass or poly bottles	HNO_3 to a pH <2	6 months
PCBs	8082	1 x ½ L. amber bottles	Cool to 4°C	5 days to extract; analyze 40 days from extraction
Pesticides	8081A	1 x ½ L. amber bottles	Cool to 4°C	5 days to extract; analyze 40 days from extraction
Soil Vapor				
VOCs	TO-15	6-L. Summa canister	None	10 days

* Holding times are based on verified time of sample receipt (VTSR) at the laboratory

Sample preservation will be verified at the lab just prior to extraction, digestion, and/or analysis and the pH will be recorded in the extraction/digestion logbook. The pH may be checked upon arrival, if desired.

If the samples are improperly preserved, a QA/QC discrepancy form will be submitted to the lab manager and QA coordinator for appropriate follow-up action (i.e., evaluation of the data during the data validation process and, if necessary, additional instruction of personnel regarding proper procedures).

5.2 Field Custody Procedures

- Sample bottles must be obtained precleaned from the laboratory or directly from an approved retail source. All containers will be prepared in a manner consistent with the NYSDEC ASP 1991 bottle-washing procedures. Coolers or boxes containing cleaned bottles should be sealed with a custody tape seal during transport to the field or while in storage prior to use.
- All containers will have assigned lot numbers to ensure traceability through the supplier.
- As few persons as possible should handle samples.
- The sample collector is personally responsible for the care and custody of samples collected until the samples are transferred to another person or dispatched properly under chain-of-custody rules.
- The sample collector will record sample data in the field notebook.
- The project manager will determine whether proper custody procedures were followed during the fieldwork and decide if additional samples are required.

5.2.1 Custody Seals

Custody seals are preprinted adhesive-backed seals with security slots designed to break if the seals are disturbed. A custody seal is placed over the cap of individual sample bottles by the sampling technician. Sample shipping containers (coolers, cardboard boxed, etc., as appropriate) are sealed in as many places as necessary to ensure security. Seals must be signed and dated before use. Strapping tape should be placed around the lid to ensure that seals are not accidentally broken during shipment and in a manner that allows easy removal by laboratory personnel. On receipt at the laboratory, the custodian must check (and certify, by completing logbook entries) that seals on boxes and bottles are intact.

5.2.2 Chain-of-Custody Record

The chain-of-custody record must be fully completed in duplicate, using black carbon paper where possible, by the field technician who has been designated by the project manager as responsible for sample shipment to the appropriate laboratory for analysis. In addition, if samples are known to require rapid turnaround in the laboratory because of project time constraints or analytical concerns (i.e., extraction time or sample retention period limitations, etc.), the person completing the chain-of-custody record should note these constraints in the "Remarks" section of the custody record.

5.3 Sample Handling, Packaging, and Shipping

The transportation and handling of samples must be accomplished in a manner that not only protects the integrity of the sample but also prevents any detrimental effects due to the possible hazardous nature of samples. Regulations for packaging, marking, labeling, and shipping hazardous materials are promulgated by the United States Department of Transportation (DOT) in the Code of Federal Regulations (CFR), 49 CFR 171 through 177.

5.3.1 Sample Packaging

Samples must be packaged carefully to avoid breakage or contamination and must be shipped to the laboratory at proper temperatures. The following sample packaging requirements will be followed:

- Sample bottle lids must never be mixed. All sample lids must stay with the original containers.
- The sample bottle should never be completely filled except for VOA bottles. At a minimum, a 10% void space should be left in the bottle to allow for expansion. The sample volume level should be marked with a grease pencil or by placing the top of the label at the appropriate sample height.
- All sample bottles must be sealed around the neck or the jar lid with clear tape. Any custody seals should be affixed prior to sealing the bottle.
- All sample bottles shall be placed in plastic zip-lock bags to minimize contact with inert packing material, unless foam inserts are used.
- Foam inserts should be used as inert packing material when shipping low hazard water samples via a common carrier to the laboratory.
- Low-hazard environmental samples are to be cooled. "Blue ice" or some other artificial icing material, or ice placed in plastic bags, may be used. Ice will not be used as a substitute for packing material.
- A duplicate custody record must be placed in a plastic bag and taped to the inside of the cooler lid. Custody seals are affixed to the sample cooler.
- The cooler will be labeled as containing a hazardous material if it contains medium or high-hazard samples. Labeling requirements differ depending on the type of material being shipped; the majority of soil samples may be shipped as a class "9" hazardous material with the proper shipping name "OTHER REGULATED SUBSTANCES (ENVIRONMENTAL SAMPLES)."
- A hazardous material shipping manifest will be completed for each cooler of medium to high-hazard samples and affixed to the lid of the cooler.
- Low-hazard environmental samples do not require a hazardous materials shipping manifest. The words "LABORATORY SAMPLES" should be printed on the top of the cooler for low-hazard samples.
- Samples packaged and shipped as limited-quantity radioactive material must comply with DOT and shipper regulations for package contamination limits, surface exposure rate, and airbill completion.

5.3.2 Shipping Containers

Environmental samples will be properly packaged and labeled for transport and dispatched for analysis to the appropriate subcontracted laboratory for geotechnical analyses. A separate chain-of-custody record must be prepared for each container. The following requirements for marking and labeling of shipping containers will be observed:

- Use abbreviations only where specified;
- The words "This End Up" or "This Side Up" must be clearly printed on the top of the outer package. Upward-pointing arrows should be placed on the sides of the package. The words "Laboratory Samples" should also be printed on the top of the package; and
- After a container has been closed, two custody seals are placed on the container—one on the front and one on the back. The seals are protected from accidental damage by placing strapping tape over them.

Field personnel will make timely arrangements for transportation of samples to the laboratory. When custody is relinquished to a shipper, field personnel will telephone the laboratory custodian to inform him of the expected time of arrival of the sample shipment and to advise him of any time constraints on sample analysis.

5.3.3 Shipping Procedures

- The coolers in which the samples are packed must be accompanied by a chain-of-custody record. When transferring samples, the individuals relinquishing and receiving them must sign, date, and note the time on the record. This record documents sample custody transfer.
- Samples must be dispatched to the laboratory for analysis with a separate chain-of-custody record accompanying each shipment. Shipping containers must be sealed with custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information are entered in the "Remarks" section of the chain-of-custody record.
- All shipments must be accompanied by the chain-of-custody record identifying their contents. The original record accompanies the shipment, and the yellow copy is retained by the Field Team Leader.
- If sent by mail, the package is registered with return receipt requested. If sent by common carrier, a bill of lading is used. Freight bills, Postal Service receipts, and bills of lading are retained as part of the permanent documentation.
- Samples must be shipped to the analytical laboratory within 24 to 48 hours from the time of collection.

5.4 Laboratory Custody Procedures

The designated sample custodian at the laboratory will be responsible for maintaining the chain-of-custody for samples received at the lab. Among other things, the custodian must adhere to the following basic requirements:

- When the sample arrives at the lab, the custodian will complete a Cooler Receipt & Preservation Form for each cooler/package container.
- Upon receipt, the coolers are examined for the presence and condition of custody seals, locks, shipping papers, etc. Shipping labels are removed and placed on scrap paper and added to the receiving paper work. The custodian then completes the chain-of-custody record by signing and recording the date and time the package is opened.
- Acceptance criteria for cooler temperature is 0-6^{o}C. If a cooler exhibits a temperature outside this range, the anomalies are noted on the Cooler Receipt & Preservation Form.
- The custodian will then unload the samples from the cooler(s)/container(s), assign an identification number to each sample container, and affix a barcode label to each sample container for logging in and out of the laboratory information management system (LIMS) system.

Adherence to this procedure will ensure that all samples can be referenced in the computer tracking system. All sample control and chain-of-custody procedures applicable to the analytical laboratory are presented in laboratory SOPs available for review.

6.0 Analytical Methods

All laboratory analyses will be performed by an accredited and appropriately (NYSDEC ELAP CLP) certified analytical laboratory. Inorganic, general analytical, and organic methods to be performed by the laboratory for this project are listed in Table 1 in Appendix A of this QAPP.

6.1 Analytical Capabilities

The analytical laboratory is fully equipped for analysis of all types of water, air, and soil samples for chemical contaminants, bacteriological quality, and general characterization. Proven and approved analytical techniques are used, backed up by a rigorous system of QC and QA checks to ensure reliable and defensible data. All laboratory work is performed in accordance with guidelines established by EPA, the NYSDOH, and the National Institute of Occupational Safety and Health (NIOSH).

Organic analysis is accomplished by gas chromatography (GC), high performance liquid chromatography (HPLC), and or GC/mass spectrometry (MS). Liquid, soil, and air samples are analyzed routinely for pesticides, PCBs, volatile organics, extractable organics, and other groups of compounds, as necessary. The laboratory uses two types of instruments for analysis of metals in various matrices: atomic absorption spectrophotometry (AAS) and inductively coupled plasma (ICP).

Laboratory procedures to be utilized for sample preparation and analysis are referenced in the NYSDEC ASP.

Method Detection Limits
Method detection limits are determined according to procedures outlined in 40 CFR Part 136, Appendix B or EPA CLP. General analytical detection limits are usually determined by the lowest point on the curve. Detection limits are determined at least annually for all appropriate analytical methods. A listing of the laboratory's method detection limits is available upon request.

6.2 Quality Control Samples

Laboratory QC consists of analysis of laboratory blanks, duplicates, spikes, standards, and QC check samples as appropriate to the methodology. These laboratory QC samples are described below.

6.2.1 Laboratory Blanks

Three types of laboratory blanks, one or more of which will be utilized depending on the analysis, are described below:

- Method blanks consist of analyte-free water and are subjected to every step of the analytical procedure to determine possible contamination.
- Reagent blanks are similar to method blanks but incorporate only one of the preparation reagents in the analysis. When a method blank indicates significant contamination, one or more reagent blanks are analyzed to determine the source.
- Calibration blanks consist of pure reagent matrix and are used to zero an instrument's response, thus establishing the baseline.

6.2.2 Calibration Standards

A calibration standard may be prepared in the laboratory by dissolving a known amount of a pure compound in an appropriate matrix. The final concentration calculated from the known quantities is the true value of the standard. The results obtained from these standards are used to generate a standard curve and thereby quantitate the compound in the environmental sample. A minimum of three calibration standards will be used to generate a standard curve for all analyses.

6.2.3 Reference Standard

A reference standard is prepared in the same manner as a calibration standard but from a different source. Reference standards may be obtained from the EPA. The final concentration calculated from the known quantities is the "true" value of the standard. The important difference in a reference standard is that it is not carried through the same process used for the environmental samples, but is analyzed without digestion or extraction. A reference standard result is used to validate an existing concentration calibration standard file or calibration curve.

6.2.4 Spike Sample

A sample spike is prepared by adding to an environmental sample (before extraction or digestion) a known amount of pure compound of the same type that is to be assayed for in the environmental sample.

Spikes are added at one to 10 times the expected sample concentration or approximately 10 times the method detection limit. These spikes simulate the background and interferences found in the actual samples, and the calculated percent recovery of the spike is taken as a measure of the accuracy of the total analytical method.

A blank spike is the same as a spike sample except the spike is added to analyte-free water. The blank spike is used to determine whether the sample preparation and analysis are under control.

6.2.5 Surrogate Standard

A surrogate is prepared by adding a known amount of pure compound to the environmental sample; the compound selected is not one expected to be found in the sample, but is similar in nature to the compound of interest. Surrogate compounds are added to the sample prior to extraction or digestion. Surrogate spike concentrations indicate the percent recovery of the analytes and, therefore, the efficiency of the methodology.

6.2.6 Internal Standard

Internal standards are similar to surrogate standards in chemical composition but are used to quantify the concentration of analytes sampled based on the relative response factor. Internal standards are added to the environmental sample just prior to instrumental analysis.

6.2.7 Laboratory Duplicate or Matrix Spike Duplicate

Laboratory duplicates are aliquots of the same sample that are split prior to analysis and treated exactly the same throughout the analytical method. Spikes and duplicates for the batch are normally aliquots of the same sample. For organics, spikes are added at approximately 10 times the method detection limit. The relative percent difference (RPD) between the values of the MS and MSD for organics or between the original and the duplicate for inorganics is taken as a measure of the precision of the analytical method.

In general, the tolerance limit for RPDs between laboratory duplicates should not exceed 20% for validation in homogeneous samples.

6.2.8 Check Standard/Samples

Inorganic and organic check standards or samples are prepared with reference standards or are available from the EPA. They are used as a means of evaluating analytical techniques of the analyst. Check standards or samples are subjected to the entire sample procedure, including extraction, digestion, etc., as appropriate for the analytical method utilized. The check standard or sample can provide information on the accuracy of the analytical method independent of various sample matrices.

6.3 Laboratory Instrumentation

Laboratory capabilities will be demonstrated initially for instrument and reagent/ standards performance as well as accuracy and precision of analytical methodology. A discussion of reagent/standard procedures and brief descriptions of calibration procedures for major instrument types follow.

All standards are obtained directly from EPA or through a reliable commercial supplier with a proven record for quality standards. All commercially supplied standards will be traceable to EPA or the National Institute of Standards and Technology (NIST) reference standards and appropriate documentation will be obtained from the supplier. In cases where documentation is not available, the laboratory will analyze the standard and compare the results to a known EPA-supplied or previous NIST-traceable standard.

All sections of the laboratory will have SOP for standard and reagent procedures to document specific standard receipt, documentation, and preparation activities. In general, the individual SOPs incorporate the following items:

- Documentation and labeling of date received, lot number, date opened, and expiration date;
- Documentation of traceability;
- Preparation, storage, and labeling of stock and working solutions; and
- Establishing and documenting expiration dates and disposal of unusable standards.

Each laboratory instrument will be labeled clearly with a unique identifier that relates to all laboratory calibration documentation. Laboratory SOPs and calibration procedures are detailed in the laboratory's Quality Assurance Manual, available upon request.

7.0 Data Reporting and Validation

7.1 Deliverables

Once the contract laboratory has provided all analytical data and hydrogeologic information has been evaluated, a report will be developed on the findings of the investigation and remedial measures. The report will be prepared as outlined in Section 5.0 of the RI Work Plan.

The report will carefully document all findings of the investigation and will be supplemented with photographic documentation, subsurface soil logs, cross sections, and study area plans indicating groundwater flow direction and subaerial contaminant distribution.

7.1.1 Category B Data Package

All analytical data for delineation and tank closure samples will be reported by the laboratory with NYSDEC ASP Category B deliverables. The Category B data package includes:

1. A detailed summary of the report contents and any quality control outliers or corrective actions taken.
2. Chain of Custody documentation
3. Sample Information including: date collected, date extracted, date analyzed, and analytical methods.
4. Data (including raw data) for:
   - samples
   - laboratory duplicates
   - method blanks
   - spikes and spike duplicates
   - surrogate recoveries
   - internal standard recoveries
   - calibrations
   - any other applicable QC data
5. Method detection limits and/or instrument detection limits
6. run logs, standard preparation logs, and sample preparation logs
7. percent solids (where applicable)

The backup quality control data must be retained by the laboratory for 6 years and provided to the NYSDEC Project Manager upon request.

Quality Assurance Reports

For the laboratory, a general QA report summarizing problems encountered throughout the laboratory effort, including sample custody, analyses, and reporting, is provided to the project QA management by the QA coordinator. This report identifies areas of concern and possible resolutions in an effort to ensure data quality.

Upon completion of a project sampling effort, analytical and QC data will be included in a comprehensive report that summarizes the work and provides a data evaluation. A discussion of the validity of the results in the context of QA/QC procedures will be made, as well as a summation of all QA/QC activity.

Serious analytical or sampling problems will be reported to NYSDEC. Time and type of corrective action, if needed, will depend on the severity of the problem and relative overall project importance. Corrective actions may include altering procedures in the field, conducting an audit, or modifying laboratory protocol. All corrective actions will be implemented after notification and approval of NYSDEC.

In addition to the laboratory report narrative, QA data validation reports that include any contractual requirements will also be provided to NYSDEC. These QA reports will be submitted with the analytical data, on a monthly basis, or at the conclusion of the project.

7.2 Data Validation and Usability

Prior to the submission of the report to NYSDEC, all data will be evaluated for precision, accuracy, and completeness.

QA/QC requirements from both methodology and company protocols will be strictly adhered to during sampling and analytical work. All data generated will be reviewed by comparing and interpreting results from instrumental responses, retention time, determination of percent recovery of spiked samples or blanks, and reproducibility of duplicate sample results. All calculations and data manipulations are included in the appropriate methodology references. Control charts and calibration curves will be used to review the data and identify outlying results.

7.2.1 Data Validation

A third-party validator will be responsible for an independent review of all analytical work performed under the NYSDEC ASP-CLP protocol. The functions will be to assess and summarize the quality and reliability of the data for the purpose of determining its usability and to document for the historical record of each Site any factors affecting data usability, such as discrepancies, poor laboratory practices, and site locations that are difficult to analyze. The data validator will be responsible for determining completeness and compliance. The QA officer will be responsible for determining data usability and overseeing the work of the data validator.

Information available to the data validator and the QA officer for performance of these functions include the NYSDEC ASP Category B data package, information from the sampling team regarding field conditions and field QA samples, chain-of-custody and shipping forms. The data package is designed to provide all necessary documentation to verify compliance with NYSDEC ASP CLP protocol and the accuracy and reliability of the reported results.

The laboratory will deliver the data package to the project QA coordinator for processing prior to submission to the data validator. The project QA coordinator will review the report for immediate problems, summarize the data for in-house use, and process the work order for the third-party data-validation subcontract within 5 working days.

In order to effectively review the data package, the data validator will obtain a general overview of each case. This includes the exact number of samples, their assigned numbers, and their matrix. The data validator will deliver the data validation report within 30 days of receipt of the data package.

If a problem arises between the data validator and the laboratory, the data validator must submit written questions to the laboratory. The laboratory will be required to respond in writing within 10 working days to correct any deficiencies. If the data validator does not receive a written response from the laboratory within the specified time period, the data in question shall be considered noncompliant.

Sampling locations will be obtained from the sampling records, such as the chain-of-custody forms. This information is necessary for preparation of the data summary, evaluation of adherence to sample holding times, discussion of matrix problems, and discussion of contaminants detected in the samples.

The following is a brief outline of the data validation process:

- Compilation of all samples with the dates of sampling, laboratory receipt, and analysis;
- Compilation of all QC samples, such as field blanks, field duplicates, MS/MSD samples, laboratory blanks, and laboratory replicates;
- Review of chain-of-custody documents for completeness and correctness;
- Review of laboratory analytical procedure and instrument performance criteria;
- Qualification of data outside acceptable QC criteria ranges;
- Preparation of a memorandum summarizing any problems encountered and the potential effects on data usability;
- Preparation of a data summary, including validated results, with sample matrix, location, and identification; and
- Tabulation of field duplicates, laboratory replicate, and blank results.

Copies of all data validation and usability reports, as well as all data summary packages, will be provided to the NYSDEC project manager. In addition, electronic copies of all analytical raw data will be provided to NYSDEC upon request.

7.2.2 Data Usability

A Data Usability Summary Report (DUSR) will be provided after review and evaluation of the analytical data package. The DUSR will contain required elements listed in Appendix 2B of *DER-10 Technical Guidance for Site Investigation and Remediation*.

The DUSR will include a description of the samples and analytical procedures used. Any data deficiencies, protocol deviations, or quality control problems will be discussed as to their effect on data results. The report will also include any suggestions for resampling or reanalysis.

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September 18, 2006

Mr. Ed Hampston
NYS Department of Environmental Conservation
Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, New York 12233-7013

Subject: **DRAFT – Soil Removal Report**
Luster-Coate Metallizing Corporation
32 East Buffalo Street
Village of Churchville, Monroe County, New York
NYSDEC Site No. 828113

Dear Mr. Hampston:

Empire Geo-Services, Inc. (Empire) has prepared this draft report presenting the results of polychlorinated biphenyl (PCB)-contaminated soil removal activities conducted at the above-referenced site. The soil removal was conducted in accordance with Empire's work plan dated February 6, 2006. The goal of the soil removal was to excavate and dispose of soil with PCB concentrations greater than 1,000 parts per billion (ppb; equivalent to 1 milligram per kilogram [mg/kg]).

Figure 1 is a site layout map. Figure 2 depicts the areas where soil removal was proposed. The removal areas were based on soil sampling locations where PCB concentrations in soil exceeded 1,000 ppb, as summarized in Empire's February 2006 work plan. In addition to the Luster Coate property, PCB-contaminated soil was present on residential properties located at 34, 36, and 40 East Buffalo Street.

Site activities were initiated on May 24, 2006. The soil removal consisted of three main components:

- Soil removal and confirmation sampling
- Air monitoring
- Site restoration

Soil removal was completed on June 26, 2006. Air monitoring was conducted from May 24 through June 30, 2006. Miscellaneous site restoration activities were completed by September 7, 2006. These activities are described in detail in the following sections.

SOIL REMOVAL AND CONFIRMATION SAMPLING

Soil removal was initiated on May 24, 2006 and continued through June 26, 2006. Per NYSDEC, no soil removal was done in Excavation Areas 1, 2, or 3 (see Figure 2). Also, per NYSDEC, no excavation was performed in areas covered by concrete, asphalt, or structures.

Figure 3 indicates the approximate areas of actual soil removal. The soil removal areas shown in Figure 3 have been assigned new designations, to more clearly reflect the four individual, contiguous areas where soil removal was performed. The procedure for the soil removal was:

- Excavating the anticipated areal extent and depth of impacted soil (PCB concentration greater than 1,000 ppb)
- Collecting one composite confirmatory sample from each individual 30 foot long segment of sidewall
- Collecting a composite confirmation floor sample representing up to 900 square feet of floor area
- If the PCB concentration in a sidewall or floor confirmation sample exceeded 1,000 ppb, additional excavation and confirmation sampling was performed.

All confirmation samples were transported to Upstate Laboratory, Inc. (Upstate), in Syracuse, New York, for analysis of PCB concentration by EPA Method 8082. The laboratory analytical data packages provided by Upstate are included in Attachment A. An ASP Category B deliverable package was also prepared by Upstate. This deliverable package was forwarded directly to NYSDEC, and is not included in this report.

During the course of the soil removal, many confirmation samples with PCB concentrations greater than 1,000 ppb were collected. These sample results are included in the laboratory analytical data package in Attachment A. In all instances where confirmation sample PCB concentrations exceeded 1,000 ppb, additional soil removal and sampling was performed until the PCB concentration was less

than 1,000 ppb. Therefore, confirmation samples with concentrations greater than 1,000 ppb are not discussed further in this report.

Confirmation samples with PCB concentrations less than 1,000 ppb are summarized in Tables 1 through 4. A discussion of the individual soil removal areas shown in Figure 3 is presented in the following paragraphs.

Excavation Area A

This area is located on the south property line of the Luster Coate facility, at the north property lines of 34 and 36 East Buffalo Street. Soil removal and confirmation sampling in this area took place between May 24 and June 26, 2006. The excavation area and sample results are depicted in Figure 4. The laboratory analytical results are summarized in Table 1. A total of four sidewall samples and two floor confirmation samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between 40 and 620 ppb. Sidewall confirmation samples were not collected adjacent to the Luster Coate concrete sidewalk.

Excavation Area B

This area is located west of the Luster Coate driveway and extends on to the 36 East Buffalo Street property. Soil removal and confirmation sampling in this area took place between June 9 and June 29, 2006. The excavation area and sample results are depicted in Figure 5. The laboratory analytical results are summarized in Table 2. A total of 10 sidewall samples (including one duplicate) and five floor confirmation samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between 120 and 1,000 ppb. Sidewall confirmation samples were not collected adjacent to the sidewalk to the south, the Luster Coate driveway to the east, or the asphalt area to the north.

Excavation Area C

This area is located east of the Luster Coate driveway and extends on to the 40 East Buffalo Street property. Soil removal and confirmation sampling in this area took place between May 30 and June 14, 2006. The excavation area and sample results are depicted in Figure 6. The laboratory analytical results are summarized in Table 3. A total of nine sidewall samples and four floor confirmation

samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between zero and 530 ppb. Sidewall confirmation samples were not collected along the north and south sides of either of the two garages located in the removal area, or along the Luster Coate driveway to the west.

Excavation Area D

This area is located east of the Luster Coate driveway and south of the 40 East Buffalo Street driveway. Soil removal and confirmation sampling in this area took place between June 1 and June 9, 2006. The excavation area and sample results are depicted in Figure 7. The laboratory analytical results are summarized in Table 4. A total of three sidewall samples and one floor confirmation samples define the remediated boundaries of the excavation. PCB concentrations in the confirmation samples ranged between zero and 410 ppb. No sidewall confirmation sample was collected along the Luster Coate driveway to the west.

Summary

Soil removal was performed in four discrete areas of the site. A total of 26 sidewall and 12 floor confirmation samples were collected with PCB-concentrations of 1,000 ppb or less. In all instances where a confirmation sample had a PCB concentration greater than 1,000 ppb, additional soil was excavated and confirmation sampling performed until the PCB concentration was reduced to 1,000 ppb or less.

A total of approximately 700 tons of non-hazardous PCB-contaminated soil were removed from the site. This waste was transported to Waste Management's Mill Seat Landfill in Bergen, New York, for disposal. Copies of the disposal manifests are included in Attachment B.

A total of approximately 80 tons classified as TSCA hazardous waste due to PCB concentrations greater than 50 mg/kg (50,000 ppb) were removed from the site. This material was removed from a portion of Excavation Area B. The approximate extent of this material is depicted on Figure 2 in Excavation Area 7. This waste was hauled to Waste Management's Model City Landfill in Model City, New York. for disposal. Copies of the disposal manifests are included in Attachment C.

AIR MONITORING

Air monitoring was conducted in accordance with the New York State Department of Health's Generic Community Air Monitoring Plan (CAMP). Monitoring of volatile organic compound (VOC) concentrations in air was performed using two RAE Systems MiniRAE 2000 photoionization detectors (PID) with data logging capabilities. Monitoring of airborne particulate concentrations was performed using two TSI DustTrak Model 8520 Aerosol Monitors with data logging capabilities. Monitoring was performed at any time soil removal or excavation backfilling was being conducted, except on days where rainfall would naturally mitigate VOC vapors or particulates in the air. If visible dust was evident, a water spray was used to wet the dust source and reduce airborne particulate concentrations to meet the CAMP requirements.

The monitors were generally set up on the east and west sides of the area in which soil removal or backfilling activities were being performed. As soil removal progressed over time, the monitors were relocated in an effort to most accurately reflect VOC and particulate concentrations in the air. The data logging capabilities of both meters were utilized to collect data. Airborne VOC concentrations were recorded by the PIDs at five minute intervals. Airborne particulate concentrations were recorded by the aerosol monitors at one minute intervals. The VOC and particulate concentration readings are presented in Attachment D. Due to the large volume of data generated by the aerosol monitors, only the daily particulate concentration statistics are presented in Attachment D. A comprehensive record of the concentrations recorded by the aerosol monitors can be provided upon request. Empire also manually recorded the instrument readings throughout the project. The manual measurements were used as backup in case the instrument data logging failed. Manual measurements collected during the project are included in Attachment D.

The only day during which persistent, elevated VOC concentrations were detected was June 2, 2006. On this date, a former gasoline underground storage tank was removed from the property at 40 East Buffalo Street. Petroleum-contaminated soils exposed at the surface were kept covered with plastic or sand to reduce VOC concentrations in the air. A water spray was also utilized to mitigate VOC vapors in the air. Air monitoring for VOC concentrations was discontinued on June 22, 2006.

A water spray was utilized on roadways and soil removal areas throughout the project to minimize airborne particulates and visible dust. Persistent, elevated particulate concentrations and visible dust were generally not present during the project. The average daily particulate concentrations were less

than 0.150 milligrams per cubic meter (mg/m^3) on each day of monitoring. Average daily particulate concentration exceeded 0.100 mg/m^3 only on May 31 (east and west monitors), June 1 (east and west monitors), and June 7 (east monitor). Average daily particulate concentrations were otherwise generally less than 0.050 mg/m^3. Monitoring for airborne particulate concentrations was discontinued on July 6, 2006.

SITE RESTORATION

The majority of the site restoration consisted of backfilling excavated areas. Clean sand fill was used to backfill all excavations to a depth of about 1 foot below the previously existing ground surface. About 556 tons of sand backfill was used. The sand backfill was obtained from Elam Sand and Gravel in West Bloomfield, New York. Screened topsoil was placed above the sand backfill to reestablish the grade that existed prior to the soil removal. About 150 tons of topsoil was placed over excavated areas. The topsoil was obtained from American Green Landscape in Spencerport, New York. Other significant site restoration activities conducted at the affected properties are described below:

32 East Buffalo Street (Luster Coate) - Excavated areas were seeded and watered to restore grass.

34 East Buffalo Street - Excavated areas were seeded and watered to restore grass. A board fence was installed along the length of the north property line as replacement for trees taken down during soil removal activities.

36 East Buffalo Street – Sod was placed on excavated areas to restore grass. A chain link fence along the northeast property line, and a portion of a board fence along the north property line were reinstalled. The fences had been taken down to facilitate soil removal. The asphalt driveway was leveled and covered with new asphalt topcoat to repair damage from trucks and machinery. Six garden plants removed during excavation were replaced.

40 East Buffalo Street - Excavated areas were seeded and watered to restore grass. A buried electrical wire between two sheds was replaced after the existing wire was damaged. Minor trim damage to site sheds was repaired. A portion of the asphalt driveway was leveled and covered with new asphalt topcoat to repair damage from trucks and machinery.

We hope this information meets your needs. If you have any questions, please call me at (585) 359-2730.

Sincerely,

Greg Young
Project Manager

Figures

Figure 1	Site Layout Map
Figure 2	Proposed Excavation Areas
Figure 3	Final Excavation Areas
Figure 4	Excavation Area A Summary
Figure 5	Excavation Area B Summary
Figure 6	Excavation Area C Summary
Figure 7	Excavation Area D Summary

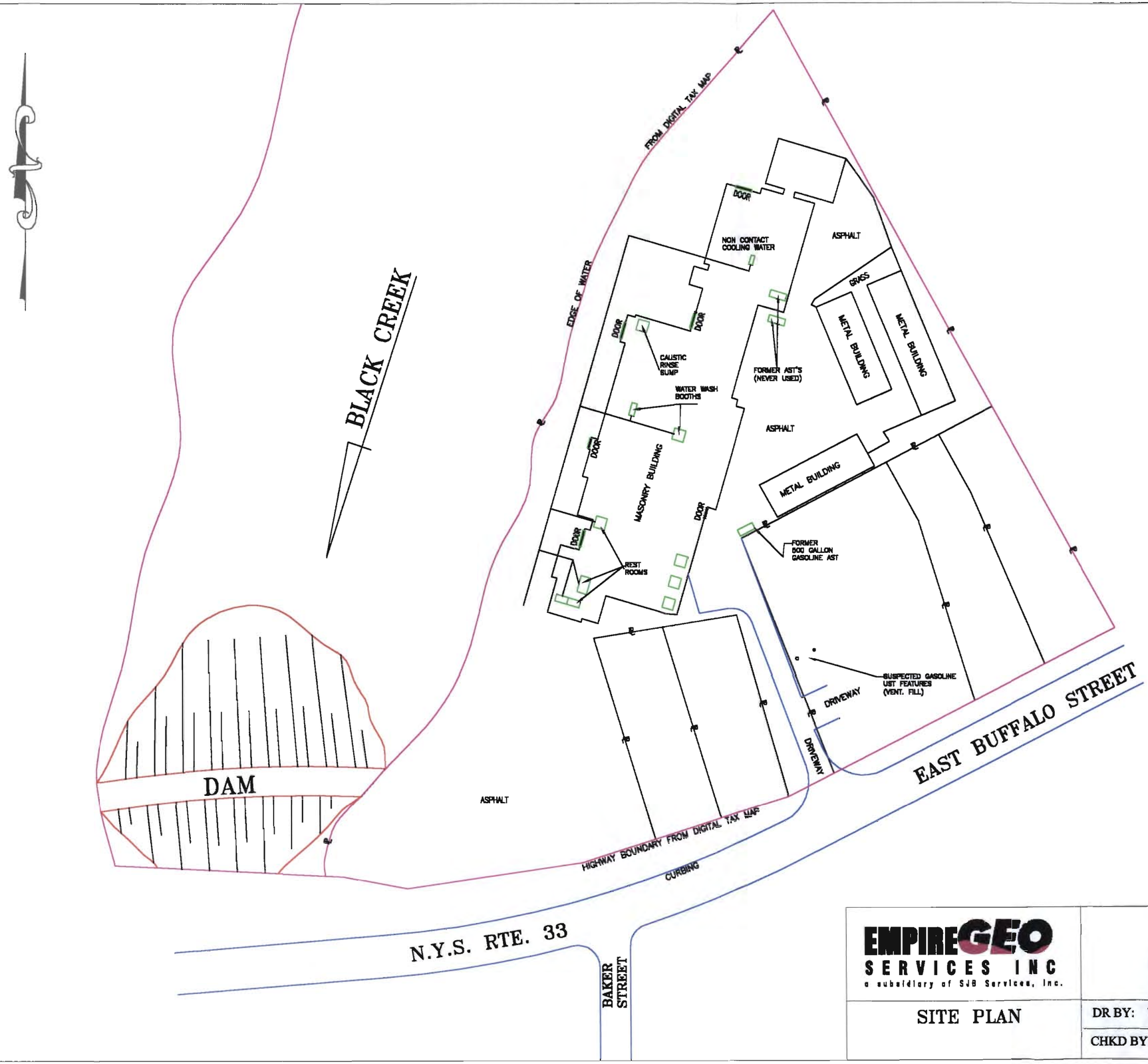
Tables

Table 1	Summary of PCB Concentrations in Soil – Excavation Area A
Table 2	Summary of PCB Concentrations in Soil – Excavation Area B
Table 3	Summary of PCB Concentrations in Soil – Excavation Area C
Table 4	Summary of PCB Concentrations in Soil – Excavation Area D

Attachments

Attachment A	Laboratory Analytical Data
Attachment B	Non-hazardous Waste Disposal Manifests
Attachment C	Hazardous Waste Disposal Manifests
Attachment D	Air Monitoring Data

FIGURES

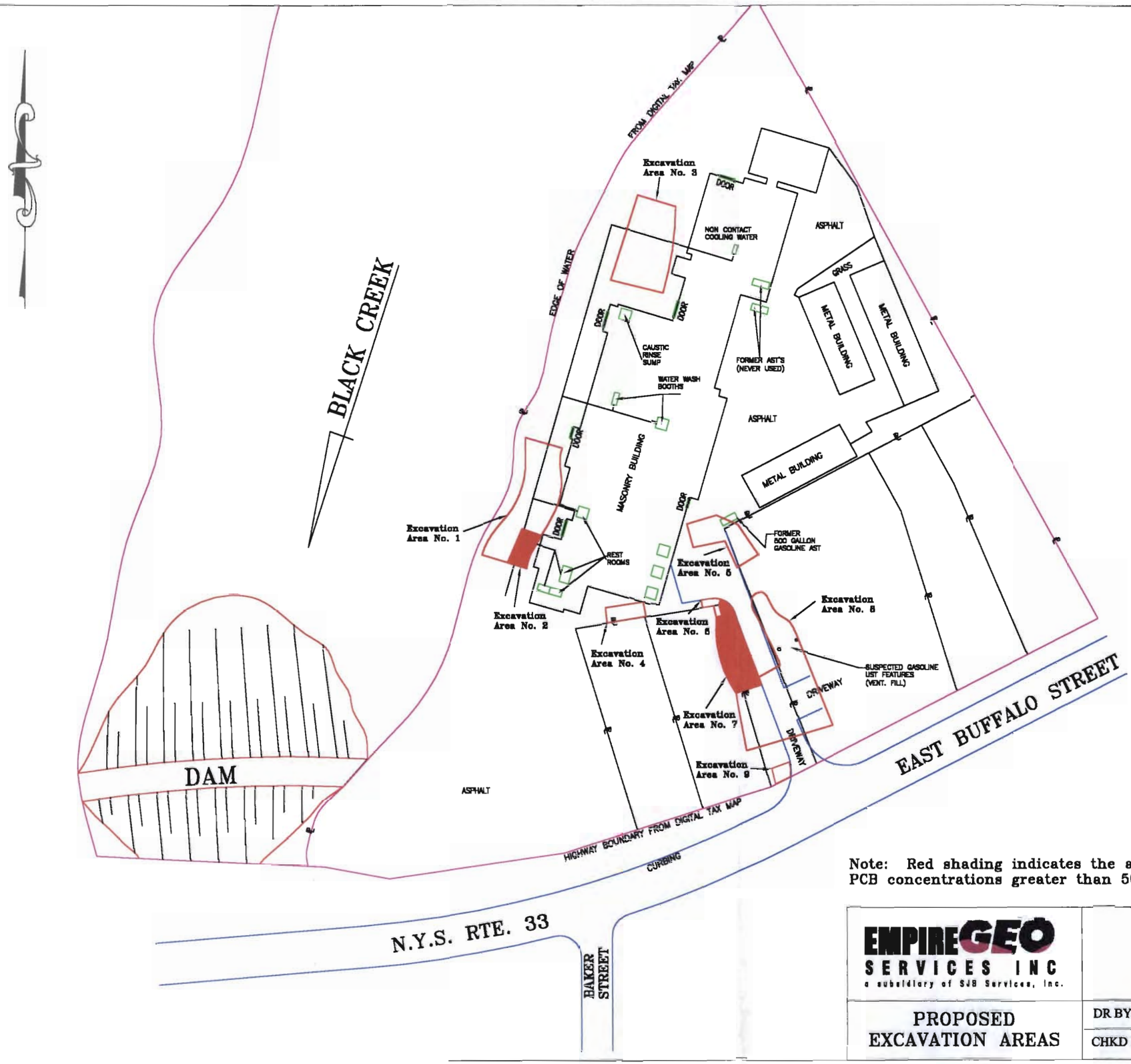


EMPIREGEO SERVICES INC
a subsidiary of SJB Services, Inc.

LUSTER COATE METALLIZING SITE

SITE PLAN

DR BY: YD	SCALE: 1"=40'	PROJ NO.:
CHKD BY:	DATE: 12/02/05	FIGURE NO: 1



Note: Red shading indicates the approximate boundaries of soil with PCB concentrations greater than 50 parts per million

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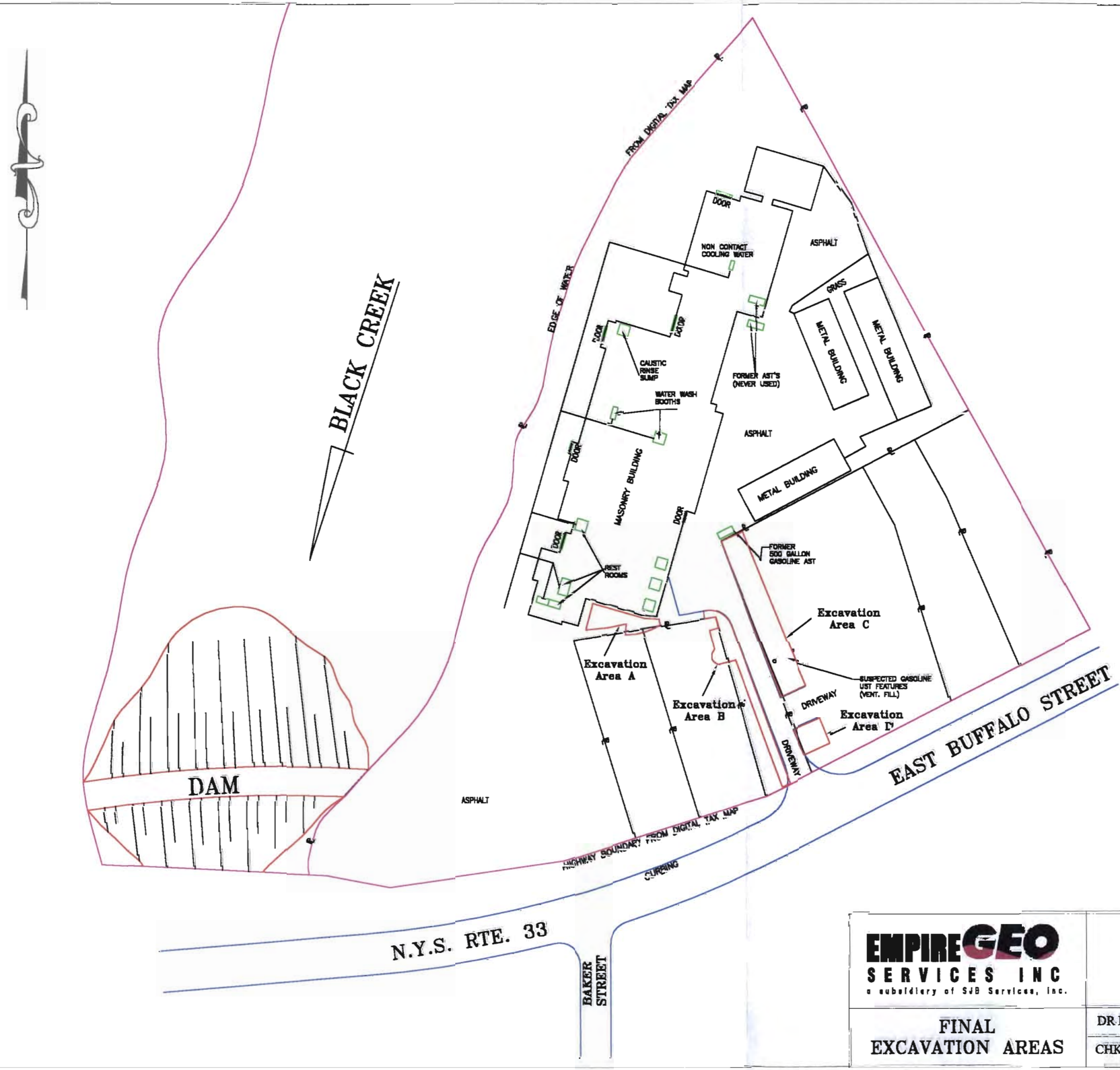
LUSTER COATE METALLIZING SITE

PROPOSED EXCAVATION AREAS

DR BY: YD	SCALE: 1"=40'	PROJ NO.:
CHKD BY:	DATE: 12/02/05	FIGURE NO: 2



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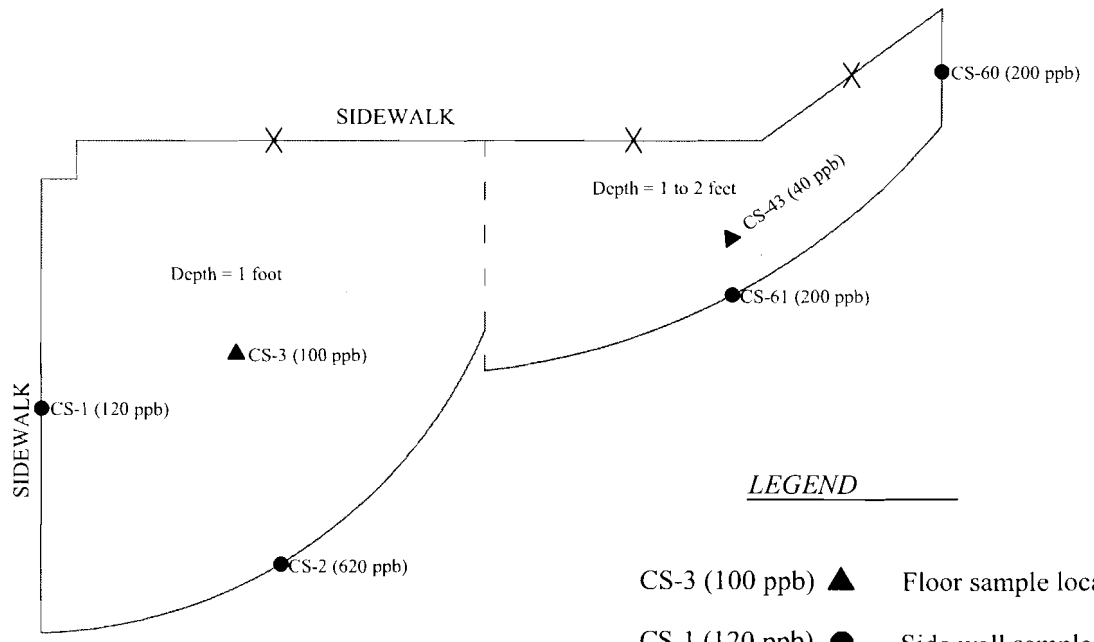
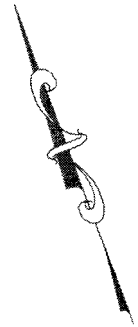
LUSTER COATE METALLIZING SITE

FINAL EXCAVATION AREAS

DR BY: YD	SCALE: 1"=40'	PROJ NO.:
CHKD BY:	DATE: 12/02/05	FIGURE NO: 3





LEGEND

CS-3 (100 ppb) ▲	Floor sample location, identification, and PCB concentration
CS-1 (120 ppb) ●	Side wall sample location, identification, and PCB concentration
×	Side wall sample not collected due to presence of asphalt, concrete, or a structure
– – – –	Boundary between samples
ppb	parts per billion

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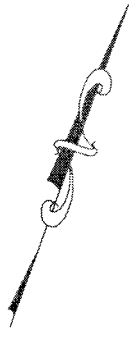
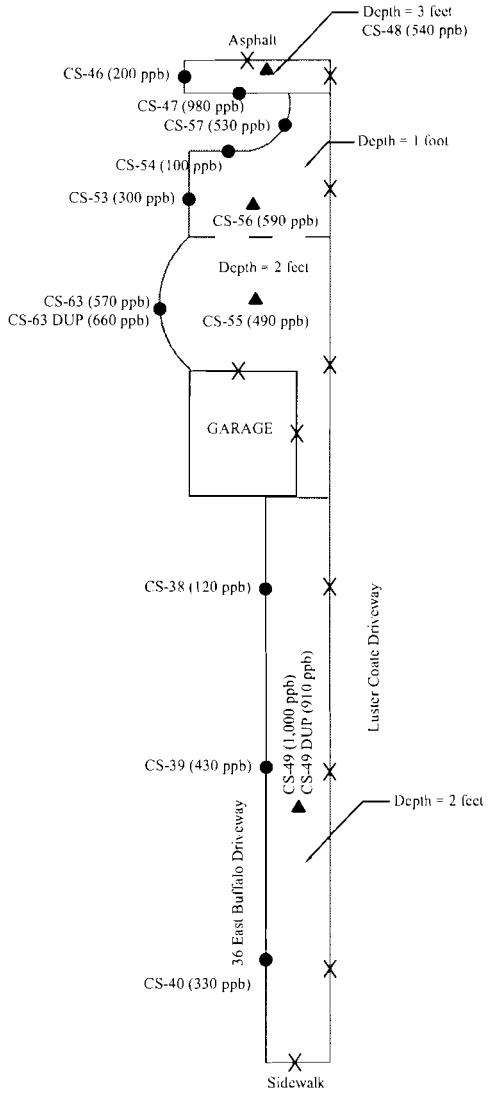
LUSTER COATE METALLIZING SITE

EXCAVATION AREA A

DR BY: JM SCALE: 1"=10' PROJ NO.:

CHKD BY: DATE: 9/13/06 FIGURE NO: 4





LEGEND

CS-55 (490 ppb) ▲ Floor sample location, identification, and PCB concentration

CS-40 (330 ppb) ● Side wall sample location, identification, and PCB concentration

× Side wall sample not collected due to presence of asphalt, concrete, or a structure

– – – – Boundary between samples

ppb parts per billion

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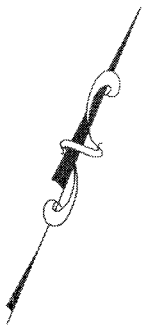
LUSTER COATE METALLIZING SITE

EXCAVATION AREA B

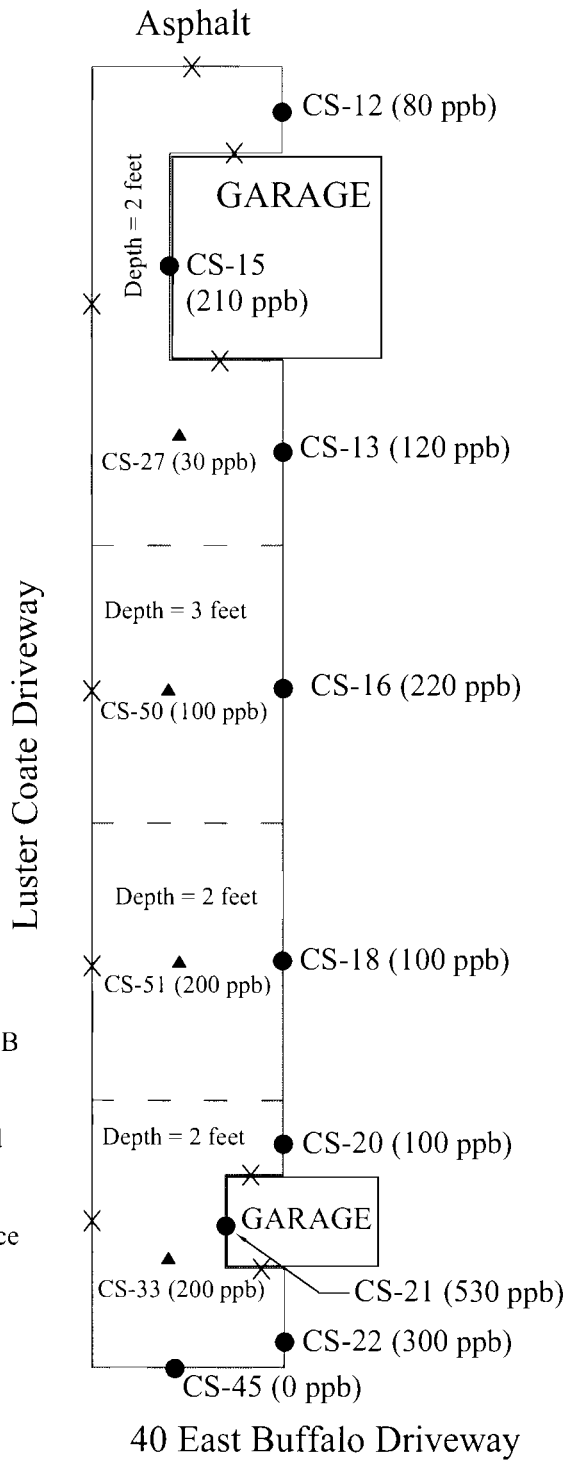
DR BY: JM SCALE: 1"=30' PROJ NO.:

CHKD BY: DATE: 9/13/06 FIGURE NO: 5



LEGEND

CS-33 (200 ppb)	▲	Floor sample location, identification, and PCB concentration
CS-45 (0 ppb)	●	Side wall sample location, identification, and PCB concentration
	×	Side wall sample not collected due to presence of asphalt, concrete, or a structure
	– – – –	Boundary between samples
ppb		parts per billion



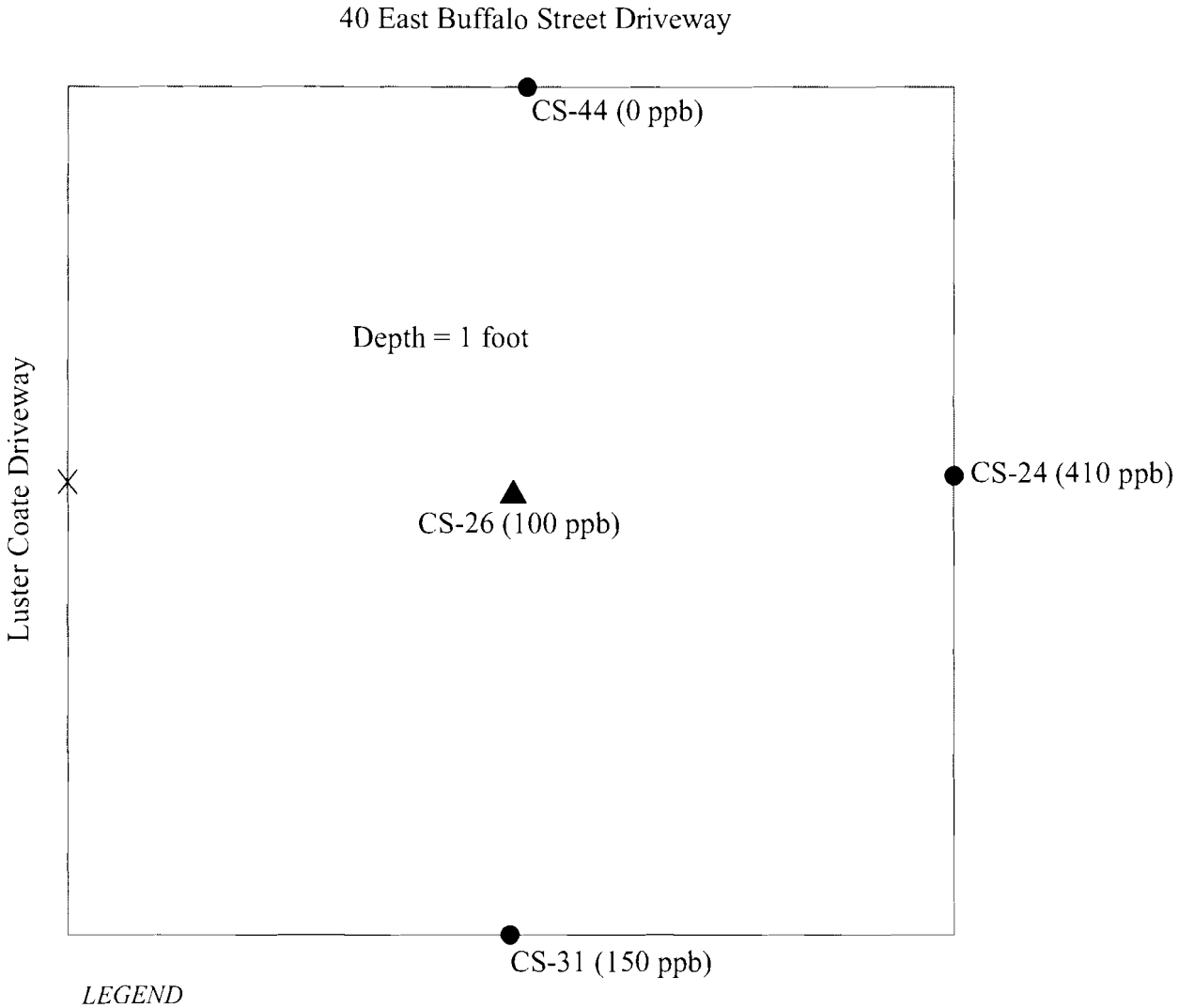
EMPIREGEO SERVICES INC
a subsidiary of SJB Services, Inc.

LUSTER COATE METALLIZING SITE

EXCAVATION AREA C

DR BY: JM | SCALE: 1"=20' | PROJ NO.:

CHKD BY: | DATE: 9/13/06 | FIGURE NO: 6



LEGEND

CS-26 (100 ppb) ▲ Floor sample location, identification, and PCB concentration

CS-31 (150 ppb) ● Side wall sample location, identification, and PCB concentration

× Side wall sample not collected due to presence of asphalt, concrete, or a structure

– – – – Boundary between samples

ppb parts per billion

EMPIREGEO SERVICES INC
a subsidiary of SJB Services, Inc.

LUSTER COATE METALLIZING SITE

EXCAVATION AREA D

DR BY: JM	SCALE: 1"=4'	PROJ NO.:
CHKD BY:	DATE: 9/13/06	FIGURE NO: 7

TABLES

TABLE 1
SUMMARY OF PCB CONCENTRATIONS IN SOIL
EXCAVATION AREA A
Luster Coate Metallizing Site 828113
East Buffalo Street
Churchville, New York

	East Wall	South Wall		West Wall	Floor	
Sample ID:	CS-60	CS-2	CS-61	CS-1	CS-3	CS-43
Date:	06/26/06	05/24/06	06/26/06	05/24/06	05/24/06	06/08/06
PCB Aroclor						
1016	ND	ND	ND	ND	ND	ND
1221	ND	ND	ND	ND	ND	ND
1232	ND	ND	ND	ND	ND	ND
1242	ND	ND	ND	ND	ND	ND
1248	200	590	200	ND	100	ND
1254	ND	ND	ND	100	ND	40
1260	ND	30	ND	20	ND	ND
Total PCBs	200	620	200	120	100	40

NOTES:

1) All samples analyzed by SW8082
2) All concentrations are presented in parts per billion
3) Only final confirmation samples are shown
4) ND denotes not detected at the reporting limit
5) J denotes analyte detected below quantitation limits

TABLE 2
SUMMARY OF PCB CONCENTRATIONS IN SOIL
EXCAVATION AREA B
Luster Coate Metallizing Site 828113
East Buffalo Street
Churchville, New York

	South Wall	West Wall								
Sample ID:	CS-47	CS-38	CS-39	CS-40	CS-46	CS-53	CS-54	CS-57	CS-63	CS-63 DUP
Date:	06/09/06	06/08/06	06/08/06	06/08/06	06/09/06	06/21/06	06/21/06	06/21/06	06/29/06	06/29/06
PCB Aroclor										
1016	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1221	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1232	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1242	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1248	ND	ND	ND	ND	ND	300	100	530	570	660
1254	980	100	400	300	200	ND	ND	ND	ND	ND
1260	ND	20	30	30	ND	ND	ND	ND	ND	ND
Total PCBs	980	120	430	330	200	300	100	530	570	660

	Floor				
Sample ID:	CS-49	CS-49 DUP	CS-48	CS-56	CS-55
Date:	06/12/06	06/12/06	06/09/06	06/21/06	06/21/06
PCB Aroclor					
1016	ND	ND	ND	ND	ND
1221	ND	ND	ND	ND	ND
1232	ND	ND	ND	ND	ND
1242	ND	ND	ND	ND	ND
1248	1,000	910	ND	590	490
1254	ND	ND	540	ND	ND
1260	ND	ND	ND	ND	ND
Total PCBs	1,000	910	540	590	490

NOTES:

1) All samples analyzed by SW8082
2) All concentrations are presented in parts per billion
3) Only final confirmation samples are shown
4) ND denotes not detected at the reporting limit
5) J denotes analyte detected below quantitation limits

TABLE 3
SUMMARY OF PCB CONCENTRATIONS IN SOIL
EXCAVATION AREA C
Luster Coate Metallizing Site 828113
East Buffalo Street
Churchville, New York

	East Wall							
Sample ID:	CS-12	CS-13	CS-15	CS-16	CS-18	CS-20	CS-21	CS-22
Date:	05/30/06	05/30/06	05/31/06	05/31/06	06/01/06	06/01/06	06/01/06	06/01/06
PCB Aroclor								
1016	ND	ND	ND	ND	ND	ND	ND	ND
1221	ND	ND	ND	ND	ND	ND	ND	ND
1232	ND	ND	ND	ND	ND	ND	ND	ND
1242	ND	ND	ND	ND	ND	ND	ND	ND
1248	70	100	200	200	ND	ND	ND	ND
1254	ND	ND	ND	ND	100	100	530	300
1260	10	20	10	20	ND	ND	ND	ND
Total PCBs	80	120	210	220	100	100	530	300

	South Wall	Floor			
Sample ID:	CS-45	CS-27	CS-33	CS-50	CS-51
Date:	06/09/06	06/05/06	06/07/06	06/14/06	06/14/06
PCB Aroclor					
1016	ND	ND	ND	ND	ND
1221	ND	ND	ND	ND	ND
1232	ND	ND	ND	ND	ND
1242	ND	ND	ND	ND	ND
1248	ND	ND	200	ND	ND
1254	ND	30	ND	100	200
1260	ND	ND	ND	ND	ND
Total PCBs	ND	30	200	100	200

NOTES:

1) All samples analyzed by SW8082
2) All concentrations are presented in parts per billion
3) Only final confirmation samples are shown
4) ND denotes not detected at the reporting limit
5) J denotes analyte detected below quantitation limits

TABLE 4
SUMMARY OF PCB CONCENTRATIONS IN SOIL
EXCAVATION AREA D
Luster Coate Metallizing Site 828113
East Buffalo Street
Churchville, New York

	North Wall	East Wall	South Wall	Floor
Sample ID:	CS-44	CS-24	CS-31	CS-26
Date:	06/09/06	06/01/06	06/06/06	06/01/06
PCB Aroclor				
1016	ND	ND	ND	ND
1221	ND	ND	ND	ND
1232	ND	ND	ND	ND
1242	ND	ND	ND	ND
1248	ND	ND	ND	ND
1254	ND	410	150	100
1260	ND	ND	ND	ND
Total PCBs	ND	410	150	100

NOTES:

1) All samples analyzed by SW8082
2) All concentrations are presented in parts per billion
3) Only final confirmation samples are shown
4) ND denotes not detected at the reporting limit
5) J denotes analyte detected below quantitation limits

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Shaw® The Shaw Group Inc.®

PRELIMINARY SITE ASSESSMENT REPORT
Luster-Coate Metalizing Corporation
32 East Buffalo Street
Churchville, New York

November 9, 2005

Submitted to:

New York State Department of Environmental Conservation
625 Broadway
Albany, New York

Submitted by:

Shaw Environmental & Infrastructure Engineering of New York, P.C.
13 British American Boulevard
Latham, New York

X:/MG/Luster-Coate/PSA Report/Final

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EXECUTIVE SUMMARY

Shaw Environmental & Infrastructure Engineering of New York, P.C. (Shaw) has prepared this report to present the results and findings of the Preliminary Site Assessment (PSA) of the property located at 32 East Buffalo Street in the Village of Churchville, New York. Shaw conducted the PSA field investigation between October 25, 2004 and December 3, 2004 on behalf of the New York State Department of Environmental Conservation (NYSDEC). The PSA field investigation included the sampling and analysis of the following matrices: soil gas, surface soils, subsurface soils, groundwater, and sediment. A Supplemental Investigation (SI) of neighboring residential lawns and two identified off-site wells was conducted on April 19, 2005. Additional site information was obtained through historical records review, field testing, and an interview with the Village Superintendent.

Impacts were reported in four separate media (soil vapor, groundwater, surface soils and sediments) across the property. Volatile organic compounds (VOCs), predominately those used as solvents, were identified in the soil vapor and groundwater downgradient of the main facility building. The occurrence of these impacts indicates that a source area could remain beneath the building slab. Polychlorinated biphenyls (PCBs) were reported in the surface soils throughout and off the property and in sediments in the Black Creek bordering the facility. The frequency, distribution, and concentrations of PCBs observed in the shallow intervals indicate that PCB containing oils may have been used historically for dust control in unpaved portions of the site. Semi-volatile organic compounds (SVOCs), predominantly those associated with poly aromatic hydrocarbons (PAHs), were identified in the surface soils north of the building near a culvert which drains the paved portion of the site. An additional area of concern observed during this investigation is indicative of an off-site historic fuel oil release. These impacts are relatively isolated to the driveway accessing the site. The sampling locations displaying these impacts are downgradient of the suspected location of an off-site underground storage tank (UST). This area, although addressed in this PSA, is not actually part of the Subject Property.

Historical records indicate that this property has been utilized as an industrial facility since at least 1929. Some of the reported usages of the site are the manufacturing of wooden toys, condiment bottle processing, canary propagation, bird seed distribution, and most recently metalizing (application of a metal film and paint coatings to plastic materials). Housekeeping

practices of the most recent occupant, Luster-Coate Metalizing, were reported (either through documentation or interviews) to be poor and possibly suspect.

Further delineation of the media and constituents of concern is recommended before formulating a course of remedial action for the site. Additionally, future use of the property will need to be addressed as this will also determine the most feasible remedial options.

1.0 Introduction

Shaw Environmental, Inc. (Shaw) was requested by the New York State Department of Environmental Conservation (NYSDEC) to eonduct a Preliminary Site Assessment (PSA) of the property (Site) located at 32 East Buffalo Street, in the Village of Churchville, Town of Riga, Monroe County, New York. The Site is the former location of Luster-Coate Metalizing Corporation (Luster-Coate). A site location map is provided as **Figure 1**.

1.1 Scope of Services

This PSA was performed to provide a preliminary characterization of the nature and extent of contamination originating at the Site and provide the necessary data to determine if the Site presents a threat to the environment or public health. This study is required to provide sufficient data for site classification under 6 NYCRR Part 375-1.8.

This report identifies areas of the property that possibly require further investigation and provides recommendations for a more detailed Remedial Investigation/Feasibility Study (RI/FS).

A description of the completed project tasks is provided in the following subsections.

1.1.1 Historical Records Review

A detailed records search was performed in accordance with American Society for Testing and Materials (ASTM) E 1527-00, Standard Practice for Environmental Site Assessments. The regulatory review included a review of the following (ASTM Standard and ASTM Supplemental) databases provided by the United States Environmental Protection Agency (USEPA):

- The Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) list;
- The Emergency Response Notification System (ERNS) list;
- The National Priorities List (NPL);
- The PCB Activity Database (PADS);
- The Resource Conservation and Recovery Information System (RCRIS) facilities list;

- The RCRA Administration Action Tracking System (RAATS);
- The Toxic Release Inventory System (TRIS);
- The Toxic Substances Control Act (TSCA) System;
- The Hazardous Materials Incident Report System (HMIRS) list;
- Superfund Consent Decrees (CONSENT) list;
- The Corrective Action Report (CORRACTS) list;
- The Material Licensing Tracking System (MLTS) list;
- Records of Decision (ROD);
- Delisted NPL Sites (Delisted NPL);
- Federal Superfund Liens (NPL Liens);
- The Facility Index System (FINDS) list;
- Mines Master Index File (MINES);
- No Further Remedial Action Planned (CERC-NFRAP) sites;
- Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA)/Toxic Substances Control Act Tracking System (TSCA)-(FTTS) lists;
- A listing of Brownsfields Site (US Brownsfields);
- Indian Reservations (Indian Reserve);
- Formerly Utilized Defense Sites (FUDS);
- Uranium Mine Tailings Site (UMTRA); and
- Department of Defense Sites (DODS).

The following State of New York ASTM standard databases were reviewed:

- Leaking Storage Tank Incident Reports (LTANK);
- State Hazardous Waste Sites (SHWS);
- Registered Petroleum Bulk Storage Tanks (UST);
- The Solid Waste Facilities/Landfill Sites Information (SWF/LS) list;
- Registered Waste Tire Storage and Facility list (SWTIRE); and
- Registered Recycling Facility list (SWRCY).

The following State of New York ASTM supplemental databases were also reviewed:

- Registered Above Ground Storage Tanks (AST);
- The Spills Information Database (NY Spills);
- The Hazardous Substance Waste Disposal Sites (HSWDS) Inventory; and
- The Voluntary Cleanup Agreements (VCP) list.

1.1.2 Historical Information Review

A review of current and past activities conducted on the property was performed. This review included:

- Review of available historical aerial photographs, topographic maps and Sanborn fire insurance maps.

1.1.3 Interviews

Interviews were conducted with individuals familiar with historic site conditions and facility practices. Where feasible, former locations of stored, generated or spilled hazardous materials were verified through the interview process.

1.1.4 Field Investigation

A field investigation was performed to provide additional data to determine the nature and extent of potential contamination from the site. The investigation was designed to address all potential pathways for human exposure as well as any threat to the environment. Through the course of the investigation the following matrices were examined and analyzed:

- Soil Vapor,
- Surface Soils (0- to 2-inches),
- Subsurface Soils (2-inches or greater),
- Groundwater, and
- Black Creek Sediments.

Additionally, all identified sumps and drainage structures associated with the facility were dye tested in an attempt to determine the location of their discharge points. The SPDES outfall, public sewer connection and other possible discharge locations were identified and tested where feasible.

1.1.5 Report Generation

This PSA report was prepared in a manner consistent with the practices established in ASTM Standard E 1527-00. This report summarizes all information obtained through the Historical Records Review and Field Investigations. This report identifies the results of the investigations and sources of information used to develop the conclusions and recommendations.

1.2 Limitations and Exceptions

Shaw has reviewed the information presented herein concerning the potential recognized environmental conditions at the subject site and prepared this report in a professional manner using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. The information contained in this report, including its opinions and conclusions, is based on the information that was made available to Shaw during the investigation and upon the services described which were performed within the time and budgetary requirements of NYSDEC. Because this report is based upon available information, some of its conclusions could be different if the information upon which it is based is determined to be false, inaccurate, or contradicted by additional information.

Shaw makes no representation concerning legal significance of its findings or the value of the property investigation. Shaw has no contractual liability to third parties for the information or opinions in this report. This report is not intended to satisfy the requirements of the National Contingency Plan.

2.0 Site Description

The Luster-Coate site is located in the Village of Churchville, Town of Riga, Monroe County, New York at 32 East Buffalo Street. The surrounding area is mainly residential with some commercial properties along Buffalo Street west of the Site. Black Creek is located along the west and northwest portion of the Site, in close proximity to the main building.

The Site property is approximately 4.5 acres with the majority covered by structures and pavement. The property consists of a main building where manufacturing occurred and warehouse buildings for storage of parts and material. The main building consists of two levels with a footprint of approximately 36,000 square feet with portions reportedly dating to the early 1800's. There are four warehouse buildings of varying sizes ranging from approximately 2,400 to 3,600 square feet reportedly built during the 1900's.

2.1 Location and Legal Description

The Subject Property is located at 32 East Buffalo Street, Churchville, Monroe County, New York, as indicated on **Figure 1**. The tax map designation is 143.10-1-37.

2.1.1 Title Records

A Chain-of-Title was not available at this time.

2.1.2 Environmental Liens or Activity and Use Limitations

No environmental liens were found according to the information provided by the Environmental Data Resources, Inc. (EDR) report.

2.2 Site History

Luster-Coate provided a finishing process which included the application of metal film and paint coatings to plastic materials manufactured off-site. Luster-Coate is currently undergoing Chapter 7 liquidation. Operations at the site appear to have ceased in rapid fashion as drums, pails and vats of chemicals were abandoned on-site. Abandoned materials were characterized and removed from the site by the USEPA in October 2004. Prior to the Luster-Coate operations, the site was reportedly used for a variety of industrial purposes including condiment bottle

processing, canary propagation and wooden toy manufacturing. Industrial activity at the site dates back to at least 1929. Based on historical operations, the primary contaminants of concern on the property are solvents, VOCs and metals, all of which were historically utilized during operations at the facility.

2.3 Previous Investigations

Two previous site assessment investigations of the Site have been identified, however, details of the investigations were either not located or of limited value.

In 2001, ENSR International (ENSR) prepared (on behalf of a third party) an environmental site assessment. The investigation identified several areas of concern, including the former waste storage area, the former above ground storage tank area, the indoor chemical storage area, the building ventilation sump, the caustic rinse sump, and a possible off-site underground fuel storage tank. As part of this investigation, ENSR completed seven borings in the areas of concern, four of which were completed as temporary monitoring wells TW-1, TW-2, TW-3, and TW-4 (**Figure 2**). Soil samples were collected from six of the seven borings and analyzed for VOCs and SVOCs. Three of the seven soil samples collected were also analyzed for metals. Elevated levels of VOCs were detected in the TW-1 sample located near the possible off-site underground fuel tank. Elevated SVOCs were detected in the area of the possible off-site underground fuel tank and caustic rinse sump. Elevated metals were found in the caustic rinse sump and former waste storage area.

In addition to the soil sampling program, a round of groundwater monitoring was also completed. Groundwater samples were collected from the two temporary wells that were not dry (TW-1 and TW-4) and the two pre-existing cooling water supply wells. All samples were analyzed for VOCs and SVOCS, while the TW-4 and a pre-existing cooling water supply well samples were also analyzed for metals. Elevated VOCs were detected in the temporary monitoring well samples, as well as in the cooling water supply well located outside the main building. The groundwater sample analysis from TW-1, located in the caustic rinse sump area, also reported elevated SVOC concentrations.

In the 2001 ENSR site assessment, a 1998 site assessment performed by Secor International is referenced. This report was not located.

In addition to the site assessments the NYSDEC requested (prior to the PSA), that the USEPA characterize and inventory the chemicals abandoned on-site, to determine their appropriate removal action. Results of the characterization and inventory confirmed hazardous waste was abandoned on site. Consequently, the chemicals/hazardous waste were removed by the USEPA on October 25, 2004.

3.0 Records Review

A detailed records search was performed in accordance with American Society for Testing and Materials (ASTM) E 1527-00, Standard Practice for Environmental Site Assessments.

3.1 Standard Environmental Record Sources

A computerized regulatory database search was conducted by EDR for the Facility and up to a one-mile radius surrounding the Facility. A report of database findings was developed by EDR and reviewed by Shaw personnel. A copy of the EDR reports and relevant Site reports are included in **Appendix A**. The findings are summarized in the following subsections. Where deemed necessary or applicable, conversations with regulatory agencies were also conducted.

3.1.1 Federal Database Review

3.1.1.1 Comprehensive Environmental Response Compensation Liability Information System (CERCLIS)

The CERCLIS list includes a list of properties/facilities that are suspected or confirmed to have adversely impacted the environment. The Luster-Coate Metalizing Corporation property was identified on the CERCLIS list. There are no other listed properties located within a one half-mile radius of the Subject Property.

The property is identified as being an abandoned warehouse and production facility containing various containers of paints, varnish, wastewater treatment chemicals and maintenance chemicals. There are no reported site incidents for this facility on the CERCLIS list.

3.1.1.2 Emergency Response Notification System (ERNS)

The ERNS is a national database used to collect information or report releases of oil and hazardous substances. The database contains information from spill reports made to the federal authorities including the USEPA, the U.S. Coast Guard, and the Department of Transportation. The Subject Property was not identified on the ERNS list.

3.1.1.3 National Priorities List (NPL)

The NPL is the USEPA's database of uncontrolled or abandoned hazardous waste sites identified for priority remedial actions under the Federal Superfund Program. The Subject Property was not identified in this database and no NPL sites were noted as being located within a one-mile radius.

3.1.1.4 PCB Activity Database (PADS)

The PADS identifies generators, transporters, commercial storers and/or brokers and disposers of PCBs who are required to notify the USEPA of such activities. The Subject Property was not identified on the PADS list.

3.1.1.5 RCRA Administration Action Tracking System (RAATS)

The RAATS contains records based on enforcement actions issued under the Resource Conservation and Recovery Act (RCRA) pertaining to major violators and includes administrative and civil actions brought by the USEPA. The Subject Property was not identified in this database as a RAATS site.

3.1.1.6 Resource Conservation and Recovery Information System (RCRIS) Facilities List

Under the RCRA program, the USEPA identifies and tracks hazardous waste from the point of generation to the point of disposal (cradle-to-grave). The RCRIS Facilities list is a compilation by the USEPA of reporting facilities that generate, transport, store, treat, or dispose of hazardous waste.

The Subject Property was identified as Luster-Coate Metalizing Corporation in the RCRIS-Large Quantity Generator (LQG) database. The USEPA Identification number for the facility is NYD002216125; the owners are listed as Stockholders, with a contact of John Beaman. According to the NY Manifest information available through the EDR Site Report, the document ID number is NYA5969592 and the Trans1 State ID number is R60503NY. The waste code description for materials generated at the facility is D001 – Non-listed Ignitable Wastes. Approximately 770 gallons of this material was listed as burned in 14 metal drums or barrels. The facility received five listed notices of violations. All reported violations have achieved compliance. A copy of this detailed report provided by EDR is included in **Appendix A**.

One RCRIS-Small Quantity Generator (SQG) was identified within a quarter mile of the facility as the Churchville Arrow Mart, located at 2 East Buffalo Street. The USEPA-ID number for this facility is NY0000041616; the owner is listed as Crawford Oil Company, Inc. This facility is listed as a conditionally exempt small quantity generator. Generated materials categorized as non-listed ignitable wastes.

No RCRIS-Transportation, Storage and Disposal (TSD) sites were identified within a one half-mile distance from the Subject Property. No other RCRIS-SQG or RCRIS-LQG sites were identified within a one-quarter mile distance from the property.

The Luster-Coate Metalizing Corporation facility is not active and therefore, no longer generates materials. The facility was inventoried and emptied of all stored chemicals on October 25, 2004. The inventory of materials removed from the facility by the USEPA is included as **Appendix B**.

3.1.1.7 Toxic Release Inventory System (TRIS)

The TRIS identifies facilities, which release toxic chemicals to the air, water, and land in reportable quantities under SARA Title III Section 313. The Subject Property was not identified on the TRIS list.

3.1.1.8 Toxic Substance Control Act (TSCA) System

The TSCA system list contains information on facilities that manufacture or import toxic chemicals. The Subject Property was not identified on the TSCA system list.

3.1.1.9 Hazardous Materials Incident Report (HMIRS)

The HMIRS list contains hazardous material spill incidents reported to the Department of Transportation. These spill incidents are not necessarily listed in ERNS. The Subject Property was not identified in this database.

3.1.1.10 Superfund Consent Decrees (CONSENT)

The CONSENT database contains information regarding major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. This information is released periodically by the United States District Courts after settlement by parties to litigation matters.

The Subject Property was not identified in this database, and no CONSENT sites were identified as being located within a one-mile radius of the Subject Property.

3.1.1.11 Corrective Action Report (CORRACTS)

The CORRACTS database identifies hazardous waste handlers with RCRA corrective action activity. The Subject Property was not identified in this database, and no CORRACTS sites were identified as being located within a one-mile radius of the property.

3.1.1.12 Material Licensing Tracking System (MLTS)

The MLTS database is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites, which possess or use radioactive materials and which are subject to NRC licensing requirements. The Subject Property was not identified in this database.

3.1.1.13 Records of Decision (ROD)

ROD documents mandate a permanent remedy at an NPL (Superfund) site and contain technical and health information to aid in the cleanup. The Subject Property was not identified in this database and no ROD sites were identified within a one-mile radius of the Subject Property.

3.1.1.14 Delisted NPL Sites (Delisted NPL)

The Delisted NPL database contains a list of facilities, which have been deleted from the NPL. The Subject Property was not identified in this database. Delisted NPL sites were not identified within a one-mile radius of the Subject Property.

3.1.1.15 Federal Superfund Liens (NPL Liens)

Under the authority granted the USEPA by the Comprehensive Environmental Response, Compensation and Liability ACT (CERCLA) of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner receives notification of potential liability. The NPL Liens database contains a list of filed notices of Superfund Liens. The Subject Property was not identified in this database.

3.1.1.16 Facility Index System (FINDS)

The FINDS database contains both facility information and "pointers" to other sources that contain more detail. The Subject Property was identified in this database and is listed in the following EPA Records:

- Aerometric Information Retrieval System/AIRS Facility Subsystem;
- Comprehensive Environmental Response, Compensation and Liability Information System;
- National Emissions Inventory;
- Resource Conservation and Recovery Act Information System; and
- Toxics Release Inventory.

The SIC code associated with the facility is 3999, indicating "Manufacturing Industries, Not Elsewhere Classified". The following NAICS codes are associated with the facility: 33221 and 332813. NAICS codes require six digits; this first code, 33221, only contains five digits, research of this property concluded that the number should be either 332211 or 332212 indicating Hand and Edge Tool Manufacturing. The second code, 332813, indicates Electroplating, Plating, Polishing, Anodizing and Coloring.

3.1.1.17 No Further Remedial Action Planned Sites (CERC-NFRAP)

CERC-NFRAP sites may be sites where, following an initial investigation, no contamination was found, contamination was removed quickly without the need for site to be placed on the NPL, or the contamination was not serious enough to require Federal Superfund action or NPL consideration. The Subject Property was not identified on the CERC-NFRAP list and no CERC-NFRAP Sites were identified within a quarter-mile radius from the Subject Property.

3.1.1.18 Mines Master Index File (MINES)

According to the Department of Labor, Mine Safety and Health Administration maintained MINES list, there are no MINES sites located within a quarter-mile radius of the Subject Property.

3.1.1.19 Federal Insecticide, Fungicide, & Rodenticide Act (FIFRA)/Toxic Substances Control Act Tracking System (TSCA) - (FTTS)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA, and the Emergency Planning and Community Right-to-know Act (EPCRA).

The Subject Property was not identified on the FTTS database.

3.1.2 State Database Review

3.1.2.1 Leaking Storage Tank Incident Report (LTANK)

LTANK records contain an inventory of reported leaking underground storage tank incidents. A review of the regulatory files provided by EDR revealed that the Subject Property does not contain an LTANK site. One LTANK site exists within a one-half mile radius of the property:

- Churchville Tire and Supply, 46 South Main Street

This LTANK number has been closed, which indicates cleanup met NYSDEC standards and that no further activity is planned.

3.1.2.2 State Hazardous Waste Sites List

State hazardous waste site records are New York States equivalent to CERCLIS. These sites may or may not be already listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds are identified along with sites where potentially responsible parties will pay for cleanup.

A review of the State Hazardous Waste Sites list indicates that the Subject Property was not included on the list. No State Hazardous Waste Sites were identified within a one-mile radius of the Subject Property.

3.1.2.3 Solid Waste Facility Information System List

The NYSDEC maintains a database of solid waste management facilities it is aware of through reporting and applications to construct and operate such facilities.

A review of the Solid Waste Facility Information System List revealed that the Subject Property was not included on the list. No State waste facility/landfills were identified within a one half-mile radius of the Subject Property.

3.1.2.4 Registered Underground Storage Tanks (UST), Chemical Bulk Storage (CBS) UST, and Major Oil Storage Facilities (MOSF) UST

The NYSDEC maintains a database of facilities that have registered petroleum or regulated hazardous substance USTs or onshore facilities or vessels (with petroleum storage capacities of 400,000 gallons or greater) in accordance with federal and state requirements. This information typically contains a description of the USTs, products stored, age, construction, and status. Not all USTs require notification due to size and use provisions of these regulations. The Subject Property was not identified in these databases.

Three UST sites were identified within a quarter mile radius of the Subject Property:

- Churchville Arrow Mart, 2 East Buffalo Street;
- George's Arco Service, 4 West Buffalo Street; and
- Agway Energy/Fluor Mill, 35 South Main Street.

No MOSF UST sites were identified within a one-half mile radius, of the Subject Property.

3.1.2.5 Spills Information Database (NY Spills)

The NYSDEC maintains a database of spill information associated with leaking underground storage tanks and other types of spills. The Luster-Coate Metalizing facility was identified on the NY Spills list. There are four spills identified in the EDR report:

1) **Spill Number: 8710200**

Spill Date: 03/05/1988 14:30

Spill Cause: Fire at facility, drums of neutralizing agent aflame but contained without spill. No chemical discharge to Black Creek except fire washoff.

Material Spilled: Kerosene

Spill Close Date: 04/15/1988

2) **Spill Number: 9512910**

Spill Date: 01/16/1996 04:10

Spill Cause: Drum containing solid waste products from a spray booth had a hot spot. Moved drums outside, fire department used water to cool drum and then relieved pressure inside drum.

Material Spilled: Non petroleum/non hazardous wastewater

Spill Close Date: 01/16/1996

3) **Spill Number: 9008174**

Spill Date: 10/26/1990 07:00

Spill Cause: Fire at facility involving pole shed containing Polystyrene and paints. Some runoff entered Black Creek via storm sewer with a very slight hydrocarbon sheen noted on water.

Material Spilled: Paints/polystyrene

Spill Close Date: 10/31/1990

4) **Spill Number: 0370107**

Spill Date: 05/20/2003

Spill Cause: Additional information about material spilled from translation of old spill file: Styrene fire. Warehouse containing styrene plastic parts caught fire.

Material Spilled: Lead, Mercury

Spill Closed Date: Not reported

During the file review conducted on March 30, 2005, this spill (0370107) was reported as having been closed on March 18, 2005.

3.1.2.6 Hazardous Substance Waste Disposal Sites (HSWDS)

The NYSDEC maintains a database of known or suspected hazardous substance waste disposal sites. Also included are sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites and non-registry sites, which USEPA Preliminary Assessment (PA) reports or Site Investigation (SI) reports were prepared. The Subject Property was not identified on the HSWDS list. No HSWDS were identified to be located within a half-mile radius of the Subject Property.

3.1.2.7 Voluntary Cleanup Agreements (VCP)

The NYSDEC maintains a database of sites listed in a voluntary remedial program, where private monies are used to get contaminated sites remediated to levels allowing for the site's productive use. The Subject Property was not identified on the VCP list. No VCP sites were identified as being located within a one-half mile radius from the Subject Property.

3.1.3 Orphan Sites

EDR identified 11 orphan sites in the database search. Orphan sites are sites for which a geographic location cannot be pin pointed because of insufficient information on the address. A spill was registered for Black Creek; the spiller is identified as "Lester Coate", this is presumed to be a typographical error and assumed to be Luster-Coate. According to the database, on June 10, 1996, an unknown amount of paint was deliberately dumped into the creek. This release was assigned spill number 9603364. The NYSDEC closed this spill on October 2, 2001; although, cleanup standards were not met. A copy of this detailed report provided by EDR is included in **Appendix A**.

3.2 Additional Environmental Record Sources

3.2.1 Sensitive Receptors and Wetlands

The primary concerns associated with sensitive receptors and wetlands are:

- Federal and state environmental regulations often limit an owner's ability to modify his/her property when sensitive receptors or wetlands are potentially impacted; and
- The potential of a release or discharge from a facility to impact a sensitive receptor or wetland.

According to the EDR report the National Wetlands Inventory (NWI), includes wetlands along portions of the Black Creek near the Subject Property. There are three other wetland areas noted within a half-mile radius of the Subject Property. Additional wetland areas are located over a half-mile from the Subject Property.

According to the USGS wetlands map (Churchville Quadrangle), the facility borders the Black Creek. The Black Creek upstream of the dam is a wetland area identified as RG-14.

Shaw did observe wetlands-type areas associated with the Black Creek during the site visits. Shaw personnel did not observe any other indications of additional wetlands in the immediate vicinity of the Subject Property.

3.2.2 Radon

Radon is a gas, which can seep into structures constructed in areas with soils and bedrock containing radium. Radon may travel through the soil and enter the structures through cracks and holes in basement walls or floors, drains, or other openings.

Based on information provided by the Radon Section of the EDR Report, a total of 582 sites in Monroe County were tested. The average radon activity in the living area of these tested sites was 0.930 pCi/L. The average radon activity in the basement area of the tested sites was 1.440 pCi/L. The Monroe County average values of the living and basement areas are below the USEPA regulatory action level of 4.0 pCi/L. It should be noted the only definitive method of identifying specific radon levels for a particular site is to conduct a radon study on-site.

3.3 Physical Setting Source

3.3.1 Site Topography

According to the Churchville USGS Topographic Quadrangle, the property elevation is approximately 570 feet above mean sea level (MSL). Relief tends to be moderately sloping to the west in the immediate vicinity of the Subject Property. A steep bank, along the western edge of the property, leads down to the Black Creek.

3.3.2 Local Geology

3.3.2.1 Bedrock Geology

The *Geologic Map of New York*, Niagara Sheet (Rickard and Fisher 1970) depicts the Churchville area as being underlain by the Upper Silurian aged Vernon Formation, the lowest member of the Akron Dolostone, Cobleskill Limestone and Salina Group. This formation consists of interbedded shales and dolostone. In this area of Monroe County, the Vernon Formation consists of massive, poorly stratified brick-red shale with some gray-green shale, shaly dolostone, sandstone and green-black shale. Salt beds occur in the middle of the Vernon Formation in the Genesee River Valley. A review of logs from gas wells drilled across New York State indicate a facies change from red shale in the east, mixed red and green shale, then green or gray shale and dolostones and finally dolostones with anhydrite and halite in the west (Rickard, 1966).

The contact of the Lockport Dolostone, principal member of the Lockport Group, underlying the Vernon Formation is mapped near the Village of Churchville.

3.3.2.2 Surficial Geology

Approximately 5,000 to 8,000 years ago the final stage of glaciation, the Wisconsin, shaped the prominent features of Monroe County. Evidence of glacial lakes, drumlins, moraines, eskers and kames occur throughout the county and point to the glacial and glaciofluvial processes which shaped the landscapes observed today. The Hilton-Ontario series soils have been formed from glacial till without reworking by moving water. The *Surficial Geologic Map of New York*, Niagara Sheet (Caldwell, 1988) indicates that the area of the Site is covered by ground moraine deposits, "dominantly lodgment till; silty clay till and sandy till; compact and generally impermeable". This type of till is transported by, and lodged beneath actively flowing ice of the continental ice sheet and typically consists of varying amounts of clay, silt, sand and larger clasts mixed together and deposited by the glacier. Glaciofluvially derived deposits, consisting of lake-laid sand, silt and clay, are mapped to the south and west of the Village of Churchville.

3.3.2.3 Local Hydrology

Locally hydrology is governed by the presence of the Black Creek. The dam located immediately south of the facility serves to maintain a higher water level in the upstream areas for

recreation and aides in control during flood events. This dam also decreases the rate of flow and current in this portion of the creek, thus increasing the amount of siltation. Local groundwater direction is westward across the site toward Black Creek.

3.4 State File Review

A file review was conducted at the NYSDEC Region 8 offices on March 30, 2005. Files from the Divisions of Environmental Permits, Water, Solid and Hazardous Materials and Spills were reviewed.

3.5 Interviews

Conversations with Mr. Dave Adams the Village of Churchville Superintendent, reported that housekeeping practices at the facility was poor and possibly suspect. Mr. Adams is also an operator/manager of the town waste water treatment plant and former volunteer firefighter.

As a volunteer firefighter, Mr. Adams said the department responded to multiple small fires in the ventilation ducts and building interior as well as the two major structure fires in 1988 and 1990.

While operating the waste water treatment plant, Mr. Adams described incidences where the influent to the plant would reach a pH of 12-14. These occurrences would usually happen after the plant staff had left for the day. Luster-Coate had a permit to discharge wastes to the city sewer system only after it had been treated and reached a neutral pH. Mr. Adams noted that these incidences with the extremely basic influent, ceased at the same point that the Luster-Coate facility closed down.

Mr. Adams suggested contacting two former employees of Luster-Coate, Mr. John Luce and Mr. Bob Weime for further information regarding housekeeping practices within the facility. Both these men worked at the facility in the maintenance department. At this time, these gentlemen have not been contacted.

4.0 Field Investigation

Shaw conducted the PSA field investigation between October 25 and December 3, 2004 on behalf of the NYSDEC. Analytical services were provided through Mitkem Corporation. In total, the PSA field investigations included sampling and analysis of the following matrices: soil gas, surface soils, subsurface soils, groundwater and sediment. Additionally, all identified sumps and drainage structures associated with the facility were dye tested in an attempt to determine their discharge locations.

Sample locations, frequencies, depths and analytes associated with the PSA field investigations were consistent with the NYSDEC-approved Final Project Management Work Plan (September 2004). All field and analytical activities were performed in accordance with the Sampling and Analysis Plan and Quality Assurance Project Plan (September 2004), respectively.

During all phases of the ground intrusive investigation two photo ionization detectors (PIDs) were in constant use. Field personnel monitored ambient air at locations throughout the site as a part of daily activities. At the request of the New York State Department of Health (NYSDOH) dust meters were added to the air monitoring protocols during the installation of the monitoring wells. At no point during the multiple phases of this investigation did activities at the site adversely affect the air quality within the work zone or in the surrounding community.

In accordance with the Occupational Safety and Health Administration (OSHA) Hazardous Waste Operations and Emergency Response (HAZWOPER) Regulation 29 CFR 1910.120, a Shaw Certified Industrial Hygienist (CIH) developed a site-specific Health and Safety Plan (HASP). The HASP was periodically revised to reflect current regulations and alterations to the scope of work. A copy of this HASP remained on site while fieldwork was performed. All field personnel, including sub-contractors and observers, involved with the completion of this investigation, signed the document acknowledging that they have read and fully understand its contents prior to the start of any work.

All field personnel had a minimum of 40 hours of initial hazardous waste training and annual eight hours of refresher training. Personnel are also required to have three days of field experience under direct supervision of an experienced professional. Those training requirements comply with the OSHA HAZWOPER regulation 29 CFR 1910.120.

Shaw personnel recorded no health and safety incidents during the completion of this PSA.

4.1 Soil Vapor Survey

Twenty soil gas points were installed between October 25 and October 26, 2004 in locations exhibiting potential environmental concern to assess the soil vapor quality. This survey was concentrated in the area between the main building on the property and the creek. Soil vapor sampling points were selected based on the following criteria: locations of facility processes within the building, chemical and waste storage area and direction of presumed groundwater flow. These sampling points are identified as SG-01 through SG-20 (**Figure 3**).

Sampling locations SG-01 through SG-14, exterior locations, were installed to a depth of 2.5 feet below ground surface (bgs) using direct push methods (truck mounted Geoprobe). Sampling locations SG-15 through SG-20 were located within the facility's main structure and were installed through the concrete slab flooring to a similar depth using a jack hammer (**Figure 3**). All locations were screened with a PID equipped with an 11.7 eV lamp.

Four locations (SG-9, SG-14, SG-17, and SG-18) were selected for additional TO-15 analysis based on previously sampled locations (SG-9, SG-14 and SG-18) and elevated PID readings (SG-17). Two of the selected locations (SG-9 and SG-14) were located outside between the building and the creek. Interior sampling locations (SG-17 and SG-18) were placed in areas of primary concern (chemical storage areas).

PID readings and TO-15 analysis of the soil gas survey locations are summarized in **Tables 1** and **2**. The complete data package on compact disc (CD) is included as **Appendix C**.

4.1.1 Soil Vapor PID Readings

PID readings were collected at the soil vapor sampling locations. PID readings collected at locations outside the building ranged from 0.0 parts per million vapor (ppmv) to 151 ppmv. PID readings collected from locations within the building ranged from 0.0 ppmv to 1,550 ppmv.

4.1.2 Soil Vapor TO-15 Analysis

Immediately following the PID screening, selected locations (SG-9, SG-14, SG-17 and SG-18) were set-up for one hour soil vapor sampling. Sampling points were constructed using

approximately 5 feet of polyethylene tubing, sand and moistened bentonite to create an air-tight seal. These locations were left sealed overnight.

On October 27, 2004, the locations were purged with the PID and sampled using one hour regulators and 6-Liter summa canisters. A Blind Duplicate sample was collected from the SG-17 location and labeled SG-Dup. Subsequent to the sampling, the summa canisters and regulators were sent via Federal Express for overnight delivery to Mitkem Corporation's subcontracted laboratory, Severn Trent Laboratories, Inc. in Santa Ana, California.

The summary of the analytical results, presented in **Table 1**, indicate detections of VOCs typically used as solvents beneath the building slab. There is a notable difference in the results from SG-17 and SG-Dup even though both samples were collected at a similar time at the same location. This discrepancy can be attributed to the fact that the canister for SG-17 was opened just prior to the canister for SG-Dup, therefore receiving the initial 'gulp' of air in the soil pore space.

4.2 Surface Soil

Ten surface soil samples were collected on October 25 and 26, 2004 from the 0- to 2-inch interval to assess the quality of the soils most likely to contact humans or impact the environment (**Figure 4**). Locations selected for sample collection were downgradient or proximate to suspected areas of environmental concern. One sample was collected at an upgradient location in order to establish site background conditions. Sampling points are identified as SS-01 through SS-10.

Surface soil sample SS-02 was installed through the asphalt parking lot with the aid of the geoprobe. Several locations had to be relocated in the field due to accessibility issues. The southeast corner sumps were filled in with junk and trash making it impossible to collect samples through their bottoms. Surface soil sample SS-07 was collected at a depth of six to eight feet bgs on October 28, 2004. This was performed in order to obtain a sample from the same interval as the bottom of the southeast corner sumps. Surface soil sample SS-08 was relocated to the western portion of the building and installed next to a large vault (DT-08). The location of SS-10 was added during the field investigation due to the identification of an eight inch culvert, which is the discharge point for the catch basin in the paved area to the east.

All ten samples were analyzed for the following constituents:

- SVOCs via EPA Method 8270, and
- Total Metals via EPA Methods 6010/7471.

Three of the samples (SS-01, SS-02 and SS-04) were initially selected for additional analysis for the following constituents:

- Pesticides via EPA Method 8081, and
- Polychlorinated Biphenyls (PCBs) via EPA Method 8082.

Following a review of the initial analytical results for the site, surface soil samples SS-03, SS-06 and SS-10 were selected for an additional analysis of PCBs. These samples were analyzed outside the standard two week holding time. Quality control samples, (i.e. duplicate, matrix spike/matrix spike duplicate) were collected from the SS-04 and SS-01 locations, respectively. An equipment blank was also collected from the sampling equipment on October 25, 2004. At the conclusion of daily sampling activities, collected samples were packed on ice and shipped via Federal Express for overnight delivery to Mitkem Corporation (Mitkem) in Warwick, Rhode Island. A summary of the analytical results is presented in **Tables 3**, **4**, **5** and **6**. Complete laboratory data packages on CD are included in **Appendix C**.

4.2.1 SVOC Surface Soil Results

SVOC concentrations detected in samples SS-01, SS-02, SS-06 and SS-10 exceeded the NYSDEC Division of Hazardous Waste Remediation (HWR) Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Cleanup Levels (TAGM) 4046 (April 1994) Recommended Soil Cleanup Objectives (RSCOs). Analytes exceeding the RSCO are primarily SVOCs within the PAH range. All other analytes were either not detected at or above the laboratory method detection limit or were detected at concentrations below the RSCO.

4.2.2 Surface Soil Total Metals

All analyzed samples contained Calcium and Magnesium at concentrations exceeding the TAGM 4046 RSCO. Zinc was detected at concentrations exceeding the RSCO in all surface soil samples, with the exception of SS-04. Nickel was detected at concentrations exceeding the

RSCO in all surface soil samples, with the exception of SS-05, SS-07 and SS-08. Additionally Cadmium was detected in the sample SS-01 at a concentration of 1.2 mg/kg, exceeding the RSCO of 1 mg/kg.

4.2.3 Surface Soil Pesticides Results

Several pesticides were detected in SS-01 and SS-02. Of the pesticides detected, only dieldrin detected in SS-02 exceeded its NYSDEC TAGM 4046 RSCO.

4.2.4 Surface Soil PCB Results

PCBs were detected in all surface soil samples that were analyzed for PCBs. Concentrations of PCBs ranged from 130 µg/kg in SS-04 to 320,000 µg/kg in SS-01. PCBs were detected above the NYSDEC TAGM 4046 RSCO in SS-01, SS-02, SS-03, and SS-06.

4.3 Subsurface Soils

Seven soil borings were installed in locations around the building to assess the soil quality in areas exhibiting potential environmental concern and to better characterize subsurface conditions. Four of the seven borings were installed downgradient of the main building. The purpose for this placement was to determine if any contamination was reaching the Black Creek from the facility. Sampling points are identified as SB-01 through SB-07 (**Figure 5**) with the sample depth interval indicated and to better characterize subsurface conditions. Borings were installed to a depth of 30 feet bgs or refusal using a hollow stem auger.

Installation of soil borings began on October 25, 2004 via direct push methods using a truck mounted geoprobe rig. Attempts were made to install borings at the SB-02 and SB-03 locations. The geoprobe encountered probe refusal on hard till at 17.5 feet bgs, thus, SB-02 was unable to reach the target depth of 30 feet bgs. At the SB-03 location, the geoprobe was unable to maintain an open hole due to sandy material overlying the hard till. Due to these encountered problems, the method of soil boring installation was changed direct push to hollow stem auger. The SB-02 location was abandoned at 17.5 feet bgs. Hollow stem augers were able to advance the remaining soil borings to the desired target depth of 30 feet. A geologist logged all soils encountered, complete drill logs are included in **Appendix D**. All soil samples collected were headspace screened using a PID. All drill cuttings generated during this phase of work were containerized and staged onsite pending disposal.

Soil borings SB-01, SB-03 and SB-06 were completed as 1 inch diameter piezometers, PZ-01, PZ-02 and PZ-03, respectively. The temporary piezometers were installed to determine the direction of groundwater flow across the site. Because PZ-01 is located in an active driveway, it was completed with a flush mounted road-box. Following the installation of the soil borings and piezometers, the entire site was surveyed to generate an accurate map with the sampling locations and obtain groundwater elevations and flow direction.

Soil samples were collected from either the soil/water interface or the interval displaying the highest impacts based on visual observations and PID headspace readings. A second soil sample was collected from SB-06 during the piezometer installation because the augers were able to advance six feet past what had previously been thought to have been refusal. This second sample was collected due to elevated PID readings encountered in the 20- to 24-foot interval. All soils selected for sample collection were analyzed for the following:

- VOCs via EPA Method 8260,
- SVOCs via EPA Methods 8270,
- Total Metals via EPA Methods 6010/7471, and
- Total Organic Carbon (TOC) via EPA Method 9060.

Three of the sample locations (SB-01, SB-04 and SB-07) were selected for additional analysis for the following constituents:

- Pesticides via EPA Method 8081, and
- PCBs via EPA Method 8082.

The selection process for these analyses was based on visual observations during installation and areas suspected of impacts.

A Blind Duplicate sample was collected from the SB-07 location and labeled SB-Dup. A Matrix Spike and Matrix Spike Duplicate (MS/MSD) sample set was collected at the SB-06 sample location. An Equipment Blank was performed on the sampling equipment on October 29, 2004. A summary of the analytical results is presented in **Tables 7**, **8**, **9**, **10** and **11**. Complete laboratory data packages on CD are included in **Appendix C**.

4.3.1 Subsurface Soil VOCs

VOCs were detected in four of the seven subsurface soil samples. Only one analyte (Total Xylenes) detected at location SB-01 exceeded its NYSDEC TAGM 4046 (RSCO). None of the remaining reported VOC concentration exceeded their respective NYSDEC TAGM 4046 RSCO.

4.3.2 Subsurface Soil SVOCs

SVOCs were detected in four of the seven subsurface soil samples. None of the reported SVOC concentrations exceeded their respective NYSDEC TAGM 4046 RSCO. Bis(2-ethylhexyl) phthalate a known laboratory artifact was detected in the method blanks for several samples.

4.3.3 Subsurface Soil Metals

Metals were detected in all seven subsurface soil samples. The reported concentrations for magnesium exceeded the NYSDEC TAGM 4046 RSCO in all soil boring locations, with the exception of SB-06 (4' – 6'). Calcium also exceeded the RSCO in all of the subsurface soil samples, with the exception of SB-02 (8' – 10') and SB-06 (4' – 6'). Additionally, zinc and barium were individually detected above the RSCO in SB-06 (4' – 6') and SB-03 (28' – 29'), respectively.

4.3.4 Subsurface Soil Total Organic Carbon

Total organic carbon samples were collected at all soil boring locations. Concentrations of organic carbon ranged from 4,400 mg/kg (SB-07) to greater than 42,000 mg/kg (SB-03).

4.3.5 Subsurface Soil Pesticides

Pesticides were not detected any soil sample analysis.

4.3.6 Subsurface Soil PCBs

Subsurface samples were collected for PCB analysis from the SB-01, SB-04 and SB-07 boring locations. No Aroclor compounds were detected at or above the laboratory method detection limit in the analyzed samples, with the exception of Aroclor 1248 detected in the sample collected from soil boring SB-01 (6' – 14') at a concentration of 510 µg/kg.

4.4 Groundwater Sampling

Four 2-inch diameter PVC monitoring wells (MW-01, MW-02, MW-03 and MW-04) were installed in the locations of SB-03/PZ-02, SB-06/PZ-03, SB-07 and SB-05. One temporary piezometer (PZ-1) remained at soil boring location SB-01. The monitoring wells were installed on November 11 and 12, 2004 using a hollow stem auger drill rig and finished with protective stick up casings. Construction logs for these monitoring wells are included in **Appendix E**. As mentioned in the previous section one soil sample was collected from the SB-06 location when drilling efforts exceeded the limit of previous screened soils. All soils generated from monitoring well installation were containerized and staged onsite pending disposal.

The monitoring wells were developed using a self contained low flow submersible pump following installation. During the well development, the discharge water was monitored every 15 minutes for the following parameters:

- Turbidity,
- Specific Conductivity,
- pH, and
- Temperature.

Table 12 summarizes the results of the well development process. The well development field sheets generated are included as **Appendix F**. Water produced during development was containerized and staged onsite pending disposal.

The newly developed monitoring wells were allowed to sit for two weeks prior to the scheduled groundwater sampling event. The newly installed monitoring wells were professionally surveyed to provide accurate groundwater elevations. Prior to sampling a round of synoptic water levels were taken on December 1, 2004 at the four new monitoring wells and the piezometer PZ-01. **Figure 7** illustrates groundwater contours designed for this site using the data collected. The resulting groundwater flow direction is westward toward the Black Creek.

Three to five well volumes were purged from the monitoring wells and the piezometer. The water supply wells were not purged prior to sampling due to the greater depth and amount of water that would be generated. The following groundwater parameters were collected prior to purging, after each purge volume and prior to sampling:

- Specific Conductivity,
- pH,
- Temperature,
- Oxidation/Reduction Potential, and
- Dissolved Oxygen.

A summary of the readings collected during the sampling event is included in **Table 13**. Monitoring well field data sheets for this event are included as **Appendix G**.

Groundwater samples collected from the four monitoring wells, two previous existing cooling water supply wells, and one piezometer were analyzed for the following parameters:

- VOCs via EPA Method 8260,
- SVOCs via EPA Method 8270,
- Total Metals via EPA Methods 6010/7471,
- Pesticides via EPA Method 8081, and
- PCBs via EPA Method 8082.

Due to the lack of a standard sand pack, the groundwater sample collected from the PZ-01 location was filtered in the laboratory to remove suspended materials. A Blind Duplicate sample was collected from the MW-03 location and labeled MW-Dup. A Matrix Spike and Matrix Spike Duplicate (MS/MSD) sample set was collected at the MW-02 sample location. An Equipment Blank was performed on the sampling equipment on November 30, 2004. A summary of the analytical results is presented in **Tables 14**, **15**, **16**, **17** and **18**. Complete laboratory data packages on CD are included in **Appendix C**.

4.4.1 Groundwater VOCs

The overburden monitoring wells MW-02 through MW-04 show varying concentrations of chlorinated solvent based compounds exceeding the New York State Groundwater Quality Standard (NYSGWQS).

Trichloroethene was detected below the laboratory method detection limit at an estimated concentration of 1 µg/L in monitoring well MW-01.

The groundwater sample collected from piezometer PZ-01 shows elevated concentrations of benzene, toluene, ethylbenzene and xylenes (BTEX) compounds typically associated with petroleum products. Sixteen of the 68 analyzed compounds exceeded their respective NYSGWQS in the sample collected from PZ-01.

Groundwater samples collected from the deeper water supply wells did not detect any VOC compounds above the NYSGWQS. Meth tert-butyl ether (MTBE) was detected in water supply well WSW-02 below the laboratory method detection limit at an estimated concentration of 1 µg/L.

Methylene Chloride was only detected in the equipment blank at a concentration of 6 µg/L; methylene chloride is a known laboratory artifact and this detection may not be indicative of the sampling equipment used.

4.4.2 Groundwater SVOCs

Piezometer PZ-01 contained four SVOCs (2-methylphenol, 4-methylphenol, naphthalene and 2-methylnaphthalene) at concentrations exceeding their respective NYSGWQS. No other SVOCs were detected at or above the laboratory method detection limits in the groundwater collected from monitoring wells MW-01 through MW-04 and water supply wells WSW-01 and WSW-02.

4.4.3 Groundwater Metals

The concentrations of iron, magnesium and sodium exceeded the NYSGWQS in all of the groundwater samples collected. Antimony concentrations exceeded the NYSGWQS in all of the groundwater samples collected with the exception of the sample collected from water supply well WSW-01. Similarly, aluminum concentrations exceeded the NYSGWQS in all of the groundwater samples collected with the exception of the sample collected from water supply well WSW-02. Cobalt was detected at concentrations exceeding the NYSGWQS of 5 µg/L in four of the seven sampled locations (MW-01, MW-02, MW-03 and PZ-01). Manganese was also detected at four locations (MW-01, MW-02, MW-04 and PZ-01) at concentrations exceeding the NYSGWQS of 300 µg/L. Thallium was reported in four samples (MW-03, MW-Dup, PZ-01 and WSW-02) above the NYSGWQS of 0.5 µg/L. Monitoring well MW-02 and piezometer PZ-01 contained concentrations of vanadium above the NYSGWQS of 14 µg/L.

4.4.4 Groundwater Pesticides

Pesticides were not detected at or above the laboratory method detection limits in any of the groundwater samples collected during this sampling event.

4.4.5 Groundwater PCBs

Aroclor compounds were not detected at or above the laboratory method detection limits in any of the groundwater samples collected during this sampling event.

4.5 Sediment Samples

Five sediment samples (SED-01 through SED-05) were collected from the Black Creek to determine if former activities at the facility have impacted the creek. Sampling locations were focused on the portion of the creek proximate to the Luster-Coate facility (**Figure 8**). Sediment samples were collected by boat using a hand auger sludge sampler from the selected locations in the Black Creek on November 1, 2004. The sediment intervals collected for analysis were the upper two foot interval of material on the creek bed.

The upgradient location of sediment sample SED-01 was selected to establish background levels within the Black Creek. The sample was collected in one foot of water, approximately 75 feet from the western bank. The intent of SED-02 was to sample the location of the SPDES outfall, however the exact location of the SPDES outfall could not be identified. Therefore, the location of sediment sample SED-02 was based on visual alignment with the facility's pump house. The sample was collected 10 feet off shore in approximately 2 feet of water. The location of sample SED-03 was collected roughly half the distance down stream to the dam, 15 feet off the eastern bank in one foot of water. SED-04 was located approximately 50 feet upstream of the dam and 50 feet west of the Luster-Coate parking lot. The water in this location was 2 feet in depth. Initially the location of SED-05 was 50 feet off the western bank directly across from the SED-04 location. At this location the depth of the creek had increased to approximately 10 feet and the sediment matrix had changed from silt to more of a loose sand and gravel. These factors reduced the sampler recovery. The SED-05 point was relocated twice in order to obtain enough material for analysis. The final sampling location was moved approximately 10 feet off the western bank.

Sediment samples were analyzed for the following parameters:

- VOCs via EPA Method 8260,
- SVOCs via EPA Method 8270,
- Total Metals via EPA Methods 6010/7471,
- Pesticides via EPA Method 8081, and
- PCBs via EPA Method 8082.

Summaries of the analytical results are presented in **Tables 19, 20, 21, 22** and **23**. Complete laboratory data packages provided on CD are included in **Appendix C**. A Blind Duplicate sample was collected from the SED-04 location and labeled SED-Dup. A Matrix Spike and Matrix Spike Duplicate (MS/MSD) sample set was collected at the SED-03 sample location. An Equipment Blank was performed on the sampling equipment on November 1, 2004.

4.5.1 Sediment VOC

VOCs were detected in all five sediment samples; however, no VOC concentrations detected exceeded the NYSDEC TAGM 4046 RSCO. Methylene chloride was detected in the method blank and several of the samples. As previously stated, methylene chloride is a common laboratory artifact.

4.5.2 Sediment SVOCs

SVOCs were detected were in all four sediment samples (SED-02, SED-03, SED-04, and SED-05). Of the SVOCs detected only one SVOC compound (chrysene) of 0.4 mg/kg was detected at concentrations above the NYSDEC TAGM 4046 RSCO at three sampling locations (SED-02, SED-03 and SED-05). All other SVOCs were detected at concentrations below the RSCO.

4.5.3 Sediment Metals

Metals were reported in all five sediment samples. The reported concentrations for zinc exceeded the NYSDEC TAGM 4046 RSCO (20 mg/kg or site background) in all of the samples collected. Additionally, Cadmium was detected above the RSCO (1 mg/kg or site background) in sediment samples SED-02, SED-03 and SED-04. Excluding the metals listed above, the remaining metal concentrations reported are within their respective eastern background standards given in TAGM 4046.

4.5.4 Sediment Pesticides

Pesticides were detected in three of the five sampling locations (SED-01, SED-02, and SED-05). Only one pesticide, aldrin, exceeded the NYSDEC TAGM 4046 RSCO of 41µg/kg in the sample SED-01. All other detected pesticide concentrations were below the RSCO.

4.5.5 Sediment PCBs

PCBs were detected in two sample locations, SED-02 and SED-03. Aroclor 1248 was detected in sediment samples SED-02 and SCD-03 at concentrations of 22,000 µg/kg and 2,800 µg/kg, respectively. Both of these Aroclor concentrations exceed the NYSDEC TAGM 4046 RSCO of 1,000 µg/kg.

4.6 Dye Testing

All drainage structures (catch basins, sumps, outfalls, etc) were identified through historical research and field reconnaissance. These locations were given alpha numeric designations DT-01 through DT-11 (**Figure 9**) and investigated on November 8 and 9, 2004. Two colors (red and yellow/green) of biodegradable, non-toxic dye were used to identify the discharge points of the identified structures. Outlet monitoring was conducted visually at the POTW station or the closest assumed outlet. **Appendix H** contains a photographic log of these investigations and tests.

The southeast corner sumps, which were the proposed locations of DT-10 and DT-11, were filled in with old equipment and assorted trash; these dye testing locations were abandoned. The catch basin location DT-09 was obtained through review of historic aerial photos and may have been a shadow in the photos, as there is no evidence of a catch basin at this location.

Field investigation revealed that the proposed DT-02 and DT-08 locations contained solid bottoms with no outlet. Because of the lack of an outlet these locations were not dye tested.

The outfall of the catch basin DT-01 was assumed to be the eight inch culvert located near surface soil sample SS-10. This was confirmed by using approximately 50 gallons of non-colored water.

Dye test location DT-03 was identified in a closet-like room in the lower portion of the building. Approximately 50 gallons of yellow/green dye solution was poured in the sump labeled DT-03.

The solution drained steadily from the sump. None of this solution was observed in the POTW manhole.

The proposed location of DT-04 was a round clay tile sump located in the northeast corner labeled 'Caustic Rinse Sump'. Investigation of this structure indicated that it is approximately two feet in diameter and two feet deep and contains liquid. A 2-inch fire hose runs from a rinse box into this sump location. The sump structure has two areas opposite each other for inlet and outlet but these appear to be closed. No dye was introduced in the location because of the lack of an open outlet.

The structure identified as location DT-05 was found in the basement under the western portion of the building. Shaw personnel were unable to remove the grate over this structure. Approximately 40 gallons of dye solution was introduced through the grate into the structure. This dye solution was not observed at the downgradient monitoring conducted at the POTW manhole. The dye solution was not observed in the creek or along the western bank.

Approximately 40 gallons of yellow/green dye and water solution was introduced into the sump labeled DT-07. The solution appeared to drain extremely slowly from the sump, with only a few inches draining during a two hour period. At the same time plain water was introduced into the sump labeled DT-06. Clear water was used to avoid any confusion at the POTW monitoring point. DT-06 drained at a slightly faster rate than DT-07. During this monitoring, no water (yellow/green or clear) was observed traveling through the POTW manhole.

4.7 Quality Assurance/Quality Control Samples

4.7.1 Field instrument calibration

Equipment utilized during the field investigation (PID and dust-meter) were calibrated in accordance with the manufacturer's specification before the start of daily activities. The results of the calibrations were noted in the field notebook. Additionally, instruments were recalibrated or checked as necessary during the course of daily activities.

4.7.2 QA/QC Sample Collection

QA/QC samples were collected for five percent (one out of every 20 samples) of the total collected samples for each matrix analyzed. These QA/QC samples included the following:

- Equipment Blanks taken on the materials and equipment used for sample collection.
- Blind Duplicates taken from the identical matrix as the original sample but labeled in a manner so as not to reveal the connection,
- Matrix Spike/Matrix Spike Duplicate samples were collected from identical matrices to ensure sufficient sample volume for these analyses, and
- Trip Blanks were included with all shipments containing samples collected for VOC analysis

These QA/QC samples show that all sampling and analysis protocols were followed as specified in the SAP.

4.8 Data Validation

All analytical data generated throughout the course of this investigation was sent out for third party validation. Environmental Data Services reviewed all the data packages and generated a Data Usability Report (DUSR). A copy of this report is included as **Appendix I**.

5.0 Summary and Conclusions

5.1 Summary

Based on the Scope of Work defined in **Section 1.0** and the findings of the Preliminary Site Assessment described in **Sections 2.0**, **3.0**, and **4.0** of this report, Shaw has prepared the following summary of potential recognized environmental conditions associated with the Subject Property. The conclusions are based on the conditions present during the on-site investigation and the information provided through interviews and document reviews provided prior to the submission of this report.

A preliminary site investigation of the Luster-Coate Metalizing Corporation property was completed. Shaw personnel observed and noted several environmental concerns associated with the property. Consequently Shaw recommends a supplemental investigation to further address and delineate identified media and constituents of concern.

5.1.1 Soil Vapor Survey

Air quality within the vadose zone appears to be impacted in the areas beneath the building slab. The highest impacts appear to be associated with the chemical storage areas near SG-17 and SG-18. VOCs are observed at decreased concentrations in exterior sampling locations SG-09 and SG-14. Areas requiring further investigation are indicated on **Figure 10**. The selection process for these areas was based upon an encountered PID reading above 50 ppmv or a total VOCs concentration greater than 5 $\mu g/m^3$.

5.1.2 Surface Soil Samples

Results of the surface soil sampling show that there are shallow impacts along the corridor between the main building and the creek (**Figure 11**). Additionally, shallow impacts were observed along the access driveway below the transformer platform and near the culvert at the northern end of the building. A majority of the analytes exceeding the RSCO in these shallow locations are SVOCs in the PAH family, metals, and Aroclor 1248.

5.1.3 Subsurface Soil Samples

Most of the analyzed subsurface soil samples were within the TAGM 4046 RSCO, with a few exceptions (**Figure 12**). Soil boring SB-01 was installed in the driveway downgradient of a suspected UST. Analysis of this sample indicated Xylene (Total) and Aroclor 1248 concentrations above the RSCO.

Other detected analytes are indicative of those associated with petroleum products.

Magnesium and Calcium were also detected at concentrations above the RSCO in many of the analyzed subsurface soils.

5.1.4 Groundwater

As illustrated on **Figure 13** monitoring wells MW-02 through MW-04 installed along the eastern bank of the Black Creek show VOC impacts in the chlorinated solvent range. Piezometer PZ-01 contains concentrations of VOCs and SVOCs impacts constant with those found in degraded fuel oils. The selected background monitoring well MW-01 shows no evidence of VOC or SVOC impacts.

The deeper water supply wells, WSW-01 and WSW-02, have historically contained VOC impacts above the NYSGWQS. Current analysis indicates both locations are within the New York State standards and showed significant improvements in groundwater quality.

5.1.5 Sediment sampling

Results of the sediment sampling indicate that Aroclor 1248 is present along the eastern bank of the Black Creek (**Figure 14**). Concentrations are highest nearest the site and decrease downgradient from the site. One SVOC (Chrysene) was also observed in the sediments above the RSCO. Additionally, a pesticide exceeding the RSCO was observed at the up gradient location.

5.1.6 Dye Testing

The results of the dye testing were inconclusive. No dyes were observed in the POTW manhole, in the creek or along the bank. Due to the amount of time that has elapsed since the plant was

active, it is quite possible that many of these outlets and associated pipe could be obstructed or clogged.

5.2 Conclusions

The field investigation revealed four separate groups of media and constituents of concern across the property. A summary of the analytical data collected during the PSA and subsequent SI is presented as **Table 24**.

Chlorinated solvent impacts were found predominantly downgradient of the main building. Impacts were not observed in the subsurface soils but were significant in the groundwater, leading to the conclusion that a source area remains beneath the building slab. The results of the soil gas survey also confirm this hypothesis. **Appendix J** contains two figures taken from Luster-Coate Metalizing Corporation's Hazardous Waste Contingency Plan amended September 10, 1993. These figures highlight areas of the facility where hazardous wastes were generated, stored and dispensed. Approximate locations of sampling points from this investigation have been super imposed on these figures. Sampling points in or downgradient of these highlighted portions of the building show elevated VOC and chlorinated solvent impacts. The highlighted area in Figure 2 – *General Site Plan Ground Level* is thought to be the location of the suspected source area.

Aroclor 1248 was detected throughout the property in surface soils and in the sediments along the western bank of the Black Creek. Aroclor 1248 was historically used in capacitors and transformers. The frequency and distribution in which this compound was observed across the site in the upper intervals, may indicate that oils containing Aroclor 1248 may have been historically used for dust control in unpaved areas. Aroclor 1248 could also have been spread across the site during one of the many fires through fire water or an ignited transformer.

SVOCs, primarily those in the PAH range, were detected at elevated concentrations in the surface soil sample SS-10. This sample location is the discharge point for a culvert which connects to a catch basin in the paved area to the east. Run-off generated from fighting the 1988 and 1990 structure fires at the site would have drained through this catch basin and discharged to the ground at the SS-10 sample location.

The area downgradient of the suspected UST shows impacts indicative of a historic fuel oil release. Impacts consistent with this material were observed in both the subsurface soils and in the groundwater.

6.0 Recommendation

Further investigation of this property is necessary to delineate these media and constituents of concern. Knowledge of the proposed future use of the property is also necessary in order to determine the most appropriate remedial action.

Due to the high frequency Aroclor impacts encountered in the surface soils across the facility, a subsequent investigation of the surrounding residential properties is recommended. Thorough assessment of these surficial impacts throughout the site and surrounding properties must be completed before determining the most feasible remedial action. The SI was performed by Shaw on April 19, 2005. This investigation focused on the surface soil and groundwater quality in the surrounding residential area. The report generated from this investigation is included as **Appendix L**. Aroclor impacts were further delineated along the access driveway. SVOC impacts in the PAH range were also identified east of the catch basin in the paved area. This location (SS-25) is topographically lower than the paved area and may have incurred some run-off during the fire fighting efforts of 1988 and 1990.

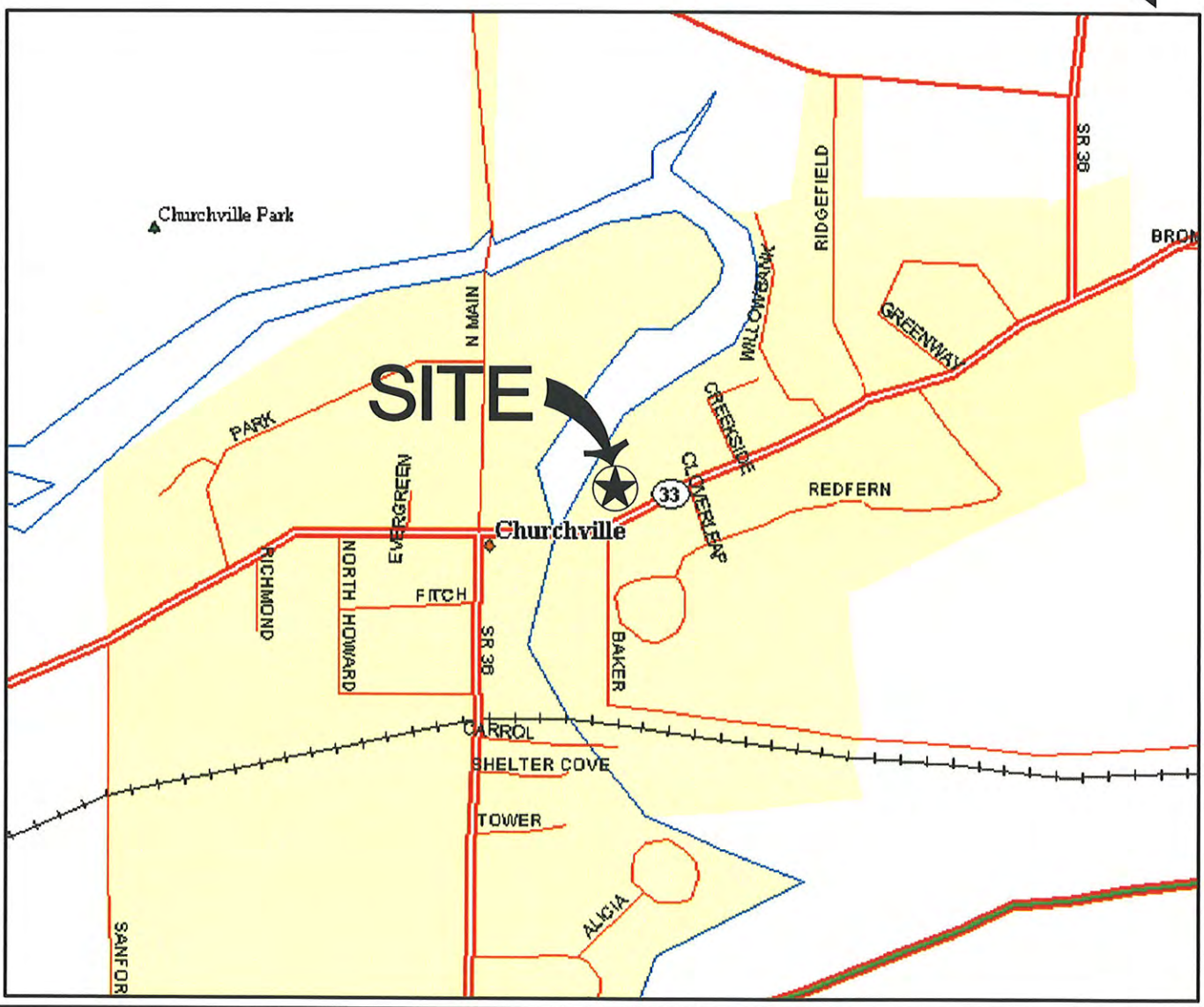
The suspected VOC source area under the western portion of the building could be assessed through additional soil vapor points or subslab soil samples. These rooms should be thoroughly inspected for any cracks or possible locations where substances may have entered the subsurface.

Additional sediment samples should be collected from the portion of the creek which borders the facility. The focus of this investigation should be delineation of the observed Aroclor impacts and possible downgradient migration of the VOC impacts from the building area. Removal methods for these impacted sediments will be dependent on the distribution and quantities encountered.

The suspected UST is not actually part of the Luster-Coate property, but the adverse affects were observed during this investigation. It is recommended that the UST be properly closed in place or removed and potential downgradient receptors be investigated for possible impacts.

FIGURES

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	07/16/04	NA	S. SHKOLNIK			109220A1



NOT TO SCALE

REFERENCE:

MAP FROM DELORME'S MAP EXPERT, FREEPORT, MAINE.

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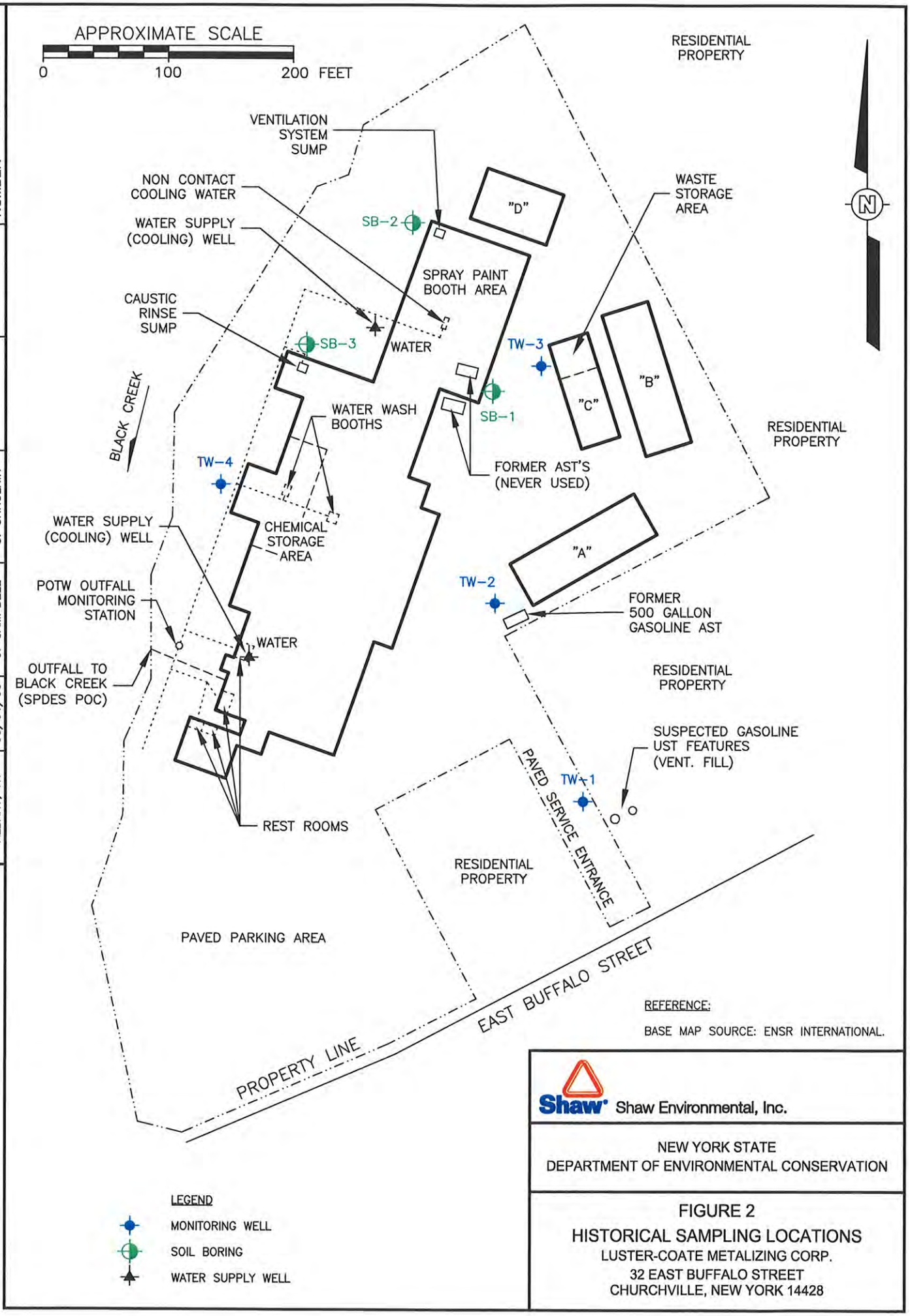
NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 1

SITE LOCATION MAP

LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

L:\project\DEC\CHURCHVILLE\109220A1.dwg
Plot Date/Time: 06/27/05 10:15am Xref: .
Plotted by: Samuil.Shkolnik Image: CHURCHVI



OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	03/01/05	C. CAMPBELL	S. SHKOLNIK			109220A17

REFERENCE:

BASE MAP SOURCE: ENSR INTERNATIONAL.

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NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 2

HISTORICAL SAMPLING LOCATIONS

LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

L:\project\DEC\CHURCHVILLE\109220A17.dwg
Plot Date/Time: 06/27/05 10:17am Xref: .
Plotted by: Samuil.Shkolnik Image: .

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D2

Xref:

Image:

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Plot Date/Time: 09/15/05 02:11pm
Plotted by: Samuel.Shkolnik

NYS GRID NAD 27

FROM DIGITAL TAX MAP

EDGE OF WATER

BLACK CREEK

SG-07 10/25/04 52.3

SG-06 10/25/04 26.2

SG-08 10/25/04 151.0

SG-09 10/26/04 0.0 10/27/04 845

SG-10 10/25/04 25.7

SG-11 10/25/04 21.0

SG-12 10/25/04 14.5

SG-17 10/26/04 1,550 10/27/04 15,990,400

SG-13 10/25/04 13.6

SG-14 10/26/04 0.0 10/27/04 256.4

SG-19 10/26/04 68.9

SG-20 10/26/04 0.0

SG-05 10/25/04 28.2

SG-15 10/26/04 25.6

SG-16 10/26/04 10.6

SG-18 10/26/04 68.9 10/27/04 15,738

SG-04 10/25/04 6.3

SG-03 10/25/04 74.6

SG-02 10/25/04 0.0

SG-01 10/25/04 0.0

MW-01 MW-02 MW-03 MW-04

WSW-01 WSW-02

6" CULVERT

NON CONTACT COOLING WATER

CAUSTIC RINSE SUMP

WATER WASH BOOTHS

MASONRY BUILDING

4" SEWER CLEANOUT

OUTFALL TO BLACK CREEK (SPDES POC)

POTW-MH 1

REST ROOMS

ELEVATED TRANSFORMER PAD ON POLES

SOUTHEAST CORNER SUMPS

FORMER 500 GALLON GASOLINE AST

FORMER AST'S (NEVER USED)

SUSPECTED GASOLINE UST FEATURES (VENT. FILL)

ASPHALT

GRASS

METAL BUILDING

METAL BUILDING

METAL BUILDING

DRIVEWAY

DRIVEWAY

DOOR

IPF

CB

DAM

EAST BUFFALO STREET

HIGHWAY BOUNDARY FROM DIGITAL TAX MAP

CURBING

N.Y.S. RTE. 33

BAKER STREET

APPROXIMATE SCALE
0 40 80 120 FEET

LEGEND

- SG-05 — SOIL VAPOR SAMPLE LOCATION
- WSW-01 — WATER SUPPLY WELL
- MW-01 — MONITOR WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB — CATCH BASIN

SG-17	SAMPLE LOCATION
10/27/04	DATE
1,550	PID READING (ppmv)
10/27/04	DATE
15,990,400	TOTAL VOC (ug/m^3)

SG-04	SAMPLE LOCATION
10/25/04	DATE
6.3	PID READING (ppmv)

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

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FIGURE 3
SOIL VAPOR SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D1

Xref:

Image:

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Plot Date/Time: 09/15/05 01:18pm
Plotted by: Samuil.Shkolnik

NYS GRID NAD 27

FROM DIGITAL TAX MAP

EDGE OF WATER

SS-10
10/26/04
787,240
209,993.37
110
NS

6" CULVERT

SS-09
10/26/04
175
177,813.39
NS
NS

SS-04
10/25/04
522
185,042.68
130
ND

SS-03
10/25/04
1,493
107,357.01
4,500
NS

SS-06
10/25/04
50,912
94,475.56
6,200
NS

SS-05
10/25/04
2,901
128,735.47
NS
NS

SS-08
10/26/04
82
207,738,54
NS
NS

SS-02
10/25/04
153,210
192,487.54
15,000
312

SS-07
10/28/04
270
140,912,315
NS
NS

SS-01
10/25/04
37,100
148,924,608
320,000
661

MW-01
MW-02
MW-03
MW-04
WSW-01
WSW-02
SS-01
SS-02
SS-03
SS-04
SS-05
SS-07
SS-08
SS-09
SS-10

DOOR
NON CONTACT COOLING WATER
CAUSTIC RINSE SUMP
WATER WASH BOOTHS
MASONRY BUILDING
4" SEWER CLEANOUT
OUTFALL TO BLACK CREEK (SPDES POC)
POTW-MH
REST ROOMS
ELEVATED TRANSFORMER PAD ON POLES
SOUTHEAST CORNER SUMPS
FORMER 500 GALLON GASOLINE AST
FORMER AST'S (NEVER USED)
SUSPECTED GASOLINE UST FEATURES (VENT. FILL)
ASPHALT
GRASS
METAL BUILDING
METAL BUILDING
METAL BUILDING
DRIVEWAY
DRIVEWAY
IPF
CB
BLACK CREEK
DAM
EAST BUFFALO STREET
HIGHWAY BOUNDARY FROM DIGITAL TAX MAP
CURBING
N.Y.S. RTE. 33
BAKER STREET

APPROXIMATE SCALE
0 40 80 120 FEET

LEGEND

- SS-07 — SURFACE SOIL SAMPLE LOCATION
- WSW-01 — WATER SUPPLY WELL
- MW-01 — MONITOR WELL
- P/L — APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB — CATCH BASIN

SS-05	SAMPLE LOCATION
10/25/04	DATE
2,901	TOTAL SVOC (ug/kg or ppb)
128,735.47	TOTAL METALS (mg/kg or ppm)
NS	TOTAL PCB (ug/kg or ppb)
NS	TOTAL PESTICIDES (ug/kg or ppb)
ND	NOT DETECTED
NS	NOT SAMPLED

NOTE: SS-07 TAKEN AT A DEPTH OF 6'-8' BELOW GROUND SURFACE.

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

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FIGURE 4
SURFACE SOIL SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D3

Xref:
Image:

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Plot Date/Time: 09/15/05 01:39pm
Plotted by: Samuil.Shkolnik

NYS GRID NAD 27

FROM DIGITAL TAX MAP

EDGE OF WATER

8" CULVERT

SB-04
10/27/04
10'-12'
14
190
75,515.50
ND
ND

SB-05
10/28/04
3
326
539
125,854.03
NS
NS

SB-02
10/26/04
8'-10'
10
110
61,262.86
NS
NS

SB-07
10/28/04
ND
14'-20'
43
1,000
63,956.24
ND

SB-03
10/26/04
28'-29'
13
170
289,111.04
NS
NS

SB-06
10/28/04
4'-6'
102
370
32,690.81
NS
NS

SB-06
11/10/04
20'-24.2'
ND
420
175,089.34
NS
NS

SB-01
10/29/04
6'-14'
55,403
2,680
125,856.82
510
ND

NON CONTACT COOLING WATER

WSW-01

WSW-02

SB-01

SB-02

SB-03

SB-04

SB-05

SB-06

SB-07

ASPHALT

GRASS

METAL BUILDING

METAL BUILDING

METAL BUILDING

DOOR

CAUSTIC RINSE SUMP

WATER WASH BOOTHS

MASONRY BUILDING

FORMER AST'S (NEVER USED)

FORMER 500 GALLON GASOLINE AST

ELEVATED TRANSFORMER PAD ON POLES

SOUTHEAST CORNER SUMPS

OUTFALL TO BLACK CREEK (SPDES POC)

POTW-MH

REST ROOMS

SUSPECTED GASOLINE UST FEATURES (VENT. FILL)

DRIVEWAY

DRIVEWAY

BLACK CREEK

DAM

ASPHALT

HIGHWAY BOUNDARY FROM DIGITAL TAX MAP

CURBING

EAST BUFFALO STREET

N.Y.S. RTE. 33

BAKER STREET

APPROXIMATE SCALE
0 40 80 120 FEET

LEGEND

- SB-01 ⊙ SUBSURFACE SOIL LOCATION
- WSW-01 WATER SUPPLY WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB CATCH BASIN

SB-02	SAMPLE LOCATION
10/26/04	DATE
8'-10'	DEPTH
10	TOTAL VOC (ug/kg or ppb)
110	TOTAL SVOC (ug/kg or ppb)
61,262.86	TOTAL METALS (mg/kg or ppm)
NS	TOTAL PCB (ug/kg or ppb)
NS	TOTAL PESTICIDES (ug/kg or ppb)
ND	NOT DETECTED
NS	NOT SAMPLED

NOTE:
SB-01, SB-03 AND SB-06 FINISHED AS PIEZOMETERS.

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 5
SUBSURFACE SOIL SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D4

Xref:
Image:

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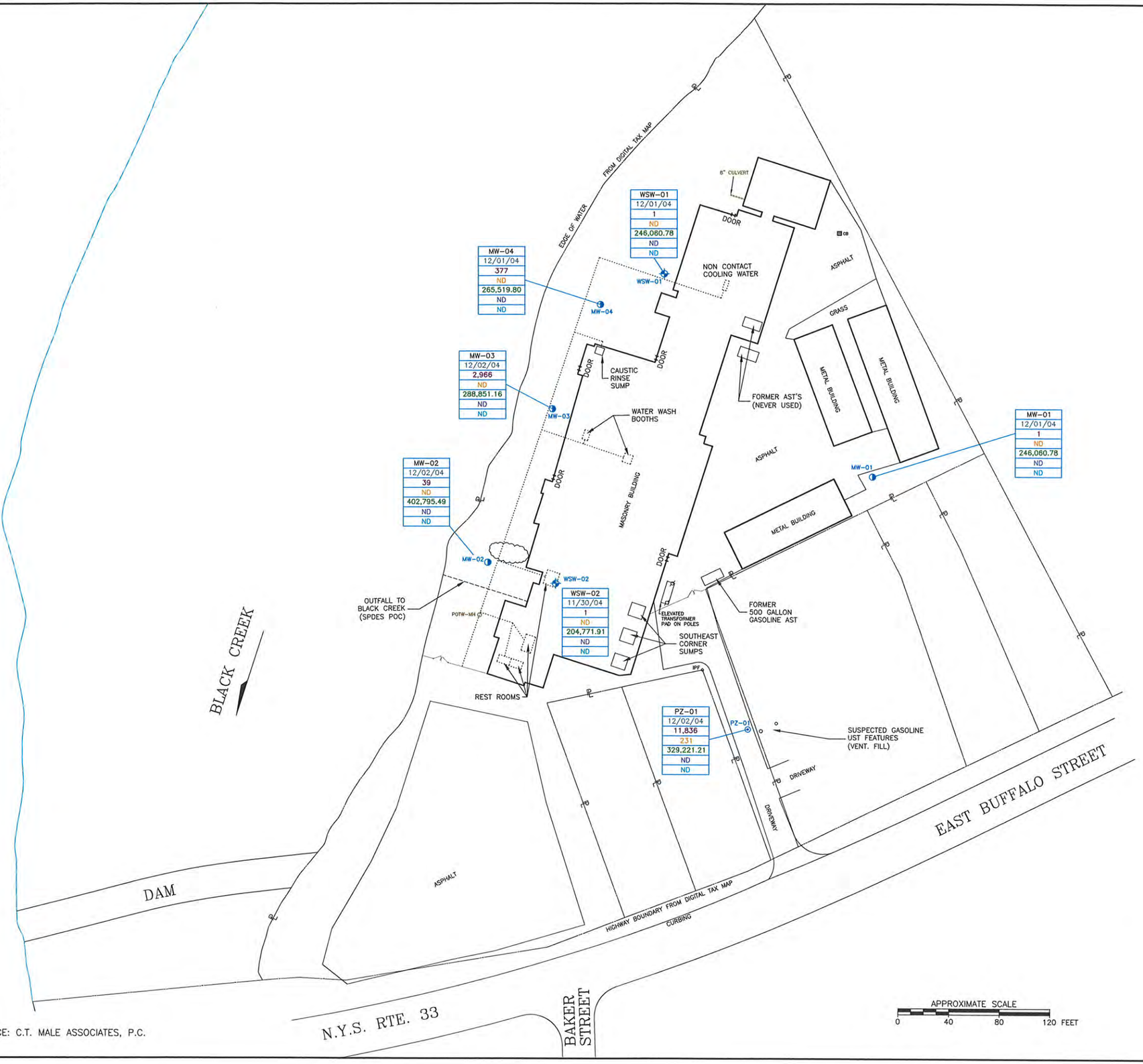
Plot Date/Time: 09/28/05 11:15am
Plotted by: Samuil Shkolnik

NYS GRID NAD 27



LEGEND

- PZ-01 — PIEZOMETER
- WSW-01 — WATER SUPPLY WELL
- MW-01 — MONITOR WELL
- PL — APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB — CATCH BASIN

MW-01	SAMPLE LOCATION
12/01/04	DATE
1	TOTAL VOC (ug/L or ppb)
ND	TOTAL SVOC (ug/L or ppb)
246,060.78	TOTAL METALS (ug/L or ppb)
ND	TOTAL PCB (ug/L or ppb)
ND	TOTAL PESTICIDES (ug/L or ppb)
ND	NOT DETECTED

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 6
MONITORING WELL SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/06/04	C. CAMPBELL	S. SHKOLNIK			109220D5

Xref:
Image:

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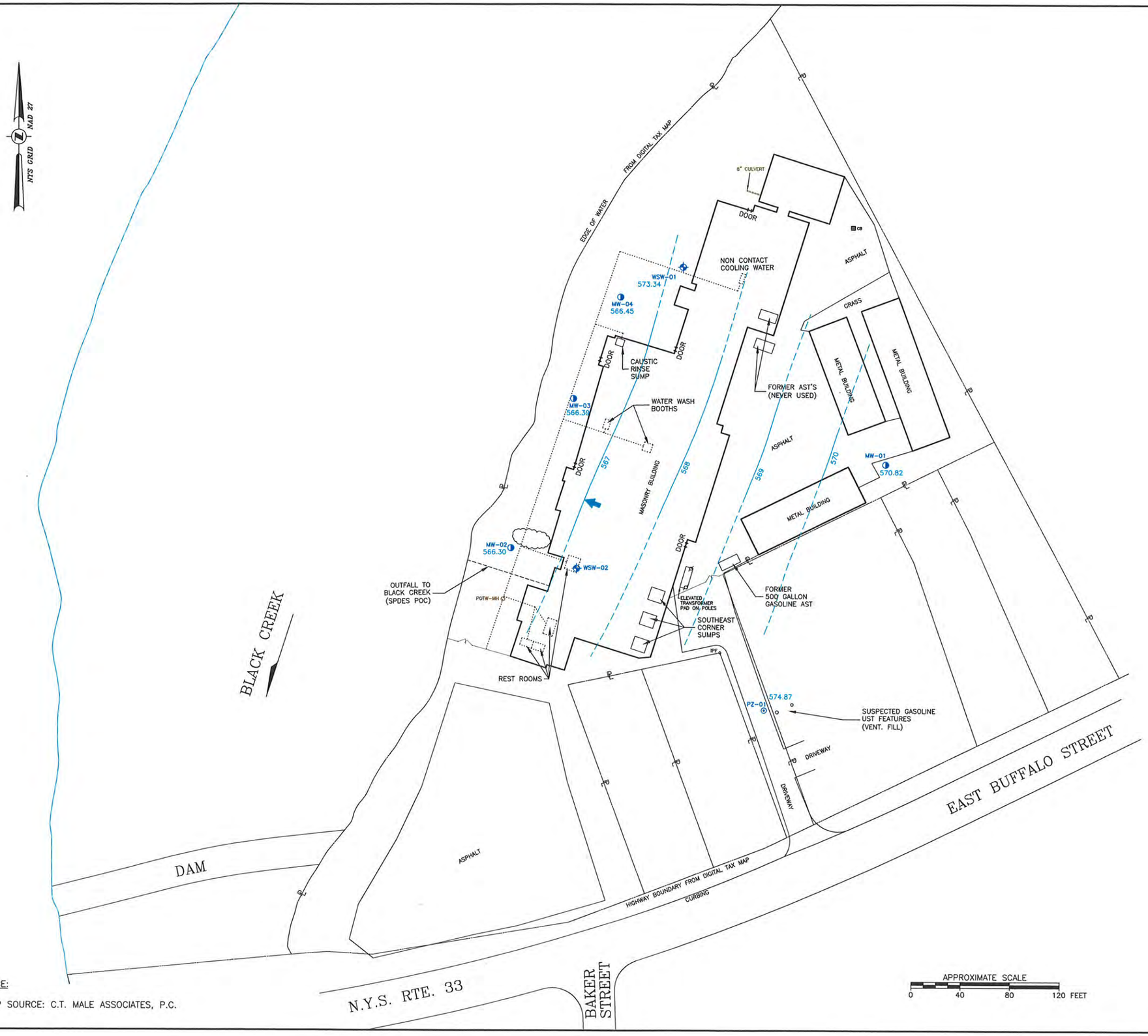
Plotted by: Samuil.Shkolnik



LEGEND

- 573.34 — GROUNDWATER ELEVATION (ft.)
- GROUNDWATER CONTOUR (DASHED WERE INFERRED)
- APPARENT GROUNDWATER DIRECTION
- PZ-01 — PIEZOMETER
- WSW-01 — WATER SUPPLY WELL
- MW-01 — MONITOR WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB — CATCH BASIN

NOTE: PZ-01 AND WSW-01 NOT USED FOR CONTOURING DUE TO DIFFERING CONSTRUCTION.

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 7
GROUNDWATER CONTOUR MAP
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	12/07/04	C. CAMPBELL	S. SHKOLNIK			109220D7

Xref:

Image:

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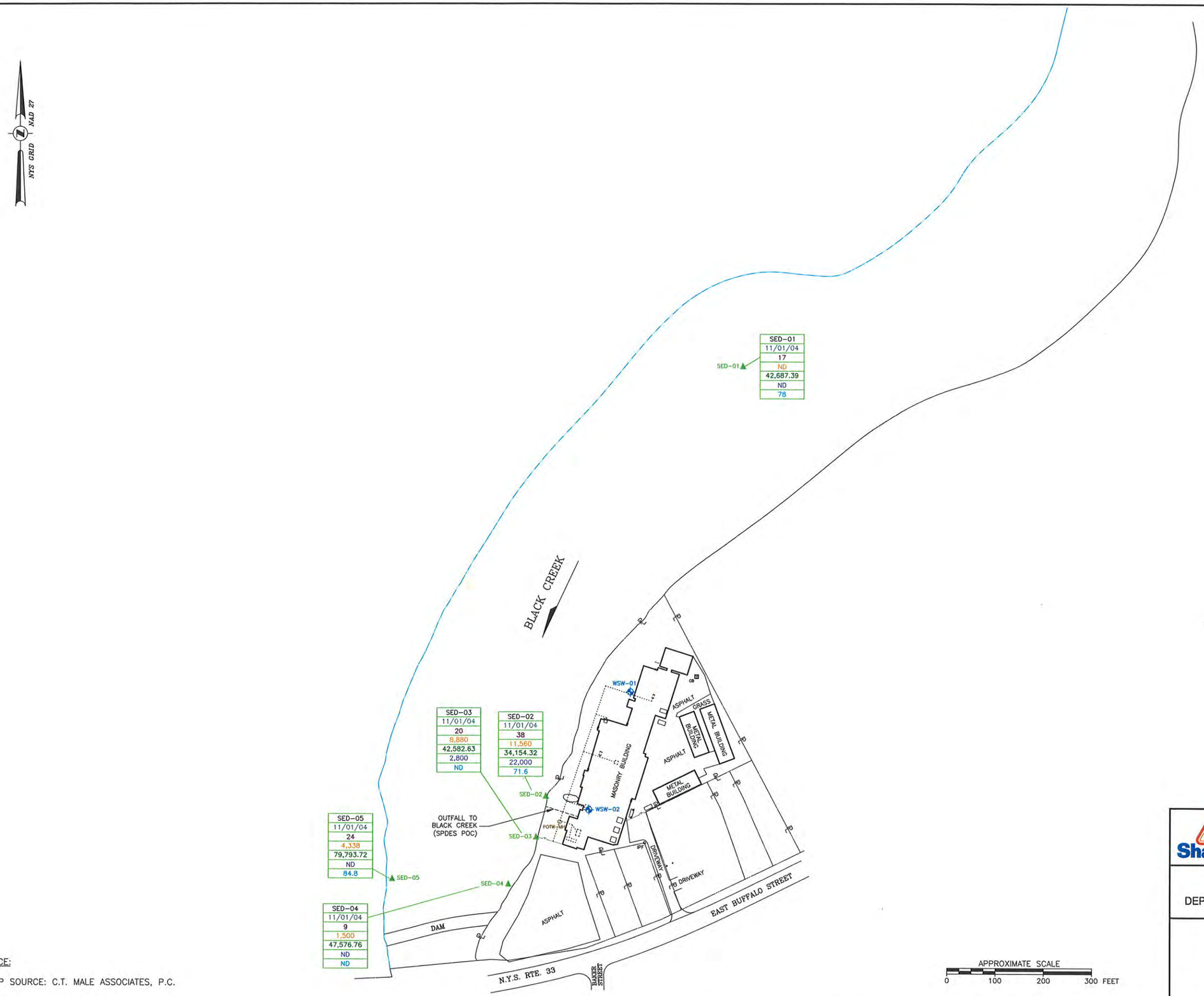
Plotted by: Samuil.Shkolnik



LEGEND

- SED-04 ▲ SEDIMENT SAMPLE LOCATION
- WSW-01 ⊕ WATER SUPPLY WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB CATCH BASIN

SED-01	SAMPLE LOCATION
11/01/04	DATE
17	TOTAL VOC (ug/kg or ppb)
ND	TOTAL SVOC (ug/kg or ppb)
42,687.39	TOTAL METALS (mg/kg or ppm)
ND	TOTAL PCB (ug/kg or ppb)
78	TOTAL PESTICIDES (ug/kg or ppb)

ND NOT DETECTED

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 8
SEDIMENT SAMPLING RESULTS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	03/02/05	C. CAMPBELL	S. SHKOLNIK			109220D8

Xref:
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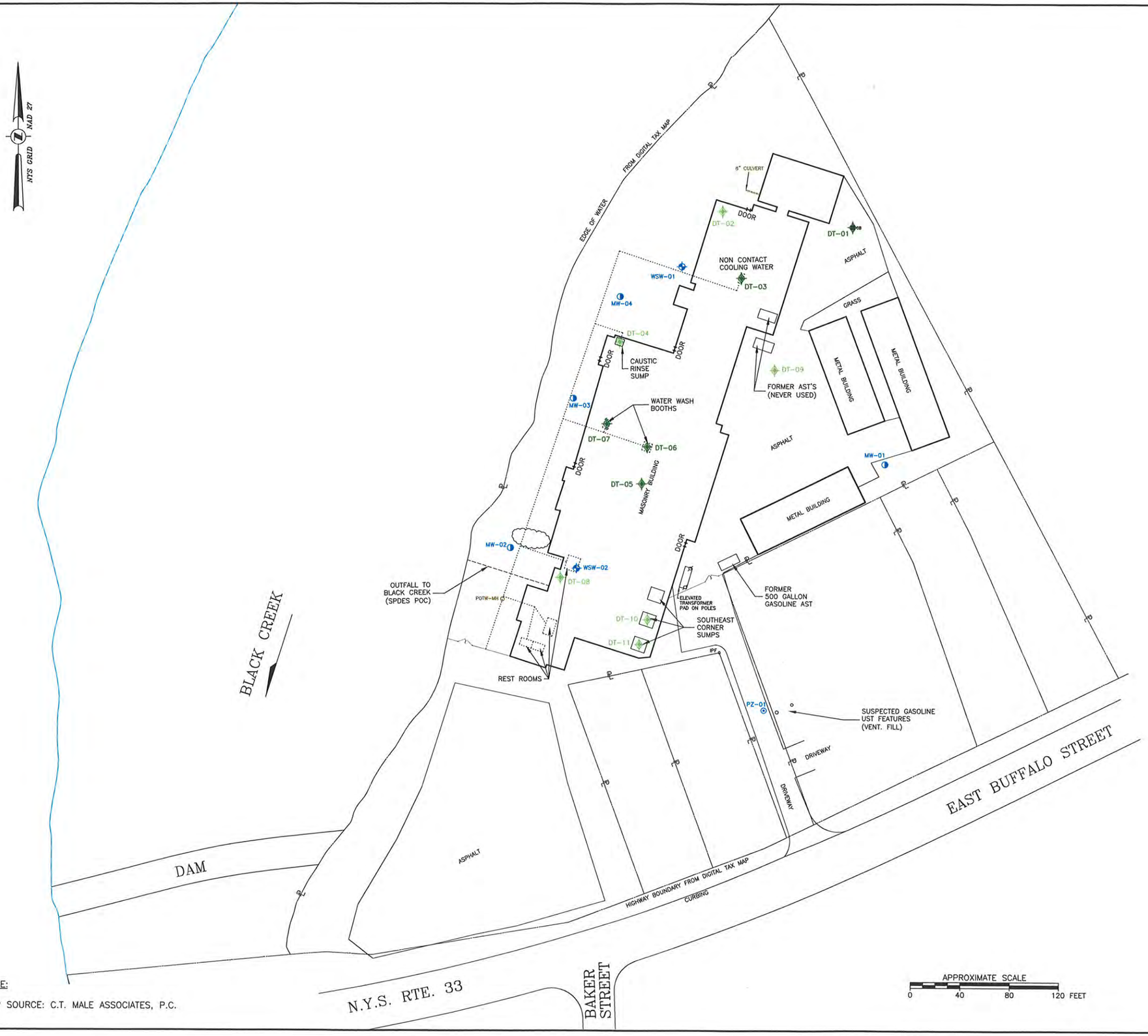

LEGEND

- DYE TESTING LOCATION
- PZ-01 PIEZOMETER
- WSW-01 WATER SUPPLY WELL
- MW-01 MONITOR WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB CATCH BASIN

NOTE:
DYE WAS NOT INTRODUCED INTO THE FOLLOWING POINTS:

DT-02	DT-09
DT-04	DT-10
DT-08	DT-11

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 9
DYE TESTING LOCATIONS
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	11/30/04	C. CAMPBELL	S. SHKOLNIK			109220D6

Xref:
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Plotted by: Samuil.Shkolnik

NTS GRID
NAD 27

FROM DIGITAL TAX MAP
EDGE OF WATER
8" CULVERT
SG-05
DOOR
SG-15
SG-07
SG-06
WSW-01
NON CONTACT COOLING WATER
ASPHALT
MW-04
SG-16
SG-09
SG-08
SG-04
GRASS
SG-10
CAUSTIC RINSE SUMP
SG-03
METAL BUILDING
METAL BUILDING
FORMER AST'S (NEVER USED)
MW-03
SG-18
WATER WASH BOOTHS
SG-11
SG-12
SG-17
ASPHALT
MW-01
SG-13
SG-14
SG-19
MASONRY BUILDING
METAL BUILDING
MW-02
4" SEWER CLEANOUT
WSW-02
OUTFALL TO BLACK CREEK (SPDES POC)
POTW-MH
ELEVATED TRANSFORMER PAD ON POLES
FORMER 500 GALLON GASOLINE AST
SG-20
SOUTHEAST CORNER SUMPS
BLACK CREEK
REST ROOMS
IPF
SG-02
PZ-01
SG-01
SUSPECTED GASOLINE UST FEATURES (VENT. FILL)
DRIVEWAY
DRIVEWAY
EAST BUFFALO STREET
DAM
ASPHALT
HIGHWAY BOUNDARY FROM DIGITAL TAX MAP
CURBING
N.Y.S. RTE. 33
BAKER STREET

LEGEND

- SG-05 — SOIL VAPOR SAMPLE LOCATION
- WSW-01 — WATER SUPPLY WELL
- MW-01 — MONITOR WELL
- PL — APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB — CATCH BASIN

NOTE: RED INDICATES VOCs GREATER THAN 5 ug/m^3 OR PID READINGS GREATER THAN 50 ppm

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

APPROXIMATE SCALE
0 40 80 120 FEET

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 10
SUMMARY OF SOIL VAPOR DATA
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	03/07/05	C. CAMPBELL	S. SHKOLNIK			109220D9

Xref:
Image:

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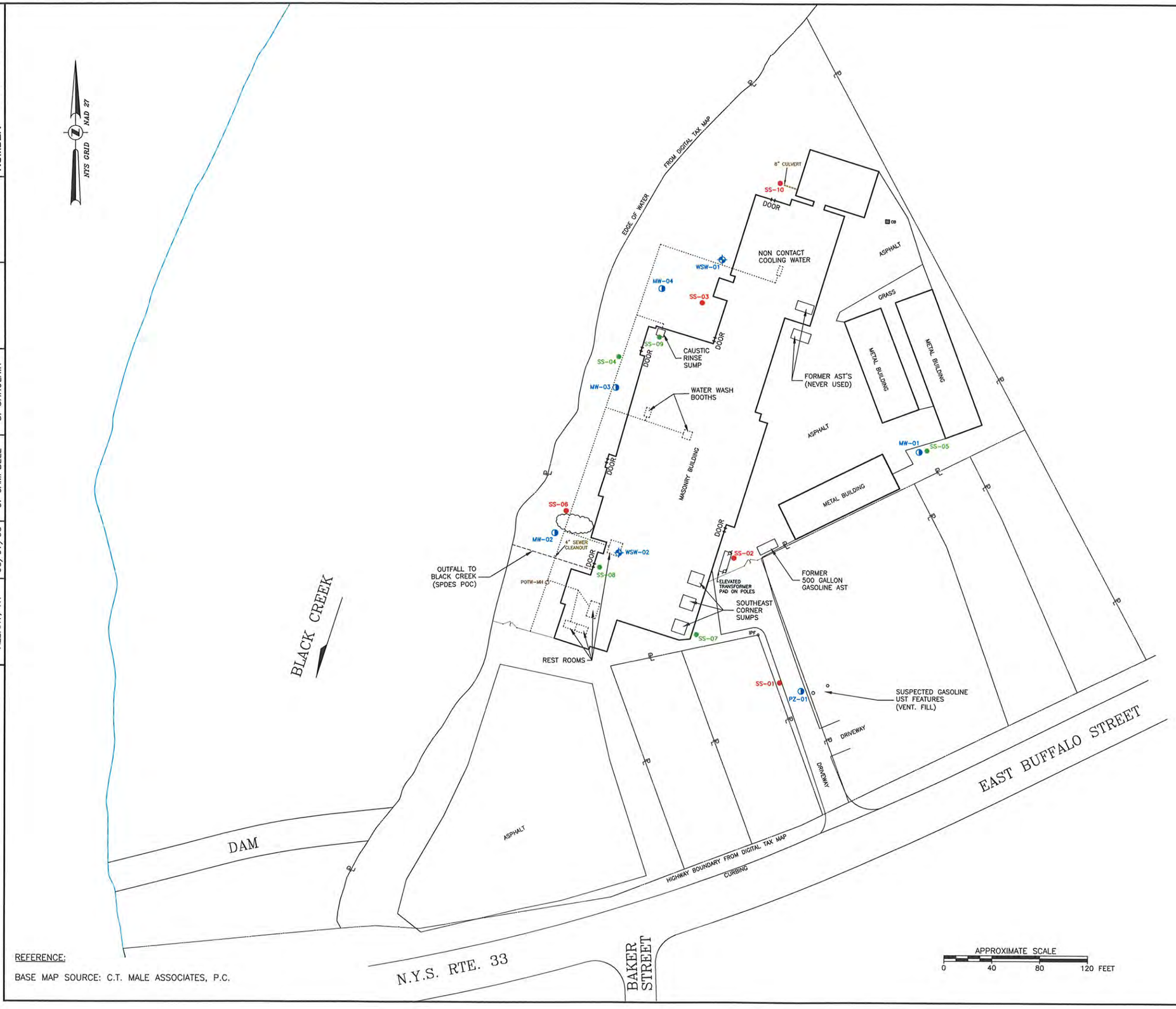
Plotted by: Samuil.Shkolnik



LEGEND

- SS-07 SURFACE SOIL SAMPLE LOCATION
- WSW-01 WATER SUPPLY WELL
- MW-01 MONITOR WELL
- PL APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB CATCH BASIN

NOTES: 1) SS-07 TAKEN AT A DEPTH OF 6'-8' BELOW GROUND SURFACE.
2) RED INDICATES ENCOUNTERED EXCEEDENCE OF NYSDEC TAGM 4046 RSCO

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 11
SUMMARY OF SURFACE SOIL DATA
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	03/07/05	C. CAMPBELL	S. SHKOLNIK			109220D15

Xref: . .
Image:

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Plot Date/Time: 06/27/05 11:12am
Plotted by: Samuel.Shkolnik

NYS GRID NAD 27

EDGE OF WATER

FROM DIGITAL TAX MAP

8" CULVERT

SB-04

DOOR

NON CONTACT COOLING WATER

WSW-01

SB-05

SB-02

ASPHALT

GRASS

METAL BUILDING

METAL BUILDING

CAUSTIC RINSE SUMP

DOOR

DOOR

SB-07

WATER WASH BOOTHS

FORMER AST'S (NEVER USED)

ASPHALT

SB-03

DOOR

MASONRY BUILDING

METAL BUILDING

SB-06

4" SEWER CLEANOUT

WSW-02

DOOR

OUTFALL TO BLACK CREEK (SPDES POC)

POTW-MH

ELEVATED TRANSFORMER PAD ON POLES

FORMER 500 GALLON GASOLINE AST

SOUTHEAST CORNER SUMPS

BLACK CREEK

REST ROOMS

IPF

SB-01

SUSPECTED GASOLINE UST FEATURES (VENT. FILL)

DRIVEWAY

DRIVEWAY

EAST BUFFALO STREET

DAM

ASPHALT

HIGHWAY BOUNDARY FROM DIGITAL TAX MAP

CURBING

N.Y.S. RTE. 33

BAKER STREET

APPROXIMATE SCALE
0 40 80 120 FEET

LEGEND

- SB-01 ⊙ SUBSURFACE SOIL SAMPLE LOCATION
- MW-01 ◑ MONITOR WELL
- APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB CATCH BASIN

NOTE: RED INDICATES ENCOUNTERED EXCEEDENCE OF NYSDEC TAGM 4046 RSCO

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 12
SUMMARY OF SUBSURFACE SOIL DATA
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	03/07/05	C. CAMPBELL	S. SHKOLNIK			109220D14

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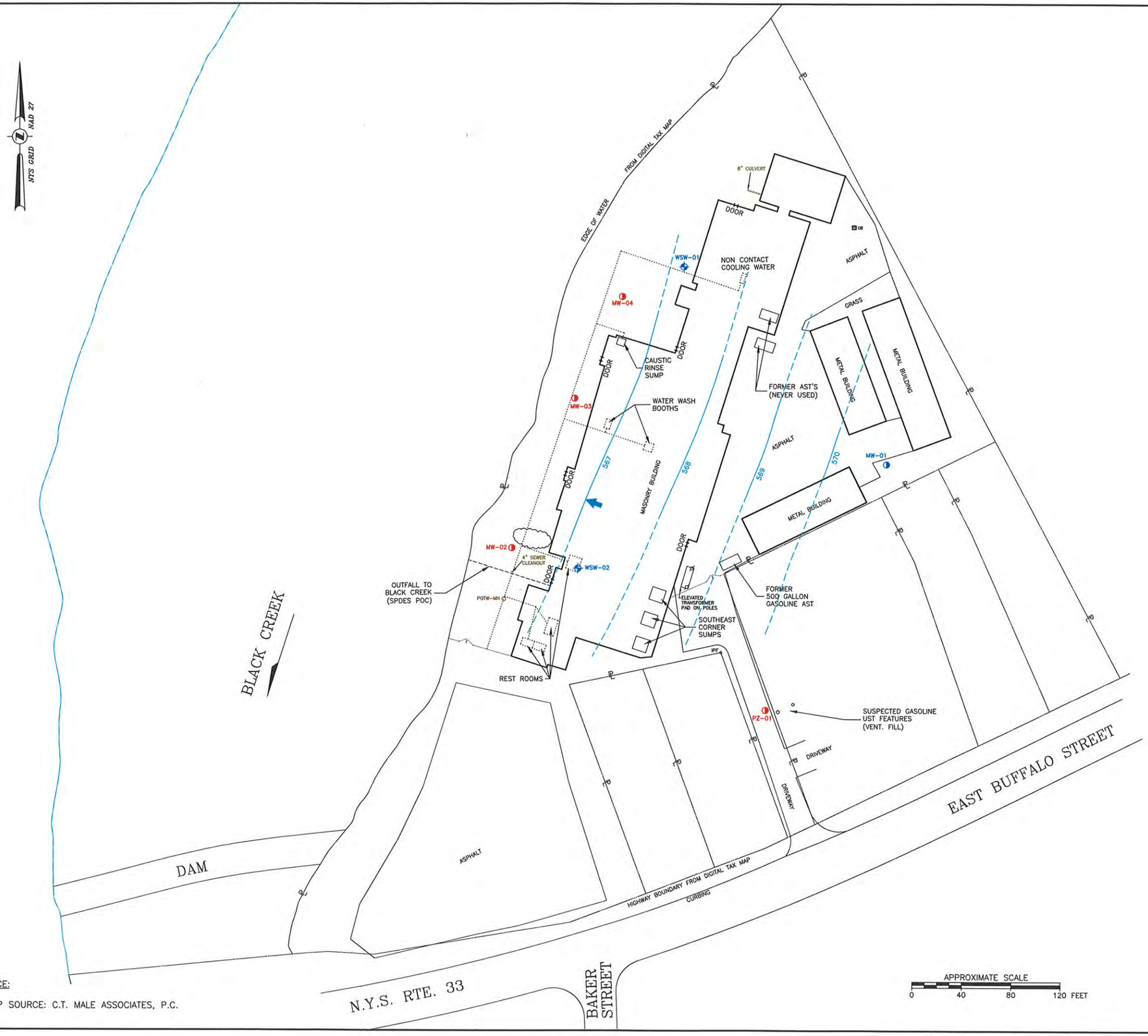

NOTE: RED INDICATES SAMPLE LOCATIONS EXCEEDING OF NEW YORK STATE GROUNDWATER QUALITY STANDARDS.

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 13
SUMMARY OF GROUNDWATER DATA
LUSTER-COATE METALIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
ALBANY, NY	03/07/05	C. CAMPBELL	S. SHKOLNIK			109220D16

Xref:
Image:

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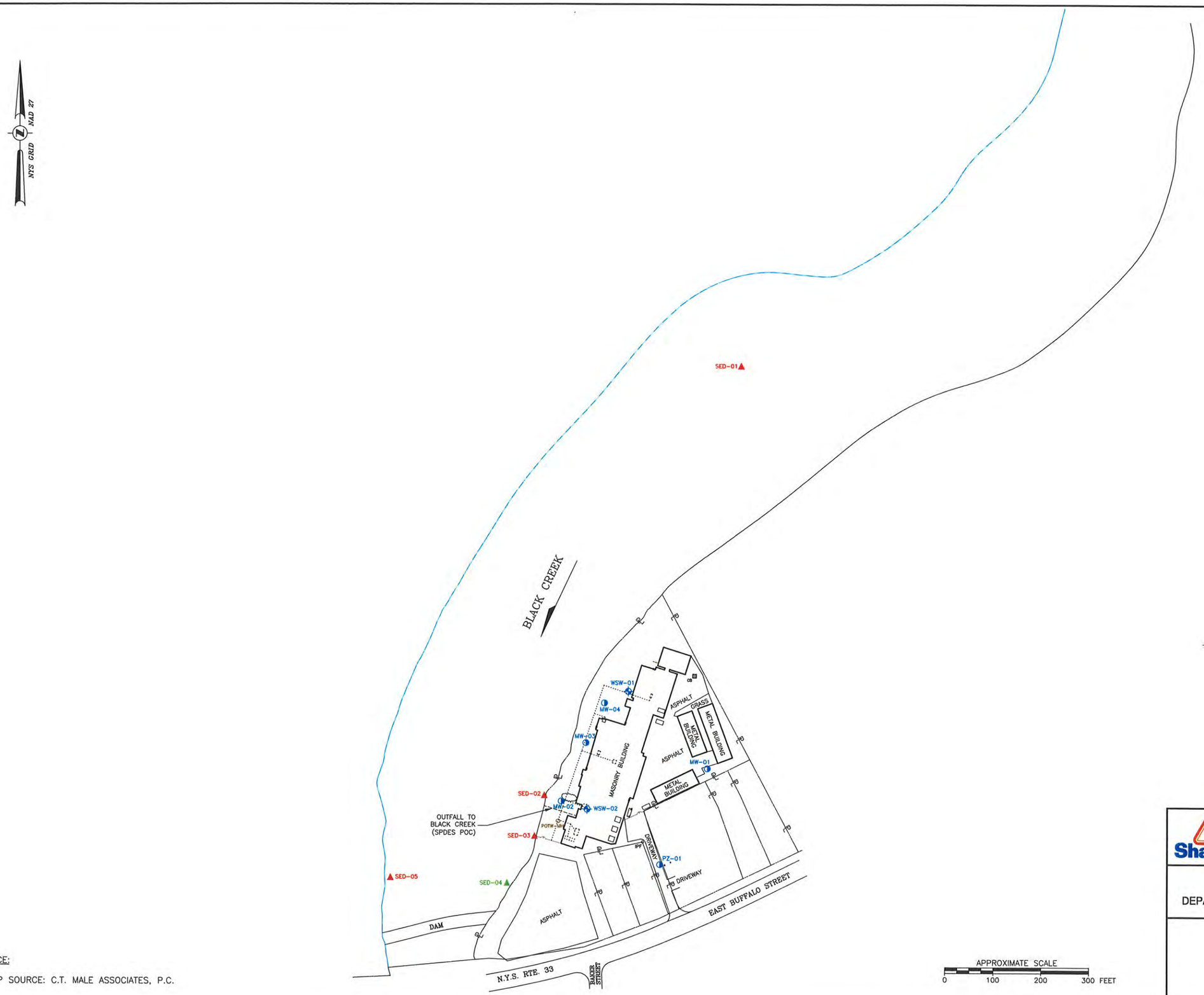


LEGEND

- SED-04 ▲ SEDIMENT SAMPLE LOCATION
- WSW-01 WATER SUPPLY WELL
- MW-01 MONITOR WELL
- PL APPROXIMATE PROPERTY LINE
- ORNAMENTAL TREES
- CB CATCH BASIN

NOTE: RED INDICATES ENCOUNTERED EXCEEDENCE OF NYSDEC TAGM 4046 RSCO

APPROXIMATE SCALE
0 100 200 300 FEET

REFERENCE:

BASE MAP SOURCE: C.T. MALE ASSOCIATES, P.C.

Shaw Shaw Environmental, Inc.

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 14
SUMMARY OF SEDIMENT DATA
LUSTER-COATE METALLZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

0370107
Churchville
Monroe Co.

ENSR INTERNATIONAL

ENSR International
360 Linden Oaks
Rochester, NY 14625-2814
(716) 381-2210
www.ensr.com

October 23, 2001

Mr. Todd Eubanks
Assistant Vice President of Environmental Affairs
General Electric Capital Commercial Finance –
201 High Ridge Road
Stamford, CT 06927

Re: **02978-213-100**
Subject: **Findings of Limited Phase II Environmental Assessment of the Luster-Coate Metallizing Corp, 32 East Buffalo Street, Churchville, New York**

Dear Mr. Eubanks:

ENSR is pleased to submit this report documenting the findings of the limited Phase II Environmental Assessment (EA) conducted at the above referenced property. This work was performed in accordance with our proposal dated August 16, 2001 and our April 2001 Corporate Purchasing Agreement with GE Corporation. The location of the subject property is illustrated on Figure 1 included in Attachment A. The objective of this limited Phase II EA was to determine whether the current or historical operations of tenants had impacted subsurface soil or groundwater beneath the subject property.

This report is for the exclusive use of GE Capital, its affiliates, designates and assignees, rating agencies, prospective bond holders and bond holders, and no other party shall have any right to rely on any service provided by ENSR without ENSR's prior written consent.

SUMMARY OF THE PHASE I ENVIRONMENTAL ASSESSMENT

A Phase I Environmental Assessment Report (ESA) was prepared for the site by Secor International Inc. (Secor) in August 1998. According to the ESA, regional groundwater likely flows in a westerly direction toward Black Creek, which abuts the site to the west. However, two water supply wells for cooling water are operated on-site, along the western side of the main site building, which may impact groundwater flow direction on-site. Below is a summary of the pertinent Phase I EA findings:

- The site consisted of a main building constructed beginning in the 1800s, and four warehouse buildings built in the 1970s. The site was being used by Luster-Coate as an industrial facility that applied metal film and paint coatings to plastic materials manufactured off-site. Prior to this use, the site was reportedly used for a variety of industrial purposes including condiment bottle processing, canary propagation, and wooden toy manufacturing (1929).

- Areas of potential environmental concern identified in the Secor report included a spray paint booth area in the northern portion of the main building, a chemical storage area in the western portion of the main building, a waste storage area in the northern portion of Building

C, a ventilation system sump in the northwestern corner of the main building, a caustic rinse sump in the western portion of the main building, a SPDES outfall by which non-contact cooling water is discharged to Black Creek, a 500-gallon gasoline AST in the eastern portion of the site, two removed 500-gallon ASTs (never used), and an off-site suspected gasoline UST (also referred to by Secor as a possible fuel oil UST) which had been inactive since circa 1977 to the east of the paved service entrance to the site.

- No off-site concerns were identified as a result of the database search performed by Secor.
- Secor concluded that there was no past or ongoing evidence of contamination, and recommended no further inquiry.

SUMMARY OF PHASE II ENVIRONMENTAL ASSESSMENT

Prior to initiating the subsurface assessment, ENSR notified Dig Safely New York to locate and mark underground utilities serving the subject site. On September 4, 2001, ENSR advanced three soil borings (SB-1 through SB-3) and installed temporary wells in four additional borings (TW-1 through TW-4) at the subject site using a hydraulic Geoprobe™ system. The boring locations are illustrated on Figure 2 included in Attachment A. Groundwater was successfully encountered in TW-1 and TW-4; however, despite field indications of groundwater during installation, TW-2 and TW-3 were dry upon attempts to sample them. Provided below is a summary of ENSR's sampling locations investigated during the subsurface investigation.

- Boring SB-1 was advanced along the northeast corner of the main building, near the location of two former aboveground storage tanks (ASTs) which had reportedly never been used. Soil samples from boring SB-1 were collected continuously in 4-foot intervals to a depth of 16 feet below ground surface (bgs). The soil samples were field screened for volatile organic compounds (VOCs) with a photoionization detector (PID). No elevated headspace readings were detected in any of these soil samples. Therefore, the sample collected at a depth between 3 and 4 feet bgs (just above the observed water table) was selected for laboratory analysis.

- Boring SB-2 was advanced along the northwest corner of the main building, near the paint booth ventilation system sump. Soil samples from boring SB-2 were collected continuously in 4-foot intervals to a depth of 16 feet bgs. The soil samples were field screened for VOCs with a PID. VOCs were detected at a concentration of 1 part per million (ppm) in the soil sample collected from the 4 to 8 foot interval; in addition, the soil in that sample exhibited dark staining with silver-colored reflective particles. Therefore, the sample collected at a depth between 7 and 8 feet bgs (where the staining was observed) was selected for laboratory analysis.

- Boring SB-3 was advanced along the western side of the main building, near the caustic rinse sump. Soil samples from boring SB-3 were collected continuously to a depth of 3.5 feet bgs, the depth at which refusal on possible concrete was encountered in multiple attempts at this area. The soil samples were field screened for VOCs with a PID. The

sample collected at a depth between 2 and 3 feet bgs (just above refusal, and the approximate depth of the base of the sump) was selected for laboratory analysis.

- Boring TW-1 was advanced in the paved service entrance, near a suspect gasoline or fuel oil underground storage tank (UST) on the abutting property to the east. Soil samples from boring TW-1 were collected continuously in 4-foot intervals to a depth of 15 feet bgs (8 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. VOCs were detected at concentrations of 16 ppm, 180 ppm and 50 ppm in the soil samples collected from the 4 to 8 foot, 8 to 12 foot and 12 to 15 foot intervals respectively. In addition, the soil between 8 and 15 bgs exhibited a dark staining with a petroleum odor. Therefore, the sample collected at a depth between 9 and 10 feet bgs, which exhibited the highest PID reading and the heaviest staining, was selected for laboratory analysis. Following the collection of the soil samples, boring TW-1 was completed as a temporary well with a 1-inch diameter PVC riser screened between 5 and 15 bgs surrounded by a sandpack to 4 feet bgs, sealed with bentonite.

- Boring TW-2 was advanced along the eastern side of the subject site, adjacent to and downgradient of a 500-gallon gasoline AST. Soil samples from boring TW-2 were collected continuously in 4-foot intervals to a depth of 15.5 feet bgs (8 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. VOCs were detected at a concentration of 1 ppm in the soil sample collected from the 8 to 12 foot interval. Therefore, the sample collected at a depth between 10 and 11 feet bgs was selected for laboratory analysis. Following the collection of the soil samples, boring TW-2 was completed as a temporary well with a 1-inch diameter PVC riser screened between 5.5 and 15.5 feet bgs surrounded by a sandpack to 4.5 feet bgs, sealed with bentonite.

- Boring TW-3 was advanced near the northwest corner of Building C, near the waste storage area. Soil samples from boring TW-3 were collected continuously in 4-foot intervals to a depth of 16 feet bgs (10 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. No VOCs were detected in the soil samples. Therefore, the sample collected at a depth between 3 and 4 feet bgs (just above the observed water table) was selected for laboratory analysis. Following the collection of the soil samples, boring TW-3 was completed as a temporary well with a 1-inch diameter PVC riser screened between 6 and 16 feet bgs surrounded by a sandpack to 5 feet bgs, sealed with bentonite.

- Boring TW-4 was advanced along the west side of the main building, near the interior chemical storage area. Soil samples from boring TW-4 were collected continuously in 4-foot intervals to a depth of 16 feet bgs (10 feet below the soil saturation zone). The soil samples were field screened for VOCs with a PID. No VOCs were detected in the soil samples, and no soil samples from this boring were submitted for analysis. Following the collection of the soil samples, boring TW-4 was completed as a temporary well with a 1-inch diameter PVC riser screened between 6 and 16 feet bgs surrounded by a sandpack to 5 feet bgs, sealed with bentonite.

ENSR collected groundwater samples from temporary wells TW-1 and TW-4, and from the two (2) pre-existing cooling water supply wells along the west side of the main building, one from the interior of the building (IN-WELL) and one located along the building's exterior (OUT-WELL). The depth of the interior and exterior water supply wells are 50-55 feet bgs and 70 feet bgs respectively. The groundwater was collected using disposable polyethylene bailers attached to polyethylene twine. Groundwater samples were immediately placed in pre-labeled sample containers provided by the laboratory. Groundwater was not able to be collected from temporary wells TW-2 and TW-3 due to the lack of water in these wells.

Soil and groundwater samples were labeled, recorded on a chain-of-custody record and placed in a cooler maintained at approximately 4°C pending delivery to Paradigm Environmental Services, Inc. of Rochester, New York, a State-certified laboratory. The soil and groundwater samples were analyzed on a standard 5-day turnaround basis.

Waste generated during field activities (i.e., soil cuttings, used bailers, personal protective equipment (PPE), acetate liners, etc) were containerized on-site in 55-gallon DOT drums stored in the waste storage area pending approval for disposal. Upon completing soil and groundwater sampling activities, borings SB-1 through SB-3 were backfilled with the soil cuttings generated during their installation; borings TW-1 through TW-4 were backfilled with hydrated bentonite chips, and sealed with cement to match the surrounding surface. Drilling and sampling equipment was decontaminated prior to first use and between each use to prevent cross-contamination.

LABORATORY RESULTS

Soil Sample Analytical Results

The soil samples from SB-1, SB-2, SB-3, and TW-3 were analyzed for VOCs by EPA Method 8260B Target Compound List (TCL) plus New York State Department of Environmental Conservation (NYSDEC) Spill Technology And Remediation Series (STARS) compounds, semivolatile organic compounds (SVOCs) by EPA Method 8270C TCL and priority pollutant list (PPL) metals (total concentrations). The soil samples from TW-1 and TW-2 were analyzed for VOCs by EPA Method 8021 STARS compounds and SVOCs by EPA Method 8270 B/N STARS compounds.

Several petroleum-related VOCs, along with the SVOC napthalene were detected at concentrations exceeding NYSDEC guidance values in the soil sample collected from boring TW-1. The concentration of zinc detected in the soil sample collected from boring TW-3 exceeded its NYSDEC guidance value. Mercury was detected at a concentration exceeding its NYSDEC guidance value in the soil sample collected from SB-2. Fluoranthene, benzo(a)anthracene, chrysene, pyrene, benzo(b)fluoranthene, benzo(k) fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, ideno(1,2,3-cd)pyrene, nickel and zinc were detected at concentrations exceeding their NYSDEC guidance values in the soil sample collected from SB-3.

No other target compounds were detected above NYSDEC Guidance values in the soil samples analyzed. The soil analytical results are summarized in Tables 1-5. Copies of the laboratory reports and chain-of-custody documentation are included in Attachment B.

Groundwater Sample Analytical Results

Groundwater samples from the preexisting wells and temporary well TW-4 were analyzed for VOCs by EPA Method 8260B TCL plus STARS compounds, SVOCs by EPA Method 8270C TCL and PPL metals (total concentrations). The groundwater sample from TW-1 was analyzed for VOCs by EPA Method 8021 STARS compounds and SVOCs by EPA Method 8270 B/N STARS compounds.

Petroleum-related VOCs and the SVOC naphthalene were detected at concentrations exceeding NYSDEC guidance values in the groundwater sample collected from temporary well TW-1. Cis-1,2-dichloroethene and vinyl chloride were detected at concentrations exceeding their NYSDEC guidance values in the groundwater sample collected from temporary well TW-4. Cis-1,2-dichloroethene, vinyl chloride, 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, trichloroethene and thallium were detected at concentrations exceeding their NYSDEC guidance values in the groundwater sample collected from the exterior water supply well OUT-WELL. Thallium was detected at a concentration exceeding its NYSDEC guidance value in the groundwater sample collected from the interior water supply well IN-WELL.

No other target compounds were detected above NYSDEC guidance values in the groundwater samples analyzed. The groundwater analytical results are summarized in Tables 6-9. Copies of the laboratory reports and chain-of-custody documentation are included in Attachment B.

Table 1
Soil Analytical Results[1]
Volatile Organic Hydrocarbons
EPA Method 8021 STARS
(Results are in mg/kg)

Compound	Sample Number	Sample Depth (in feet)	Concentration	NYSDEC STARS Guidance Value[2]	NYSDEC Rec. Soil Cleanup Objective[3]
Ethylbenzene	TW-1C	9 - 10	**2.52**	0.1	5.5
M & P –Xylene	TW-1C	9 - 10	**32.2**	0.1	1.2
O - Xylene	TW-1C	9 - 10	**12.5**	0.1	1.2
Isopropylbenzene	TW-1C	9 - 10	**2.54**	0.1	NA
n-Propylbenzene	TW-1C	9 - 10	**4.56**	0.1	NA
1,3,5-Trimethylbenzene	TW-1C	9 - 10	**13.6**	0.1	NA
1,2,4-Trimethylbenzene	TW-1C	9 - 10	**43.3**	0.1	NA
Sec-Butylbenzene	TW-1C	9 - 10	**1.75**	0.1	NA
p-Isopropyltoluene	TW-1C	9 - 10	**1.8**	0.1	NA
Naphthalene	TW-1C	9 - 10	**2.74**	0.2	13.0

Notes:

1. Analytical results are reported only for those chemicals with detectable concentrations in soil.
2. Source: NYSDEC STARS Memo #1 "Petroleum-Contaminated Soil Guidance Policy", August 1992
3. Source: NYSDEC TAGM Memo #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels", January 1994
4. NA – Not Available
5. Two NYSDEC guidance values are available for comparison: the STARS guidance values and the Recommended Soil Cleanup Objectives (RSCOs). The STARS values are designed to be applied toward petroleum bulk storage facilities and petroleum spills; the RSCOs are designed for applications that are more general. When one guidance value conflicts with another, the rule is to apply the more stringent of the two. Concentrations in bold exceed one or more guidance values.

Table 2
Soil Analytical Results[1]
Volatile Organic Hydrocarbons
EPA Method 8260B TCL + STARS
(Results are in mg/kg)

Compound	Sample Number	Sample Depth (in feet)	Concentration	NYSDEC STARS Guidance Value[2]	NYSDEC Rec. Soil Cleanup Objective[3]
Chloroethane	SB-2B	7 – 8	0.106	NA	1.9
Acetone	SB-2B	7 – 8	0.037	NA	0.2
Toluene	SB-3A	2 – 3	0.021	0.1	1.5

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in soil.
2. Source: NYSDEC STARS Memo #1 "Petroleum-Contaminated Soil Guidance Policy", August 1992
3. Source: NYSDEC TAGM Memo #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels", January 1994
4. NA – Not Available
5. Two NYSDEC guidance values are available for comparison: the STARS guidance values and the Recommended Soil Cleanup Objectives (RSCOs). The STARS values are designed to be applied toward petroleum bulk storage facilities and petroleum spills; the RSCOs are designed for applications that are more general. When one guidance value conflicts with another, the rule is to apply the more stringent of the two. Concentrations in bold exceed one or more guidance values.

Table 3
Soil Analytical Results[1]
Semivolatile Organic Hydrocarbons
EPA Method 8270 B/N STARS
(Results are in mg/kg)

Compound	Sample Number	Sample Depth (in feet)	Concentration	NYSDEC STARS Guidance Value[2]	NYSDEC Rec. Soil Cleanup Objective[3]
Naphthalene	TW-1C	9 – 10	**1.530**	0.2	13.0

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in soil.
2. Source: NYSDEC STARS Memo #1 "Petroleum-Contaminated Soil Guidance Policy", August 1992
3. Source: NYSDEC TAGM Memo #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels", January 1994
4. Two NYSDEC guidance values are available for comparison: the STARS guidance values and the Recommended Soil Cleanup Objectives (RSCOs). The STARS values are designed to be applied toward petroleum bulk storage facilities and petroleum spills; the RSCOs are designed for applications that are more general. When one guidance value conflicts with another, the rule is to apply the more stringent of the two. Concentrations in bold exceed one or more guidance values.

Table 4
Soil Analytical Results[1]
Semivolatile Organic Hydrocarbons
EPA Method 8270C TCL
(Results are in mg/kg)

Compound	Sample Number	Sample Depth (in feet)	Concentration	NYSDEC STARS Guidance Value[2]	NYSDEC Rec. Soil Cleanup Objective[3]
Fluoranthene	SB-3A	2 – 3	**1.650**	1.0	50.0
Phenanthrene	SB-3A	2 – 3	0.678	1.0	50.0
Benzo (a) anthracene	SB-3A	2 – 3	**0.739**	0.00004	0.224
Bis (2-ethylhexyl) phthalate	SB-3A	2 – 3	4.410	NA	50.0
Chrysene	SB-3A	2 – 3	**0.851**	0.00004	0.4
Pyrene	SB-3A	2 – 3	**1.430**	1.0	50.0
Benzo (b) fluoranthene	SB-3A	2 – 3	**1.370**	0.00004	1.1
Benzo (k) fluoranthene	SB-3A	2 – 3	**0.427**	0.00004	1.1
Benzo (g,h,i) perylene	SB-3A	2 – 3	**1.170**	0.00004	50.0
Benzo (a) pyrene	SB-3A	2 – 3	**0.881**	0.00004	0.061
Ideno (1,2,3-cd) pyrene	SB-3A	2 – 3	**0.946**	0.00004	3.2

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in soil.
2. Source: NYSDEC STARS Memo #1 "Petroleum-Contaminated Soil Guidance Policy", August 1992
3. Source: NYSDEC TAGM Memo #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels", January 1994
4. Two NYSDEC guidance values are available for comparison: the STARS guidance values and the Recommended Soil Cleanup Objectives (RSCOs). The STARS values are designed to be applied toward petroleum bulk storage facilities and petroleum spills; the RSCOs are designed for applications that are more general. When one guidance value conflicts with another, the rule is to apply the more stringent of the two. Concentrations in bold exceed one or more guidance values.

Table 5
Soil Analytical Results[1]
Priority Pollutant List Metals
(Results are in mg/kg)

Compound	Sample Number	Sample Depth (in feet)	Concentration	NYSDEC Rec. Soil Cleanup Objective[2]
Arsenic	TW-3A	3 - 4	2.08	3 – 12
Cadmium	TW-3A	3 - 4	0.440	0.1 – 1
Chromium	TW-3A	3 - 4	11.8	1.5 – 40
Copper	TW-3A	3 - 4	8.56	1 –50
Lead	TW-3A	3 - 4	15.7	4 – 61
Nickel	TW-3A	3 - 4	9.54	0.5 – 25
Zinc	TW-3A	3 - 4	**65.9**	9 – 50
Arsenic	SB-1A	3 - 4	1.88	3 – 12
Chromium	SB-1A	3 - 4	6.68	1.5 – 40
Copper	SB-1A	3 - 4	5.43	1 –50
Lead	SB-1A	3 - 4	9.18	4 – 61
Nickel	SB-1A	3 - 4	4.84	0.5 – 25
Selenium	SB-1A	3 - 4	0.541	0.1 – 0.9
Zinc	SB-1A	3 - 4	49.0	9 – 50
Arsenic	SB-2B	7 - 8	1.94	3 – 12
Chromium	SB-2B	7 - 8	9.50	1.5 – 40
Copper	SB-2B	7 - 8	5.67	1 –50
Lead	SB-2B	7 - 8	21.3	4 – 61
Mercury	SB-2B	7 - 8	**1.36**	0.1
Nickel	SB-2B	7 - 8	9.17	0.5 – 25
Zinc	SB-2B	7 - 8	43.3	9 – 50
Arsenic	SB-3A	2 - 3	2.71	3 – 12
Cadmium	SB-3A	2 - 3	0.545	0.1 – 1
Chromium	SB-3A	2 - 3	10.8	1.5 – 40
Copper	SB-3A	2 - 3	16.2	1 –50
Lead	SB-3A	2 - 3	34.8	4 – 61
Nickel	SB-3A	2 - 3	**592**	0.5 – 25
Selenium	SB-3A	2 - 3	0.895	0.1 – 0.9
Zinc	SB-3A	2 - 3	**82.0**	9 – 50

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in soil.
2. Source: NYSDEC TAGM Memo #4046 "Determination of Soil Cleanup Objectives and Cleanup Levels", January 1994
3. Concentrations in bold exceed the recommended soil cleanup objective.

Table 6
Groundwater Analytical Results[1]
Volatile Organic Hydrocarbons
EPA Method 8021 STARS
(Results are in µg/L)

Compound	Sample Number	Concentration	NYSDEC STARS Guidance Value[2]	NYSDEC Guidance Value/ Standard[3]
Benzene	TW-1	**210**	0.7	1.0
Toluene	TW-1	**988**	5.0	5.0
Ethylbenzene	TW-1	**769**	5.0	5.0
M & P –Xylene	TW-1	**3,300**	5.0	5.0
O - Xylene	TW-1	**1,080**	5.0	5.0
Isopropylbenzene	TW-1	**154**	5.0	5.0
n-Propylbenzene	TW-1	**219**	5.0	5.0
1,3,5-Trimethylbenzene	TW-1	**300**	5.0	5.0
1,2,4-Trimethylbenzene	TW-1	**882**	5.0	5.0
Sec-Butylbenzene	TW-1	**55.0**	5.0	5.0

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in groundwater.
2. Source: NYSDEC STARS Memo #1 "Petroleum-Contaminated Soil Guidance Policy", August 1992
3. Source: NYSDEC Division of Water, Technical and Operational Guidance Series (1.1.1), June 1998
4. Two NYSDEC guidance values are available for comparison: the STARS guidance values and the Technical and Operational Guidance Series (TOGS). The STARS values are designed to be applied toward petroleum bulk storage facilities and petroleum spills; the TOGs are designed for applications that are more general. When one guidance value conflicts with another, the rule is to apply the more stringent of the two. Concentrations in bold exceed one or more guidance values.

Table 7
Groundwater Analytical Results[1]
Volatile Organic Hydrocarbons
EPA Method 8260B TCL + STARS
(Results are in µg/L)

Compound	Sample Number	Concentration	NYSDEC STARS Guidance Value[2]	NYSDEC Guidance Value/ Standard[3]
Cis-1,2-Dichloroethene	TW-4	**20.2**	NA	5.0
Vinyl Chloride	TW-4	**59.5**	NA	2.0
Cis-1,2-Dichloroethene	IN-WELL	3.84	NA	5.0
1,1-Dichloroethane	OUT-WELL	**45.3**	NA	5.0
1,1-Dichloroethene	OUT-WELL	**45.7**	NA	5.0
Cis-1,2-Dichloroethene	OUT-WELL	**229**	NA	5.0
Trans-1,2-Dichloroethene	OUT-WELL	2.14	NA	5.0
1,1,1-Trichloroethane	OUT-WELL	**255**	NA	5.0
Trichloroethene	OUT-WELL	**161**	NA	5.0
Vinyl Chloride	OUT-WELL	**108**	NA	2.0

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in groundwater.
2. Source: NYSDEC STARS Memo #1 "Petroleum-Contaminated Soil Guidance Policy", August 1992
3. Source: NYSDEC Division of Water, Technical and Operational Guidance Series (1.1.1), June 1998
4. NA – Not Available
5. Two NYSDEC guidance values are available for comparison: the STARS guidance values and the Technical and Operational Guidance Series (TOGS). The STARS values are designed to be applied toward petroleum bulk storage facilities and petroleum spills; the TOGs are designed for applications that are more general. When one guidance value conflicts with another, the rule is to apply the more stringent of the two. Concentrations in bold exceed one or more guidance values.

Table 8
Groundwater Analytical Results[1]
Semivolatile Organic Hydrocarbons
EPA Method 8270 B/N STARS
(Results are in µg/L)

Compound	Sample Number	Concentration	NYSDEC STARS Guidance Value[2]	NYSDEC Guidance Value/ Standard[3]
Naphthalene	TW-1	**13.4**	10	10

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in groundwater.
2. Source: NYSDEC STARS Memo #1 "Petroleum-Contaminated Soil Guidance Policy", August 1992
3. Source: NYSDEC Division of Water, Technical and Operational Guidance Series (1.1.1), June 1998
4. Two NYSDEC guidance values are available for comparison: the STARS guidance values and the Technical and Operational Guidance Series (TOGS). The STARS values are designed to be applied toward petroleum bulk storage facilities and petroleum spills; the TOGs are designed for applications that are more general. When one guidance value conflicts with another, the rule is to apply the more stringent of the two. Concentrations in bold exceed one or more guidance values.

Table 9
Groundwater Analytical Results[1]
Priority Pollutant List Metals
(Results are in µg/L)

Compound	Sample Number	Concentration	NYSDEC Guidance Value/ Standard[2]
Arsenic	TW-4	8	25
Chromium	TW-4	31	50
Lead	TW-4	5	25
Zinc	TW-4	52	2,000
Copper	IN-WELL	72	200
Lead	IN-WELL	10	25
Thallium	IN-WELL	**8**	0.5
Zinc	IN-WELL	897	2,000
Selenium	OUT-WELL	9	10
Thallium	OUT-WELL	**8**	0.5
Zinc	OUT-WELL	253	2,000

Notes:
1. Analytical results are reported only for those chemicals with detectable concentrations in groundwater.
2. Source: NYSDEC Division of Water, Technical and Operational Guidance Series (1.1.1), June 1998 (TOGs).
3. Concentrations in bold exceed the NYSDEC TOGs.

CONCLUSIONS

Based on the analytical results of soil and groundwater samples collected during this limited Phase II EA, ENSR provides the following conclusions:

1. The petroleum compounds detected in the soil and groundwater samples collected from TW-1 indicate evidence of a petroleum release to the site from the nearby suspect UST on the abutting property to the east.

2. The elevated zinc concentrations detected in soil collected from boring TW-3, elevated zinc, nickel and SVOC concentrations in soil collected from SB-3, and the elevated mercury concentration detected in soil from SB-2, appear to result from the current on-site plating and painting operations and the use of the caustic rinse sump.

3. The elevated thallium concentrations detected in the groundwater samples collected from both pre-existing water supply wells may reflect impacts from current or historical site operations.

4. The vinyl chloride detected in TW-4 and the exterior pumping well, and the cis-1,2-dichloroethene detected in both pumping wells and TW-4 are most likely impacts from the facility's current and/or historic operations. These compounds appear to be breakdown products of more complex chlorinated solvents, suggesting that the source of subsurface impact is in the vicinity of the caustic rinse sump, and may be due to a more historical release, which has allowed degradation of these compounds.

RECOMMENDATIONS

Based on the results of this limited Phase II EA, ENSR recommends the following:

- While not specifically required by NYS regulations, ENSR recommends that the site owner or operator report these releases to the NYSDEC.

- Further investigation of potential on-site source areas is recommended, in particular in the area of SB-3 and the exterior water supply well with regard to chlorinated solvents, and surrounding the northern portion of the main building with regard to metals. Once areas of impact, and source areas are better defined, soil and groundwater remediation approaches should be evaluated for implementation.

- As solvents are present in the water used for non-contact cooling water at concentrations above NYDEC groundwater standards, and this water is discharged to Black Creek via a SPDES outfall, which is not being monitored for these compounds, ENSR recommends that appropriate monitoring with possible pre-treatment or cessation of discharge be implemented, with the involvement of the NYDEC.

STUDY LIMITATIONS

This report describes the results of ENSR's limited Phase II assessment to evaluate current environmental conditions at the subject property based on historical activities conducted on-site. In the conduct of this assessment, ENSR has attempted to independently assess the potential presence of such a problem within the limits of the established scope of work as described in our proposal. However, current site conditions and field investigation methods employed limit the extent to which a thorough evaluation could be conducted. Specifically, the placement of soil borings was limited by presence of overhead obstructions, site buildings, and/or site equipment.

This report and all field data and notes were gathered and/or prepared by ENSR in accordance with the agreed upon scope of work and generally accepted engineering and scientific practice in effect at the time of ENSR's assessment of the site. The statements, conclusions, and opinions contained in this report are only intended to give approximations of the environmental conditions at the site. Moreover, there are several major modifications that are inherent in the conduct of this or any other environmental due diligence examination.

1. It is difficult to predict which, if any, of the potential environmental issues identified will become actual problems in the future. Federal and state environmental regulations continually change, as do the enforcement priorities of the applicable government agencies involved.

2. Even for problems currently identified, it is often difficult and sometimes impossible to accurately estimate the liabilities that may be involved in remedying the problem(s). The legal and technological standard for evaluating and remedying environmental problems tends to be highly dependent upon agency negotiations and the sometime arbitrary and unpredictable nature of agency officials charged with such negotiations.

3. There is always the distinct possibility that major sources of future environmental liability have yet to manifest themselves to the point where they are reasonably identifiable through an external investigation such as the one conducted herein.

ENSR appreciates the opportunity to be of service to GE Capital. If you have any questions or comments, please call Mr. Randy Ellis at (805) 388-3775 or Carol-Anne Morse at 978-589-3000.

Sincerely,

ENSR

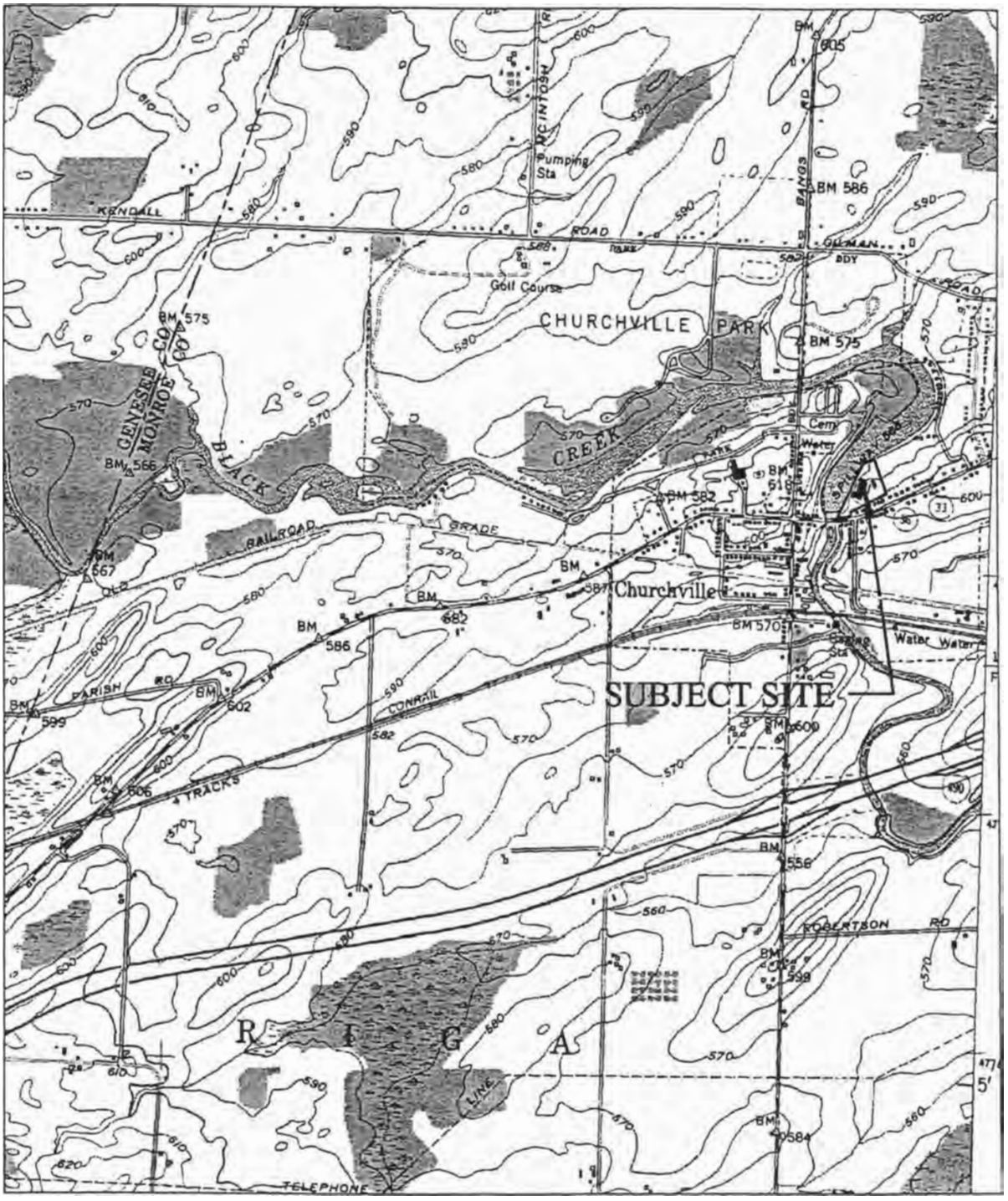
Kevin J. McGovern
Field Geologist
Report Author

David T. Montplaisir
Senior Project Manager
Reviewer

Carol-Anne Morse, P.G.
Department Manager
Senior Reviewer

KJM: kjm

Attachments: A) Figure 1 - Site Locus
Figure 2 - Site Plan
B) Laboratory Analytical Results & Chain of Custody Documentation



SCALE: 1" = 2,000'
SOURCE MAP: U.S.G.S. 7.5 MINUTE SERIES TOPOGRAPHIC, CHURCHVILLE, NEW YORK QUADRANGLE (1978)
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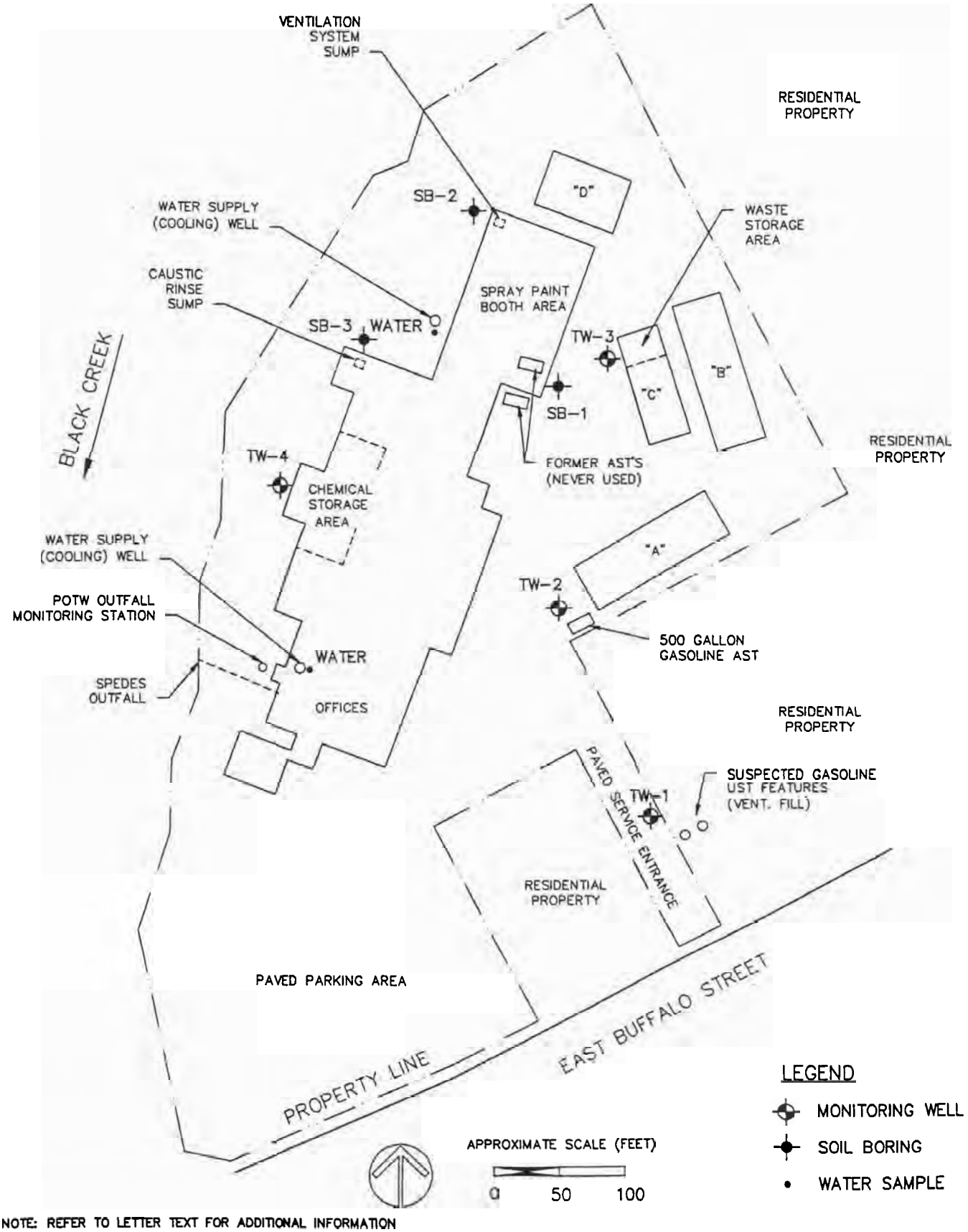
SITE LOCATION MAP
PHASE II ENVIRONMENTAL ASSESSMENT
LUSTER-COATE METALLIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

FIGURE NUMBER: 1

DRAWN BY:	DATE:	PROJECT NUMBER:	SHEET NUMBER:
KJM	9/13/01	02978213.100.0120	1 OF 2



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SITE PLAN
PHASE II ENVIRONMENTAL ASSESSMENT
LUSTER-COATE METALLIZING CORP.
32 EAST BUFFALO STREET
CHURCHVILLE, NEW YORK 14428

FIGURE NUMBER:	
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LaBella Associates, D.P.C.
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Rochester, New York 14614

Appendix 6

Contact List Information and Qualifications

32 East Buffalo Street
Churchville, New York
BCP Site #C828113

Remedial Investigation Work Plan
Contact List Information

Environmental Professional: LaBella Associates, D.P.C.

Environmental Director	Gregory Senecal, CHMM*	Ph. 585-295-6243 Cell 585-752-6480
Project Manager	Daniel Noll, P.E.*	Ph. 585-295-6611 Cell 585-301-8458
Quality Assurance Officer	Jennifer Gillen*	Ph. 585-295-6648 Cell 315-402-6480
Field Geologist & Site Safety Officer	Alex Brett	Ph. 585-770-2552 Cell 585-709-0761
LaBella Safety Director	Richard Rote, CIH	Ph. 585-295-6241

Shallow Overburden Drilling Contractor: LaBella Environmental LLC

* denotes LaBella's assumption that each of these individuals qualifies as a Qualified Environmental Professional as defined in NYSDEC Part 375-1.2(ak). Alternate QEPs are also included in the following qualifications in the event one or more of these persons are needed to complete the RI.

LABELLA Associates, D.P.C.

Relationships. Resources. Results.

Greg Senecal, CHMM

Greg is Director of Environmental Services and is a Certified Hazardous Materials Manager and is responsible for the direction of all environmental investigation related projects undertaken by the firm. He has more than 23 years experience in designing, managing, and conducting numerous site assessments, remedial projects, brownfield redevelopment projects, groundwater monitoring well installations, test pit excavations, and underground petroleum storage tank removals and spill cleanups.

Greg coordinates staffing and client relationships for many of the firm's environmental clients. This effort includes working closely with the client, and forming the best technical project teams for the diverse array of environmental consulting and engineering services offered by the firm.

PHASE I/II INTRO:
As Director of Environmental Services, Greg is responsible for the direction of all environmental investigation related projects undertaken by the firm. Greg has more than 24 years experience scoping, scheduling, and reviewing Phase I Environmental Site Assessments, Phase II Environmental Site Assessments, and remedial efforts undertaken by the firm.

Greg is a Certified Hazardous Materials Manager (CHMM) and has extensive experience in the field of Environmental Management relating to Phase I and Phase II Environmental Site Assessments, remediation, and environmental compliance evaluations. Greg has conducted or supervised over 3,000 Phase I Environmental Site Assessments and over 1,500 Phase II Environmental Site Assessments, as the firm has averaged performing 300-340 assessments per year.

Project Experience

Monoco Oil Brownfield Cleanup
Pittsford, NY
Greg is responsible for directing all environmental services associated with the NYSDEC Brownfield Cleanup Program for this project. This complex environmental project involves the cleanup and demolition of a 20-acre blighted vacant oil refinery. The redevelopment plan for the project includes redevelopment of an upscale waterfront apartment and town home complex along the Canal.

Director, Environmental Division
- State University of New York at Syracuse, School of Environmental Science and Forestry: BS, Environmental Science
- State University of New York at Cobleskill: AAS, Fisheries and Wildlife Technology

Certification / Registration
- Certified Hazardous Materials Manager
- Certified Hazardous Waste Operations & Emergency Response (40-Hour OSHA Health and Safety Training 29)

935 West Broad Street
Rochester, NY
Greg is Client Manager for the Remedial Investigation, Remedial Alternatives Analysis, Site Re-use Concept Plan and a Corrective Action Plan. This project is funded under the NYSDEC 1996 Clean Water/Clean Air Bond Act. Projects tasks completed to date include: geophysical site assessment; comprehensive soil and groundwater characterization; computer model contaminant plume migration trends; GIS mapping to depict site features, analytical data, contaminant plumes; developed reuse concept site plan.

Monroe County Environmental Testing Term Agreement Monroe County, NY
As Director of Environmental Services, Greg has been responsible for the successful completion of over 12 years of term agreements (with annual renewals) for hazardous materials inspection and abatement design with Monroe County. Assignments typically involve

Greg Senecal, CHMM

asbestos and lead inspections, but have also included other Regulated Building Materials and mold. Projects have ranged in size from small utility spaces to large multi-story office/housing complexes. A recently completed project involved the inspection of 160,000 sq ft of the Public Safety Building.

Environmental Term Agreement | City of Rochester
Rochester, NY
Client Manager who directs all of the projects under the term. Projects range from Phase I Environmental Site Assessments to Site Characterizations, Remedial Cost Estimates, and Brownfield Cleanups.

690 St. Paul Street | NYSDEC Brownfield Cleanup Project
Rochester, NY
Greg is serving as the project director for this multi-faceted Brownfield investigation and cleanup project. Greg acts as the liaison between the building owners, the former owner (Bausch & Lomb), the Building tenant (City of Rochester School District), and the numerous regulatory agencies involved in the project. This project includes a large SVI investigation, design and installation of a SVI mitigation system, monthly performance monitoring of indoor, sub slab, and exterior air, and communication of the above results to the agencies, tenants, and various stakeholder groups this project also included several IRM's for the removal of orphan tanks and petroleum impacted soils. The RI is currently focusing on the identification and delineation of suspected TCE plumes on the property and under the building structures.

Buffalo Avenue Industrial Corridor Brownfield Opportunity Area | Pre-Nomination Study
Niagara Falls, NY
Greg served as the project director for this 1500 acre, 2500 industrial parcel Brownfield Opportunity Area Project. Greg coordinated the effort between LaBella's Planning and environmental division. He also oversaw the schedule and public outreach components of the project.

Vacuum Oil/South Genesee Brownfield Opportunity Area | Pre-Nomination Study
Rochester, NY
Director of the Project Team for the City of to prepare a pre-nomination study for the proposed Vacuum Oil-South Genesee River Corridor Brownfield Opportunity Area. LaBella developed mapping that allowed for the Brownfield Opportunity Area boundaries to be established in a logical manner at the 56 acre 1.2 mile long corridor along the Genesee River. LaBella conducted economic and demographic research for the project site and gathered zoning, occupancy, and environmental information for potential underutilized Brownfield properties within the BOA.

Port of Rochester Redevelopment Project | Phase II Site Characterization
Rochester, NY
Project Manager for complete Phase II Site Characterization, which involved sub surface characterization of approximately 38 acres. Greg directed the environmental team who received a beneficial re-use determination to re use 80,000 cubic yards of iron foundry slag as on site fill.

Bureau of Water, Lighting, & Parking Meter Operations
Rochester, NY
Greg served as Client Manager to remediate the Water Bureau site to obtain regulatory closure or inactivation. The project scope includes the redevelopment of the current site for reuse as a new facility for the operations center.

CSXT Train Derailment & Hazardous Materials Spill
Rochester, NY
Project Manager responsible for review of all delineation reports, implementation of additional delineation studies, review of remedial work plans, and oversight of all facets of the execution of IRM as it related to achieving a cleanup that would limit long term liability for the City and allow for the planned redevelopment to occur.

Rochester Rhinos Stadium Brownfield Redevelopment
Rochester, NY
Greg served as Project Manager of the NYSDEC Voluntary Cleanup of this prominent urban redevelopment site. The voluntary clean was based around a soils management plan approach that included the re-use of approximately sixty thousand yards of low level petroleum contaminated soils as on site fill under parking lots and in landscaped berm areas of the property.

LABELLA Associates, D.P.C.

Relationships. Resources. Results.

Daniel Noll, PE

Dan has over 15 years of experience with environmental projects at industrial/manufacturing facilities and environmental investigation projects for a variety of clients including developers, financial institutions, industrial clients, and municipalities. Dan has managed numerous Phase II Environmental Site Assessments and remediation projects such as groundwater monitoring programs, soil vapor investigations, test pit investigations, geo-probe investigations, underground storage tank removals, soil removals, bio-cell remediations, and in-situ groundwater remediation. He also has experience with the design and installation oversight of mitigation systems. In addition, Dan has assisted industrial, municipal and agricultural clients with permitting and annual reporting for State Pollution Discharge Elimination System (SPDES) permits, Part 360 Land Application permits, Composting permits, and Petroleum Bulk Storage (PBS) registrations.

Brownfield Program Manager

- Clarkson University: BS, Chemical Engineering

Certification / Registration

- Professional Engineer, NY
- OSHA 40-Hour Certified Hazardous Waste Site Worker Training
- OSHA 8-Hour Certified Hazardous Waste Site Worker Refresher Training

Project Experience

Carriage Cleaners BCP Site | Springs Land Company
Rochester, NY

As Project Manager, Dan completed a Brownfield Cleanup Program (BCP) Application & Work Plan to conduct a Remedial Investigation at a former dry cleaning facility. A soil, groundwater, and soil gas study was undertaken to develop remedial costs and assist with redeveloping the property. Subsequently, an Interim Remedial Measure was completed to remove the source area of impacts from the Site. Dan completed a remedial alternatives analysis for selecting a treatment approach for the residual groundwater plume. Dan also attended Town Board Meetings regarding this project.

Former Manufacturing Facility - BCP Site | Stern Family Limited Partnership
Rochester, NY

Dan was the Project Engineer for this BCP Site, which underwent a Remedial Investigation, Interim Remedial Measures, and installation of a sub-slab depressurization system. Dan completed and stamped the Final Engineering Report required to obtain the Certificate of Completion for the property owner, allowing them to obtain their tax credits.

Former Bausch & Lomb Facility BCP Site | Genesee Valley Real Estate
Rochester, NY

Dan is Project Manager for this Brownfield site that served as a manufacturing facility from the 1930s to the 1970s. The project includes a Remedial Investigation (RI) of a four-acre parcel with ten areas of concern identified based on historic information. The RI identified four areas requiring remedial actions and Interim Remedial Measures have been completed in three of the locations. The areas of remediation included petroleum impacted soil and groundwater with free floating petroleum product, and chlorinated solvent contamination including bedrock impacts at depth. A remedial alternatives analysis is being completed to determine a final remedy for the site.

Vacuum Oil – BCP Site | One Flint Street Associates
Rochester, NY

Dan was the Project Manager for this Brownfield site that is the oldest oil refinery in the United States. The current project includes developing a remedial investigation plan for two parcels that have had a history of oil refining since the 1800s. The remedial investigation was designed to fill data gaps from previous studies in order to minimize cost to the Client.

Daniel Noll, PE

Petroleum Soil Removal & Oxygen Injection System| City of Rochester
Rochester, NY
As Project Engineer, Dan developed a soil and groundwater study to investigate former underground storage tanks at a former gasoline/auto repair facility. A remedial alternatives analysis was conducted to evaluate several options for remediating soil and groundwater at the site including light non-aqueous phase liquid. Dan followed this project through remediation which consisted of removing about 1,500 cy of soil and designing/installing an oxygen injection system to remediate groundwater over time.

Former Emerson Power Transmission Facility
Ithaca, NY
Dan completed a detailed review of this 100-acre site with 800,000 sq. ft. of manufacturing space. The site is in the NYSDEC Inactive Hazardous Waste Disposal Site registry and was a heavy industrial facility for over 100 years. The facility closed in 2009 and Dan is the project manager for environmental due diligence activities for a potential buyer. The facility has known issues with chlorinated solvents in bedrock and with significant off-site impacts. The overall project will include a detailed and in-depth environmental site assessment with sampling for soil, bedrock, groundwater, soil gas, sediments, and surface waters in order to document any impacts above NYSDEC criteria and thus limit liability for the purchaser.

Genesee River Dredging Project | City of Rochester
Rochester, NY
Dan managed a project to permit three areas for dredging near the mouth of the Genesee River. The project included evaluating the previous dredging operations in the area, the existing sediment sampling data, sediment levels, discharge points in the area to be dredged and 3-D modeling of the sediments for accurate volume calculations. This information was summarized in a presentation to NYSDEC and the Army Corp of Engineers in order to streamline the permitting process and determine any additional requirements for obtaining a permit. Subsequent to the presentation, Dan developed the permit and submitted them to the Client for signature, and then approval by regulatory agencies.

Port Marina | City of Rochester
Rochester NY
Dan assisted with the environmental investigation of the City of Rochester Port Marina. This project included evaluating the extent of slag fill materials that would require proper management during any redevelopment work. The extent of slag was evaluated by implementing a grid pattern of soil borings and using the resulting data to develop a 3-dimensional model of the subsurface at the Site. This model was used to generate volumes of material to be disturbed during redevelopment and estimate the cost burden of the environmental portion of the project. This project also included evaluating the magnitude and permitting of a massive dewatering program to allow the mass excavation to be completed.

NYSDEC Legacy Site Soil Vapor Intrusion Project | City of Rochester
Rochester, NY
Dan is Project Manager for this project which includes evaluating soil vapor intrusion from a former 230-acre municipal landfill with methane gas and chlorinated solvent impacts. The landfill was converted into an industrial park after closure in 1971 and is now developed with 45 separate parcels and over 2,000,000 square feet of building space. This challenging project included obtaining access from 27 different property owners and conducting site assessments at each facility and separately evaluating groundwater impacts over approximately 20-acre area. The results of this work determined the cost burden and liability of the City for addressing soil vapor intrusion. LaBella utilized all of the following mitigation approaches for minimizing this significant cost burden to the City: sealing of floors, vapor barriers, sub-slab depressurization systems and building pressurization depending on building conditions/uses.

Fill Relocation and Sub-Slab Mitigation System | City of Rochester
Rochester, NY
Dan was project manager for this project which relocated approximately 3,000 cubic yards of fill material from a development site that is located on a former landfill operated by the City of Rochester. This work was conducted for the City but on private property. The fill was relocated and placed in a soil berm on City property with NYSDEC approval. In addition, Dan designed and oversaw construction of a sub-slab depressurization system for the new 8,000 square foot building.

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Richard Rote, MS, CIH

Rick has been providing health, safety and environmental services to LaBella clients for 25 years. Prior to joining LaBella Associates, he worked over 10 years for Eastman Kodak Company. Rick has conducted a wide variety of industrial hygiene investigations including:

- Industrial Hygiene Walk-Through Surveys
- OSHA Personnel Exposure Studies
- Noise Exposure Studies
- OSHA Compliance Programs and Audits
- Indoor Air Quality Studies
- Mold Assessment and Testing
- Non- ionizing Radiation Surveys
- Asbestos Site Surveys
- Health & Safety Plans for Hazardous Waste Sites

Project Experience

Rick has performed exposure studies for a wide variety of agents, from carcinogens and heavy metals to simple irritants and asphyxiates. Occupational exposure monitoring includes vapors, gasses, dusts, noise and other agents. He is routinely called upon to complete indoor air quality studies, including the assessment of 'Toxic Mold' contamination and potential for occupant exposure. In some studies, computerized data acquisition is used, allowing for complex data analysis and graphical representations of results. In another area of data management, he designed and helped to develop a database for tracking employee exposure histories and training.

Rick has prepared corporate programs for compliance with OSHA regulations such as Confined Space, Lock Out/Tag Out, Respiratory Protection, Hazard Communication, asbestos, lead and others.
Rick has extensive experience with employee health and safety training programs. He has provided Hazard Communication, Right to Know and Hazard Awareness training courses for many large organizations. Average class sizes ranged from 10 - 30 people. Some of the training courses Rick has prepared and presented are:

- Lead
- Hazard Communication
- Hearing Conservation
- Confined Space Entry
- Respiratory Protection
- Lock Out/Tag Out
- Lab Safety

Senior Industrial Hygienist

- University of Rochester: MS, Industrial Hygiene
- St. Lawrence University: BS, Geology

Certification / Registration

- Certified Industrial Hygienist
- Asbestos Inspector & Abatement Designer
- 40 Hour Hazwoper

Professional Affiliations

- American Industrial Hygiene Association
- American Board of Industrial Hygiene
- Air & Waste Management
- American Society of Safety Engineers

Lattimore Community Surgicenter: Septic Contamination Remediation Response — Rochester, NY

LaBella prepared a remediation design to safely respond to a pipe break that resulted in septic contamination of surgical suites and associated support areas. The affected areas were isolated, remediation approach and methods identified, and a remediation contractor selected. Work methods were monitored, limited air sampling completed during work and the work areas were cleared with post-remediation wipe samples.

Childtime: Various Sites —Upstate, NY

LaBella completed visual inspections and assessments for mold contamination at 10 sites across Upstate New York. Contaminated areas were delineated, limited sampling was completed, remediation recommendations were provided and a remediation specification was prepared.

During and post remediation inspections were performed with clearance testing done as needed.

Astra Zeneca: Environmental, Health & Safety Management
Project Manager for on-site environmental, health & safety management services to a large pharmaceutical research facility through a four year contract. LaBella's personnel were responsible for day to day health & safety responsibilities, including facility inspections, accident investigation and reporting, chemical exposure monitoring, compliance program updates and employee training. LaBella was also responsible for the on-going collection and disposal of all chemical and biological wastes generated at the facility. The contract terminated when the company relocated to an out of state facility.

LaBella managed the environmental shut down operations of the facility. Labs and storage areas were inspected for remaining chemicals. Unused chemicals and chemical wastes were marshaled in selected areas and sorted in preparation for lab pack disposal. Disposal contractors were interviewed and the chemical disposal was bid out. Non-hazardous laboratory equipment and supplies were collected in selected areas and made available to local schools and clinics free of charge. Lab hoods were tested for contaminated residues and cleaned as appropriate. Dumpsters were ordered for the disposal of non-hazardous materials. A cleaning company was contracted to complete a final clean to leave the space as required in the lease.

UCB Manufacturing: Occupational Exposure Monitoring of Methylene Chloride and Dust — Rochester, NY
Project Manager for the assessment of occupational exposures to methylene chloride and dust during the production of two pharmaceutical products. Several different production phases were monitored for both products. Both 8-hr Time Weighted Averages and Short Term Exposure Limit concentrations were determined for each phase. Ventilation evaluations and recommendations were provided to improve contaminant capture and reduce exposures.

Optimation Technology: Hexavalent Chromium Concentrations during Welding — Rochester, NY
Project Manager retained in response to new OSHA regulations, personal exposure monitoring was completed during a variety of stainless steel welding tasks to determine exposure concentrations of hexavalent chromium. Standard welding operations were evaluated with excellent ventilation controls in the work areas. Exposure concentrations did not exceed OSHA limits.

American Motive Power
Project manger for on-site provision of environmental, health & safety services. Plant operations were reviewed and investigated; Hazcom, Lockout/Tagout, Respiratory Protection, waste management and air permit programs were developed. Employee training was provided as required. Employees were monitored to determine exposure concentrations to noise and solvents.

Nestle Purina
Completed employee exposure monitoring for two corrosive irritants used during routine cleaning of processing equipment. The client needed immediate support to respond to employee concerns about the process. Samples were taken for several employee tasks during the B shift within one week of the request to complete the work, the final report was provided two weeks later.

Nexpress/Kodak
Project Manager for the assessment of occupational exposures to solvents and noise during the development of coating equipment and processes. Ventilation evaluations and design services were provided to improve performance. Respiratory protection program training and fit testing were provided to new users.

Wegmans Food Markets, Inc.: Project Manager, Employee Exposure Assessment — Rochester, NY
LaBella measured the concentrations of several different solvents and dark room chemicals to assess employee exposures during various printing operations. The exhaust ventilation system was evaluated for effectiveness. Recommendations were provided on chemical handling and modifications to the exhaust system.

Employee Exposure
Personal and area samples were taken to measure employee exposures to ammonia and dust at a large egg farm. Full shift dosimetry was performed with data

logging. Time history graphs were used to identify specific high exposure tasks.

Nazareth College: HSE Compliance Services
Project Manager for the assessment of compliance with OSHA and environmental regulations and exposure monitoring in the Art Department. A Spill Prevention Control & Countermeasure Plan and a Laboratory Chemical Hygiene Plan were developed to assist with compliance measures.

Pfaulder, US, Inc.
A number of air monitoring studies have been completed to determine exposure concentrations to metals, silica and solvent vapors across a variety of production operations. The work has been completed as a component of the company's Safety Management Program.

LaBella updated Pfaudler's Confined Space Program by reevaluating the plant for confined space hazards, preparing a new program manual and written entry procedures. The plant was also evaluated for Lock-Out/Tag Out hazards. All powered equipment was assessed and a new Lock-Out/Tag-Out Program was prepared, including written Lock-Out/Tag Out procedures. LaBella has provided employee training in these programs and Hazcom on a regular basis.

Indoor Air Quality
LaBella has completed numerous indoor air quality studies in a variety of environments in response to employee complaints such as, upper respiratory tract irritation, odors, headaches and a high rate of illness. Building design, ventilation, equipment, and operations are evaluated for factors which could contribute to poor indoor air quality. Testing has included agents such as carbon dioxide, volatile organic compounds, solvents, dust, noise and bioaerosols. Recommendations for remediation and ventilation improvements are provided.

RIT: Indoor Air Quality Study — Rochester, NY
Industrial Hygienist and investigator for several Indoor Air Quality and mold studies performed at a number of campus buildings. Studies have been triggered by employee, faculty and student complaints of upper respiratory irritation, dry scratchy eyes, illness, odors and stale air. Investigations include observation, interviews and testing. Testing assesses ventilation effectiveness, contaminant concentrations, and mold types and concentrations. Recommendations are provided for improved air quality and mold remediation.

Soldiers & Sailors Hospital: Mold Assessment — Penn Yan, NY
LaBella completed an assessment of mold contamination in a portion of a building affected by water intrusion from a pipe break. Following an initial response by the hospital to dewater and dehumidify the affected areas, LaBella completed an inspection for visual signs of water damage and mold growth and conducted limited sampling. Rapid response by the hospital had prevented significant mold growth, some minor corrective actions were recommended.

Elmira Psychiatric Center: NYSOGS — Elmira, NY
Project Manager for the comprehensive assessment of radon across the entire facility. Results were reported and at-risk spaces were identified. After consideration of site characteristics, space usage, and existing ventilation performance, a design for a comprehensive ventilation upgrade was provided.

NYSDOT: Fredonia Maintenance Residency — Fredonia, NY
Volatile Organic Compounds were scanned using SUMA canisters and Method TO-15 to achieve very low detection levels in response to employee concerns over sub-slab gasoline and fuel oil contamination. Sample data was compiled and presented in an industrial hygiene format for presentation to employees. Vapor concentrations were concluded to be low enough to not present the potential for adverse health effects.

City of Rochester: Indoor Air Quality Studies — Rochester, NY
Project Manager for Indoor Air Quality studies, including toxic mold investigations, which been performed at a number of city facilities. Studies have been triggered by employee complaints of upper respiratory irritation, dry scratchy eyes, illness, odors and stale air. Testing was completed for specific contaminants based on conditions identified during the initial walk-through evaluation. Ventilation system design and function are also

Richard Rote, MS, CIH

evaluated. All work was carried out in close association with the Environmental Services Department, including the development of corrective actions.

Wegmans Food Markets, Inc.: Indoor Air Quality — Rochester, NY
Warehouse guards had expressed concern about exposure to engine exhaust and particulate. Personal sampling was conducted to determine employee exposure concentrations to respirable dust, carbon monoxide, and nitrogen dioxide. Recommendations were made for modifications to the guard house ventilation system to help reduce particulate and exhaust gas infiltration.

Affinity Realty Partners, LLC
Radon monitoring was performed to satisfy lender requirements at this and many other apartment complexes. Testing needs are assessed and monitoring is completed quickly and efficiently.

SUNY Fredonia
The Fenner House Admissions Office was assessed for mold contamination in response to occupant concerns. Inspection and sampling determined that occupied areas were in good condition, but that the basement needed some corrective actions. The inspection revealed several areas and aspects of water infiltration, leading to recommendations for better drainage and other methods to prevent the reoccurrence of mold growth.

APD Engineering
Community noise studies have been completed in several upstate locations in support of the placement and development of large retail establishments. Follow up noise studies have been completed to support retail store response to neighbor noise complaints.

Warren County Public Safety Facility
A community noise study was completed to address neighbor complaints about noise from a recently installed roof top chiller. Measurements were taken at several locations revealing that noise from the chiller was only slightly higher than ambient noise levels.

Lead Services

Residential
Rick has conducted many industrial hygiene studies and exposure evaluations on operations where lead exposure was a concern, and appreciates how easily serious lead exposures can occur. Rick manages the staff responsible for inspections and risk assessments required for compliance with EPA and HUD lead paint guidelines for housing inspections and abatement clearance.

Industrial
Rick has conducted many industrial hygiene studies and exposure evaluations on operations where lead exposure was a concern. The types of operations studied include production, maintenance and demolition. Specific operations include: part finishing, hand and wave soldering for circuit board manufacturing, lead chromate painting operations, incinerator maintenance and ash handling operations, lead smelting, and demolition of lead paint coated steel structures. Rick has experience with the HUD lead paint guidelines for home inspections and abatement clearance.

City of Rochester: Lead Paint Program — Rochester, NY
Rick has managed LaBella Associates participation in the City Lead Paint Program as a provider of 3rd party Clearance testing following hazard reduction activities. Nearly 100 Clearance Certifications have been completed within the last 6 years.

Providence Housing: School Campus Conversion to Housing — Rochester, NY
This large project involves the conversion of a former Parrish and private school campus to program housing. Rick managed the provision of lead and asbestos inspection and abatement design services. Lead testing was completed in 5 different campus buildings that were converted to housing. The project also included limited risk assessments, interim lead clearance and final clearance testing in each completed housing unit.

Richard Rote, MS, CIH

DASNY: SUNY Oswego, Onondaga Hall ACM and Lead Inspection and Testing — Oswego, NY
Rick was the manager of the asbestos and lead inspection and testing efforts required for this project. The planned work presented the potential for impact of asbestos-containing materials (ACM) and lead-based paint. Rick conducted the lead inspection and assisted with the asbestos inspection of bathrooms in this high rise dormitory. A major renovation project for the upgrade of bathrooms and restrooms in the dorm required new fixtures, finishes and plumbing. Abatement specifications and drawings are being prepared for the abatement of confirmed ACM; all paint coatings were found to be lead-free.

Gates Chili Central School District: Asbestos Abatement and Inspection — Gates, NY
Project Manager for asbestos and lead paint inspection, and abatement design related to improvements and modifications to 10 buildings. The projects required coordination between the project team, school staff, and several architectural firms. Lead considerations included inspection, testing, abatement design, interim and final clearance tests.

Compliance Audit and Management Projects

Astra Zeneca
Rick and his staff had full responsibility for ongoing health, safety and environmental compliance at a pharmaceutical research operation for over 4 years, until site relocation out of state. The project was initiated with a comprehensive audit of operations, followed by correction of deficiencies and management of ongoing compliance with all applicable OSHA, EPA, DEC and NRC requirements. Responsibilities included safety audits, training and management; pest inspections and management; and Hazwaste management. Hazwaste management included waste characterization, container labeling, lab pack preparation, scheduling removal, review of manifests and annual reporting.

Hazardous Waste Management
Rick has completed audits and provided consulting assistance to a variety of industries on practices and issues relating to hazardous waste disposal and management. Industry experience includes polymer processing, spray painting, silk screening, plating and varied solvent use.

Air Emission Compliance
Rick is a certified third party compliance inspector for the NYS DEC in the dry cleaner perchloroethylene inspection program. The certified inspector acts as an agent of the DEC in performing annual Part 232 compliance inspections. Rick has performed many Part 201, 228 and Title V compliance determinations for a variety of industries. He has also reviewed and prepared Risk Management Plans for the accidental release of toxic materials.

OSHA Safety Compliance
Rick routinely provides OSHA compliance audits and performance reviews. He prepares compliance programs and consults with industries on their implementation. Rick also provides employee training for most OSHA safety programs. Example safety programs include Confined Space, Lock Out/Tag Out, Hazcom, Lead, Asbestos, Emergency Evacuation, Laboratory Safety and many more.

Bird Contamination

Attic Cleanup, South Buffalo Charter School
Buffalo, NY
Rick served as Project Manager for an indoor air quality study and the cleanup of a bird contaminated attic space in the main school building. Cleanup methods were proposed and reviewed. Air sampling before, during and after cleanup documented successful cleanup and control methods.

Port of Rochester Redevelopment
Rochester, NY
Project Manager of asbestos and environmental management services associated with the design and construction of a new ferry and customs terminal at the Port of Rochester. A large building slated for renovation was contaminated with bird carcass and several inches of bird feces. Rick managed the asbestos inspection and the

abatement design for the proper removal of both the asbestos and bird residues.

Pole Barn Cleanup, Greece Central School District Rochester, NY
Rick reviewed conditions associated with the reconstruction of a transportation pole barn that had bird feces in the attic spaces. A specification was developed to inform the contractor of the hazard and to specify control conditions intended to protect adjacent school property from emissions and impact from the cleanup work.

Ice Rink Cleanup, Ithaca, NY
The ice rink and open canopy roof was to be upgraded and enclosed. Over the years bird feces and nests had collected in the canopy support structure. A specification was developed to inform the contractor of the hazard and to specify control conditions intended to protect adjacent occupied property from emissions and impact from the cleanup work.

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Jennifer Gillen, MS

Jennifer is a Project Geologist responsible for the coordination and successful completion of Phase II Environmental Site Assessments (ESAs) and several Sites in the NYSDEC Brownfield/ Voluntary Cleanup Programs. Jennifer has also worked on several Brownfield Opportunity Area (BOA) studies. Jennifer was previously the Phase I ESA Program Manager at LaBella and has completed hundreds of Phase I ESAs, numerous Phase II ESAs, and has experience with many Sites with chlorinated solvent impacts as well as NYSDEC Spill Sites.

Project Geologist

- SUNY Albany: BS, Geological Sciences
- SUNY Albany: MS, Geological Sciences
- Certified Hazardous Waste Operations & Emergency Response (40 Hour OSHA Health and Safety Training 29)
- OSHA 8 Hour Hazardous Waste Operations and Emergency Response Course

Project Experience

Canal Corridor Brownfield Opportunity Area Study | Oswego, NY
Jennifer was responsible for the compilation, analysis and dissemination of data associated with the BOA project, which spans 1,344 acres along the Oswego Canal and shore of Lake Ontario, within in the City of Oswego.

Tonawanda Brownfield Opportunity Area Study | Tonawanda, NY
Jennifer was responsible for the compilation, mapping and analysis of data associated with this 1,000 acre BOA on the Niagara River, which included properties used for radiological waste disposal associated with the Manhattan Project.

NYSDEC BCP Site #C828159, 690 Saint Paul Street | Rochester, NY
Jennifer assisted with the development of two Interim Remedial Measure Work Plans, the Remedial Investigation Report and Remedial Alternatives Analysis/Remedial Action Work Plan for the remediation of a NYSDEC Brownfield Cleanup Program site formerly utilized as an industrial manufacturing facility. Implemented the two Interim Remedial Measures and portions of the Remedial Investigation at the Site which included the excavation of contaminated soil and bedrock, the advancement of soil borings, and the installation and sampling of groundwater monitoring wells. Also, included in this work was the installation of bedrock monitoring wells using conventional rock coring methods and installation of infrastructure for *in situ* chemical treatment. This process involved coordination with the NYSDEC, the NYSDOH, and the City of Rochester School District.

Penn Yan Marine | Penn Yan, NY
Currently completing a groundwater delineation investigation and BCP application as well as a work plan for *in situ* treatment of groundwater contaminated with chlorinated volatile organic compounds. The implementation of the groundwater delineation investigation has included the installation and sampling of nineteen groundwater monitoring wells.

NYSDEC VCP Site #V00585-6, Lake Ontario Mariners Marina | Henderson Harbor, NY
Developed a Remedial Alternatives Analysis/Remedial Action Work Plan for this NYSDEC Voluntary Cleanup Site. This work included the design of a sub-slab depressurization system within a building under which a plume of petroleum-contaminated groundwater is located and the design of a pilot test for an air sparging system.

Former Emerson Power Transmission Facility | Ithaca, NY
Jennifer assisted with a detailed review of this 100-acre site with 800,000 sq. ft. of manufacturing space. The facility was a heavy industrial facility for over 100 years and has known issues with chlorinated solvents in bedrock and with significant off-site impacts. The project included a detailed and in-depth environmental site assessment in order to document any impacts above NYSDEC criteria and thus limit liability for the purchaser.

NYSDEC Spill Site #0906903, 185 Scio Street | Rochester, NY
Oversaw the installation of dedicated bedrock groundwater monitoring wells at the Site using conventional rock coring methods.

City of Rochester Department of Environmental Services, Division of Environmental Quality, Pump Test Report, Port of Rochester | Rochester, NY

which included geotechnical sampling. Implementation of the pump test included the pumping of over 650,000-gallons of water and the analysis of drawdown effects on observation wells. This process involved coordination with the New York State Department of Environmental Conservation, Monroe County Pure Waters, and the City of Rochester Division of Environmental Quality.

NYSDEC Spill Site #0906903, 185 Scio Street | Rochester, NY
Oversaw the installation of dedicated bedrock groundwater monitoring wells at the Site using conventional rock coring methods. Completed sampling of these wells using standard low-flow methods.

NYSDEC Spill #0911669, Phase II Environmental Site Assessment and Remediation, Wemco Corp., Saltonstall Street | Canandaigua, NY
Conducted geoprobe soil boring sampling and groundwater sampling to evaluate for potential subsurface effects related to historic fuel distribution operations. Following the subsurface investigation, assisted with the implementation of remedial excavations at the Site and coordinated with the NYSDEC for the closure of the Spill.

NYSDEC Site #C738046, Former Breneman Site | Oswego, NY
Developed Remedial Investigation Work Plan and Citizen Participation Work Plan in anticipation of the upcoming Remedial Investigation at the Site.

Brownfield Cleanup Program Project, Greenport Crossings LLC., 181 Union Turnpike| Greenport, NY

Phase I Environment Site Assessments | Northeastern United States
Performed numerous Phase I ESAs and Transaction Screens on a wide variety of residential, commercial, industrial, and manufacturing facilities including gasoline stations, repair shops, apartment complexes, office buildings, and restaurants for the following groups:
Financial Institutions
- Bank of Castile
- Canandaigua National Bank
- ESL Federal Credit Union
- First Niagara Bank
- Genesee Regional Bank
- Northwest Savings Bank
- Steuben Trust Company

Municipal and Government Clients
- City of Rochester
- City of Oswego
- New York State Department of Transportation
- Town of Victor
- Yates County

Development and Construction Companies
- Urban Housing League of Rochester
- Edgemere Development
- Chrisanntha, Inc.
- Buckingham Properties
- Morgan Management
- Rochester Cornerstone Group

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Alexander Brett, EIT

Alex Brett is an Engineer in Training (EIT) in LaBella's Phase II and Brownfield Group. He is responsible for the successful completion of environmental investigation and remediation projects. His experience includes environmental field work, including soil and groundwater sampling, fieldwork oversight, and project reporting.

Environmental Engineer

- University at Buffalo: BS, Environmental Engineering
- Engineer in Training
- 40 Hour OSHA HAZWOPER Certified
- RCRA & DOT Hazardous Waste Shipping Training
- Erosion & Sediment Control Training

Project Experience

Field Activities:
-Low-flow groundwater sampling utilizing bladder and peristaltic pumps.
-Soil sampling and logging using direct push drilling rigs
-Monitoring well installation oversight
-SVI sampling

Monroe Hollywood Collision: 1821 Monroe Avenue—Brighton, NY
Conducted low-flow peristaltic groundwater sampling as part of scheduled quarterly groundwater monitoring.

Corning Hospital NYSDEC BCP Site:
176 Denison Parkway– Corning, NY
Performed low-flow peristaltic groundwater sampling for onsite wells for two separate sampling events. Provided CAMP monitoring for Site demolition activities.

Former Unisys Site Groundwater Monitoring—Lake Success, NY*
Coordinated quarterly groundwater sampling rounds and conducted low-flow bladder pump groundwater sampling according to the Site Sampling and Analysis Plan. Prepared quarterly OMM reports for onsite treatment systems ensuring proper operation.

NYSDEC: Al Tech Specialty Steel , Watervliet, NY*
Conducted low-flow groundwater sampling as part of the annual groundwater monitoring requirement using peristaltic pumps. Conducted the inspection of the landfill looking at the condition of the cover and drainage system. Also inspected the treatment system for the condition of the storage tanks and operational controls.

Confidential Client: Site Demolition & Restoration—Green Island, NY*
Construction manager of site demolition and restoration activities. Restoration included placement of a 40 mil HDPE liner over the former slab location of a previously demolished building to prevent infiltration of water pending further investigation into the subsurface. Responsible for proper shipment of hazardous wastes associated with a previous building demolition. Oversaw the demolition and asbestos abatement of a former steel baghouse containing ACM gaskets.

Confidential Client: Facility Decommissioning & Restoration—Niskayuna, NY*
Provided oversight of contractors for multiple activities including asbestos abatement, and facility cleaning/ restoration. The facility restoration included concrete fixes, removing oil from trenches followed by cleaning the trenches, and cleaning floors and beams. Worked directly with on-site employees to ensure proper waste characterization, and scheduling for disposal of wastes. Compiled all project documents and wrote the final decommissioning and restoration report for the site.

Confidential Client: Nail Creek Sampling—Utica, NY*
Assisted the project manager with oversight and sampling of soil and sediments to be analyzed for PCBs as part of the remedial investigation. Samples were located in a stream channel armored with large loose-fit limestone blocks and next to a highway interchange. Samples were recovered using a Geoprobe in soils surrounding the channel, and undisturbed sediments beneath the large blocks by angling the Geoprobe or by drilling directly through the rocks. Used a hand auger to collect additional

*Completed under previous employment

Alexander Brett, EIT

soil samples in the stream channel where no rock was present.

Confidential Client: Sludge Drying Beds—Selkirk, NY*
Oversaw contractors to determine the flow path of two sludge drying beds on the site. Oil and water mixture was pumped out of distribution chamber that acted as an oil water separator. Dyed water was added to the each sludge drying bed separately to confirm it drained to the chamber. The dyed water level was raised to find the outlet of the chamber. The tank edges were excavated and a new tank entrance was found to determine that both beds entered the chamber though a single pipe.

Confidential Client: Beacon Park Containment Delineation—Allston, MA*
Contractor oversite of vacuum excavation to a depth of 5 feet to clear boring locations for utility lines and other obstructions using an air vacuum excavation truck. Marked out new boring locations and confirmed new location with the project manager. Oversight of direct push soil borings using a Geoprobe. Logged all soils from borehole locations, collected headspace PID readings, and collected soil samples at designated depth intervals as required to find the extent of impacted soils for the site investigation. Provided daily updates of work progress to project manager.

*Completed under previous employment

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Megan Denner

Ms. Denner is an Senior Environmental Analyst with over five years of experience for LaBella Associates, responsible for the coordination and successful completion of the NYSDOT Hazardous Materials Assessment and Remediation Three Year Term Agreement. She also assists in the coordination and successful completion of Spill Prevention, Control and Countermeasures (SPCC) Programs for Electrical Utility companies and private clients. Megan also has experience with project management activities, including: permitting, preparation of proposals and cost estimates, Brownfield Applications, and development of work plans for investigation and remediation.

Sr. Environmental Analyst

- SUNY Brockport: BS, Environmental Science
- Monroe Community College: AAS, Science
- OSHA 40-hour HAZWOPER Training
- NYS Erosion and Sediment Control Certified

Project Experience

Electrical Utility SPCC Plan Program — New York Statewide and Maine

Megan assisted with SPCC Plan revisions/development for more than 250 electrical substations and service centers. Performs ongoing updates or creating SPCC Plans for newly constructed or modified substations as required. The SPCC scope of work for each electrical substation included an inventory of oil containing electrical equipment and total oil volume, documentation of secondary oil containment measures, evaluation of local topographic conditions, locating nearby potential water body receptors, and preparation of a SPCC plan report. The purpose of each SPCC plan is to determine whether on-site controls (i.e. secondary containment such as berms or concrete containment structures) would adequately contain an oil release in the event of electrical equipment failure, and in the event the such controls were inadequate, to identify approximate surface flow characteristics and local at risk water bodies. Obstacles associated with the project included the volume of substations to be assessed, the large geographical distribution of the substations, and strict schedule demands which required all aspects of the project to be completed within four-six weeks. The SPCC plans were successfully completed and delivered to the client within the schedule required.

Ginna Retirement Transmission Alternative (GRTA) – Rochester, NY

Provided historical oversight during the environmental planning stages for the GRTA installation. This oversight included managing a team to generate circuit route drawings and reports to aid in the anticipated site specific areas for soil disposal and re-use with regards to potential soil and groundwater contamination encountered during field installation.

Circuit 802/803 – Rochester, NY

Provided historical oversight during the environmental planning stages for the GRTA installation. This oversight included generating circuit route drawings and reports to aid in the anticipated site specific areas for soil disposal and re-use with regards to potential soil and groundwater contamination encountered during field installation.

Circuit 806/943 – Rochester, NY

Provided historical oversight during the environmental planning stages for the GRTA installation. This oversight included generating circuit route drawings and reports to aid in the anticipated site specific areas for soil disposal and re-use with regards to potential soil and groundwater

Megan Denner

contamination encountered during field installation.

Staubs Dry Cleaners IHWDS #828160 - Rochester, NY
Megan assisted with a detailed review of this Inactive Hazardous Waste Disposal Site. The site has been an industrial facility for over 85 years. The project included a detailed and in-depth environmental site assessment in order to document any impacts above NYSDEC criteria and thus limit liability for the purchaser.

Dutchess County Correctional Facility Expansion - Poughkeepsie, NY
Megan assisted with a detailed review of this 6-acre site with the inclusion of the Former Hamilton Reproduction Company (NYSDEC #B00020). The site has been a manufacturing/industrial/correctional facility for over 100 years. The project included a detailed and in-depth environmental site assessment in order to document any impacts above NYSDEC criteria. Future activities will involve coordinating with the NYSDEC and creating a unifying Site Management Plan for the planned expansion of the jail and the associated Sheriff's service building.

Binghamton, NY
Megan was responsible for the successful completion of a Brownfield Application and Remedial Investigation Work Plan associated with the Former Stowe Manufacturing facility.

Victor Insulators - Victor, NY
Megan completed a detailed review of this 50-acre site with 321,000 sq. ft. of manufacturing space. The site has been an industrial facility for over 100 years and manufactures ceramic transformer insulators. The project included a detailed and in-depth environmental site assessment in order to document any impacts above NYSDEC criteria and thus limit liability.

PHASE I ENVIRONMENTAL SITE ASSESSMENTS

Megan has performed hundreds of Phase I ESAs and Transaction Screens on a wide variety of residential, commercial, agricultural, and manufacturing facilities including gasoline stations, automobile repair facilities, apartment complexes, office buildings, and restaurants.

LaBella Associates, D.P.C.
300 State Street

Rochester, New York 14614

Appendix 7

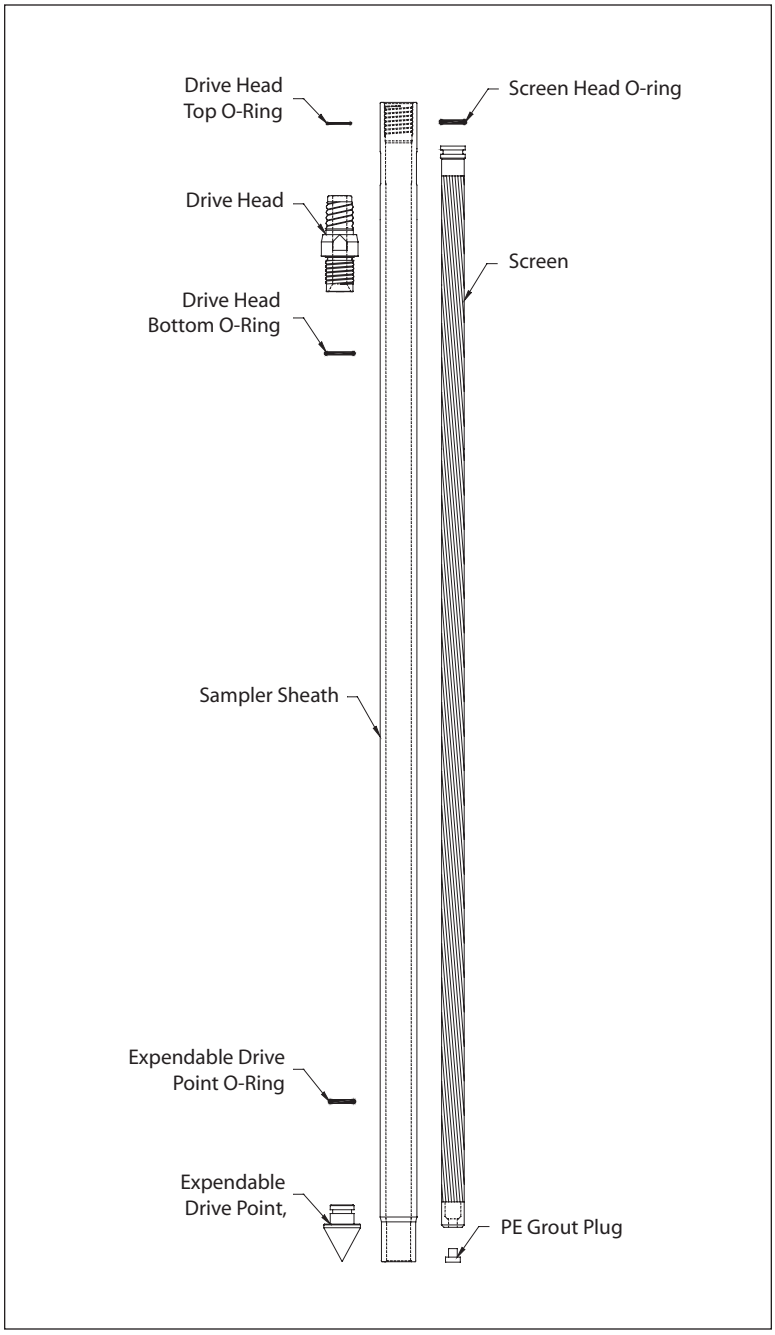
Geoprobe Screen Point 16

GEOPROBE® SCREEN POINT 16 GROUNDWATER SAMPLER

STANDARD OPERATING PROCEDURE

Technical Bulletin No. MK3142

PREPARED: November, 2006



GEOPROBE® SCREEN POINT 16 GROUNDWATER SAMPLER PARTS

Geoprobe® and Geoprobe Systems®, Macro-Core® and Direct Image® are Registered Trademarks of Kejr, Inc., Salina, Kansas

Screen Point 16 Groundwater Sampler is manufactured under U.S. Patent 5,612,498

1.0 OBJECTIVE

The objective of this procedure is to drive a sealed stainless steel or PVC screen to depth, deploy the screen, obtain a representative water sample from the screen interval, and grout the probe hole during abandonment. The Screen Point 16 Groundwater Sampler enables the operator to conduct abandonment grouting that meets American Society for Testing and Materials (ASTM) Method D 5299 requirements for decommissioning wells and borings for environmental activities (ASTM 1993).

2.0 BACKGROUND

2.1 Definitions

Geoprobe®: A brand name of high quality, hydraulically powered machines that utilize both static force and percussion to advance sampling and logging tools into the subsurface. The Geoprobe® brand name refers to both machines and tools manufactured by Geoprobe Systems®, Salina, Kansas. Geoprobe® tools are used to perform soil core and soil gas sampling, groundwater sampling and monitoring, soil conductivity and contaminant logging, grouting, and materials injection.

Screen Point 16 (SP16) Groundwater Sampler: A direct push device consisting of a PVC or stainless steel screen that is driven to depth within a sealed, steel sheath and then deployed for the collection of representative groundwater samples. The assembled SP16 Sampler is approximately 51.5 inches (1308 mm) long with an OD of 1.625 inches (41 mm). Upon deployment, up to 41 inches (1041 mm) of screen can be exposed to the formation. The Screen Point 16 Groundwater Sampler is designed for use with 1.5-inch probe rods and machines equipped with the more powerful GH60 Hydraulic Hammer. Operators with GH40 Series hammers may chose to use this sampler in soils where driving is difficult.

Rod Grip Pull System: An attachment mounted on the hydraulic hammer of a direct push machine which makes it possible to retract the tool string with extension rods or flexible tubing protruding from the top of the probe rods. The Rod Grip Pull System includes a pull block with rod grip jaws that are bolted directly to the machine. A removable handle assembly straddles the tool string while hooking onto the pull block to effectively grip the probe rods as the hammer is raised. A separate handle assembly is required for each probe rod diameter.

2.2 Discussion

In this procedure, the assembled Screen Point 16 Groundwater Sampler (Fig. 2.1A) is threaded onto the leading end of a Geoprobe® probe rod and advanced into the subsurface with a Geoprobe® direct push machine. Additional probe rods are added incrementally and advanced until the desired sampling interval is reached. While the sampler is advanced to depth, O-ring seals at each rod joint, the drive head, and the expendable drive point provide a watertight system. This system eliminates the threat of formation fluids entering the screen before deployment and assures sample integrity.

Once at the desired sampling interval, extension rods are sent downhole until the leading rod contacts the bottom of the sampler screen. The tool string is then retracted approximately 44 inches (1118 mm) while the screen is held in place with the extension rods (Fig. 2.1B). As the tool string is retracted, the expendable point is released from the sampler sheath. The tool string and sheath may be retracted the full length of the screen or as little as a few inches if a small sampling interval is desired.

There are three types of screens that can be used in the Screen Point 16 Groundwater Sampler. Two of the these, a stainless steel screen with a standard slot size of 0.004 inches (0.10 mm) and a PVC screen with a standard slot size of 0.010 inches (0.25 mm), are recovered with the tool string after sampling. The third screen is also manufactured from PVC with a standard slot size of 0.010 inches (0.25 mm), but is designed to be left downhole when sampling is complete. This disposable screen has an exposed screen length of approximately 43 inches (1092 mm). The two screens that are recovered with the sampler both have an exposed screen length of approximately 41 inches (1041 mm).

(continued on following page)

An O-ring on the head of the stainless steel screens maintains a seal at the top of the screen. As a result, any liquid entering the sampler during screen deployment must first pass through the screen. PVC screens do not require an O-ring because the tolerance between the screen head and sampler sheath is near that of the screen slot size.

The screens are constructed such that flexible tubing, a mini-bailer, or a small-diameter bladder pump can be inserted into the screen cavity. This makes direct sampling possible from anywhere within the saturated zone. A removable plug in the lower end of the screens allows the user to grout as the sampler is extracted for further use.

Groundwater samples can be obtained in a number of ways. A common method utilizes polyethylene (TB25L) or Teflon® (TB25T) tubing and a Check Valve Assembly (GW4210). The check valve (with check ball) is attached to one end of the tubing and inserted down the casing until it is immersed in groundwater. Water is pumped through the tubing and to the ground surface by oscillating the tubing up and down.

An alternative means of collecting groundwater samples is to attach a peristaltic or vacuum pump to the tubing. This method is limited in that water can be pumped to the surface from a maximum depth of approximately 26 feet (8 m). Another technique for groundwater sampling is to use a stainless steel Mini-Bailer Assembly (GW41). The mini-bailer is lowered down the inside of the casing below the water level where it fills with water and is then retrieved from the casing.

The latest option for collecting groundwater from the SP16 sampler is to utilize a Geoprobe® MB470 Series Mechanical Bladder Pump (MBP)*. The MBP may be used to meet requirements of the low-flow sampling protocol (Puls and Barcelona 1996, ASTM 2003). Through participation in a U.S. EPA Environmental Technology Verification study, it was confirmed that the MB470 can provide representative samples (EPA 2003).

**The Mechanical Bladder Pump is manufactured under U.S. Patent No. 6,877,965 issued April 12, 2005.*

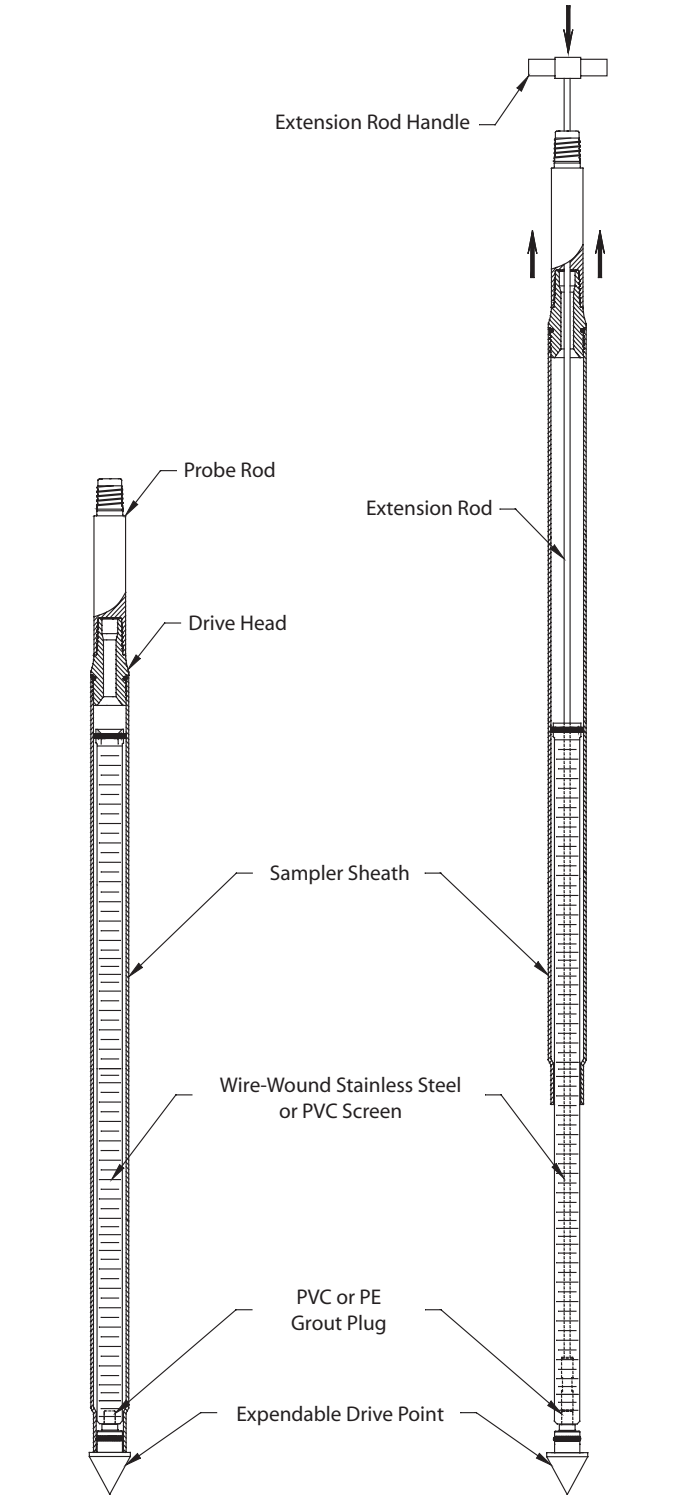


FIGURE 2.1
Screen Point 16 Groundwater Sampler

3.0 TOOLS AND EQUIPMENT

The following tools and equipment can be used to successfully recover representative groundwater samples with the Geoprobe® Screen Point 16 Groundwater Sampler. Refer to Figures 3.1 and 3.2 for identification of the specified parts. Tools are listed below for the most common SP16 / 1.5-inch probe rod configurations. Additional parts for optional rod sizes and accessories are listed in Appendix A.

SP16 Sampler Parts	**Part Number**
SP16 Sampler Sheath	15187
SP16 Drive Head, 0.5-inch bore, 1.5-inch rods*	18307
SP16 O-ring Service Kit, 1.5-inch rods *(includes 4 each of the O-ring packets below)*	15844
O-rings for Top of SP16 Drive Head, 1.5-inch rods only (Pkt. of 25)	*15389*
O-rings for Bottom of SP16 Drive Head (Pkt. of 25)	*13196*
O-rings for GW1520 Screen Head (Pkt. of 25)	*GW1520R*
O-rings for SP16 Expendable Drive Point (Pkt. of 25)	*GW1555R*
Screen, Wire-Wound Stainless Steel, 4-Slot*	GW1520
Grout Plugs, PE (Pkg. of 25)	GW1552K
Expendable Drive Points, steel, 1.625-inch OD (Pkg. of 25)*	GW1555K
Screen Point 16 Groundwater Sampler Kit, 1.5-inch Probe Rods *(includes 1 each of: 15187, 18307, 15844, GW1520, GW1535, GW1540, GW1555K, and GW1552K)*	15770

Probe Rods and Probe Rod Accessories	**Part Number**
Drive Cap, 1.5-inch probe rods, threadless, (for GH60 Hammer)	12787
Pull Cap, 1.5-inch probe rods	15090
Probe Rod, 1.5-inch x 60-inch*	11121

Extension Rods and Extension Rod Accessories	**Part Number**
Screen Push Adapter	GW1535
Grout Plug Push Adapter	GW1540
Extension Rod, 60-inch*	10073
Extension Rod Coupler	AT68
Extension Rod Handle	AT69
Extension Rod Jig	AT690
Extension Rod Quick Link Coupler, pin	AT695
Extension Rod Quick Link Coupler, box	AT696

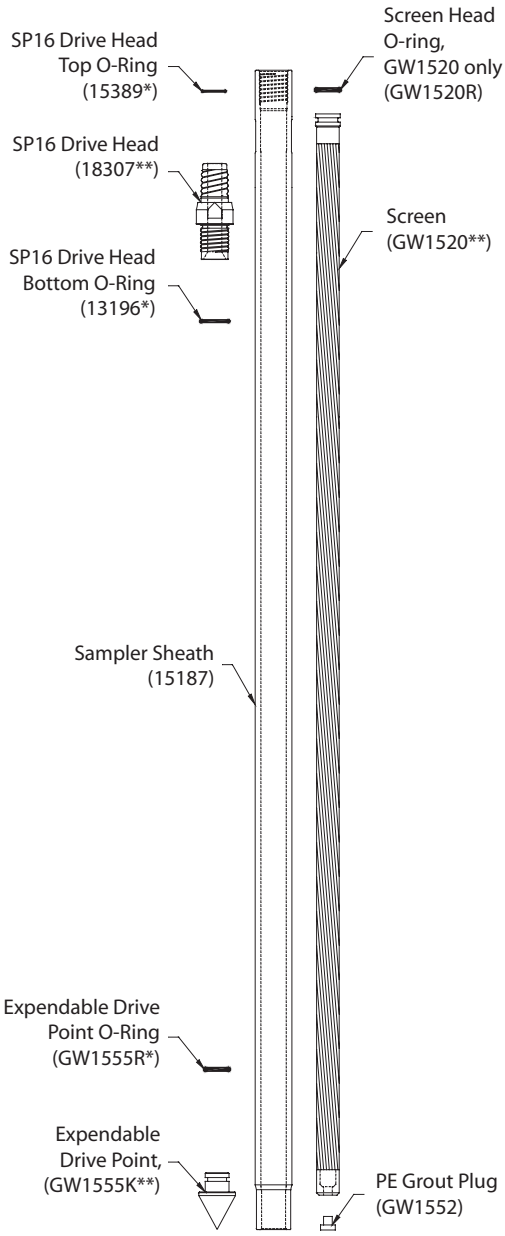
Grout Accessories	**Part Number**
Grout Nozzle, for 0.375-inch OD tubing	GW1545
High-Pressure Nylon Tubing, 0.375-inch OD / 0.25-inch ID, 100-ft. (30 m)	11633
Grout Machine, self-contained*	GS1000
Grout System Accessories Package, 1.5-inch rods	GS1015

Groundwater Purging and Sampling Accessories	**Part Number**
Polyethylene Tubing, 0.375-inch OD, 500 ft.*	TB25L
Check Valve Assembly, 0.375-inch OD Tubing*	GW4210
Water Level Meter, 0.438-inch OD Probe, 100 ft. cable*	GW2000
Mechanical Bladder Pump**	MB470
Mini Bailer Assembly, stainless steel	GW41

Additional Tools	**Part Number**
Adjustable Wrench, 6.0-inch	FA200
Adjustable Wrench, 10.0-inch	FA201
Pipe Wrenches	NA

* See Appendix A for additional tooling options.

** Refer to the Standard Operating Procedure (SOP) for the Mechanical Bladder Pump (Technical Bulletin No. MK3013) for additional tooling needs.



* Included in the SP16 O-ring Service Kit (15844)
** Part numbers show most common tool configuration. See Appendix A for alternative parts.

FIGURE 3.1
SP16 Sampler Parts

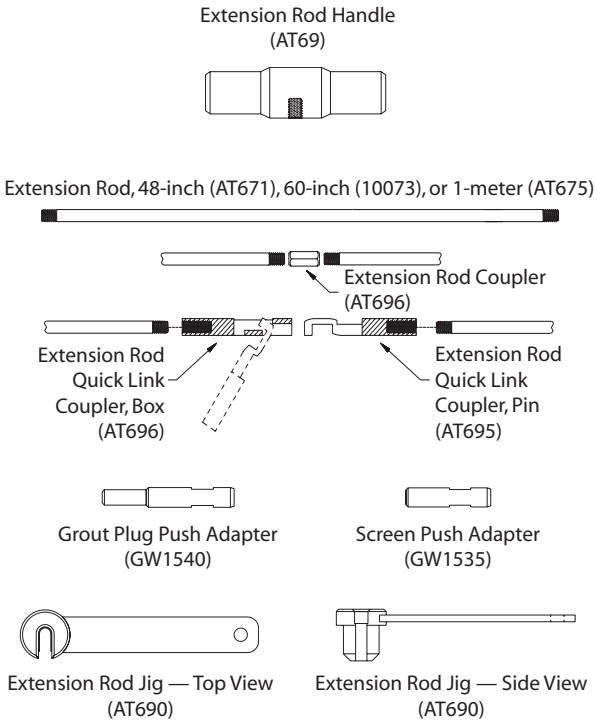


FIGURE 3.2
Geoprobe® Extension Rods and Accessories

4.0 OPERATION

4.1 Basic Operation

The SP16 sampler utilize a stainless steel or PVC screen which is encased in an alloy steel sampler sheath. An expendable drive point is placed in the lower end of the sheath while a drive head is attached to the top. O-rings on the drive head and expendable point provide a watertight sheath which keeps contaminants out of the system as the sampler is driven to depth.

Once the sampling interval is reached, extension rods equipped with a screen push adapter are inserted down the ID of the probe rods. The tool string is then retracted up to 44 inches (1118 mm) while the screen is held in place with the extension rods. The system is now ready for groundwater sampling. When sampling is complete, a removable plug in the bottom of the screen allows for grouting below the sampler as the tool string is retrieved.

4.2 Sampler Options

The Screen Point 15 and Screen Point 16 Groundwater Samplers are nearly identical. Subtle differences in the design of the SP16 sampler make it more durable than the earlier SP15 system. Operators of GH60-equipped machines should always utilize SP16 tooling. Operators of machines equipped with GH40 Series hammers may also choose SP16 tooling when sampling in difficult probing conditions.

A 1.75-inch OD Expendable Drive Point (17066K) and Disposable PVC Screen (16089) provide two useful options for the SP16 sampler. The 1.75-inch drive point may be used when soil conditions make it difficult to remove the sampler after driving to depth. The disposable PVC screen may be left downhole after sampling (when regulations permit) to eliminate the time required for screen decontamination.

4.3 Decontamination

In order to collect representative groundwater samples, all sampler parts must be thoroughly cleaned before and after each use. Scrub all metal parts using a stiff brush and a nonphosphate soap solution. Steam cleaning may be substituted for hand-washing if available. Rinse with distilled water and allow to air-dry before assembly.

4.4 SP16 Sampler Assembly (Figure 4.1)

Part numbers are listed for a standard SP16 sampler using 1.5-inch probe rods. Refer to Page 6 for screen and drive head alternatives.

1. Place an O-ring on a steel expendable drive point (GW1555K). Firmly seat the expendable point in the necked end of a sampler sheath (15187).

2. Install a PE Grout Plug (GW1552) in the bottom end of a Wire-wound Stainless Steel Screen (GW1520). Place a GW1520R O-ring in the groove on the top end of the screen.

3. Slide the screen inside of the sampler sheath with the grout plug toward the bottom of the sampler. Ensure that the expendable point was not displaced by the screen.

4. Install a bottom O-ring (13196) on a Drive Head (18307 or 15188). Thread the drive head into the sampler sheath using an adjustable wrench if necessary to ensure complete engagement of the threads. Attach a Drive Cap (12787 or 15590) to the top of the drive head.

   NOTE: The 18307 drive head should be used whenever possible as the smaller 0.5-inch ID provides a greater material cross-section for increased durability.

Sampler assembly is complete.

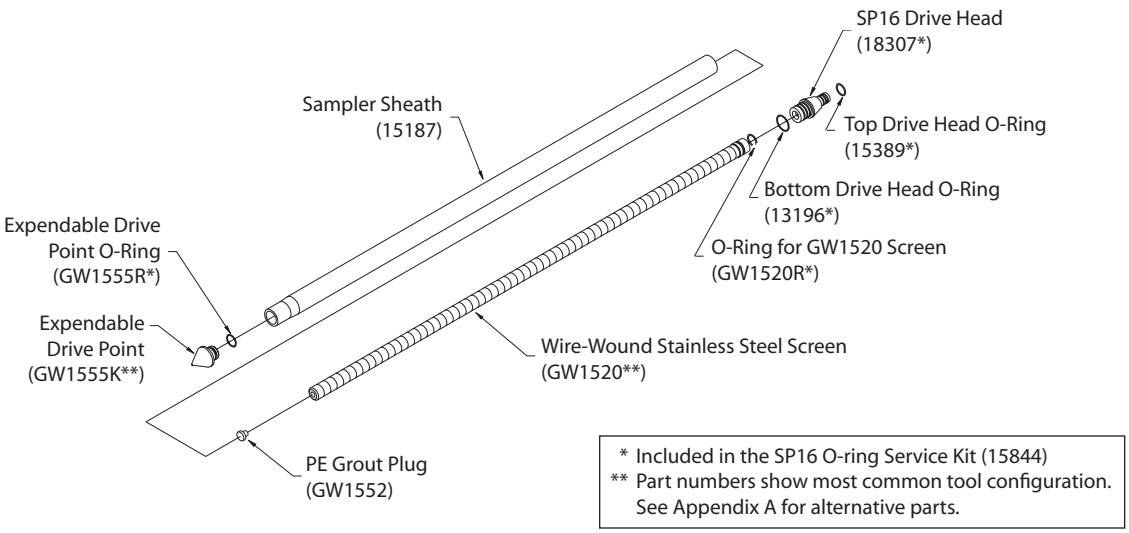


FIGURE 4.1
Screen Point 16 Groundwater Sampler Assembly

4.5 Advancing the SP16 Sampler

To provide adequate room for screen deployment with the Rod Grip Pull System, the probe derrick should be extended a little over halfway out of the carrier vehicle when positioning for operation.

1. Begin by placing the assembled sampler (Fig. 2.1.A) in the driving position beneath the hydraulic hammer of the direct push machine as shown in Figure 4.2.

2. Advance the sampler with the throttle control at slow speed for the first few feet to ensure that the sampler is aligned properly. Switch to fast speed for the remainder of the probe stroke.

3. Completely raise the hammer assembly. Remove the drive cap and place an O-ring in the top groove of the drive head. Distilled water may be used to lubricate the O-ring if needed.

Add a probe rod (length to be determined by operator) and reattach the drive cap to the rod string. Drive the sampler the entire length of the new rod with the throttle control at fast speed.

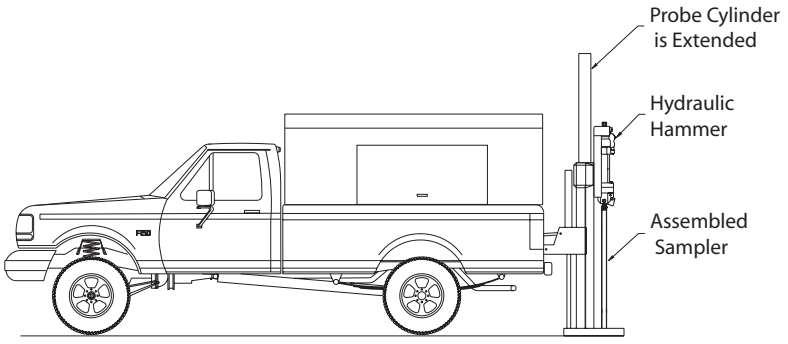


FIGURE 4.2
Screen Point 16 Groundwater Sampler in Driving Position

4. Repeat Step 3 until the desired sampling interval is reached. Approximately 12 inches (305 mm) of the last probe rod must extend above the ground surface to allow attachment of the puller assembly. A 12-inch (305 mm) rod may be added if the tool string is over-driven.

5. Remove the drive cap and retract the probe derrick away from the tool string.

4.6 Screen Deployment

1. Thread a screen push adapter (GW1535) on an extension rod of suitable length (AT671, 10073, or AT675). Attach a threaded coupler (AT68) to the other end of the extension rod. Lower the extension rod inside of the probe rod taking care not to drop it down the tool string. An extension rod jig (AT690) may be used to hold the rods.

2. Add extension rods until the adapter contacts the bottom of the screen. To speed up this step, it is recommended that Extension Rod Quick Links (AT695 and AT696) are used at every other rod joint.

3. Ensure that at least 48 inches (1219 mm) of extension rod protrudes from the probe rod. Thread an extension rod handle (AT69) on the top extension rod.

4. Maneuver the probe assembly into position for pulling.

5. Raise (pull) the tool string while physically holding the screen in place with the extension rods (Fig. 4.3.B). A slight knock with the extension rod string will help to dislodge the expendable point and start the screen moving inside the sheath.

   Raise the hammer and tool string about 44 inches (1118 cm) if using a GW1520 or GW1530 screen. At this point the screen head will contact the necked portion of the sampler sheath (Fig. 4.3.C.) and the extension rods will rise with the probe rods. Use care when deploying a PVC screen so as not to break the screen when it contacts the bottom of the sampler sheath.

   The Disposable Screen (16089) will extend completely out of the sheath if the tool string is raised more than 45 inches (1143 mm). Measure and mark this distance on the top extension rod to avoid losing the screen during deployment.

6. Remove the rod grip handle, lower the hammer assembly, and retract the probe derrick. Remove the top extension rod (with handle) and top probe rod. Finally, extract all extension rods.

7. Groundwater samples can now be collected with a mini-bailer, peristaltic or vacuum pump, tubing bottom check valve assembly, bladder pump, or other acceptable small diameter sampling device.

   When inserting tubing or a bladder pump down the rod string, ensure that it enters the screen interval. The leading end of the tubing or bladder pump will sometimes catch at the screen head giving the illusion that the bottom of the screen has been reached. An up-and-down motion combined with rotation helps move the tubing or bladder pump past the lip and into the screen.

4.7 Abandonment Grouting for GW1520 and GW1530 Screens

The SP16 Sampler can meet ASTM D 5299 requirements for abandoning environmental wells or borings when grouting is conducted properly. A removable grout plug makes it possible to deploy tubing through the bottom of GW1520 and GW1530 screens. A GS500 or GS1000 Grout Machine is then used to pump grout into the open probe hole as the sampler is withdrawn. The following procedure is presented as an example only and should be modified to satisfy local abandonment grouting regulations.

1. Maneuver the probe assembly into position for pulling. Attach the rod grip puller to the top probe rod. Raise the tool string approximately 4 to 6 inches (102 to 152 cm) to allow removal of the grout plug.

2. Thread the Grout Plug Push Adapter (GW1540) onto an extension rod. Insert the adapter and extension rod inside the probe rod string. Add extension rods until the adapter contacts the grout plug at the bottom of the screen. Attach the handle to the top extension rod. When the extension rods are slightly raised and lowered, a relatively soft rebound should be felt as the adapter contacts the grout plug. This is especially true when using a PVC screen.

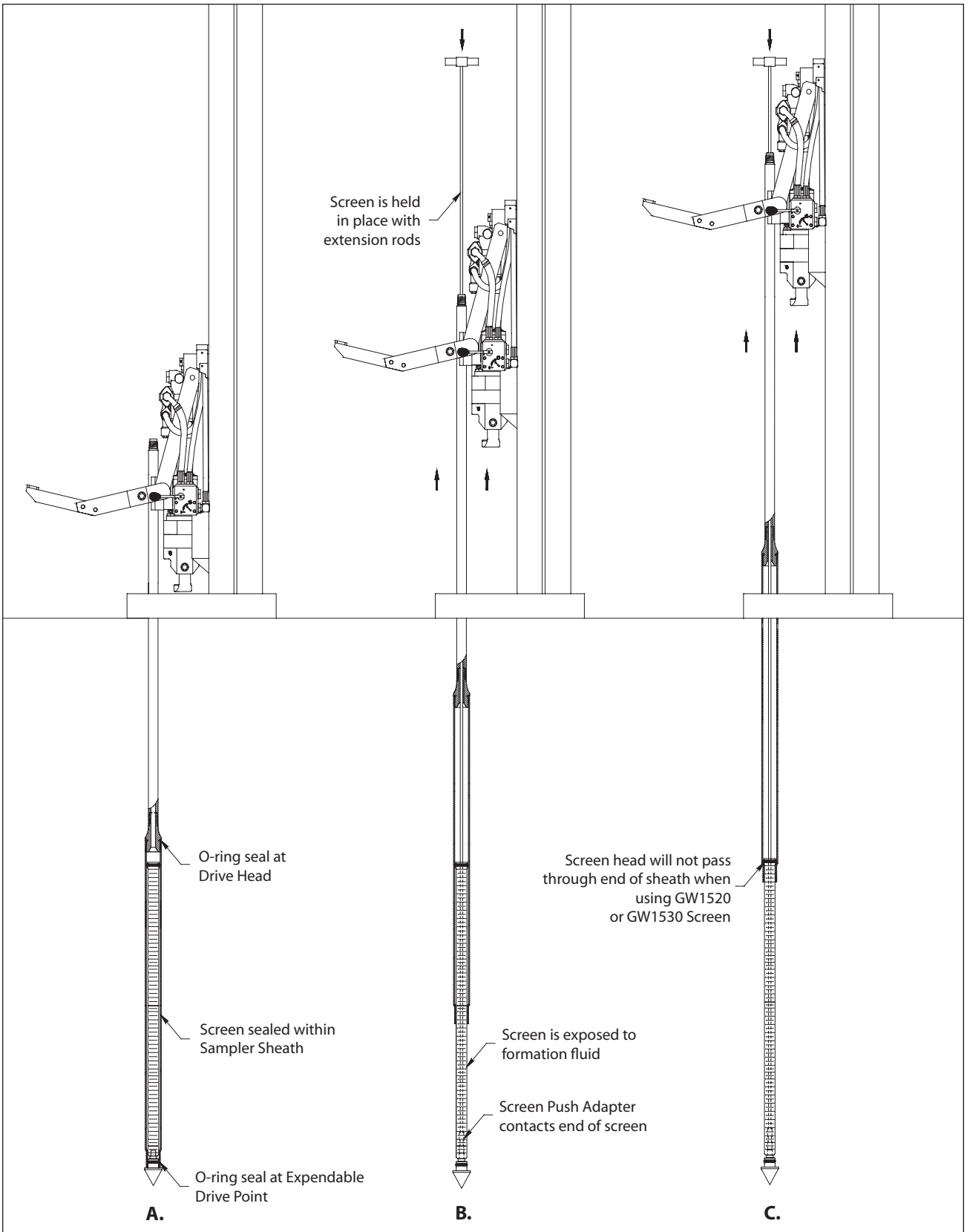


FIGURE 4.3
Screen Deployment for SP16 Sampler

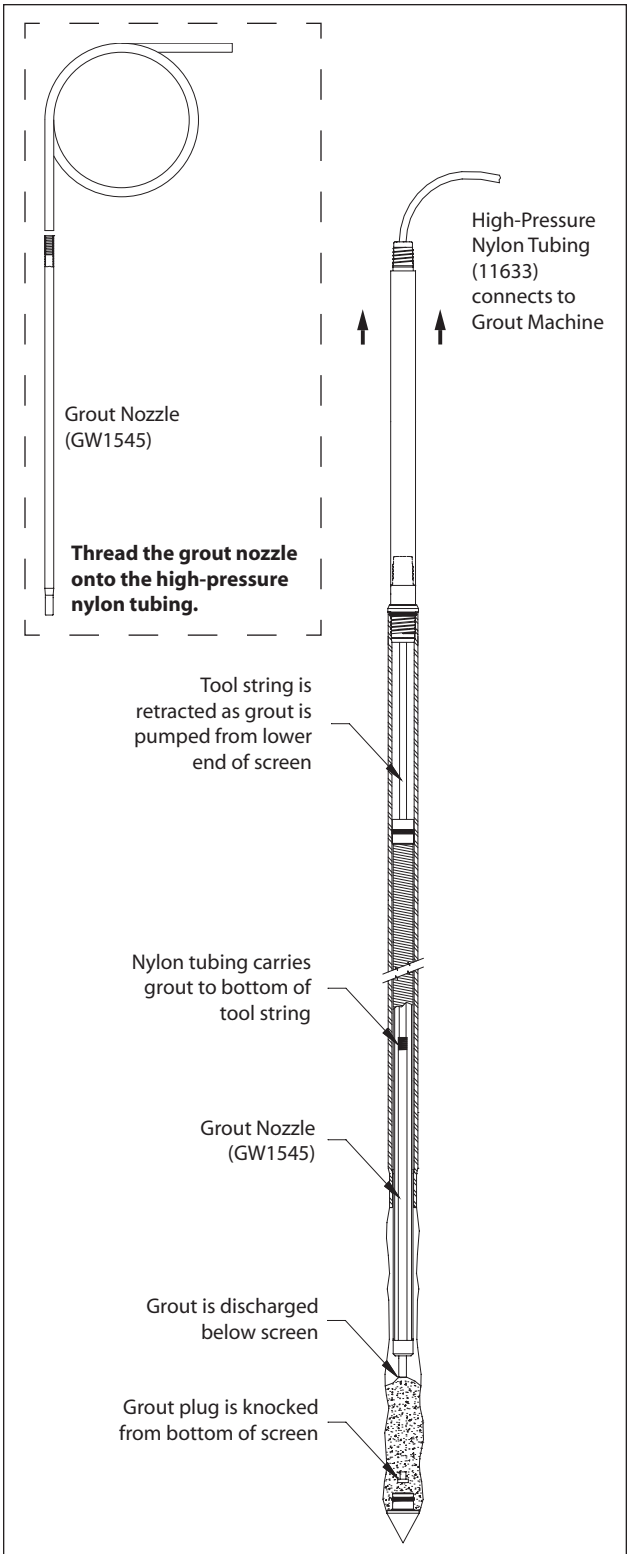


FIGURE 4.4
Grouting the SP16 Sampler With a GW1520 or GW1530 Screen

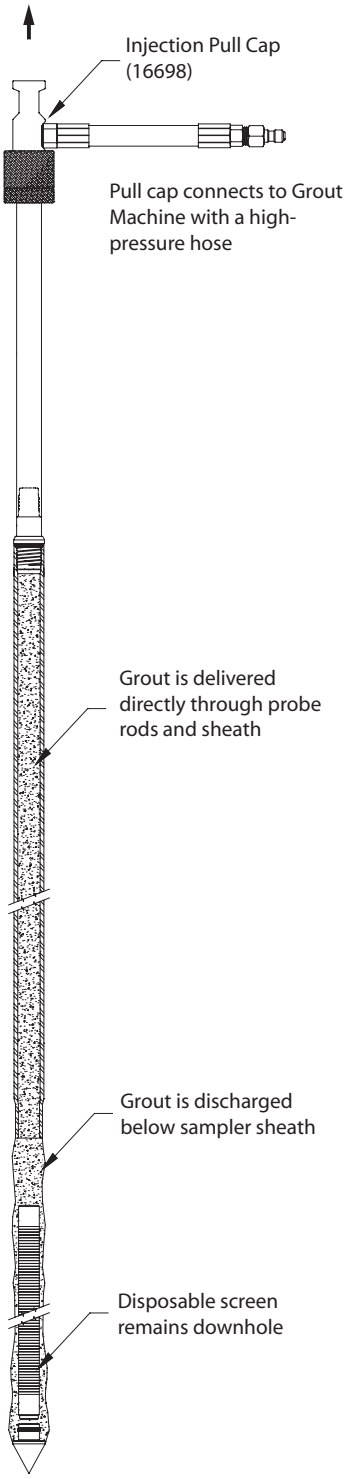


FIGURE 4.5
Grouting the SP16 Sampler With a 16089 Disposable Screen

3. Place a mark on the extension rod even with the top of the probe rod. Apply downward pressure on the extension rods and push the grout plug out of the screen. The mark placed on the extension rod should now be below the top of the probe rod. Remove all extension rods.

   Note: When working with a stainless steel screen, it may be necessary to raise and quickly lower the extension rods to jar the grout plug free. When the plug is successfully removed, a metal-on-metal sensation may be noted as the extension rods are gently "bounced" within the probe rods.

4. A Grout Nozzle (GW1545) is now connected to High-Pressure Nylon Tubing (11633) and inserted down through the probe rods to the bottom of the screen (Fig. 4.4). It may be necessary to pump a small amount of clean water through the tubing during deployment to jet out sediments that settled in the bottom of the screen. Resistance will sometimes be felt as the grout nozzle passes through the drive head. Rotate the tubing while moving it up-and-down to ensure that the nozzle has reached the bottom of the screen and is not hung up on the drive head.

   Note: *All probe rods remain strung on the tubing as the tool string is pulled. Provide extra tubing length to allow sufficient room to lay the rods on the ground as they are removed. An additional 20 feet is generally enough.*

5. Operate the grout pump while pulling the first rod with the rod grip pull system. Coordinate pumping and pulling rates so that grout fills the void left by the sampler. After pulling the first rod, release the rod grip handle, fully lower the hammer, and regrip the tool string. Unthread the top probe and slide it over the tubing placing it on the ground near the end of the tubing.

6. Repeat Step 5 until the sampler is retrieved. Do not bend or kink the tubing when pulling and laying out the probe rods. Sharp bends create weak spots in the tubing which may burst when pumping grout. Remember to operate the grout pump only when pulling the rod string. The probe hole is thus filled with grout from the bottom up as the rods are extracted.

7. Promptly clean all probe rods and sampler parts before the grout sets up and clogs the equipment.

4.8 Abandonment Grouting for the 16089 Disposable Screen

ASTM D 5299 requirements can also be met for the SP16 samplers when using the 16089 disposable screen. Because the screen remains downhole after sampling, the operator may choose either to deliver grout to the bottom of the tool string with nylon tubing or pump grout directly through the probe rods using an Injection Pull Cap (16698). A GS500 or GS1000 Grout Machine is needed to pump grout into the open probe hole as the sampler is withdrawn. The following procedure is presented as an example only and should be modified to satisfy local abandonment grouting regulations.

1. Maneuver the probe assembly into position for pulling with the rod grip puller.

2. Thread the screen push adapter onto an extension rod. Insert the adapter and extension rod inside the probe rod string. Add extension rods until the adapter contacts the bottom of the screen. Attach the handle to the top extension rod.

3. The disposable screen must be extended at least 46 inches (1168 mm) to clear the bottom of the sampler sheath. Considering the length of screen deployed in Section 4.7, determine the remaining distance required to fully extend the screen from the sheath. Mark this distance on the top extension rod.

4. Pull the tool string up to the mark on the top extension rod while holding the disposable screen in place.

   The screen is now fully deployed and the sampler is ready for abandonment grouting. Apply grout to the bottom of the tool string during retrieval using either flexible tubing (as described in Section 4.7) or an injection pull cap (Fig. 4.5). This section continues with a description of grouting with a pull cap.

5. Remove the rod grip handle and maneuver the probe assembly directly over the tool string. Thread an Injection Pull Cap (16698) onto the top probe rod and close the hammer pull latch over the top of the pull cap.

6. Connect the pull cap to a Geoprobe® grout machine using a high-pressure grout hose.

7. Operate the pump to fill the entire tool string with grout. When a sufficient volume has been pumped to fill the tool string, begin pulling the rods and sampler while continuing to operate the grout pump. Considering the known pump volume and sampler cross-section, time tooling withdrawal to slightly "overpump" grout into the subsurface. This will ensure that all voids are filled during sampler retrieval.

   The grouting process can lubricate the probe hole sufficiently to cause the tool string to slide back downhole when disconnected from the pull cap. Prevent this by withdrawing the tool string with the rod grip puller while maintaining a connection to the grout machine with the pull cap.

4.9 Retrieving the Screen Point 16 Sampler

If grouting is not required, the Screen Point 16 Sampler can be retrieved by pulling the probe rods as with most other Geoprobe® applications. The Rod Grip Pull System should be used for this process as it allows the operator to remove rods without completely releasing the tool string. This avoids having the probe rods fall back downhole when released during the pulling procedure. A standard Pull Cap (15164) may still be used if preferred. Refer to the Owner's Manual for your Geoprobe® direct push machine for specific instructions on pulling the tool string.

5.0 REFERENCES

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Puls, Robert W., and Michael J. Barcelona, 1996. Ground Water Issue: Low-Flow (Minimal Drawdown) Ground Water Sampling Procedures. EPA/540/S-95/504. April.

U.S. Environmental Protection Agency (EPA), 2003. Environmental Technology Verification Report: Geoprobe Inc., Mechanical Bladder Pump Model MB470. Office of Research and Development, Washington, D.C. EPA/600R-03/086. August.

Appendix A
ALTERNATIVE PARTS

The following parts are available to meet unique soil conditions. See section 3.0 for a complete listing of the common tool configurations for the Geoprobe® Screen Point 16 Groundwater Sampler.

SP16 Sampler Parts and Accessories	**Part Number**
SP16 Drive Head, 0.625-inch bore, 1.5-inch rods	15188
Expendable Drive Points, aluminum, 1.625-inch OD (Pkg. of 25)	GW1555ALK
Expendable Drive Points, steel, 1.75-inch OD (Pkg. of 25)	17066K
Screen, PVC, 10-Slot	GW1530
Screen, Disposable, PVC, 10-Slot	16089

Groundwater Purging and Sampling Accessories	**Part Number**
Polyethylene Tubing, 0.25-inch OD, 500 ft	TB17L
Polyethylene Tubing, 0.5-inch OD, 500 ft	TB37L
Polyethylene Tubing, 0.625-inch OD, 50 ft	TB50L
Check Valve Assembly, 0.25-inch OD Tubing	GW4240
Check Valve Assembly, 0.5-inch OD Tubing	GW4220
Check Valve Assembly, 0.625-inch OD Tubing	GW4230
Water Level Meter, 0.375-inch OD Probe, 100-ft. cable	GW2001
Water Level Meter, 0.438-inch OD Probe, 200-ft. cable	GW2002
Water Level Meter, 0.375-inch OD Probe, 200-ft. cable	GW2003
Water Level Meter, 0.438-inch OD Probe, 30-m cable	GW2005
Water Level Meter, 0.438-inch OD Probe, 60-m cable	GW2007
Water Level Meter, 0.375-inch OD Probe, 60-m cable	GE2008

Grouting Accessories	**Part Number**
Grout Machine, auxiliary-powered	GS500

Probe Rods, Extension Rods, and Accessories	**Part Number**
Probe Rod, 1.5-inch x 1-meter	17899
Probe Rod, 1.5-inch x 48-inch	13359
Drive Cap, 1.5-inch rods (for GH40 Series Hammer)	15590
Rod Grip Pull Handle, 1.5-inch Probe Rods (for GH40 Series Hammer)	GH1555
Extension Rod, 48-inch	AT671
Extension Rod, 1-meter	AT675

Equipment and tool specifications, including weights, dimensions, materials, and operating specifications included in this brochure are subject to change without notice. Where specifications are critical to your application, please consult Geoprobe Systems®.

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