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FORMER SPERRY REMINGTON SITE (NYSDEC SITE I.D. #808043)

REVISED INTERIM REMEDIAL MEASURE WORK PLAN

CITY OF ELMIRA, CHEMUNG COUNTY, NY

Prepared for
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Prepared by
Geosyntec Consultants, Inc. and Its Affiliate
Beech and Bonaparte Engineering, PC
10211 Wincopin Circle, 4th Floor
Columbia, Maryland 21044

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NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5353 I F: (585) 226-8139
www.dec.ny.gov

Via E-mail

September 16, 2019

Mr. Kevin Krueger, PE
Unisys Corporation
Corporate Environmental Affairs
3199 Pilot Knob Road
Eagan, MN 55121

Dear Mr. Krueger:

Re: Revised Interim Remedial Measures Work Plan
Former Sperry Remington Site #808043
Elmira, Chemung County

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have completed the review of "Revised Interim Remedial Measure Work Plan" for the Former Sperry Remington Site #808043, dated 24 April 2014, last revised 28 June 2019, and approve contingent upon the following:

1. The means, methods, extent and confirmation of sewer cleaning is provided along with an updated schedule.
2. Documentation (not confirmation) samples are appropriately identified at all depths in limited excavations and layback soils.
3. Construction trailers are not placed in areas where potential exposure to PCBs exist.

Please provide the requested information and an updated work plan schedule within 20 days. Additionally, a copy of the work plan, this approval and the updated schedule must be placed in the document repository for the site before proceeding with work.

Sincerely,

Timothy Schneider, P.E.
Professional Engineer 1

P. Brookner
A. Krasnopoler
B. Schilling

M. Cruden
H. Dudek
D. Harrington
D. Hettrick
J. Deming

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Certification

I Aron Krasnopoler certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Interim Remedial Measures Work Plan dated 7 October 2019 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).

10/7/2019

Aron Krasnopoler, P.E.

1. INTRODUCTION

1.1 Background

On behalf of Unisys Corporation (Unisys), Geosyntec Consultants, Inc. and its New York affiliate Beech and Bonaparte Engineering, P.C. (collectively Geosyntec) are submitting this Revised Interim Remedial Measure (IRM) Work Plan for the Former Sperry Remington Site (Site #808043) (Site) in Elmira, New York. In accordance with the Order on Consent and Administrative Settlement (AOC) (Index #B8-0815-09-10) with the New York State Department of Environmental Conservation (NYSDEC or agency) approved by NYSDEC on 30 March 2010, Unisys is conducting a Remedial Investigation (RI) to determine the nature and extent of constituents of concern (COCs) that may have discharged from the Site, determining if residual sources of COCs still exist, and identifying both current and potential routes of human exposure, if any, to COCs. The proposed IRM intends to address potential sources for migration of COCs from historic oil skimmer #2 (OS2) to the environment.

The Site is located at 1051 South Main Street in Elmira, Chemung County, New York (see **Figure 1**). The Site is a 185' x 65' rectangular area (0.28 acres) as shown on **Figure 2** that includes an eight to twelve (8 to 12) foot diameter covered concrete culvert (Site Culvert) and OS2. The Site Culvert extends from a former holding pond (immediately to the west and adjacent of the Site) to a discharge point to the east northeast and off-site. The Site Culvert discharges into a 580 feet long Drainage Swale, which subsequently drains into an approximate 3.5-acre Wetlands Area and Coldbrook Creek at two outfall locations (the Off-Site Areas). The Site Culvert is approximately 275 feet long and extends beneath a railroad line owned by Norfolk Southern. OS2 is a concrete rectangular structure measuring approximately sixteen (16) feet wide and forty-two (42) feet long and aligned parallel to the Site Culvert (**Figure 2**) with a shared wall. The Site and off-Site areas are currently owned by multiple parties. The 0.28-acre Site is currently owned by the Southern Tier Commerce Center (STCC). Elmira High School (EHS) is the adjacent property to the north. Samples collected in 2006 by NYSDEC indicated that there were polychlorinated biphenyls (PCBs) and inorganic constituents present in sediments in the Drainage Swale, Wetlands Area and Coldbrook Creek.

Phase 1 Remedial Investigation (RI) results were originally presented in the Remedial Investigation Phase 1 Data Report (Phase 1 Data Report) dated 18 November 2011. Information presented in the Phase 1 Data Report identified the Site Culvert, the OS2 structure, and their respective subsurface connections as potential sources of COCs in off-Site wetland sediments, and may warrant IRM implementation. In order to evaluate applicability and effectiveness of potential IRM alternatives Unisys conducted an IRM PDI at the Site in July 2012 to characterize hydraulic connections to OS2 and culvert structures. Based on those findings, Unisys proposed an IRM for closure of OS2 in place on 24 April 2014. In response to 23 June 2014 NYSDEC comments, Unisys proposed an IRM to clean but not close OS2 on 12 September 2014. NYSDEC provided further comments on the revised IRM Work Plan on 3 October 2014. A second revision to the

IRM Work Plan was submitted to NYSDEC on 6 November 2014. Copies of NYSDEC comments and Unisys' responses are provided in **Appendix A**. After discussion with NYSDEC on prioritization of multi-site activities, implementation of an OS2 IRM was delayed to accommodate completion of Site Characterization and IRM tasks at the Former Sperry Remington - North Portion (NYSDEC #c808022).

1.2 Report Organization

The remainder of this report is organized into the following sections:

- Section 2 – IRM Pre-Design Investigation Summary;
- Section 3 – Scope of Work;
- Section 4 – Quality Assurance
- Section 5 – Permits and Temporary Controls;
- Section 6 – Health and Safety;
- Section 7 – Institutional Controls; and
- Section 8 – Schedule and Deliverables.

2. IRM PRE-DESIGN INVESTIGATION SUMMARY

2.1 Summary of Previous Investigations

Potential hydraulic connections to OS2 and the Site Culvert, as well as connections between the two structures, and other potential sources were evaluated during the 2012 IRM PDI and Site Characterization of the Former Sperry Remington Site – North Portion (NYSDEC #c808022) located on the EHS property and the Former Scott Technologies Site (NYSDEC #808049) located on the STCC property. Findings of those investigations have been presented previously in the following reports:

- Remedial Investigation Phase 1 Data Report, Former Sperry Remington Site, 18 November 2011
- Revised Interim Remedial Measure Pre-Design Investigation Data Report, Former Sperry Remington Site, 19 February 2013;
- Site Characterization Data Report, Former Sperry Remington Site – North Portion, 6 February 2015; and
- Site Characterization Data Report, Former Scott Technologies Site, 13 May 2016.

2.1.2 OS2 Structure and Connections

Plan and cross-sectional depictions of OS2 are shown on **Figure 3**. The top of OS2 has been observed to be 12 to 36 inches below the ground surface. Observed inlet and outlet connections to OS2 include:

- A concrete-encased eighteen-inch (18-inch) pipe traverses the Site Culvert from the south and connects to OS2 in a manner that partially obstructs flow within the Site Culvert. The encased pipe is approximately eighty-eight (88) feet from the western end of the Site Culvert and is approximately three (3) feet tall by three (3) feet thick and was observed to be two-thirds (2/3) submerged in water inside the Site Culvert, approximately three (3) feet from the crown of the Site Culvert. The bottom of the Site Culvert drops several feet to bypass beneath the concrete encased pipe (see the Site Culvert profile in **Appendix B**);
- An approximate five-foot (5-ft) box culvert enters the bottom of OS2 at the eastern end;
- A twelve-inch (12-in) high by fifty-two-inch (52-in) wide rectangular opening is present on the north side of the Site Culvert approximately fifty-seven (57) feet from its western end opening directly to OS2. The rectangular opening is approximately three and one-half (3.5) feet above the base of the Site Culvert and was observed to be approximately three (3) feet above the water line in the Site Culvert during the 2012 IRM PDI;

- Four (4) 12-in diameter pipes penetrate the south side of OS2 at the water line in the Site Culvert below the rectangular opening then turn downward below the observed water line inside OS2; and
- Two (2) three-inch (3-in) diameter steel connections on the north side approximately three (3) feet below the top of OS2.

2.2 2017 Pre-Design Investigation

On 17 October 2017, Unisys submitted an IRM PDI Work Plan to collect data needed to evaluate IRM options and complete an IRM design. NYSDEC gave conditional approval on 23 October 2017. The objective of the IRM PDI was to determine whether inlets to OS2 are connected to active storm water infrastructure on the EHS and STCC properties. Field work for the 2017 IRM PDI was conducted between 6 and 17 November 2017. Geosyntec mobilized to the Site with Remedial Construction Services, L.P. (RECON) on 6 November 2017. RECON set up temporary fencing and cleared vegetation in preparation for PDI activities. PDI activities presented in the 2017 IRM PDI Work Plan including geophysical surveys, test pitting and in-line camera surveys are described in the following sections.

2.2.1 Utility Clearance and Geophysical Survey

Prior to test pitting, vegetation was cleared in the southeast corner of the EHS property to provide access for other PDI activities. Ground Penetrating Radar Systems, LLC (GPRS) of Rochester, New York conducted a geophysical survey on 6 November 2017 to identify subsurface utilities and structures. Additional geophysical surveys were conducted near CB-6 and CB-10 (see **Figure 4**). Geophysical anomalies were identified in the vicinity of OS2 and former Oil Skimmer #1 (OS1) near the EHS basketball hoops in the rear parking lot. New York Leak Detection (NYLD) of Jamesville, New York conducted a utility survey on 9 November 2017 to determine the direction of a downstream connection from CB-6. Copies of geophysical survey reports provided are presented in **Appendix C**.

During vegetative clearing, a manhole ring was observed east of the EHS fence adjacent to an unfinished concrete slab. Hand digging around the manhole ring identifed a manhole cover underneath the manhole ring but no subsurface structure. A mini excavator was used to lift the concrete slab and a brick manhole structure (CB-15) was observed. The location of CB-15 is shown on **Figure 4**. Observations from the surface identified three connections to CB-15: to the north; east; and west with an approximate depth of 10.5 feet. Fine-grained material was observed in the bottom of the structure. Water was not observed in this structure. Pursuant to the PDI Work Plan, fine-grained material CB-15 was identfied for sampling and completion of an in-line camera survey was specified.

2.2.2 Test Pit and Trenching

A test pit & trenching program was conducted to identify potential subsurface structures connecting to OS2. This investigation took place in four (4) test pit zones on EHS and STCC properties: Test Pit 1 (TP-1), Test Pit 2 (TP-2), Test Pit 3 (TP-3), and Test Pit 4 (TP-4). Within each zone, one or more pits/trenches were excavated to locate connections and structures related to the former combined industrial sewer. Test pit locations are shown on **Figure 4**. A photoionization detector (PID) was used for testing head space in test pits, samples, and ambient air. PID readings did not exceed 0.3 ppm during this PDI program. Test pit investigation logs and photographs are provided in **Appendix D**. Composite samples of soil spoils were collected to characterize relevant test pits. Soil samples were submitted to the Test America analytical laboratory for analyses for PCBs, semi-volatile compounds (SVOCs), and metals in accordance with Quality Assurance Project Plan (QAPP). Copies of analytical reports are provided in **Appendix E**.

Upon completion, test pits were backfilled with a demarcation layer (i.e. geotextile), test pit spoils, a second demarcation layer, and one (1) to two (2) feet of #1 and #2 stone approved for import based on current land use. Fill thickness was two (2) feet on the EHS property and one (1) foot on the STCC property. Test pit spoils not used as backfill were contained in a roll-off container pending waste characterization.

2.2.2.1 Test Pit TP-1

TP-1 was completed to investigate the extent of the 18-inch inlet to OS2 to the southeast. Several supplemental test pits were dug to investigate the gas line and horizontal extent of OS2 and Site Culvert. TP-1 test pit locations are shown on **Figure 4**. Test trench TP-1.1 was oriented from northeast to southwest on the southwest side of OS2. TP-1 measured 2.5 feet in width, 10 feet in length and was excavated to an approximate depth of eight (8) feet below ground surface (ft bgs). TP-1.1 lithology consisted of topsoil, underlain by dark gray fill dominated gravelly silt, orange mottled silty sand with gravel and underlying yellow-brown sandy silt with an abundance of yellow brick. No staining, odor, or elevated PID reading were noted during excavation. No structures were identified. One sample, TP1_01_11092017, was collected from TP-1.1 soil spoils.

2.2.2.2 Test Pit TP-2

The purpose of TP-2 test pitting was to investigate potential connections between CB-15 and OS2, and the 5-ft box culvert as shown on **Figure 4**. One test trench (TP-2.1) was located southwest of CB-15 and the second (TP-2.2) was excavated above and extending out to the northeast and southeast edge of OS2.

TP-2.1 was oriented northwest to southeast, parallel to the EHS fence line. An eight-foot (8-foot) long by one-foot (1-foot) wide trench was excavated to depth of approximately nine (9) ft bgs at which an approximately six-foot (6-foot) wide culvert was identified as the connection between CB-15 and OS2. A second smaller pit (a continuation of TP-2.1) was dug approximately eight (8)

feet to the west (closer to OS2) to identify the concrete top of the 5-ft box culvert. The cement top was identified at approximately eight (8) ft bgs, verifying the depth and directional trend of the 5-ft culvert connection. Sample TP2_01_110817 was collected from TP-2.1 soil spoils. No staining, odor, or high PID readings were observed during excavation.

TP-2.2 was initiated to further examine potential connections to OS2 from the east. TP2.2 approximate dimensions were twenty (20) feet long and eleven (11) feet wide and a depth of approximately eight (8) feet. TP-2.2 was an irregular polygonal shape composed of a series of excavated trenches to investigate the northern and southern edges of OS2, the OS2 manhole, and the 5-ft box culvert headed northeast. TP-2.2 also investigated soils directly above OS2 with excavations to a depth of 2.5 ft. TP-2.2 pit was dug to identify the connecting former industrial sewer lines to OS2 between 4 and 8 ft bgs. The 5-ft box culvert was located at approximately eight (8) ft from the northeast corner of OS2. This observation confirmed the connection between CB-15 and OS2. The concrete ceiling of the 5-ft box culvert was observed approximately six and a half (6 ½) ft bgs, the two edges of the 5-ft box culvert were excavated to 8 ft bgs (but the base was not observed). No staining, odor, or high PID readings were observed during excavation, one sample TP2_02_110817 was collected to characterizes the soil spoils from TP-2.2.

2.2.2.3 Test Pit TP-3

The purpose of TP-3 test pitting was to investigate structures previously observed in prior camera surveys downstream of CB-6, to the south and east. Test pit locations are shown on **Figure 4**.

TP-3.1 was located in a grassy area on the north end of the parking lot, southeast of the gas line and trending northeast-southwest across the parking lot. TP-3.1 reached dimensions of two (2) feet long, ten (10) feet wide, and eleven (11) feet deep. Sample TP3_01111017 characterized the soil spoils of TP-3.1. No structures were observed during TP-3 excavation.

A second test pit (TP-3.2) was located further northwest, closer to CB-6, at the location where the previous camera survey showed a sewer line take a sharp right turn. TP-3.2 was excavated with approximate dimensions of two (2) feet long, ten (10) feet wide, and nine (9) deep. Similar to TP-3-1, no structures were encountered.

Both TP-3.1 and TP-3.2 contained soil of similar color and composition, the soil color alternated between yellow-brown to dark brown and ranged in composition from silty sand with gravel to silty gravel with coarse sand. No staining, odor, or high PID readings were detected in either excavation, one sample TP03_01111017 was collected to characterizes the soil spoils from TP-3.1. Because of the similarities in soil profile and proximity of TP-3.1 and TP-3.2 a second sample from TP-3.2 was not collected.

2.2.2.4 Test Pit TP-4

The purpose of TP-4 test pitting was to investigate potential connections and structures between CB-15 and CB-6. Test pit locations are shown on **Figure 4**. TP-4 test pits were also excavated to identify the location and depth of the gas line located along the EHS fence line and to identify a

subsurface anomaly observed during the geophysical survey. The subsurface anamoly coincided with a manhole shown on some historic maps but no manhole was encountered.

TP 4.1 was excavated north-west of CB-15, perpendicular to the EHS fence line to locate the pipe connection to CB-15. TP 4.1 trended northeast to southwest with approximate dimensions of eleven (11) feet long, two (2) feet wide and 11.5 feet deep. At approximately 11.5 ft bgs, at the excavator's depth limit, a solid structure was encountered. While not necessary for IRM planning and design, it is unknown if the structure connects to CB-15. Sample TP04_01_111317 characterizes the soil spoils removed from TP-4.1.

Test Pit 4.2 was excavated to the southwest of TP-4.1 to identify the location of a connection to the 5-ft culvert connecting to OS2 approximately ten (10) feet west from CB-15 (see Section 2.2.3). TP-4.2 was excavated with approximate dimensions of eleven (11) feet long, two (2) feet wide, and 11.5 feet deep. Sample TP4_02_111717 was collected from soil spoils characterizing the upper 10 ft. Hydrocarbon odors and dark staining were observed at an approximate depth of eleven (11) ft bgs. Sample TP4_03_111717 was collected to characterize this area of TP-4.2. No structure was observed.

2.2.3 Former Combined Industrial Sewer Inspection

The extent of the current and former combined stormwater and piping infrastructure was investigated for possible connections to OS2. A plan view and profiles of the storm sewers investigated using inline camera surveys are shown on **Figure 5**. Inspections were conducted by Kandey Company (Kandey) of West Seneca, New York. Video and photographs for each survey run are included for reference in **Appendix F**. General findings from in-line camera surveys are summarized as follows:

- Kandey conducted a confined space entry of CB-15 to collect samples of fine-grained material for laboratory analyses for PCBs, SVOCs and metals. First, sample CB-15_01_111617 was collected from the upper two (2) inches of fine-grained material in CB-15. After that sample was collected, Kandey attempted to locate the bottom of CB-15. No hard bottom was encountered to a depth of approximately ten (10) inches at which stained soil with a strong hydrocarbon odor was observed. Sample CB-15_02_111617 was collected from across the depth of fine-grained material, i.e. between two (2) and ten (10) inches, to characterize stained soil.

  During the confined space entry, connections to CB-15 were visually inspected. A connection to the east toward the railroad tracks was observed to have been plugged with concrete. A connection to the northwest was constructed of clay tile and appeared to run parallel to the EHS property line. A connection to the southwest appeared to connect to OS2. A brick arch and 30-inch brick sewer line was observed (see photograph included in **Appendix F**) on the right side of this connection approximately ten (10) feet from CB-15.

- A thirty-six-inch (36-in) sewer line was surveyed from CB-15 to the northwest. The line constructed of rectangular ceramic titles contained wet debris with wood and standing

water. Roots and mud caked the walls of the tunnel indicating that at one time the line was filled to at least 60% of the line capacity. At a distance of approximately of 245 ft, drier conditions were observed. At a distance of approximately 395 ft, a white two-inch (2-in) polyvinyl chloride (PVC) pipe was observed pushed through the side of the line breaking through tiles. Accumulated sand blocked further passage and the survey was abandoned.

- The 36-inch brick sewer line was surveyed from the 5-ft box culvert toward the northwest beginning approximately ten (10) feet southwest of CB-15. The line contained abundant roots, entering through the edges of the brick, abundant fine-grained material, cobbles, wood, and standing water. The survey continued straight for approximately fifty (50) feet until accumulated sludge prevented further progress and the survey was abandoned. The line continued straight as far as the camera could see.

- The 5-ft box culvert connecting CB-15 to OS2 was surveyed to the southwest from CB-15. The culvert was wet with abundant fine-grained material, cobbles, wood, and standing water. The concrete culvert appears to be constructed of concrete segments. The survey extended a distance of approximately thirty-nine (39) ft until accumulated sludge prevented further progress and the survey was abandoned. The internal baffles at the northeast inlet to OS2 were observed. The connection to OS2 was confirmed by observation of an object that had been lowered through the OS2 manhole.

- The camera was lowered through the manhole above the northeast side of OS2 to approximately a third of the depth of the manhole to observe connections from within OS2. OS2 was observed to contain some standing water and fine-grained material. The 18-in inlet in the southeast corner was observed to be half covered by water. A square cement culvert was observed at the base of the eastern wall, trending northeast toward CB-15. In the southwest corner, the faint outline of the four (4) pipes discharging to the Site Culvert and higher rectangular opening connecting were observed. On the northwest wall, two smaller pipes were observed to penetrate OS2. These observations were consistent with those from previous investigations.

- The 36-inch circular brick pipe heading southeast from CB-6 was re-surveyed. The direction of stormwater flow is assumed to be to the southeast. Standing water, wood debris, rocks, and fine-grained material were observed in the line, making survey progress difficult. At a distance of approximately twenty-six (26) feet, two (2) connections are observed within a subsurface structure. The connection on the left (east) is sealed with brick and is not considered active. The connection to the right (west) continued straight. At a distance of approximately thirty-nine (39) feet from CB-6, the line transitions from brick to concrete and takes a right turn (between 30 and 80 degrees) to the southwest. At a linear distance of approximately forty-six (46) feet from CB-6, the line turns back to the left (east) at about the same angle as the previous turn. A structural fracture in the line was observed at 10-12 o'clock within eight (8) inches of the joint at a distance of approximately fifty (50) feet. At a distance of approximately sixty-seven (67) feet, the line again turns left (45 to 80 degrees) to the south and transitions to a clay tile built line. The survey ended at

a linear distance of approximately eighty (80) feet at where approximately seventy-five 75 percent (75 %) of the connection was blocked by fine-grained material, wood, and rock. The survey of this connection was consistent with those from previous investigations while providing additional information regarding the condition of the western branch.

- The connection heading northeast from CB-10 was re-surveyed in attempt to survey the entire line. The direction of stormwater flow is assumed to be to the north, northeast. The connection leaving CB-10 heading north is estimated to be approximately twenty-four (24) inches in diameter and constructed of hollow clay sections. The line started out relatively dry but contained coarse gravel and brick lining the bottom of the structure. At a distance of approximately twenty-five (25) feet from CB-10 the line bended slightly to the right (east) and appeared to slope downward. The line turned slightly to the left (northeast) continuing to slope downward at a distance of approximately sixty (60) feet. Standing water was observed beginning at a distance of approximately seventy (70) feet. The water level increased with distance until coarse debris was no longer visible at a distance of approximately one hundred fifteen (115) feet. At a distance of approximately one hundred (135) feet, a brick structure was observed. The line continued to ninety degrees (90°) to the left (north) with concrete construction. The water level was observed to increase with a depth reaching roughly the mid-section of the pipe. An opening to another structure was observed at a distance of approximately one hundred fifty-seven (157) feet and the survey was ended. Based on distance and location, that structure is considered to be OS2. The survey of this connection was consistent with those from previous investigations.

2.2.4 Post-Investigation Survey

A post-investigation location survey was conducted by a licensed New York State surveyor of the test pits and identified subsurface structures. In addition, the location and invert elevations of CB-10, CB-11 and CB-2 were surveyed to support potential storm sewer modification as part of the IRM. A copy of the survey report is presented in **Appendix G**.

2.2.5 Data Usability

Analytical data packages generated by the fixed laboratory, TestAmerica, during IRM PDI activities presented herein are included in **Appendix E** and were validated by Geosyntec. Analytical data packages were reviewed for completeness, field and laboratory quality control (QC) sample results were evaluated, significant laboratory control problems were assessed, and data qualifiers were assigned. Data validation was performed on analytical data generated to verify and validate the usability of those data. Verification and validation were based on completeness and compliance checks of sample receipt conditions, both sample-related and instrument-related QC results, recalculation checks, and review of actual instrument outputs. Data validation reports, delivered on 19 December 2017, are included in **Appendix E** and indicate qualification of data based on sample-related QC results. All data were found to be suitable for their intended use, except as noted in the validation reports.

2.2.6 IDM Management

A composite sample was collected of solid investigation-derived material (IDM) contained in the roll-off container was collected for waste characterization. Samples were submitted for toxic characteristic leaching procedure (TCLP) analyses for metals, SVOCs, and VOCs and for analyses for PCBs. The analytical report is presented in **Appendix E**. Detections of PCBs and TCLP metals did not exceed hazardous waste characteristics for toxicity. The roll-off container will be transported off-Site for disposal as non-hazardous waste.

2.3 2018 Pre-Design Investigation – Amendment 1

On 30 March 2018, Unisys submitted Amendment #1 to the 2017 IRM PDI Work Plan for pre-delineation of soils surrounding OS2 for excavation as part of the IRM. NYSDEC gave conditional approval on 5 April 2017 and a revised Amendment #1 was submitted on 13 April 2018. Field work for Amendment #1 was conducted between 20 and 27 April 2018. Eleven (11) soil boring were advanced on STCC property a as part of the OS IRM PDI. Boring logs are presented in **Appendix H**. Soil samples were collected and submitted to the fixed laboratory for analyses for PCBs and metals in accordance with the relevant PDI work plans. Analytical reports are presented in **Appendix E**. Data validation reports, delivered on 30 May 2018, are included in **Appendix E** and indicate qualification of data based on sample-related QC results. All data were found to be suitable for their intended use, except as noted in the validation reports.

2.4 Findings

The current understanding of connections between OS2 and the former industrial sewer on the STCC and EHS properties is shown on **Figure 5**. In summary, the following is concluded regarding the status of OS2 and the former industrial sewer:

- The connection between CB-10 and OS2 is part of the active storm water infrastructure on the STCC property;
- Former industrial sewer connections on EHS property from CB-6 and CB-15 are not inactive;
- The discharge from OS2 to the Site Culvert will be active when water levels in OS2 are above the level of the discharge pipes; and
- A direct connection between the former industrial sewer on EHS property to the Site Culvert could not be confirmed during this phase of investigation. Observed obstructions have limited the extent of the camera survey and may restrict stormwater flow from upgradient reaches of the former industrial sewer. Additional work will be necessary to visually confirm the extent, condition and chemical quality of the sewer contents.

Detailed findings from the 2017-18 IRM PDI and previous investigations are:

- The concrete-encased 18-in clay pipe that enters OS2 from the southeast is connected to CB-10. This connection was observed to be dry during the 2012 IRM PDI. During Site Characterization of the Former Scott Technologies Site, CB-10 was observed to be connected to a subsurface structure at a distance of approximately one hundred thirty-two (132) feet northeast of CB-10 at which point the 18-in pipe turned toward the north and was of concrete construction. Water was observed at the base of the structure and in the pipe as it continued to the north, but no rocks or fine-grained material were noted. The pipe continued a further distance of approximately twenty-three (23) feet at which point an opening to a larger structure was observed. That larger structure was observed through the opening to contain water and was identified as OS2. Observations from within OS2 of a connection partially covered with water are consistent with that observation. Brick was observed in TP-1.1 at a depth of eight (8) ft bgs but no subsurface structure was encountered. It is likely that a structure is present at deeper depths. Previous investigations of the Site Culvert indicate that the concrete-encased pipe crosses the base of the Site Culvert. CB-10 is connected to upstream sewer connections through CB-11. Therefore, the connection between CB-10 and OS2 is part of the active storm water infrastructure on the STCC property.

- A piping connection to the south southeast of CB-6 was observed to branch approximately twenty-six (26) feet downstream of CB-6 and observed to contain standing water and accumulated sludges. The eastern (left) branch is closed off with a brick bulkhead (i.e., a wall built to block flow). The western (right) branch continues for a linear distance of approximately sixty-four (64) feet until it becomes approximately seventy-five percent (75 %) blocked by heavy sludge. The line turns right at thirty-nine (39) feet with at transition to concrete then left at forty-six (46) feet and right at sixty-seven (67) feet with a transition to clay tile. The turns may be related to the bypass of an obsolete oil former oil skimmer, considered to be OS1, reported in a letter from Remington Rand to the Chemung County Health Department dated 15 August 1966. IRM PDI test pitting in the vicinity of the presumed location of OS1 confirmed its location in 2012. Observations made during test pitting along the exterior of that structure did not identify outlet pipes or demonstrate characteristics of non-native material and were, therefore, not sampled. No active connections from former OS1 to OS2 or the Site Culvert were identified. Former OS1 has been determined not to be a potential active source of COCs to OS2 or the Site Culvert. No evidence of pipe collapse or structural compromise. Structurally sound pipe continues to the southeast beyond the sludge obstruction. .

- A clay tile pipe connection connecting to CB-15 from the northwest extends approximately 395 feet. It was observed that this pipe had standing water and accumulated sludge in about ten 10 to twenty 20 percent (10-20%) of the pipe. Penetration by a two-inch PVC pipe and accumulated sand prevented further investigation at 395 ft. The structural compromise to the edge of the pipe at 395 ft is assumed to be piezometer MW-8 sand pack which obstructed further camera survey and flow. The location is consistent with a former

industrial sewer line along the eastern EHS property boundary shown on historic maps. The structurally sound pipe continues to the north beyond the observed obstruction.

- CB-15 was found to be a multi chambered poured concrete structure having an open bottom and found to have standing water and debris. The eastern chamber was identified as a concrete bulkhead and the western chamber extends to the five (5) foot box culvert connecting to OS-2. A thirty-six-inch (36-inch) clay tile lined pipe empties into the main chamber and a thirty-inch (30-inch) diameter brick lined pipe empties into the west chamber.

- The 5-ft box culvert that enters OS2 from the northeast is connected to CB-15 to the northeast. The culvert was wet with abundant fine-grained material, cobbles, wood, and standing water. A thirty-six-inch (36-inch) brick line connects to the culvert at a distance approximately ten (10) feet southwest of CB-15. The line contained abundant roots, entering through the edges of the brick, abundant fine-grained material, cobbles, wood, and standing water. While the camera survey was abandoned at distance of approximately fifty (50) feet, the line appeared clear further on. The direction of the line appears to be toward CB-6. Test pitting to a depth of eleven (11) feet did not encounter the connection to the 5-ft culvert. Partial blockages in the thirty (30) and thirty-six (36) inch diameter pipes appears to restrict flow from CB-6 and other points north. Additional investigation is needed to confirm the extent of the thirty-six-inch (36-inch) pipe system and connection of the thirty inch (30-inch) system between CB-6 and the west chamber of CB-15. Additionally, excavation along the north side of OS-2 confirmed steel pipe connections have been removed.

- The two (2) steel pipe connections on the north side of OS2 previously associated with historical Site operations rather than storm water infrastructure have been removed.

- The four (4) 12-in diameter pipes on the south side of OS2 appear to be discharge pipes from OS2 to the Site Culvert. Observations of the Site Culvert during previous investigations indicate that the pipes discharge at the base of the Site Culvert. The observed water level in OS2 was below the discharge. This outlet connection from OS2 is considered to be active if the water level in OS2 rises to that of the discharge.

- An 18-in clay pipe connects to the Site Culvert on the north side approximately 180 feet from the western end of the Site Culvert. Historic drawings depict the 18-in clay pipe connecting CB-15 to the Site Culvert. No flow was observed entering the Site Culvert from this line during the 2012 IRM PDI. No connections to the Site Culvert were observed from CB-15 during the 2017 IRM PDI. A connection to the east from CB-15 was plugged with concrete and may have previously connected to the 18-in clay pipe and the Site Culvert as an overflow bypass of OS2. The former industrial sewer lines on EHS property do not appear to have a currently active direct connection to the Site Culvert.

- The Site Culvert remains an active part of the Site storm water sewer system receiving flows from both the STCC and EHS properties, as well as from the City of Elmira captured along South Main Street. On the EHS property, storm water from the north and combined storm water and cooling water discharge from the west combine at catch basin CB-5 and discharge to the Site Culvert. On the STCC property, storm water from the south of Building 88 and from South Main Street flow through the 5-ft RCP connecting to catch basin CB-2 and the Site Culvert. A plan view and profile of the Site Culvert, as previously presented in the Phase 1 Data Report, are included in **Appendix B**.

- Soils around the perimeter of OS2 have been sampled from test pits spoils during previous investigations. Additional samples were collected from test pit spoils in 2017. **Table 1** presents a summary of the test pit analytical results from the Site. COC concentrations in soil at depths above two (2) feet bgs are compared to Industrial Soil Cleanup Objectives (SCOs) presented in 6 NYCRR Subpart 375. Total PCB concentrations are also compared to the limit of fifty (50) mg/kg for PCB remediation wastes as defined in 40 CFR §761.3 Toxic Substances Control Act (TSCA). TSCA limits are considered in PCB delineation for identification of those soils that may be classified as hazardous waste containing PCBs as defined in 6 NYCRR Part 371.4 (e). Sample locations are shown on **Figure 5**.

    - Soils from TP-4 and OS-SB-01 on the north side of OS2 had detections of total PCBs above the Industrial SCO of 25 mg/kg, but total PCB concentrations did not exceed TSCA limits. Detections of metals and SVOCs did not exceed Industrial SCOs.

    - Soils from TP-02-02 on the east side of OS2 above the 5-ft box culvert had detections of total PCBs and arsenic above the Industrial SCO and detections of total PCBs above TSCA limits. Soils from TP-3 north of the 5-ft box culvert had detections of arsenic above the Industrial SCO of sixteen (16) mg/kg but detection of total PCBs were less than one (1) mg/kg.

    - Soils from TP-2 and OS-SB-02 on the west side of OS2 had detections of total PCBs below the Industrial SCO but TP-2 had detections of arsenic above the Industrial SCO.

    - Soils from TP-1 and TP-01-01 on the south side of OS2 had detections of total PCBs below the Industrial SCO but detections of arsenic were above the Industrial SCO.

    - Previous sampling of soils adjacent to OS2 for waste characterization did not indicate characteristics of hazardous waste.

- Soil borings were advanced for soil sample collection during the OS2 IRM and IRM #2 PDIs as well as previous investigations. Summaries of PCB analytical results for the STCC

for shallow subsurface soils, i.e. to a depth of two (2) ft bgs are presented on **Table 2** and on **Figure 6** and **7**. Total PCB concentrations are compared the restricted use SCO for the current land use, i.e., the Industrial SCO, as well as TSCA limits. Summaries of metal analytical results are presented in **Table 3** and **Figures 8** and **9**.

  - Total PCBs were detected in shallow subsurface soils above the Industrial SCO and TSCA limits east of OS2 on the STCC property. Total PCB detections in shallow subsurface soils northwest of OS2 exceeded the Industrial SCO only.

  - Arsenic was detected in shallow subsurface soils above the Industrial SCO of sixteen (16) mg/kg on the STCC property.

- Detections of total PCBs in deeper subsurface soils (i.e. below 2 ft bgs) on the STCC property were below the Industrial SCO of twenty-five (25) mg/kg as shown on **Table 4** and **Figures 10** to **15**.

- Detections of arsenic in deeper subsurface soils (i.e. below 2 ft bgs) on the STCC property were above the Industrial SCO of sixteen (25) mg/kg as shown on **Table 4** and **Figures 16** to **19**.

- Samples of fine-grained material were collected from catch basins closest to OS2 on the EHS and STCC properties on 28 May 2015. A fine-grained sample was collected from CB-15 on 16 November 2017. COCs detected included PCBs, metals, and SVOCs as summarized on **Table 5** and compared to NYSDEC Class C sediment guideline values (SGVs) and TSCA limits for total PCB.

2.5 Proposed IRM

Unisys has identified that fine-grained material within OS2 contains concentrations of total PCBs that exceed New York State hazardous waste disposal criteria. Inlets to OS2 are connected to the former industrial sewer on EHS and STCC properties. On the EHS property, the former industrial sewer is not part of the active storm sewer system through connections to CB-6 and CB-15. On the STCC property, the former industrial sewer is part of the active storm sewer system on the STCC property through connections to CB-10. Total PCBs and metals have been detected above restricted use SCOS for total PCBs and metals in shallow subsurface soils on the STCC property. Total PCBs have also been detected above TSCA limits in shallow subsurface soils on the STCC property.

A non-emergency IRM at OS2 is applicable to mitigate potential environmental or human exposures before the completion of the RI by removing OS2 and shallow subsurface soils north of the Site Culvert and on the EHS property. Removal of OS2 will require a bypass of CB-10 and connecting CB-11 to the Site Culvert to maintain storm water management on the STCC property. Open grates at inactive storm sewer connections on the EHS property will be replaced with solid

covers. The proposed IRM will include 1) installation of new storm water infrastructure; 2) excavation of soils surrounding OS2; 3) excavation to expose and remove the top of OS2; 4) removal of water and fine-grained material from within OS2; 5) stabilization of fine-and off-Site disposal; 6) cleaning of OS2 interior surfaces; 7) removal of OS2; 8) backfilling; and 6) site restoration. COCs that may be present in fine-grained material in upstream structures to OS2 will be addressed as future IRMs or as part of the final remedy for the Site.

Detections of total PCBs and metals in soils above restricted use SCOs as well as detections of total PCBs above TSCA limits on the EHS property have not been completely delineated and will be addressed as part of the Brownfields Cleanup Program (BCP) Remedial Investigation (RI) to be conducted at for the Former Sperry Remington Site – North Portion (#c808022) in 2019.

3. SCOPE OF WORK

This IRM Work Plan presents a scope of work to remove COC-impacted water and fine-grained material from OS2. The IRM Work Plan also addresses temporary construction facilities, controls, health and safety, and confirmation sampling in accordance with NYSDEC *Technical Guidance for Site Investigation and Remediation* (DER-10). Construction drawings are presented in **Appendix I.**

3.1 Storm Water Piping Modifications

3.1.1 STCC Property

Based on data collected during previous investigations, the 18-in inlet to OS2 connects to CB-10 by way of the concrete-encased pipe. CB-10 is considered part of the active STCC storm water sewer system with upstream connections to catch basin CB-11 and other catch basins east and north of Building 87. Removal of OS2 will require decommissioning of CB-10 and its connection to OS2 and installation of a new storm water connection between CB-11 and the 5-ft RCP in order to maintain storm water flows on the STCC property. Storm water flow will be redirected at a location just prior to reaching CB-10 to the 5-ft RCP so that the storm water system will not be disrupted by the proposed IRM.

CB-10 and its connections to OS2 will be decommissioned as part of OS2 removal (Section 3.4). Fine-grained material will be flushed in sections from upgradient drainage infrastructure, starting at the most upstream catch basins (STI-CB7 and CB-14; see Figure 5) and including CB-11, prior to the installation of new infrastructure for storm water flow redirection. Water and entrained solids will be collected at the next downstream catch basin and staged in a water management area for later off-Site disposal. In-line camera survey will be used to verify that fine-grained material has been removed. If more than *de minimis* quantities of fine-grained material are observed, the section of upstream storm sewer will be re-cleaned and re-inspected.

Two (2) new storm water structures will be installed to connect the thirty-six inch (36-in) vitreous clay pipe (VCP) from CB-11 to the 60-in RCP. A new six-foot (6-ft) diameter manhole will be installed in line with the 36-in VCP from CB-11 and a new eight-foot (8-ft) diameter manhole will be installed in line with the 60-in RCP. The new structures will be connected by a new 36-in RCP at an invert elevation that will maintain storm water flow from CB-11 to the 60-in RCP. During storm water piping modifications, storm water flows from CB-2 and CB-11 will be diverted to holding pond.

Plans for the installation of new storm water structures are presented on the construction drawings included as **Appendix I**. Written approval from STCC of the proposed storm water infrastructure modifications are included in **Appendix J**.

3.1.2 EHS Property

Based on inspections of the former combined industrial sewer on the EHS property conducted during Site Characterization of the Former Sperry Remington Site – North Portion, three (3) open grate catch basins are connected to a former industrial sewer line located along the eastern side of the EHS property that connects to the 5-ft box culvert inlet to OS2 (see Sheet 8 of the Construction Drawings). Inline camera inspections have shown this line to be collapsed or filled with fine-grained material and has been shown to have a limited extent of storm water collection and obstructed flow to OS2. Two (2) catch basins, SSHS-CB1 and SSHS-CB2 are located in the grassy area east of the EHS gymnasium and capture surface drainage. The third catch basin, CB-6 (or SSHS-CB3), located southwest of the EHS K Wing, is not needed to capture surface drainage from the driveway in that area. Surface flow is to the south toward the swale located between the EHS parking lot and the STCC property. Therefore, these open grates will be replaced with closed tops to prevent surface flow from entering these catch basins. The area of east of the gymnasium will be regraded so that surface drainage is directed toward the property line. During previous discussions, NYSDEC and ECSD supported this approach with the understanding that fine-grained material in the former combined industrial sewer line will be addressed during future remedial actions. Written approval from ECSD of the proposed storm water infrastructure modifications are included in **Appendix J**.

3.2 Excavation of Shallow Subsurface Soils

Shallow subsurface soils will be removed to a depth of two (2) ft bgs to address exceedances of industrial use SCOs for total PCBs and metals between the Site Culvert and the property line to the north as shown on **Figure 20**. IRM #2 for the Former Sperry Remington Site – North Portion was completed on the EHS property in August 2018 and removed PCB-impacted soils in the vicinity of the EHS rear parking lot. The western limit will be the fence around the holding pond which limits access to that area. The cleanup goals for the shallow subsurface soil removal to a depth of 2 ft bgs will be:

- 25 mg/kg total PCBs (Industrial SCO); and
- 16 mg/kg arsenic (Industrial SCO).

Confirmation sampling of excavation side walls and bottom areas will be conducted as follows in accordance with Section 5.4 (b) of DER-10:

- one sample from the bottom of each sidewall for every thirty (30) linear feet of sidewall; and
- one sample from the excavation bottom for every nine hundred (900) square feet of bottom area.

Confirmation sample locations are shown on **Figure 20** and on the Construction Drawings. Confirmation samples will be submitted to the fixed laboratory for analyses for PCBs and metals in accordance with Quality Assurance Project Plan (QAPP).

Upon excavation, excavated soils will be managed in two (2) categories:

- Soils with total PCB concentrations less than fifty (50) mg/kg will be stockpiled in the non-hazardous soil stockpile for waste characterization and transport and off-Site disposal; and
- Soils with total PCB concentrations greater than or equal to fifty (50) mg/kg will be accumulated in a TSCA stockpile prior to loading for off-Site transport and disposal as hazardous waste.

No active utilities will be permanently abandoned as part of IRM construction. During excavation, natural gas utilities may be exposed at depths between two and three ft bgs. Private utility location and vacuum excavation will be used to locate those utilities prior to excavation. The natural gas line along the eastern property line will remain in service during construction but will not require support given shallow depth of excavation. The natural gas line that serves STCC may be impacted by deeper excavation as part of OS2 removal (Section 3.4) and will be relocated prior to construction in coordination with STCC and NYSEG. Based on discussions with NYSEG, a deactivated natural gas service for the STCC building is available from South Main Street. NYSEG will reactivate that service and the IRM contractor will make the interconnection to the existing STCC building natural gas infrastructure on the roof of the building. NYSEG will deactivate the natural gas service at the gas house and the existing connection at the STCC building will be capped. No soils will be disturbed as part of the natural gas service relocation.

3.3 Removal of PCB-Impacted Material from OS2

OS2 will be exposed as part of the shallow soil removal presented in Section 3.2. The top of OS2 has been observed to be twelve to thirty-six (12 to 36) inches below the ground surface. Once exposed, the concrete top of OS2 will be removed and stockpiled for cleaning and off-Site transport and disposal. The 18-in clay pipe connecting CB-10 to OS2 will be inspected to verify that the pipe does not discharge to the Site Culvert. If the connection to OS2 is confirmed by visual inspection, the CB-10 will be isolated and the pipe will be flushed with water in the direction of OS2 to remove fine-grained material from the line. In-line camera survey will be used to verify that fine-grained material has been removed. If more than *de minimis* quantities of fine-grained material are observed, the line will be re-cleaned and re-inspected. A grout slurry will then be injected into the pipe in order to plug the line up to the southern edge of the Site Culvert. The surface ring at CB-10 will be removed. CB-10 will be grouted up to one (1) ft bgs and then backfilled with imported fill.

Standing water within OS2 will be removed by suction provided by a vacuum truck and contained on-Site in a water management area for later off-Site disposal. Next, fine-grained material within the structure will be removed by suction provided by a vacuum truck and transferred to a solids stabilization area for stabilization with cement kiln dust prior to off-Site disposal. Cement kiln dust will be mixed into the saturated fine-grained material (43 - 65% moisture based on analytical results – see **Table 6**) in order to reduce the moisture content to levels that will be acceptable to

the receiving facility. Mixing will be performed in batches using an excavator bucket outfitted with a guard to prevent damage to the bottom liner. A layer of geotextile fabric will be place on top of the bottom liner as an indicator to the operator. The solids stabilization area will be bermed and lined to contain leachate. A sump will be place at the lowest point within the bermed area for leachate collection if necessary.

The inner surfaces of the OS2 structure will then be cleaned in order to remove any potential residual material. Fluids generated as part of the cleaning will also be contained on-site in the water management area for later off-Site disposal. Samples of concrete will be collected from the walls and floor of OS2 to confirm the cleaning of the inner surfaces of OS2. Porous surface samples will be collected from five (5) locations on the floor of OS2 and five (5) locations from the walls as shown on **Figure 21**. Wipe samples will be collected from non-porous surfaces. Procedures for sampling of porous and non-porous surfaces are described in Section 4.1 and 4.2, respectively. Samples will be submitted to a fixed laboratory for analyses for PCBs. The need for re-cleaning and re-sampling will be assessed based on the disposition of the material. Non-porous material (e.g., metal baffles) will be re-cleaned and re-sampled if total PCB concentrations in wipe samples are greater than one hundred (100) micrograms per square centimeter (cm^2). Porous material to be removed for off-Site disposal will be re-cleaned and resampled if total PCB concentrations in concrete cores are greater than or equal to fifty (50) mg/kg. Porous material that will remain in place will be re-cleaned and re-sampled if total PCB concentrations in concrete cores are greater than or equal to one hundred (100) mg/kg based on allowable concentrations for bulk PCB remediation waste for capped areas as defined in 40 CFR 761, Section 61.

After water and fine-grained material have been removed from OS2, the following inlet and outlet connections to OS2 will be grouted closed:

- 18-inch inlet pipe on the south wall (traversing the Site Culvert);
- 5-ft box culvert inlet on the east wall;
- Four (4) 12-inch outlet pipes on the south wall (discharging to Site Culvert); and
- 12-in high by 52-in wide rectangular opening on the south wall.

The interior of the 5-ft box culvert will be inspected for integrity and the thickness of fine-grained material. Samples of fine-grained material, if present, will be collected for characterization prior to closure.

3.4 Removal of OS2

After PCB-impacted material has been removed from OS2, the OS2 structure will be demolished and removed. Soils surrounding OS2 will be excavated as shown on the Construction Drawings (**Appendix I**) on the north, east, and west sides. The south wall of OS2 is adjacent to the Site

Culvert. Temporary support of excavation (SOE) and benching will be required for areas of the Site with excavation depths of four (4) feet or greater. Excavation side slopes of two (2) horizontal to one (1) vertical (2H:1V) will be implemented on the west side of OS2 and excavation side slopes of one (1) horizontal to one (1) vertical (1H:1V) will be implemented on the north and east sides of OS2. After the exterior of OS2 has been exposed, OS2 will be demolished and removed from the excavation. Because the south wall of OS2 may be connected to the Site Culvert, the southern wall will be kept in place by cutting the east and west walls and floor of OS2 as shown on the Construction drawings. Soil and debris from the excavation and removal of OS2 will be stockpiled for disposal. Documentation samples will be collected from the sidewalls at 2-ft depth intervals and bottom of the excavation to remove OS2 as shown on the Construction Drawings in accordance with Section 5.4 (b) of DER-10. Documentation samples will be submitted to the fixed laboratory for analyses for PCBs and metals in accordance with QAPP.

3.5 Backfilling

Imported fill material and/or stockpiled soil approved by NYSDEC for reuse will be used to backfill the excavation up to the ground surface. Reused or imported backfill material will meet the requirements specified in DER-10 under Section 5.4(e) and Table 5.4(e). The fill material will be compacted in order to maintain the integrity of the cover with accommodation for settling and subsidence and to have permeability consistent with natural subsoils present.

3.6 Off-Site Disposal

3.6.1 Hazardous Fine-Grained Material

Fine-grained material was collected from OS2 during Phase 1 of the RI and during the IRM PDI for analyses for hazardous waste characteristics and total PCBs in order to anticipate disposal requirements for material to be generated during the IRM. Sample locations are shown on Figure **5**. Total PCB concentrations ranged from sixteen to two hundred thirty-four (16 to 234) milligrams per kilogram (mg/kg) as shown on **Table 6**. Total PCB concentrations in composited OS2 fine-grained material were above the federal TSCA disposal criterion of fifty (50) mg/kg. OS2 fine-grained material had no other characteristics of hazardous waste as shown on **Table 6**. Therefore, OS2 fine-grained material will be classified as PCB remediation waste under TSCA and as hazardous waste containing PCBs as defined in 6 NYCRR Part 371.4 (e). Stabilized fine-grained material will be loaded from the solids stabilization area onto trucks for transport for off-Site disposal as hazardous waste at an appropriate treatment storage and/or disposal facility. Each shipment will have the required manifest, labeling and placarding in accordance with Federal and state laws and regulations.

3.6.2 Hazardous Soils

Soils with total PCB concentrations greater than or equal to fifty (50) mg/kg will be classified as PCB remediation waste under TSCA and as hazardous waste containing PCBs as defined in 6

NYCRR Part 371.4 (e). Soils classified as hazardous waste will be accumulated in the TSCA stockpile prior to loading in the TSCA Loading Area for off-site disposal. Trucks will be loaded in the loading area for transport of hazardous waste for off-Site disposal at an appropriate treatment storage and/or disposal facility. Each shipment will have the required manifest, labeling and placarding in accordance with Federal and state laws and regulations.

3.6.3 Non-hazardous Soils

Soils with total PCB concentrations less than fifty (50) mg/kg will be managed as non-hazardous waste to be transported off-Site for disposal at an appropriate treatment storage and/or disposal facility. Non-hazardous soils accepted for disposal will be stockpiled and staged for disposal as non-hazardous waste. Waste profiles will be developed based on sampling of the non-hazardous soil stockpile for waste characteristics at a frequency consistent with the requirements of the receiving facility. Stockpiles will be maintained and secured so that soils do not migrate from staging and stockpile locations.

3.6.4 Contact Water

Waste profiles will be developed for material generated as part of the IRM (e.g., contained water from OS2, decon water). Those materials will be transported and disposed of off-Site at an appropriate treatment storage and/or disposal facility.

3.6.5 Off-Site Transport

The planned on-site journey management plan for the material which will be handled during the IRM will be discussed with the City of Elmira Traffic Engineering Department. All trucks hauling impacted soils on the public roadway will have a valid NYS Part 364 Waste Transporter Permit. All trucks leaving the Site for off-Site disposal will travel north on South Main Street, cross the Chemung River and travel east on East Water Street to the interchange with Interstate 86. Routes have been selected to avoid planned road construction in Elmira during the IRM, difficult traffic areas as well as to utilize routes with the most marked pedestrian crossings to ensure maximum safety.

Each vehicle will be inspected prior to shipment. Each vehicle will be lined and covered, and the tailgate secured. The wheels, sides and underbody will be decontaminated prior to departure from the Site.

Based on proposed volumes of soil and debris to be transported off-Site for disposal, necessary truck traffic necessary for off-Site disposal has been estimated as 10 to 12 loads per day for hazardous waste and 18 to 20 loads per day for non-hazardous waste. Off-Site transport is anticipated to be completed over one (1) week pending waste profile approvals. Transport on public roads for off-Site disposal (hazardous and non-hazardous waste) will not exceed 35 loads per day without prior notification of NYSDEC. Truck traffic will not take place during EHS student arrival/departure times.

3.7 Site Restoration

After completion of the OS2 IRM, disturbed areas will be restored to original grades. Unpaved areas will be reseeded based on original conditions. Paved areas that were disturbed by excavation will be repaved. Fencing between the STCC and EHS properties will be restored with temporary posts in anticipation of future remedial activities.

4. QUALITY ASSURANCE

4.1 Porous Surface Sample Collection

Porous surface (e.g. concrete, brick, and/or block surfaces) samples will be collected from the floor and walls of OS2 in accordance with 40 CFR 761 Subpart N. A carbide drill bit with a diameter of 7/8 or 1 inch will be used to generate a fine powder, or other representative sample, suitable for extraction and analysis for the porous surface to be sampled. The maximum sampling depth will be 7.5 cm. For soft surfaces, chisels or sharp knives may be used to collect samples. Porous surface samples will be collected in accordance with the following general protocol:

- A hammer drill of sufficient size to accept a 7/8 or 1 inch drill bit will be used to advance the drill bit;
- The drill bit will have been decontaminated before use;
- The sampling location and sediment depth will be identified and recorded in the field logbook;
- Clean (new) nitrile protective gloves will be worn to prepare porous surface (i.e. removing accumulated solids and debris from surface) prior to sampling;
- Gloves used to prepare surface will be replaced with new nitrile gloves for collecting samples;
- A hole will be cut in aluminum foil or aluminum pan just large enough to allow the drill bit to pass through;
- Aluminum foil or aluminum pan will be placed on surface to be sampled with hole aligned on the sample location;
- Drill bit will be aligned with hole over sample location;
- Appropriate personal protective equipment will be worn prior to drilling:
    - Protective eyewear (ANSI Z87.1)
    - Steel-toed footwear
    - Nitrile gloves
    - Dust mask
    - Leather gloves, as required for using hammer drill
    - Hard hat (if required)
    - High-Vis reflective vest (if required)
- Drilling will begin by advancing the tip of the drill bit to the predetermined sample depth (typically three (3) inches maximum). Cuttings/pulverized sample material will be

deposited on the aluminum foil/pan. NOTE: some of the sample may fall back into the hole; the sampler may need to use a small tool or even a nitrile gloved finger to fully evacuate the hole, if a nitrile gloved finger is used the nitrile gloves will need to be replaced to avoid contaminating the exterior of the sample jar and drill bit;

- Cutting/pulverized sample material will be placed into laboratory-supplied glass jar.
- Jar will be labeled with date, time, and sample name as described in the QAPP;
- Sample location will be recorded on project-specific sample logs in accordance with QAPP;
- Decontaminate all sampling equipment in accordance with project sampling equipment decontamination procedures;
- Complete chain-of-custody forms, prepare shipping containers, and send to laboratory for analysis; and
- Dispose of sampling wastes generated in accordance with established guidelines.

Porous surface samples will be placed in appropriate sample containers, sealed, and submitted to the laboratory for analyses. The samples will be labeled, handled, and packaged following the procedures described in Site-specific QAPP. QC samples will be collected at the frequency detailed in the Site-specific QAPP.

4.2 Non-Porous Surface Sample Collection

Non-porous surface samples will be collected from the steel wall separating the outlet chamber from the separation chamber (**Figure 21**). Non-porous surface samples will be collected in accordance with 40 CFR 761 Subpart P. A standard wipe test will be used to sample one 10 cm by 10 cm square (100 cm^2) area to represent surface area PCB concentrations of each square meter or fraction of a square meter of nearly flat non-porous surface.

Steps for collecting the wipe samples are as follows:

- Locate sample location;
- Don personal protective equipment (PPE) per the HASP;
- Put on clean (new) nitrile protective gloves for collecting samples;
- Place paper template (provided by laboratory) with 10-cm x 10-cm cutout on non-porous surface;
- Remove hexane-soaked gauze pad (for PCB sampling). Using gauze pad, wipe entire cutout area from side to opposite side. Refold gauze pad and wipe in perpendicular direction of first wipe, side to opposite side of entire cutout;

- Place gauze pad back in sample container;
- Label sample jar per the Site-specific QAPP;
- Remove PPE and place in appropriate disposal container;
- Complete chain-of-custody forms, prepare shipping containers, and send to laboratory for analysis;
- Record exact sample location on the project specific sample logs in accordance with the Site-specific QAPP; and
- Repeat procedure for total number of samples required.

Wipe samples will be placed in appropriate sample containers, sealed, and submitted to the laboratory for analyses. The samples will be labeled, handled, and packaged following the procedures described in Site-specific QAPP. QC samples will be collected at the frequency detailed in the Site-specific QAPP.

4.3 Decontamination Procedures

Non-dedicated equipment and tools used to collect samples for chemical analyses will be decontaminated prior to and between each sample using an Alconox rinse and potable water rinse. Additional cleaning of the equipment with steam may be needed under some circumstances. Decontamination fluids will be discharged to the ground surface unless a visible sheen or odor is detected on either the equipment or the fluids, at which point the decontamination water will be staged in an appropriate container and disposed of appropriately.

4.4 Data Validation

Data validation will be performed on all analytical data generated for the IRM to verify and validate the usability of those data in accordance with the QAPP. Analytical data packages will be reviewed for completeness and field and laboratory QC sample results will be evaluated. Verification and validation will be based on completeness and compliance checks of sample receipt conditions, both sample-related and instrument-related QC results, recalculation checks, and review of actual instrument outputs. Data Usability Summary Reports (DUSRs) will be prepared and included in the Construction Completion Report.

5. PERMITS AND TEMPORARY CONTROLS

5.1 Permits and Notifications

Unisys will notify the United States Environmental Protection Agency (EPA) of PCB waste activities by filing EPA Form 7710–53 in accordance with 40 CFR §761.205. Unisys will submit EPA Form 8700-12 to provide initial notification of Resource Conservation and Recovery Act (RCRA) Subtitle C Activity and to obtain an EPA Identification Number for the Site.

A storm water construction permit is not required as the area of disturbance from construction activities for the IRM is expected to be less than one acre.

Storm water piping modifications presented in Section 3.1 will not affect State Pollution Discharge Elimination System (SPDES) permit held by ECSD (SPDES# NY0106216; **Appendix K**). The modifications are upstream of the ECSD discharge to the Site Culvert (**Figure 5**) but the ECSD monitoring point is located in the EHS parking lot. A review of NYSDEC and USEPA records found no active SPDES permits for the STCC property. Written approvals from STCC and ECSD of the proposed storm water infrastructure modifications are included in **Appendix J**.

5.2 Temporary Facilities

During IRM construction, temporary facilities for stockpiling excavated soils and solids stabilization will be established as shown on the construction drawings presented in **Appendix I**. All stockpiles will be maintained to avoid having steep sides or faces. At the end of each work day and during periods of extended inactivity or prevailing high wind conditions, stockpiles will be covered with tarps, and the tarps will be secured with sandbags. Stockpiles will not be placed within twenty-fie (25) yards of occupied buildings. Construction trailers will not be placed in areas where potential exposure to PCBs exist.

5.3 Soil and Sediment Erosion Control

Soil and sediment erosion controls will be established within the limit of disturbance as shown on the construction drawings presented in **Appendix I** to control runoff during construction and prevent sediment from entering the existing storm sewer system. Erosion and sediment controls will be in accordance with the "New York Standards and Specifications for Erosion and Sediment Control" (NYSDEC, 2016) and will be inspected weekly during active construction with additional inspections following rain events.

5.4 Water Management

Storm water contacting potentially impacted soils (contact water) will be segregated from storm water entering areas cleaned of impacted soils (non-contact water). Contact and non-contact water shall remain separated at all times. Contact water generated within the excavation will be minimized and managed to the extent practical. Standing water will be pumped into a temporary

storage tank at the Site for off-Site transportation and disposal/recycling as appropriate. Grading shall be performed as necessary to divert surface water runoff from entering excavation areas and all stockpiles will be tightly covered. Diversion control berms and temporary drainage channels shall be constructed as needed and maintained.

Any contact water generated will be conveyed overland via hose to frac tanks staged on-Site. Liquids will be pumped through a filter skid prior to entering the storage tanks as PCBs are typically not readily water soluble and therefore running these liquids through filter bags prior to storage will help to reduce the potential TSCA waste from the project site and therefore the associated elevated costs to the client. Once a tank nears capacity, waste characterization samples will be collected for waste profiling and off-Site disposal.

5.5 Dust, Odor and Organic Vapor Control and Monitoring

Dust control shall be conducted throughout the Site during all phases of work to prevent the presence of visible dust. Visible dust shall not leave the exclusion zone. Dust control measures shall be applied periodically throughout each work day. Dust control may be conducted by sprinkling with water until the surface is wet; mulching at two to two and one-half (2 to 2.5) tons per acre with anchoring, restricting vehicle speeds, covering excavation areas; and reducing the excavation size and/or number of excavations. Spray-on adhesive may also be used in areas of no vehicular traffic.

IRM activities are not anticipated to generate unacceptable airborne emissions. However, as a contingency measure, New York State Department of Health's (NYSDOH's) Generic Community Air Monitoring Plan (CAMP) will be implemented during the IRM. Initial air monitoring data for each activity will be used to evaluate the need for continued monitoring. If required, continuous real-time particulate and VOC monitoring will be conducted at the upwind and downwind perimeter of the exclusion zone using portable monitors. A minimum of one (1) upwind and four (4) downwind locations shall be monitored. The four (4) downwind locations shall be equally distributed along the perimeter of the work area. Air monitoring shall be conducted during excavation, grading, placement of clean fill, or other activities which may generate fugitive dust. The CAMP will be implemented at the start of each new ground intrusive activities to establish an air monitoring database. A copy of the CAMP is included in **Appendix L**.

6. HEALTH AND SAFETY

All Site activities will be performed in such a manner as to ensure the safety and health of all personnel and the surrounding community. All Site activities shall be conducted in accordance with all pertinent general industry (29 CFR 1910) and construction (29 CFR 1926) Occupational Health and Safety Administration (OSHA) standards, as well as any other applicable New York State and municipal codes or ordinances. All Site activities will comply with those requirements set forth in OSHA's final rule entitled Hazardous Waste Operation and Emergency Response (HAZWOPER), 29 CFR 1910.120, Subpart H. Entry into OS2 and other stormwater structures will be evaluated for confined space entry requirements in accordance with 29 CFR 1910.146.

To ensure that all Site activities are in compliance, each contractor will prepare a Health and Safety Plan (HASP) in accordance with the aforementioned regulations. The HASP shall conform to the requirements of 29 CFR 1910.120 and all applicable state, federal, local, and other health and safety requirements and safe construction practices not specifically identified in these requirements.

7. INSTITUTIONAL CONTROLS

Unisys will evaluate the need for institutional controls during the design of the Remedial Action for the Site. Because the proposed IRM could leave PCBs in concrete structures to remain in place, potential institutional controls may include requirements to identify to any purchaser that the land has been used for PCB remediation waste disposal, is restricted to low occupancy use and the presence and maintenance requirements of fences or caps. STCC has been notified and has provided in writing that such institutional controls would be acceptable should this be the case (**Appendix J**).

8. SCHEDULE AND DELIVERABLES

8.1 Schedule

The proposed schedule for the OS2 IRM is presented in **Appendix M**. Unisys will procure an IRM contractor no later than two (2) weeks, from receipt of written notice to proceed from NYSDEC or access is obtained from the property owners, whichever is later. The IRM contractor will mobilize to the Site, weather permitting, within two (2) weeks of notice of intent to award a contract or access is obtained from the property owners, whichever is later. The OS2 IRM will be conducted in phases. Phase I of the OS2 IRM will be conducted in November 2019 will consist of storm water piping modifications on the STCC property. The duration of the Phase I on-Site work is anticipated to be approximately three (3) weeks. The natural gas service to the STCC building will be relocated prior in October 2019 prior to construction.

Phase II of OS2 IRM construction will begin in March 2020. During Phase II, the IRM contractor will set up temporary facilities and controls and proceed with shallow soil removal, material

removal from OS2, OS2 demolition, backfilling and EHS property storm water piping modifications. Waste profiles of stabilized sediment will be developed prior to removal from the OS2 structure. Off-site transport and disposal of stabilized sediment will be arranged following receipt of the waste profile. Other waste profiles (e.g. water, soil) will be developed by sampling the containment or stockpile. Off-site transport and disposal of those wastes will be arranged following receipt of those waste profiles. The duration of Phase II on-site work is anticipated to be approximately five (5) weeks.

8.2 Deliverables

A construction completion report (CCR) will be prepared in accordance with Section 5.8 of DER-10 to document the implementation of the IRM. The CCR will include a description of IRM construction activities, as-built drawings, daily field reports, analytical data reports, and disposal manifests. The CCR will be submitted to NYSDEC within ninety (90) days of completion of on-Site construction.

TABLES

TABLE 1
SUMMARY OF TEST PIT ANALYTICAL RESULTS

Former Sperry Remington Site
Elmira, New York

							STCC							EHS				
						Location	OS-SB-01	OS-SB-02	TP-1	TP-2	TP-3	TP-4	TP01-01	TP02-02	TP02-01	TP03-01	TP04-01	TP04-02	TP04-02
						Field_ID	OC-SB-01-0-11.5_07-27-12	OS-SB-02-0-9.5_07-30-12	Test Pit - 1	Test Pit - 2	Test Pit - 3	Test Pit - 4	TP01_01_110917	TP02_02_110817	TP02_01_110817	TP03_01_111017	TP4_01_111317	TP4_02_111717	TP4_03_111717
						Sample Date	7/27/2012	7/30/2012	8/24/2011	8/24/2011	8/24/2011	8/24/2011	11/9/2017	11/8/2017	11/8/2017	11/10/2017	11/13/2017	11/17/2017	11/17/2017
						Depth Interval (ft bgs)	0-11.5	0-9.5	3.5-4	12-12.5	9-9.5	6.5-7	0-8	0-8	0-8	0-11	0-11.5	0-10	11-11
				Soil Cleanup Objective (SCO)		NYS Hazardous Waste													
Analytical Group	Constituent of Concern	Units	EQL	Industrial	Restricted - Residential														
Polychlorinated Biphenyls	Arochlor 1016	mg/kg	0.006				<0UJ	<0UJ	<0U	<0U	<0U	<0U	<0.0065U	<0.12U	<0.0061U,F1	<0.0063U	<0.006U	<0.0064U	<0.0063U
	Arochlor 1221	mg/kg	0.012				<0UJ	<0UJ	<0U	<0U	<0U	<0U	<0.013U	<0.24U	<0.012U	<0.013U	<0.012U	<0.013U	<0.013U
	Arochlor 1232	mg/kg	0.011				<0UJ	<0UJ	<0U	<0U	<0U	<0U	<0.012U	<0.22U	<0.011U	<0.012U	<0.011U	<0.012U	<0.011U
	Arochlor 1242	mg/kg	0.011				<0UJ	<0UJ	<0U	<0U	<0U	<0U	<0.012U	<0.22U	<0.011U	<0.012U	<0.011U	<0.012U	<0.012U
	Arochlor 1248	mg/kg	0.018				26J	9.9J	7.7	0.96	0.058	0.15	3.6	41	3.8	0.2	1.8	0.15	0.029
	Arochlor 1254	mg/kg	0.013				22J	8.3J	<0U	<0U	<0U	0.15	2.1	19	2.3	0.11	1	0.076	<0.013U
	Arochlor 1260	mg/kg	0.0055				<0UJ	<0UJ	<0U	<0U	<0U	<0U	0.38	3.6	0.42	0.019	0.28	0.023	<0.0055U
	Arochlor 1268	mg/kg	0.0089				<0UJ	<0UJ	<0U	<0U	<0U	<0U	<0.0097U	<0.18U	<0.0091U	<0.0094U	<0.0089U	<0.0095U	<0.0094U
	Arochlor 1262	mg/kg	0.013				<0UJ	<0UJ	<0U	<0U	<0U	<0U	<0.014U	<0.26U	<0.013U	<0.014U	<0.013U	<0.014U	<0.014U
	Total PCBS	mg/kg		25	1	50	48	18.2	7.7	0.96	0.058	0.3	6.08	64.6	6.52	0.329	3.08	0.249	0.029
Metals	Arsenic	mg/kg	1.1	16	16		-	-	27	140	330J	11	160	17	18	7.1	17	11	7.5
	Barium	mg/kg	22	10000	400		-	-	130J	250J	240J	77J	360	270	290F1	74	130	370	77
	Beryllium	mg/kg	0.43	2700	72		-	-	0.47	0.52	0.92	<0U	0.41J	0.43	0.71	0.43J	0.49	0.44J	0.38J
	Cadmium	mg/kg	0.044	60	4.3		-	-	0.91J	1J	0.55J	0.18J	<0.044U	0.34J	0.39J	0.17J	0.49J	0.21J	0.17J
	Calcium	mg/kg	540				-	-	1400	530J	2600	620	620	2200	6000F1,F2	16,000	2700	3600	1500
	Cobalt	mg/kg	5.4				-	-	8.7	5.9J	5.6J	2.7J	4J	7	9.3	7.1	8.6	7.7	7.2
	Iron	mg/kg	11				-	-	76,000J	85,000J	44,000J	36,000J	42,000	38,000	38,000	18,000	40,000	34,000	22,000
	Magnesium	mg/kg	540				-	-	380J	220J	290J	920	280J	1500	1600	3100	1700	1600	1400
	Mercury	mg/kg	0.035	5.7	0.81		-	-	0.7J	0.047J	1.7J	0.16J	0.27	0.41	0.43	0.034J	0.19	0.034J	0.037
	Nickel	mg/kg	4.3	10000	310		-	-	33	20	31J	8.1	25	81	150F1	23	170	130	170
	Potassium	mg/kg	540				-	-	590J	590J	550J	580J	940	580	750	810	660	650	510J
	Silver	mg/kg	0.11	6800	180		-	-	<0U	<0U	0.48J	<0U	0.18J	<0.11U	<0.12U	<0.12U	<0.12U	<0.13U	<0.12U
	Sodium	mg/kg	540				-	-	430J	190J	200J	<0U	550J	110J	280J	100J	400J	470J	130J
	Zinc	mg/kg	2.2	10000	10000		-	-	61J	40J	36J	27J	26	130	180F1	83	330	130	120
SVOCs	1,4-Dioxane	mg/kg	0.056	250	13		-	-	-	-	-	-	<0.06U	<0.11U	<0.056U	<0.059U	<0.056U	<0.059U	<0.059U
	2-methylphenol	mg/kg	0.033	1000	100		-	-	<0U	<0U	<0U	<0U	<0.035U	<0.066U	<0.033U	<0.034U	<0.033U	<0.035U	<0.035U
	4-nitroaniline	mg/kg	0.13				-	-	<0UJ	<0UJ	<0UJ	<0UJ	<0.14U	<0.27U	<0.13U	<0.14U	<0.13U	<0.14U	<0.14U
	Acenaphthylene	mg/kg	0.027	1000	100		-	-	<0U	<0U	<0U	<0U	<0.027U	0.077J	0.18	0.037J	0.051J	<0.027U	<0.027U
	Acetophenone	mg/kg	0.026				-	-	<0U	<0U	<0U	<0U	<0.028U	<0.051U	<0.026U	<0.027U	<0.026U	<0.027U	<0.027U
	Anthracene	mg/kg	0.029	1000	100		-	-	<0U	<0U	<0U	<0U	<0.031U	0.073J	0.16	0.045J	0.036J	<0.029U	0.029J
	Benz(a)anthracene	mg/kg	0.031	11	1		-	-	0.18	<0U	<0U	<0U	0.076J	0.29	0.42	0.21	0.11	<0.031U	0.12
	Benzo(b)fluoranthene	mg/kg	0.034	11	1		-	-	0.15	<0U	<0U	<0U	0.082	0.39	0.63	0.32	0.18	<0.034U	0.12
	Benzo(g,h,i)perylene	mg/kg	0.034	1000	100		-	-	0.1	<0U	<0U	<0U	<0.035U	0.25	0.31	0.19	0.12	<0.034U	0.071J
	Benzo(k)fluoranthene	mg/kg	0.027	110	3.9		-	-	<0U	<0U	<0U	<0U	<0.028U	0.11J	0.19	0.075J	0.048J	<0.027U	0.04J
	Chrysene	mg/kg	0.075	110	3.9		-	-	0.34	<0U	<0U	<0U	0.22	0.45	0.7	0.24	0.26	0.079	0.13
	Dibenz(a,h)anthracene	mg/kg	0.031	1.1	0.33		-	-	<0U	<0U	<0U	<0U	<0.033U	<0.062U	0.09	<0.032U	<0.031U	<0.032U	0.056J
	Dibenzofuran	mg/kg	0.03	1000	59		-	-	0.16J	<0U	<0U	<0U	0.2J	0.33J	0.14J	<0.031U	<0.03U	<0.031U	<0.032U
	Fluoranthene	mg/kg	0.075	1000	100		-	-	0.28	0.021J	0.056J	<0U	0.13	0.5	1	0.47	0.22	0.039J	0.15
	Fluorene	mg/kg	0.027	1000	100		-	-	<0U	<0U	<0U	<0U	<0.029U	<0.053U	0.048J	<0.028U	<0.027U	<0.028U	<0.028U
	Hexachlorobenzene	mg/kg	0.03	12	1.2		-	-	<0U	<0U	<0U	<0U	<0.032U	<0.06U	<0.03U	<0.031U	<0.03U	<0.032U	<0.032U
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.03	11	0.5		-	-	0.06J	<0U	<0U	<0U	<0.031U	0.2	0.26	0.17	0.089	<0.03U	0.079
	Naphthalene	mg/kg	0.028	1000	100		-	-	0.3	0.034J	0.027J	0.049J	0.37	0.95	0.27	<0.028U	0.056J	<0.028U	<0.028U
	Pentachlorophenol	mg/kg	0.71	55	6.7		-	-	<0U	<0U	<0U	<0U	<0.76U	<1.4U	<0.71U	<0.74U	<0.71U	<0.74U	<0.74U
	Phenanthrene	mg/kg	0.075	1000	100		-	-	0.7	0.1	0.085J	<0U	0.54	0.68	0.76	0.11	0.17	0.058J	0.18
	Phenol	mg/kg	0.05	1000	100		-	-	<0U	<0U	<0U	<0U	<0.054U	<0.1U	<0.05U	<0.053U	<0.05U	<0.053U	<0.053U
	Pyrene	mg/kg	0.075	1000	100		-	-	0.18	0.023J	0.039J	<0U	0.12	0.44	0.7	0.31	0.23	0.037J	0.2

Notes:
J - estimated value
U - non-detect
- - not analyzed
mg/kg - milligram per kilogram
ft bgs - feet below ground surface
PCBs - polychlorinated biphenyls
SVOCs - Semi-volatile Organic Compounds
Concentrations detected above restricted use Soil Cleanup Objectives (SCOs) presented in 6 NYCRR Subpart 375 are presented in light grey.
Restricted use for Southern Tier Commerce Center (STCC) is Industrial. Restricted use for Elmira High School is Restricted-Residential.
Total PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark grey.

TABLE 2a
PCB Results for Surface and Shallow Subsurface Soil Borings - STCC
Former Sperry Remington Site
Elmira, New York

			Polychlorinated Biphenyls									
			Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Arochlor 1262	Total PCBs
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
Industrial Soil Cleanup Objective												25
NYS Hazardous Waste												50
Location	**Sample Depth Range (ft bgs)**	**Sample Date**										
OS-SB-03	0-1	4/23/2018	<0.0063U	<0.013U	<0.011U	<0.012U	1.5	0.89	0.24	<0.0094U	<0.014U	2.663
OS-SB-03	1-2	4/23/2018	<0.066U	<0.13U	<0.12U	<0.12U	10	4.3	0.9	<0.098U	<0.14U	15.54
OS-SB-04	0-1	4/23/2018	<0.064U	<0.13U	<0.12U	<0.12U	11	5.2	1.2	<0.095U	<0.14U	17.73
OS-SB-04	1-2	4/23/2018	<0.062U	<0.12U	<0.11U	<0.11U	9.3	3.7	0.94	<0.093U	<0.13U	14.25
OS-SB-05	0-1	4/23/2018	<0.0063U	<0.012U	<0.011U	<0.012U	3	2.1	0.6	<0.0094U	<0.014U	5.732
OS-SB-05	1-2	4/23/2018	<0.0061U	<0.012U	<0.011U	<0.011U	3	1.8	0.51	<0.0092U	<0.013U	5.341
OS-SB-06	0-1	4/24/2018	<0.066U,F1	<0.13U	<0.12U	<0.12U	16J	7.1J	1.7J	<0.098U	<0.14U	25.14
OS-SB-06	1-2	4/24/2018	<0.065U	<0.13U	<0.12U	<0.12U	16J	6.4J	1.5J	<0.096U	<0.14U	24.24
OS-SB-07	0-1	4/24/2018	<0.0061U	<0.012U	<0.011U	<0.011U	2J	1.1J	0.29J	<0.0092U	<0.013U	3.421
OS-SB-07	1-2	4/24/2018	<0.0062U	<0.012U	<0.011U	<0.011U	2.3J	1J	0.23J	<0.0092U	<0.013U	3.561
OS-SB-08	0-1	4/24/2018	<0.0064U	<0.013U	<0.012U	<0.012U	2J	1J	0.27J	<0.0096U	<0.014U	3.304
OS-SB-08	1-2	4/24/2018	<0.0059U	<0.012U	<0.011U	<0.011U	0.85J	0.52J	0.13J	<0.0088U	<0.013U	1.531
OS-SB-09	0-1	4/23/2018	<0.0062U	<0.012U	<0.011U	<0.011U	3	3.2	0.46	<0.0093U	<0.013U	6.691
OS-SB-09	1-2	4/23/2018	<0.0062U	<0.012U	<0.011U	<0.011U	1.9	2.2	0.44	<0.0092U	<0.013U	4.571
OS-SB-10	0-1	4/23/2018	<0.31U	<0.62U	<0.57U	<0.57U	45	35	5.7	<0.47U	<0.67U	87.31
OS-SB-10	1-2	4/23/2018	<0.0065U	<0.013U	<0.012U	<0.012U	3.4	1.8	0.29	<0.0097U	<0.014U	5.524
OS-SB-11	0-1	4/23/2018	<0.31U	<0.61U	<0.56U	<0.57U	40	21	2.6	<0.46U	<0.66U	65.19
OS-SB-11	1-2	4/23/2018	<0.062U	<0.12U	<0.11U	<0.11U	13	9.3	1.6	<0.093U	<0.13U	24.21
OS-SB-12	0-1	4/23/2018	<0.6U	<1.2U	<1.1U	<1.1U	110	75	8.6	<0.9U	<1.3U	196.7
OS-SB-12	1-2	4/23/2018	<0.35U	<0.71U	<0.65U	<0.65U	81	23	3.6	<0.53U	<0.77U	109.4
OS-SB-13	0-1	4/23/2018	<0.68U	<1.4U	<1.2U	<1.3U	110	97	14	<1U	<1.5U	224.5
OS-SB-13	1-2	4/23/2018	<0.068U	<0.14U	<0.12U	<0.12U	15	5.2	0.82	<0.1U	<0.15U	21.37

TABLE 2a
PCB Results for Surface and Shallow Subsurface Soil Borings - STCC
Former Sperry Remington Site
Elmira, New York

			Polychlorinated Biphenyls									
			Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Arochlor 1262	Total PCBs
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	
Industrial Soil Cleanup Objective												25
NYS Hazardous Waste												50
Location	**Sample Depth Range (ft bgs)**	**Sample Date**										
SSHS-B557	0-2	9/7/2016	<0.0041U	<0.0064U	<0.0022U	<0.0033U	1.1J	0.72J	0.13J	<0.0017U	<0.0028U	1.96
SSHS-B558	0-2	9/7/2016	<0.002U	<0.0032U	<0.0011U	<0.0016U	0.55J	0.27J	0.04J	<0.00083U	<0.0014U	0.8651

Notes:
J - estimated value
U - non-detect
PCBs - polychlorinated biphenyls
Concentrations detected above the industrial soil criteria for PCBs (0-2 ft bgs) of 1 mg/kg (NYSDEC CP-51) are presented in grey.
PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark grey

TABLE 2b
PCB Results for Surface and Shallow Subsurface Soil Borings - EHS
Former Sperry Remington Site - North
Elmira, New York

			Polychlorinated Biphenyls									
			Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Arochlor 1262	Total PCBs
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.002	0.0032	0.0011	0.0016	0.0045	0.0045	0.0045	0.00083	0.0014	
Restricted - Residential Soil Cleanup Objective												1
NYS Hazardous Waste												50
Location	**Sample Depth Range (ft bgs)**	**Sample Date**										
SSHS-B1028	0-2	5/24/2018	<0.008U	<0.016U	<0.015U	<0.015U	0.24	0.2	0.078	<0.012U	<0.017U	0.5595
SSHS-B1029	0-2	5/23/2018	<0.033U	<0.065U	<0.06U	<0.061U	8.4	6.1	0.92	<0.049U	<0.071U	15.59
SSHS-B1030	0-2	5/24/2018	<0.66U	<1.3U	<1.2U	<1.2U	360	160	31	<0.98U	<1.4U	554.4
SSHS-B1031	0-2	5/24/2018	<0.0067U	<0.013U	<0.012U	<0.012U	3.1	2.6	0.64	<0.01U	<0.014U	6.374
SSHS-B1032	0-2	5/24/2018	<0.0067U	<0.013U	<0.012U	<0.012U	2.4	1.4	0.31	<0.01U	<0.015U	4.144
SSHS-B1066	0-2	6/27/2018	<0.14U	<0.14U	<0.14U	<0.14U	4.5	2.4	0.51J	<0.14U	<0.14U	7.83
SSHS-B903	0-2	1/12/2018	<0.0067U	<0.013U	<0.012U	<0.012U	0.22J	0.11J	0.042J	<0.01U	<0.015U	0.4064

Notes:
J - estimated value
U - non-detect
PCBs - polychlorinated biphenyls
Concentrations detected above the restricted residential soil criteria for PCBs (0-2 ft bgs) of 1 mg/kg (NYSDEC CP-51) are presented in grey.
PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark grey

TABLE 3a
Metals Results for Surface and Shallow Subsurface Soil Borings - STCC
Former Sperry Remngton Site
Elmira, New York

			Metals																					
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Thallium	Vanadium	Zinc
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			10	0.37	0.52	10	0.21	0.058	260	0.26	2.6	1.3	5.2	0.52	260	0.78	0.016	2.1	260	0.52	0.086	0.26	2.6	1
Industrial Soil Cleanup Objective					16	10000	2700	60		800		10000		3900		10000	5.7	10000		6800	6800			10000
Location	**Sample Depth Range (ft bgs)**	**Sample Date**																						
OS-SB-03	0-1	4/23/2018	-	-	60	290	-	<0.57U	-	56	-	-	-	100	-	-	0.26	-	-	2.9	<0.12U	-	-	-
OS-SB-03	1-2	4/23/2018	-	-	42	270	-	1.7	-	56	-	-	-	140	-	-	0.32	-	-	2.3	<0.13U	-	-	-
OS-SB-04	0-1	4/23/2018	-	-	44	270	-	0.75	-	25	-	-	-	130	-	-	0.37	-	-	3	<0.12U	-	-	-
OS-SB-04	1-2	4/23/2018	-	-	32	320	-	0.25J	-	21	-	-	-	85	-	-	0.32	-	-	2.6	<0.13U	-	-	-
OS-SB-05	0-1	4/23/2018	-	-	18	170	-	0.84	-	34	-	-	-	140	-	-	0.28	-	-	1.9	<0.13U	-	-	-
OS-SB-05	1-2	4/23/2018	-	-	13	140	-	0.2J	-	14	-	-	-	52	-	-	0.05	-	-	1.5	<0.12U	-	-	-
OS-SB-06	0-1	4/24/2018	-	-	39	270J	-	0.31J	-	22J	-	-	-	80J	-	-	0.34J	-	-	5.9	<0.13U	-	-	-
OS-SB-06	1-2	4/24/2018	-	-	110	470F1	-	0.11J	-	18	-	-	-	47	-	-	0.33	-	-	6.8	<0.12U	-	-	-
OS-SB-07	0-1	4/24/2018	-	-	28J	130	-	0.22J	-	18	-	-	-	54J	-	-	0.16J+	-	-	2	<0.12U	-	-	-
OS-SB-07	1-2	4/24/2018	-	-	31	140	-	0.23J	-	21	-	-	-	43	-	-	0.16	-	-	2.4	<0.11U	-	-	-
OS-SB-08	0-1	4/24/2018	-	-	42	130	-	0.14J	-	21	-	-	-	64	-	-	0.15	-	-	3	<0.12U	-	-	-
OS-SB-08	1-2	4/24/2018	-	-	37	110	-	0.15J	-	25	-	-	-	67	-	-	0.62	-	-	2.4	<0.12U	-	-	-
OS-SB-09	0-1	4/23/2018	-	-	15	97J	-	0.15J	-	19	-	-	-	60J	-	-	0.2	-	-	2.4	<0.12U	-	-	-
OS-SB-09	1-2	4/23/2018	-	-	13	130	-	<0.6U	-	17	-	-	-	58	-	-	0.34	-	-	1J	<0.13U	-	-	-
OS-SB-10	0-1	4/23/2018	-	-	14	140	-	0.2J	-	14	-	-	-	230J	-	-	0.07	-	-	0.78J	<0.13U	-	-	-
OS-SB-11	0-1	4/23/2018	-	-	21	120	-	0.13J	-	13	-	-	-	34	-	-	0.082	-	-	2	<0.12U	-	-	-
OS-SB-11	1-2	4/23/2018	-	-	12	180	-	0.16J	-	20F1	-	-	-	120F1	-	-	0.045	-	-	1.1J	<0.12U	-	-	-
OS-SB-12	0-1	4/23/2018	-	-	23	200	-	0.43J	-	51	-	-	-	190	-	-	0.061	-	-	1.5	1.8	-	-	-
OS-SB-12	1-2	4/23/2018	-	-	14	160	-	0.26J	-	22	-	-	-	120	-	-	0.18	-	-	2.3	<0.14U	-	-	-
OS-SB-13	0-1	4/23/2018	-	-	21	150	-	0.32J	-	40	-	-	-	76	-	-	0.27	-	-	2.4	<0.13U	-	-	-
OS-SB-13	1-2	4/23/2018	-	-	15	87	-	0.18J	-	12	-	-	-	80	-	-	0.1	-	-	2.8	<0.13U	-	-	-
SSHS-B557	0-2	9/7/2016	4200	<0.37U	39	110	0.25	<0.058U	720	14	3.5	40	29,000	45	1100	150	0.14	21	470	3.1	<0.086U	<0.26U	16	41
SSHS-B558	0-2	9/7/2016	1600	0.24J	63	50	0.24	<0.059U	810	5.6	1.5J	22	15,000	34	390	56	0.17	13	330	5.8	<0.087U	0.46J	10	28

Notes:
J - estimated value
U - non-detect
PCBs - polychlorinated biphenyls
Concentrations detected above the industrial soil criteria are presented in grey.

TABLE3b
Metals Results for Surface and Shallow Subsurface Soil Borings - EHS
Former Sperry Remington Site
Elmira, New York

			Metals																						
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium (III+VI	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Sodium	Thallium	Vanadium	Zinc
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			7.9	0.14	0.39	7.9	0.16	0.058	200	0.2	2	0.99	3.9	0.39	200	0.59	0.013	1.6	200	0.39	0.066	55	0.2	2	0.79
Restricted - Residential					16	400	72	4.3		110		270		400		2000	0.81	310		180	180				10000
Location	**Sample Depth Range (ft bgs)**	**Sample Date**																							
SSHS-B1028	0-2	5/24/2018	10,000	<0.52U	7.8	130	0.51J	0.32J	3200	15	8.2	61	20,000	65	2600	650	0.041	33	1300	<0.79U	<0.16U	58J	<0.32U	15	110
SSHS-B1029	0-2	5/23/2018	5700	3.5	18	150	0.64	0.26J	3300	27	8.2	260	34,000	120	1000	270	0.15	290	860	2	<0.12U	110J	<0.24U	16	99
SSHS-B1030	0-2	5/24/2018	10,000	0.81J	16	130	0.67	0.4J	3200	23	9.9	260	29,000	78	2400	460	0.077	74	1100	1.3	<0.13U	150J	<0.26U	17	120
SSHS-B1031	0-2	5/24/2018	11,000	0.83J	14	130	0.56	0.78	3400	22	8.8	370	33,000	790	2400	540	0.1	140	1100	1.1J	<0.14U	78J	<0.27U	19	370
SSHS-B1032	0-2	5/24/2018	7900	.49J,F1,F	14	180	0.59	0.45J	3600	25	13	180	27,000F2	390F2	2000	390F2	0.18F1	83F1	1000	0.78J	<0.13U	120J	<0.27U	16	160

Notes:
J - estimated value
U - non-detect
mg/kg - milligram per kilogram
ft bgs - feet below ground surface
Concentrations detected above Restricted Residential SCOs are presented in grey.

TABLE 4
PCB and Metals Results for Subsurface Soil Borings - STCC
Former Sperry Remington Site
Elmira, New York

			Metals																					
			Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	Calcium	Chromium (III+VI)	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Thallium	Vanadium	Zinc
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			7.9	0.14	0.39	7.9	0.16	0.048	200	0.2	2	0.99	3.9	0.39	200	0.59	0.013	1.6	200	0.39	0.066	0.2	2	0.79
Industrial Soil Cleanup Objective					16	10000	2700	60		800		10000		3900		10000	5.7	10000		6800	6800			10000
NYS Hazardous Waste																								
LocCode	**Sample_Depth_Range**	**Sampled_Date-Time**																						
OS-SB-04	2-4	4/23/2018	-	-	41	190	-	0.34J	-	15	-	-	-	110	-	-	0.97	-	-	3.6	<0.12U	-	-	-
OS-SB-04	4-6	4/23/2018	-	-	86	260	-	0.37J	-	15	-	-	-	52	-	-	1.1	-	-	6	0.14J	-	-	-
OS-SB-04	6-8	4/23/2018	-	-	100	250	-	0.52J	-	8.9	-	-	-	14	-	-	2.7	-	-	6.8	<0.15U	-	-	-
OS-SB-05	2-4	4/23/2018	-	-	29J	270J	-	0.26J	-	16J	-	-	-	38J	-	-	0.089	-	-	2.9	<0.13U	-	-	-
OS-SB-05	4-6	4/23/2018	-	-	71	360	-	0.13J	-	13	-	-	-	20	-	-	0.075	-	-	6.1	<0.12U	-	-	-
OS-SB-05	6-8	4/23/2018	-	-	54	190	-	0.22J	-	12	-	-	-	24	-	-	0.17	-	-	2.5	<0.13U	-	-	-
OS-SB-06	2-4	4/24/2018	-	-	95	420	-	<0.048U	-	11	-	-	-	15	-	-	0.47	-	-	4.2	<0.14U	-	-	-
OS-SB-06	4-6	4/24/2018	-	-	57	190	-	0.14J	-	10	-	-	-	8.5	-	-	0.081	-	-	3	<0.12U	-	-	-
OS-SB-06	6-8	4/24/2018	-	-	290	200	-	0.071J	-	16	-	-	-	27	-	-	0.073	-	-	6.6	<0.13U	-	-	-
OS-SB-07	2-4	4/24/2018	-	-	37	100	-	0.091J	-	14	-	-	-	53	-	-	0.13	-	-	3.2	<0.11U	-	-	-
OS-SB-07	4-6	4/24/2018	-	-	15	82	-	0.13J	-	14	-	-	-	15	-	-	0.062	-	-	<0.57U	<0.12U	-	-	-
OS-SB-07	6-8	4/24/2018	-	-	12	78	-	0.17J	-	14	-	-	-	8.2	-	-	0.044	-	-	0.95J	<0.11U	-	-	-
OS-SB-08	2-4	4/24/2018	-	-	39	62	-	0.059J	-	15	-	-	-	29	-	-	0.11	-	-	2.4	<0.14U	-	-	-
OS-SB-08	4-6	4/24/2018	-	-	21	80	-	0.067J	-	10	-	-	-	11	-	-	0.032J	-	-	1	<0.11U	-	-	-
OS-SB-08	6-8	4/24/2018	-	-	22	78	-	0.14J	-	12	-	-	-	9.7	-	-	0.025J	-	-	0.78J	<0.11U	-	-	-
OS-SB-09	2-4	4/23/2018	-	-	17	860	-	<0.61U	-	13	-	-	-	180	-	-	0.2	-	-	1.5	<0.13U	-	-	-
OS-SB-10	2-4	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-10	4-6	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-10	6-8	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-10	8-10	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-11	2-4	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-11	4-6	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-11	6-8	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-11	8-10	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-11	10-12	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-12	2-4	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OS-SB-13	2-4	4/23/2018	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSHS-B557	2-4	9/7/2016	4000	0.65J	25	120	0.25	0.3	2100J	30	5	240J	32,000	99	1200	190	0.21	74	410	2	0.16J	<0.26U	15	90
SSHS-B557	4-6	9/7/2016	5700	0.23J	18	80	0.23	0.092J	1100	14	5.3	42	22,000	26	1700	250	0.039	25	450	1.2	<0.086U	<0.26U	13	50
SSHS-B557	6-8	9/7/2016	8200	<0.19U	5.9	91	0.29	0.068J	480	14	6.4	22	23,000	9.6	2200	290	0.013J	16	470	0.51J	<0.089U	<0.27U	14	56
SSHS-B557	8-10	9/7/2016	3800	<0.14U	9.7	59	0.15J	0.069J	620	11	3.2	37	15,000	21	1100	160	0.05	15	330	0.83	<0.066U	<0.2U	8.3	34
SSHS-B557	10-12	9/7/2016	4300	<0.2U	4.5	41	0.12J	<0.064U	750	8.6	2.9	14	18,000	5.2	1500	84	0.0091J	9	360	0.63	<0.094U	<0.28U	8.2	33
SSHS-B557	12-14	9/7/2016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SSHS-B558	2-4	9/7/2016	5800	<0.39U	20	51	0.26	0.093J	14,000	7.9	5.9	27	32,000	8.9	3200	260	0.017	14	340	0.81	<0.09U	<0.27U	11	48
SSHS-B558	4-6	9/7/2016	6900	<0.19U	7.6	59	0.22	<0.061U	2000	10	4.9	22	21,000	9.6	1900	320	0.032	14	350	0.46J	<0.09U	<0.27U	13	49
SSHS-B558	6-8	9/7/2016	9300	<0.19UJ	9.2	200J	0.35	0.1J	770	13	8	18J-	23,000J	12	2300	300J	0.023	17	550	0.5J	<0.089U	<0.27U	15	60J
SSHS-B558	8-10	9/7/2016	6600	<0.2U	8.4	120	0.32	0.074J	1900	15	5.8	19	20,000	15	1800	170	0.028	17	410	0.66	<0.093U	<0.28U	12	52
SSHS-B558	10-12	9/7/2016	4600	<0.2U	8.1	50	0.18J	<0.064U	1100	10	3.4	88	19,000	20	1600	120	0.011J	24	460	0.28J	<0.095U	<0.28U	8.9	47

Notes:
J - estimated value
U - non-detect
- No Analysis
PCBs - polychlorinated biphenyls
Concentrations detected above the industrial soil criteria are presented in grey.
PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark grey

TABLE 4
PCB and Metals Results for Subsurface Soil Borings - STCC
Former Sperry Remington Site
Elmira, New York

			Polychlorinated Biphenyls									
			Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Arochlor 1262	Total PCBs
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.00021	0.00033	0.00011	0.00017	0.00011	0.00017	0.00016	0.000085	0.00014	
Industrial Soil Cleanup Objective												25
NYS Hazardous Waste												50
LocCode	**Sample_Depth_Range**	**Sampled_Date-Time**										
OS-SB-04	2-4	4/23/2018	<0.0059U	<0.012U	<0.011U	<0.011U	3	1.3	0.38	<0.0089U	<0.013U	4.711
OS-SB-04	4-6	4/23/2018	<0.0066U	<0.013U	<0.012U	<0.012U	3	1.5	0.38	<0.0098U	<0.014U	4.914
OS-SB-04	6-8	4/23/2018	<0.0072U	<0.014U	<0.013U	<0.013U	0.6	0.35	0.1	<0.011U	<0.015U	1.087
OS-SB-05	2-4	4/23/2018	<0.0061U,F2	<0.012U	<0.011U	<0.011U	1.7	0.62	0.2F2	<0.0092U	<0.013U	2.551
OS-SB-05	4-6	4/23/2018	<0.0065U	<0.013U	<0.012U	<0.012U	1.5	0.57	0.17	<0.0097U	<0.014U	2.274
OS-SB-05	6-8	4/23/2018	<0.0068U	<0.014U	<0.012U	<0.013U	1	0.43	0.1p	<0.01U	<0.015U	1.565
OS-SB-06	2-4	4/24/2018	<0.0067U	<0.013U	<0.012U	<0.012U	4.3J	1.3J	0.32J	<0.01U	<0.014U	5.954
OS-SB-06	4-6	4/24/2018	<0.0066U	<0.013U	<0.012U	<0.012U	1.7J	0.73J	0.18J	<0.0099U	<0.014U	2.644
OS-SB-06	6-8	4/24/2018	<0.0067U	<0.013U	<0.012U	<0.012U	0.13J	0.063J	0.014J	<0.01U	<0.015U	0.2414
OS-SB-07	2-4	4/24/2018	<0.0058U	<0.012U	<0.011U	<0.011U	1.1J	0.54J	0.15J	<0.0086U	<0.012U	1.82
OS-SB-07	4-6	4/24/2018	<0.0059U	<0.012U	<0.011U	<0.011U	0.32J	0.18J	0.04J	<0.0089U	<0.013U	0.5709
OS-SB-07	6-8	4/24/2018	<0.0058U	<0.012U	<0.011U	<0.011U	0.11J	0.067J	0.017J	<0.0087U	<0.013U	0.2248
OS-SB-08	2-4	4/24/2018	<0.0062U	<0.012U	<0.011U	<0.011U	0.39J	0.22J	0.061J	<0.0092U	<0.013U	0.7022
OS-SB-08	4-6	4/24/2018	<0.0057U	<0.011U	<0.01U	<0.011U	0.035J	0.019J	<0.005U	<0.0085U	<0.012U	0.0856
OS-SB-08	6-8	4/24/2018	<0.0057U	<0.011U	<0.01U	<0.011U	0.026J	0.014J	<0.005U	<0.0086U	<0.012U	0.07165
OS-SB-09	2-4	4/23/2018	<0.0063U	<0.013U	<0.012U	<0.012U	0.56	0.46	0.085	<0.0094U	<0.014U	1.138
OS-SB-10	2-4	4/23/2018	<0.0067U	<0.013U	<0.012U	<0.012U	2.4	1.3	0.18	<0.0099U	<0.014U	3.914
OS-SB-10	4-6	4/23/2018	<0.0061U	<0.012U	<0.011U	<0.011U	2.7	2.3	0.38	<0.0092U	<0.013U	5.411
OS-SB-10	6-8	4/23/2018	<0.0064U	<0.013U	<0.012U	<0.012U	0.12	0.082	0.0087J	<0.0096U	<0.014U	0.2442
OS-SB-10	8-10	4/23/2018	<0.062U	<0.12U	<0.11U	<0.11U	8.3	9.7	1.8	<0.093U	<0.13U	20.11
OS-SB-11	2-4	4/23/2018	<0.0059U	<0.012U	<0.011U	<0.011U	2.5	1.5	0.19	<0.0089U	<0.013U	4.221
OS-SB-11	4-6	4/23/2018	<0.0062U	<0.012U	<0.011U	<0.011U	1.8	1	0.13	<0.0092U	<0.013U	2.961
OS-SB-11	6-8	4/23/2018	<0.0061U	<0.012U	<0.011U	<0.011U	0.61	0.37	0.056	<0.009U	<0.013U	1.067
OS-SB-11	8-10	4/23/2018	<0.0062U	<0.012U	<0.011U	<0.012U	0.51	0.33	0.049	<0.0093U	<0.013U	0.9208
OS-SB-11	10-12	4/23/2018	<0.0065U	<0.013U	<0.012U	<0.012U	0.095	0.038	<0.0057U	<0.0098U	<0.014U	0.1695
OS-SB-12	2-4	4/23/2018	<0.065U	<0.13U	<0.12U	<0.12U	15	4.2	0.72	<0.097U	<0.14U	20.26
OS-SB-13	2-4	4/23/2018	<0.0063U	<0.013U	<0.012U	<0.012U	5.3	3.2	0.73	<0.0095U	<0.014U	9.263
SSHS-B557	2-4	9/7/2016	<0.001U	<0.0016U	<0.00056U	<0.00083U	0.28J	0.25J	0.055J	<0.00042U	<0.00069U	0.5876
SSHS-B557	4-6	9/7/2016	<0.001U	<0.0016U	<0.00056U	<0.00083U	0.25J	0.17J	0.028J	<0.00042U	<0.0007U	0.4506
SSHS-B557	6-8	9/7/2016	<0.00022U,F2,F1	<0.00034U	<0.00012U	<0.00018U	<0.00011U	<0.00018U	<0.00016U,F2,F1	<0.000089U	<0.00015U	<0.001549
SSHS-B557	8-10	9/7/2016	<0.001U	<0.0016U	<0.00056U	<0.00083U	0.28J	0.22J	0.11J	<0.00042U	<0.0007U	0.6126
SSHS-B557	10-12	9/7/2016	<0.00022U	<0.00035U	<0.00012U	<0.00018U	0.00024J	<0.00018U	<0.00016U	<0.000089U	<0.00015U	0.0009645
SSHS-B557	12-14	9/7/2016	<0.00021U	<0.00034U	<0.00012U	<0.00017U	0.0098J	0.0073J	0.0015J	<0.000087U	<0.00014U	0.01913
SSHS-B558	2-4	9/7/2016	<0.00021U	<0.00033U	<0.00011U	<0.00017U	0.00021J	<0.00017U	<0.00016U	<0.000085U	<0.00014U	0.0008975
SSHS-B558	4-6	9/7/2016	<0.00021U	<0.00033U	<0.00011U	<0.00017U	0.07J	0.036J	0.0057J	<0.000085U	<0.00014U	0.1122
SSHS-B558	6-8	9/7/2016	<0.00022U	<0.00034U	<0.00012U	<0.00017U	0.0014J	0.0012J	0.00045J	<0.000088U	<0.00015U	0.003594
SSHS-B558	8-10	9/7/2016	<0.0022U	<0.0034U	<0.0012U	<0.0018U	0.18J	0.092J	0.014J	<0.00089U	<0.0015U	0.2915
SSHS-B558	10-12	9/7/2016	<0.00021U	<0.00034U	<0.00012U	<0.00017U	0.00027J	0.00024J	0.00018J	<0.000088U	<0.00015U	0.001229

Notes:
J - estimated value
U - non-detect
- No Analysis
PCBs - polychlorinated biphenyls
Concentrations detected above the industrial soil criteria are presented in grey.
PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark grey

TABLE 5
COC CONCENTRATIONS IN EHS AND STCC CATCH BASINS

Former Sperry Remington Site
Elmira, New York

					Location	CB-1	CB-4	CB-5	CB-6	CB-6	CB-9	CB-10	CB-11	CB-15	CB-15
					Field_ID	CB-1_07-24-12	CB-4	CB-5	CB-6	CB-DUP-01	CB-9	CB-10	CB-11	CB-15_01_111617	CB-15_02_111617
					Sample Date	7/24/2012	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	11/16/2017	11/16/2017
					Depth Interval (ft bgs)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-0.17	0.17-0.83
Analyte Group	**Constituent of Concern**	**Units**	**EQL**	**NYS Hazrdous Waste**											
Polychlorinated Biphenyls	Arochlor 1016	mg/kg	0.00053			<0U	<0.0028U	<0.00053U	<0.033U	<0.034U	<0.0052U	<0.0007U	<0.003U	<0.048U	<0.28U
	Arochlor 1221	mg/kg	0.00065			<0U	<0.0034U	<0.00065U	<0.041U	<0.042U	<0.0063U	<0.00086U	<0.0036U	<0.096U	<0.55U
	Arochlor 1232	mg/kg	0.0009			<0U	<0.0048U	<0.0009U	<0.056U	<0.057U	<0.0088U	<0.0012U	<0.005U	<0.087U	<0.51U
	Arochlor 1242	mg/kg	0.00066			<0U	<0.0035U	<0.00066U	<0.041U	<0.042U	<0.0064U	<0.00087U	<0.0037U	<0.088U	<0.51U
	Arochlor 1248	mg/kg	0.00065			<0U	1.2J	<0.00065U	18J	12J	<0.0063U	<0.00086U	<0.0036U	36	190
	Arochlor 1254	mg/kg	0.0026			0.65	0.49J	0.024J	7.4J	6J	1.1J	0.24J	0.32J	<0.1U	<0.58U
	Arochlor 1260	mg/kg	0.0026			<0U	0.095J	0.0045J	1J	0.85J	0.55J	0.067J	0.12J	<0.042U	<0.24U
	Arochlor 1268	mg/kg	0.00053			<0U	<0.0028U	<0.00053U	<0.033U	<0.033U	<0.0051U	<0.00069U	<0.0029U	<0.072U	<0.42U
	Arochlor 1262	mg/kg	0.00096			<0U	<0.0051U	<0.00096U	<0.06U	<0.061U	<0.0094U	<0.0013U	<0.0054U	<0.1U	<0.6U
	Total PCBs	mg/kg		50		0.65	1.785	0.0285	26.4	18.85	1.65	0.307	0.44	36	190
Metals	Aluminum	mg/kg	11			8100B	4200	3900	10,000	10,000	6000	9200	5800	5100F2	8200
	Antimony	mg/kg	0.13			2B	<0.13U	0.38J	1.5	2.2	4.9J	0.73J	3.5	1.4J	2.9
	Arsenic	mg/kg	0.56			24	8.2	4.8	19	22	12	15	27	20	33
	Barium	mg/kg	11			130B	29B	31B	3000B	3000B	120J	140B	240B	96	280
	Beryllium	mg/kg	0.22			0.55B	0.16J	0.095J	1.2	1	0.33	0.54	0.37	0.4J	1.2
	Cadmium	mg/kg	0.28			2.2	0.093J	0.15J	1.8	2.2	2.5J	2.8	16	3.8F1	2.1
	Calcium	mg/kg	280			46,000B	54,000B	150,000B	28,000B	23,000B	1500B	26,000B	4000B	9700F1	14,000
	Chromium (III+VI)	mg/kg	0.28			66	7.6	24	120	140	290F2	26	210	44	200
	Cobalt	mg/kg	2.8			14	3.8	3.8J	25	30	8.1	13	14	6.3J	15
	Copper	mg/kg	1.4			240	27	56	450	550	210F2	120	250	180F2	610
	Iron	mg/kg	5.6			30,000B	14,000B	21,000B	55,000B	72,000B	29,000B	29,000B	88,000B	38,000F2	41,000
	Lead	mg/kg	0.66			140	19	29	860	630	200F2	94	380	99F1,F2	360
	Magnesium	mg/kg	280			17,000B	5300	14,000	6900	2800	1300	2700	2400	1700	2700
	Manganese	mg/kg	0.84			420	190	210	550	560	350J	450	410	130F1	230
	Mercury	mg/kg	0.0073			0.057	<0.0073U	0.13	0.38	0.24	0.066J+	0.082	0.11	0.2	1.1
	Nickel	mg/kg	2.2			43	18	17	200	210	760	37	270	100F1	420
	Potassium	mg/kg	280			780	410	270J	540J	370J	300	710	500	600J	710
	Selenium	mg/kg	0.34			0.95	0.68	0.88	1.2J	1.6	0.63	1.4	1.8	2.3	3.6
	Silver	mg/kg	0.025			<0U	<0.027U	<0.025U	0.38J	0.61	4.8J	0.067J	0.26J	1.3	6.7
	Sodium	mg/kg	78			23J	600	130J	430J	450	85J	250J	190J	410J	320J
	Thallium	mg/kg	0.089			<0U	<0.099U	<0.45U	<0.11U	<0.12U	<0.089U	<0.12U	0.15J	<0.36U	<0.22U
	Vanadium	mg/kg	2.8			24	10B	15B	26B	34B	21J	18B	29B	11	30
	Zinc	mg/kg	1.2			1100B	58B	160B	790B	970B	420B	460B	880B	510	1000

TABLE 5
COC CONCENTRATIONS IN EHS AND STCC CATCH BASINS

Former Sperry Remington Site
Elmira, New York

					Location	CB-1	CB-4	CB-5	CB-6	CB-6	CB-9	CB-10	CB-11	CB-15	CB-15
					Field_ID	CB-1_07-24-12	CB-4	CB-5	CB-6	CB-DUP-01	CB-9	CB-10	CB-11	CB-15_01_111617	CB-15_02_111617
					Sample Date	7/24/2012	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	11/16/2017	11/16/2017
					Depth Interval (ft bgs)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-0.17	0.17-0.83
Analyte Group	**Constituent of Concern**	**Units**	**EQL**	**NYS Hazrdous Waste**											
SVOCs	1,1-Biphenyl	mg/kg	0.012			<0U	<0.078U	<0.075U	0.46J	0.64J	<0.073U,F1	<0.098U	<0.33U	<0.46U	0.72J
	1,2,4,5-tetrachlorobenzene	mg/kg	0.01			<0U	<0.067U	<0.064U	<0.079U	<0.08U	<0.062U	<0.083U	<0.28U	<0.42U	<0.4U
	1,4-Dioxane	mg/kg	0.016			-	<0.1U	<0.096U	<0.12U	<0.12U	<0.093U	<0.13U	<0.43U	<0.88U	<0.83U
	2,3,4,6-tetrachlorophenol	mg/kg	0.0089			<0U	<0.057U	<0.054U	<0.067U	<0.068U	-	<0.07U	<0.24U	<0.47U	<0.44U
	2,4,5-trichlorophenol	mg/kg	0.015			<0U	<0.094U	<0.089U	<0.11U	<0.11U	-	<0.12U	<0.4U	<0.56U	<0.52U
	2,4,6-trichlorophenol	mg/kg	0.021			<0U	<0.13U	<0.13U	<0.16U	<0.16U	-	<0.16U	<0.56U	<0.51U	<0.48U
	2,4-dichlorophenol	mg/kg	0.0028			<0U	<0.018U	<0.017U	<0.021U	<0.021U	-	<0.022U	<0.074U	<0.48U	<0.45U
	2,4-dimethylphenol	mg/kg	0.022			<0U	<0.14U	<0.13U	<0.16U	<0.17U	<0.13U,F1	<0.17U	<0.58U	<0.45U	<0.43U
	2,4-dinitrophenol	mg/kg	0.16			<0U	<1U	<1U	<1.2U	<1.3U	<0.97U	<1.3U	<4.4U	<12U	<11U
	2,4-Dinitrotoluene	mg/kg	0.011			<0U	<0.071U	<0.068U	<0.084U	<0.085U	-	<0.088U	<0.3U	<0.77U	<0.73U
	2,6-dinitrotoluene	mg/kg	0.014			<0U	<0.091U	<0.086U	<0.11U	<0.11U	<0.084U,F1	<0.11U	<0.38U	<0.41U	<0.38U
	2-chloronaphthalene	mg/kg	0.0029			<0U	<0.018U	<0.017U	<0.022U	<0.022U	-	<0.023U	<0.077U	<0.38U	<0.36U
	2-chlorophenol	mg/kg	0.011			<0U	<0.072U	<0.069U	<0.085U	<0.087U	<0.067U	<0.089U	<0.3U	<0.42U	<0.4U
	2-methylnaphthalene	mg/kg	0.012			<0U	<0.016U	0.2	0.69	0.9	3.1	0.2J	0.47J	<0.45U	2.8
	2-methylphenol	mg/kg	0.0096			<0U	<0.061U	<0.059U	<0.073U	<0.074U	<0.057U	<0.076U	<0.26U	<0.52U	<0.49U
	2-nitroaniline	mg/kg	0.062			<0U	<0.39U	<0.38U	<0.47U	<0.47U	-	<0.49U	<1.7U	<2U	<1.9U
	2-nitrophenol	mg/kg	0.015			<0U	<0.097U	<0.092U	<0.11U	<0.12U	<0.09U,F2	<0.12U	<0.41U	<0.43U	<0.4U
	3,3-Dichlorobenzidine	mg/kg	0.015			<0U	<0.093U	<0.089U	<0.11U	<0.11U	-	<0.12U	<0.39U	<2.4U	<2.3U
	3-nitroaniline	mg/kg	0.057			<0U	<0.36U	<0.35U	<0.43U	<0.44U	-	<0.45U	<1.5U	<1.7U	<1.6U
	4,6-Dinitro-2-methylphenol	mg/kg	0.055			<0U	<0.35U	<0.34U	<0.42U	<0.43U	-	<0.44U	<1.5U	<21U	<20U
	4-bromophenyl phenyl ether	mg/kg	0.012			<0U	<0.077U	<0.073U	<0.091U	<0.092U	-	<0.095U	<0.32U	<0.56U	<0.53U
	4-chloro-3-methylphenol	mg/kg	0.013			<0U	<0.081U	<0.077U	<0.096U	<0.097U	-	<0.1U	<0.34U	<0.61U	<0.58U
	4-chloroaniline	mg/kg	0.011			<0U	<0.07U	<0.067U	<0.083U	<0.085U	-	<0.088U	<0.3U	<0.33U	<0.31U
	4-chlorophenyl phenyl ether	mg/kg	0.015			<0U	<0.098U	<0.093U	<0.12U	<0.12U	<0.09U,F1,F2	<0.12U	<0.41U	<0.42U	<0.4U
	4-methylphenol	mg/kg	0.055			<0U	0.2J	<0.082U	<0.1U	<0.1U	<0.08U,F1	0.22J	<0.36U	<0.52U	<0.49U
	4-nitroaniline	mg/kg	0.056			<0U	<0.36U	<0.34U	<0.42U	<0.43U	-	<0.44U	<1.5U	<2.1U	<2U
	4-nitrophenol	mg/kg	0.05			<0U	<0.32U	<0.31U	<0.38U	<0.39U	-	<0.4U	<1.4U	<6.1U	<5.8U
	Acenaphthene	mg/kg	0.0026			<0U	<0.017U	0.91	0.84	0.69	<0.016U,F1	0.15J	0.84	<0.39U	9.2
	Acenaphthylene	mg/kg	0.0032			0.41J	<0.02U	0.9	0.28J	0.57J	0.39	0.44	0.49J	0.75J	2.6
	Acetophenone	mg/kg	0.011			<0U	<0.072U	<0.069U	<0.086U	<0.087U	<0.067U,F1	<0.09U	<0.3U	1.8J	<0.38U
	Anthracene	mg/kg	0.0027			0.51J	<0.017U	5.4	1.1	1	0.58J	0.82	2	1.3	19
	Atrazine	mg/kg	0.013			<0UJ	<0.086U	<0.082U	<0.1U	<0.1U	<0.079U,F1	<0.11U	<0.36U	<0.81U	<0.76U
	Benz(a)anthracene	mg/kg	0.028			1.9J	0.22	12	3.2	2.5	0.77J	1.4	3.2	3.9	38
	Benzaldehyde	mg/kg	0.021			<0U	<0.13UJ	<0.13UJ	<0.16UJ	<0.16UJ	<0.12UJ	<0.16UJ	<0.56UJ	<0.38U	<0.36U
	Benzo(a) pyrene	mg/kg	0.028			1.9J	0.28	11	2.6	2.4	0.72J	1.1	2.5	3.3	27
	Benzo(b)fluoranthene	mg/kg	0.028			2.7	0.37	13	3.2	2.9	0.87J	1.3	3.5	4.5	35
	Benzo(g,h,i)perylene	mg/kg	0.028			2J	0.32	11	2.5	2.5	0.8J	1	2.4	2.8	20
	Benzo(k)fluoranthene	mg/kg	0.026			<0U	0.14J	5.5	1.2	1.2	0.46	0.59	0.79	1J	14

TABLE 5
COC CONCENTRATIONS IN EHS AND STCC CATCH BASINS

Former Sperry Remington Site
Elmira, New York

					Location	CB-1	CB-4	CB-5	CB-6	CB-6	CB-9	CB-10	CB-11	CB-15	CB-15
					Field_ID	CB-1_07-24-12	CB-4	CB-5	CB-6	CB-DUP-01	CB-9	CB-10	CB-11	CB-15_01_111617	CB-15_02_111617
					Sample Date	7/24/2012	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	5/28/2015	11/16/2017	11/16/2017
					Depth Interval (ft bgs)	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-1	0-0.17	0.17-0.83
Analyte Group	**Constituent of Concern**	**Units**	**EQL**	**NYS Hazrdous Waste**											
SVOCs	Bis(2-chloroethoxy) methane	mg/kg	0.0091		<0U	<0.058U	<0.055U	<0.069U	<0.07U	<0.054U,F1	<0.072U	<0.24U	<0.34U	<0.32U
	Bis(2-chloroethyl)ether	mg/kg	0.0037		<0U	<0.024U	<0.022U	<0.028U	<0.028U	<0.022U	<0.029U	<0.1U	<0.35U	<0.33U
	Bis(2-chloroisopropyl) ether	mg/kg	0.003		<0U	<0.019U	<0.018U	<0.022U	<0.023U	<0.018U	<0.024U	<0.08U	<0.38U	<0.36U
	Bis(2-ethylhexyl) phthalate	mg/kg	0.022		<0U	<0.14U	2.8	0.68J	0.31J	0.43J	<0.18U	<0.6U	<3.9U	<3.7U
	Butyl benzyl phthalate	mg/kg	0.019		<0U	<0.12U	<0.11U	<0.14U	<0.14U	0.3J	<0.15U	<0.51U	<4.3U	<4.1U
	Caprolactam	mg/kg	0.1		<0U	<0.66U	<0.63U	<0.79U	<0.8U	<0.61U	<0.83U	<2.8U	<2.8U	<2.6U
	Carbazole	mg/kg	0.0025		<0U	<0.016U	2.2	1.1	0.87	<0.015U,F1	0.32	0.87	<0.5U	16
	Chrysene	mg/kg	0.028		1.7J	0.39	13	3.5	2.9	0.92J	1.4	3.2	3.4	40
	Dibenz(a,h)anthracene	mg/kg	0.0031		0.24J	<0.02U	2.3	0.61	0.53	0.19	0.26	0.63J	<0.48U	6.5
	Dibenzofuran	mg/kg	0.014		<0U	<0.087U	0.58J	1.1	1.2	<0.08U,F1	0.17J	0.62J	<0.47U	5.8
	Diethylphthalate	mg/kg	0.015		<0U	<0.096U	<0.091U	<0.11U	<0.12U	<0.089U,F1,F2	<0.12U	<0.41U	0.75J,B	<0.49U
	Dimethyl phthalate	mg/kg	0.015		<0U	<0.096U	<0.091U	<0.11U	<0.12U	<0.089U,F1,F2	<0.12U	<0.4U	<0.41U	<0.38U
	Di-n-butyl phthalate	mg/kg	0.017		<0U	<0.11U	<0.1U	<0.13U	<0.13U	0.19J	<0.14U	<0.46U	<0.46U	<0.44U
	Di-n-octyl phthalate	mg/kg	0.015		<0U	<0.093U	<0.088U	<0.11U	<0.11U	<0.086U,F1	<0.12U	<0.39U	<0.69U	<0.65U
	Fluoranthene	mg/kg	0.028		3.1	0.91	33	8.1	6.8	1.7	3.2	7	7.8	110
	Fluorene	mg/kg	0.0036		<0U	<0.023U	1.6	0.75	0.7	0.88J	0.36	1	0.5J	9.2
	Hexachlorobenzene	mg/kg	0.0029		<0U	<0.019UJ	<0.018UJ	<0.022UJ	<0.023UJ	<0.017UJ	<0.023UJ	<0.079UJ	<0.47U	<0.44U
	Hexachlorobutadiene	mg/kg	0.0031		<0U	<0.02UJ	<0.019UJ	<0.023UJ	<0.024UJ	<0.018UJ	<0.024UJ	<0.083UJ	<0.37U	<0.35U
	Hexachlorocyclopentadiene	mg/kg	0.015		<0U	<0.095U	<0.09U	<0.11U	<0.11U	-	<0.12U	<0.4U	<0.5U	<0.47U
	Hexachloroethane	mg/kg	0.0099		<0U	<0.063U	<0.06U	<0.075U	<0.076U	-	<0.079U	<0.27U	<0.42U	<0.4U
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.028		1.5J	0.26	9	1.9	2	0.65J	0.87	2	2.6	19
	Isophorone	mg/kg	0.01		<0U	<0.066U	<0.063U	<0.079U	<0.08U	<0.061U,F1	<0.083U	<0.28U	<0.32U	<0.31U
	Naphthalene	mg/kg	0.0097		<0U	<0.015U	0.17	0.59	0.61	0.5J	0.21J	0.73J	<0.42U	7.2
	Nitrobenzene	mg/kg	0.011		<0U	<0.073U	<0.07U	<0.087U	<0.088U	<0.068U,F1	<0.091U	<0.31U	<0.45U	<0.42U
	N-nitrosodi-n-propylamine	mg/kg	0.0032		<0U	<0.021U	<0.02U	<0.024U	<0.025U	<0.019U,F1	<0.026U	<0.087U	<0.4U	<0.37U
	n-Nitrosodiphenylamine	mg/kg	0.013		<0U	<0.081U	<0.078U	<0.096U	<0.098U	-	<0.1U	<0.34U	<0.92U	<0.87U
	Pentachlorophenol	mg/kg	0.012		<0U	<0.079U	<0.075U	<0.093U	<0.095U	-	<0.098U	<0.33U	<11U	<10U
	Phenanthrene	mg/kg	0.0044		1.6J	0.51	19	6.9	5.1	1.8	2.2	5.6	3.9	94
	Phenol	mg/kg	0.0033		<0U	<0.021U	<0.02U	<0.025U	<0.025U	<0.019U	<0.026U	<0.088U	<0.79U	<0.75U
	Pyrene	mg/kg	0.028		2.4	0.61	20	5.3	4	1.7	2	4.1	6.2	76

Notes

1. Analytes with no detections are not shown. See analytical reports for complete results.

mg/kg milligrams per kilogram

U Non-Detect

F1 MS and/or MSD Recovery is outside acceptance limits.

F2 MS/MSD RPD exceeds control limits

B Compound was found in the blank and sample.

Total PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark grey

TABLE 6
CHARACTERIZATION OF OS2 FINE -GRAINED MATERIAL

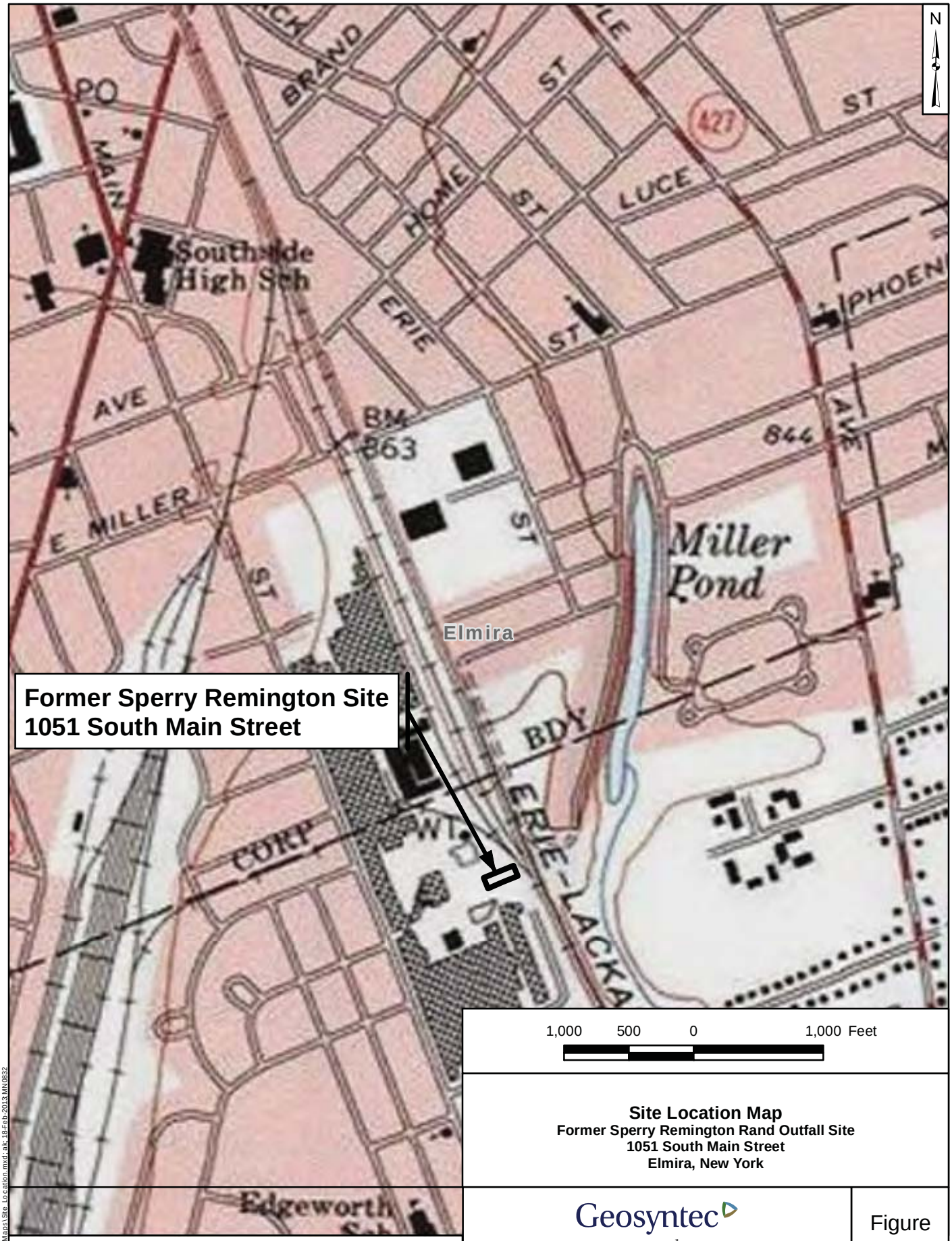
Former Sperry Remington Site
Elmire, New York

				Location	OS-1	OS2-3	OS2-4	OS-2	OS-2
				Field_ID	OS-1	OS2-3_07-31-12	OS2-4_07-31-12	OS-2	OS-3
				Sample Date	8/24/2011	7/31/2012	7/31/2012	8/24/2011	8/24/2011
				Depth Interval (ft bgs)	*11.5'-12'*	Composite	Composite	*11.5'-12'*	*11.5'-12'*
Group	Analytte	Units	EQL	Hazardous Waste Characertistics Threshold					
General	Moisture Content	%			49	65	62	43	43
Corrosivity	pH	pH Units	0.1	≤2 or ≥12.5	-	6.24J	6.47J	-	-
Reacitivity	Cyanide Total	mg/kg	0.44		13	3.4	3.8	5.7	6.5
	Sulphide	mg/kg	79		-	850	540	-	-
Ignitablity	Flash Point	oF	0	140	-	>140	>140	-	-
Polychlorinated Biphenyls	Arochlor 1016	mg/kg	0.54		ND	ND	ND	ND	ND
	Arochlor 1221	mg/kg	0.54		ND	ND	ND	ND	ND
	Arochlor 1232	mg/kg	0.54		ND	ND	ND	ND	ND
	Arochlor 1242	mg/kg	0.54		ND	29J	94J	ND	ND
	Arochlor 1248	mg/kg	0.54		22	ND	ND	16	14
	Arochlor 1254	mg/kg	0.54		ND	30J	140J	ND	ND
	Arochlor 1260	mg/kg	0.54		ND	ND	ND	ND	ND
	Arochlor 1268	mg/kg	0.54		ND	ND	ND	ND	ND
	Arochlor 1262	mg/kg	0.54		ND	ND	ND	ND	ND
	Total PCBs	mg/kg		50	22	59J	234J	16	14
TCLP Metals	Arsenic	mg/L	0.05	5		0.006J	0.009J		
	Barium	mg/L	0.2	100		0.72B	0.76B		
	Cadmium	mg/L	0.05	1		0.054	0.072		
	Chromium	mg/L	0.05	5		0.006J	0.008J		
	Lead	mg/L	0.05	5		0.3	0.42		
	Mercury	mg/L	0.0002	0.2		ND	ND		
	Selenium	mg/L	0.05	1		ND	ND		
	Silver	mg/L	0.05	5		ND	ND		
Total Metals	Arsenic	mg/kg	0.86		40	-	-	33	36
	Barium	mg/kg	17		540J	-	-	310J	400J
	Cadmium	mg/kg	0.43		1.7	-	-	2.3	2.4
	Chromium	mg/kg	0.43		400J	-	-	400J	310J
	Lead	mg/kg	0.26		430J	-	-	430J	630J
	Mercury	mg/kg	0.029		1J	-	-	3.6J	1.4J
	Selenium	mg/kg	0.43		4.7	-	-	1.9	2
	Silver	mg/kg	0.43		2.2	-	-	1.4	1.6
TCLP SVOCs	1,4-dichlorobenzene	µg/L	50	7,500		ND	ND		
	2,4,5-trichlorophenol	µg/L	50	400,000		ND	ND		
	2,4,6-trichlorophenol	µg/L	50	400,000		ND	ND		
	2,4-Dinitrotoluene	µg/L	50	7,500		ND	ND		
	2-methylphenol	µg/L	50	4,200,000		ND	ND		
	Cresol Total	mg/L	0.05	4,200		ND	ND		
	Hexachlorobenzene	µg/L	10	30,130		ND	ND		
	Hexachlorobutadiene	µg/L	10	500		ND	ND		
	Hexachloroethane	µg/L	50	30,130		ND	ND		
	Nitrobenzene	µg/L	100	500		ND	ND		
	Pentachlorophenol	µg/L	50	3,000		ND	ND		
	Pyridine	µg/L	50	2,000		ND	ND		
Total SVOCs	1,4-dichlorobenzene	mg/kg	0.0096		ND	-	-	ND	ND
	2,4,5-trichlorophenol	mg/kg	8.6		ND	-	-	ND	ND
	2,4,6-trichlorophenol	mg/kg	8.6		ND	-	-	ND	ND
	2,4-Dinitrotoluene	mg/kg	8.6		ND	-	-	ND	ND
	2-methylphenol	mg/kg	8.6		ND	-	-	ND	ND
	3-&4-methylphenol	mg/kg	8.6		ND	-	-	ND	ND
	Hexachlorobutadiene	mg/kg	1.7		ND	-	-	ND	ND
	Hexachloroethane	mg/kg	8.6		ND	-	-	ND	ND
	Nitrobenzene	mg/kg	17		ND	-	-	ND	ND
	Pentachlorophenol	mg/kg	8.6		ND	-	-	ND	ND
TCLP VOCs	1,1-dichloroethene	µg/L	200	700		ND	ND		
	1,2-dichloroethane	µg/L	200	500		ND	ND		
	Methyl Ethyl Ketone	µg/L	200	200,000		ND	ND		
	Benzene	µg/L	200	500		ND	ND		
	Carbon tetrachloride	µg/L	200	500		ND	ND		
	Chlorobenzene	µg/L	200	100,000		ND	ND		
	Chloroform	µg/L	200	6,000		ND	ND		
	Trichloroethene	µg/L	200	500		ND	ND		
	Tetrachloroethene	µg/L	200	700		ND	ND		
	Vinyl chloride	µg/L	200	200		ND	ND		
Total VOCs	1,1-dichloroethene	mg/kg	0.0096		0.049J	-	-	ND	ND
	1,2-dichloroethane	mg/kg	0.0096		ND	-	-	ND	ND
	Methyl Ethyl Ketone	mg/kg	0.038		ND	-	-	0.098	0.12
	Benzene	mg/kg	0.0096		ND	-	-	ND	0.002J
	Carbon tetrachloride	mg/kg	0.0096		ND	-	-	ND	ND
	Chlorobenzene	mg/kg	0.0096		ND	-	-	ND	ND
	Chloroform	mg/kg	0.0096		ND	-	-	ND	ND
	Trichloroethene	mg/kg	0.0096		1.4	-	-	ND	ND
	Tetrachloroethene	mg/kg	0.0096		ND	-	-	ND	ND
	Vinyl chloride	mg/kg	0.0096		0.23J	-	-	0.1	0.12
TCLP Pesticides and Herbicides	chlordane	µg/L	5	30		ND	ND		
	Endrin	µg/L	0.5	20		ND	ND		
	g-BHC (Lindane)	µg/L	0.5	400		ND	ND		
	Heptachlor	µg/L	0.5	8		ND	ND		
	Heptachlor epoxide	µg/L	0.5	8		ND	ND		
	Methoxychlor	µg/L	1	10,000		ND	ND		
	Toxaphene	mg/L	0.02	500		ND	ND		
	2,4,5-TP (Silvex)	mg/L	0.01	10		ND	ND		
	2,4-D	mg/L	0.04	10		ND	ND		
Total Pesticides	chlordane	mg/kg	0.37		ND	-	-	ND	ND
	Endrin	mg/kg	0.037		0.11J	-	-	0.061J	0.062J
	g-BHC (Lindane)	mg/kg	0.037		ND	-	-	ND	ND
	Heptachlor	mg/kg	0.037		ND	-	-	ND	ND
	Heptachlor epoxide	mg/kg	0.037		0.42	-	-	0.3J	0.29J
	Methoxychlor	mg/kg	0.073		0.051J	-	-	0.032J	0.03J
	Toxaphene	mg/kg	1.5		ND	-	-	ND	ND

Notes:
J - estimated value
ND - not detected
- - not analyzed
mg/kg - milligram per kilogram
mg/L - milligram per liter
µg/L - microgram per liter

ft bgs - feet below ground surface
PCBs - polychlorinated biphenyls
SVOCs - semi-volatile Organic Compounds
VOCs - volatile organic compounds
TCLP - toxicity characteristic leaching procedure

FIGURES



Site Location Map
Former Sperry Remington Rand Outfall Site
1051 South Main Street
Elmira, New York

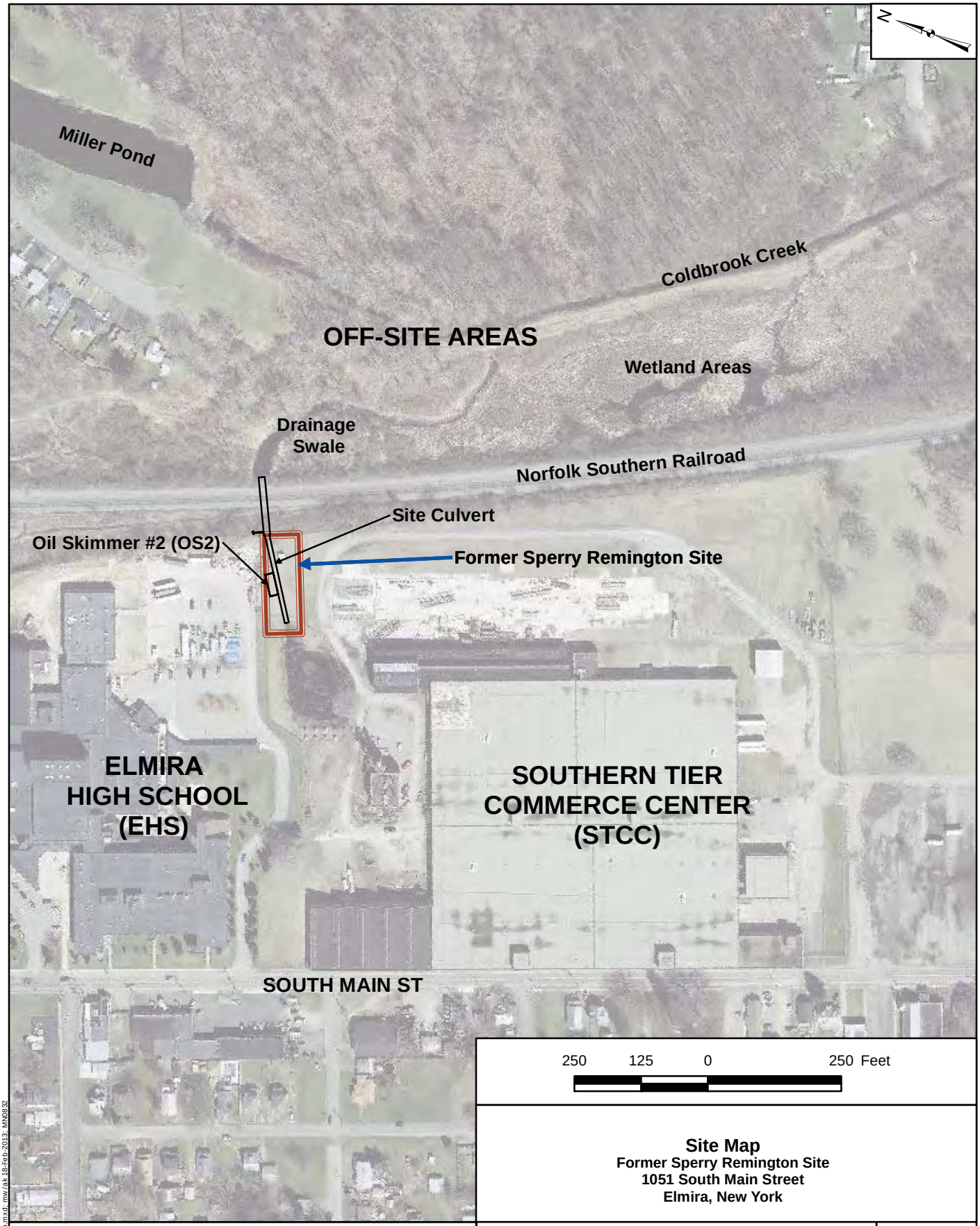
Notes
USGS 7.5' Quadrangle Elmira (1976)

Geosyntec consultants

Columbia, Maryland | February 2013

Figure **1**

P:\GIS\MN0832\Maps\Site Location.mxd; ak; 18-Feb-2013;MN0832



Site Map
Former Sperry Remington Site
1051 South Main Street
Elmira, New York

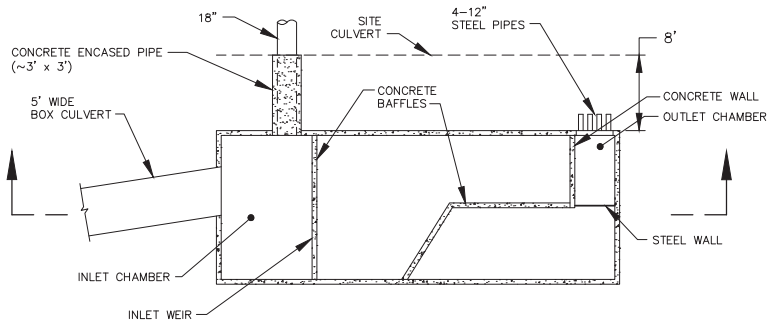
Notes
2010 imagery in Chemung County, NYS Digital Ortho-imagery Program (NYSDOP), NYS Office of Cyber Security (2010)

Geosyntec consultants

Columbia, Maryland | October 2017

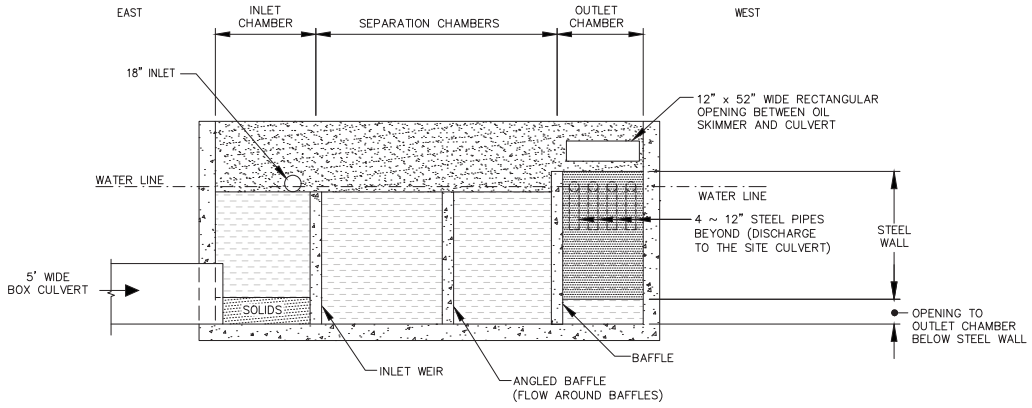
Figure 2

P:\GIS\MN0832\Maps\SiteMap.mxd; mw/ak 18-Feb-2013; MN0832



OIL SKIMMER #2 PLAN

SCALE: 1" = 10'



OIL SKIMMER #2 SECTION

SCALE: NTS

NOTE:
SITE PLAN DEVELOPED FROM AN AUTOCAD FILE (OIL SKIMMER.DWG) OBTAINED FROM ADVANCED GEOSERVICES ENGINEERING, P.C., FEBRUARY 2013.

10 5 0 10

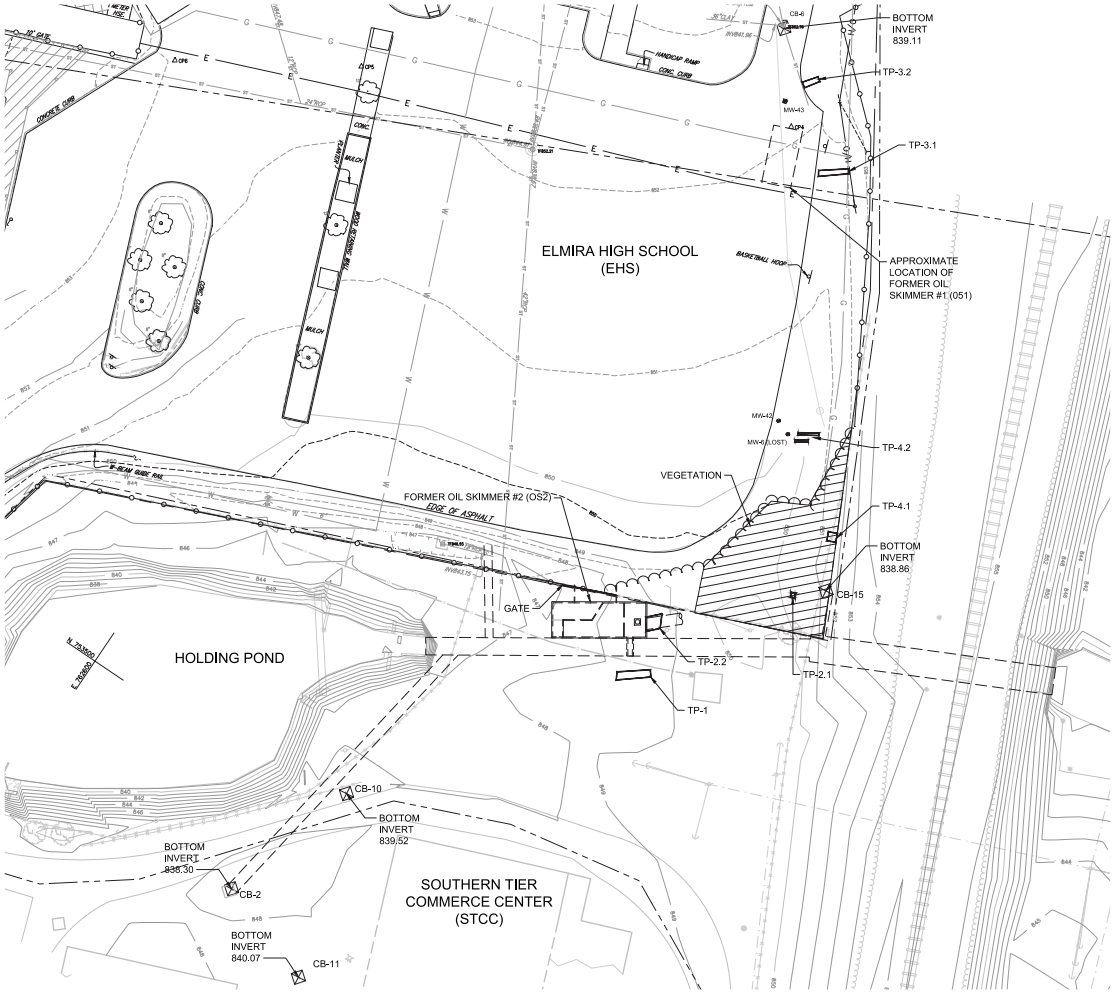
SCALE: 1" = 10'

OIL SKIMMER #2

FORMER SPERRY REMINGTON RAND OUTFALL SITE
1051 SOUTH MAIN STREET
ELMIRA, NEW TORK

Geosyntec consultants
COLUMBIA, MARYLAND

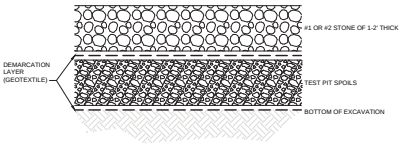
DATE:	NOVEMBER 2018
PROJECT NO.	MN0832A
DOCUMENT NO.	MD18229
FILE NO.	0832f002
FIGURE NO.	3



LEGEND

- PROPERTY BOUNDARY
- 845 EXISTING GRADE CONTOUR (FEET-MSL)
- EXISTING BUILDING
- EXISTING CONCRETE/CONCRETE PAD
- EXISTING PAVEMENT/ROAD
- EXISTING TREELINE
- EXISTING FENCE
- EXISTING RAILROAD TRACK
- EXISTING CATCH BASIN
- EXISTING UNDERGROUND FEATURE
- EXISTING UNDERGROUND GAS LINE
- EXISTING UTILITY POLE (AND GUY WIRE)
- EXISTING WATER METER
- EXISTING WATER VALVE
- EXISTING HYDRANT
- MONITORING WELL
- TEST PIT
- TEMPORARY FENCE

OS2 TYPICAL CROSS SECTION FOR BACKFILL



*NOT TO SCALE

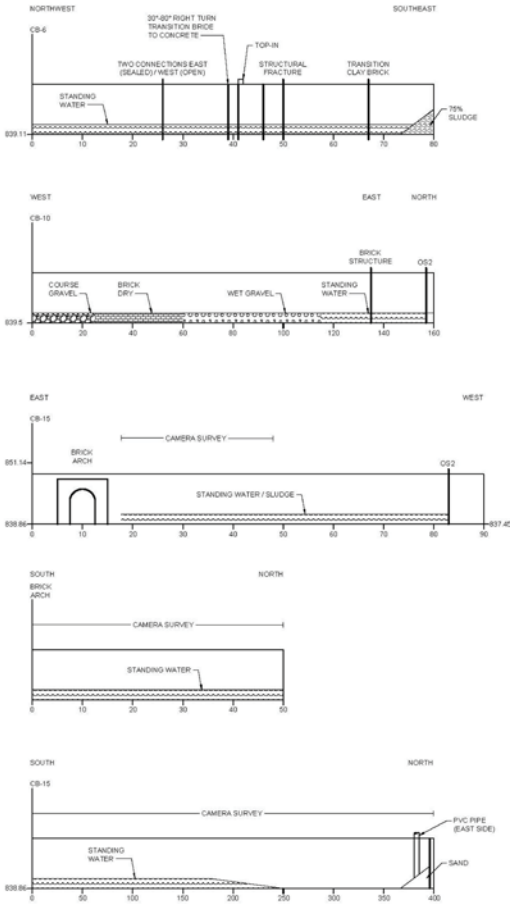
GENERAL NOTES:

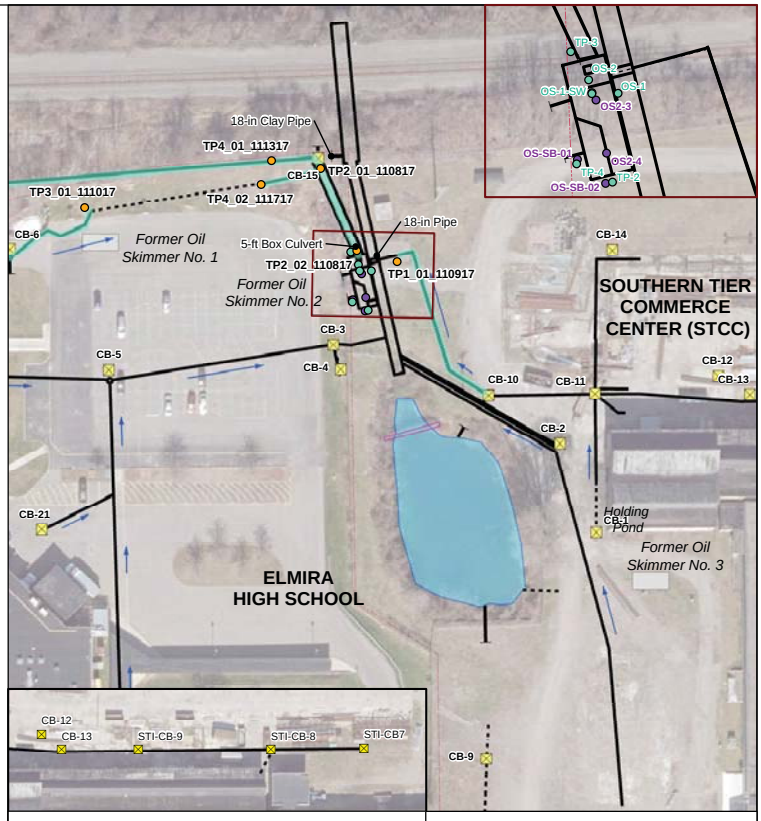
1. EXISTING CONDITIONS FROM CAD FILES OF DRAWING ENTITLED "TOPOGRAPHIC SURVEY OF FORMER REMINGTON RAND SITE" BY WEILER ASSOCIATES, DATED 27 APRIL 2011 AND "SITE UTILITY PLAN, HIGH SCHOOL 2018 ALTERATIONS PROJECT, ELMIRA CITY SCHOOL DISTRICT" BY HUNT ENGINEERS ARCHITECTS SURVEYORS, DATED 1 AUGUST 2017.
2. LOCATION OF BURIED STRUCTURES AND PIPES IS APPROXIMATE.

0 20' 40'
SCALE IN FEET

TEST PIT LOCATIONS
FORMER SPERRY REGIMEN SITE
ELMIRA, NEW YORK

PROJECT NO: [PROJ-NO] | MARCH 2019 | FIGURE 4





Legend

- 2017 Test Pit Samples
- Phase 1 RI Sample Location
- IRM PDI Sample Location
- 2017 Camera Survey
- FlowDirection
- Catch Basin
- Stormwater/Wastewater Infrastructure
- Sealed
- Inferred
- Walkway
- Known
- Inferred
- Oil Skimmer
- Holding Pond

Stormwater Infrastructure

Former Sperry Remington Site
Elmira, New York

Beech and Bonaparte P.C. engineering p.c.
an affiliate of Computer Consultants

Columbia, Maryland | October 2019

Figure 5

P:\GIS\Elmira - MN0832\Maps\Figure5_Test Pit Sample Locations.mxd 10/10/2019 2:14:19 PM

Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Chain Link Fence
- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 0-1 ft bgs

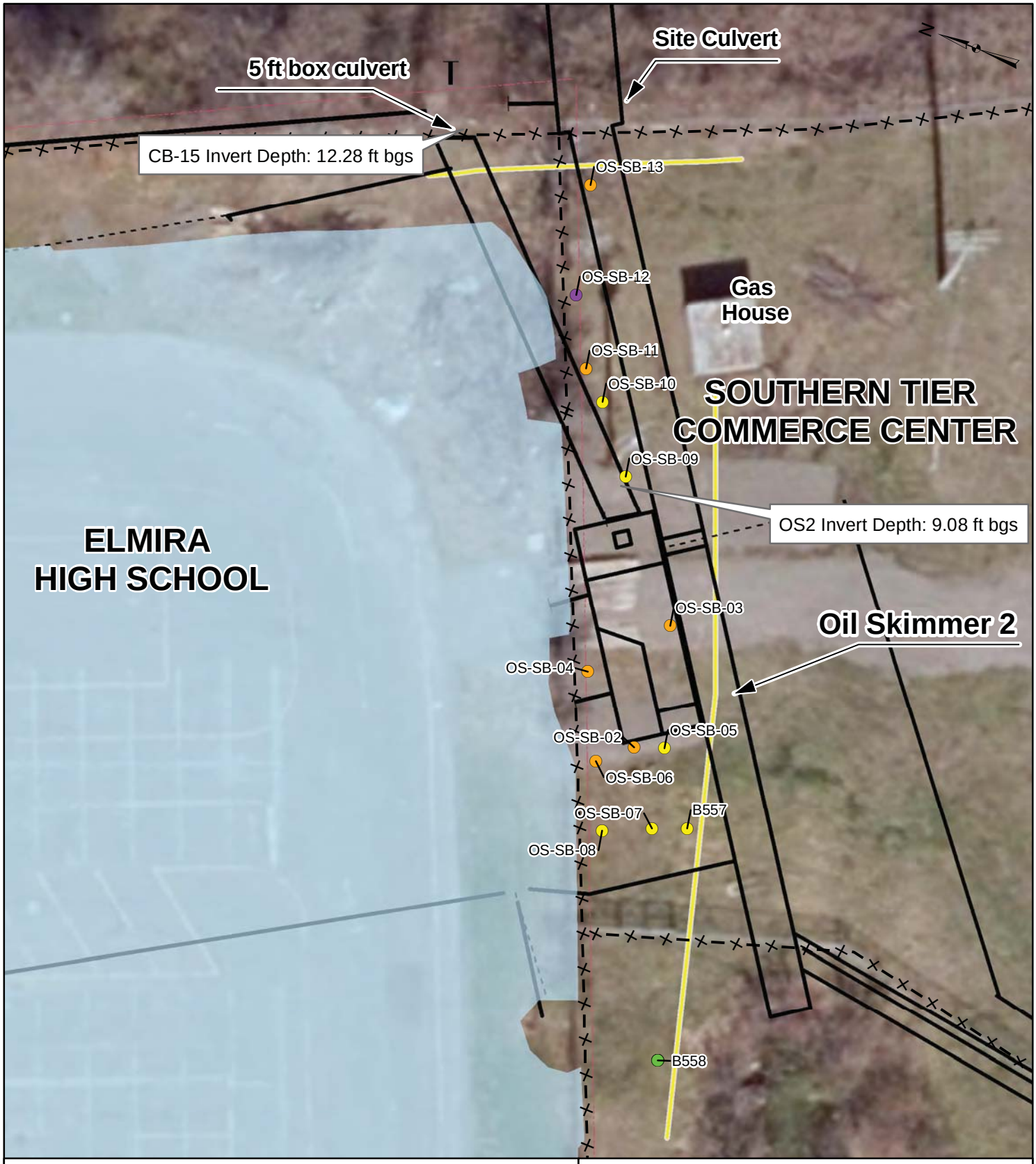
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 6

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 6_OS2_Investigation_0_1_PCBs.mxd; 3/13/2019



Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Chain Link Fence
- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 1-2 ft bgs

Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
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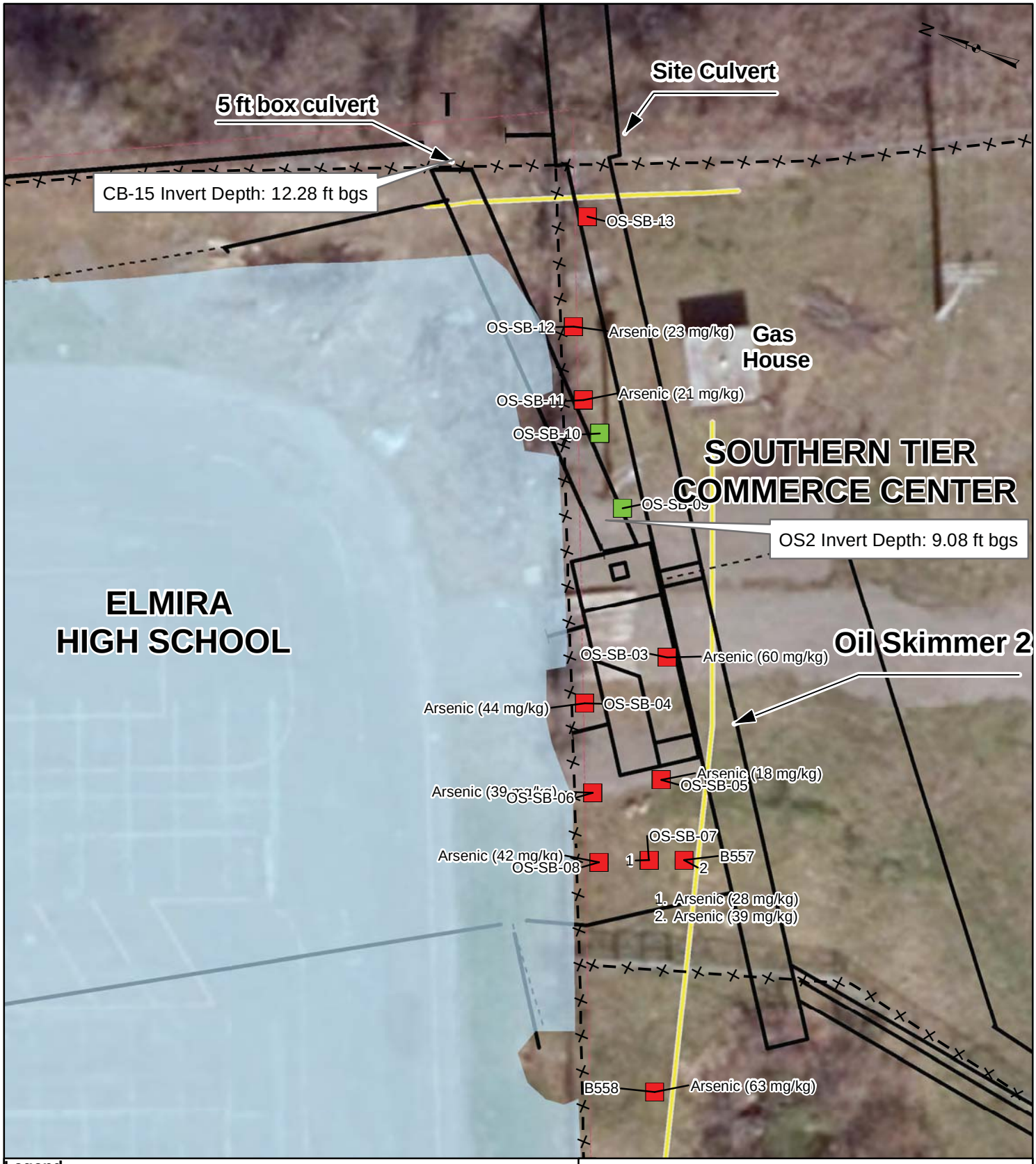
Columbia, MD | March 2019

Figure 7

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 7_OS2_Investigation_1_2_PCBs_v2.mxd: 3/14/2019



Legend

Metals Results

- Non-Detect
- Detect, Does Not Exceed SCO
- Exceeds SCO

- Natural Gas Line
- Chain Link Fence
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation Metals Results: 0-1 ft bgs

Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
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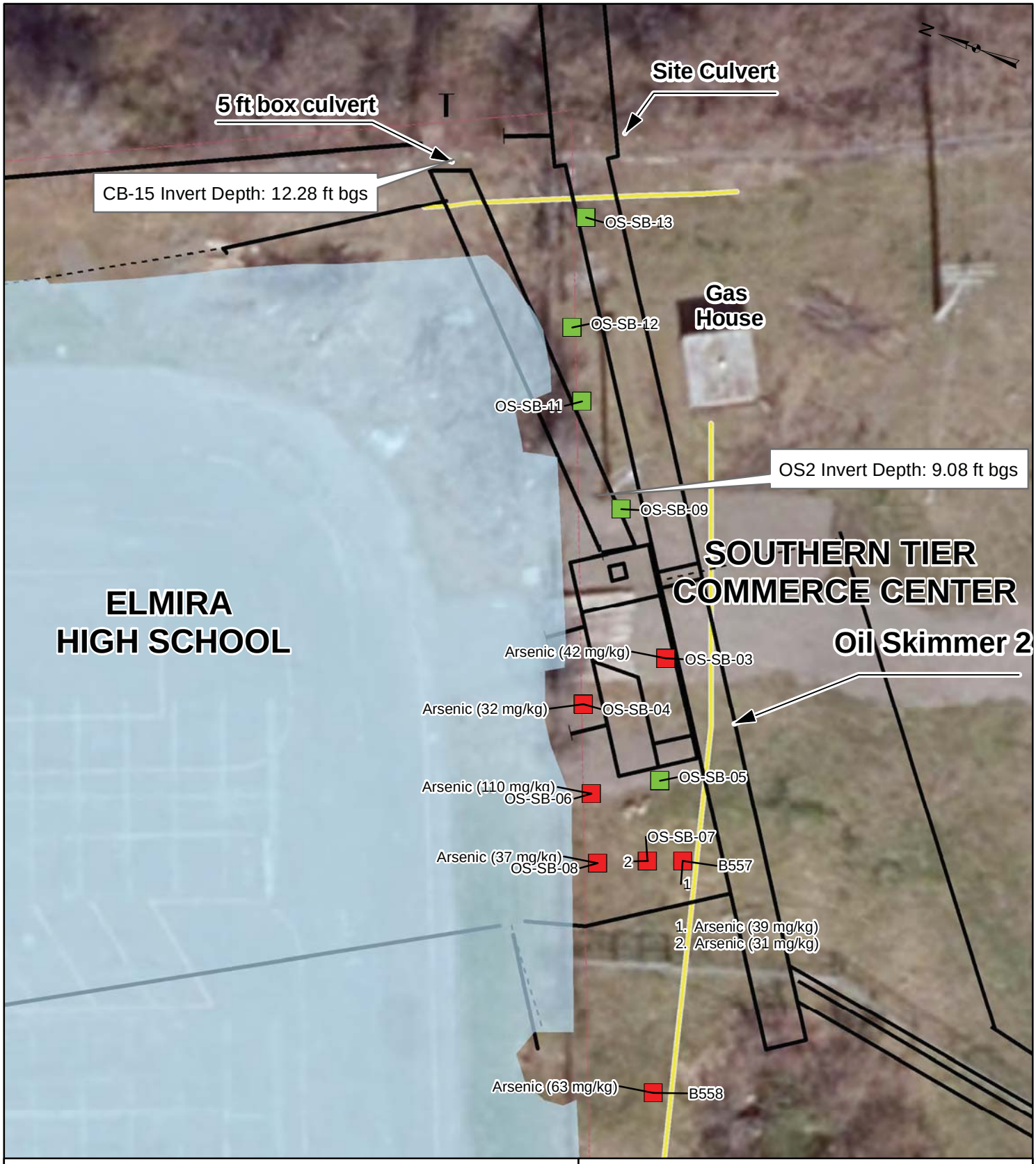
Columbia, MD | March 2019

Figure 8

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 8_OS2_Investigation_0_1_Metals.mxd: 3/14/2019



Legend

Metals Results

- Non-Detect
- Detect, Does Not Exceed SCO
- Exceeds SCO

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation Metals Results: 1-2 ft bgs

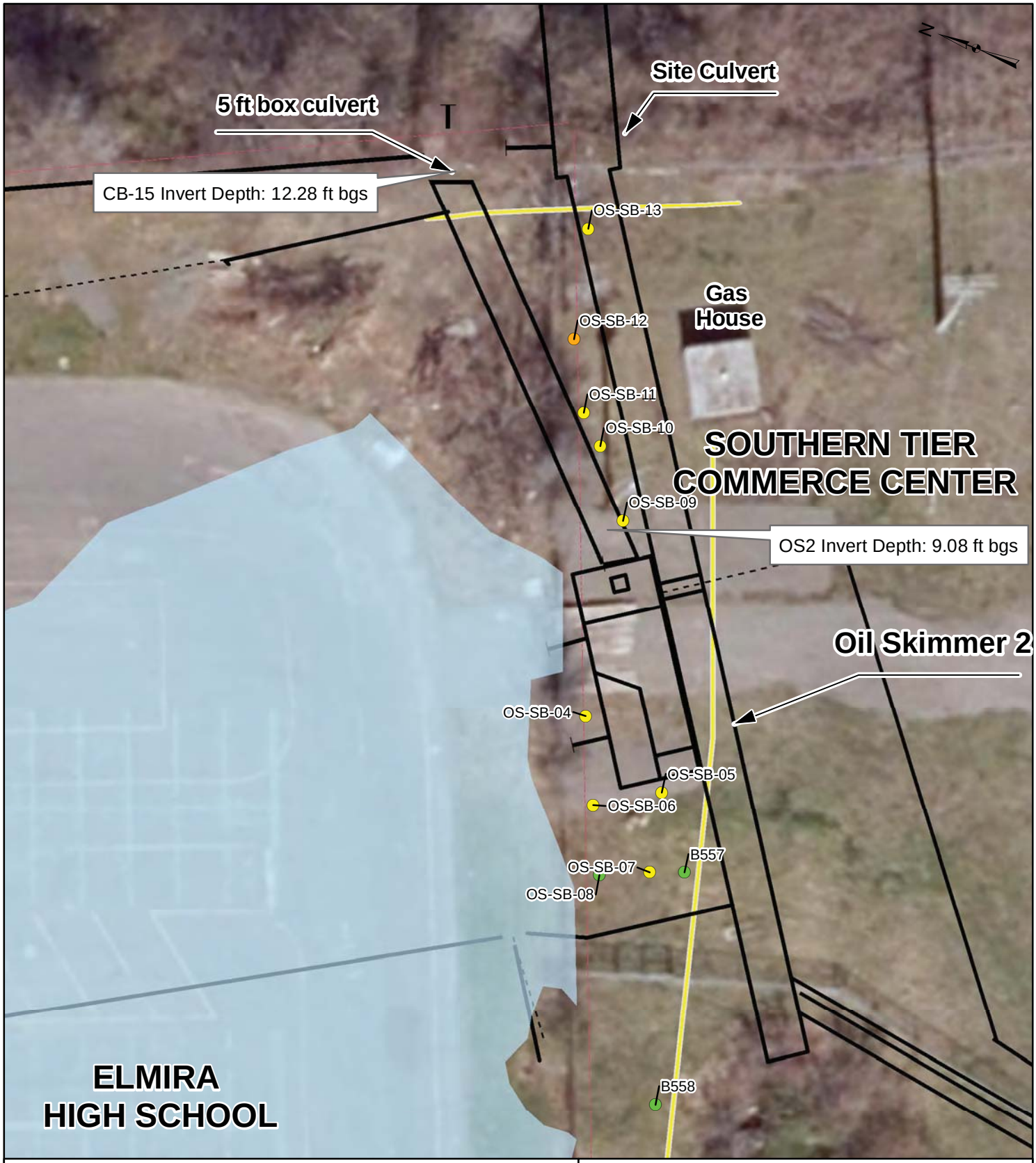
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 9

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 9_OS2_Investigation_1_2_Metals.mxd: 3/13/2019



Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 2-4 ft bgs

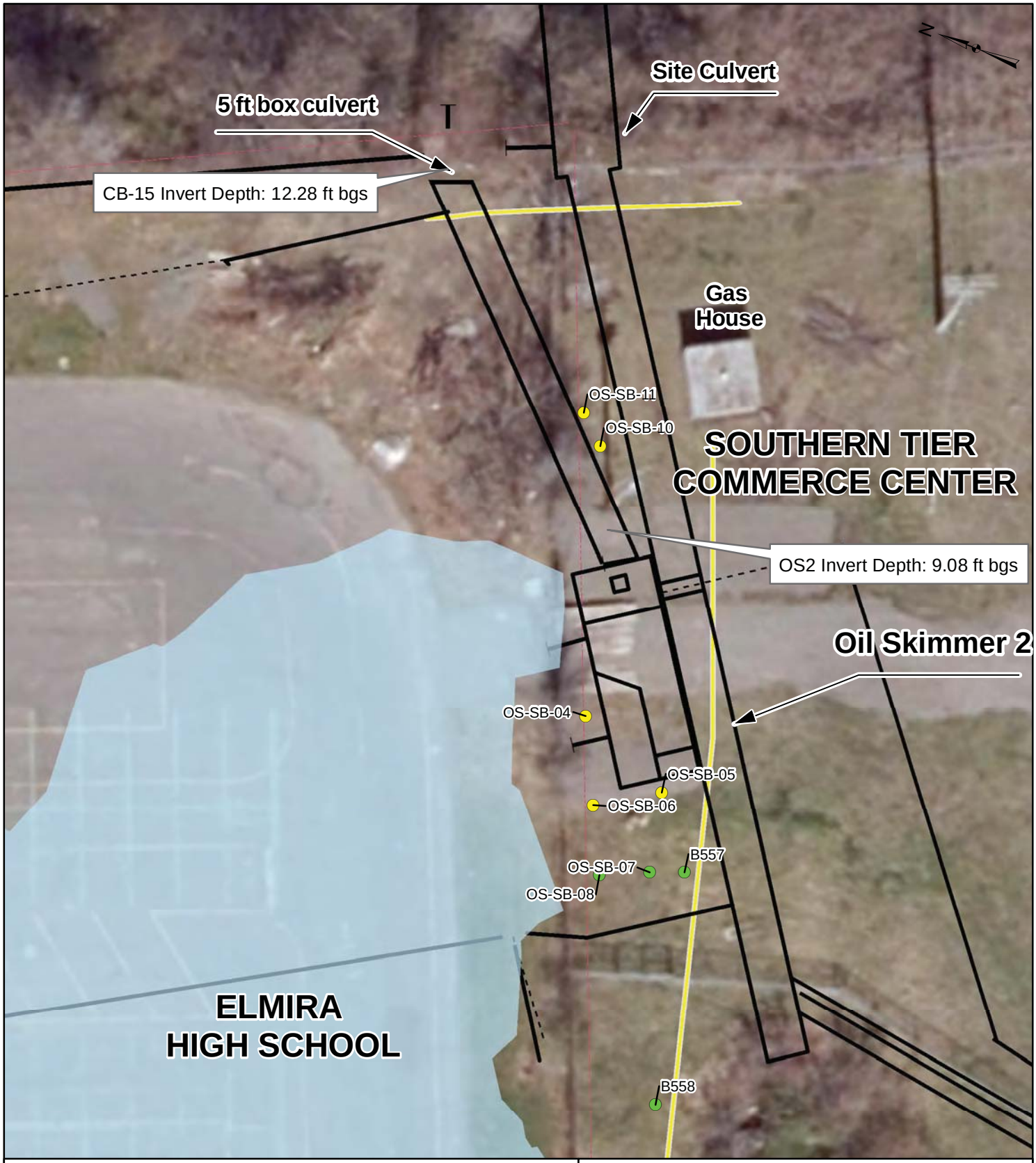
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 10

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 10_OS2_Investigation_2_4_PCBs.mxd: 3/14/2019



Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 4-6 ft bgs

Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
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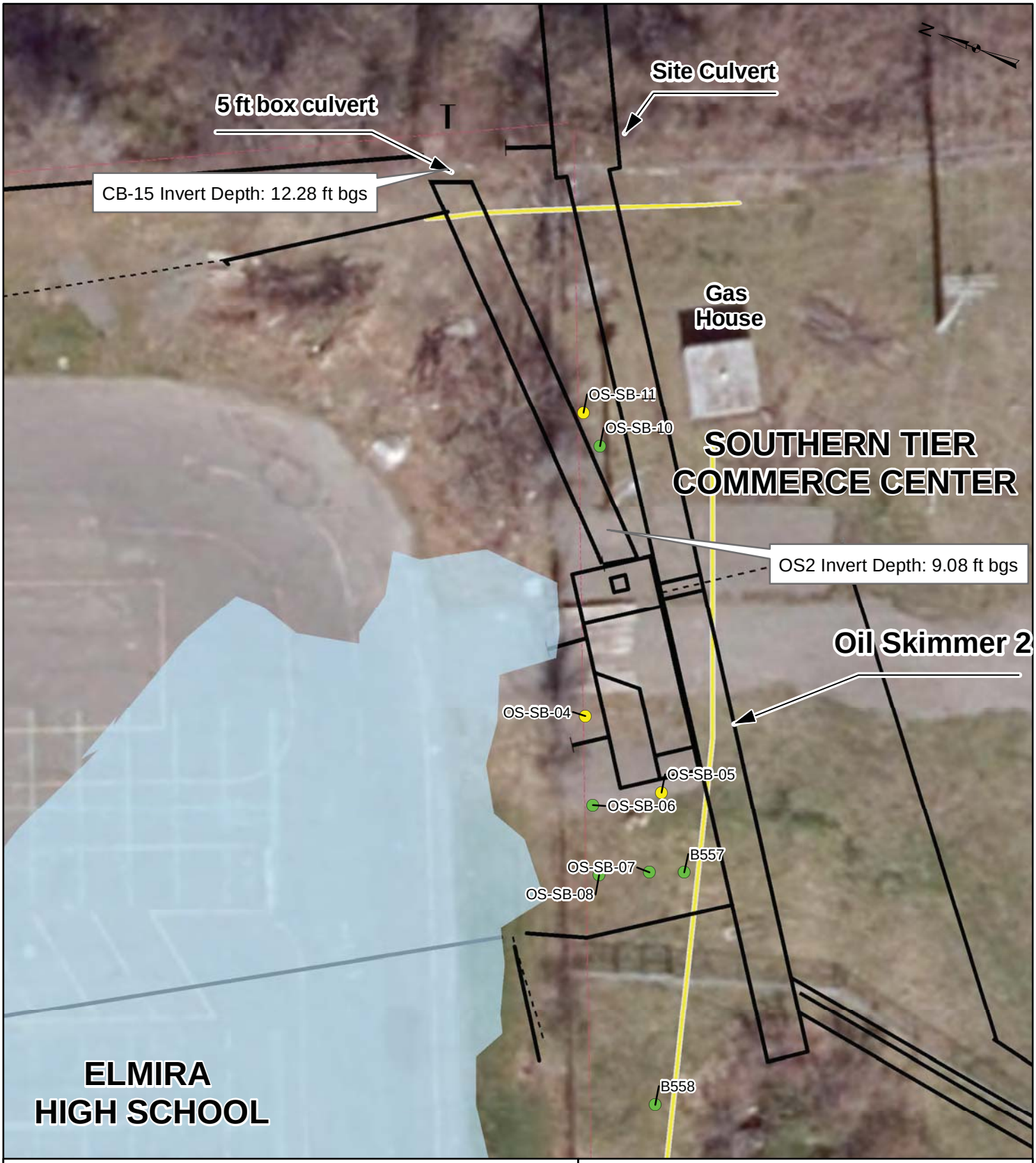
Columbia, MD | March 2019

Figure 11

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 11_OS2_Investigation_4_6_PCBs.mxd: 3/14/2019



Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 6-8 ft bgs

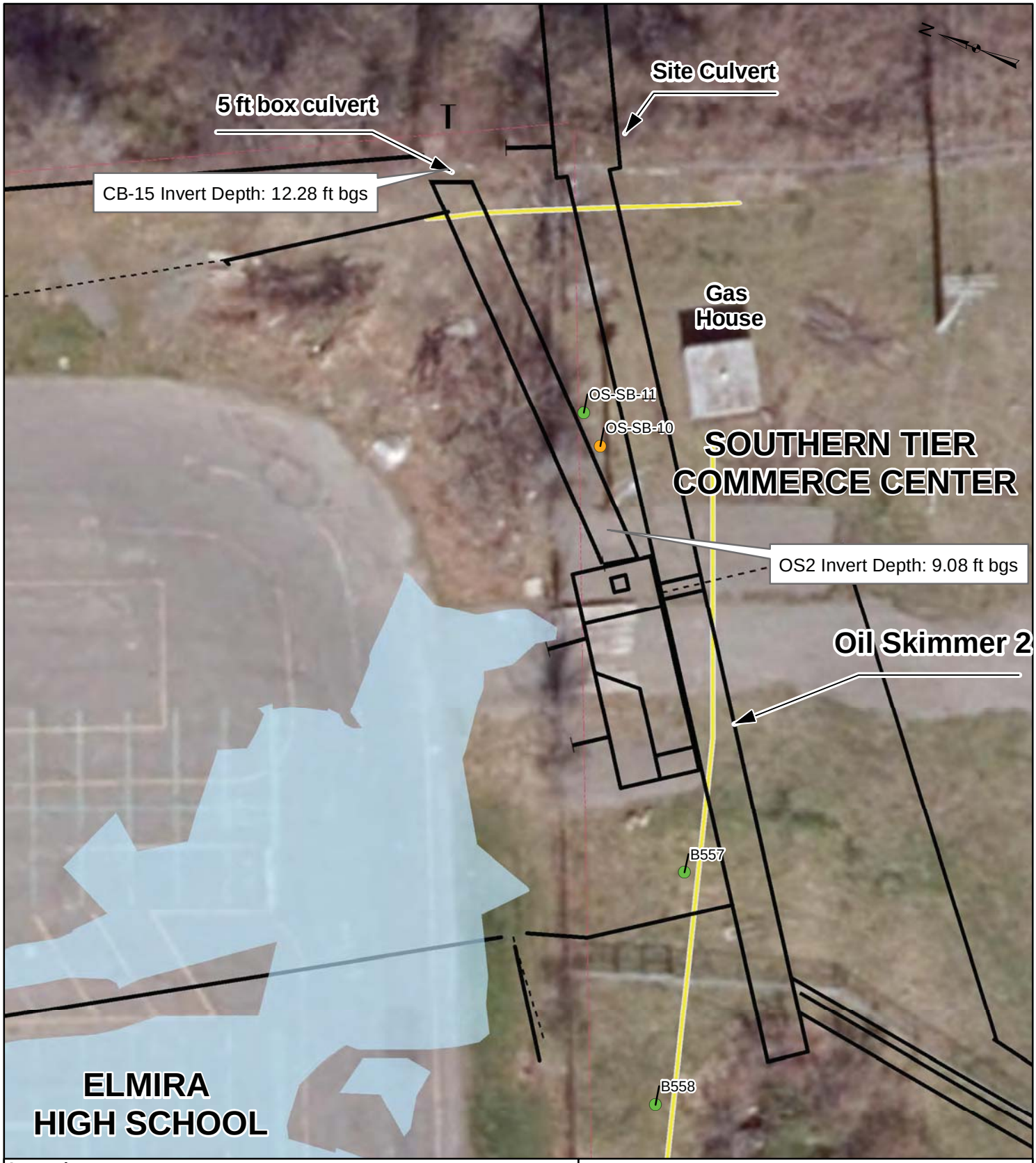
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 12

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 12_OS2_Investigation_6_8_PCBs.mxd: 3/14/2019



Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 8-10 ft bgs

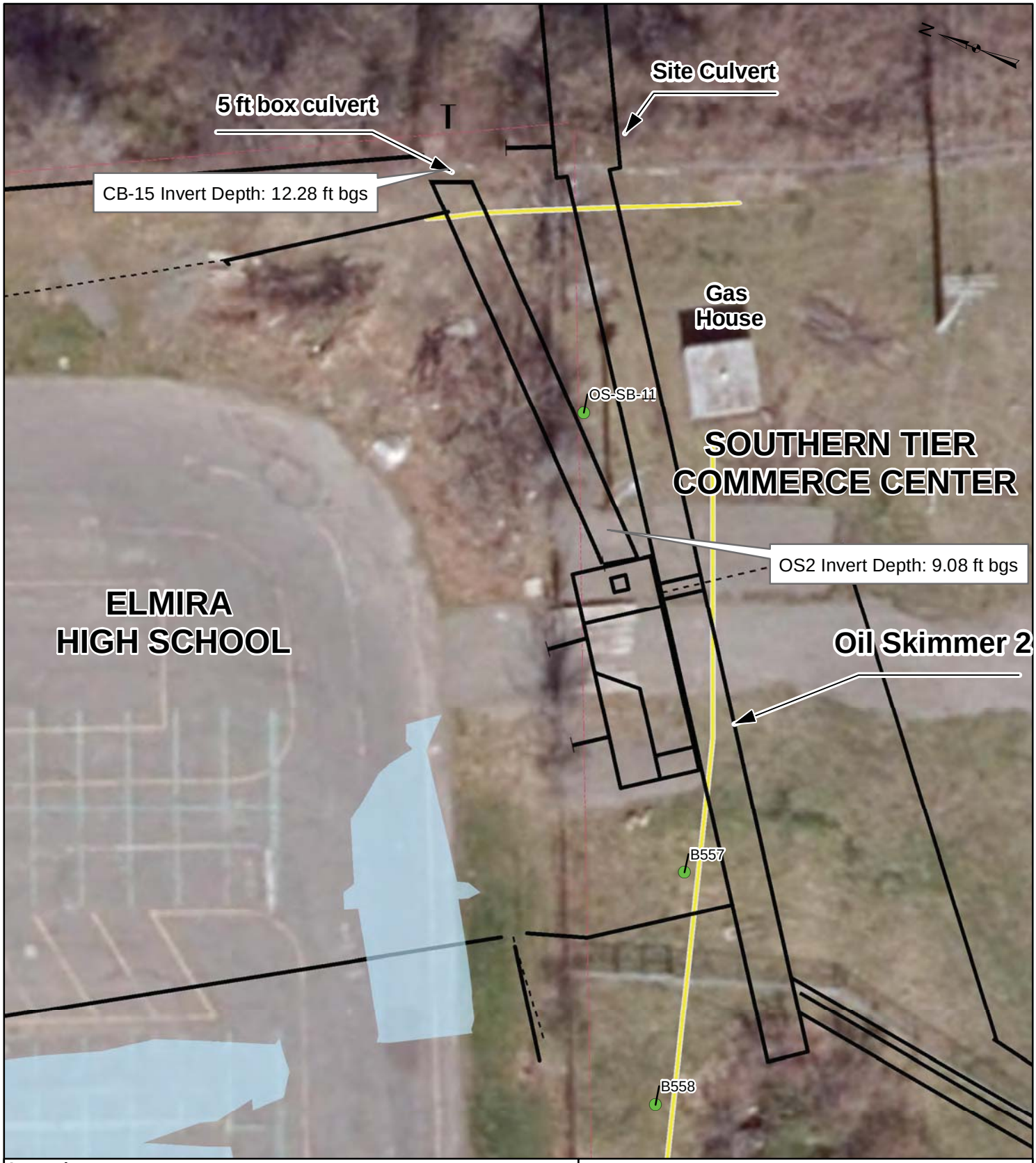
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 13

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 13_OS2_Investigation_8_10_PCBs.mxd; 3/14/2019



Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 10-12 ft bgs

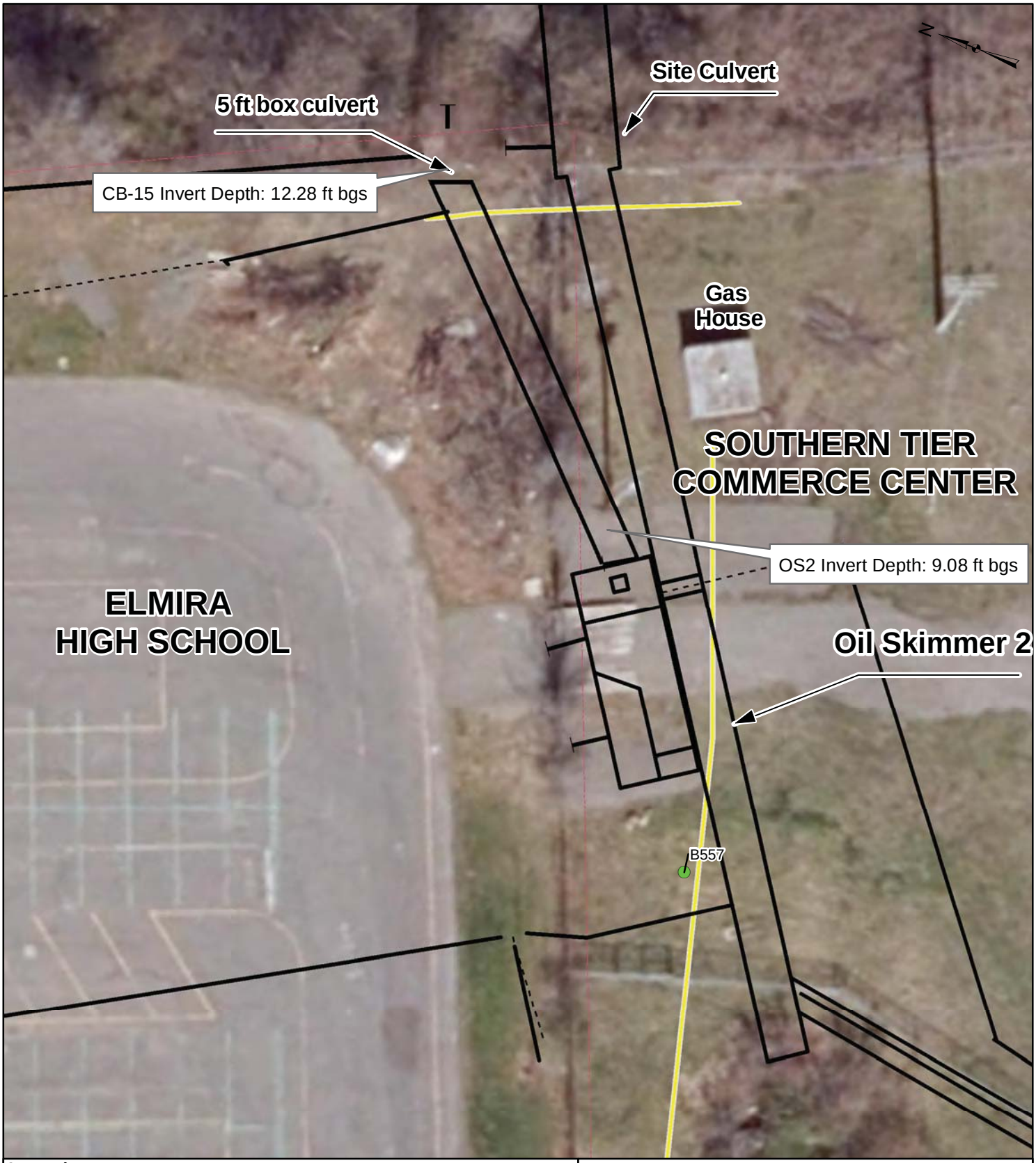
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 14

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 14_OS2_Investigation_10_12_PCBs.mxd: 3/13/2019



Legend

Total PCB Concentration

- Non-Detect
- <1 mg/kg
- 1-10 mg/kg
- 10 - 25 mg/kg
- 25 - 50 mg/kg
- >50 mg/kg

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation PCB Results: 12-14 ft bgs

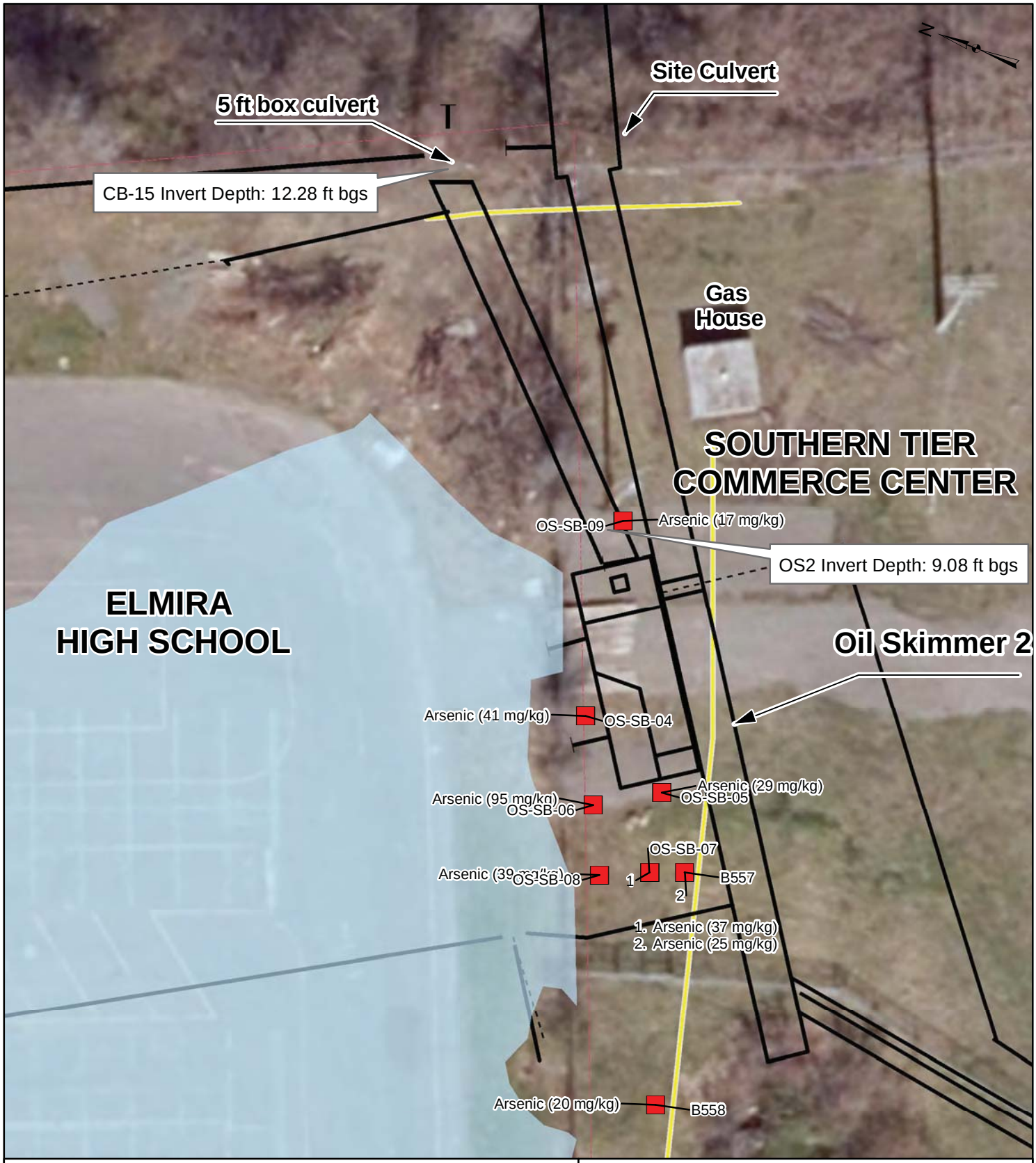
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 15

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 15_OS2_Investigation_12_14_PCBs.mxd; 3/13/2019



Legend

Metals Results

- Non-Detect
- Detect, Does Not Exceed SCO
- Exceeds SCO

- Known Structures/Connections
- Inferred Connections
- Natural Gas Line
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation Metals Results: 2-4 ft bgs

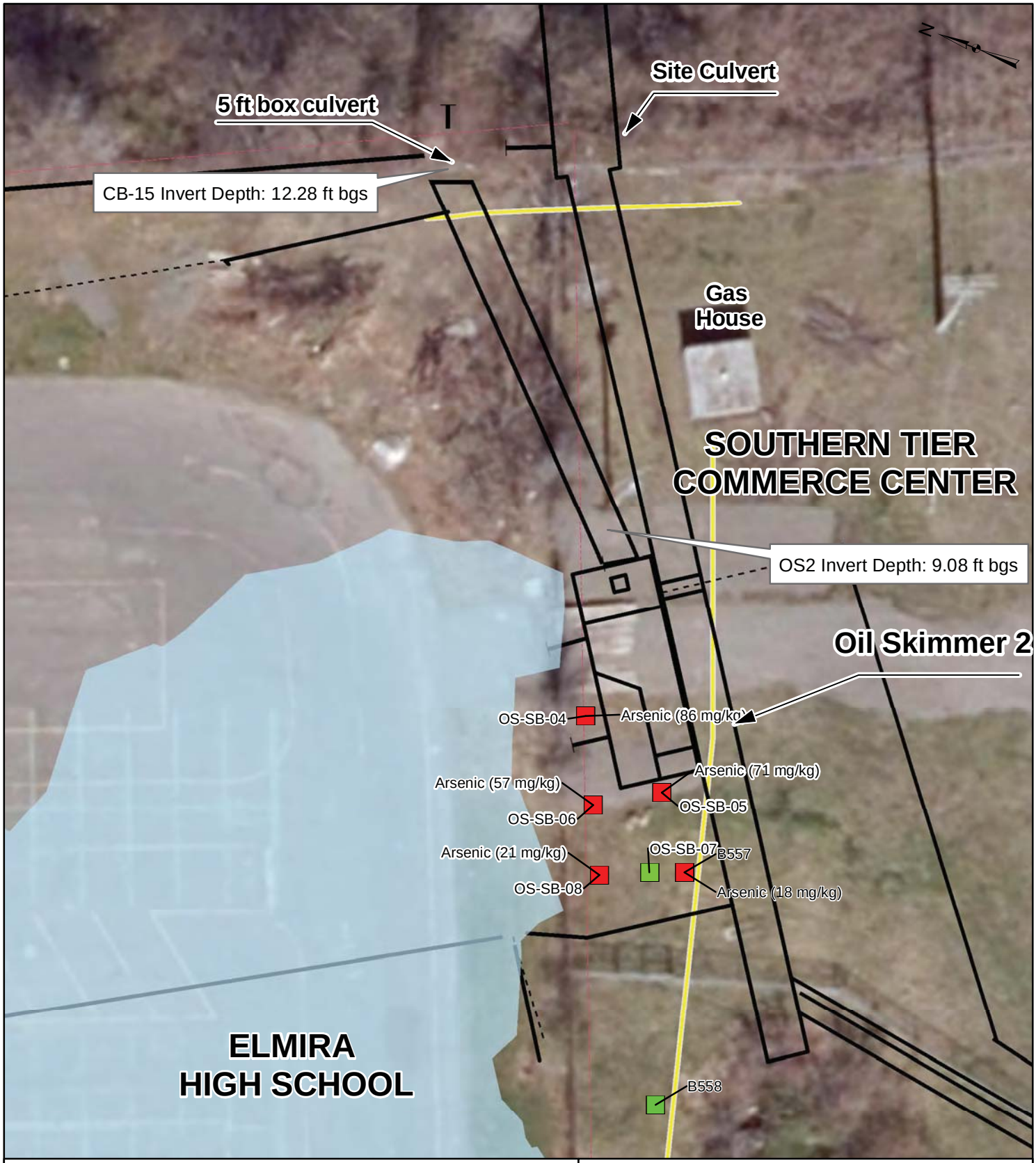
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 16

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 16_OS2_Investigation_2_4_Metals.mxd: 3/13/2019



Legend

Metals Results

- Non-Detect
- Detect, Does Not Exceed SCO
- Exceeds SCO

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation Metals Results: 4-6 ft bgs

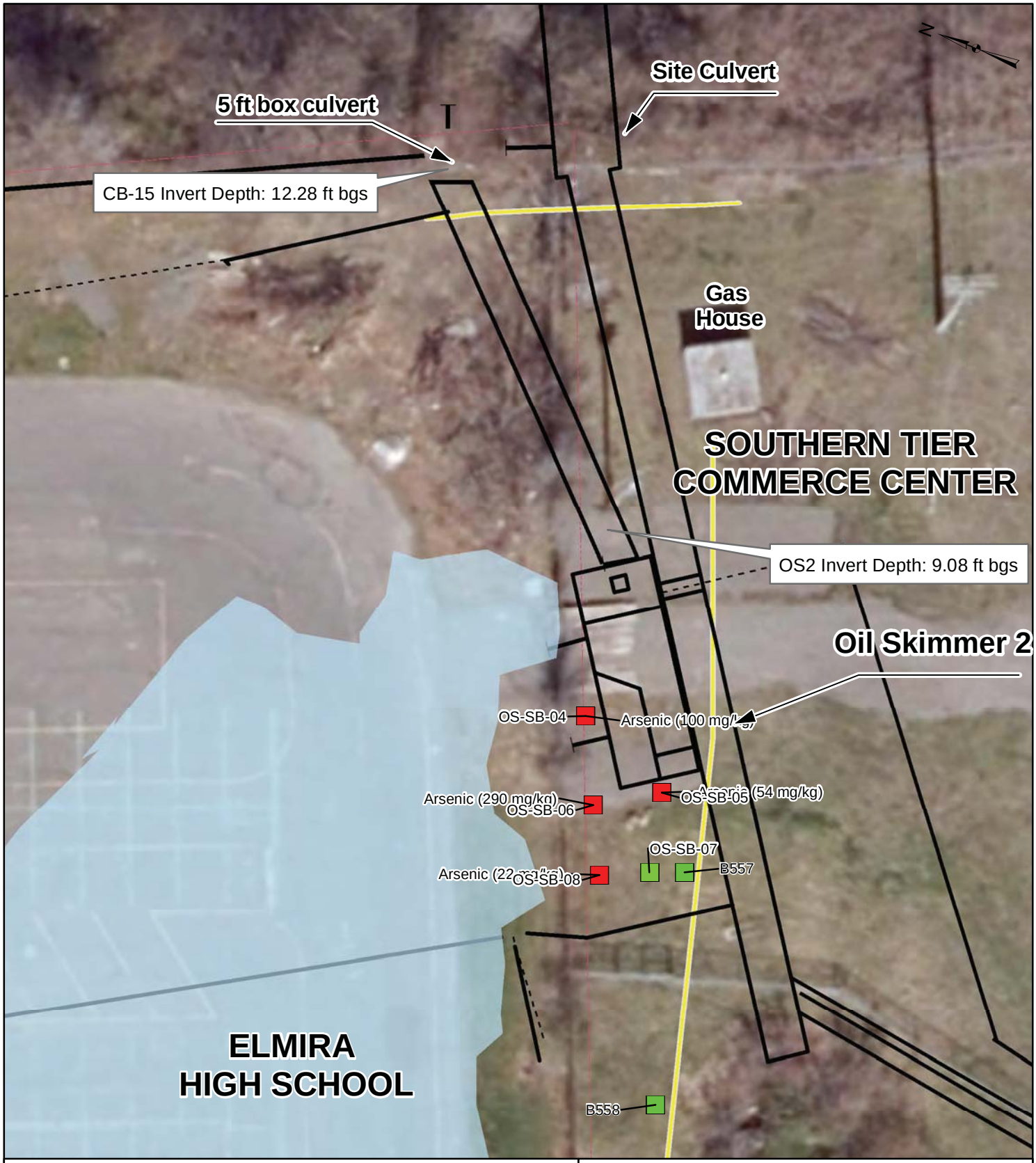
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 17

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 17_OS2_Investigation_4_6_Metals.mxd; 3/13/2019



Legend

Metals Results

- Non-Detect
- Detect, Does Not Exceed SCO
- Exceeds SCO

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation Metals Results: 6-8 ft bgs

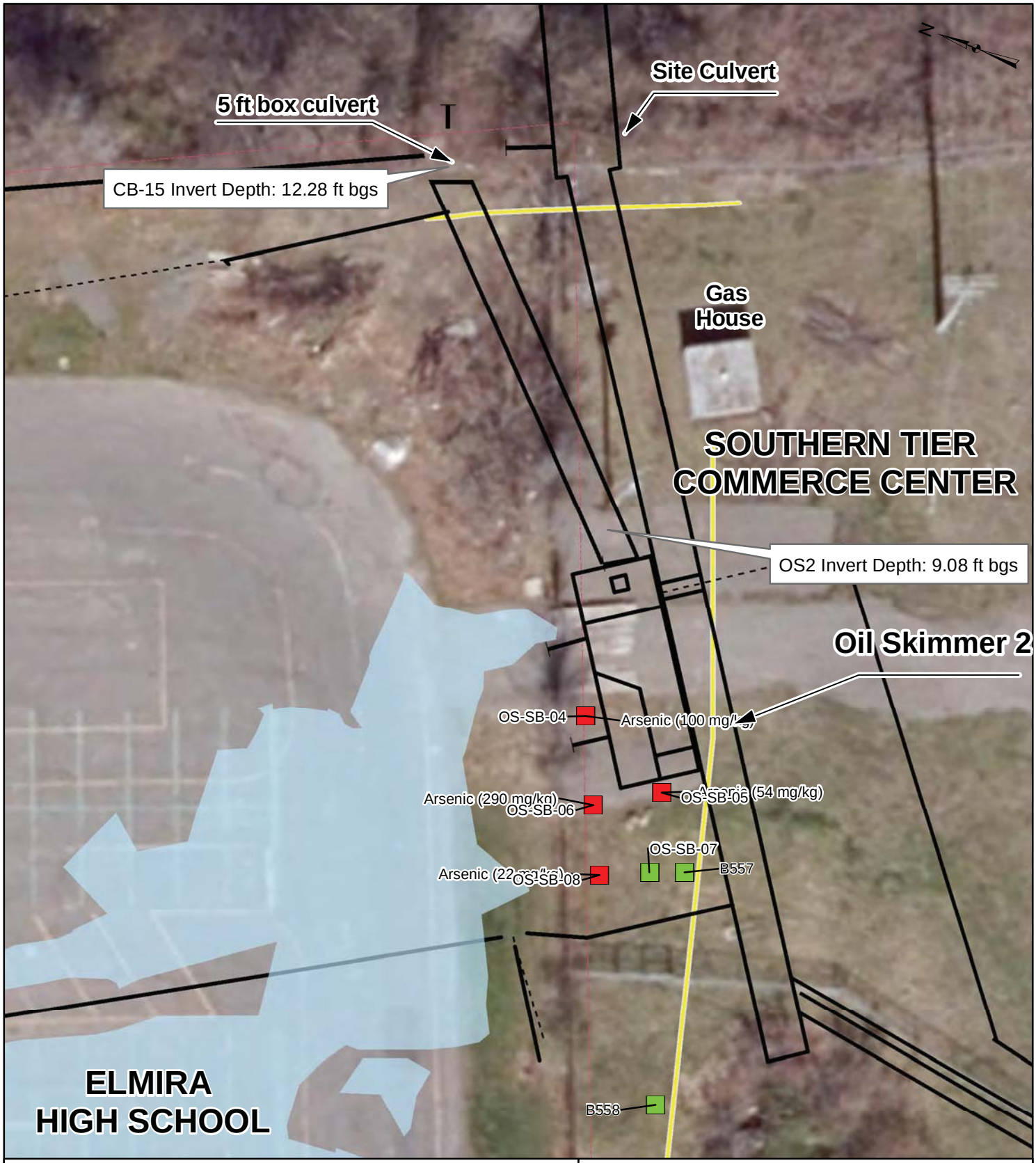
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

Columbia, MD | March 2019

Figure 18

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 18_OS2_Investigation_6_8_Metals.mxd; 3/13/2019



Legend

Metals Results

- Non-Detect
- Detect, Does Not Exceed SCO
- Exceeds SCO

- Natural Gas Line
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- IRM #2 (As-Built)

0 25 Feet

Soil Investigation Metals Results: 8-10 ft bgs

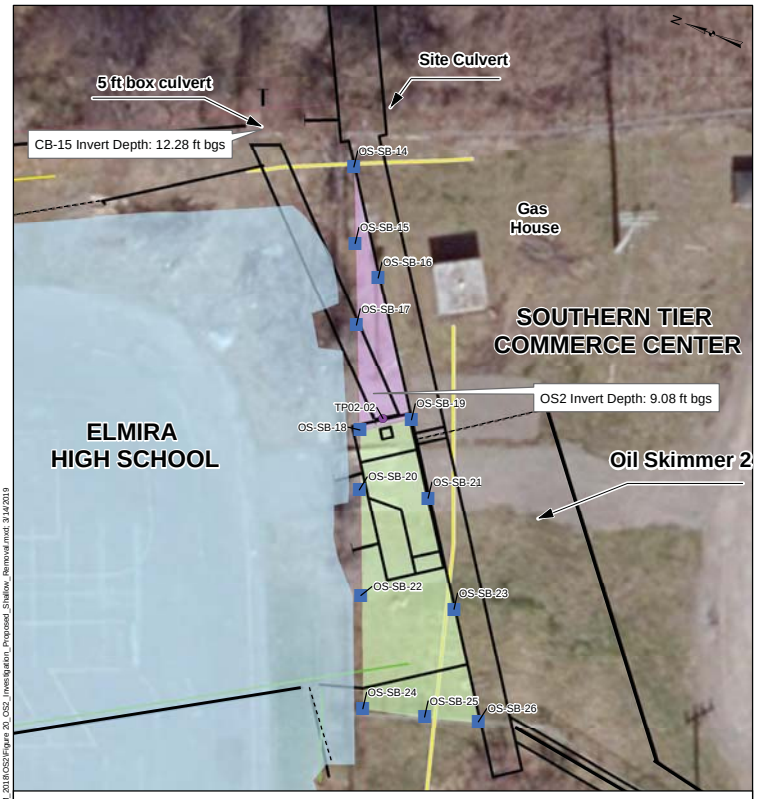
Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants

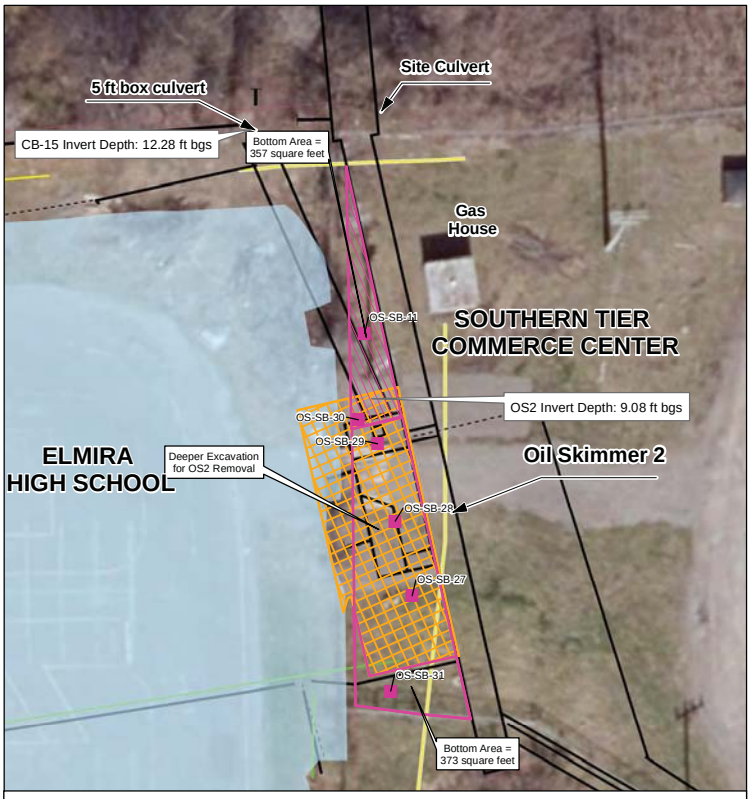
Columbia, MD | March 2019

Figure 19

P:\GIS\Elmira - MN0832\Maps\NYDEC AOCs\IRM_2018\OS2\Figure 19_OS2_Investigation_8_10_Metals.mxd: 3/14/2019



Proposed Excavation 0-2 ft bgs



Excavation Bottom Areas

Legend

Proposed Excavation 0-2 ft bgs
- Non-Hazardous
- TSCA

Excavation Bottom Area
- Non-Hazardous
- TSCA

- Natural Gas Line
- Natural Gas
- Electric
- Water
- Storm Sewer
- Sanitary Sewer
- Known Structures/Connections
- Inferred Connections
- Property Boundary
- Deeper Excavation for OS2 Removal
- IRM #2
- Sidewall Samples
- Bottom Samples

0 25 Feet

Proposed Shallow Soil Removal

Former Sperry Remington Site (#808043)
Elmira, New York

Beech and Bonaparte engineering p.c.

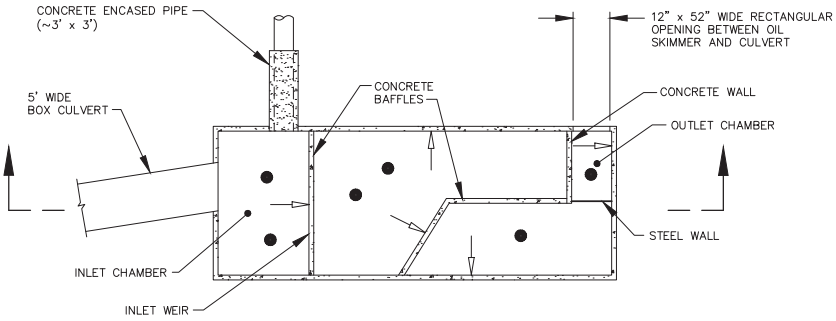
Columbia, MD | March 2019

Figure 20

P:\GIS\Elmira - MK0832\Mxd\XYZ\EC-ADCs\RM_2018\OS2\Figure 20_OS2_Investigation_Proposed_Shallow_Removal.mxd 3/14/2019

LEGEND

- CONCRETE FLOOR SAMPLE LOCATION
- CONCRETE WALL SAMPLE LOCATION
- WIPE SAMPLE LOCATION



OIL SKIMMER #2 PLAN

SCALE: 1" = 10'

NOTE:
SITE PLAN DEVELOPED FROM AN AUTOCAD FILE (OIL SKIMMER.DWG) OBTAINED FROM ADVANCED GEOSERVICES ENGINEERING, P.C., FEBRUARY 2013.

10 5 0 10

SCALE: 1" = 10'

OIL SKIMMER #2 SAMPLE LOCATIONS

FORMER SPERRY REMINGTON SITE
ELMIRA, NEW TORK

Geosyntec consultants
COLUMBIA, MARYLAND

DATE:	NOVEMBER 2018
PROJECT NO.	MN0832A
DOCUMENT NO.	MD18229
FILE NO.	0832f002
FIGURE NO.	21

Appendix A
NYSDEC Comments

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, New York 14414-9519
Phone: (585) 226-5353 • **Fax:** (585) 226-8139
Website: www.dec.ny.gov

Joe Martens
Commissioner

Mr. Kevin Krueger, PE
Unisys Corporation
Corporate Environmental Affairs
3199 Pilot Knob Road
Eagan, NY 55121

June 23, 2014

Re: Former Sperry Remington Site (#808043)
Interim Remedial Measure Work Plan
City of Elmira, Chemung County, NY

Dear Mr. Krueger:

The Department has completed its review of the document entitled "Interim Remedial Measure Work Plan" agency review draft dated April 2014 and has determined that the work plan does not substantially addresses the requirements of the Superfund Order. Please address the following comments in a revised submission:

1. Please provide a response to the Department's specific comments / limitations / deficiencies of 5-20-13 (attached).
2. The Department will not authorize the disconnection or closure of any drainage collection system (former combined industrial & storm sewer) connected to OS-2 or the Site Box Culvert until the full extent of each system is verified by physical or video inspection, the system function, condition and sediment are characterized and an alternative plan to modify is accepted by the Department, property owners and any other agency with regulatory jurisdiction.
3. Summary statements in section 1.2 regarding pipe inlet connections to OS-2 being dry is not accurate and is inconsistent with Department field observations and Unisys report documentation/observation (attached). The Geosyntec depiction of these pipe connections in Figure 6 of the IRMPDI Report is inaccurate and inconsistent with field observations as well as previous submissions by Advanced Geoservices (attached).
4. A summary statement in section 1.2 regarding ***"data"*** indicating that inlet connections to OS2 are inactive is inconsistent with reporting and should be removed. No video **data** was collected during the IRMPDI to confirm these connections and dye testing **data** also did not confirm connection. What **"data"** is this statement referring to?
5. A statement in section 1.3 regarding the "functionality of the site storm sewer system" should be removed and addressed in accordance with #2 above.
6. The IRM work plan provides insufficient scope of work for "additional storm sewer inspections" to address #2 above.
7. Unisys will provide a scope of work that includes confined space entry and a plan to address debris / accessibility issues that limited sewer inspection during the IRMPDI.
8. A statement in Section 2.1 regarding the "no other connections to the southern…" is misleading and should be removed or modified and the statement of "no further investigation of connections between CB-10 and OS2" is not acceptable. The geometric configuration or alignment of piping **assumed** to connect OS2 to CB-10 would require a 90 degree change of direction. Because of this configuration, it is improbable that a direct piping connection exists without additional intermediary structures or pipes.
9. The Appendix B Construction Plans to "seal and grout" decommission the 18" pipe inlet on the south side of OS2 is unacceptable. All piping connections to OS2 are documented to have transported industrial waste. No pipe or structure will be decommissioned without appropriate characterization of it's contents, it's structural integrity and potential release of contaminants to the environment evaluated in accordance with DER-10. Cleaning of pipes and

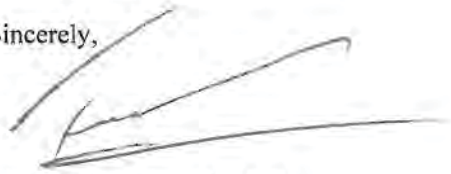
structures may also be required prior to decommissioning.

10. The 18" pipe outfall from CB-10 identified as "steel" needs to be verified because CB-10 photos show bell end of pipe consistent with RCP or clay. Please provide video of this pipe section. Department observations of a curving alignment seen during the camera survey would be consistent with clay or concrete pipe and not steel.
11. The Appendix B Construction Plans to import backfill material must be consistent with DER-10 guidance.
12. The Appendix B Construction Plan pg. 5 of 5 erosion and sediment notes #11-14 regarding the handling of water and sediments (potentially contaminated) should be removed or appropriately modified.
13. The Appendix B Construction Plan depicts a **permeable** sediment stabilization area and does not address the containment of potentially contaminated sediment leachate.
14. All IRM work plans and drawings must be signed and sealed by a NYS Professional Engineer in accordance with the Consent Order.
15. The Department review of the IRMWP does not include the evaluation of the structural or hydraulic specifications presented in this plan. It will be the responsibility of the owner's or other regulatory jurisdictions to evaluate and accept these specifications.
16. Section 2.3 of the IRMWP has cited 40 CFR 761, Section 61 regarding the closure of OS2 and specifically identified "capping" as a disposal option for leaving PCB remediation waste up to 100 ppm on site. To facilitate this option, Unisys must document the property owner's consent to **filing a deed restriction** that will **in perpetuity notify any potential purchaser** of the property **that the land has been used for PCB remediation waste disposal**, that **the area will be restricted to "low occupancy" use** and **the requirement to maintain the cap**.
17. Section 2.4 Offsite Disposal discusses characteristics of hazardous waste without additional discussion of "listed hazardous wastes" identified in OS2 sediment and management or disposal thereof.
18. Section 3.1 of the IRMWP has cited 40 CFR 761 and a self implementing onsite cleanup and disposal regarding the closure of OS2 however it appears that because OS2 is a treatment structure in a former combined industrial **sewer**, this site may not be applicable for a self implementing cleanup and disposal. If that is the case, prior written approval from the EPA would be required prior to implementation.
19. Section 4 Health & Safety: A site specific health and safety plan must be prepared for this remediation activity in accordance with DER-10 sec 1.9.
20. Section 5.3 Decontamination Procedures are anticipated to involve the use of heavy equipment potentially in contact with TSCA or hazardous waste. More detail will be required regarding the layout and management of a decontamination area and the containment and management of decontamination wastes. Under no circumstance shall decontamination fluids be discharged to the ground surface (as presented in the IRMWP) without appropriate chemical testing.

If Unisys chooses not to address the deficiencies and revise the IRM work plan, you are required to notify this office within 20 days after receipt of this letter. In this event I suggest a meeting be scheduled to discuss Unisys' concerns prior to the end of this 20 day period.

We look forward to working together to complete this remedial investigation. If you have questions or concerns on this matter, please contact me.

Sincerely,



Timothy A. Schneider, P.E.
Environmental Engineer 2

cc. P. Brookner
B. Putzig
M. Doroski
B. Conlon
A. Meinstein
A. Krasnopoler
M. Cruden
J. Deming
M. Crance

ATTACHMENT B

Oil Skimmer Photographs

Picture #1- Test Pit #2

Picture #2- Oil Skimmer manhole uncovered

Picture #3- Test Pit #3, next to Oil Skimmer manhole

Picture #4- Inside Oil Skimmer from manhole looking NW at pipe penetrations

Picture #5- Looking down inside Oil Skimmer at ~5’wide influent culvert from east

Picture #6- Looking down inside Oil Skimmer at internal baffles

Picture #7- Inside Oil Skimmer looking south at pipe opening to south

Picture #8- Inside Oil skimmer from Main Site Culvert looking east to ~5’ wide culvert

Picture #9- Inside Oil Skimmer looking NW at pipe penetrations and internal baffles

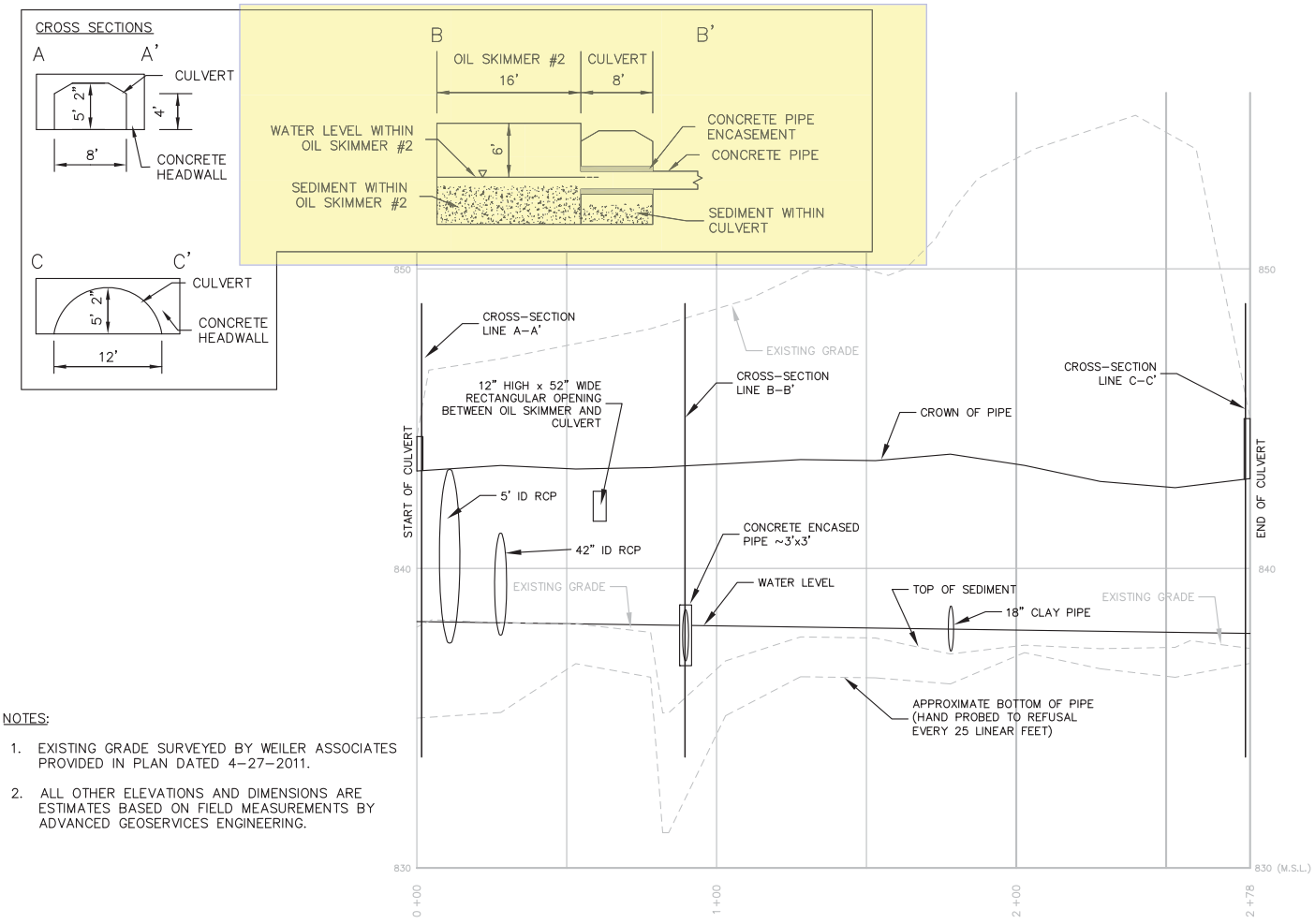
Picture #10- Sediment sample material from Oil Skimmer directly below manhole

TP-14 – groundwater encountered in test pit

Inside OS2 view of 3x3 concrete encased pipe

OS2 – Eastern end Access way

OS2 – 5’ RCP that enters structure at eastern end



NOTES:

1. EXISTING GRADE SURVEYED BY WEILER ASSOCIATES PROVIDED IN PLAN DATED 4-27-2011.
2. ALL OTHER ELEVATIONS AND DIMENSIONS ARE ESTIMATES BASED ON FIELD MEASUREMENTS BY ADVANCED GEOSERVICES ENGINEERING.

J:\NY092480 Sperry Remington\dwg\OIL SKIMMER-cross sections.dwg

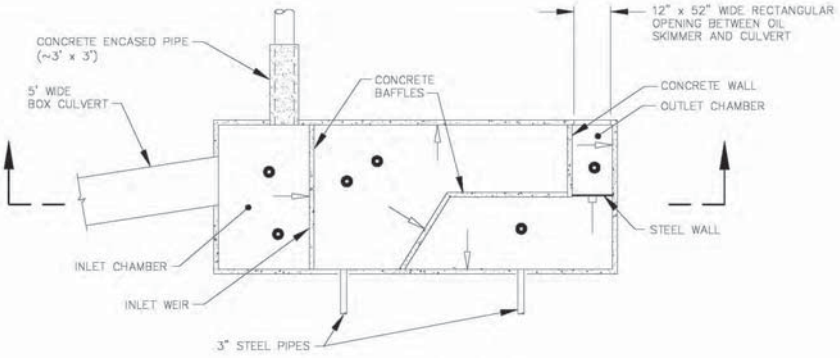
SITE CULVERT PROFILE AND CROSS SECTIONS

PROJECT MANAGER:	S.W.K.	SCALE:	AS SHOWN
CHECKED BY:	M.J.P.	PROJECT NUMBER:	NY09-2480
DRAWN BY:	C.E.P.	DATE:	

ADVANCED GeoServices Engineering P.C.
Engineering for the Environment. Planning for People.™
1055 HARDING HWY. SUITE 4, WEST CHESTER PA. 19380
tel 610.840.9700 fax 610.840.9799 www.advancedgeoservices.com

FORMER SPERRY REMINGTON RAND OUTFALL SITE
1051 SOUTH MAIN STREET, ELMIRA, NY

Figure 5

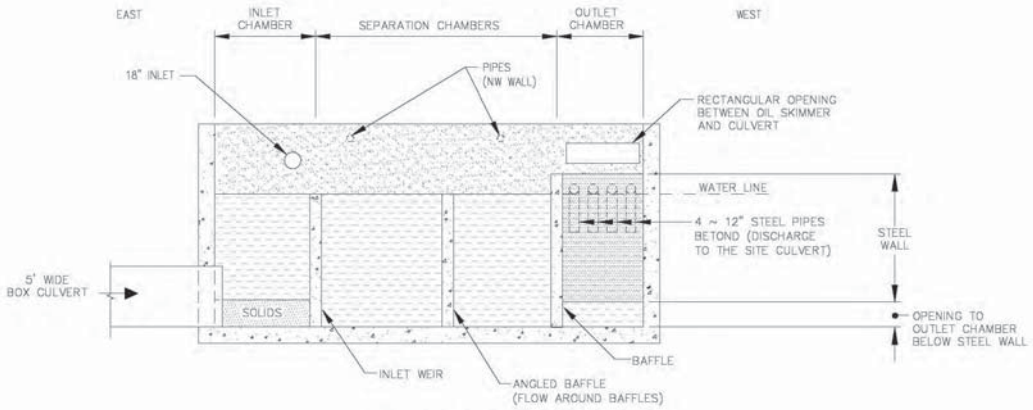


OIL SKIMMER #2 PLAN

SCALE: 1" = 10'

LEGEND

- CONCRETE FLOOR SAMPLE LOCATION
- CONCRETE WALL SAMPLE LOCATION
- WIPE SAMPLE LOCATION



OIL SKIMMER #2 SECTION

SCALE: NTS

NOTE:
SITE PLAN DEVELOPED FROM AN AUTOCAD FILE (OIL SKIMMER.DWG) OBTAINED FROM ADVANCED GEOSERVICES ENGINEERING, P.C., FEBRUARY 2013.

10 5 0 10

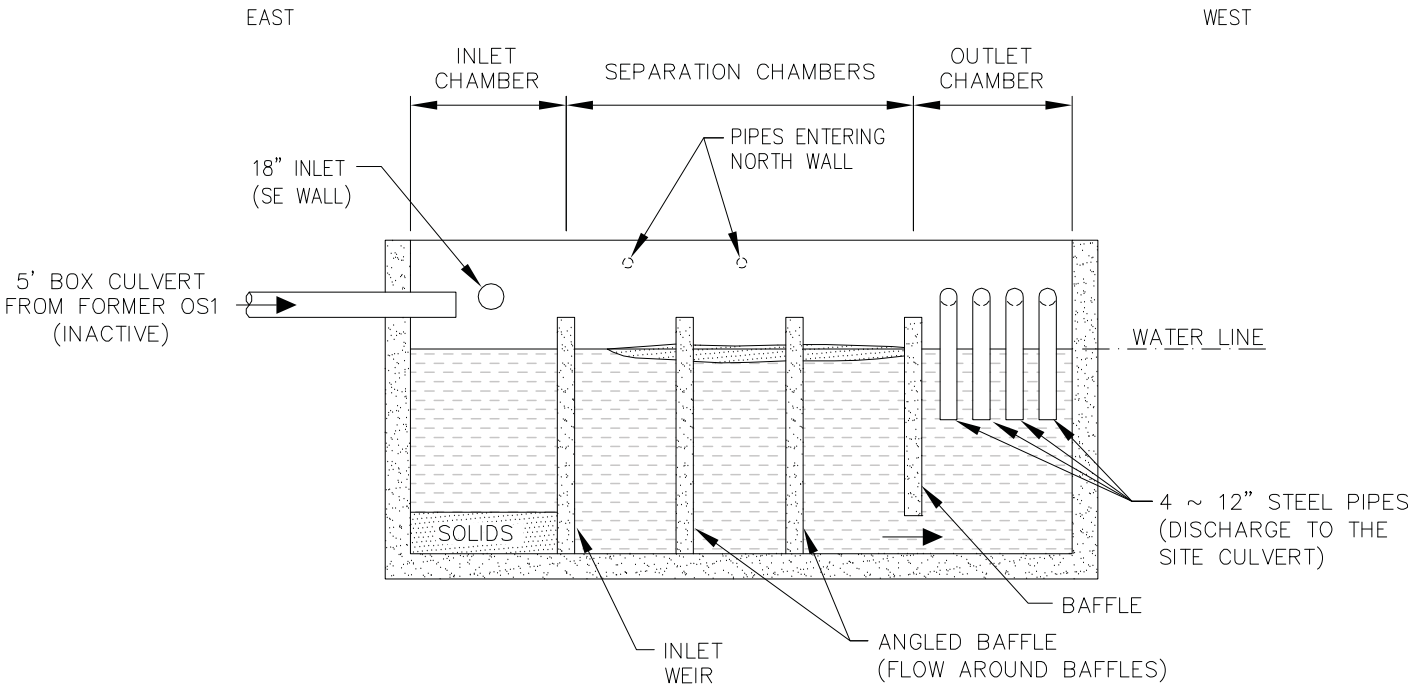
SCALE: 1" = 10'

OIL SKIMMER #2 SAMPLE LOCATIONS

FORMER SPERRY REMINGTON RAND OUTFALL SITE
1051 SOUTH MAIN STREET
ELMIRA, NEW TORK

Geosyntec consultants
COLUMBIA, MARYLAND

DATE:	APRIL 2014
PROJECT NO.	MR0832
DOCUMENT NO.	MD14033
FILE NO.	0832f002
FIGURE NO.	4



NOT TO SCALE

CROSS-SECTIONAL REPRESENTATION OF OS2

FORMER SPERRY REMINGTON RAND OUTFALL SITE
1051 SOUTH MAIN STREET
ELMIRA, NEW TORK

Geosyntec consultants
COLUMBIA, MARYLAND

DATE:	OCTOBER 2012
PROJECT NO.	MN0832-06
DOCUMENT NO.	MD12310
FILE NO.	0832f001
FIGURE NO.	6

Geosyntec consultants

100 Washington Avenue South Suite 1330
Minneapolis, Minnesota 55401
PH 612.253.8200
FAX 612.605.8261
www.geosyntec.com

14 July 2014

Mr. Timothy Schneider
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

VIA ELECTRONIC MAIL

Subject: **Response to 23 June 2014 Agency Review**
Former Sperry Remington Site (#808043) (Site)
Interim Remedial Measure Work Plan
City of Elmira, Chemung County, NY

Dear Mr. Schneider:

On behalf of Unisys Corporation (Unisys), Geosyntec Consultants, Inc. (Geosyntec) is responding to your 23 June 2014 approval (with modifications) of the Interim Remedial Measure (IRM) Work Plan submitted by Unisys on 24 April 2014. The following presents the modifications requested by NYSDEC (shown in italics) and Unisys' response.

1. *Please provide a response to the Department's specific comments / limitations / deficiencies of 5-20-13 (attached).*

   A response to specific Department comments received on 20 May 2013 on the IRM Pre-Design Investigation Report will be provided under separate cover.

2. *The Department will not authorize the disconnection or closure of any drainage collection system (former combined industrial & storm sewer) connected to OS-2 or the Site Box Culvert until the full extent of each system is verified by physical or video inspection, the system function, condition and sediment arc characterized and an alternative plan to modify is accepted by the Department, property owners and any other agency with regulatory jurisdiction.*

   Unisys is prepared to eliminate disconnection/closure activities associated with OS2 under a revision to the existing IRM Work Plan.

   Furthermore, Unisys has provided for investigation (geophysical and subsurface test pitting) of the two OS2 connections (5' box culvert [eastern end] and 18' pipe [southern side]) to determine the origination of these OS2 inlets under Section 2.1 of the IRM Work Plan. These investigation activities are scheduled to precede any closure activities, and will be subject to Department approval of any required work plan modification necessitated by the findings of that investigation, as described in Section 2.1.

3. *Summary statements in section 1.2 regarding pipe inlet connections to OS-2 being dry is not accurate and is inconsistent with Department field observations and Unisys report documentation/observation (attached). The Geosyntec depiction of these pipe connections in Figure 6 of the IRMPDI Report is inaccurate and inconsistent with field observations as well as previous submissions by Advanced Geoservices (attached).*

   The reference to the dry connection is referring to the 30" to 36" RCP pipe exiting catch basin CB-6, as observed during the IRM PDI (See attached photo). Clarification will be made as to the specific pipe.

   Figure 6 of the IRM PDI Data Report was not part of the IRM Work Plan submittal package. Changes to the cross-section depiction of OS2 were incorporated in the IRM Work Plan. See Figure 4 and Appendix B, Construction Plans, Drawing 3 of 5 for the revised interpretations.

4. *A summary statement in section 1.2 regarding "data" indicating that inlet connections to OS2 are inactive is inconsistent with reporting and should be removed. No video data was collected during the IRMPDI to confirm these connections and dye testing data also did not confirm connection. What "data" is this statement referring to?*

   Reference to "historical data" will be revised to state "Based on historical map depictions."

   Reference to "Data and observations during this phase of work indicate that inlet connections to OS2 are inactive under normal conditions." will be removed.

5. *A statement in section 1.3 regarding the "functionality of the site storm sewer system" should be removed and addressed in accordance with #2 above.*

   Current text stating "Data and observations made during the IRM PDI indicate OS2 can be taken out of service through closure while maintaining the functionality of the Site storm water sewer system." will be removed.

6. *The IRM work plan provides insufficient scope of work for "additional storm sewer inspections" to address #2 above.*

   In addition to the current scope of work planned for the investigation of the unknown OS2 connections, Unisys is prepared to supplement the scope of work with physical inspection of accessible sewer connections via confined space entry certified personnel, equipment, and atmosphere monitoring meters.

7. *Unisys will provide a scope of work that includes confined space entry and a plan to address debris I accessibility issues that limited sewer inspection during the IRMPDI.*

   See response to comment #5.

8. *A statement in Section 2.1 regarding the "no other connections to the southern ..." is misleading and should be removed or modified and the statement of "no further investigation of connections*

between CB-10 and OS2" is not acceptable. The geometric configuration or alignment of piping assumed to connect OS2 to CB-10 would require a 90 degree change of direction. Because of this configuration, it is improbable that a direct piping connection exists without additional intermediary structures or pipes.

Reference to "no other connections to the southern…" will be revised to state "No other pipe connections were visually observed along the southern side of OS2 during the previous investigations."

The last two sentences of the third paragraph will be removed. Additionally, investigation activities planned for CB-6 and the 5' box culvert will also include CB-10 and the 18" pipe inlet to OS2

9. *The Appendix B Construction Plans to "seal and grout" decommission the 18" pipe inlet on the south side of OS2 is unacceptable. All piping connections to OS2 are documented to have transported industrial waste. No pipe or structure will be decommissioned without appropriate characterization of it's contents, it's structural integrity and potential release of contaminants to the environment evaluated in accordance with DER-10. Cleaning of pipes and structures may also be required prior to decommissioning.*

   See response to comment #2.

10. *The 18"pipe outfall from CB-10 identified as "steel" needs to be verified because CB-10 photos show bell end of pipe consistent with RCP or clay. Please provide video of this pipe section. Department observations of a curving alignment seen during the camera survey would be consistent with clay or concrete pipe and not steel.*

    See response to comment #8. Video from the camera survey was provided as Appendix D of the IRM Pre-Design Investigation (PDI) Data Report dated 19 February 2013.

11. *The Appendix B Construction Plans to import backfill material must be consistent with DER-10 guidance.*

    Imported backfill material will meet the requirements specified in DER-10 under Section 5.4(e) and Table 5.4(e).

12. *The Appendix B Construction Plan pg. 5 of 5 erosion and sediment notes # 11-14 regarding the handling of water and sediments (potentially contaminated) should be removed or appropriately modified.*

    Notes No. 11 through 14 will be modified appropriately with regard to handling of potentially impacted water and sediment.

13. *The Appendix B Construction Plan depicts a permeable sediment stabilization area and does not address the-containment of potentially contaminated sediment leachate.*

    Appendix B – Construction Plans, Drawing 5 of 5, Plan View 1 from Sheet 2 and Section A of Plan View 1 of the Sediment Holding Area includes a scrim reinforced 6-mil poly sheeting above the gravel pad as well as a 6-mil poly sheeting to cover the sediment material.

14. *All IRM work plans and drawings must be signed and sealed by a NYS Professional Engineer in accordance with the Consent Order.*

    The revised IRM Work Plan and drawing set will be signed and sealed by a Professional Engineer licensed in the State of New York.

15. *The Department review of the IRMWP does not include the evaluation of the structural or hydraulic specifications presented in this plan. It will be the responsibility of the owner's or other regulatory jurisdictions to evaluate and accept these specifications.*

    See response to comment #2.

16. *Section 2.3 of the IRMWP has cited 40 CFR 761, Section 61 regarding the closure of OS2 and specifically identified "capping" as a disposal option for leaving PCB remediation waste up to 100 ppm on site. To facilitate this option, Unisys must document the property owner's consent to* ***filing a deed restriction*** *that will* ***in perpetuity notify any potential purchaser*** *of the property* ***that the land has been used for PCB remediation waste disposal****, that* ***the area will be restricted to "low occupancy" use*** *and* ***the requirement to maintain the cap****.*

    See response to comment #2. In addition, any remaining PCB remediation waste associated with OS2 following the IRM will be further evaluated during the Remedial Investigation and Feasibility Study.

17. *Section 2.4 Offsite Disposal discusses characteristics of hazardous waste without additional discussion of "listed hazardous wastes" identified in OS2 sediment and management or disposal thereof.*

    As stated in Section 2.4, waste profiles will be developed for all material generated during the IRM. These waste profiles will be evaluated by the off-site facility for proper disposal in accordance with regulatory criteria.

18. *Section 3.1 of the IRMWP has cited 40 CFR 761 and a self-implementing onsite cleanup and disposal regarding the closure of OS2 however it appears that because OS2 is a treatment structure in a former combined industrial sewer, this site may not be applicable for a self-implementing cleanup and disposal. If that is the case, prior written approval from the EPA would be required prior to implementation.*

    Unisys will consult with EPA Region 2 personnel regarding the applicability of self-implementation of PCB remediation at OS2 and the subject site.

19. *Section 4 Health & Safety: A site specific health and safety plan must be prepared for this remediation activity in accordance with DER- I 0 sec 1.9.*

    An addendum to the site-specific Health and Safety Plan prepared for the RI/FS will be included in the revised IRM Work Plan. In addition, the IRM contractor will be required to prepare a site-specific Health and Safety Plan as noted on Appendix B – Construction Plans, Drawing 5 of 5, Health and Safety Note #3.

20. *Section 5.3 Decontamination Procedures are anticipated to involve the use of heavy equipment potentially in contact with TSCA or hazardous waste. More detail will be required regarding the layout and management of a decontamination area and the containment and management of decontamination wastes. Under no circumstance shall decontamination fluids be discharged to the ground surface (as presented in the IRMWP) without appropriate chemical testing.*

    Additional detail will be provided in the revised work plan as to the means and methods to be employed during the decontamination processes associated with the IRM implementation under the revised IRM Work Plan.

CLOSING

Geosyntec looks forward to working with NYSDEC to complete this interim remedial measure. If you have any questions, please contact Mr. Kevin Krueger of Unisys at (651) 687-2210.

Sincerely,

Geosyntec Consultants, Inc.

Aron Krasnopoler, Ph.D., P.E.
Project Engineer

Paul Brookner, M.B.A., P.G.
Project Director

Copies to: Bart Putzig, NYSDEC
Ben Conlon. NYSDEC
Mary Jo Crance, NYSDEC
Melissa Doroski, NYSDOH
Krista Anders, NYSDOH
Kevin Krueger, Unisys
David Noble, Unisys
Adam Meinstein, STCC
Kevin Murphy, Wladis Law Firm
John H. Paul, Beveridge & Diamond
Michael G. Murphy, Beveridge & Diamond

CB-6

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, New York 14414-9519
Phone: (585) 226-5353 • **Fax: (**585) 226-8139
Website: www.dec.ny.gov

Joe Martens
Commissioner

Mr. Kevin Krueger, PE
Unisys Corporation
Corporate Environmental Affairs
3199 Pilot Knob Road
Eagan, NY 55121

July 31, 2014

Re: Former Sperry Remington Site (#808043)
Interim Remedial Measure Work Plan – Response to Comments
City of Elmira, Chemung County, NY

Dear Mr. Krueger:

The Department has completed its review of the document entitled "Interim Remedial Measure Work Plan" agency review draft dated April 2014 and has determined that the work plan does not substantially addresses the requirements of the Superfund Order. Please address the following comments in a revised submission:

1. Response #10: Attached please find a copy of Appendix D contents and corresponding figure. Unfortunately there are missing video files and / or incorrect file labels.
2. Response #13: The response and referenced construction details do not address the containment of potentially contaminated leachate associated with stabilizing saturated contaminated sediments. Any construction details will be referenced on the general drawings.
3. Response #18: The Department will be copied on USEPA correspondence.

With the above noted clarifications being addressed in the final revised work plan, a rapid approval response may be facilitated. Please provide a final revised work plan within 2 weeks for Department review and approval.

As a reminder, all final documents and reports are to be in electronic format on compact computer discs (CDs). The disk should contain an Adobe® Acrobat® Portable Document Format (PDF) file and must be searchable. In addition, all data submitted to the DER must be in the DEC-approved Electronic Data Deliverable (EDD). Moreover, new data must 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). In other words, data is not to be held and submitted with the related reports.

If Unisys chooses not to address the clarifications, you are required to notify this office within 20 days after receipt of this letter. In this event I suggest a meeting be scheduled to discuss Unisys' concerns prior to the end of this 20 day period.

We look forward to working together to complete this remedial investigation. If you have questions or concerns on this matter, please contact me.

Sincerely,

Timothy A. Schneider, P.E.
Environmental Engineer 2

cc. P. Brookner A. Krasnopoler
B. Putzig M. Cruden
D. Hettrick J. Deming
B. Conlon M. Crance
A. Meinstein

New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, New York 14414-9519
Phone: (585) 226-5353 • **Fax: (**585) 226-8139
Website: www.dec.ny.gov

Joe Martens
Commissioner

Mr. Kevin Krueger, PE

DRAFT

October 3, 2014

Unisys Corporation
Corporate Environmental Affairs
3199 Pilot Knob Road
Eagan, NY 55121

Re: Former Sperry Remington Site (#808043)
Revised Interim Remedial Measures Work Plan
Town of Southport, Chemung County, NY

Dear Mr. Krueger:

The Department has completed its review of the above referenced work plan submitted by Unisys in April 24, 2014, revised September 12, 2014 and has determined that the revised work plan does not substantially addresses the requirements of the Superfund Order. The work plan is rejected for the following reasons:

1. The revised work plan proposal to permanently close conveyance structures and OS2 is inconsistent with Unisys' 14 July 2014 response to comments and does not address the 23 June 2014 Department criteria for closure.

2. Pg 3 paragraph 1 last sentence – "Data and observations…" was not removed in accordance with Unisys' 14 July 2014 response to comments. Please note that August 2014 observations documenting water with sheen in CB-6 are inconsistent with the 2012 IRMPDI observations.

A resubmitted IRM work plan must include:

1. Interim reporting for Department approval that documents and depicts the extent, function, structural integrity and chemical quality of sediments (if any) in the collection and conveyance systems connecting with OS2. Included in this interim report will be a justification for any closure and or redirection of surface collection and subsurface conveyance systems.
2. A conveyance system closure plan that also addresses potentially contaminated contents (if any). Written property owner approval will be required prior to Department notice to proceed with the permanent closure or modification of any privately owned structures.
3. Interim reporting for Department approval that documents the chemical results of OS2 cleaning. If PCB concentrations are greater than or equal to 1 ppm for porous materials (e.g., concrete) either further cleaning or replacement of the structure would be necessary.
4. Construction plans and details must eliminate the sediment holding area or provide a design that will contain potentially contaminated leachate for collection and appropriate offsite disposal.
5. Construction plans must appropriately address the closure of the 12" siphon outfall pipe(s) from OS2 to the box culvert and construction details should accurately depict the invert elevation of the 18" concrete encased pipe inlet.

The proposed IRM activities are not emergencies per DER-10, therefore if Unisys chooses not to fully address

the Department's concerns through an IRM, these concerns would become an immediate priority to be addressed through additional remedial investigation and remedy selection.

Please notify the Department of within 20 days after receipt of this letter of your intentions moving forward (revised IRMWP or RIWP Addendum).

If you have questions or concerns on this matter, please contact me.

Sincerely,

Timothy A. Schneider, P.E.
Environmental Engineer 2

cc. P. Brookner A. Krasnopoler
B. Putzig M. Cruden
D. Hettrick J. Deming
B. Conlon M. Crance A. Meinstein

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
P: (585) 226-5353 I F: (585) 226-8139
www.dec.ny.gov

Via E-mail

January 30, 2019

Mr. Kevin Krueger, PE
Unisys Corporation
Corporate Environmental Affairs
3199 Pilot Knob Road
Eagan, MN 55121

Dear Mr. Krueger:

Re: Revised Interim Remedial Measures Work Plan
Former Sperry Remington Site #808043
Elmira, Chemung County

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have completed the review of "Revised Interim Remedial Measure Work Plan" for the Former Sperry Remington Site #808043, dated 24 April 2014, last revised 7 November 2018, and provide the following comments, modifications and additions for revision:

General

1. Provide written approval of drainage modifications from both Southern Tier Commerce Center and the Elmira City School District.
2. Unisys is proposing cleanup criteria for concrete structures that **could** leave up to 100 mg/kg / 100 ug/cm2 PCBs. This would require institutional and engineering controls in accordance with 40 CFR 761. Please provide written approval from Southern Tier Commerce Center accepting institutional controls that would in part, identify to any purchaser that the land has been used for PCB remediation waste disposal, is restricted to low occupancy use and the presence and maintenance requirements of fences or caps, should this be the case.
3. Provide confirmation that all drainage modifications are consistent with industrial storm water regulations / permits.
4. Remediate all upgradient drainage infrastructure (STCC) prior to redirection from OS-2 and direct off-site discharge.
5. Appropriately dispose of Test Pit TP-2.2 spoils as TSCA waste.
6. Update depictions on Figure 4 to be consistent with descriptions and dimensions presented in Section 2.2.2 Test Pit and Trenching. Add typical section for backfill and demarcation in addition to chemical quality data for each pit or trench location and CB-15.

7. Complete the lateral and vertical delineation of all contaminants in soil above cleanup objectives and TSCA.
8. Add invert elevations/depth below ground surface of all infrastructure to contaminant figures.
9. Depict industrial sewers in plan and profile view including extent and estimated directions from camera survey (including ceramic lined 36" pipe with PVC break @ 395').
10. Please update all figures and construction drawings to show current, post IRM #2 conditions.
11. Confirmation sampling in accordance with DER-10 Section 5.4 (b) will be required for all excavations prior to backfill.
12. Section 2.4 Findings – revise 4th bullet to clarify that direct connection along former industrial sewer alignments could not be confirmed during this phase of investigation. Observed obstructions have limited the extent of the camera survey and may restrict stormwater flow from upgradient reaches of the former industrial sewer. Additional work will be necessary to visually confirm the extent, condition and chemical quality of the sewer contents.
13. Section 2.4 Findings - 6th Bullet – Add - piping from CB-6 contained standing water and accumulated sludges. Add - 75% blocked by heavy sludge. Correct - no evidence of collapse or structural compromise. Structurally sound pipe continues to the southeast beyond the sludge obstruction.

14. Section 2.4 Findings - 7th Bullet – add standing water and accumulated sludge 10-20% in pipe. Revise - structural compromise to edge of pipe @ 395 ft assumed to be piezometer (MW-8?) sand pack which obstructed further camera survey and flow. Correct - Structurally sound pipe continues to the north beyond obstruction.

15. Section 2.4 Findings – Add Bullet describing CB-15 as a multi chambered poured concrete structure having an open bottom and found to have standing water and debris. Identify the eastern chamber is bulk headed by concrete and the western chamber extends to the 5’ box culvert connecting to OS-2. A 36” clay tile lined pipe empties into the main chamber and a 30” dia brick lined pipe empties into the west chamber.

16. Section 2.4 Findings - 8th Bullet – Modify - last sentence to indicate that partial blockage in the 30” and 36” diameter pipes appears to restrict flow from CB-6 and other points north. Additional camera survey work is needed to confirm extent of 36” pipe system and connection of 30” system between CB-6 and west chamber of CB-15.
17. Section 2.4 Findings - 8th Bullet – Add – excavation along the north side of OS-2 confirmed steel pipe connections have been removed.
18. Section 2.4 Findings - 10th Bullet – Add – an 18” clay pipe is shown on historic drawings to connect directly from CB-15 to the site culvert….
19. Section 3.1 Storm Water Piping Modification – Please see comment 4.
20. Section 3.1 Storm Water Piping Modification – Please provide discussion and detailed decommissioning procedures for CB-10 and 18” pipe to OS-2.
21. Section 3.1.2 EHS Property – Please modify - camera inspections have shown a limited extent of storm water collection and obstructed flow to OS-2.
22. Section 3.2 Excavation of Shallow Subsurface Soils – Please see comment 7.
23. Section 3.3 Removal of PCB-Impacted Material from OS-2 – Jetting 18” pipe to OS-2 - Please verify the bottom of 18” pipe through site culvert does not directly discharge to the site culvert.

24. Section 3.3 Removal of PCB-Impacted Material from OS-2 – Need for recleaning concrete left in place – see comment 2.
25. Section 3.3 Removal of PCB-Impacted Material from OS-2 – Closure of inlet and outlet connections – please consider grouting 18” pipe only to the southern edge of the site culvert. Please provide design details of the cleaning and closure of the 5’ box culvert. Former small diameter pipes along north wall do not exist.
26. Section 3.3 Removal of PCB-Impacted Material from OS-2 – Please provide discussion and design details for the stabilization of saturated soils/waste.
27. Section 3.3 Removal of PCB-Impacted Material from OS-2 – Please provide a stockpile management plan.
28. Section 3.3 Removal of PCB-Impacted Material from OS-2 – Please provide tasks to characterize the 5’ box culvert and contents prior to closure.
29. Section 3.4 Removal of OS-2 – Eastern excavation side slopes shown in construction drawing do not extend to existing grade (NE) and must slope up from the removed portion of OS-2 along the eastern edge.
30. Section 3.4 Removal of OS-2 – Please add confirmatory sampling for side and bottom wall sampling.
31. Section 5 Permits and Notifications – Please see comment 3.
32. Figure 20 – the proposed excavation 0-2 ft bgs should depict the extent of slope benching necessary to remove OS-2.
33. Figure 21 – 3” steel pipes on north edge of OS-2 do not exist.
34. Construction Drawings – please remove “inactive” labels
35. Construction Drawings – please show construction security fencing on STCC property
36. Construction Drawings – please verify limits of safe excavation north and east of OS-2.
37. Construction Drawings – Sheet 5 of 11 – show TP2.2 spoils to be managed as TSCA.
38. Construction Drawings – Please provide the limits of the site and show that decontamination and materials handling will be within the site boundaries.
39. Construction Drawings – Sheet 7 of 11 – Please note that all excavation slopes/benching will be determined by the “Competent Person” in accordance with OSHA Construction Safety.
40. Construction Drawings – Sheet 7 of 11 – The 18” pipe elevation is incorrectly depicted in B Section.
41. Construction Drawings – Sheet 7 of 11 – Slope / benching contours do not appear to be accurate or extend to existing grade north and east of OS-2.
42. Construction Drawings – Sheet 8 of 11 – Clean material will be imported and graded to drain via sheet flow to the east (no cut).
43. Construction Drawings – Sheet 9 of 11 – A Section – Please demonstrate that leachate from the stabilization area will be contained and collected. In addition, please explain how the bottom liner be protected from the mechanical mixing of cement kiln dust.
44. Construction Drawings – please provide construction details for leveling of stockpile, stabilization and loading areas.

If Unisys chooses not to address one or more of the comments, modifications and additions, you are required to notify this office within 20 days after receipt of this letter. In this event I suggest a meeting be scheduled to discuss your concerns prior to the end of this 20-day period.

If you have questions or concerns on this matter, please contact me.

Sincerely,

Timothy Schneider, P.E.
Professional Engineer 1

P. Brookner
A. Krasnopoler
B. Schilling
M. Cruden
H. Dudek
D. Harrington
B. Conlon
D. Hettrick
J. Deming

Geosyntec consultants
Beech and Bonaparte engineering p.c.
an affiliate of Geosyntec Consultants
100 Washington Avenue South Suite 1590
Minneapolis, Minnesota 55401
PH 612.253.8200
FAX 612.605.8261
www.geosyntec.com

28 June 2019

Mr. Timothy Schneider
New York State Department of Environmental Conservation (NYSDEC)
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

VIA ELECTRONIC MAIL

Subject: **Response to 30 January 2019 Review**
Revised Interim Remedial Measures Work Plan
Former Sperry Remington Site – North Portion (#808043)
City of Elmira, Chemung County, NY

Dear Mr. Schneider:

On behalf of Unisys Corporation (Unisys), Geosyntec Consultants, Inc. and its New York engineering affiliate, Beech and Bonaparte Engineering, P.C. (collectively, Geosyntec) are responding to the 30 January 2019 review by the New York State Department of Environmental Conservation (NYSDEC) of the Revised Interim Remedial Measure (IRM) Work Plan (OS2 IRM Work Plan) for the Former Sperry Remington Site (#808043) (Site) in Elmira, New York. The OS2 IRM Work Plan was initially submitted on 24 April 2014 and last revised 7 November 2018. Unisys notified NYSDEC of its intention to respond to NYSDEC's 15 October 2018 conditional approval letter within the allotted 20-days in an email communication on 14 February 2019.

To facilitate the discussion, the 30 January 2019 NYSDEC comments (shown in italics) are presented below, followed by Unisys' response.

1. *Provide written approval of drainage modifications from both Southern Tier Commerce Center and the Elmira City School District.*

   Response: Written approval of drainage modifications from both Southern Tier Commerce Center (STCC) and Elmira City School District (ECSD) are provided in Appendix J.

2. *Unisys is proposing cleanup criteria for concrete structures that could leave up to 100 mg/kg / 100 ug/cm2 PCBs. This would require institutional and engineering controls in accordance with 40 CFR 761. Please provide written approval from Southern Tier Commerce Center accepting institutional controls that would in part, identify to any purchaser that the land has been used for PCB remediation waste disposal, is restricted to low occupancy use and the presence and maintenance requirements of fences or caps, should this be the case*

   Response: Written approval from (STCC) accepting potential institutional controls is provided in Appendix J.

3. *Provide confirmation that all drainage modifications are consistent with industrial storm water regulations / permits.*

   Response: The proposed drainage modifications are consistent with State Pollution Discharge Elimination System (SPDES) permit held by ECSD (SPDES# NY0106216). A copy of the SPDES Permit is provided in Appendix K. The modifications are upstream of the ECSD discharge to the Site Culvert but the ECSD monitoring point is located in the EHS parking lot. A review of NYSDEC and USEPA records found no active SPDES permits for the STCC property.

4. *Remediate all upgradient drainage infrastructure (STCC) prior to redirection from OS-2 and direct off-site discharge.*

   Response: Accepted. Fine-grained material will be flushed from upgradient drainage infrastructure, including CB-11, prior to the installation of new infrastructure for storm water flow redirection. Water and entrained solids will be collected at CB-11 and staged in a water management area for later off-Site disposal.

5. *Appropriately dispose of Test Pit TP-2.2 spoils as TSCA waste.*

   Response: Accepted. Excavation for removal of OS2 will include Test Pit TP-2.2 spoils as shown on the Construction Drawings. Those spoils will be disposed of as TSCA waste.

6. *Update depictions on Figure 4 to be consistent with descriptions and dimensions presented in Section 2.2.2 Test Pit and Trenching. Add typical section for backfill and demarcation in addition to chemical quality data for each pit or trench location and CB-15.*

   Response: Accepted. Figure 4 has been revised to be consistent with descriptions and dimensions presented in Section 2.2.2 Test Pit and Trenching. A typical section for backfill and demarcation has been added as well as chemical quality data for each pit or trench location and CB-15.

7. *Complete the lateral and vertical delineation of all contaminants in soil above cleanup objectives and TSCA.*

   Response: The lateral and vertical extent of PCBs and metals has been completed within the IRM project area. The area is bounded by the STCC property line to the north and east, the Site Culvert to the south and the storm sewer to the west. Confirmation samples will be collected in accordance with DER-10 Section 5.4 (b) to document the removal of PCBs and metals above soil cleanup objectives and TSCA.

8. *Add invert elevations/depth below ground surface of all infrastructure to contaminant figures.*

   Response: Accepted. Invert elevations and/or depth below ground surface have been added for all infrastructure shown on Figures 6 through 19.

9. *Depict industrial sewers in plan and profile view including extent and estimated directions from camera survey (including ceramic lined 36" pipe with PVC break @ 395').*

   Response: Accepted: Profiles of industrial sewers investigated by inline camera survey have been added to Figure 5.

10. *Please update all figures and construction drawings to show current, post IRM #2 conditions.*

    Response: Accepted. The extent of IRM #2 shown on figures and construction drawings has been updated to show the as-built conditions.

11. *Confirmation sampling in accordance with DER-10 Section 5.4 (b) will be required for all excavations prior to backfill.*

    Response: Accepted. Proposed confirmation sample locations are presented on Figure 20 and Construction Drawings Sheets 5 and 7.

12. *Section 2.4 Findings – revise 4th bullet to clarify that direct connection along former industrial sewer alignments could not be confirmed during this phase of investigation. Observed obstructions have limited the extent of the camera survey and may restrict stormwater flow from upgradient reaches of the former industrial sewer. Additional work will be necessary to visually confirm the extent, condition and chemical quality of the sewer contents.*

    Response: Accepted. The text has been revised as requested.

13. *Section 2.4 Findings - 6th Bullet – Add - piping from CB-6 contained standing water and accumulated sludges. Add - 75% blocked by heavy sludge. Correct - no evidence of collapse or structural compromise. Structurally sound pipe continues to the southeast beyond the sludge obstruction.*

    Response: Accepted. The text has been revised as requested.

14. *Section 2.4 Findings - 7th Bullet – add standing water and accumulated sludge 10-20% in pipe. Revise - structural compromise to edge of pipe @ 395 ft assumed to be piezometer (MW-8?) sand pack which obstructed further camera survey and flow. Correct - Structurally sound pipe continues to the north beyond obstruction.*

    Response: Accepted. The text has been revised as requested.

15. *Section 2.4 Findings – Add Bullet describing CB-15 as a multi chambered poured concrete structure having an open bottom and found to have standing water and debris. Identify the eastern chamber is bulk headed by concrete and the western chamber extends to the 5' box culvert*

connecting to OS-2. A 36" clay tile lined pipe empties into the main chamber and a 30" dia brick lined pipe empties into the west chamber.

Response: Accepted. The text has been revised as requested.

16. *Section 2.4 Findings - 8th Bullet – Modify - last sentence to indicate that partial blockage in the 30" and 36" diameter pipes appears to restrict flow from CB-6 and other points north. Additional camera survey work is needed to confirm extent of 36" pipe system and connection of 30" system between CB-6 and west chamber of CB-15.*

    Response: Accepted. The text has been revised as requested.

17. *Section 2.4 Findings - 8th Bullet – Add – excavation along the north side of OS-2 confirmed steel pipe connections have been removed.*

    Response: Accepted. The text has been revised as requested.

18. *Section 2.4 Findings - 10th Bullet – Add – an 18" clay pipe is shown on historic drawings to connect directly from CB-15 to the site culvert….*

    Response: Accepted. The text has been revised as requested.

19. *Section 3.1 Storm Water Piping Modification – Please see comment 4.*

    Response: See response to Comment 4.

20. *Section 3.1 Storm Water Piping Modification – Please provide discussion and detailed decommissioning procedures for CB-10 and 18" pipe to OS-2.*

    Response: The 18-in clay pipe connecting CB-10 to OS2 will be inspected to verify that the pipe does not discharge to the Site Culvert (Comment 23). If the connection to OS2 is confirmed by visual inspection, the CB-10 will be isolated and the pipe will be flushed with water in the direction of OS2 to remove fine-grained material from the line. A grout slurry will then be injected into the pipe in order to plug the line up to the southern edge of the Site Culvert (Comment 25). The surface ring at CB-10 will be removed. CB-10 will be grouted up to one (1) ft bgs and then backfilled with imported fill.

21. *Section 3.1.2 EHS Property – Please modify - camera inspections have shown a limited extent of storm water collection and obstructed flow to OS-2.*

    Response: Accepted. The text has been revised as requested.

22. *Section 3.2 Excavation of Shallow Subsurface Soils – Please see comment 7.*

    Response: See response to Comment 7.

23. *Section 3.3 Removal of PCB-Impacted Material from OS-2 – Jetting 18" pipe to OS-2 - Please verify the bottom of 18" pipe through site culvert does not directly discharge to the site culvert.*

    Response: See response to Comment 20.

24. *Section 3.3 Removal of PCB-Impacted Material from OS-2 – Need for recleaning concrete left in place – see comment 2.*

    Response: Section 3.3 has been revised to clarify the need for recleaning and resampling non-porous and porous materials. Non-porous materials will be recleaned and resampled if total PCB concentrations in wipe samples are greater than 100 micrograms per square centimeter. Porous material to be transported off-Site for disposal will be recleaned and resampled if total PCB concentrations in concrete cores are greater than or equal to 50 milligrams per kilogram (mg/kg). Porous material to be remain in place beneath a soil cap will be recleaned and resampled if total PCB concentrations in concrete cores are greater than or equal to 100 milligrams per kilogram (mg/kg).

25. *Section 3.3 Removal of PCB-Impacted Material from OS-2 – Closure of inlet and outlet connections – please consider grouting 18" pipe only to the southern edge of the site culvert. Please provide design details of the cleaning and closure of the 5' box culvert. Former small diameter pipes along north wall do not exist.*

    Response: The 18-in inlet pipe will be grouted to the southern edge of the Site Culvert as requested. The eastern wall of OS2 including the 5-ft box culvert inlet will remain in place. The 5-ft box culvert will be cleaned at the inlet then closed using concrete blocks and grout. Former small diameter pipes along the north wall have been removed from the figures and drawings.

26. *Section 3.3 Removal of PCB-Impacted Material from OS-2 – Please provide discussion and design details for the stabilization of saturated soils/waste.*

    Response: Discussion of details for stabilization of saturated solids prior to disposal is included in Section 3.3. Cement kiln dust will be mixed into the saturated fine-grained material (43 - 65% moisture based on analytical results) in order to reduce the moisture content to levels that will be acceptable to the receiving facility. Mixing will be performed in batches using the excavator bucket.

27. *Section 3.3 Removal of PCB-Impacted Material from OS-2 – Please provide a stockpile management plan.*

    Response: A stockpile management plan is presented in Section 5.2 – Temporary Facilities.

28. *Section 3.3 Removal of PCB-Impacted Material from OS-2 – Please provide tasks to characterize the 5' box culvert and contents prior to closure.*

    Response: The interior of the 5-ft box culvert will be inspected for integrity and the thickness of fine-grained material. Samples of fine-grained material, if present, will be collected for characterization prior to closure.

29. *Section 3.4 Removal of OS-2 – Eastern excavation side slopes shown in construction drawing do not extend to existing grade (NE) and must slope up from the removed portion of OS-2 along the eastern edge.*

    Response: Excavation grading for OS2 removal shown on Sheet 7 of the Construction Drawing has been revised to match existing grades on the EHS property and final subgrade following shallow soil removal on the STCC property (Sheet 5).

30. *Section 3.4 Removal of OS-2 – Please add confirmatory sampling for side and bottom wall sampling.*

    Response: Confirmation samples will be collected from the sidewalls and bottom of the excavation to remove OS2 as shown on the Construction Drawings in accordance with Section 5.4 (b) of DER-10. Confirmation samples will be submitted to the fixed laboratory for analyses for PCBs and metals in accordance with QAPP.

31. *Section 5 Permits and Notifications – Please see comment 3.*

    Response: See response to Comment 3.

32. *Figure 20 – the proposed excavation 0-2 ft bgs should depict the extent of slope benching necessary to remove OS-2.*

    Response: Figure 20 presents the proposed shallow soil excavation to achieve the IRM objectives for soil cleanup at the Site. Sloping of the excavation to remove OS2 will extend onto the EHS property. Soils on the 0-2 ft interval have been previously remediated on that property as part of IRM #2 for the Former Sperry Remington Site – North Portion (#c808022).

33. *Figure 21 – 3" steel pipes on north edge of OS-2 do not exist.*

    Response: The steel pipes have been removed from Figure 21.

34. *Construction Drawings – please remove "inactive" labels*

    Response: "Inactive" labels have been removed.

35. *Construction Drawings – please show construction security fencing on STCC property*

    Response: Construction security fencing on STCC property is shown on Sheet 3.

36. *Construction Drawings – please verify limits of safe excavation north and east of OS-2.*

    Response: Excavations will be sloped 1H:1V north and east of OS2. Limits of safe excavation will be confirmed by the "Competent Person" in accordance with OSHA Construction Safety.

37. *Construction Drawings – Sheet 5 of 11 – show TP2.2 spoils to be managed as TSCA.*

    Response: See response to Comment 5.

38. *Construction Drawings – Please provide the limits of the site and show that decontamination and materials handling will be within the site boundaries.*

    Response: The Site boundary will be added to the Construction Drawings. The Site is a 185' x 65' rectangular area (0.28 acres) as shown on Figure 2. Material handling and decontamination will be within the limit of disturbance (LOD) shown on the Construction Drawings. The LOD extends beyond the Site boundary to the extent necessary to complete the IRM objectives. Unisys will acquire access for IRM activities beyond the Site boundary from STCC and ECSD as necessary.

39. *Construction Drawings – Sheet 7 of 11 – Please note that all excavation slopes/benching will be determined by the "Competent Person" in accordance with OSHA Construction Safety.*

    Response: Accepted. Notes on Sheet 7 will require that all excavation slopes/benching be confirmed by the "Competent Person" in accordance with OSHA Construction Safety.

40. *Construction Drawings – Sheet 7 of 11 – The 18" pipe elevation is incorrectly depicted in B Section.*

    Response: The elevation of the pipe 18-in pipe has been corrected.

41. *Construction Drawings – Sheet 7 of 11 – Slope / benching contours do not appear to be accurate or extend to existing grade north and east of OS-2.*

    Response: See response to Comment 29.

42. *Construction Drawings – Sheet 8 of 11 – Clean material will be imported and graded to drain via sheet flow to the east (no cut).*

    Response: Accepted. Existing soils will not be removed to grade the area for drainage to the northeast (no cut). Material approved for import by NYSDEC will be used for fill to required grades.

43. *Construction Drawings – Sheet 9 of 11 – A Section – Please demonstrate that leachate from the stabilization area will be contained and collected. In addition, please explain how the bottom liner be protected from the mechanical mixing of cement kiln dust.*

    Response: Leachate will be contained within the bermed and lined portion of the stabilization area until cement kiln dust is applied for stabilization. A sump will be place at the lowest point within the bermed area for leachate collection if necessary. Mechanical mixing of cement kiln dust will be performed using an excavator bucket outfitted with a guard to prevent damage to the bottom liner. A layer of geotextile fabric will be place on top of the bottom liner as an indicator to the operator.

44. *Construction Drawings – please provide construction details for leveling of stockpile, stabilization and loading areas.*

    Response: The stockpile and stabilization areas will be constructed on top of the loading area. The loading area will be leveled using imported fill following placement of the geotextile base layer.

CLOSING

Unisys looks forward to working with NYSDEC and NYSDOH to complete this Remedial Investigation. If you have any questions, please contact Mr. Kevin Krueger of Unisys at (651) 212-7273.

Sincerely,

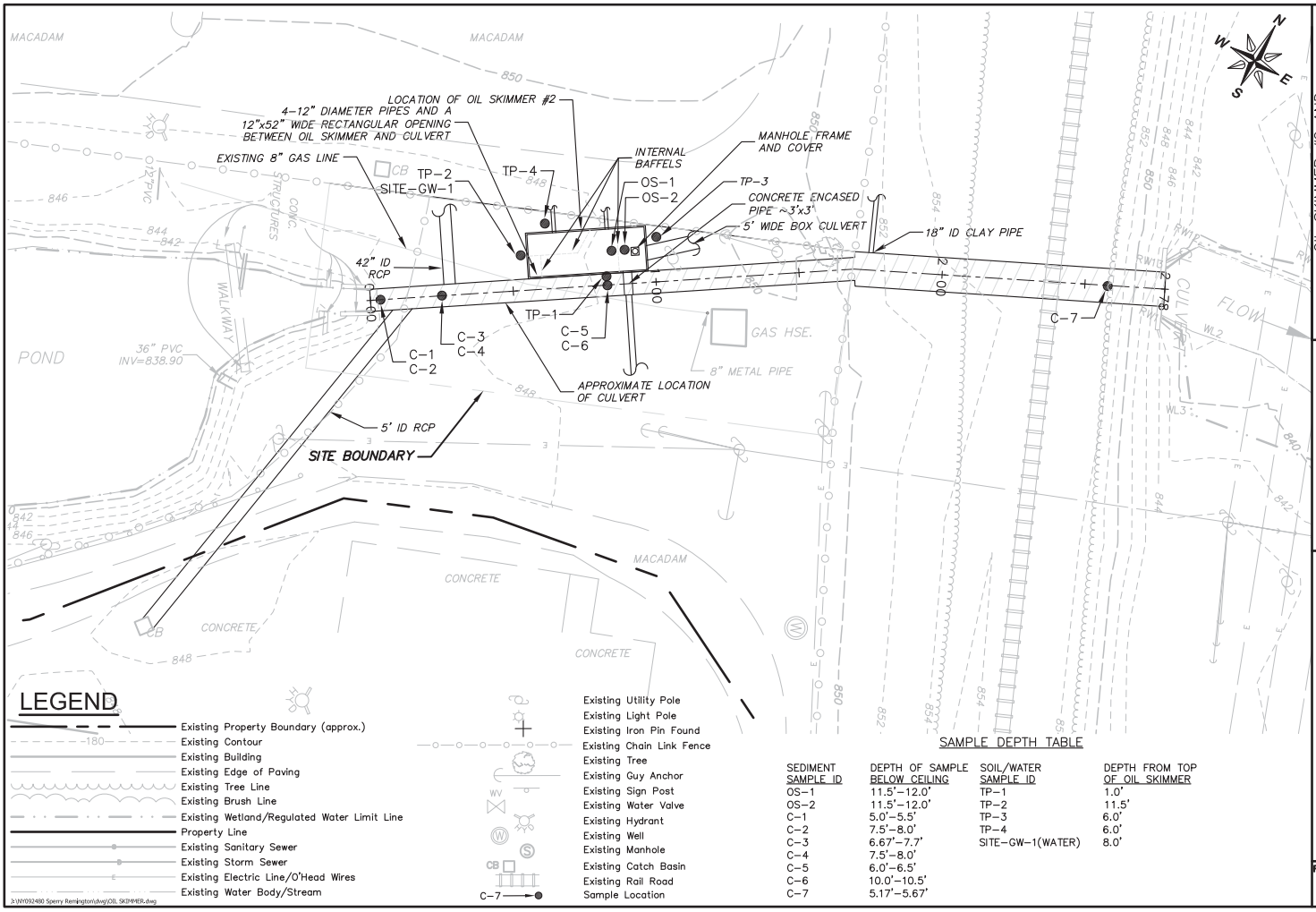
Geosyntec Consultants, Inc.

Paul Brookner
Project Director
Geosyntec Consultants, Inc.

Aron Krasnopoler, Ph.D., P.E.
Project Engineer/Project Manager
Beech and Bonaparte Engineering P.C.

Copies to:
Bernette Schilling, NYSDEC
Michael Cruden, NYSDEC
Heidi Dudek, NYSDEC
Ben Conlon. NYSDEC
Dawn Hettrick, NYSDOH
Justin Deming, NYSDOH
Kevin Krueger, Unisys
Beth Parker, Unisys
Michael G. Murphy, Beveridge & Diamond
Adam Meinstein, STCC
Kevin Murphy, Wladis Law Firm
Mike Dunn, ECSD

Appendix B
Site Culvert Plan View and Profile



LEGEND

- Existing Property Boundary (approx.)
- Existing Contour
- Existing Building
- Existing Edge of Paving
- Existing Tree Line
- Existing Brush Line
- Existing Wetland/Regulated Water Limit Line
- Property Line
- Existing Sanitary Sewer
- Existing Storm Sewer
- Existing Electric Line/O'Head Wires
- Existing Water Body/Stream
- Existing Utility Pole
- Existing Light Pole
- Existing Iron Pin Found
- Existing Chain Link Fence
- Existing Tree
- Existing Guy Anchor
- Existing Sign Post
- Existing Water Valve
- Existing Hydrant
- Existing Well
- Existing Manhole
- Existing Catch Basin
- Existing Rail Road
- Sample Location

SAMPLE DEPTH TABLE

SEDIMENT SAMPLE ID	DEPTH OF SAMPLE BELOW CEILING	SOIL/WATER SAMPLE ID	DEPTH FROM TOP OF OIL SKIMMER
OS–1	11.5'–12.0'	TP–1	1.0'
OS–2	11.5'–12.0'	TP–2	11.5'
C–1	5.0'–5.5'	TP–3	6.0'
C–2	7.5'–8.0'	TP–4	6.0'
C–3	6.67'–7.7'	SITE–GW–1(WATER)	8.0'
C–4	7.5'–8.0'		
C–5	6.0'–6.5'		
C–6	10.0'–10.5'		
C–7	5.17'–5.67'		

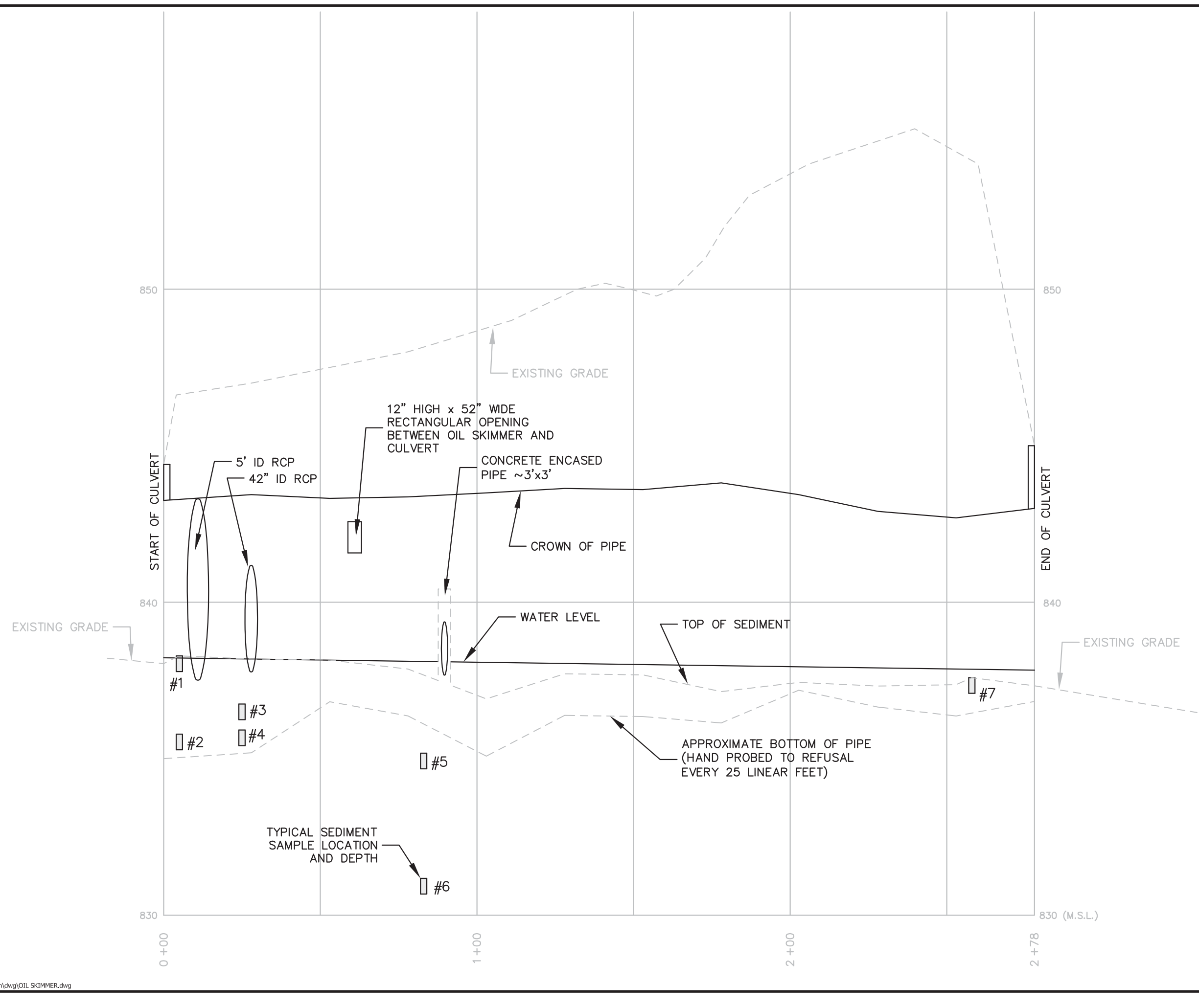
OIL SKIMMER #2 AND
SITE CULVERT SAMPLING
LOCATIONS MAP

PROJECT MANAGER: S.W.K. | SCALE: 1" = 30'
CHECKED BY: M.J.P. | PROJECT NUMBER: NY09–2480
DRAWN BY: RA | DATE:

ADVANCED GeoServices Engineering P.C.
Engineering for the Environment. Planning for People.™
1525 HARDEN BLVD, SUITE 4, WEST CHESTER PA, 19380
tel 610.840.9700 fax 610.840.9799 www.advancedgeoservices.com

FORMER SPERRY
REMINGTON RAND OUTFALL SITE
1051 SOUTH MAIN STREET, ELMIRA, NY

Figure
1



J:\NY092480 Sperry Remington\dwg\OIL SKIMMER.dwg

OIL SKIMMER #2
SITE CULVERT AND SAMPLING LOCATIONS PROFILE

PROJECT MANAGER:	S.W.K.	SCALE:	1" = 30'
CHECKED BY:	M.J.P.	PROJECT NUMBER:	NY09-2480
DRAWN BY:	RA	DATE:	

ADVANCED GeoServices Engineering P.C.
Engineering for the Environment. Planning for People.™
1055 ANDREW DRIVE, SUITE A, WEST CHESTER PA. 19380
tel 610.840.9100 fax 610.840.9199 www.advancedgeoservices.com

FORMER SPERRY
REMINGTON RAND OUTFALL SITE
1051 SOUTH MAIN STREET, ELMIRA, NY

Figure
2

Appendix C
Geophysical Survey Reports

NYLD Infrastructure Field Report

NEW YORK LEAK DETECTION, INC.

Date: 11/9/17 Technician: Joe Goodfellow

Customer: Geosyntec Consultants

Site Address: 777 So. Main St. Elmira, NY

Contact Person: Ellen Buelow Phone: 612-295-3715 Phone: _____

Scope of Work: Locate the direction of the pipe coming out of catch basin CB-6

Type of Service:

☐ *Leak Detection* ☒ *Utility Location/GPR* ☐ *Video Inspection*

☐ *Infrastructure Assessment* ☐ *Utility Mapping/AutoCAD*

Type of Equipment Used

☐ *Profiler EMP 400* ☐ *RD4000* ☒ MetroTech Vivax vLocPro2

☐ *LC2500 Leak Correlator* ☒ *Noggin 250 mHz* ☐ PosiTector UTG G3

☐ *S-30 Surveyor* ☐ Noggin 500 mHz ☒ *Video Inspection Camera*

☒ *Sonde* ☐ Conquest 1000 mHz ☐ *Helium # Bottles*

☐ *Leica Robotic Total Station* ☐ *Leica GPS*

Marking Used

☒ *Paint* ☐ *Flags* ☐ *Chalk*

☐ *Updated existing maps onsite* ☐ *Other:* _____

Instructions from Onsite Contact: Video manholes/catch basins and find direction of pipework, GPR designated areas

Size of Pipe: _____

Ground Cover/Weather Conditions: Pavement, grass, dirt. Clouds, cold

Notes/Testing Results: Began at CB-6, scanned area of test pit 4 and 2. Scanned grassy area near CB-10 using GPR. Unable to get catch basin open on CB-10. See attached.

Site Access/Safety Training: _____ **Expiration Date:** _____

Information Transfer

☒ *Information relayed on site to: Ellen* ☐ *Hand drawn map (forward to office for digital remake)* ☐ *All markings picked up by surveyors*

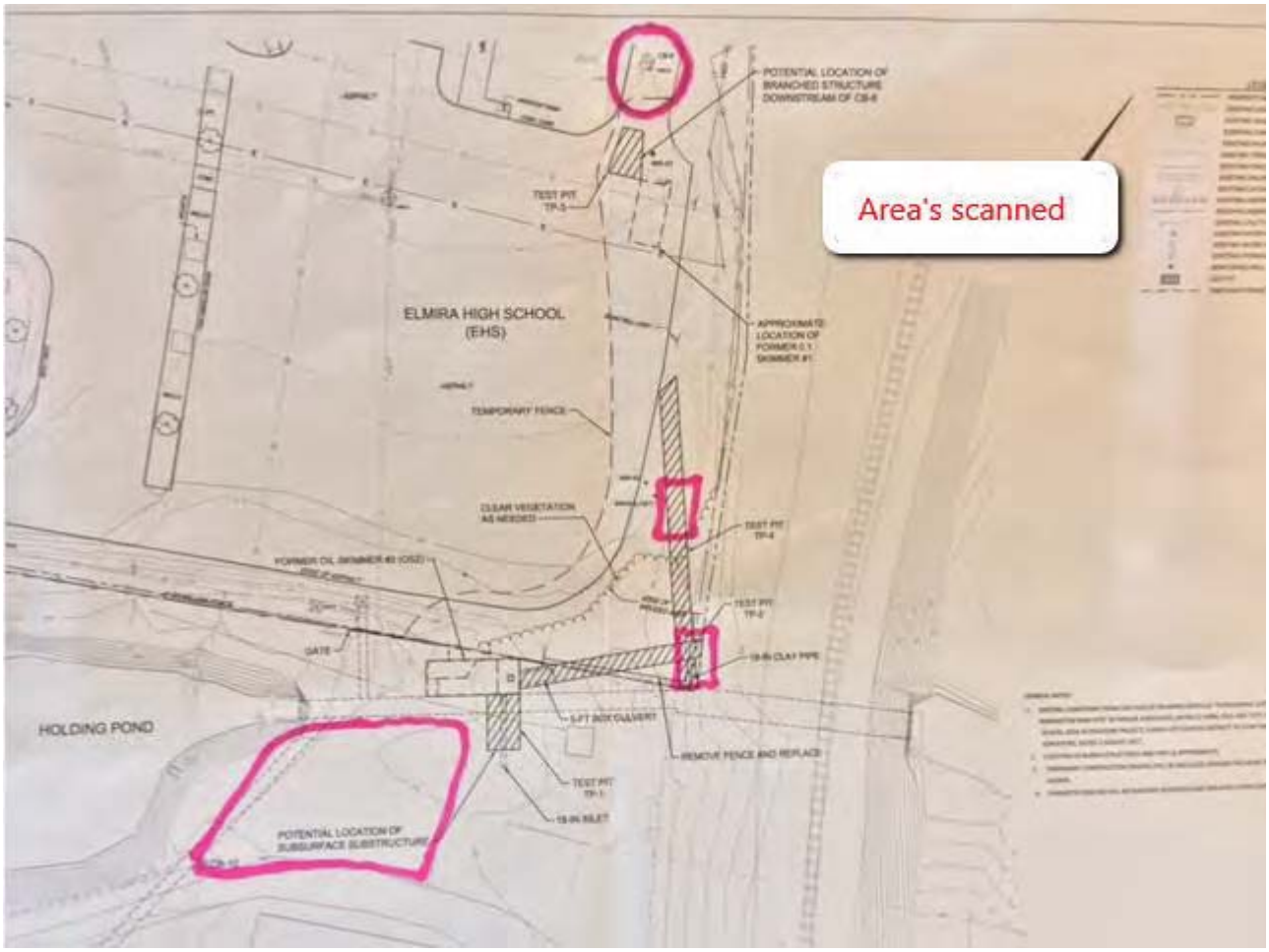
NYLD Infrastructure

NEW YORK LEAK DETECTION, INC.

Field Report

Key

Blue	Water
Red	Power
Orange	Communications
Yellow	Gas/Flammable Fuel
White	Unknown
Green	Storm/Sanitary



NEW YORK LEAK DETECTION, INC.


Anomaly,concrete and metal
Test pit 4 area


Anomaly
Test pit area 4


Test pit 2 area
Geosyntec
located buried
M.H.


Direction
of pipe
CB-10

Appendix D
Test Pit Logs and Photographs

Geosyntec consultants

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LOG OF TEST PIT

Coordinates:	-
Surface Elevation:	Approximately 858.3 ft.
Reference Elevation:	-
Reference Description:	Test Pit TP-1.1 SE of OS-2

Job. No.	**Client:** Unisys	**Location**
MN0832A.9	**Project:** Elmira	Elmira, New York
Sampling Location Description: soil spoils		**Location ID:** TP-1.1
FORMER OS2 CONNECTION INVESTIGATION		Sheet 1 of 1
Sample Method: Composite sample		
Depth of Test Pit: 8 ft. bgs		**Sampling Date/Time**
Depth to Bedrock (ft. bgs): N/A		**Start** / **Finish**
Groundwater Encountered (ft. bgs): N/A		1130 / 1500
Disposition of Test Pit: NE-SW, SE of OS-2		
Surface Conditions: Grass		
Weather: 25-35°F, partly cloudy in the morning and sunny in the afternoon.		

Depth Interval (ft. bgs)	PID (ppm)	VOCs	SVOCs	TAL Metals	PCBs/ Pesticides			Description of Material
0-0.67'	0.0							TOPSOIL, ML, light brown, non plastic, medium dense, dry silt.
0.67-1"	0.0							ML, dark gray, loose, dry, silt with gravel, gravel consists of coal and slag fragments.
1-2'	0.0							ML, orange with dark brown mottled texture, loose, dry, silty sand with gravel and brick.
2-8'	0.0							FILL, yellow-brown, medium loose, dry, silty sand with abundant yellow brick.

NOTES: Surface dimension: 2.5' x 10' (approximately). No structure was encountered in TP- 1.1. Sample TP1_01_110917 was collected from TP-1.1 soil spoils.

Logged by:	E. Buelow	**Date:**	9-Nov-17
Sample Interval:	0-8 ft. bgs, excavation soil spoils	**Time:**	-

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LOG OF TEST PIT

Coordinates:	-
Surface Elevation:	-
Reference Elevation:	850-851 ft. bgs
Reference Description:	Test Pit 2 Area, SW of CB-15

Job. No.	**Client:** Unisys	**Location**
MN0832A.9	**Project:** Elmira	Elmira, New York
Sampling Location Description: soil spoils		**Location ID:** TP-2.1
FORMER OS2 AREA CONNECTION INVESTIGATION		Sheet 1 of 1
Sample Method: Composite sample		**Sampling Date/Time**
Depth of Test Pit: 8 ft. bgs		**Start** 1000 / **Finish** 1215
Depth to Bedrock (ft. bgs): N/A		
Groundwater Encountered (ft. bgs): N/A		
Disposition of Test Pit: NW-SE, SW of CB-15		
Surface Conditions: Soil (exposed during clearing of trees and debris)		
Weather: 25-35°, Partly Sunny		

Depth Interval (ft. bgs)	PID (ppm)	VOCs	SVOCs	TAL Metals	PCBs/ Pesticides	TCLP		Description of Material
0-3'	0.0							SM, dark brown with light gray-medium gray clasts, non-plastic, medium dense, dry, massive bedded sandy silt with gravel. Gravel consists of well rounded clasts, and angular foreign material (slag and coal).
3-8'	0.0							GM, gray-brown, non cohesive, medium dense, dry, silty gravel with sand, gravel is fine to coarse, well rounded gravel and angular foreign material. Foreign material includes slag, brick and 1 ft. long pieces of concrete.

NOTES: Surface dimension: 2.5' x 10'. An approximate 5-6 ft. wide culvert was exposed during excavation and trends NE-SW between CB-15 and OS-2. Sample TP2_01_110817 was collected from TP-2.1 soil spoils.

Logged by: E. Buelow **Date:** 8-Nov-17

Sample Interval: 8 ft. bgs, excavation soil spoils **Time:** -

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LOG OF TEST PIT

Coordinates:	-
Surface Elevation:	-
Reference Elevation:	840.96 ft. bgs (surface elevation)
Reference Description:	Test Pit 2 Area, above OS-2 and slightly NE of OS-2

Job. No.	**Client:**	Unisys	**Location**
MN0832A.9	**Project:**	Elmira	Elmira, New York

Sampling Location Description: soil spoils

Location ID: TP-2.2

FORMER OS2 CONNECTION INVESTIGATION

Sheet 1 of 1

Sample Method: Composite sample

Depth of Test Pit: 2-8.5 ft. bgs

Depth to Bedrock (ft. bgs): N/A

Groundwater Encountered (ft. bgs): N/A

Disposition of Test Pit: NW-SE, above and NE OS-2

Sampling Date/Time	
Start	**Finish**
1415	1600

Surface Conditions: Grass

Weather: 25-35°, Partly Sunny

Depth Interval (ft. bgs)	PID (ppm)	VOCs	SVOCs	TAL Metals	PCBs/ Pesticides	TCLP		Description of Material
0-2'	0.0							SM, dark brown, moist, medium dense, noncohesive, non-plastic, silty sand with gravel, gravel is medium to coarse, sand is coarse, some grass roots present
2-6'	0.0							GM, dark brown, dry-moist, medium dense, noncohesive, non plastic, silty gravel with sand, cobbles fine to coarse, sand is coarse.
6-8.5'	0.0							GM, dark green-gray, appears to be dry-moist, medium-loose, noncohesive, non plastic, silty gravel with sand, cobbles coarse, sand is coarse.

NOTES: Sample TP2_02_110817 was collected to characterizes the soil spoils from TP-2.2. The north-east portion of OS-2 was excavated, the OS-2 manhole was unearthed, the five foot culvert extending N-E was delineated, and the top of the active site culvert to the SE was exposed.

Logged by: E. Buelow **Date:** 8-Nov-17

Sample Interval: 8.5 ft. bgs, excavation soil spoils **Time:** -

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LOG OF TEST PIT

Coordinates:	-
Surface Elevation:	-
Reference Elevation:	852.1 ft. (surface elevation)
Reference Description:	Located on the N. edge of the EHS parking lot, SE of the gas line cutting through the parking lot (NE-SW).

Job. No.	**Client:** Unisys	**Location**
MN0832A.9	**Project:** Elmira	Elmira, New York
Sampling Location Description: soil spoils		**Location ID:** TP-3.1
FORMER OS2 CONNECTION INVESTIGATION		Sheet 1 of 1
Sample Method: Composite sample		**Sampling Date/Time**
Depth of Test Pit: 11 ft. bgs		**Start** 1030 / **Finish** 1500
Depth to Bedrock (ft. bgs): N/A		
Groundwater Encountered (ft. bgs): N/A		
Disposition of Test Pit: NW-SE. NE of CB-6		
Surface Conditions: Grass		
Weather: 14°F, Partly cloudy in the morning and sunny in the afternoon		

Depth Interval (ft. bgs)	PID (ppm)	VOCs	SVOCs	TAL Metals	PCBs/ Pesticides	TCLP		Description of Material
0-0.83'	0.0							TOPSOIL, ML, light brown, non plastic, dry, silt with roots.
0.83'-6'	0.1							GM-GC, yellow brown to dark brown, medium dense, low plastic, silty gravel with coarse sand, localized clay, gravel is fine to coarse (average size of 4-5 cm), yellow brick makeup <10% of the material.
6-11'	0.0							GM, dark brown, dry to moist, medium dense, low plastic, silty gravel with coarse sand. (descriptions made from afar and soil spoils).

NOTES: Sample TP3_01_111017 characterized the soil spoils of TP-3.1. No structures were observed during TP-3 excavation.

Logged by: E. Buelow **Date:** 10-Nov-17

Sample Interval: 0-11' ft bgs, excavation soil spoils **Time:** -

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LOG OF TEST PIT

Coordinates:	-
Surface Elevation:	-
Reference Elevation:	-
Reference Description:	Southeast of CB-6 (approximately 26 ft.)

Job. No.	**Client:**	Unisys	**Location**
MN0832A.9	**Project:**	Elmira	Elmira, New York

Sampling Location Description: soil spoils		**Location ID:** TP-3.2
FORMER OS2 CONNECTION INVESTIGATION		Sheet 1 of 1
Sample Method: Composite sample		**Sampling Date/Time**
Depth of Test Pit: Approximately 11 ft. bgs		**Start** / **Finish**
Depth to Bedrock (ft. bgs): N/A		
Groundwater Encountered (ft. bgs):		0945 / 1115
Disposition of Test Pit: N-S, NE of CB-6		
Surface Conditions: Grass		
Weather: 25° F, Sunny		

Depth Interval (ft. bgs)	PID (ppm)	VOCs	SVOCs	TAL Metals	PCBs/ Pesticides	TCLP		Description of Material
0-0.8'	0.0							TOPSOIL, ML, light brown, non plastic, dry, silt with roots
0.8'-6'	0.0							GM-GC, yellow brown to dark brown, medium dense, low plastic, silty gravel with coarse sand, localized clay, gravel is fine to coarse (average size of 4-5 cm), yellow brick make up <10% of the material.
6-11'	0.0							GM, dark brown, dry to moist, medium dense, low plastic, silty gravel with coarse sand with brick and clay pipe fragments.

NOTES: No structures were observed during TP-3 excavation.

Logged by:	E. Buelow	**Date:**	11-Nov-17
Sample Interval:	no sample collected	**Time:**	-

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LOG OF TEST PIT

Job. No.	MN0832A.9
Client:	Unisys
Project:	Elmira
Location	Elmira, New York
Sampling Location Description:	soil spoils
	FORMER OS2 CONNECTION INVESTIGATION
Location ID:	TP-4.1
	Sheet 1 of 1
Coordinates:	-
Surface Elevation:	-
Reference Elevation:	-
Reference Description:	Test Pit located perpendicular to the EHS-Norfolk Southern property fence line, NW of CB-15
Sample Method:	Composite sample
Depth of Test Pit:	approximately 11.5 ft. bgs
Depth to Bedrock (ft. bgs)	N/A
Groundwater Encountered (ft. bgs):	N/A
Disposition of Test Pit:	NE-SW
Sampling Date/Time	Start: 0800 / Finish: 1400
Surface Conditions:	top soil was removed during tree removal, dry exposed soil surface
Weather:	

Depth Interval (ft. bgs)	PID (ppm)	VOCs	SVOCs	TAL Metals	PCBs/ Pesticides	TCLP		Description of Material
0-6'	0.0							SM, dark gray-brown, dry, loose, silty sand with gravel, gravel is fine to coarse with coal an slag debris
6-8'	0.0							SM, light yellow-brown, silty sand with coarse gravel, less fill material.
8-11.5'	0.0							SM, light yellow to dark brown, silty sand with gravel and debris (gravel and brick)

NOTES: At approximately 11.5' bgs a solid structure was encountered. This structure is constructed of clay tiles and extends northeast from CB-15. Sample TP04_01_111317 characterizes the soil spoils removed from TP-4.1.

Logged by: E. Buelow **Date:** 11/13/2017 - 11/14/2017

Sample Interval: 0-11.5' ft. bgs, excavation soil spoils **Time:** -

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LOG OF TEST PIT

Coordinates:	-
Surface Elevation:	-
Reference Elevation:	-
Reference Description:	TP-4.2, 37 ft. NW of brick connection to CB-15

Job. No.	**Client:**	Unisys	**Location**
MN0832A.9	**Project:**	Elmira	Elmira, New York

Sampling Location Description: soil spoils		**Location ID:** TP-4.2
FORMER OS2 CONNECTION INVESTIGATION		Sheet 1 of 1
Sample Method: Composite sample		
Depth of Test Pit: approximately 11 ft. bgs		**Sampling Date/Time**
Depth to Bedrock (ft. bgs) N/A		**Start** / **Finish**
Groundwater Encountered (ft. bgs): N/A		1245 / 1530
Disposition of Test Pit: NE to SW		

Surface Conditions:

Weather:

Depth Interval (ft. bgs)	PID (ppm)	VOCs	SVOCs	TAL Metals	PCBs/ Pesticides	TCLP		Description of Material
0-1.2'	0.1							TOPSOIL, ML, light brown, non plastic, medium dense, dry silt.
1.2-6'	0.1							FILL, GM, dark gray to black, medium dense, dry, silty gravel with sand, grains and clast are dominated by fill material (coal, slag, and yellow or red brick).
6-10'	0.0							Light yellow-brown coarse-silty sand with gravel (abundant brick) with lenses of grey-brown plastic clay.
10-11.5'	0.3							SAME AS ABOVE, with staining and strong hydrocarbon odor.

NOTES: Sample TP4_02_111717 was collected from soil spoils characterizing the upper 10 ft. Hydrocarbon odors and dark staining were observed at an approximate depth of eleven (11) ft. bgs. Sample TP4_03_111717 was collected to characterize this area of TP-4.2. No structure was observed.

Logged by: E. Buelow **Date:** 17-Nov-17

Sample Interval: 0-6' ft. bgs, excavation soil spoils **Time:** -

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 1 **Date: 11/8/2017** **Direction: E** **Comments:** Test Pit-2.1 south of CB-15, orange paint marks indicate the edge of the 5 ft culvert.	

Photograph ID: 2 **Date: 11/8/2017** **Direction: N/A** **Comments:** Slag material found in TP-2.1 and in other test pits on site.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 3 **Date: 11/8/2017** **Direction: N/A** **Comments:** Sample fill fragments found in TP-2.1 and other soil spoils on site. On the right side is a yellow fragment of brick common in soils found in the Test pit areas 2, 3, and 4.	

Photograph ID: 4 **Date: 11/8/2017** **Direction: N/A** **Comments:** A fragment of coal collected from TP-2.1 soil spoils.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 5 **Date: 11/9/2017** **Direction: NE** **Comments:** TP-2.2 investigated the northern and southern edges of OS2, the OS2 manhole, and the 5-ft box culvert headed northeast. Orange paint marks identify the edges of the 5-ft box culvert.	
Photograph ID: 6 **Date: 11/8/2017** **Direction: N/A** **Comments:** The OS-2-man hole was uncovered in TP-2.2 approximately 2 ft bgs.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 7 **Date: 11/9/2017** **Direction: N/A** **Comments:** TP-1.1 lithology consisted of topsoil, underlain by dark gray fill dominated gravelly silt, orange mottled silty sand with gravel and underlying yellow-brown sandy silt with an abundance of yellow brick.	

Photograph ID: 8 **Date: 11/10/2017** **Direction: N/A** **Comments:** TP-3.1 reached dimensions of two (2) feet long, ten (10) feet wide, and eleven (11) feet deep. No structures were observed during TP-3.1 excavation.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 9 **Date: 11/10/2017** **Direction: N/A** **Comments:** TP-3.1 and TP-3.2 contained soil of similar color and composition, the soil color alternated between yellow-brown to dark brown and ranged in composition from silty sand with gravel to silty gravel with coarse sand.	
Photograph ID: 10 **Date: 11/11/2017** **Direction: SE** **Comments:** TP-3.2 was located closer to CB-6 (bottom left), at the location where the previous camera survey showed a sewer line take a sharp right turn. No structures were encountered.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 11 **Date: 11/11/2017** **Direction: N/A** **Comments:** Clay pipe fragments discovered in TP-3.2.	

Photograph ID: 12 **Date: 11/13/2017** **Direction: SE** **Comments:** TP 4.1 was excavated north-west of CB-15, perpendicular to the EHS fence line.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 13 **Date: 11/13/2017** **Direction: S** **Comments:** TP-4.1, excavated northwest of CB-15. CB-15's metal ring is visible to the left of TP-4.1.	
Photograph ID: 14 **Date: 11/17/2017** **Direction: E** **Comments:** Test Pit 4.2 was excavated to the southwest of TP-4.1 to identify the location of the brick 36" connection to the 5-ft culvert connecting to OS2.	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 15 **Date: 11/17/2017** **Direction: N/A** **Comments:** Soil spoils collected from approximately 11 ft bgs in TP-4.2. At 11 ft soil smelled like hydrocarbons and was visually stained.	
Photograph ID: 16 **Date: 11/17/2017** **Direction: N/A** **Comments:** Excess soil spoils and plastic disposed of in the onsite Roll-off.	

Appendix F
Camera Survey Video and Photographs

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 1 **Date: 11/16/2017** **Direction: NE** **Comments: CB-15's northeast connection, toward the railroad tracks, was observed to have been plugged with concrete.**	
Photograph ID: 2 **Date: 11/16/2017** **Direction: NW** **Comments: The connection leaving CB-15 headed northwest was constructed of clay tile and appeared to run parallel to the EHS property line.**	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 3 **Date: 11/16/2017** **Direction: SW** **Comments: Looking from CB-15 toward OS-2, two connections were visible. The first connection to the southwest appeared to connect to OS2. A brick arch and 30-inch brick sewer line was observed on the right side of this connection approximately ten (10) feet southwest from CB-15.**	

Photograph ID: 4 **Date: 11/16/2017** **Direction: NW** **Comments: The thirty-six-inch (36-in) sewer line was surveyed from CB-15 to the northwest 398.02. The survey was abandoned because of blockage (sand).**	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 5 **Date: 11/16/2017** **Direction: NW** **Comments: The 36-inch brick sewer line (10) feet southwest of CB-15 at a right angle to the 5-ft box culvert headed northwest. The survey was abandoned at 49.36 ft due to an abundance of sludge.**	

Photograph ID: 6 **Date: 11/16/2017** **Direction: SW** **Comments: The 5-ft box culvert connecting CB-15 to OS2 was surveyed to the southwest from CB-15. The connection to OS2 was confirmed by a visual of the inlet weirs.**	

GEOSYNTEC CONSULTANTS Photographic Record	
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 7 **Date: 11/16/2017** **Direction: NE** **Comments: The 36-inch circular brick pipe heading southeast from CB-6 was re-surveyed. A structural fracture in the line was observed at 10-12 o'clock within eight (8) inches of the joint at a distance of approximately fifty (50) feet.**	
Photograph ID: 8 **Date: 11/16/2017** **Direction: N- NE** **Comments: The survey ended at a linear distance of approximately eighty (80) feet at where approximately seventy-five 75 percent (75 %) of the connection was blocked by fine-grained material, wood, and rock.**	

GEOSYNTEC CONSULTANTS Photographic Record	Geosyntec consultants
Client: Unisys	**Project Number: MN0832A**
Site Name: Former Sperry Remington Site	**Site Location: City of Elmira, Chemung Country, NY**

Photograph ID: 9

Date: 11/16/2017

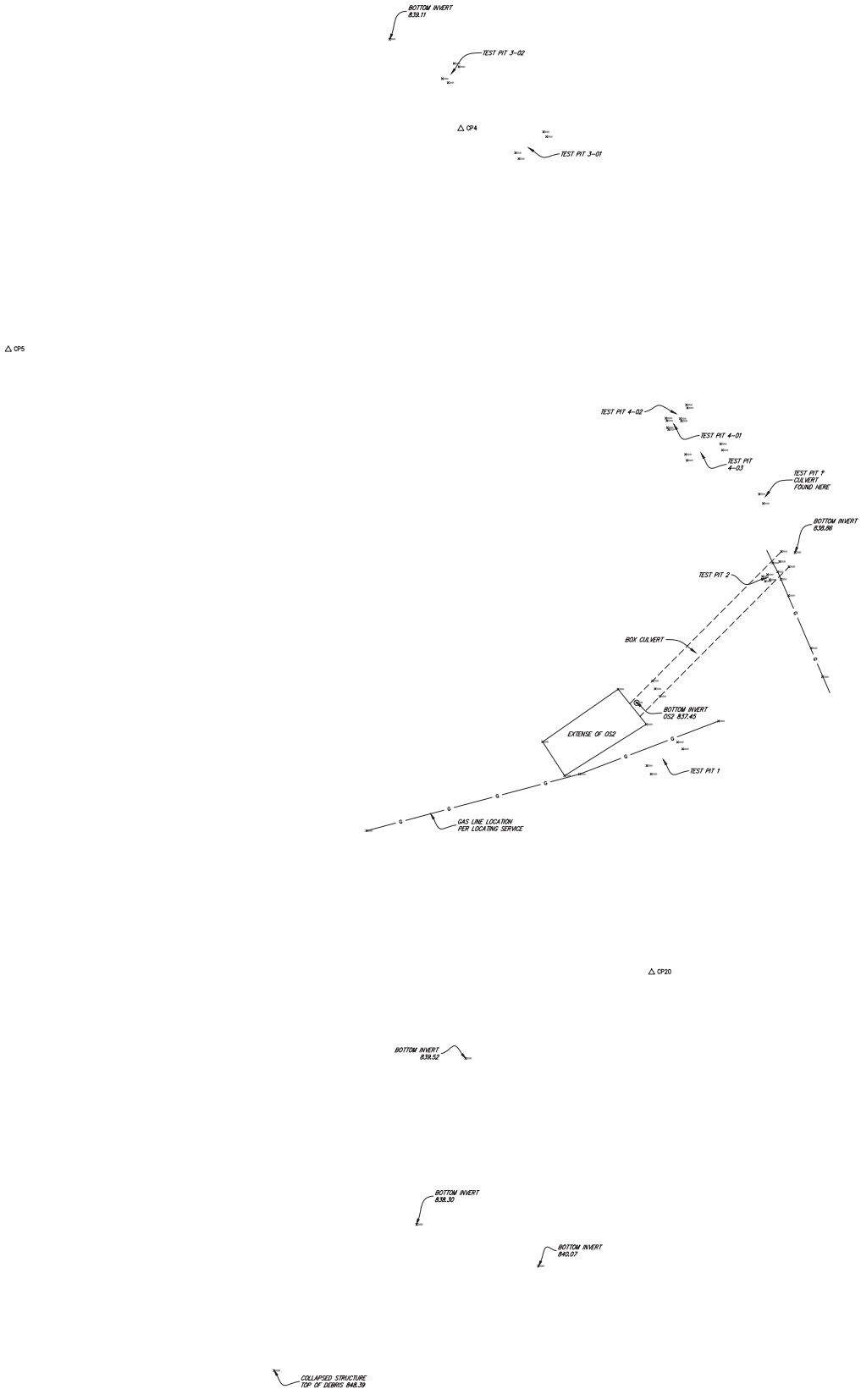
Direction: N

Comments: The connection heading northeast from CB-10 was re-surveyed in attempt to survey the entire line. An opening to another structure was observed at a distance of approximately one hundred fifty-seven (157) feet and the survey was ended. Based on distance and location, that structure is considered to be OS2.

Appendix G
Post-Investigation Survey

TEST PIT EXPLORATION
RESULTS NOVEMBER 2017

HUNT ENGINEERS • ARCHITECTS • SURVEYORS
AIRPORT CORPORATE PARK, 100 HUNT CENTER
HORSEHEADS, NEW YORK 14845
607•358•1000
FAX•358•1800
DATE: 11-29-2017



SCALE: 1" = 20'

0 10 20 40 60

Appendix H
Soil Boring Logs

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BORING OS-SB-03

CLIENT Unisys **PROJECT NAME** Former Sperry Remington

PROJECT NUMBER MN0832 **PROJECT LOCATION** Elmira, New York

DATE STARTED 4/23/18 **COMPLETED** 4/23/18 **NORTHING** 753633.911 ft **EASTING** 762776.722 ft

DRILLER Cascade Technical Services, LLC **GROUND ELEVATION** --- **BORING DIAMETER** 2 in

DRILLING METHOD Direct Push **TOP OF CASING ELEVATION** ---

SAMPLING METHOD 2" x 5' Macrocore **UTILITY CONTRACTOR** ---

RIG TYPE Geoprobe 6620DT **LOGGED BY** E.Buelow **CHECKED BY** A.Ranna

NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				Medium stiff, SILT, dry to moist, light tan, non plastic, Note: gravel cover from November 2017 test pitting.	
		OC-SB-03-SUB-0-1		Medium dense, WELL GRADED SAND WITH SILT, dry to moist, dark reddish brown, abundant foreign material (slag and black shiny material)	3.7
		OC-SB-03-SUB-1-2		Medium dense, SANDY SILT, black shiny material (ash), dry to moist, dark brown, low plasticity, with some concrete	4.1
				Fall back (gravel)	
2.5				Medium dense, SANDY SILT, black shiny material (ash), dry to moist, dark brown, low plasticity, with some concrete	
				Bottom of borehole at 2.0 feet.	
5.0					
7.5					

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BORING OS-SB-04

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
NORTHING 753645.233 ft **EASTING** 762763.199 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		OC-SB-04-SUB-0-1		SILTY SAND WITH GRAVEL, dry to moist, dark brown, non plastic, with roots	2.9
				WELL GRADED GRAVEL WITH SAND, dry, dark brown, coal fragments	
		OC-SB-04-SUB-1-2		Loose, WELL GRADED SAND WITH GRAVEL, fine gravel, with black shiny material (ash), moist, brown to dark brown, gravel is composed of slag	3.4
				No recovery	
2.5		OC-SB-04-SUB-2-4		Loose, WELL GRADED GRAVEL, dry, dark brown to black, composed of foreign material slag and black shiny material	2.5
				WELL GRADED SAND, dry to moist, dark brown to black	3
				No recovery	
		OC-SB-04-SUB-4-6		Loose, WELL GRADED SAND, dry to moist, dark brown, soil is dominated by slag	
5.0				Loose, WELL GRADED GRAVEL, dark brown with orange, with slag, coal, and black shiny material	4 5.0
				No recovery	
		OC-SB-04-SUB-6-8		Loose, WELL GRADED SAND, coarse sand, moist, dark brown, sand composed of slag material	
				Loose, WELL GRADED GRAVEL WITH SAND, fine gravel, with coarse sand, moist to wet, dark yellowish brown	3.9
7.5				Loose, WELL GRADED GRAVEL WITH SAND, coarse sand, wet, dark brown, abundant slag	7.5

Bottom of borehole at 8.0 feet.

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BORING OS-SB-05

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
NORTHING 753626.729 ft **EASTING** 762754.95 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, some coarse gravel, dry to moist, dark brown, low plasticity	
		OS-SB-05-SUB-0-1 (PCBs 5.732 mg/kg)		Medium dense, SILTY SAND, fine to medium sand, with black shiny material (ash), dry to moist, dark brown to black	72.2
				Medium dense, SILT, dry to moist, light tan brown, non plastic	
		OS-SB-05-SUB-1-2 (PCBs 5.341 mg/kg)		Medium dense, SILTY SAND, fine to medium sand, with black shiny material (ash), dry to moist, dark brown to black	5
2.5		OS-SB-05-SUB-2-4 (PCBs 2.551 mg/kg)		Loose, WELL GRADED SAND, fine to coarse sand, dark brown to orangeish black, orange color appears rusted	12
				No recovery	
		OS-SB-05-SUB-4-6 (PCBs 2.274 mg/kg)		Loose, WELL GRADED SAND, fine to coarse sand, dark brown to orangeish black, composed primarily of slag, orange color appears rusted	3.4
5.0				No recovery	
		OS-SB-05-SUB-6-8 (PCBs 1.565 mg/kg)		Loose, WELL GRADED SAND, with black shiny material (ash), dry, dark brown to gray	
				Loose, WELL GRADED SAND WITH GRAVEL, coarse sand, with fine gravel, moist to wet, orangeish brown to dark brown	3.4
7.5				No recovery	

Bottom of borehole at 8.0 feet.

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BORING OS-SB-06

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/24/18 **COMPLETED** 4/24/18
NORTHING 753637.86 ft **EASTING** 762748.129 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, some black shiny material (ash), dry to moist, dark brown, low plasticity, with grass and roots	
		OS-SB-06-SUB-0-1 (PCBs 25.14 mg/kg)		WELL GRADED SAND WITH SILT, little black shiny material (ash), dry to moist, dark brown to black, low plasticity, coal, roots present	1.9
		OS-SB-06-SUB-1-2 (PCBs 24.24 mg/kg)		Loose, WELL GRADED SAND WITH GRAVEL, fine to coarse gravel, moist, dark black, composition is primarily foreign material, slag, coal, and black shiny material	2.4
2.5		OS-SB-06-SUB-2-4 (PCBs 5.954 mg/kg)		Loose, WELL GRADED SAND WITH GRAVEL, fine to coarse sand, with fine gravel, dry to moist, dark brown to black, composition is primarily slag and black shiny material	2.8
				No recovery	
5.0		OS-SB-06-SUB-4-6 (PCBs 2.644 mg/kg)		WELL GRADED GRAVEL WITH SAND, coarse sand, dark brown with yellowish brown, composition is primarily slag and black shiny material	3.4
				No recovery	
7.5		OS-SB-06-SUB-6-8 (PCBs 0.2414 mg/kg)		WELL GRADED GRAVEL WITH SAND, coarse sand, dark brown, composition is primarily slag and black shiny material	2.4
				Bottom of borehole at 8.0 feet.	

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BORING OS-SB-07

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/24/18 **COMPLETED** 4/24/18
NORTHING 753623.519 ft **EASTING** 762740.144 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES Hit refusal at 4 ft and stepped off to the NE

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, dry, dark brown, non plastic, silt and grass roots, some red brick	
		OS-SB-07-SUB-0-1 (PCBs 3.421 mg/kg)		Medium dense, WELL GRADED SAND WITH SILT, fine to coarse sand, with silt, fine to coarse gravel, dry, dark brown, abundant black shiny material, roots present	3.4
		OS-SB-07-SUB-1-2 (PCBs 3.561 mg/kg)		Medium dense, WELL GRADED SAND, fine to medium sand, with fine to coarse gravel, and black shiny material (ash), dry to moist, dark brown	4.9
2.5				Medium dense, SANDY SILT WITH GRAVEL, dry to moist, dark brown with reddish brown, non plastic	2.5
		OS-SB-07-SUB-2-4 (PCBs 1.82 mg/kg)		SILTY GRAVEL WITH SAND, dry to moist, brown to black	8.1
				No recovery	
5.0		OS-SB-07-SUB-4-6 (PCBs 0.5709 mg/kg)		Medium dense, SILTY SAND WITH GRAVEL, fine gravel, some black shiny material (ash), dry to moist, orangeish brown to dark brown	4.4 5.0
				Stiff, SILTY SAND WITH GRAVEL, moist, orangeish brown	
				Loose, SILTY SAND WITH GRAVEL, fine gravel, dry to moist, brown gray, with black shiny material in the matrix	
		OS-SB-07-SUB-6-8 (PCBs 0.2248 mg/kg)		Medium dense, POORLY GRADED SAND WITH GRAVEL, fine to medium sand, with fine to coarse gravel, dry to moist, orangeish brown	4.7
7.5				Loose, WELL GRADED GRAVEL WITH SAND, coarse sand, wet, orangeish brown	7.5

Bottom of borehole at 8.0 feet.

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BORING OS-SB-08

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/24/18 **COMPLETED** 4/24/18
NORTHING 753632.1127 ft **EASTING** 762736.3674 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES Stepped off to the NE because of refusal at OS-SB-07

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		OS-SB-08-SUB-0-1 (PCBs 3.304 mg/kg)		Medium dense, SILT, dry, brown, roots present	
				WELL GRADED SAND WITH SILT AND GRAVEL, dry to moist, brown to black	191.4
		OS-SB-08-SUB-1-2 (PCBs 1.531 mg/kg)		Medium dense, SILTY SAND WITH GRAVEL, fine gravel, dry to moist, black to dark brown, abundant black shiny material	19.5
				Foreign material (coal)	
2.5				Medium dense, POORLY GRADED SAND, with black shiny material (ash), dry to moist, dark brown	2.5
		OS-SB-08-SUB-2-4 (PCBs 0.7022 mg/kg)		Dense, SANDY SILT WITH GRAVEL, coarse gravel, moist, dark orange, gravel is composed of concrete	6.8
				No recovery	
5.0		OS-SB-08-SUB-4-6 (PCBs 0.0856 mg/kg)		Loose, WELL GRADED GRAVEL WITH SILT AND SAND, dry, orangeish gray	14.6 5.0
				No recovery	
		OS-SB-08-SUB-6-8 (PCBs 0.07165 mg/kg)		Dense, WELL GRADED GRAVEL WITH SILT AND SAND, fine to coarse grained, dry to moist, orangeish brown	7.5
7.5				Stiff, SANDY LEAN CLAY WITH GRAVEL, clay, with fine to coarse sand, and fine to coarse gravel, moist to wet, dark brown, medium plasticity	7.5

Bottom of borehole at 8.0 feet.

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BORING OS-SB-09

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
NORTHING 753651.7012 ft **EASTING** 762799.8013 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES Refusal at 4 ft (3 times) stepped off to the N-NE

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				Loose, SILTY GRAVEL, fine to coarse gravel, dry to moist, dark gray to brown	
		OS-SUB-09-SUB-0-1		Loose, WELL GRADED SAND WITH SILT, and black shiny material (ash), dry, dark brown to black, (black material is interpreted to be coal), roots present	5.4
		OS-SUB-09-SUB-1-2		Loose, WELL GRADED SAND WITH SILT, few black shiny material (ash), dry, dark gray brown, some slag and red brick	5.2
2.5				Loose, WELL GRADED SAND, dry, dark gray brown, Composition appears to primarily slag with some black shiny material	2.5
		OS-SUB-09-SUB-2-4		Loose, WELL GRADED SAND WITH SILT, dry, brown, and crushed brick	4.1
				Loose, WELL GRADED SAND WITH GRAVEL, fine to coarse sand, with fine to coarse gravel, and black shiny material (ash), dry to moist, dark brown	
				No recovery	

Bottom of borehole at 4.0 feet.

5.0

7.5

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BORING OS-SB-10

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
NORTHING 753660.715 ft **EASTING** 762811.331 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				Stiff, SILT, moist, dark brown, low plasticity	
				Loose, WELL GRADED GRAVEL, dry, gray	
		OS-SB-10-SUB-0-1 (PCBs 87.31 mg/kg)		Loose, WELL GRADED SAND WITH SILT, dry, dark brown, non plastic, few coal , slag, and black shiny material, orange discoloration in soil (appears to be a weathering color)	111.2
				With red brick	
		OS-SB-10-SUB-1-2 (PCBs 5.524 mg/kg)			13.1
				No recovery	
2.5				Loose, WELL GRADED SAND WITH SILT, dry to moist, dark brown, with red brick, wood, and coal, increasing moisture with depth	2.5
		OS-SB-10-SUB-2-4 (PCBs 3.914 mg/kg)			5.2
				No recovery	
				Loose, WELL GRADED SAND WITH SILT, dry to moist, dark gray brown, with black shiny material and red and yellow brick	
5.0		OS-SB-10-SUB-4-6 (PCBs 5.411 mg/kg)			4.1 5.0
				No recovery	
				Stiff, SILTY SAND WITH GRAVEL, coarse gravel, dry to moist, tan gray, with red brick and concrete	
		OS-SB-10-SUB-6-8 (PCBs 0.2442 mg/kg)			2.1
7.5				No recovery	7.5
				Loose, SILTY SAND, dry, dark brown to gray, with yellow and red brick (hit refusal at 8ft, again hit refusal 8 ft, and hit refusal a second time at 9 ft)	
		OS-SB-10-SUB-8-10 (PCBs 20.11 mg/kg)		Bottom of borehole at 9.0 feet.	5.7

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BORING OS-SB-11

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
NORTHING 753665.8552 ft **EASTING** 762816.0409 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0		OS-SB-11-SUB-0-1 (PCBs 65.19 mg/kg)		WELL GRADED SAND, with black shiny material (ash), some, dry to moist, dark gray to black, some ashy material, fine grained material is slag material	10.5
		OS-SB-11-SUB-1-2 (PCBs 24.21 mg/kg)			5.2
2.5		OS-SB-11-SUB-2-4 (PCBs 4.221 mg/kg)		Dense, SILTY SAND WITH GRAVEL, some fine gravel, moist, yellow brown, low plasticity	
				Loose, WELL GRADED SAND WITH GRAVEL, fine to coarse sand, with gravel, dry to moist, dark brown, some red brick, slag material, black shiny material	1.9
				No recovery	
				Loose, SILTY SAND, dry to moist, dark brown, small brick fragments and wood	
5.0		OS-SB-11-SUB-4-6 (PCBs 2.961 mg/kg)		Dense, SILTY SAND WITH GRAVEL, fine to medium sand, with fine to coarse gravel, dry to moist, tan brown, low plasticity	3.3
				Loose, WELL GRADED SAND WITH SILT, moist, dark brown, abundant fill material (slag and brick fragments)	
				Crushed yellow brick	
		OS-SB-11-SUB-6-8 (PCBs 1.067 mg/kg)		Stiff, SILTY SAND WITH GRAVEL, coarse gravel, moist, dark brown, low plasticity	2
7.5				No recovery	
				POORLY GRADED SAND, dry to moist, dark brown, with crushed red and yellow brick	
				Stiff, SANDY SILT WITH GRAVEL, dry to moist, tan to light brown, low plasticity	
		OS-SB-11-SUB-8-10 (PCBs 0.9208 mg/kg)			1.6

(Continued Next Page)

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BORING OS-SB-11

CLIENT Unisys **PROJECT NAME** Former Sperry Remington

PROJECT NUMBER MN0832 **PROJECT LOCATION** Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0		OS-SB-11-SUB-10-12 (PCBs 0.1695 mg/kg)		Loose, WELL GRADED GRAVEL, coarse gravel, wet, brown, (wet gravel is interpreted to be the water table)	
				No recovery	1.2
				Bottom of borehole at 12.0 feet.	
12.5					
15.0					
17.5					
20.0					

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BORING OS-SB-12

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
NORTHING 753672.491 ft **EASTING** 762828.252 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES Water depth: approximately 12 ft

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				SILT, dry to moist, dark brown, low plasticity, with roots	
		OS-SB-12-SUB-0-1 (PCBs 196.7 mg/kg)		Loose, WELL GRADED GRAVEL WITH SILT, fine gravel, dry to moist, tan	28.9
				Medium dense, SANDY SILT, few gravel, with black shiny material (ash), dry to moist, dark brown, non plastic	
		OS-SB-12-SUB-1-2 (PCBs 109.4 mg/kg)		Loose, POORLY GRADED SAND WITH GRAVEL, some black shiny material (ash), dry to moist, dark brown to dark gray	25
				Medium dense, SILTY SAND WITH GRAVEL, fine gravel, moist, dark brown, low plasticity Becomes black	
2.5				Stiff, CLAYEY GRAVEL WITH SAND, fine gravel, with clay, and sand, dry to moist, tannish brown, low plasticity	2.5
		OS-SB-12-SUB-2-4 (PCBs 20.26 mg/kg)		Loose, WELL GRADED SAND WITH GRAVEL, with black shiny material (ash), dry to moist, brown to dark brown, some crushed red brick, soil is dominated by slag	22.1
				No recovery (Hit refusal at 5 ft and stepped over)	
				Loose, WELL GRADED SAND WITH GRAVEL, some construction debris, with black shiny material (ash), moist, dark brown	
5.0		OS-SB-12-SUB-4-6		Dense, SANDY SILT WITH GRAVEL, few gravel, dry to moist, dark brown, non plastic, with orange brick	8.7 5.0
				No recovery	
				Loose, SILTY SAND, dry to moist, dark brown, with crushed brick	
				Loose, WELL GRADED GRAVEL WITH SILT, some black shiny material (ash), brown with gray	
		OS-SB-12-SUB-6-8		SANDY SILT WITH GRAVEL, fine to coarse sand, dry to moist, orangeish tan	34.2
7.5				Medium stiff, SILT WITH SAND, fine sand, with silt, and fine to coarse gravel, dry to moist, tan gray, low plasticity	7.5
				Stiff, SANDY SILT WITH GRAVEL, fine sand, dry to moist, tan brown, low plasticity	
		OS-SB-12-SUB-8-10			38.7
				No recovery	

(Continued Next Page)

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BORING OS-SB-12

CLIENT Unisys **PROJECT NAME** Former Sperry Remington

PROJECT NUMBER MN0832 **PROJECT LOCATION** Elmira, New York

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
10.0		OS-SB-12-SUB-10-12		SILTY SAND WITH GRAVEL, fine to coarse gravel, and black shiny material (ash), dry to moist, dark brown	4.2
				Dense, SILTY SAND WITH GRAVEL, fine to coarse gravel, tan brown, low plasticity	
				CLAYEY GRAVEL, medium to coarse gravel, moist to wet, dark brown, medium plasticity	
				No recovery (Wet soil is interpreted to be the water table at approximately 12 ft)	
				Bottom of borehole at 12.0 feet.	
12.5					
15.0					
17.5					
20.0					

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BORING OS-SB-13

CLIENT Unisys
PROJECT NAME Former Sperry Remington
PROJECT NUMBER MN0832
PROJECT LOCATION Elmira, New York
DATE STARTED 4/23/18 **COMPLETED** 4/23/18
NORTHING 753677.426 ft **EASTING** 762848.4548 ft
DRILLER Cascade Technical Services, LLC
GROUND ELEVATION --- **BORING DIAMETER** 2 in
DRILLING METHOD Direct Push
TOP OF CASING ELEVATION ---
SAMPLING METHOD 2" x 5' Macrocore
UTILITY CONTRACTOR ---
RIG TYPE Geoprobe 6620DT
LOGGED BY E.Buelow **CHECKED BY** A.Ranna
NOTES Refusal at 5', hit the Site Culvert

DEPTH (ft)	RUN RECOVERY	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0.0				Medium dense, SANDY SILT, moist, dark brown, with roots	
		OS-SB-13-SUB-0-1'		Loose, SILTY SAND, little black shiny material (ash), moist, dark brown	35.9
		OS-SB-13-SUB-1-2'		Loose, WELL GRADED SAND WITH SILT AND GRAVEL, fine to coarse sand, with silt, and fine to coarse gravel, dry to moist, dark brown, (slag material)	16.6
				No recovery	
2.5		OS-SB-13-SUB-2-4'		Loose, WELL GRADED SAND WITH SILT AND GRAVEL, with black shiny material (ash), orangeish brown to dark brown, crushed yellow and orange brick	6.1
		OS-SB-13-SUB-4-6'		Loose, WELL GRADED SAND WITH SILT AND GRAVEL, with black shiny material (ash), moist, dark brown	
				Red brick	
5.0				No sample (Hit refusal at 5 ft, interpreted to be the top of the Site Culvert insufficient space to move away from the culvert)	7.9
				Refusal at 5.0 feet. Bottom of borehole at 5.0 feet.	
7.5					

Appendix I
Construction Drawings

Appendix J
Approvals from Property Owners

WLADIS LAW FIRM
THE NEW STANDARD IN CLIENT SERVICE

Kevin C. Murphy
kmurphy@wladislawfirm.com

June 6, 2019

Via E-Mail and U.S. Mail
Michael Murphy
Beveridge & Diamond, P.C.
477 Madison Avenue, 15th Floor
New York, New York 10022

Re: Revised Interim Remedial Measures Work Plan
Former Sperry Remington Site #808043, Elmira, Chemung County

Dear Mr. Murphy,

As you know, I represent Southern Tier Commerce Center (Southern Tier), the owner of the parcel on which most, if not all, of the work proposed in the referenced Interim Remedial Measures work will be performed. Southern Tier has reviewed the existing and prior drafts of the subject work plan and communications between Unisys and NYSDEC. I write in response to the first two General Comments set out in the NYSDEC comment letter dated January 30, 2019.

Regarding General Comment #1, Southern Tier has no objection to and will permit Unisys to implement the drainage modifications proposed in the subject Work Plan.

Regarding General Comment # 2, Southern Tier understands that, as set forth in the Work Plan, Unisys, through cleaning and possibly re-cleaning, will undertake reasonable efforts to meet TSCA thresholds (porous and non-porous) for any OS2 structural components left in place. With that understanding, Southern Tier is familiar with and has no standing objection to the potential need for post-remediation institutional and/or engineering controls in accordance with 40 CFR 761. That being said, Southern Tier cannot commit or agree today to institutional or engineering controls, the specific details of which have not yet been determined. If, following the completion of all necessary and appropriate remedial measures, institutional or engineering controls are determined to be necessary and appropriate, Southern Tier will review the available data and information, the proposed controls, and thereafter, make a final decision regarding the then-proposed controls.

Please contact me if any further clarification is required at this time.

Very truly yours,
THE WLADIS LAW FIRM, P.C.

Kevin C. Murphy

KCM/mms

Elmira City School District

Hillary J. Austin
Superintendent of Schools
Administration Building
951 Hoffman Street
Elmira, NY 14905

Phone: (607) 735-3010
Fax: (607) 735-3009
haustin@elmiracityschools.com

April 2, 2019

Aron Krasnopoler
Beech and Bonaparte Engineering, P.C.
10211 Wincopin Circle, 4th Floor
Columbia, MD 21044

Dear Mr. Krasnopoler,

The proposed EHS Stormwater modifications-#808043 IRM presented in your March 29, 2019 email and accompanying attachment labeled MN0832A-008 Site Plan- EHS Area are acceptable; however, if the area to be regraded is mulch/soil/grass, the soils used for fill in this area must meet the Unrestricted Use standards presented in Appendix 5 of DER-10, not the Restricted Residential standards referenced in the note on the drawing.

Sincerely,

Hillary J. Austin
Superintendent of Schools

HJA:km

Appendix K
ECSD SPDES Permit

Appendix L
Community Air Monitoring Plan

Appendix 1A
New York State Department of Health
Generic Community Air Monitoring Plan

Overview

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 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.

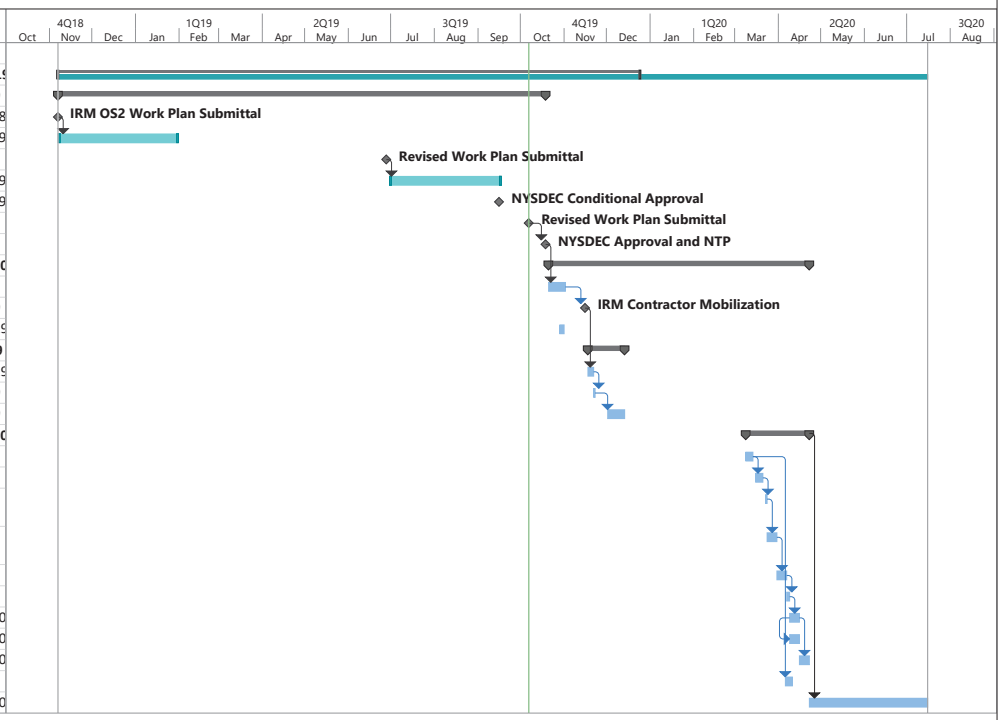
3. All readings must be recorded and be available for State (DEC and NYSDOH) and County Health personnel to review.

December 2009

Appendix M
Project Schedule

Former Sperry Remington Site
NYSDEC Site No. 808043

ID	Task Name	Duration	Start	Finish
1				
2	**Former Sperry Remington Site OS2 IRM**	**293 days**	**Wed 11/7/18**	**Tue 12/24/19**
3	OS2 IRM Work Plan	248 days	Wed 11/7/18	Fri 10/18/19
4	IRM OS2 Work Plan Submittal	0 days	Wed 11/7/18	Wed 11/7/18
5	NYSDEC Review	60 days	Thu 11/8/18	Wed 1/30/19
6	Revised Work Plan Submittal	0 days	Fri 6/28/19	Fri 6/28/19
7	NYSDEC Review	56 days	Mon 7/1/19	Mon 9/16/19
8	NYSDEC Conditional Approval	0 days	Mon 9/16/19	Mon 9/16/19
9	Revised Work Plan Submittal	0 days	Mon 10/7/19	Mon 10/7/19
10	NYSDEC Approval and NTP	0 days	Fri 10/18/19	Fri 10/18/19
11	**OS2 IRM Construction**	**131 days**	**Mon 10/21/19**	**Wed 4/22/20**
12	IRM Contractor Procurement	10 days	Mon 10/21/19	Fri 11/1/19
13	IRM Contractor Mobilization	0 days	Fri 11/15/19	Fri 11/15/19
14	Natural Gas Service Relocation	3 days	Tue 10/29/19	Thu 10/31/19
15	**Phase I Construction**	**18 days**	**Mon 11/18/19**	**Fri 12/13/19**
16	Upstream Sewer Line Clean Out	4 days	Mon 11/18/19	Thu 11/21/19
17	Sewer Clean Out Verfication Camera Surve	1 day	Fri 11/22/19	Fri 11/22/19
18	Storm Sewer Modfication (STCC)	2 wks	Mon 12/2/19	Fri 12/13/19
19	**Phase II Construction**	**33 days**	**Mon 3/9/20**	**Wed 4/22/20**
20	Mobilization/Temporary Facilities	1 wk	Mon 3/9/20	Fri 3/13/20
21	Shallow Soil Excavation	1 wk	Mon 3/16/20	Fri 3/20/20
22	Shallow Soil Documentation Samplilng	1 day	Mon 3/23/20	Mon 3/23/20
23	Removal of PCB-Impacted Material from OS2/Abandon 18" Line from CB10 to OS2	1 wk	Tue 3/24/20	Mon 3/30/20
24	Removal of OS2	1 wk	Tue 3/31/20	Mon 4/6/20
25	Documentation Sampling	2 days	Tue 4/7/20	Wed 4/8/20
26	Backfilling	1 wk	Thu 4/9/20	Wed 4/15/20
27	Off-Site Disposal	1 wk	Thu 4/9/20	Wed 4/15/20
28	Site Restoration	1 wk	Thu 4/16/20	Wed 4/22/20
29	Storm Sewer Modfication (EHS)	1 wk	Mon 4/6/20	Fri 4/10/20
30	OS2 IRM Construction Completion Report	3 mons	Thu 4/23/20	Wed 7/15/20



Project Schedule
Former Sperry Remington Site
(Proposed Schedule Based on Approvals)

Task	Inactive Task	Manual Summary Rollup	External Milestone		
Split	Inactive Milestone	Manual Summary	Deadline		
Milestone	Inactive Summary	Start-only	Progress		
Summary	Manual Task	Finish-only			
Project Summary	Duration-only	External Tasks			