

# NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

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## Via E-mail

May 28, 2020

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

**Re: Final (100%) Interim Remedial Measure #4 Work Plan  
Former Sperry Remington – North Portion Site #c808022  
Elmira, Chemung County**

Dear Mr. Krueger:

The New York State Department of Environmental Conservation (NYSDEC), in consultation with New York State Department of Health, has completed its review of the document entitled “Final (100%) Interim Remedial Measure #4 Work Plan”, dated April 30, 2020 last revised May 19, 2020 for the Former Sperry Remington – North Portion Site #808022 and approve as modified:

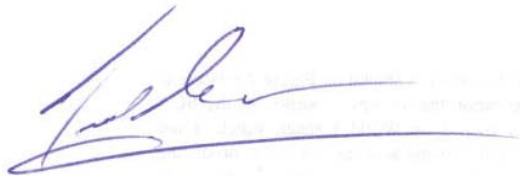
1. Time-integrated PCB air monitoring will occur continuously at upwind and downwind locations, in addition to the roof location, during all soil excavations and/or soil handling where the PCB concentrations above TSCA levels (50ppm).
2. The community air monitoring plan will have an action level for the time-integrated PCB analysis of 110 nanograms per cubic meter. NYSDOH and NYSDEC (Agency) will be notified if PCB concentrations exceed this action level.
3. Any changes in the air monitoring program must be approved by the Agency prior to implementation.
4. Sheet 19 of 25 – Replace the ‘Tarp’ liner at the TSCA accumulation area with a poly liner as proposed for installation under the TSCA haul road.
5. Sheet 20 & 24 of 25 – Include sumps at low spots in the TSCA haul road liner placement where runoff water can be collected for off-site disposal.

6. Hours of operation impacting the public and neighboring properties is limited to 7 AM to 5 PM Monday through Friday and truck traffic limited to 35 trucks per day. Emergency, low impact / quiet prep and cleanup work may be conducted outside those hours without prior Agency authorization and community notification.
7. COVID-19 response plan updates and schedules are received prior to the commencement of work.

Please attach this letter to the front of the work plan for inclusion in the document repository.

If you have questions, feel free to contact me at (585) 226-5480 or by email.

Sincerely,



Timothy Schneider, P.E.  
Professional Engineer 1

P. Brookner / A. Krasnopoler / E. Tollefsrud  
M. Cruden / D. Pratt  
S. Bogardus / J. Deming  
H. Austin / P. Sylvestri / J. Magliocca

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**FINAL (100%)  
INTERIM REMEDIAL MEASURE #4  
WORK PLAN**

**FORMER SPERRY REMINGTON SITE – NORTH PORTION  
777 SOUTH MAIN STREET  
CITY OF ELMIRA, CHEMUNG COUNTY, NY  
NYSDEC PROJECT C808022**

*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*  
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Document Number MD20059

30 April 2020; Revised 19 May 2020

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## LIST OF ACRONYMS

<b>Acronym</b>	<b>Definition</b>
µg/L	micrograms per liter
µg/m <sup>3</sup>	micrograms per cubic meter
BCA	Brownfield Cleanup Agreement
BCP	Brownfields Cleanup Program
bgs	below ground surface
CAMP	Community Air Monitoring Plan
COPC	Contaminant of Potential Concern
CPP	Community Participation Plan
CQA	Construction Quality Assurance
Cu YD	Cubic Yard
E&S	Erosion and Sedimentation
EC(s)	Engineering Controls
ECSD	Elmira City School District
EHS	Elmira High School
ERC	Environmental Recovery Corporation
EWB	Elmira Water Board
FFC	Football Field Complex
ft	Feet
HASP	Health & Safety Plan
IC (s)	Institutional Controls
IRM	Interim Remedial Measure
LOD	Limit of Disturbance
mg/kg	milligrams per kilogram
mph	miles per hour
MSA	Material Staging Area
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health



<b>Acronym</b>	<b>Definition</b>
NYSDOT	New York State Department of Transportation
OSHA	Occupational safety and Health Administration
PCB	Polychlorinated Biphenyl
PDI	Pre-design Investigation
PFAS	Perfluoroalkyl Substances
PID	Photo Ionization Detector
PM-10	Particulate Matter that are less than ten (10) micrometers in size
PUF	Poly-Urethane Foam
QAPP	Quality Assurance Project Plan
QEP	Qualified Environmental Professional
RECON	Remedial Construction Services, L.P
RI	Remedial Investigation
RI	Remedial Investigation
SC	Soil Characterization
SCFM	Standard Cubic Feet per Minute
SCO	Soil Cleanup Objective
SDCMP	Soil/Dust Control and Monitoring Plan
SMP	Site Management Plan
SOE	Support of Excavation
SOP(s)	Site Operations Plans
STCC	Southern Tier Commerce Center
SVOC(s)	Semi-volatile organic compounds
SWPPP	Storm-Water Pollution Prevention Plan
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
USEPA	United States Environmental Protection Agency
VOC(s)	Volatile organic compounds

### Certification

*I Aron Krasnopoler certify that I am currently a NYS registered professional engineer as defined in 6 NYCRR Part 375 and that this Final (100%) Interim Remedial Measures #4 Work Plan for the Former Sperry Remington Site – North Portion dated 19 May 2020 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).*



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Aron Krasnopoler, P.E.



5/19/2020

## 1. INTRODUCTION

### 1.1 Background

On behalf of Unisys Corporation (Unisys), Geosyntec Consultants, Inc. and its New York affiliate B&B Engineers & Geologists of New York, P.C. (collectively Geosyntec) are submitting this Interim Remedial Measure #4 (IRM #4) Work Plan for the Former Sperry Remington Site – North Portion (Site #c808022) (Site) in Elmira, New York. On 26 April 2016, Unisys applied to enter the Site into the New York State Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program (BCP) with the consent of Elmira City School District (ECSD). NYSDEC gave an initial determination that the BCP application was complete on 10 June 2016 and received public comments until 22 July 2016. The Brownfields Cleanup Agreement (BCA) for the Site was executed on 23 March 2017. Unisys is proposing an IRM at the Site in accordance with the BCA.

Prior to the BCA, an Order on Consent and Administrative Settlement (Order) with the NYSDEC for the Site approved by NYSDEC on 7 July 2014. Unisys conducted Site Characterization (SC) activities at the Site in accordance with the Order, the Site Characterization Work Plan (SC Work Plan) dated 29 July 2014 (revised 27 October 2014) and subsequent addenda dated 22 May 2016, 8 January 2016, 9 August 2016, 3 February 2017, and 16 March 2017.

The Site is located at the Elmira High School (EHS) property (formerly known as Southside High School), 777 South Main Street in Elmira, Chemung County, New York (see **Figure 1**). The EHS property is approximately thirty-four (34) acres and as shown on **Figure 2** is bounded by South Main Street to the west, the Southern Tier Commerce Center (STCC) to the south, the Consolidated Rail Corp. property to the east and vacant land to the north. Miller Pond is located approximately one thousand (1,000) feet to the east. EHS property has been the subject of multiple environmental investigations between 1998 and 2019. In 2003, New York State Department of Health (NYSDOH) completed a Health Consultation for Southside High School (now EHS) that recommended that ECSD develop a written soil management plan to “minimize potential public exposures to contaminated subsurface materials...”

In June 2009, ECSD prepared an Environmental Management Plan (EMP) in response to a request from the State Education Department (SED) to formalize environmental management operations and practices at EHS. NYSDEC and NYSDOH provided technical assistance to SED in development and review of the EMP. The intent of the EMP is to advise construction personnel and the general community regarding the potential for exposure to Compounds of Potential Concern (COPC) that may be present in soil, groundwater and soil vapor on EHS property. In April 2019, Unisys submitted a draft interim Site Management Plan (SMP) for agency review to address institutional controls and engineering controls that have been implemented as interim measures until a Site remedy has been selected. NYSDEC approved the interim SMP on 20 December 2019. The interim SMP incorporates and replaces the EHS EMP.

## **1.2 Previous Site Characterization and Remedial Activities**

In June 2013, NYSDEC identified potential areas of concern (PAOCs) at the EHS property based on information related to historical use of the EHS property and previous environmental investigations results. The SC Work Plan dated July 2014 and revised October 2014 was submitted to NYSDEC to collect data to document environmental conditions at the Site as it relates to PAOCs, and historical information. Implementation of the SC Work Plan was expedited in order to complete most field activities and obtain preliminary results prior to start of classes at EHS on 3 September 2014. Verification of previous analytical results in surface (zero to two [0-2] inches below ground surface [bgs]<sup>1</sup>) and shallow sub-surface (0.17 to two [2] feet bgs) soils were conducted in July 2014 in order to confirm that COPCs did not pose an unacceptable level of risk to human health and the environment prior to the start of classes. NYSDEC and NYSDOH provided oversight and review during field activities. Preliminary, un-validated analytical results for polychlorinated biphenyls (PCBs) and semi-volatile organic compounds (SVOCs) in surface soils were submitted to NYSDEC and NYSDOH on 31 July 2014. Additional surface, shallow subsurface and subsurface (greater than 2 feet bgs) soil investigations, groundwater investigation and former combined storm sewer inspections for Site Characterization were conducted at the Site between August and October 2014. The SC Data Report was submitted to NYSDEC on 6 February 2015 following data validation completion on 10 November 2014.

The SC Data Report identified PCBs, polycyclic aromatic hydrocarbons (PAHs), and metals as COPCs at the Site based on comparison to Restricted Residential Soil Cleanup Objectives<sup>2</sup> (SCOs). A meeting to discuss analytical results for PCBs in soils was held on 17 March 2015 among ECSD, NYSDOH, NYSDEC and Unisys. NYSDOH and NYSDEC presented results of an evaluation that included PCB analytical data from samples collected from zero to two (0-2) feet bgs between 2000 and 2014 and vegetative cover conditions with respect to preventing potential exposures to shallow soils. According to NYSDOH, 2014 surface soil data were consistent with surface soil data previously collected by NYSDEC/NYSDOH and do not alter conclusions or recommendations presented in the 2003 Health Consultation prepared by NYSDOH. The 2003 Health Consultation also stated that well-established and maintained grass cover minimizes human exposures to soil by limiting direct contact with the soil. As a precaution, a temporary short-term response action (STRA) was undertaken by Unisys to evaluate cover systems in areas where PCBs exceed one (1) milligram per kilogram (mg/kg) in surface or shallow subsurface soils at the EHS and additional protective measures were implemented to prevent potential exposure to shallow soils in unpaved areas. A report on STRA activities was submitted to NYSDEC on 15 May 2015.

The SC Data report included recommendations for additional delineation of PCBs in soils from select areas of the Site. SC Work Plan Addendum #1 was submitted to NYSDEC on 22 May 2015 with responses to NYSDEC comments on 2 July 2015. Field activities for SC Work Plan Addendum #1 were conducted between 13 July and 7 August 2015. Subsurface soil borings were

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<sup>1</sup> Below ground surface is interpreted as below vegetative cover.

<sup>2</sup> 6 NYCRR Subpart 375

installed to delineate the horizontal and vertical extent of PCBs in subsurface soils. A summary of field activities and analytical results for SC Work Plan Addendum #1 were presented in SC Work Plan Addendum #2 dated 8 January 2016 along with plans for additional delineation of PCBs in soils and evaluation of potential PCB migration in groundwater. Field activities for SC Work Plan Addendum #2 were conducted between 29 February and 24 March 2016. A summary of field activities and analytical results for SC Work Plan Addendum #2 were provided in SC Work Plan #3 dated 9 August 2016 along with plans for additional delineation of COPCs in soils and evaluation of potential PCB migration in groundwater. Other SC activities addressed 2 June 2015 comments from NYSDEC on the SC Data Report requesting evaluation of intermediate groundwater east of the gymnasium, characterization of volatile organic compounds (VOCs) in groundwater in the vicinity of the F-Wing and catch basin inspection and sampling. Field activities for SC Work Plan Addendum #3 were conducted between 22 August and 28 September 2016. A summary of field activities and analytical results for SC Work Plan Addendum #3 were in SC Work Plan #4 dated 3 February 2017 along with plans for additional delineation of PCBs in soils. Field activities for SC Work Plan Addendum #4 were conducted between 6 and 16 February 2017. Review of data received indicated the need for additional data collection to complete a design of the IRM#1 that was conducted at the Site in summer 2017. Plans for additional delineation of PCBs in soils were submitted as SC Work Plan Addendum #5 on 16 March 2017. Field activities for SC Work Plan Addendum #5 were conducted between 20 and 24 March 2017 and with modifications between 10 and 13 April 2017 and 15 and 23 May 2017. A SC Report was submitted to NYSDEC on 17 May 2017 that described SC and remedial activities conducted to date. NYSDEC provided comments on the SC Report in August 2018 and a revised SC Report was submitted to NYSDEC on 28 March 2019.

IRM #1 was conducted between 19 June and 8 September 2017 for removal of PCB-impacted soils in the vicinity of the EHS Tennis Courts (North Excavation) and Main Parking Lot (South Excavation) in accordance with the IRM (#1) Work Plan dated 11 July 2017 and approved by NYSDEC on 10 August 2017. IRM construction in the South Excavation was limited to excavation to four (4) feet below ground surface (ft bgs) in the main parking lot and to two (2) ft bgs in areas to the east due to the schedule for ECSD capital improvements in 2017. A soil cover system consisting of two (2) feet of imported fill approved by NYSDEC for restricted residential use was installed (**Figure 3**). Excavated soils approved by NYSDEC for reuse were used for backfill below the soil cover system. Amendment #1 to IRM #1 Work Plan dated 11 August 2017 presented plans for surface soil removal in the southwest portion of the football field and high jump pit area for the purpose of minimizing potential exposure to PCBs in those areas. Activities associated with the football field and high jump pit area were completed in September 2017. IRM #1 activities are documented in a Construction Completion Report (CCR) submitted to NYSDEC on 30 April 2018, and revised on 28 February 2019.

IRM #2 was conducted between 22 June and 25 October 2018 for removal of PCB-impacted soils in the vicinity of the EHS Rear Parking Lot in accordance with the Revised Final IRM #2 Work Plan dated 13 July 2018 and approved by NYSDEC on 25 July 2018 and incorporated Amendment

#1 dated 3 July 2018, Amendment #2 dated 17 July 2018, and Amendment #3 dated 18 January 2019. IRM #2 activities are documented in a CCR submitted to NYSDEC on 15 March 2019.

IRM #3 was conducted between 28 June and 14 October 2019 to continue soil removal in the IRM #1 South Excavation in accordance with the Revised Final 2019 IRM Work Plan dated 18 June 2019 and incorporated Amendment #1 dated 9 July 2019 and Amendment #2 dated 16 August 2019. NYSDEC gave conditional approval of the 2019 IRM Work Plan on 13 June 2019 and for construction drawings and plans on 17 June 2019. IRM #3 activities are documented in a CCR submitted to NYSDEC on 14 February 2020.

### 1.3 Purpose

The purpose of IRM #4 is to conduct soil removal in the IRM #1 South Excavation adjacent to the EHS building in anticipation of remedial activities and capital improvement in the EHS Football Field Complex (FFC) anticipated in the beginning of Fall 2020 and Spring 2021, respectively. Unisys has identified Site soils with concentrations of total PCBs and metals that may be considered hazardous waste. A non-emergency IRM for soil removal is applicable to mitigate environmental or human exposures prior to capital improvement construction. Soil removal will be conducted with following cleanup goals:

- COPC concentrations in soils greater than or equal to Restricted Residential SCOs at depths less than two (2) feet bgs;
- Total PCB concentrations greater than or equal to ten (10) mg/kg at depths between two (2) feet bgs and fourteen (14) ft bgs
- Total PCB concentrations greater than or equal to 3.2 mg/kg within the vadose zone and below the water table.<sup>3</sup>, where PCB have been detected above groundwater standards i.e. below fourteen (14) ft bgs;
- Metal<sup>4</sup> concentrations greater than twenty (20) times the equivalent toxicity characteristic of hazardous waste with exception of lead; and
- Lead concentrations greater than 200 times the equivalent lead toxicity characteristic, i.e. 1,000 mg/kg<sup>5</sup>.

This IRM Work Plan presents a scope of work that includes excavation, soil management, backfilling, off-Site transport and disposal and site restoration. The IRM Work Plan also addresses

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<sup>3</sup> Depth to water was measured at 16.1 ft bgs at monitoring well MW-15S in September 2016 with a groundwater elevation of 839.62 feet above mean sea level (ft msl).

<sup>4</sup> Resource Recovery and Conservation Act (RCRA) list of eight (8) metals (RCRA 8 metals) for which toxicity characteristics are based on toxicity characteristic leach procedure (TCLP) results: arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver.

<sup>5</sup> Based on NYSDEC experience, lead concentrations of 1,000 mg/kg or greater are more indicative of soils having toxicity characteristics of hazardous waste.

temporary construction facilities, controls, health and safety, and confirmation sampling in accordance with NYSDEC *Technical Guidance for Site Investigation and Remediation* (DER-10).

#### 1.4 Pre-Design Investigation

The purpose of completing Pre-Design Investigation (PDI) activities is to provide sufficient data to complete design of IRM #4. PDI data supplemented previously collected data associated with IRM #1 and Remedial Investigation (RI) of the Site as a whole. The IRM #1 South Excavation was characterized during SC activities between July 2014 and May 2017. Additional investigations for the FFC were conducted between July 2018 and May 2019. Unisys conducted RI and PDI activities at the FFC area of the Site in July 2018 (RI), August 2018 (PDI) October/November 2018 (PDI Amendment #2) and April/May 2019 (PDI Amendment #3) in accordance with the BCA. These activities were conducted in accordance with the FFC RI / PDI Activities Work Plan dated 17 July 2018, FFC PDI Activities Work Plan Amendment dated 23 August 2018, FFC PDI Activities Work Plan Amendment #2 dated 12 October 2018, FFC PDI Activities Work Plan Amendment #3 dated 17 May 2019 and FFC PDI Activities Work Plan Amendment #4 dated 8 October 2019.

Results for PCB analyses of shallow subsurface soil samples from are summarized on **Table 1** and compared to the Restricted Residential SCO of one (1) mg/kg. Results for PCB analyses of subsurface soil samples from between two (2) and fourteen (14) feet bgs are summarized on **Table 2** and compared to a screening value of ten (10) mg/kg for delineation. 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). Soils from zero (0) to two (2) feet bgs were removed during IRM #1 and replaced with imported fill as a soil cover system (**Figure 3**). During IRM #3, PCBs were detected in post-excavation sidewall samples in shallow subsurface soils between two (2) inches and two (2) feet bgs outside of the soil cover system. **Figures 4 to 9** present the extent of total PCBs in subsurface soils at two-foot (2 ft) intervals to a total depth of fourteen (14) feet bgs.

PCBs were detected in monitoring well MW-15S in September 2016 above the groundwater quality standard of 0.09 micrograms per liter ( $\mu\text{g/L}$ ) with total and dissolved total PCB concentrations of 0.48 and 0.59  $\mu\text{g/L}$ , respectively. Analytical results from subsurface soil samples from between fourteen (14) feet bgs and the water table depth of approximately sixteen (16) ft bgs<sup>6</sup> are summarized on **Table 3**. Total PCB concentrations in soil are compared to the Protection of Groundwater SCO for total PCBs of 3.2 mg/kg for delineation and to the TSCA limit of fifty (50) mg/kg. **Figure 10** presents the extent of total PCBs in subsurface soils between fourteen (14) and sixteen (16) ft bgs.

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<sup>6</sup> Depth to water as measured at monitoring well MW-15S in September 2016

PDI activities included soil characterization for other COPCs including metals, SVOCs and VOCs. Analytical results for metals, SVOCs, and VOCs in surface and shallow subsurface soils including are presented on **Table 4** and compared to Restricted Residential SCOs. Analytical results for metals from subsurface soil samples from below two (2) bgs are summarized on **Table 5** and are compared to a screening values for potentially hazardous waste. **Figures 11 to 18** present the extent of metals in subsurface soils at two-foot (2 ft) intervals to a total depth of sixteen (16) feet bgs. Lead was detected above the proposed cleanup goal of 1,000 mg/kg within the IRM #4 area. Detections of other RCRA 8 metals were also above the proposed cleanup goals.

Analytical results for SVOCs and VOCs from subsurface samples from below two (2) feet bgs are summarized in **Table 6**. The concentrations of total PAHs do not exceed 100 mg/kg in any sample within the IRM #4 area.

## **1.5 Report Organization**

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

- Section 2 – Scope of Work;
- Section 3 – Permits and Temporary Controls;
- Section 4 – Health and Safety;
- Section 5 – Institutional Controls; and
- Section 6 – Schedule and Deliverables.



## 2. SCOPE OF WORK

The IRM scope of work is presented in the Construction Drawings (**Appendix A**) and Construction Specifications (**Appendix B**). The following sections summarize key elements of the work.

### 2.1 Pre-Construction Meeting

Prior to invasive construction activities, a pre-construction meeting will be held with NYSDEC and ECSD to review the scope of work. Existing conditions will be documented during a site inspection in order to establish conditions for site restoration.

### 2.2 Site Preparation

Upon mobilization, the IRM contractor will establish temporary facilities and controls including temporary fencing and erosion and sedimentation (E&S) controls. A Material Staging Area (MSA) to stockpile soils for potential reuse or off-Site transport and non-hazardous disposal and a TSCA Accumulation Area to accumulate hazardous waste for off-Site transport and disposal will be constructed in the North Athletic Field (NAF) as shown on Sheet 3 of the Construction Drawings (**Appendix A**). Temporary haul roads will be constructed between the excavation and the stockpile areas. Portions of the temporary haul road will be constructed on the adjacent Norfolk Southern Railway Company (NSRC) property pending amendment of the current Environmental Right of Entry (EROE)<sup>7</sup>. Concrete pavement within the limit of excavation as shown on the Construction Drawings (**Appendix A**) will be demolished prior to excavation and staged in the MSA for off-Site disposal with non-hazardous soils pending facility approval.

### 2.3 Demolition

The EHS Grandstands including the restrooms located beneath the bleachers and the press box located on top of the bleachers will be demolished in order to provide access to complete the FFC PDI in that area. The IRM contractor will conduct a hazardous materials survey and prepare a demolition plan. The demolition plan will include 1) disconnection of utilities, 2) site access and temporary controls; 3) demolition; 4) salvage; 5) disposal; and 6) cleanup. The hazardous material survey will be used to identify hazardous materials (e.g., asbestos, PCBs) that may be present in construction debris for appropriate segregation prior to disposal. A pre-demolition meeting will be held with ECSD and NYSDEC to review demolition procedures.

After the completion of demolition, the EHS Grandstand area will be investigated as part of the FFC PDI to determine the nature and extent of COPCs. COPCs present at concentrations above screening criteria will be addressed in a future IRM.

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<sup>7</sup> NSRC granted Unisys EROE for BCP RI activities on 5 February 2019. Unisys will seek to amend the existing EROE to include IRM activities.

## 2.4 Excavation and Soil Management

Soils will be excavated to meet cleanup goals presented in Section 1.3. Site Characterization and PDI data have been used to determine the limits of excavation to achieve those cleanup goals and the limits of PCB remediation waste within the excavation in two-foot intervals as shown on **Figures 3 to 10**. An overall excavation grading plan is presented in **Figure 19**. Excavation depths of four (4) feet or greater will be achieved using excavation side slopes of two (2) horizontal to one (1) vertical (2H:1V) where feasible. The total excavation volume is approximately 6,500 cubic yards. Temporary support of excavation (SOE) consisting of soldier piles and lagging, or Engineer-approved alternative, will be installed to support existing infrastructure including the EHS building foundation and storm sewer lines as shown on the Construction Drawings in **Appendix A**. SOE design analysis is provided in **Appendix C**. Additional SOE will be provided by struts to be installed between the soldier pile walls to be installed between the north side of the EHS A-Wing and the storm sewer and tiebacks to be installed with the soldier pile wall to be installed on the west side of the EHS A-Wing.

Subsurface utilities within the excavation including electric, water, data communication and storm sewer will be removed and replaced in-kind during backfill. No active utilities will be permanently abandoned. Water, electric and data communication services to the EHS building will be maintained during IRM construction in coordination with ECSD. This will include providing a temporary water service connection between the existing water line on the east side of the EHS building and the water meter located in the EHS A-Wing as shown on the Construction Drawings (**Appendix A**). Submersible pumps will be installed in upstream catch basins to collect storm water and discharge it to downstream catch basins as shown on the Construction Drawings in order to maintain stormwater management during construction. Pumping requirements are based on modeling of stormwater drainage (**Appendix D**). Horizontal and vertical extents of waste excavations and the location, type, and dimensions of existing underground utilities prior to demolition will be surveyed by a NYS licensed surveyor to document as-built conditions.

Excavation will require the removal of soil cover consisting of NYSDEC-approved imported soil above a demarcation layer. Previously imported soil from above the demarcation will be removed and stockpiled for reuse without characterization. Soils outside of and below the soil cover system will be managed in two-foot intervals as shown on **Figure 3 to 10**:

- Layback soils outside of the extent of the soil cover system or areas being excavated to achieve IRM cleanup will be stockpiled in the MSA for chemical testing for potential reuse as backfill between two (2) and fourteen (14) ft bgs. Soils that overlay PCB remediation waste will be staged on poly sheeting within the work area for testing prior to transport to the MSA. PCB analyses will be expedited (i.e. 1-day turnaround time). If total PCBs are less than fifty (50) mg/kg, NYSDEC approval will be requested to transfer those overlay soils to the MSA;

- Soils with total PCB concentrations greater than ten (10) mg/kg and less than fifty (50) mg/kg will be stockpiled in the MSA pending waste profile approval for transport and off-Site disposal as non-hazardous waste.
- Soils from within the limits of PCB remediation waste (greater than or equal to fifty (50) mg/kg) will be temporarily stored in a TSCA Accumulation Area prior to loading in the TSCA Loading Area for off-site disposal as hazardous waste; and
- Soils from at or near the water table with total PCB concentrations greater than 3.2 mg/kg and less than fifty (50) mg/kg will be managed as PCB remediation waste and will be accumulated in a TSCA Accumulation Area prior to loading in the TSCA Loading Area for off-site disposal.

Soils identified for disposal have been sampled for waste characterization with analyses for pH, cyanide, sulfide, flash point, toxicity characteristic leaching procedure (TCLP) VOCs, SVOCs, herbicides and pesticides, and metals. Waste characterization sample locations are shown on **Figures 11 to 18**. **Tables 7A** and **7B** presents a summary of waste characterization results for TCLP and total analyses respectively. Waste characterization data will be used to develop profiles for those soils that will be submitted to the receiving facility for approval prior to IRM construction.

Temporary transit roads will be constructed over non-TSCA areas for TSCA equipment to move between TSCA excavation areas and the TSCA accumulation area and vice versa.

The native soil horizon will be documented during these excavations. Confirmation sampling of excavation side walls and bottom will be conducted as the excavation proceeds in accordance with Section 5.4 (b) of DER-10 as follows:

- 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.

Sidewall samples will be collected at two-foot (2-ft) intervals consistent with soil management as shown on the Construction Drawings. If a depth cannot be reached, then a sidewall sample will be collected for the excavation depth achieved. Confirmation samples will be submitted to the fixed laboratory for expedited (i.e. 1-day turnaround time) analyses for PCBs and target analyte list (TAL) metals in accordance with the Quality Assurance Project Plan (QAPP) included as **Appendix E**. Unvalidated data will be available for NYSDEC review approximately three (3) days after sample collection. Upon receipt of unvalidated data, analytical results will be compared to the IRM cleanup goals. Procedures for excavation step-out and step-down based on unvalidated confirmation sampling results are presented in **Table 8**. Decisions regarding step-out or step-down of the excavation will be made in consultation with NYSDEC and ECSD. It is the intent of IRM #4 to complete soil removal on the western and southern limits of excavation in order to avoid future disturbance of the areas adjacent to the EHS main entrance and the EHS A-Wing. Therefore, step-out of the excavation may

be limited in other areas in order to complete IRM #4 on schedule and return the work area to ECSD for the 2020-21 school year. Documentation samples will be collected from sidewalls adjacent to the EHS building. As shown on **Figures 3 to 10** and **Figures 11 to 18**, IRM #4 does not include areas with detections of PCBs and metals above IRM cleanup goals to the north of the work area. Those areas will be addressed in a future IRM. Areas where confirmation and documentation samples will be collected are shown on **Figure 19**. For areas where the temporary SOE is required, documentation samples will be collected from the exposed excavation sidewall before lagging is placed on the soldier pile wall. Proposed confirmation and documentation samples are identified in blue on the Construction Drawings (**Appendix A**). Confirmation and documentation sample locations will be biased to areas with the highest concentrations of COPCs. NYSDEC will approve final sample locations and may request additional samples.

As shown on **Figures 3 to 10**, pre-delineation data have been used to determine the limit of PCB remediation waste, i.e. TSCA excavations. Confirmation TSCA sidewall and bottom samples will be collected where pre-delineation data do not follow DER-10 Section 5.4(b) requirements. **Table 10** presents the area of TSCA bottom areas shown on **Figures 3 to 10**, the required number of bottom samples to meet DER-10 requirements of one (1) sampler per 900 square feet, the number of pre-delineation samples within the TSCA bottom area with a minimum sample recovery of 50%, and the number of confirmation TSCA bottom samples required. Confirmation TSCA sidewall samples will be collected where the distance between pre-delineation samples used to determine the TSCA sidewall within the excavation is greater than thirty (30) feet. Pre-delineation and proposed TSCA sidewall and bottom samples are identified in orange on the Construction Drawings (**Appendix A**).

It is anticipated that ground water may be encountered at or around sixteen (16) ft bgs. Groundwater entering the excavation will be managed using methods described in Section 3.4. Previous well installations have encountered a glacial outwash layer has been encountered between sixteen (16) and thirty-six (36) ft bgs during previous soil investigations and installation of monitoring well MW-15D and EHS production well. Boring logs are provided in **Appendix F**. Flow tests of the EHS production wells in 2000 provided in **Appendix F** reported production of 570 and 602 gallons per minute (gpm) with 1.96 and 2.63 feet of drawdown, respectively. If bottom sample results at the water table exceed the cleanup goal of 3.2 mg/kg total PCBs, the necessity for stepping down the excavation would be evaluated based on:

- Unvalidated bottom sample results;
- Pre-design soil analytical data from “deep” excavations (near water table);
- Lithology (e.g. gravel, cobbles vs. sand, silt); and
- Infiltration rate as an indicator of transmissivity.

If further excavation below the water table is required, ground water will be managed using water management methods described in Section 3.4. Glacial outwash conditions may limit the feasibility of dewatering for further excavation at depth within schedule. Drawdown during dewatering will be observed for four (4) hours to assess its effectiveness. If the observed drawdown is ineffective

to allow deeper excavation to proceed, NYSDEC will be advised that the technical practicality of dewatering is considered low and that deeper excavation should be halted.

Additional confirmation samples may be collected based on visual or olfactory observations or field screening during excavation. A qualified environmental professional (QEP) will request analyses of those samples for COPCs (not limited to PCBs) in accordance with the QAPP (**Appendix E**) and in consultation with NYSDEC. All confirmation data will be submitted to NYSDEC's EquIS database in accordance with NYSDEC requirements. Confirmation sample location and elevation will be surveyed by a NYS licensed surveyor to document as-built conditions.

Boring refusal was encountered at various locations during SC and PDI activities as shown on **Figure 20**. This refusal may be due to rubble or historic subsurface structures shown on **Figure 20**. NYSDEC will be notified immediately of any previously unidentified subsurface structures encountered within the excavation. Unidentified structures encountered will be characterized to determine active function, contents and integrity for removal. Structure type, location and elevation will be surveyed by a NYS licensed surveyor. Structures will be demolished and removed if feasible and debris will be stockpiled and characterized for off-Site disposal based the surrounding soils in which they are encountered. Structures encountered in hazardous or PCB remediation waste will be cleaned and sampled for disposal as non-hazardous waste, if appropriate. If removal is not feasible during IRM #4 construction, such structures shall be left in place and documentation samples will be collected from around the structure. Documentation samples will be analyzed for PCBs, TAL metals, SVOCs and VOCs and sample locations will be surveyed by a NYS licensed surveyor to document as-built conditions.

## **2.5 Stockpile Methods**

Upon excavation, excavated soils will be stockpiled in the following categories based on potential for reuse or waste category including:

- Imported fill approved by NYSDEC for use as soil cover above a demarcation layer (approximately 3,200 CY);
- Soils previously approved by NYSDEC for reuse as backfill below a demarcation layer (approximately 3,700 CY);
- Uncharacterized soils with the potential for reuse as backfill below two (2) ft bgs in accordance with Section 5.4 of DER-10;
- Soils with total PCB concentrations greater than ten (10) mg/kg and less than fifty (50) mg/kg that will be transported off-Site for disposal as non-hazardous waste (approximately 1,550 CY); and
- Soils with total PCB concentrations greater than or equal to fifty (50) mg/kg that will be transported off-Site for disposal as hazardous waste (approximately 900 CY); and

- Soils from near the water table with total PCB concentrations greater than or equal 3.2 mg/kg and less than fifty (50) mg/kg that will be transported off-Site for disposal as PCB remediation waste (approximately 350 CY).

NYSDEC approved the use of imported fill as soil cover above a demarcation layer and reuse of excavated soil as below a demarcation layer in accordance with the IRM (#1) Work Plan in 2017 and the Revised Final 2019 (IRM #3) Work Plan in 2019. The horizontal and vertical extent of those soils is documented in the IRM #1 and IRM #3 CCRs. NYSDEC-approved imported fill and reuse backfill encountered during excavation will be stockpiled separately within the MSA to be constructed in the NAF as shown on the Construction Drawings (**Appendix A**) for reuse without testing.

Soil from the excavation including layback that will be potentially reused as backfill below two (2) ft bgs. Soil will be stockpiled in the MSA in windrows and characterized for approval for reuse at a maximum frequency of approximately one hundred (100) cubic yards in volume. The MSA will be accessed by a temporary haul road to be constructed on NSRC property so haul trucks will not need to access South Main Street except for off-Site transport and disposal. Existing conditions at the stockpile area and along the temporary haul road will be documented by photographs prior to and after completion of construction.

Each newly placed soil stockpile to be used for backfilling below two (2) ft bgs as part of the IRM will be inspected by the QEP for visual or olfactory impacts, solid waste, bricks or debris and screened with a photoionization detector (PID) for elevated VOC vapor levels. Soils will be sampled for analyses for PCBs, metals, SVOCs, and VOCs at the frequency presented in Table 5.4 (e) 10 of DER-10 in accordance with the QAPP. Soils that exhibit visual or olfactory impacts or that exhibited elevated PID readings will be segregated for additional testing at the direction of the QEP prior to re-use as backfill. Stockpiles with observed solid waste or debris will be segregated for potential off-Site disposal. Stockpiles with observed bricks, concrete, or other inert materials will be evaluated for use in structural backfill. Unvalidated analytical results will be submitted to NYSDEC with a request to reuse as backfill below the soil cover system and at least two (2) feet above the water table. Upon approval by NYSDEC for reuse, windrows may be consolidated with other soils approved by NYSDEC for reuse.

Soils with total PCB concentrations greater than ten (10) mg/kg and 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 stockpiled in the MSA and then loaded for transport from there to the receiving facility. If further characterization of soils is required by the receiving facility for waste profile approval, those soils will be segregated within the MSA for waste characterization sampling and staged for off-Site transport and disposal.

Soils identified for disposal as hazardous waste or PCB remediation waste will be accumulated in a TSCA Accumulation Area prior to loading in the TSCA Loading Area for off-site disposal. The TSCA Accumulation Area as shown on Sheet 3 of the Construction Drawings (**Appendix A**) will be located in a secure portion of the NAF. The TSCA accumulation area will be defined by

concrete blocks, as shown on Sheet 19 of the Construction Drawings (**Appendix A**). This will allow for TSCA material to be stockpiled within the area and create a separation between the TSCA accumulation stockpile and the TSCA loading area that will mitigate dust migration outside the area.

All soil stockpiles (i.e. TSCA, non-hazardous and potential re-use) will be covered with poly sheeting and secured at the end of each workday and during heavy rain events.

## **2.6 Off-Site Disposal**

### **2.6.1 Hazardous Waste**

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 Accumulation Area prior to loading in the TSCA Loading Area for off-site disposal. Trucks will be loaded in the TSCA 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. It is estimated that approximately 900 CY (1,100 tons) of soil will be removed as hazardous waste.

### **2.6.2 Non-hazardous waste**

Soils identified for disposal as non-hazardous waste will be stockpiled in non-hazardous soil stockpile area for off-Site transport and disposal. Stockpiles will be maintained and secured so that soils do not migrate from staging and stockpile locations. In the event, that soils have not been pre-characterized for disposal, composite samples will be collected for analyses for waste characteristics at a frequency consistent with the requirements of the receiving facility. Trucks will be loaded in the non-hazardous soil stockpile area for transport 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. It is estimated that approximately 900 CY (1,720 tons) of soil will be removed as non-hazardous waste.

### **2.6.3 PCB Remediation Waste**

Soils with total PCB concentrations greater than or equal to 3.2 mg/kg from at or near the water table will be classified as PCB remediation waste under TSCA. Soils classified as PCB remediation waste will be accumulated in the TSCA Accumulation Area prior to loading in the TSCA Loading Area for off-site disposal. Trucks will be loaded in the TSCA 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. It is estimated that approximately 350 CY (665 tons) of PCB remediation waste will be disposed (hazardous and non-hazardous

## 2.6.4 Estimated Truck Traffic

Based on proposed soil volumes to be transported between the Site and the MSA, necessary on-Site truck traffic has been estimated as follows:

- Transport of non-hazardous soil to the MSA via the temporary haul road for stockpiling for potential reuse or non-hazardous disposal: 450 cubic yards per day (20 to 22 loads per day);
- Transport of soils approved for reuse from the MSA for use as excavation backfill via the temporary haul road: 450 cubic yards per day (20 to 22 loads per day); and
- It is unlikely that excavation and backfilling operations will be concurrent, so truck traffic to and from the MSA will not exceed 22 loads per day.

Necessary truck traffic on public roads for off-Site disposal has been estimated as follows:

- Transport of hazardous waste/PCB remediation waste on public roads for off-Site disposal: 200 to 250 tons per day (10 to 12 loads per day);
- Transport of non-hazardous soil on public roads for off-Site disposal: 400 to 440 tons per day (18 to 20 loads per day); and
- Transport on public roads for off-Site disposal (hazardous waste/PCB remediation waste and non-hazardous soil) will not exceed 35 loads per day without prior notification of NYSDEC.

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 as described in the Construction Specifications (**Appendix B**).

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. Proposed haul routes are presented on **Figure 21**. 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. It is anticipated that off-Site transport for disposal will occur when school is not in session, therefore truck traffic will not take place during student arrival/departure times.

Over the road haul trucks which will transport hazardous waste, PCB remediation waste and non-hazardous waste will enter and exit the MSA via the temporary haul road to South Main Street. Off-road haul trucks which will transport soils between the Site and the MSA will use the temporary haul road to enter and exit the excavation as presented on **Figure 21**.

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.



## **2.7 Backfilling**

Excavations will be backfilled to final grades as shown on the Construction Drawings (**Appendix A**). Prior to backfilling, the extent of the excavation will be surveyed and a demarcation layer, consisting of orange snow fencing material, white geotextile or equivalent material, will be placed in the excavation to provide a visual reference of the limit of fill material for future excavations. Backfilling will begin after achievement of cleanup goals has been demonstrated by unvalidated confirmation sampling results or after documentation samples have been collected in areas where COPCs will left in place. NYSDEC approval will be obtained prior to backfilling any portion of the excavation. During backfilling, demolished utilities will be replaced in-kind as necessary with respect to planned capital improvements in the FFC. Previously unidentified subsurface structures encountered within the excavation shall be left in place if removal will impact the schedule for completion of the IRM and return of control of the project area to ECSD prior to the beginning of the 2020-21 school year. Some SOE elements will remain in place with the acceptance of ECSD. Lagging and tiebacks installed during excavation adjacent to the west side of the EHS A-Wing will be removed but the soldier piles will remain in place. Soldier piles installed adjacent to the storm sewer and the north side of the EHS A-Wing as well as the struts installed between them and lagging installed adjacent to the storm sewer will remain in place for use as SOE during a future IRM in the FFC. Final grades, the location, type, and dimension of restored underground utilities, the location and dimension of soldier piles, struts, lagging, and the location of demarcation layers will be surveyed by a NYS licensed surveyor to document as-built conditions.

Backfill material will include soils previously approved by NYSDEC for use as soil cover, imported fill, soils previously approved by NYSDEC for reuse below soil cover and excavated soils stockpiled for potential reuse. Soils stockpiled for reuse will meet the requirements of Section 5.4 of DER-10 for use below a soil cover system over a demarcation layer. Reuse soils will not be used for backfilling within one (1) foot of the seasonal high-water table or above two (2) ft bgs. Imported fill to be used above two (2) ft bgs will be certified to meet the requirements of Section 5.4 of DER-10 for unrestricted use as fill for soil cover system including emerging contaminants. An additional demarcation layer will be placed between stockpile soils reused for backfill and imported fill used for the soil cover system.

## **2.8 Site Restoration**

After completion of backfilling, the work area will be restored to original conditions including replacement of concrete sidewalks and fences. Unpaved areas will be restored with a minimum of four (4) inches of topsoil and reseeded or sod installed based on original conditions. Typical sections are presented in the Construction Drawings (**Appendix A**).

Areas within the construction limits (e.g. staging areas, haul roads) or other areas potentially impacted by dust from the IRM excavation will be cleaned and decontaminated following construction. Post-use conditions will be documented by verification sampling. Restored conditions within the construction limits will be documented by photographs. Unisys will

coordinate with ECSD to determine the final requirements for Site restoration. The MSA and the temporary haul roads to be constructed on NSRC property will be maintained after completion of IRM #4 for use during future remedial construction.

### **3. PERMITS AND TEMPORARY CONTROLS**

#### **3.1 Permits and Notifications**

A storm water construction permit is required as the area of disturbance from construction activities for the IRM is expected to be greater than one acre. To meet the requirements of the General Permit, a Stormwater Pollution Prevention Plan (SWPPP) will be prepared and submitted to NYSDEC for review and approval.

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.

#### **3.2 Temporary Facilities**

During IRM construction, temporary facilities on the EHS property will be constructed for accumulation and loading of hazardous waste and PCB remediation waste. Other on-Site temporary facilities will include construction trailers and frac tanks. Temporary haul roads on the adjacent NSRC property to the east will be constructed for transport of soils between the Site and the MSA. Temporary facilities on the EHS and NSRC properties are shown on the construction drawings presented in **Appendix A**.

A temporary water line will be installed to maintain the connection between the existing water line and the EHS building. The service connection located at the EHS service entrance will be maintained during IRM construction while the service connection located at the entrance to the EHS main parking lot will be closed. Water service including the fire loop will be restored during backfilling and Site restoration in coordination with ECSD and the Elmira Water Board.

#### **3.3 Soil and Sediment Erosion Control**

A SWPPP will document selection, design, installation, implementation and maintenance of control measures and practices that will be used to minimize the discharge of pollutants in storm water and prevent a violation of water quality standards. Soil and sediment erosion controls will be established within the limit of disturbance as shown on the construction drawings presented in **Appendix A** 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 State Standards and Specification for Erosion and Sediment Control” (NYSDEC, 2016) and will be inspected weekly during active construction with additional inspections following rain events.

#### **3.4 Water Management**

Storm water contacting potential PCB impacted soils (contact water) will be segregated from storm water entering areas cleaned of PCB 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. 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.

Standing water remaining after storm events will be removed from the excavation in a timely manner using vacuum trucks and/or dewatering sumps. 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. Once a tank nears capacity, waste characterization samples will be collected for waste profiling and off-Site disposal.

As excavation proceeds to the final depth near the water table, ground water may be encountered. Excavation below the water table may be required by the Engineer and NYSDEC to achieve cleanup goals. Moist or wet soils will be placed on poly sheeting on the slope and any excess water will decant back into the bottom of the excavation. After those soils have sufficiently drained, they will be transported to the TSCA Accumulation Area for stockpiling and loadout. Any residual moisture will be contained within the TSCA Accumulation Area, collected in the sump for that area and transferred to a frac tank for off-Site treatment and disposal. In the case of moderate ground water infiltration, sumps will be constructed at the base of the excavation. Pumps with sufficient lift and a pumping capacity of up to fifteen (15) gpm will transfer water collected in the sumps to an adjacent frac tank for off-Site disposal. Approximately 20,000 gallons of capacity is reserved for excavation dewatering activities. A contingency plan for additional capacity will be provided within one day based on actual conditions encountered if this capacity will be exceeded. Drawdown during initial dewatering will be observed for four (4) hours to assess its effectiveness. If the observed drawdown is ineffective to allow deeper excavation to proceed, NYSDEC will be advised that the technical practicality of dewatering is considered low and that dewatering operations should be halted.

### **3.5 Dust Control and Monitoring**

Dust control and monitoring shall be conducted throughout the Site during all phases of work in accordance with the Soil/Dust Control and Monitoring Plan (SDCMP, **Appendix G**). The SDCMP has been developed to be consistent with NYSDOH's Generic Community Air Monitoring Plan (CAMP, **Appendix G**). The QEP will be responsible for the implementation of the dust monitoring, control and mitigation measures.

Dust control shall be conducted to prevent the presence of visible dust as determined by visual observation and continuous dust monitoring. Visible dust shall not leave the exclusion zone. Dust control measures shall be applied periodically throughout each workday. Dust control may be conducted by sprinkling with water until the surface is wet; restricting vehicle speeds, covering excavation areas and stockpile areas; and reducing the excavation size and/or number of excavations. Additional dust control measures will be considered during intrusive activities within

twenty (20) feet of potentially exposed populations or occupied structures including dust barriers and special ventilation devices.

Continuous air monitoring for PCBs will be conducted in accordance with the SDCMP (**Appendix G**). The air monitoring program will include two different types of ambient air quality measurements (1) real-time dust monitoring using direct reading instruments, and (2) time-integrated air sampling and fixed laboratory PCB analyses. Continuous real-time particulate monitoring will be conducted at the upwind and downwind perimeter of the exclusion zone(s) 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(s). Work areas are areas where ground intrusive activities and/or soil handling is occurring. During work activities within twenty (20) feet of potentially exposed populations or occupied structures, continuous monitoring locations will be selected based on the nearest potentially exposed individual and the location of ventilation system intakes for nearby structures. Proposed air monitoring locations are presented on **Figure 22**. Air monitoring locations will be adjusted, as necessary, based on changes in wind direction.

Air monitoring shall be conducted during excavation, grading, placement of clean fill, or other activities which may generate fugitive dust. Action levels for dust and PCBs in ambient air are presented in the SDCMP. If an action level for dust is reached, Site operations will be stopped and dust control measures in the working area will be implemented. Mitigation measures for dust may include increasing the level of personal protection for on-Site personnel, increasing water spraying, or stopping work. If dust suppression techniques being utilized at the Site do not lower particulates to an acceptable level, work will be suspended until appropriate corrective measures are approved by the QEP to remedy the situation.

Time-integrated sampling will be used to provide chemical-specific data for the assessment of potential impacts. One (1) upwind and two (2) downwind real-time monitoring locations will be used for time-integrated sampling for PCBs during excavation of PCB-impacted soils. Time-integrated samples for PCB analyses will be completed under expedited three-day (3-day) laboratory turnaround times. These time-integrated samples will be used for assessing the potential for off-Site exposures. Time integrated samples will be collected during work hours (excluding lunch and break time) from each sampling location using high-volume air samplers for each day of the first week of PCB-impacted soil excavation activities. After one week of PCB-impacted soil excavation, the need for daily time-integrated sampling for PCBs will be re-evaluated. If results from the first week of sampling indicate that PCB concentrations are consistent with background or are below comparison criteria, the PCB sampling frequency reduced to one day per week. The schedule for time-average PCB sampling may be adjusted due to weather conditions during the first week of sampling. Additional samples may be collected during excavations in areas with the highest total PCB concentrations (i.e. total PCB concentrations greater than 50 mg/kg). If any PCB concentration exceeds the PCB action level, NYSDEC and NYSDOH will be notified immediately and work practices will be re-evaluated, and changes will be implemented, as appropriate.

Daily Construction Inspection Reports (Daily Reports) will be sent the NYSDEC and the NYSDOH the following day. Daily Reports summarizing work completed Friday through Sunday will be submitted no later than the following Monday. CAMP data will be attached the Daily Report.

### **3.6 Vibration Monitoring and Building Survey**

Vibration monitoring will be required during excavation. A building condition survey will be performed to assess the pre- and post-construction conditions of the EHS building. The building condition survey and vibration monitoring shall be performed in accordance with the requirements of the Construction Specifications (**Appendix B**). Written approval for building condition surveys and vibration monitoring will be obtained from ECSD and provided to NYSDEC prior to construction.

### **3.7 Temporary Use Restrictions**

There will be temporary use restrictions of the EHS property during IRM construction to ensure safe access during construction work. ECSD will have limited operations at EHS during the summer. No student activities will be occurring, and only a limited number of the full-year staff will be working on-Site. All individuals accessing the building will do so through the main parking lot and entrance, thereby avoiding all remedial work being performed. Public access, such as new enrollments, will be accommodated through the main entrance. No staff or visitor will have access to the work areas. The doors on the north and west side of the EHS A Wing will be locked to prevent access to the work area. Access to those areas of the A-Wing will be limited so this temporary restriction will not impact emergency evacuation procedures.

Access to the FFC and the NAF will be restricted by temporary fencing. A temporary rally point will be constructed in parking lot adjacent to the basketball courts. In the event of an evacuation or evacuation drill, all IRM activities will be halted until ECSD gives permission for them to resume. The temporary evacuation route from the EHS building to the temporary rally point is shown on **Figure 23**.

ECSD concurrence with these temporary use restrictions of the EHS property will be provided under separate cover. ECSD has provided comments on this IRM #4 Work Plan and the construction documents. Those comments and a schedule for responses are provided in **Appendix H**.

#### **4. 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.

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. Each 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. A Site-specific HASP has been prepared for IRM tasks (**Appendix I**). A contingency for chemical specific PCB monitoring would be developed in the event the State determines that it is necessary.

The IRM Contractor will provide a “competent person” per 29 CFR 1926 Subpart P – Excavations on-Site during excavations. The qualifications of the designated “competent person” will be provided to NYSDEC prior to IRM construction.

The IRM contractor will be the “controlling contractor” for IRM activities and will be responsible for implementing a COVID-19 Action Plan. A COVID-19 Action Plan was submitted to NYSDEC and NYSDOH on 14 April 2020 and will be updated as necessary, and for IRM 4 construction.

#### **5. INSTITUTIONAL CONTROLS**

Institutional controls (ICs) will be implemented at the Site in accordance with the interim SMP approved by NYSDEC on 20 December 2019. The interim SMP will be updated following IRM completion to include details of cover systems which are part of the IRM to ensure that ongoing site management at the Site remains protective. The interim SMP includes quarterly inspections of permanent cover systems (e.g., pavements, vegetated areas, and building floor slabs) and temporary cover systems (e.g., mulch beds). Photographic documentation and recommendations for corrective action will be provided in quarterly Site Inspection Reports and the annual Periodic Review Report. Unisys and ECSD will coordinate cover maintenance and corrective action in accordance with the interim SMP. ECSD has agreed to accept an Environmental Easement on the property since the IRM will include a cover system (**Appendix H**). The necessity for an Environmental Easement requiring compliance with the SMP will be evaluated when a final remedy for the Site has been completed and a final SMP has been prepared.

## 6. SCHEDULE AND DELIVERABLES

### 6.1 Schedule

The proposed schedule for the IRM is presented in **Table 10**. The following are milestone dates applicable to this IRM:

- 14 February 2020 – Pre-Final (95%) IRM #4 Work Plan Submittal;
- 30 April 2020 – Final (100%) IRM #4 Work Plan Submittal
- 30 April 2020 – IRM Contractor Work Plan Submittal
- 19 May 2020 – Revised Final (100%) IRM #4 Work Plan Submittal
- 21 May 2020 – Revised IRM Contractor Work Plan Submittal
- 1 June 2020 – Mobilization of IRM contractor to the Site, weather permitting;
- 1 June 2020 – Survey of existing conditions
- 10 June 2020 – MSA and temporary haul road construction;
- 30 June 2020 – Soldier pile installation;
- 30 June 2020 –Excavation Start;
- 11 August 2020 – Excavation Completion;
- 20 August 2020 –Backfill Completion;
- 28 August 2020 – Site restoration at EHS Completion;
- 3 September 2020 – Completion of transport of soil stockpiles for off-Site disposal; and
- 4 September 2020 – Demobilization.

The proposed schedule is based on excavation of up to 600 cubic yards per day. Based on construction of previous IRMs at the Site, the schedule includes contingency for delays of up to three (3) days due to weather. Anticipated working hours are Monday through Friday during daylight hours. Work on weekends may be required to meet schedule milestones.



## 6.2 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 delivered to NYSDEC within ninety (90) days of completing transport of soil stockpiles for off-Site disposal, site restoration, and demobilization.

## 7. CONTINGENCY PLANNING

The proposed schedule for IRM #4 presented in Section 6 has been prepared with the assumption that school will not be in session at EHS during IRM #4 construction. Temporary fencing, dust control, community air monitoring, vibration monitoring and noise monitoring will be implemented as described above to protect the health, safety and security of the EHS community during IRM #4. In the event that school will be in session during Summer 2020, enhanced safety and security measures will be implemented at EHS and enhanced communications will be provided to ECSD and the EHS community as follows:

- Enhanced Site Safety and Security
  - Site contractor personnel will have personnel ID badges.
  - Traffic patterns will be coordinated with ECSD to avoid high traffic periods for staff and students arriving and leaving EHS.
- Enhanced Communication
  - Weekly activity reports to ECSD with a summary of work completed and projected activities for the following week
  - Reporting of CAMP results to publicly available website.
    - Daily reporting of real-time dust monitoring results
    - Reporting of PCB analytical results for time-averaged air samples as they become available from the fixed laboratory.
  - Update Frequently Asked Questions (FAQs) handout available on NYSDEC web page: <http://www.dec.ny.gov/chemical/102390.html>

Implementation of contingency planning measures, if necessary, will be detailed at least two (2) weeks in advance of Summer 2020 open session in the Community Liaison Plan linked to the NYSDEC website.

# TABLES

TABLE 1  
Summary of PCB Results for Subsurface Soils (0-2 ft bgs)  
IRM4  
Former Sperry Remington Site - North Portion  
Elmira, New York

Location	Sample Name	Sample Depth Range (ft bgs)	Sample Date	Lab Report Number	Polychlorinated Biphenyls									
					Total PCBs	Anechlor 1016	Anechlor 1221	Anechlor 1232	Anechlor 1242	Anechlor 1248	Anechlor 1254	Anechlor 1260	Anechlor 1268	Anechlor 1262
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EOL					0.0036	0.0044	0.0041	0.0024	0.004	0.0051	0.0048	0.0022	0.0054	
Restricted Residential					J									
NYS Hazardous Waste					50									
SSHS-B267	SSHS-B267-SUB-0-2	0-2	7/30/2015	180-46426-1	0.0701	<0.0036U	<0.0044U	<0.0061U	<0.0044U	0.029J	0.032J	0.0091J	<0.0035U	<0.0065U
SSHS-B334	SSHS-B334-SUB-0-2	0-2	3/3/2016	180-52706-1	0.784	<0.008U	<0.013U	<0.0044U	<0.0065U	0.54J	0.2J	0.044J	<0.0033U	<0.0054U
SSHS-B651	SSHS-651-SUB-0-2	0-2	2/14/2017	180-63507-1	2.14	<0.0096U	<0.0094U	<0.0072U	<0.014U	1.5J	0.54J	0.1J	<0.0055U	<0.013U
SSHS-B702	SSHS-B702-SUB-0-2	0-2	3/21/2017	180-64494-1	0.6011	<0.0098U	<0.0095U	<0.0073U	<0.015U	0.41	0.12	0.041	<0.0056U	<0.013U
SSHS-B703	SSHS-B703-SUB-0-2	0-2	3/23/2017	180-64584-1	0.2574	<0.011U	<0.011U	<0.0083U	<0.017U	0.15	0.058	0.015J	<0.0064U	<0.015U
SSHS-IRM3-B100-BOT2	SSHS-IRM3-B100 BOT BOT	1.4-1.4	8/1/2019	180-93547-2	-0.0458	<0.0062U	<0.0068U	<0.0047U	<0.0028U	<0.0046U	<0.0058U	<0.0055U	<0.0026U	<0.0068U
SSHS-IRM3-S001	SSHS-IRM3-S001-07-10-19	0.1-0.1	7/10/2019	180-92467-1	-0.0405	<0.0055U	<0.006U	<0.0042U	<0.0025U	<0.0041U	<0.0051U	<0.0048U	<0.0023U	<0.0066U
SSHS-IRM3-S002	SSHS-IRM3-S002-07-09-19	0.3-0.3	7/9/2019	180-92395-1	-0.0402	<0.0055U	<0.006U	<0.0041U	<0.0025U	<0.004U	<0.0051U	<0.0048U	<0.0023U	<0.0059U
SSHS-IRM3-S003	SSHS-IRM3-S003-07-09-19	0.2-0.2	7/9/2019	180-92395-1	-0.0422	<0.0058U	<0.0063U	<0.0043U	<0.0026U	<0.0043U	<0.0053U	<0.005U	<0.0024U	<0.0062U
SSHS-IRM3-S020	SSHS-IRM3-S020-07-10-19	0-0	7/10/2019	180-92462-1	0.922	<0.0058U	<0.0064U	<0.0044U	<0.0026U	0.54J	0.28J	0.088J	<0.0024U	<0.0063U
SSHS-IRM3-S020A	SSHS-IRM3-S020A-C	1.7-1.7	7/29/2019	180-93352-1	0.2711	<0.0063U	<0.0069U	<0.0047U	<0.0028U	0.12J	0.098J	0.038J	<0.0026U	<0.0068U
SSHS-IRM3-S021A	SSHS-IRM3-S021A-C	1.8-1.8	7/29/2019	180-93352-1	0.0504	<0.0063U	<0.0069U	<0.0047U	<0.0028U	0.047U	0.022J	0.011J	<0.0026U	<0.0068U
SSHS-IRM3-S022A	SSHS-IRM3-S022A-C	1.9-1.9	7/29/2019	180-93352-1	0.0904	<0.0069U	<0.0075U	<0.0051U	<0.0031U	0.045J	0.026J	<0.006U	<0.0028U	<0.0074U
SSHS-IRM3-S023AA	SSHS-IRM3-S023AA-C	0.8-0.8	8/1/2019	180-93547-2	0.09375	<0.0062U	<0.0067U	<0.0046U	<0.0028U	0.043J	0.024J	0.012J	<0.0025U	<0.0067U
SSHS-IRM3-S023AB	SSHS-IRM3-S023AB-C	1.3-1.3	8/1/2019	180-93547-2	0.7138	<0.0058U	<0.0063U	<0.0043U	<0.0026U	0.44J	0.19J	0.07J	<0.0024U	<0.0062U
SSHS-IRM3-S023A-BOT	SSHS-IRM3-S023A BOT-C	1.5-1.5	8/1/2019	180-93547-2	0.388	<0.0054U	<0.0059U	<0.0041U	<0.0024U	0.24J	0.1J	0.035J	<0.0022U	<0.0059U
SSHS-IRM3-S023AC	SSHS-IRM3-S023AC-C	0.8-0.8	8/1/2019	180-93547-2	0.4697	<0.0061U	<0.0067U	<0.0046U	<0.0028U	0.29J	0.12J	0.045J	<0.0025U	<0.0066U
SSHS-IRM3-S023AD	SSHS-IRM3-S023AD-C	0.6-0.6	8/1/2019	180-93547-2	2.494	<0.0059U	<0.0064U	<0.0044U	<0.0027U	1.8J	0.53J	0.15J	<0.0024U	<0.0064U
SSHS-IRM3-S024A	SSHS-IRM3-S024A-C	1.4-1.4	7/29/2019	180-93352-1	-0.0415	<0.0057U	<0.0062U	<0.0042U	<0.0026U	<0.0042U	<0.0052U	<0.005U	<0.0023U	<0.0061U
SSHS-IRM3-S025	SSHS-IRM3-S025-07-09-19	0.6-0.6	7/9/2019	180-92395-1	-0.0404	<0.0055U	<0.006U	<0.0041U	<0.0025U	<0.0041U	<0.0051U	<0.0048U	<0.0023U	<0.006U
SSHS-IRM3-S026	SSHS-IRM3-S026-07-09-19	0.2-0.2	7/9/2019	180-92395-1	-0.0404	<0.0055U	<0.006U	<0.0041U	<0.0025U	<0.0041U	<0.0051U	<0.0048U	<0.0023U	<0.006U
SSHS-IRM3-S027	SSHS-IRM3-S027-07-10-19	0.4-0.4	7/10/2019	180-92467-1	-0.0428	<0.0059U	<0.0064U	<0.0044U	<0.0026U	<0.0043U	<0.0054U	<0.0051U	<0.0024U	<0.0063U
SSHS-IRM3-S028	SSHS-IRM3-S028-07-10-19	0.1-0.1	7/10/2019	180-92467-1	-0.0419	<0.0057U	<0.0062U	<0.0043U	<0.0026U	<0.0042U	<0.0053U	<0.005U	<0.0024U	<0.0062U
SSHS-IRM3-S028d	SSHS-IRM3-S028-D	0.4-0.4	8/5/2019	180-93684-3	2.544	<0.0057U	<0.0062U	<0.0043U	<0.0026U	1.7	0.66	0.17	<0.0024U	<0.0062U
SSHS-IRM3-S029	SSHS-IRM3-S029-D	0.6-0.6	8/5/2019	180-93684-3	14.14	<0.056U	<0.061U	<0.042U	<0.025U	9.5	3.7	0.81	<0.023U	<0.06U
SSHS-IRM3-S044	SSHS-IRM3-S044-C	1.5-1.5	7/12/2019	180-92615-1	2.024	<0.006U	<0.0065U	<0.0045U	<0.0027U	1.3J	0.54J	0.17J	<0.0025U	<0.0065U
SSHS-IRM3-S048	SSHS-IRM3-S048-D	0.1-0.1	7/12/2019	180-92616-1	2.333	<0.0056U	<0.0061U	<0.0042U	<0.0025U	1.6	0.6	0.12	<0.0023U	<0.0061U
SSHS-IRM3-S052	SSHS-IRM3-S052-D	1.6-1.6	7/15/2019	180-92661-1	33.33	<0.056U	<0.061U	<0.042U	<0.025U	20	9.5	3.7	<0.023U	<0.06U
SSHS-SE-SIDEWALL 1	SE SIDEWALL 1	0-2	7/24/2017	180-68518-1	0.04975	<0.0098U	<0.0096U	<0.0073U	<0.015U	<0.0089U	0.0091J	<0.012U	<0.0057U	<0.013U

**Notes:**  
 J - estimated value  
 U - non-detect  
 mg/kg - milligram per kilogram  
 ft bgs - feet below ground surface  
 ft MSL - feet above mean sea level  
 PCBs - polychlorinated biphenyls  
 SCO - Soil Cleanup Objective  
 PCB or Metals concentrations detected above Restricted-Residential Soil Cleanup Objectives (6 NYCRR Part 375) are presented in light gray.  
 PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark gray.

TABLE 2  
Summary of PCB Results for Subsurface Soils (2-14 ft bgs)  
IRM 4

Former Sperry Remington Site - North Portion  
Elmira, New York

Table with columns: EQI, Subsurface Soil Criteria, Location, Sample Name, Sample Depth Range (ft bgs), Sample Date, Lab Report Number, Total PCBs (mg/kg), and individual PCB congeners (Arochlor 1221, Arochlor 1232, Arochlor 1242, Arochlor 1248, Arochlor 1254, Arochlor 1260, Arochlor 1268) (mg/kg).

TABLE 2
Summary of PCB Results for Subsurface Soils (2-14 ft bgs)
IRM 4
Former Sperry Remington Site - North Portion
Elmira, New York

Table with columns: Location, Sample Name, Sample Depth Range (ft bgs), Sample Date, Lab Report Number, and PCBs (Arochlors 106, 121, 123, 124, 125, 126, 128, 129, 150, 151, 153, 154, 155, 156, 157, 158, 159, 180, 181, 182, 183, 184, 185, 187, 188, 189, 191, 192, 193, 194, 195, 196, 197, 198, 199, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000.

Notes:
J - estimated value
U - non-detect
F1 - MS and/or MSD recovery is outside acceptable limits
F2 - MS/MSD RPD - exceeds control limits
mg/kg - milligrams per kilogram
ft bgs - feet below ground surface
ft ASL - feet above mean sea level
PCBs - polychlorinated biphenyls
SCO - Soil Cleanup Objective
PCBs/Metals concentrations detected above Restricted Residential Soil Cleanup Objectives (6 NYCRR Part 375) are presented in light gray.
PCBs concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (a)) are presented in dark gray.

TABLE 3  
Summary of PCB Results for Subsurface Soils (<14 ft bgs)  
IRM 4

Former Sperry Remington Site - North Portion  
Elmira, New York

Location	Sample Name	Sample Depth Range (ft bgs)	Sample Date	Lab Report Number	Total PCBs	PCBs										
						Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Arochlor 1262		
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
EQL					0.0055	0.006	0.0041	0.0025	0.0041	0.0025	0.0041	0.0025	0.0041	0.0025	0.0041	0.0025
Subsurface Soil Criteria (Water Table Zone)					3.2											
NYS Hazardous Material					50											

Notes

- J - estimated value
- U - non-detect
- F1 - MS and/or MSD recovery is outside acceptable limits
- F2 - MS/MSD RPD exceeds control limits
- mg/kg - milligrams per kilogram
- ft bgs - feet below ground surface
- ft MSL - feet above mean sea level
- PCBs - polychlorinated biphenyls
- SCO - Soil Cleanup Objective

PCB or Metals concentrations detected above Restricted-Residential Soil Cleanup Objectives (6 NYCRR Part 375) are presented in light gray.  
PCB concentrations detected above New York State hazardous waste threshold (6 NYCRR Part 371.4 (e)) are presented in dark gray.

Table 4  
Summary of IRM 4 Metals in Shallow Subsurface (0.17-2 ft bgs)  
IRM 4

B&B Engineers and Geologists of New York P.C.

Former Sperry Remington Site - North Portion  
Elmira, NY

					Metals																						
					Aluminum	Antimony	Arsenic	Barium	Berillium	Bismuth	Cadmium	Calcium	Chromium (6)	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Selenium	Silver	Thallium	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	
Location	Sample Name	Sample Depth Range (ft bgs)	Sample Location (ft SL)	Sample Date	Lab Report Number																						
EQJ	Restricted - Residential SCO					18	0.3	0.9	18	0.36	0.038		110		2.2	9	0.9	1.3	0.008	3.6	450	0.51	0.094	0.22	4.5	1.8	
SSHS-B2238	SSHS-B2238-SUB-017-2	0.17-2		7/23/2018	180-80091-1	6600	<0.36U	4.2	42	0.26J	0.09J	80,000	8.9	5.7	20	15,000	7	15,000	350	<0.008U	16	640	<0.55U	<0.11U	<0.22U	10	59
SSHS-B2238	SSHS-B2238-SUB-SS	0-0.17		7/23/2018	180-80091-4	8500	<0.39U	5.1	58	0.34J	0.083J	21,000	11	6.9	21	17,000	18	4600	340	0.019J	17	710	<0.64J	<0.12U	<0.24U	12	56
SSHS-B2746	SSHS-B2746-SUB-017-2	0.17-2	760.18	4/22/2019	180-89394-1	<10,000U	<0.41U	6.7	120	0.53	1.1	4100	13	9.3	16	20,000	15	3000	560	0.05	22	980	<0.62U	<0.13U	<0.39U	14	64
SSHS-B2748	SSHS-B2748-SUB-017-2	0.17-2	741.35	4/23/2019	180-89344-1	7200	<0.38UJ	7.8	110	0.39J	0.16J	16,000J	15	7.1	140J	29,000	48	8800J	510	0.023J	150J	920	0.74J	<0.12U	<0.36UJ	12	72
SSHS-B2749	SSHS-B2749-SUB-017-2	0.17-2	747.84	4/23/2019	180-89344-1	7700	0.44J	6.5	140	0.38J	0.26J	10,000J	12	6.7	42J	19,000	63J	3600	420	0.045	33	800	<0.57U	<0.12U	<0.35U	13	87J
SSHS-B2750	SSHS-B2750-SUB-017-2	0.17-2	743.49	4/23/2019	180-89344-1	9100	0.48J	7.4	110	0.43J	0.12J	4600	14	7.6	38	21,000	39	2600	470	0.05	28	910	<0.62U	<0.13U	<0.39U	15	67
SSHS-IRM3-B100-BOT2	SSHS-IRM3-B100 BOT BOT	1.4-1.4	853.56	8/1/2019	180-93547-2	12,000	0.53J	5.7	84	0.46	<0.08UJ	1300	13	6.7	14	19,000	9.4	2500	280	<0.018U	18	570	<0.54U	<0.11U	<0.34U	17	55J
SSHS-IRM3-S001	SSHS-IRM3-S001-07-10-19	0.1-0.1	855.58	7/10/2019	180-92467-1	8300	<0.35U	6.1	72	0.33J	0.11J	30,000	11	7.1	20	17,000	14	7600	370	<0.015U	17	750	0.6J	<0.11U	<0.33U	12	55
SSHS-IRM3-S002	SSHS-IRM3-S002-07-09-19	0.3-0.3	855.70	7/9/2019	180-92395-1	6800	<0.36U,FJ	4.6	51	0.28J	0.17J	70,000	8.9	5.9	24	16,000	7.6	12,000	400	<0.014U	17	680	1J	<0.11U	<0.34U	10	71FJ
SSHS-IRM3-S003	SSHS-IRM3-S003-07-09-19	0.2-0.2	855.90	7/9/2019	180-92395-1	9100	0.38J	5.9	89	0.36J	0.13J	26,000	12	7.5	21	19,000	15	5800	370	<0.016U	18	590	0.83J	<0.11U	<0.35U	13	58
SSHS-IRM3-S020	SSHS-IRM3-S020-07-10-19	0-0	854.99	7/10/2019	180-92462-1	8600	0.83J	7.9	140	0.41J	0.25J	13,000	22	7.7	55	22,000	71	3900	500	0.047	38	880	0.89J	<0.11U	<0.34U	15	91
SSHS-IRM3-S020A	SSHS-IRM3-S020A-C	1.7-1.7	853.32	7/29/2019	180-93352-1	8500	0.66J	8.1	150	0.38J	0.15J	9400	16	6.9	57	21,000	100	3200	440	0.056	40	740	<0.56U	<0.12U	<0.35U	14	81
SSHS-IRM3-S021A	SSHS-IRM3-S021A-C	1.8-1.8	853.15	7/29/2019	180-93352-1	10,000	0.49J	7.1	110	0.51	0.12J	2500	14	8.7	18	20,000	21	2800	590	0.022J	21	1700	<0.62U	<0.13U	<0.39U	14	56
SSHS-IRM3-S022A	SSHS-IRM3-S022A-C	1.9-1.9	853.11	7/29/2019	180-93352-1	12,000	<0.45U	7.4	120	0.57	0.5J	4300	15	9.8	16	22,000	14	3500	530	0.023	23	1700	<0.68U	<0.14U	<0.42U	16	61
SSHS-IRM3-S023AA	SSHS-IRM3-S023AA-C	0.8-0.8	854.41	8/1/2019	180-95547-2	10,000	0.55J	7.4	110	0.54	0.18J	2000	13	9.5	16	19,000	17	2800	520	0.025J	23	890	<0.56U	<0.11U	<0.35U	14	61J
SSHS-IRM3-S023AB	SSHS-IRM3-S023AB-C	1.3-1.3	853.84	8/1/2019	180-95547-2	9300	0.59J	7.2	100	0.48	0.46J	5000	12	8.8	20	18,000	20	3000	640	0.023	22	670	<0.51U	<0.1U	<0.32U	14	58J
SSHS-IRM3-S023A-BOT	SSHS-IRM3-S023A-BOT-C	1.5-1.5	853.64	8/1/2019	180-95547-2	9100	0.68J	7.4	86	0.42	0.13J	6200	12	7.7	24	20,000	25	2800	650	0.019J	21	650	<0.51U	<0.1U	<0.32U	15	82J
SSHS-IRM3-S023AC	SSHS-IRM3-S023AC-C	0.8-0.8	854.35	8/1/2019	180-95547-2	10,000	0.55J	7.1	120	0.54	0.18J	3200	13	9.5	15	19,000	16	2900	550	0.022J	22	900	<0.57U	<0.12U	<0.36U	14	58J
SSHS-IRM3-S023AD	SSHS-IRM3-S023AD-C	0.6-0.6	854.42	8/1/2019	180-95547-2	9700	0.5J	6.7	130	0.49	0.18J	6300	13	9	20	19,000	24	3500	520	0.12	25	800	<0.52U	<0.11U	<0.35U	14	67J
SSHS-IRM3-S024A	SSHS-IRM3-S024A-C	1.4-1.4	853.89	7/29/2019	180-93352-1	7200	<0.3U	4.1	46	0.28J	0.13J	59,000	9.4	5.9	23	15,000	6.3	6400	370	<0.014U	17	680	1	<0.094U	<0.29U	11	66
SSHS-IRM3-S025	SSHS-IRM3-S025-07-09-19	0.6-0.6	854.64	7/9/2019	180-92395-1	7300	<0.36U	4.7	53	0.3J	0.15J	57,000	9.8	6.8	22	16,000	9.2	8500	380	<0.015U	18	630	1.3	<0.11U	<0.34U	11	65
SSHS-IRM3-S026	SSHS-IRM3-S026-07-09-19	0.2-0.2	855.29	7/9/2019	180-92395-1	7700	<0.35U	5.2	56	0.3J	0.15J	51,000	10	6.8	22	16,000	13	9200	400	<0.014U	17	650	1.2	<0.11U	<0.33U	11	65
SSHS-IRM3-S027	SSHS-IRM3-S027-07-10-19	0.4-0.4	855.25	7/10/2019	180-92467-1	8700	0.47J	6.1	63	0.35J	0.12J	35,000	12	7.6	23	18,000	79	6200	400	<0.015U	19	710	0.74J	<0.12U	<0.35U	13	64
SSHS-IRM3-S028	SSHS-IRM3-S028-07-10-19	0.1-0.1	855.32	7/10/2019	180-92467-1	7000	<0.37U	4.7	53	0.27J	0.13J	76,000	9.6	6.5	24	16,000	9	22,000	360	<0.015U	17	740	1.1	<0.12U	<0.35U	11	65
SSHS-IRM3-S028M	SSHS-IRM3-S028-D	0.4-0.4	855.08	8/5/2019	180-93684-3	8800B	0.43J	6.1	61	0.37J	0.14J	41,000	12B	7.4	26	19,000B	14	8200	440B	<0.015U	19	840	0.89J	<0.11U	<0.32U	13	69
SSHS-IRM3-S029	SSHS-IRM3-S029-D	0.6-0.6	855.00	8/5/2019	180-93684-3	9200B	0.6J	6.7	75	0.38J	0.14J	30,000	12B	7.5	30	20,000B	24	12,000	420B	0.025J	22	880	0.74J	<0.11U	<0.33U	14	78
SSHS-IRM3-S044	SSHS-IRM3-S044-C	1.5-1.5	853.53	7/12/2019	180-92615-1	8600	<0.36U	5.9	100	0.36J	0.48J	22,000	10	6.7	58	16,000	25	4900	410	0.023	20	960	0.63J	<0.11U	<0.34U	12	62
SSHS-IRM3-S048	SSHS-IRM3-S048-D	0.1-0.1	855.23	7/12/2019	180-92615-1	6500	<0.37U	5.6	120	0.28J	0.18J	83,000	8.4	5.5	24	16,000	24	19,000	380	0.018J	16	830	1.4	<0.12U	<0.35U	11	60
SSHS-IRM3-S052	SSHS-IRM3-S052-D	1.6-1.6	854.07	7/15/2019	180-92661-1	7800	1.7	7.3	120	0.36J	0.16J	21,000	20	8.2	270	25,000	150	3000	420	0.025J	170	690	0.82J	<0.11U	<0.35U	14	99

- Notes:**  
 EQJ - Estimated Quantitation Limit  
 mg/kg - milligram per kilogram  
 ft bgs - feet below ground surface  
 ft MSL - feet above mean sea level  
 U - Non-detect  
 J - estimated value  
 B - analyte found in method blank  
 TCLP - Toxicity Characteristic Leaching Procedure  
 FI - MS and/or MSD recovery is outside acceptable limits  
 Concentrations detected above 20 TCLP (200 for Lead) are shown in dark gray



Table 5  
Summary of IRM - 4 Metals in Subsurface (2-16 ft bps)  
IRM 4

Former Sperry Remington Site - North Portion  
Elmira, NY

Table with columns for Location, Sample Name, Sample Depth, Sample Date, Lab Report Number, and various chemical elements (Antimony, Barium, Bismuth, Boron, Cadmium, Chromium, Cobalt, Copper, Gallium, Germanium, Indium, Iron, Lead, Manganese, Mercury, Nickel, Nitrogen, Phosphorus, Selenium, Silver, Strontium, Thallium, Vanadium, Zinc, Zirconium) with their respective concentrations in mg/kg.

Table 5  
Summary of IRM 4 Metals in Subsurface (2-16 ft bgs)  
IRM 4

Former Sperry Remington Site - North Portion  
Elmira, NY

Table with columns for Location, Sample Name, Range Depth, Sample Date, Lab Report Number, and various metal concentrations (mg/kg) for elements like Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Manganese, Mercury, Nickel, Silver, Thallium, Vanadium, Zinc, and others. Includes a 'Total' row at the bottom.

Table 5  
Summary of IRM 4 Metals in Subsurface (2-16 ft bs)  
IRM 4

Former Sperry Remington Site - North Portion  
Elmira, NY

Location	Sample Name	Sample Depth Range (ft bs)	Sample Date	Lab Report Number	Metals																		
					Antimony	Barium	Bismuth	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Manganese	Molybdenum	Nickel	Vanadium	Zinc				
IRM 4		18	0.31	0.9	18	0.36	0.042	450	0.45	4.5	2.2	9	0.9	450	1.3	0.008	3.6	450	0.46	0.005	0.22	4.5	1.8
Method 20 TCLP Screening Limit (1000 ppm)					100																		
Protection of Ground-water MCL					10																		
					20																		
					450																		
					19																		
					1720																		
					2000																		
					0.73																		
					130																		
					4																		
					8.3																		
					2480																		

Table 5  
Summary of IRM 4 Metals in Subsurface (2-16 ft bgs)

B&B Engineers and Geologists of New York P.C.

Former Sperry Remington Site - North Portion  
Elmira, NY

Location	Sample Name	Sample Depth Range (ft bgs)	Sample Date	Lab Report Number	Metals																					
					Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Bismuth (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Sulfur (mg/kg)	Titanium (mg/kg)	Zinc (mg/kg)			
					18	0.31	0.9	18	0.36	0.042	450	0.45	4.5	2.2	9	0.9	450	1.3	0.0081	3.6	450	0.46	0.095	0.22	4.5	1.8
							100	2000		20		100				1000			4			20	100			
							16	820	47	7.5		19		1720		450		2000	0.73	130		4	8.3			2480

Notes:

- EQL- Estimated Quantitation Limit
- mg/kg - milligram per kilogram
- ft bgs - feet below ground surface
- ft MSL - feet above mean sea level
- U - Non-detect
- J - estimated value
- B - analyte found in method blank
- TCLP - Toxic Characteristic Leaching Procedure
- F1 - MS and/or MSD recovery is outside acceptable limits
- Concentrations detected above the protection of groundwater SCO are shown in light gray
- Concentrations detected above 20 - TCLP P200 (see EQL) are shown in dark gray

**TABLE 6**  
 Summary of S OC and OC Results for Subsurface Soils (Below 2 ft bgs)  
 R34.4

Former Sperry Remington Site - North Portion  
 Elmira, New York

EQL	Substrate SCO	Location	Sample Name	Sample Depth Range (ft bgs)	Sample Date	Lab Report Number	S			Cs																		
							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
100						0.07912	<0.004U	<0.0043U	<0.00065U	<0.00085U	<0.00081U	<0.00062U	<0.00039U	<0.00099U	<0.00049U	<0.00047U	<0.00061U	<0.00022U	<0.00067U	<0.00038U	<0.00096U	<0.00045U	<0.00099U	<0.00045U	<0.00095U	<0.00029U	<0.00022U	<0.00046U

Notes:  
 EQL - Estimated Quantization Limit  
 mg/kg - milligrams per kilogram  
 ft bgs - feet below ground surface  
 ft MSL - feet above mean sea level  
 U - Not detected  
 J - estimated value  
 B - analyte found in method blank  
 FL - MS and/or MSD recovery is outside acceptable limits  
 S OCs - semi-volatile organic compounds  
 DCs - volatile organic compounds  
 UD - compound not detected as an estimated value

TABLE 6  
Summary of S<sub>OC</sub> and OC Results for Subsurface Soils (Below 2 ft bgs)  
IRM 4

Brock & Bontempo Engineers and Geologists of NY, P.C.

Former Sperry Remington Site - North Portion  
Elms, New York

Location	Sample Name	Sample Depth Range (ft bgs)	Sample Date	Lab Report Number	Cs																			
					1,1-dichloroethane	trans 1,2-dichloroethane	trans 1,3-dichloroethane	1,1-dichloroethane	1,2-dichloroethane	1,3-dichloroethane	1,1-dichloroethane	1,2-dichloroethane	1,3-dichloroethane	1,1-dichloroethane	1,2-dichloroethane	1,3-dichloroethane	1,1-dichloroethane	1,2-dichloroethane	1,3-dichloroethane	1,1-dichloroethane	1,2-dichloroethane	1,3-dichloroethane		
EQL					0.00044	0.00062	0.00035	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045	0.00045			
Subsurface SO																								
SSHS-B2238	SSHS-B2238-SUB-0-17.2	0-17.2	7/23/2018	180-80091-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2238	SSHS-B2238-SUB-12-14	12-14	7/23/2018	180-80091-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2238	SSHS-B2238-SUB-SS	0-11.7	7/23/2018	180-80091-4	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2239	SSHS-B2239-SUB-12-14	12-14	7/23/2018	180-80091-3	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2240	SSHS-B2240-SUB-12-14	12-14	7/23/2018	180-80091-2	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2746	SSHS-B2746-SUB-0-17.2	0-17.2	4/22/2019	180-89294-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2746	SSHS-B2746-SUB-10-12	10-12	4/22/2019	180-89294-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2746	SSHS-B2746-SUB-12-14	12-14	4/22/2019	180-89294-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2746	SSHS-B2746-SUB-2-4	2-4	4/22/2019	180-89294-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2746	SSHS-B2746-SUB-4-6	4-6	4/22/2019	180-89294-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2746	SSHS-B2746-SUB-6-8	6-8	4/22/2019	180-89294-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2746	SSHS-B2746-SUB-8-10	8-10	4/22/2019	180-89294-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2750	SSHS-B2750-SUB-0-17.2	0-17.2	4/23/2019	180-89344-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2750	SSHS-B2750-SUB-12-14	12-14	4/23/2019	180-89344-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2750	SSHS-B2750-SUB-2-4	2-4	4/23/2019	180-89344-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2750	SSHS-B2750-SUB-4-6	4-6	4/23/2019	180-89344-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2750	SSHS-B2750-SUB-6-8	6-8	4/23/2019	180-89344-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2750	SSHS-B2750-SUB-8-10	8-10	4/23/2019	180-89344-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2763	SSHS-B2763-SUB-10-12	10-12	4/26/2019	180-89521-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2763	SSHS-B2763-SUB-6-8	6-8	4/26/2019	180-89521-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2763	SSHS-B2763-SUB-8-10	8-10	4/26/2019	180-89521-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2977	SSHS-B2977-SUB-10-12	10-12	11/7/2019	180-98520-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B2977	SSHS-B2977-SUB-12-14	12-14	11/7/2019	180-98520-1	<0.00044U	<0.00062U	<0.00035U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U	<0.00045U			
SSHS-B8	B23484	4-5	5/11/2000		0.00299	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U	<0.00050U			

Notes:  
EQL - Estimated Quantization Limit  
mg/kg - milligrams per kilogram  
ft bgs - feet below ground surface  
ft MSL - feet above mean sea level  
U - Non-detect  
J - Estimated value  
B - Analyte found in method blank  
FL - MS and/or MSD recovery is outside acceptable limits  
S - OCs semi-volatile organic compounds  
D - OCs volatile organic compounds  
UD - compound not detected as an estimated value

TABLE 7A  
Waste Characterization Results - TCLP

Brech & Bonaparte Engineers and Geologists of NY, P.C.

Former Sperry Remington - North Portion  
Elmira, New York

etho Name	ChemName	units	L	Sample Location/SSHS											
				Sample Location/SSHS-B2621		SSHS-B2625	SSHS-B2634	SSHS-B2637	SSHS-B2637	SSHS-B2649	SSHS-B2660	SSHS-B2661	SSHS-B2672	SSHS-B2673	SSHS-B2675
				Sample Depth (ft bgs)	Date	2-4	2-4	6-8	4-6	8-10	2-4	2-4	4-6	2-4	2-4
RCRA Toxicity Characteristics				5/16/2019	5/16/2019	4/24/2019	4/24/2019	4/24/2019	4/24/2019	5/17/2019	4/25/2019	4/25/2019	5/19/2019	5/18/2019	5/17/2019
Pesticides and Herbicides	gamma-Chlordane	mg/L	0.0029	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U
	Endrin	g/L	0.091	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U
	p-BHC (Lindane)	g/L	0.12	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U
	Hepachlor	g/L	0.18	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U
	Hepachlor epoxide	g/L	0.14	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U
	Metho xchlor	g/L	0.31	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U
	To aphene	mg/L	0.02	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U
	2,4,5-TP (Silvex)	mg/L	0.0011	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U	<0.0011U
	Heclonal	mg/L	0.0045	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U	<0.0045U
	1,4-dichlorobenzene	g/L	4.5	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U
	2,4,5-trichlorophenol	g/L	7.9	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U
	2,4,6-trichlorophenol	g/L	9.5	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U
	2,4-Dinitrotoluene	g/L	7.9	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U
	2-methylphenol	g/L	4	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U
	S OCs	4-methylphenol	mg/L	0.0079	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U
He chlorobenzene		g/L	5.5	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	
He chlorobutadiene		g/L	8.4	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	
He chloroethane		g/L	4	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	
Nitrobenzene		g/L	12	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	
Para-chlorophenol		g/L	7.5	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	
Pyridine		g/L	8.2	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	
1,1-dichloroethane		g/L	110	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	
1,2-dichloroethane		g/L	58	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	
Methyl Ethyl etone		g/L	120	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	
OCs	Benzene	g/L	79	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	
	Carbon tetrachloride	g/L	130	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	
	Chlorobenzene	g/L	63	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	
	Chloroform	g/L	85	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	
	Trichloroethene	g/L	60	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	
	Tetrachloroethene	g/L	80	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	
	vinyl chloride	g/L	150	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	
	Arsenic	mg/L	0.041	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	
	Barium	mg/L	2	2.9	0.73	2.8	3.2B	1.9	0.69J	0.76J	2.5	3.3	2.4	2.2	
	Cadmium	mg/L	0.016	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	
Metals	Chromium (III D)	mg/L	0.0078	5	0.018J	0.034J	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	
	Lead	mg/L	0.029	5	0.88	0.038J	1.8	1.2	0.64	<0.029U	<0.029U	0.53	8.8	29	
	Selenium	mg/L	0.036	1	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	
	Silver	mg/L	0.0085	5	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	
	Mercury	mg/L	0.00065	0.2	<0U	<0U	<0U	<0U	<0U	<0U	<0U	<0U	<0U	<0U	

Note:

J - estimated value

U - non-detect

g/L - micrograms per liter

mg/L - milligrams per liter

ft bgs - feet below ground surface

Chemical concentrations detected above screening criteria are presented in light gray.

TABLE 7A  
Waste Characterization Results - TCLP  
Former Sperry Remington - North Portion  
Elmira, New York

Borch & Bonaparte Engineers and Geologists of NY, P.C.

Sample Location	Sample Depth (ft bgs)	Sample Date																	
		SSHS-B2679		SSHS-B2679		SSHS-B2679		SSHS-B2682		SSHS-B2703		SSHS-B2724		SSHS-B2724		SSHS-B2724		SSHS-B2763	
		4-6	14-16	4-6	8-10	2-4	0.17-2	12-14	2-4	4-6	6-8	4-6	4-6	4-6	4-6	4-6	4-6	4-6	
RCRA Toxicity Characteristics																			
Chem Name	ChemName	units	L	SSHS-B2679	SSHS-B2679	SSHS-B2679	SSHS-B2679	SSHS-B2682	SSHS-B2703	SSHS-B2724	SSHS-B2724	SSHS-B2724	SSHS-B2724	SSHS-B2724	SSHS-B2724	SSHS-B2763			
Pesticides and Herbicides	gamma-Chlordane	mg/L	0.0029	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U			
	Endrin	g/L	0.091	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U	<0.091U			
	p-BHC (Lindane)	g/L	0.12	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U	<0.12U			
	Heptachlor	g/L	0.18	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U	<0.18U			
	Heptachlor epoxide	g/L	0.14	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U	<0.14U			
	Methoxychlor	g/L	0.31	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U	<0.31U			
	Toxaphene	mg/L	0.02	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U	<0.02U			
	2,4,5-TP (Silvex)	mg/L	0.0011	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U	<0.001U			
	Heptachlor	mg/L	0.0045	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U	<0.005U			
	1,4-dichlorobenzene	g/L	4.5	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U	<4.5U			
	2,4,5-trichlorophenol	g/L	7.9	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U			
	2,4,6-trichlorophenol	g/L	9.5	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U	<9.5U			
	2,4-Dinitrotoluene	g/L	7.9	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U	<7.9U			
	2-methylphenol	g/L	4	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U			
	S OCs	4-methylphenol	mg/L	0.0079	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U	<0.008U		
He chlorobenzene		g/L	5.5	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U	<5.5U			
He chlorobutadiene		g/L	8.4	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U	<8.4U			
He chloroethane		g/L	4	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U	<4U			
Nitrobenzene		g/L	12	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U	<12U			
Pentachlorophenol		g/L	7.5	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U	<7.5U			
Pyridine		g/L	8.2	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U	<8.2U			
1,1-dichloroethane		g/L	110	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U	<110U			
1,2-dichloroethane		g/L	58	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U	<58U			
Methyl Ethyl ketone		g/L	120	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U	<120U			
OCs	Benzene	g/L	79	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U	<79U			
	Carbon tetrachloride	g/L	130	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U	<130U				
	Chlorobenzene	g/L	63	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U	<63U				
	Chloroform	g/L	85	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U	<85U				
	Trichloroethene	g/L	60	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U	<60U				
	Tetrachloroethene	g/L	80	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U	<80U				
	vinyl chloride	g/L	150	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U	<150U				
	Arsenic	mg/L	0.041	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U			
	Barium	mg/L	2	<2U	<2U	<2U	<2U	<2U	<2U	<2U	<2U	<2U	<2U	<2U	<2U	<2U			
	Cadmium	mg/L	0.016	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U	<0.016U			
Metals	Chromium (III)	mg/L	0.078	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U	<0.078U			
	Lead	mg/L	0.029	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U			
	Selenium	mg/L	0.036	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U			
	Silver	mg/L	0.0085	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U			
	Mercury	mg/L	0.000065	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U			

Note:

J - estimated value

U - non-detect

g/L - micrograms per liter

mg/L - milligrams per liter

ft bgs - feet below ground surface

Chemical concentrations detected above screening criteria are presented in light



TABLE 7A  
Waste Characterization Results - TCLP

Borch & Bonaparte Engineers and Geologists of NY, P.C.

Former Sperry Remington - North Portion  
Elmira, New York

etho Name	ChemName	units	L	Sample Location SSHS-B2765A											
				Sample Depth (ft bgs) 10-12											
				Sample Date 4/27/2019	SSHs-B2765A	SSHs-B2766	SSHs-B2908	SSHs-B2908	SSHs-B2908	SSHs-B2942	SSHs-B2945	SSHs-B2945	SSHs-B2945	SSHs-B2945	
RCRA Toxicity Characteristics				4/27/2019	4/23/2019	4/23/2019	11/4/2019	11/4/2019	11/4/2019	11/5/2019	11/5/2019	11/6/2019	11/6/2019	11/6/2019	11/6/2019
Pesticides and Herbicides	gamma-Chlordane	mg/L	0.0029	<0.003U	<0.003U	<0.003U	-	-	-	-	-	-	-	-	-
	Endrin	g/L	0.091	<0.091U	<0.091U	<0.091U	-	-	-	-	-	-	-	-	-
	p-BHC (Lindane)	g/L	0.12	<0.12U	<0.12U	<0.12U	-	-	-	-	-	-	-	-	-
	Heptachlor	g/L	0.18	<0.18U	<0.18U	<0.18U	-	-	-	-	-	-	-	-	-
	Heptachlor epoxide	g/L	0.14	<0.14U	<0.14U	<0.14U	-	-	-	-	-	-	-	-	-
	Methoxychlor	g/L	0.31	<0.31U	<0.31U	<0.31U	-	-	-	-	-	-	-	-	-
	Toxaphene	mg/L	0.02	<0.02U	<0.02U	<0.02U	-	-	-	-	-	-	-	-	-
	2,4,5-TP (Silvex)	mg/L	0.0011	<0.0011U	<0.0011U	<0.0011U	-	-	-	-	-	-	-	-	-
	Dieldrin	mg/L	0.0045	<0.0045U	<0.0045U	<0.0045U	-	-	-	-	-	-	-	-	-
	1,4-dichlorobenzene	g/L	4.5	<4.5U	<4.5U	<4.5U	-	-	-	-	-	-	-	-	-
	2,4,5-trichlorophenol	g/L	7.9	<7.9U	<7.9U	<7.9U	-	-	-	-	-	-	-	-	-
	2,4,6-trichlorophenol	g/L	9.5	<9.5U	<9.5U	<9.5U	-	-	-	-	-	-	-	-	-
2,4-Dinitrotoluene	g/L	7.9	<7.9U	<7.9U	<7.9U	-	-	-	-	-	-	-	-	-	
2-methylphenol	g/L	4	<4U	<4U	<4U	-	-	-	-	-	-	-	-	-	
S OCs	4-methylphenol	mg/L	0.0079	<0.0079U	<0.0079U	<0.0079U	-	-	-	-	-	-	-	-	-
	Hexachlorobenzene	g/L	5.5	<5.5U	<5.5U	<5.5U	-	-	-	-	-	-	-	-	-
	Hexachlorocyclopentadiene	g/L	8.4	<8.4U	<8.4U	<8.4U	-	-	-	-	-	-	-	-	-
	Hexachloroethane	g/L	4	<4U	<4U	<4U	-	-	-	-	-	-	-	-	-
	Nitrobenzene	g/L	12	<12U	<12U	<12U	-	-	-	-	-	-	-	-	-
	o-Nitrochlorophenol	g/L	7.5	<7.5U	<7.5U	<7.5U	-	-	-	-	-	-	-	-	-
	Pyridine	g/L	8.2	<8.2U	<8.2U	<8.2U	-	-	-	-	-	-	-	-	-
	1,1-dichloroethane	g/L	110	<110U	<110U	<110U	-	-	-	-	-	-	-	-	-
	1,2-dichloroethane	g/L	58	<58U	<58U	<58U	-	-	-	-	-	-	-	-	-
	Methyl Ethyl ketone	g/L	120	<120U	<120U	<120U	-	-	-	-	-	-	-	-	-
	Benzene	g/L	79	<79U	<79U	<79U	-	-	-	-	-	-	-	-	-
	Carbon tetrachloride	g/L	130	<130U	<130U	<130U	-	-	-	-	-	-	-	-	-
Chlorobenzene	g/L	63	<63U	<63U	<63U	-	-	-	-	-	-	-	-	-	
Chloroform	g/L	85	<85U	<85U	<85U	-	-	-	-	-	-	-	-	-	
Trichloroethene	g/L	60	<60U	<60U	<60U	-	-	-	-	-	-	-	-	-	
Tetrachloroethene	g/L	80	<80U	<80U	<80U	-	-	-	-	-	-	-	-	-	
vinyl chloride	g/L	150	<150U	<150U	<150U	-	-	-	-	-	-	-	-	-	
Metals	Arsenic	mg/L	0.041	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U
	Barium	mg/L	2	0.16J	0.34J	1.2J	0.29J	1J	0.63J	1.9J	0.46J	0.86J	0.82J	0.27J	
	Cadmium	mg/L	0.0016	0.077J	0.24J	<0.0016U	<0.0016U	<0.0016U	<0.0016U	<0.0016U	<0.0016U	<0.0016U	<0.0016U	<0.0016U	<0.0016U
	Chromium (III D)	mg/L	0.0078	0.019J	0.012J	<0.0078U	<0.0078U	<0.0078U	<0.0078U	0.012J	0.13J	0.096J	0.12J	0.096J	0.12J
	Lead	mg/L	0.029	<0.029U	<0.029U	<0.029U	0.02J	7.5	0.33J	0.066J	<0.029U	<0.029U	<0.029U	<0.029U	<0.029U
	Selenium	mg/L	0.036	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U
	Silver	mg/L	0.0085	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U	<0.0085U
	Mercury	mg/L	0.000065	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U	<0.000065U

Note:

J - estimated value

U - non-detect

g/L - micrograms per liter

mg/L - milligrams per liter

ft bgs - feet below ground surface

Chemical concentrations detected above screening criteria are presented in light

TABLE 7A  
Waste Characterization Results - TCLP  
Former Sperry Remington - North Portion  
Elmira, New York

Chem Name	ChemName	Units	L	Sample Location SSHS-B2945							
				Sample Depth (ft bgs) 8-10		SSHS-B2946	SSHS-B2947	SSHS-B2948	SSHS-B2949	SSHS-B2950	SSHS-B2951
				Sample	Date	11/6/2019	11/5/2019	11/6/2019	11/7/2019	11/5/2019	11/5/2019
RCRA Toxicity Characteristics											
Pesticides and Herbicides	gamma-Chlordane	mg/L	0.0029	-	-	-	-	-	-	-	-
	Endrin	g/L	0.091	20	-	-	-	-	-	-	-
	p-BHC (Lindane)	g/L	0.12	400	-	-	-	-	-	-	-
	Heptachlor	g/L	0.18	8	-	-	-	-	-	-	-
	Heptachlor epoxide	g/L	0.14	-	-	-	-	-	-	-	-
	Methoxychlor	g/L	0.31	10000	-	-	-	-	-	-	-
	Toxaphene	mg/L	0.02	0.5	-	-	-	-	-	-	-
	2,4,5-TP (Silvex)	mg/L	0.0011	1	-	-	-	-	-	-	-
	Heptachlor	mg/L	0.0045	10	-	-	-	-	-	-	-
S OCs	1,4-dichlorobenzene	g/L	4.5	7500	-	-	-	-	-	-	-
	2,4,6-trichlorophenol	g/L	7.9	400000	-	-	-	-	-	-	-
	2,4,6-trichlorophenol	g/L	9.5	2000	-	-	-	-	-	-	-
	2,4-Dinitrotoluene	g/L	7.9	30130	-	-	-	-	-	-	-
	2-methylphenol	g/L	4	420000	-	-	-	-	-	-	-
	4-methylphenol	mg/L	0.0079	4200	-	-	-	-	-	-	-
	Hexachlorobenzene	g/L	5.5	30130	-	-	-	-	-	-	-
	Hexachlorobutadiene	g/L	8.4	500	-	-	-	-	-	-	-
	Hexachloroethane	g/L	4	3000	-	-	-	-	-	-	-
	Nitrobenzene	g/L	12	2000	-	-	-	-	-	-	-
	Pentachlorophenol	g/L	7.5	100000	-	-	-	-	-	-	-
	Pyridine	g/L	8.2	35000	-	-	-	-	-	-	-
	1,1-dichloroethene	g/L	110	700	-	-	-	-	-	-	-
	1,2-dichloroethane	g/L	58	500	-	-	-	-	-	-	-
	Methyl Ethyl ketone	g/L	120	200000	-	-	-	-	-	-	-
	Benzene	g/L	79	500	-	-	-	-	-	-	-
	Carbon tetrachloride	g/L	130	500	-	-	-	-	-	-	-
	Chlorobenzene	g/L	63	100000	-	-	-	-	-	-	-
	Chloroform	g/L	85	6000	-	-	-	-	-	-	-
	Trichloroethene	g/L	60	500	-	-	-	-	-	-	-
	Tetrachloroethene	g/L	80	700	-	-	-	-	-	-	-
	vinyl chloride	g/L	150	200	-	-	-	-	-	-	-
Metals	Arsenic	mg/L	0.041	5	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U	<0.041U
	Barium	mg/L	2	100	0.84J	0.67J	0.75J	0.21J	0.62J	0.58J	0.36J
	Cadmium	mg/L	0.0016	1	<0.003U	0.004J	<0.003U	<0.003U	<0.003U	<0.003U	<0.003U
	Chromium (III + VI)	mg/L	0.0078	5	0.17J	0.08J	0.08J	0.011J	<0.008U	0.027J	0.012J
	Lead	mg/L	0.029	5	<0.029U	0.23J	<0.029U	0.2J	<0.029U	0.032J	<0.029U
	Selenium	mg/L	0.036	1	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U	<0.036U
	Silver	mg/L	0.0085	5	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U	<0.009U
	Mercury	mg/L	0.000065	0.2	<0U	<0U	<0U	0J	0	<0U	<0U

**Notes:**

J - estimated value  
U - non-detect

g/L - micrograms per liter  
mg/L - milligrams per liter

ft bgs - feet below ground surface

Chemical concentrations detected above screening criteria are presented in light

TABLE 7B  
Waste Characterization Results - Total Constituents  
Former Sperry Remington - North Portion  
Elms, New York

Bloch & Associates Engineers and Geologists of NY, P.C.

Chem Name	Chem Name	Units	L	Sample Location (SSHS-B2621 to SSHS-B2679)														
				Sample Depth 1-4	Sample Date 5/14/2019	Sample Date 4/24/2019	Sample Date 4/24/2019	Sample Date 4/24/2019	Sample Date 5/17/2019	Sample Date 4/25/2019	Sample Date 4/25/2019	Sample Date 5/19/2019	Sample Date 5/17/2019	Sample Date 4/24/2019	Sample Date 4/24/2019	Sample Date 4/24/2019		
Metals 20 TCLP Screening (Lead 1000 ppm)				SYS Hazardous Material														
Lead PC in	mg/kg		50	23.67	5.635	20.78	121.8	27.58	33.69	0.6386	15.77	26.33	255.8	58.84	118.9	24.83	489.8	188.3
Lead 1016	mg/kg			<0.01U	<0.006U	<0.06U	<0.65	<0.12U	<0.12U	<0.007U	<0.03U	<0.01U	<0.64U	<0.31U	<0.29U	<0.058U	<1.2U	<0.61U
Lead 1221	mg/kg	0.0062		<0.014U	<0.006U	<0.06U	<0.65U	<0.13U	<0.13U	<0.0062U	<0.034U	<0.007U	<0.69U	<0.33U	<0.31U	<0.064U	<1.3U	<0.66U
Lead 1222	mg/kg	0.0062		<0.012U	<0.006U	<0.06U	<0.65U	<0.08U	<0.09U	<0.0062U	<0.024U	<0.006U	<0.68U	<0.31U	<0.29U	<0.064U	<1.3U	<0.66U
Lead 1242	mg/kg	0.0029		<0.014U	<0.002U	<0.02U	<0.27U	<0.052U	<0.052U	<0.014U	<0.024U	<0.014U	<0.29U	<0.14U	<0.13U	<0.026U	<0.53U	<0.27U
Lead 1248	mg/kg	0.017		15J	3.5	15J	80J	27J	26J	0.43J	11J	21J	200J	41J	87J	21J	160J	80J
Lead 1254	mg/kg	0.0058		5.8J	1.6	4.7J	28J	8.4J	8.1J	0.15J	3.9J	4.5J	41J	12J	28J	6.7J	110J	25J
Lead 1260	mg/kg	0.0051		2.8J	0.52	0.94J	4.4J	1.8J	1.3J	0.645J	0.79J	0.88J	11J	1.3J	4.2J	0.99J	17J	3.8J
Lead 1268	mg/kg	0.0023		<0.013U	<0.002U	<0.02U	<0.25U	<0.04U	<0.05U	<0.0023U	<0.013U	<0.002U	<0.28U	<0.13U	<0.12U	<0.024U	<0.49U	<0.24U
Lead 1262	mg/kg	0.0061		<0.014U	<0.006U	<0.06U	<0.65U	<0.13U	<0.13U	<0.0061U	<0.034U	<0.006U	<0.69U	<0.33U	<0.31U	<0.064U	<1.3U	<0.66U
Ignitability	F			140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
Cyanide Total	mg/kg			0.64	3.5	3.8	106	5.7	4.7	1.3	2.4	1.6	12	1.6	2.6	1.4	3.1	2.6
Sulfide	mg/kg	12		<12U	12J	34	31J	27J	17J	28J	29J	16J	42	14J	24J	25J	26J	23J
pH Lab	pH Units	6.1		7.5J	10.889J	8.2J	8.2J	8.3J	11.5J	8.1J	8.3J	8J	8.2J	8.2J	8.2J	8.2J	8.2J	8.2J
Aluminum	mg/kg	22		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Antimony	mg/kg	0.37		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Arsenic	mg/kg	1.1	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	mg/kg	22	2000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Beryllium	mg/kg	0.43		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cadmium	mg/kg	0.54	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Calcium	mg/kg	540		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium (III)	mg/kg	0.54	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	mg/kg	5.4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	mg/kg	0.7		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	mg/kg	11		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	mg/kg	1.1	1000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	mg/kg	540		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Magnesium	mg/kg	1.6		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	mg/kg	4.3		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Potassium	mg/kg	540		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Selenium	mg/kg	0.58	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Silver	mg/kg	540	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	mg/kg	1.1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Thallium	mg/kg	0.35		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	mg/kg	5.4		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
U	mg/kg	2.2		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Mercury	mg/kg	0.037	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

J - estimated value  
U - non-detect  
mg/kg - milligrams per kilogram  
lb/bs - feet below ground surface  
Detection concentrations detected above screening criteria are presented in light gray.

TABLE 7B  
Waste Characterization Results - Total Constituents  
Former Sperry Remington - North Portion  
Elms, New York

Bosch & Broquage Engineers and Geologists of NY, P.C.

etho	Name (ChemName)	Units	L	Sample Location: SSHS-B2682											
				Sample Depth: 2-4		SSHIS-B2703	SSHIS-B2724	SSHIS-B2724	SSHIS-B2724	SSHIS-B2724	SSHIS-B2724	SSHIS-B2763	SSHIS-B2765A	SSHIS-B2765A	SSHIS-B2766
				Sample Date: 4/25/2019	5/19/2019	4/24/2019	4/24/2019	4/24/2019	4/24/2019	4/24/2019	4/26/2019	4/27/2019	4/27/2019	4/23/2019	
Metals 20 TCLP Screening (Lead 1000 ppm)				NYS Hazardous Material											
	Total PCBs	mg/kg		50	3095	152	0.1684	3.904	13.33	18.49	0.1886	4.817	11.19	9.621	
Polychlorinated Biphenyls	Arochlor 1216	mg/kg	0.0057	-0.111	-0.3111	-0.00581	-0.00481	-0.061	-0.061	-0.061	-0.06232	-0.061	-0.0311	-0.0311	
	Arochlor 1221	mg/kg	0.0062	-0.70	-0.347	-0.00611	-0.00611	-0.0611	-0.0611	-0.0611	-0.0611	-0.0611	-0.0311	-0.0311	
	Arochlor 1232	mg/kg	0.0042	-0.48	-0.328	-0.00411	-0.00411	-0.0411	-0.0411	-0.0411	-0.0411	-0.0411	-0.0211	-0.0211	
	Arochlor 1242	mg/kg	0.0026	-0.88	-0.141	-0.00241	-0.00241	-0.0241	-0.0241	-0.0241	-0.0241	-0.0241	-0.0141	-0.0141	
	Arochlor 1248	mg/kg	0.017	2409	120	0.11	3.43	11	11	11	0.14	1.5	4.5	7.11	
	Arochlor 1254	mg/kg	0.0058	992	241	0.04	1.82	3.48	4.48	4.48	-0.00582	3.3	8.6	2.11	
	Arochlor 1260	mg/kg	0.0051	90	7.3	-0.00511	0.29	0.59	0.79	0.79	-0.00511	-0.00511	-0.0211	0.351	
	Arochlor 1268	mg/kg	0.0021	-2.58	-0.138	-0.00211	-0.00211	-0.0211	-0.0211	-0.0211	-0.0211	-0.0211	-0.0111	-0.0111	
Arochlor 1282	mg/kg	0.0061	-0.61	-0.331	-0.00611	-0.00611	-0.0611	-0.0611	-0.0611	-0.0611	-0.0611	-0.0311	-0.0311		
Miscellaneous	Ignitability	F		140	140	140	140	140	140	140	140	140	140	140	
	Cyanide Total	mg/kg	0.28	12	0.84	-0.281	0.561	1	2	0.321	1.5	1.4	3.4		
	Sulfide	mg/kg	12	40	37	23	21	26	25	41	52	20	24		
	Hf (Total)	mg/kg	0.3	8.3	69.8	8.3	8.3	8.3	8.4	8	11.488	11.488	8.3		
	Aluminum	mg/kg	22								700	750			
Metals	Antimony	mg/kg	0.37	-	-	-	-	-	-	-	-	0.39	-0.371	-	
	Arsenic	mg/kg	1.1	100	-	-	-	-	-	-	-	8.5	6.8	-	
	Barium	mg/kg	22	2000	-	-	-	-	-	-	-	94	94	-	
	Beryllium	mg/kg	0.63	-	-	-	-	-	-	-	-	0.38	0.3	-	
	Cadmium	mg/kg	0.34	20	-	-	-	-	-	-	-	0.14	0.49	-	
	Calcium	mg/kg	540	-	-	-	-	-	-	-	-	7200	50,000	-	
	Chromium (III)	mg/kg	0.14	100	-	-	-	-	-	-	-	8	11	-	
	Cobalt	mg/kg	5.4	-	-	-	-	-	-	-	-	5.4	5.3	-	
	Copper	mg/kg	2.7	-	-	-	-	-	-	-	-	29	35	-	
	Iron	mg/kg	11	-	-	-	-	-	-	-	-	17,000	20,000	-	
	Lead	mg/kg	1.1	1000	-	-	-	-	-	-	-	59	100	-	
	Magnesium	mg/kg	540	-	-	-	-	-	-	-	-	3000	4800	-	
	Manganese	mg/kg	1.6	-	-	-	-	-	-	-	-	490	480	-	
	Nickel	mg/kg	4.3	-	-	-	-	-	-	-	-	16	26	-	
	Potassium	mg/kg	540	-	-	-	-	-	-	-	-	740	640	-	
	Selenium	mg/kg	0.38	20	-	-	-	-	-	-	-	-0.588	0.92	-	
	Silver	mg/kg	0.11	100	-	-	-	-	-	-	-	-0.129	-0.141	-	
	Sodium	mg/kg	540	-	-	-	-	-	-	-	-	98	130	-	
Thallium	mg/kg	0.35	-	-	-	-	-	-	-	-	-0.361	-0.351	-		
Zinc	mg/kg	5.4	-	-	-	-	-	-	-	-	12	12	-		
inc	mg/kg	2.2	-	-	-	-	-	-	-	-	70	99	-		
Misc	mg/kg	0.037	4	-	-	-	-	-	-	-	0.027	0.1	-		

J - estimated value  
 U - undetect  
 mg/kg - milligrams per kilogram  
 ft bgs - feet below ground surface  
 \*Relative concentrations detected above screening criteria are presented in light gray.

TABLE 8  
Step-Out and Step-Down Procedures

B & B Engineers & Geologists of NY, P.C.

Former Sperry Remington Site - North Portion  
Elmira, New York

<b>Confirmation Sampling</b>		<b>Documentation Sampling</b>
Sidewall sample results exceed IRM cleanup objective	Bottom sample results exceed IRM cleanup objective	Sidewall sample results exceed IRM cleanup objective
Extend excavation a maximum of thirty (30) feet and re-sample sidewall and bottom areas	Excavate area additional two (2) feet and re-sample sidewall and bottom areas. <sup>3</sup>	Document COPCs left in place for future removal

Notes

The feasibility of excavation below the water table will be evaluated based on lithology, transmissivity and field observations. If feasible, groundwater will be managed using water management methods presented in Section 3.4.

TABLE 9  
Bottom Excavation Areas and Samples  
Former Sperry Remington Site - North Portion  
Elmira, New York

Figure Number	Label	Bottom Depth (ft bgs)	Bottom of Excavation Area <sup>1</sup> (SF)	Proposed Bottom Samples		
				Required Number of Samples	Existing Sample	Samples Needed
5	4-1	4	2,556	3	6	0
6	6-1	6	865	1	0	1
7	8-1	8	489	1	1	0
8	10-1	10	776	1	1	0
8	10-2	10	871	1	1	0
10	14-1	14	547	1	0	1
10	14-2	14	347	1	2	0

Notes

SF - square feet

ft bgs - feet below ground surface

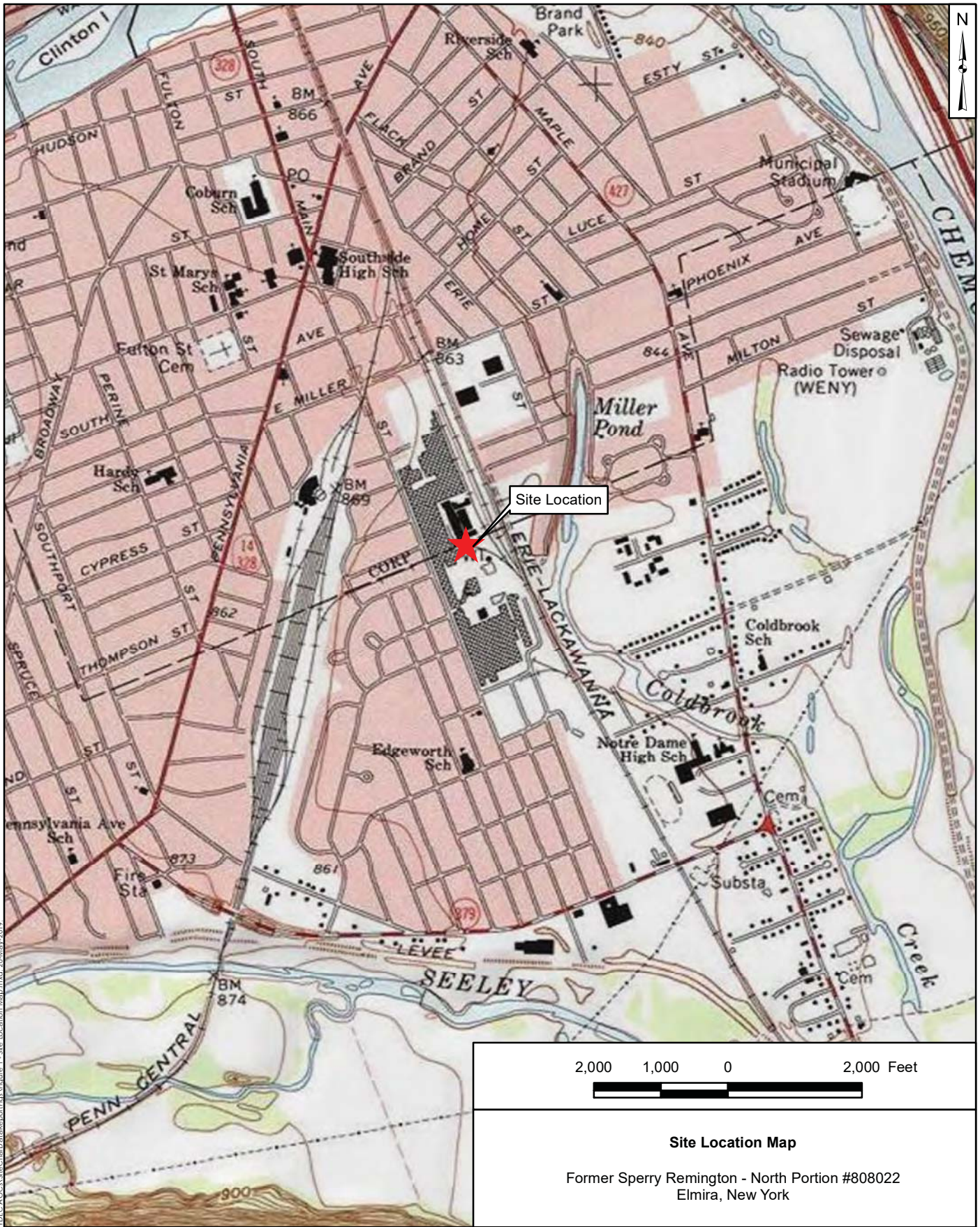
<sup>1</sup> Bottom of TSCA excavation of each two-foot interval in areas where the two-foot interval below is not presumed to be a TSCA excavation

ormer Sperr Remington North Portion  
lmira Chemung Count Ne or

Tas Name	Duration	Start	inish
IRM Strategy & Planning Meeting	0 days	Tue 11/19/2019	Tue 11/19/2019
<b>R 4 or Plan an Design</b>	117 days		
Pre-Final (95 ) Work Plan and Design Preparation	9 wks	Wed 12/18/2019	Fri 2/14/2020
Pre-Final (95 ) Work Plan and Submittal	0 days	Fri 2/14/2020	Fri 2/14/2020
Agency and ECSD Review	6 wks	Fri 2/14/2020	Thu 3/26/2020
Agency Comments on Pre-Final (95 ) Submittal	0 days	Thu 3/26/2020	Thu 3/26/2020
Final (100 ) Work Plan and Design Preparation	5 wks	Fri 3/27/2020	Thu 4/30/2020
Final (100 ) Work Plan and Design Submittal	0 days	Thu 4/30/2020	Thu 4/30/2020
Contractor Work Plan	2 wks	Fri 4/17/2020	Thu 4/30/2020
ECSD Comments	0 days	Thu 5/7/2020	Thu 5/7/2020
Response Schedule to ECSD Comments	0 days	Mon 5/11/2020	Mon 5/11/2020
Agency Comments on Final (100 ) Submittal	0 days	Wed 5/13/2020	Wed 5/13/2020
Revised Final (100 ) Work Plan and Design Preparation	4 days	Thu 5/14/2020	Tue 5/19/2020
Revised Final (100 ) Work Plan and Design Submittal	0 days	Tue 5/19/2020	Tue 5/19/2020
Agency and ECSD Review	1 wk	Wed 5/20/2020	Thu 5/28/2020
Revised Contractor Work Plan Submittal	0 days	Thu 5/21/2020	Thu 5/21/2020
Temporary Rally Point Plan Submittal	0 days	Thu 5/21/2020	Thu 5/21/2020
Agency and ECSD Review	4 days	Fri 5/22/2020	Thu 5/28/2020
NYSDEC Approval and NTP	0 days	Thu 5/28/2020	Thu 5/28/2020
2020 IRM Contractor Selection Process	48 days	Wed 1/22/2020	Fri 3/27/2020
<b>R 4 Construction</b>	70 days	Mon 6/1/2020	Fri 9/4/2020
Mobilization	0 days	Mon 6/1/2020	Mon 6/1/2020
E isting Conditions Survey/Utility Location/ Grandstand Hazardous Material Survey	8 days	Mon 6/1/2020	Wed 6/10/2020
Install Temporary Fencing	8 days	Wed 6/3/2020	Fri 6/12/2020
Construct Temporary Facilities (haul roads, MSA)	14 days	Wed 6/10/2020	Mon 6/29/2020
Demolition Plan Submittal	0 days	Fri 6/12/2020	Fri 6/12/2020
Agency and ECSD Review of Demolition Plan	2 wks	Mon 6/15/2020	Fri 6/26/2020
Grandstand Demolition	1 mon	Mon 7/6/2020	Fri 7/31/2020
E cavation - West Side (Slope and Bench)	8 days	Tue 6/30/2020	Thu 7/9/2020
Install Soldier Piles	9 days	Tue 6/30/2020	Mon 7/13/2020
E cavation with SOE (Soldier Pile Walls)	18 days	Mon 7/13/2020	Thu 8/6/2020
Backfilling	2 wks	Fri 8/7/2020	Thu 8/20/2020
Site Restoration	2 wks	Fri 8/14/2020	Fri 8/28/2020
Demobilization	0 days	Fri 9/4/2020	Fri 9/4/2020
<b>R 4 Construction Completion Report (CCR)</b>			
CCR Preparation	3 mons	Fri 8/28/2020	Fri 11/20/2020
CCR Submittal	0 days	Fri 11/20/2020	Fri 11/20/2020

# FIGURES





Site Location

2,000 1,000 0 2,000 Feet

**Site Location Map**

Former Sperry Remington - North Portion #808022  
Elmira, New York

B&B Engineers & Geologists  
of new york, p.c.  
*an affiliate of Geosyntec Consultants*

**Figure**

**1**

Notes:  
Topographic map accessed via ArcGIS Online and provided by National Geographic Society and i-cubed on 20 May 2019. Elmira, New York Quadrangle (1971, photorevised 1976) is shown.

Columbia, Maryland

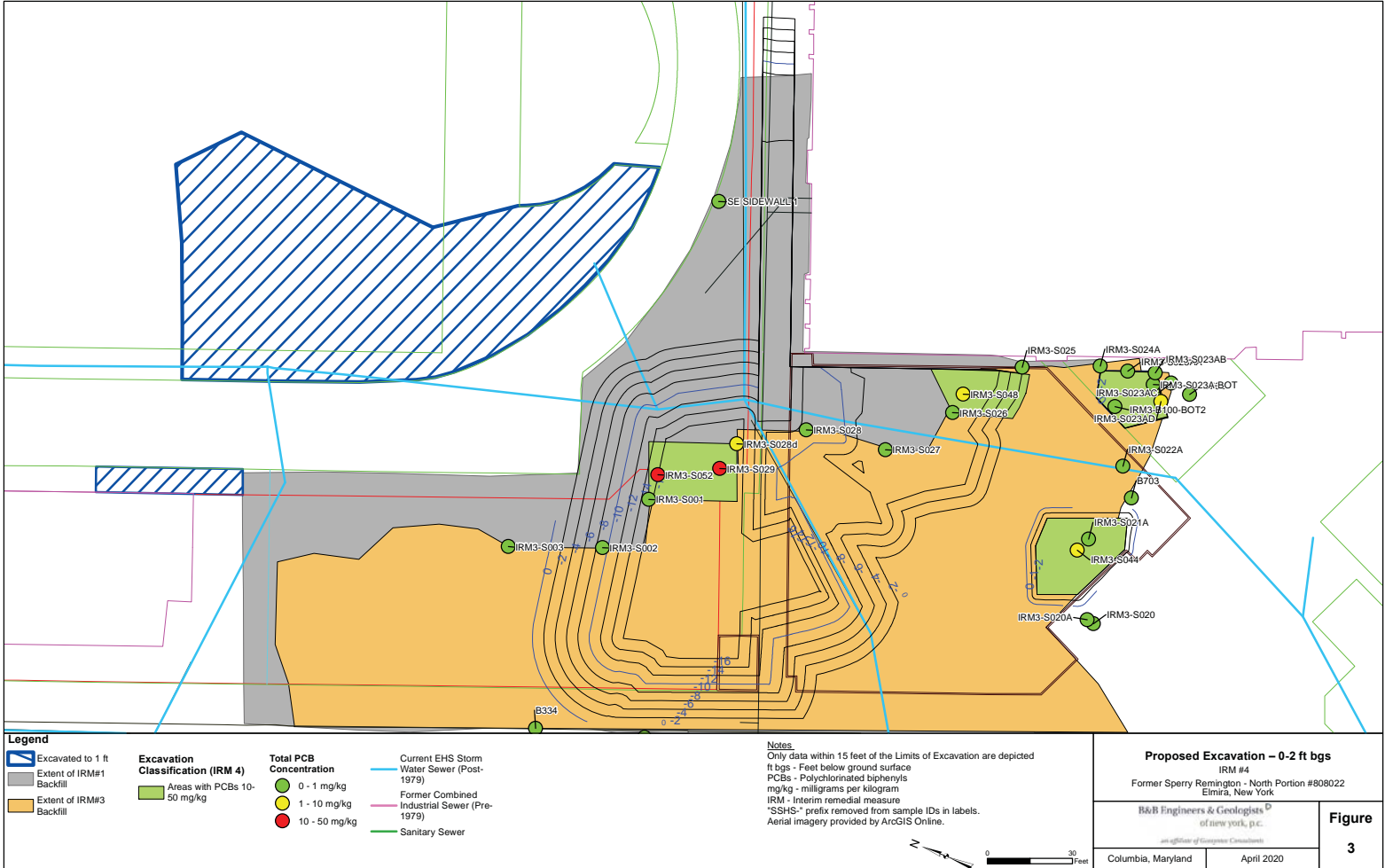
February 2020

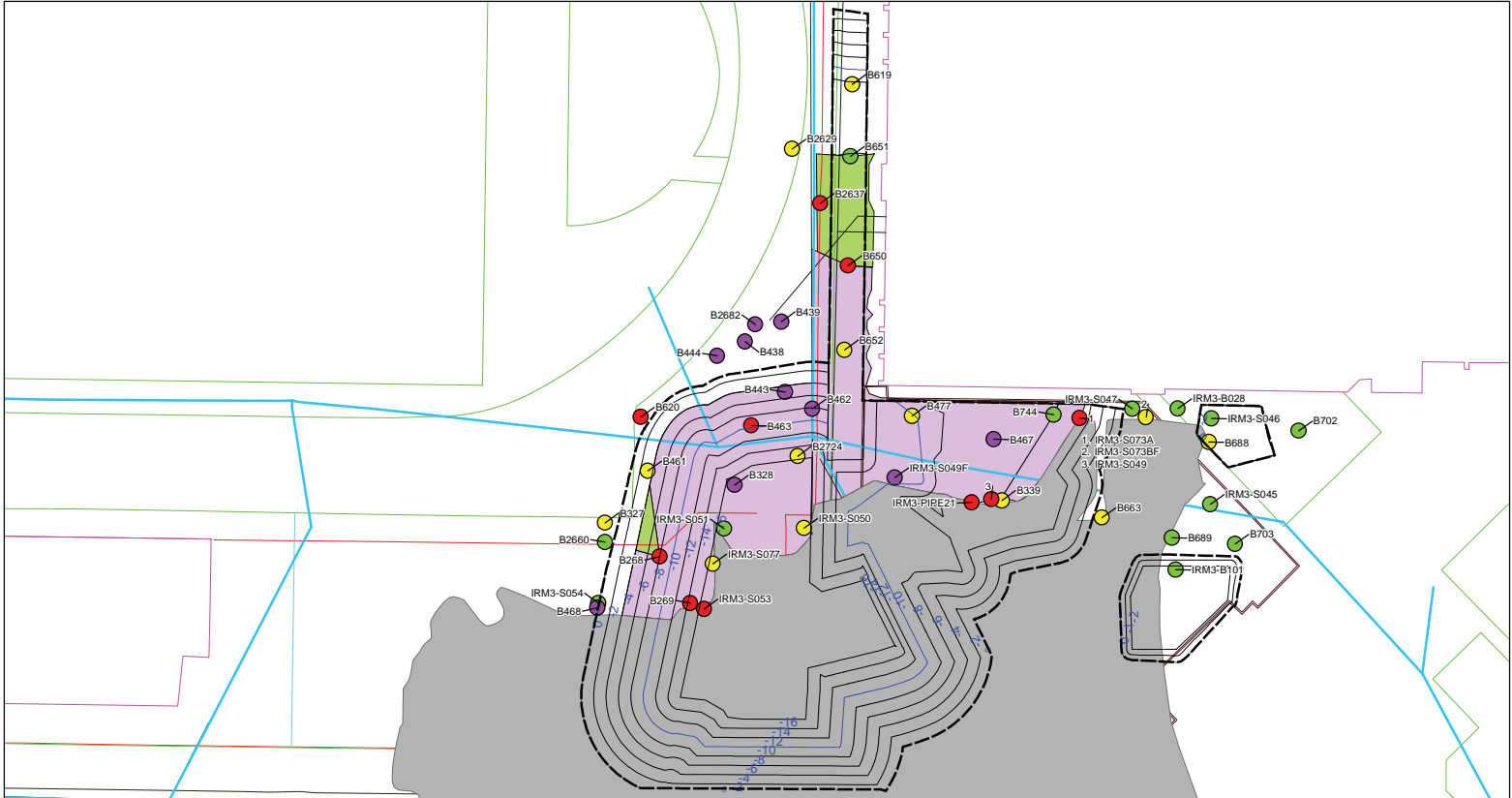
F:\GIS\Elmira - M010822\Maps\NYDEC\AOC\SiteCharData\airport\Fig\Figure 1 - Site Location Map.mxd, 20 May 2019.



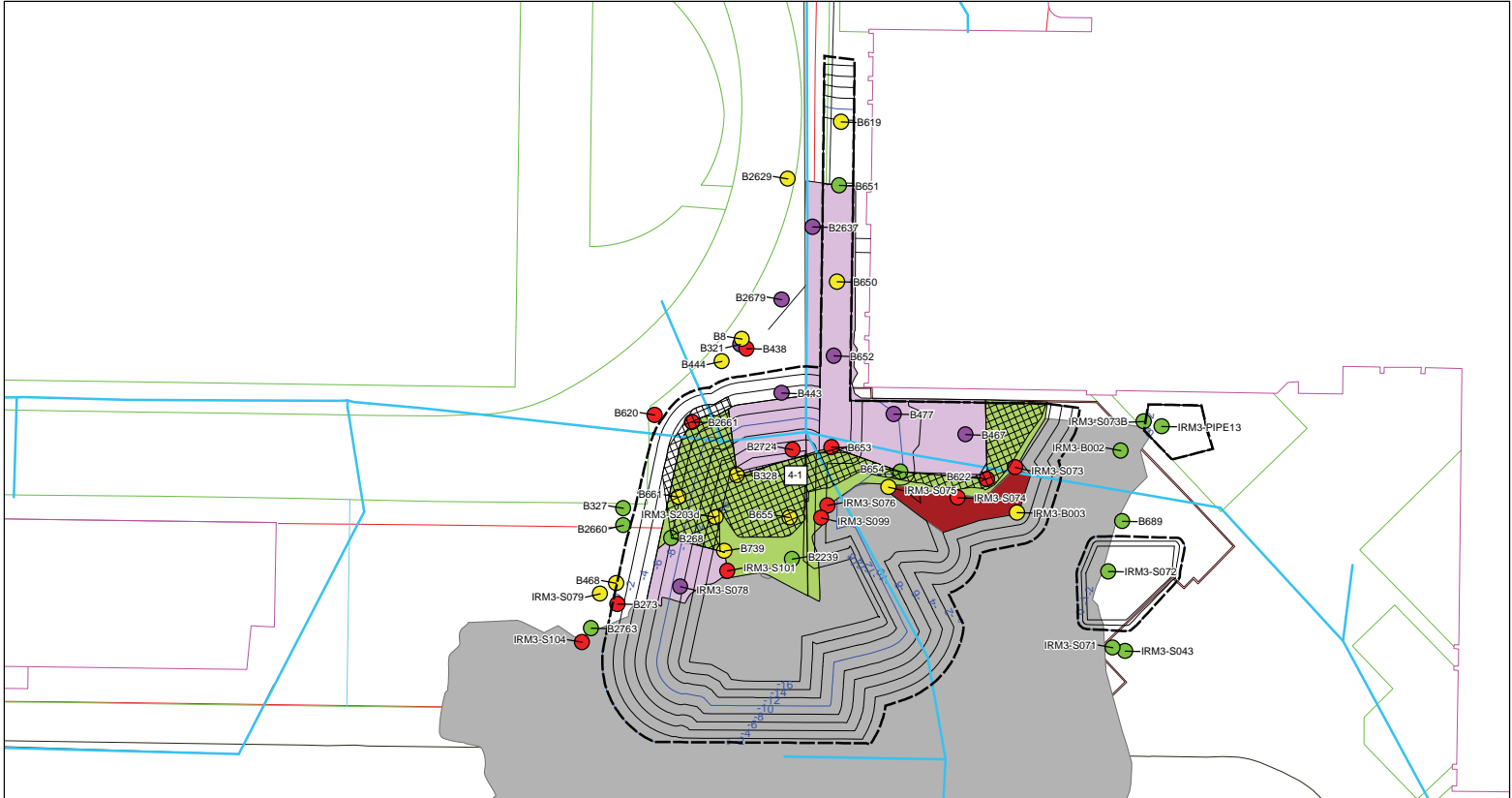
**Notes**  
 Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 07 April 2020.

150 75 0 150 Feet 	
<b>Site Layout Map</b> Former Sperry Remington - North Portion #808022 Elmira, New York	
<b>Beech and Bonaparte</b> engineering p.c. <i>an affiliate of Geosyntec Consultants</i>	
Columbia, Maryland	April 2020
<b>Figure</b>	
<b>2</b>	





<b>Legend</b> Total PCB Concentration ○ Non-Detect ● 0 - 1 mg/kg ● 1 - 10 mg/kg ● 10 - 50 mg/kg ● >50 mg/kg		<b>Limits of Excavation</b> ▭ Excavated — Excavation Contour (minor) — Excavation Contour (major)		<b>Excavation Classification (IRM 4)</b> ■ Areas with PCBs 1-10 mg/kg ■ Areas with PCBs 10-50 mg/kg ■ Areas with PCBs > 50 mg/kg		<b>Site Boundary</b> — Current EHS Storm Water Sewer (Post-1979) — Former Combined Industrial Sewer (Pre-1979) — Sanitary Sewer	
<b>Notes</b> Only data within 15 feet of the Limits of Excavation are depicted ft bgs - Feet below ground surface PCBs - Polychlorinated biphenyls IRM - Interim remedial measure mg/kg - milligrams per kilogram Aerial imagery provided by ArcGIS Online.						<b>Proposed Excavation – 2-4 ft bgs</b> IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York	
B&B Engineers & Geologists of new york, p.c. <small>an affiliate of Geosynapse Consultants</small>						<b>Figure</b> <b>4</b>	
Columbia, Maryland      February 2020							



**Legend**

<ul style="list-style-type: none"> <li> TSCA Bottoms</li> <li> Non-Detect</li> <li> 0 - 1 mg/kg</li> <li> 1 - 10 mg/kg</li> <li> 10 - 50 mg/kg</li> <li> &gt;50 mg/kg</li> </ul>	<ul style="list-style-type: none"> <li> Limits of Excavation</li> <li> Excavated</li> <li> Excavation Contour (minor)</li> <li> Excavation Contour (major)</li> </ul>
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<p><b>Excavation Classification (IRM 4)</b></p> <ul style="list-style-type: none"> <li> Areas with PCBs 1-10 mg/kg</li> <li> Areas with PCBs 10-50 mg/kg</li> <li> Areas with PCBs &gt; 50 mg/kg</li> <li> Metals-Driven</li> </ul>	<ul style="list-style-type: none"> <li> Site Boundary</li> <li> Current EHS Storm Water Sewer (Post-1979)</li> <li> Former Combined Industrial Sewer (Pre-1979)</li> <li> Sanitary Sewer</li> </ul>
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**Notes**

Only data within 15 feet of the Limits of Excavation are depicted

ft bgs - Feet below ground surface

PCBs - Polychlorinated biphenyls

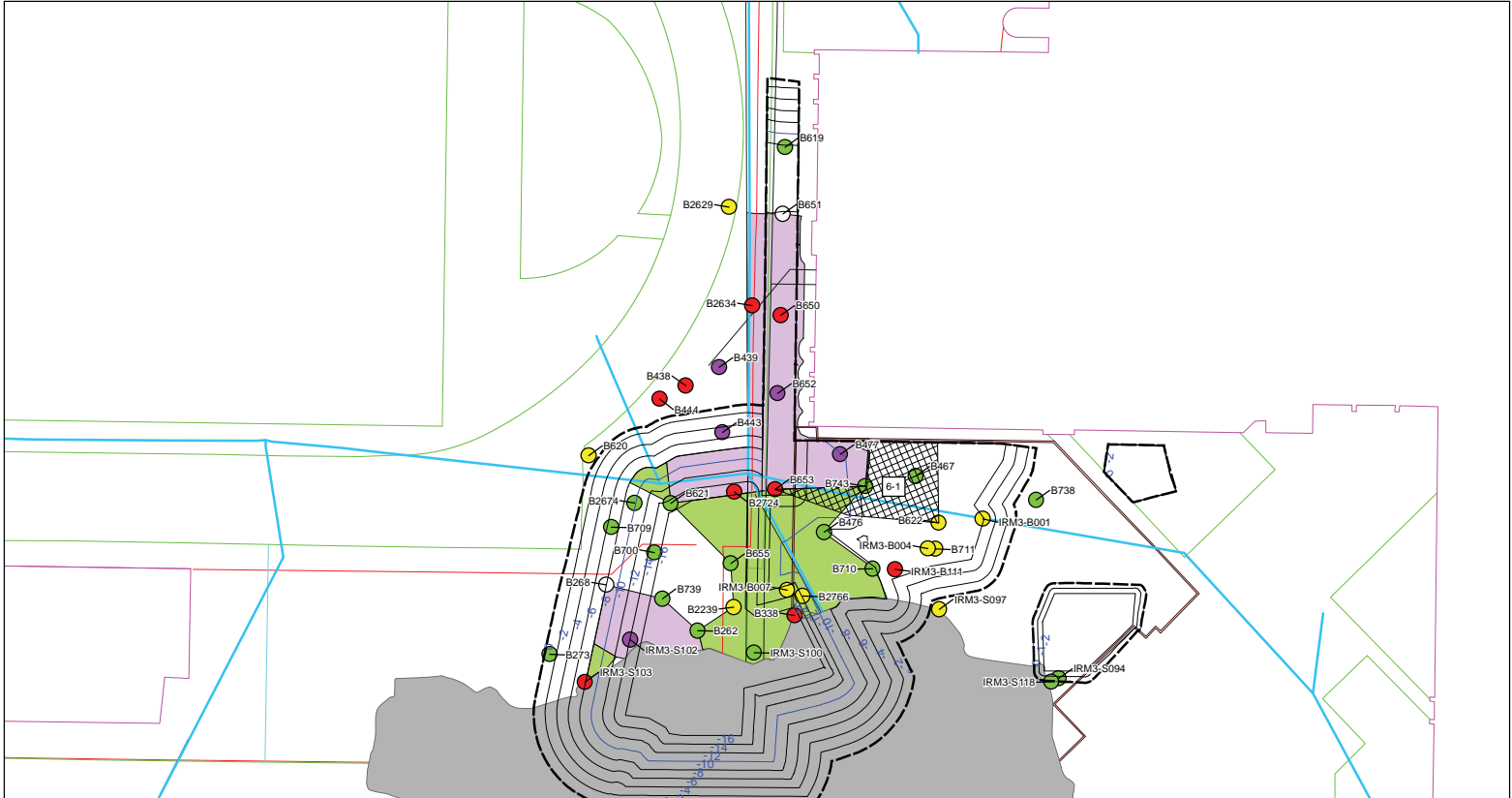
IRM - Interim remedial measure

mg/kg - milligrams per kilogram

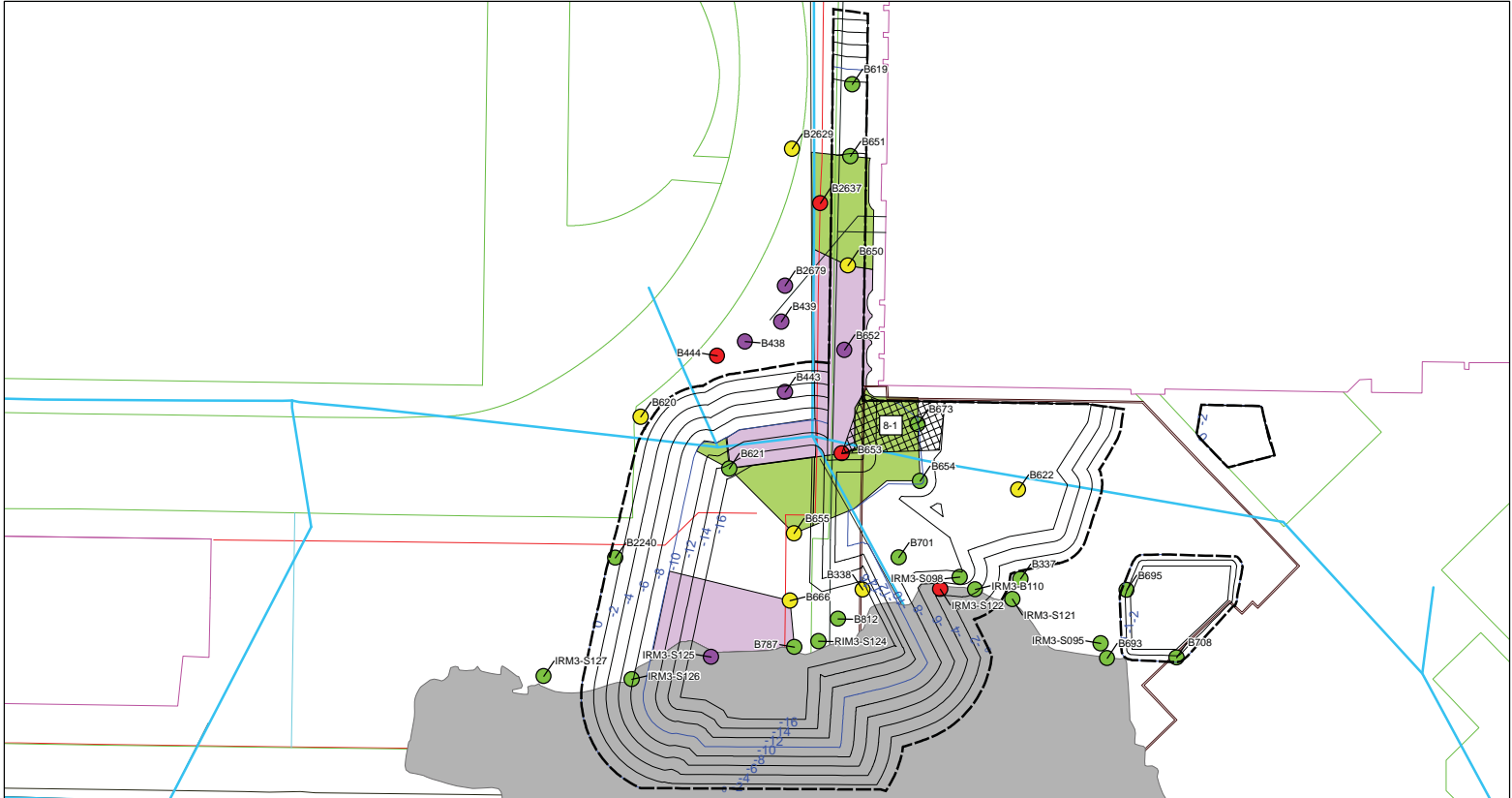
Aerial imagery provided by ArcGIS Online.



<b>Proposed Excavation – 4-6 ft bgs</b>		<b>Figure</b>  5
IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York		
B&B Engineers & Geologists of New York, P.C. <small>An Affiliate of Companies Chemcon</small>		
Columbia, Maryland	April 2020	



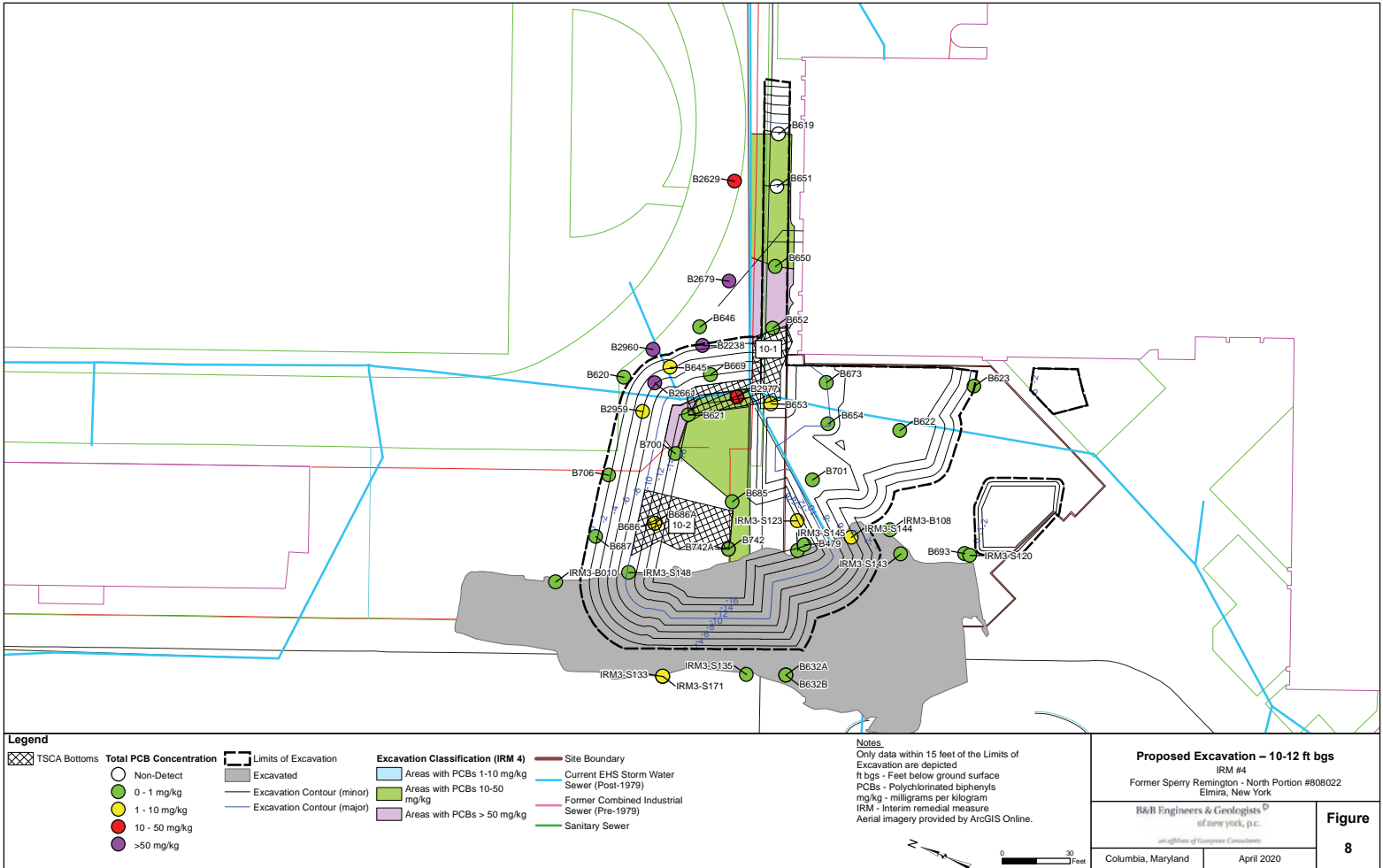
<b>Legend</b> TSCA Bottoms		<b>Total PCB Concentration</b> Non-Detect 0 - 1 mg/kg 1 - 10 mg/kg 10 - 50 mg/kg >50 mg/kg symbol"/> >50 mg/kg		<b>Limits of Excavation</b> Excavated Excavation Contour (minor) Excavation Contour (major)		<b>Excavation Classification (IRM 4)</b> Areas with PCBs 1-10 mg/kg Areas with PCBs 10-50 mg/kg Areas with PCBs > 50 mg/kg		<b>Site Boundary</b> Current EHS Storm Water Sewer (Post-1979) Former Combined Industrial Sewer (Pre-1979) Sanitary Sewer		<b>Notes</b> Only data within 15 feet of the Limits of Excavation are depicted ft bgs - Feet below ground surface PCBs - Polychlorinated biphenyls IRM - Interim remedial measure mg/kg - milligrams per kilogram Aerial imagery provided by ArcGIS Online.		<b>Proposed Excavation – 6-8 ft bgs</b> IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York  B&B Engineers & Geologists of new york, p.c. <small>an affiliate of Geotechnical Consultants</small> Columbia, Maryland      April 2020		<b>Figure</b> <b>6</b>	
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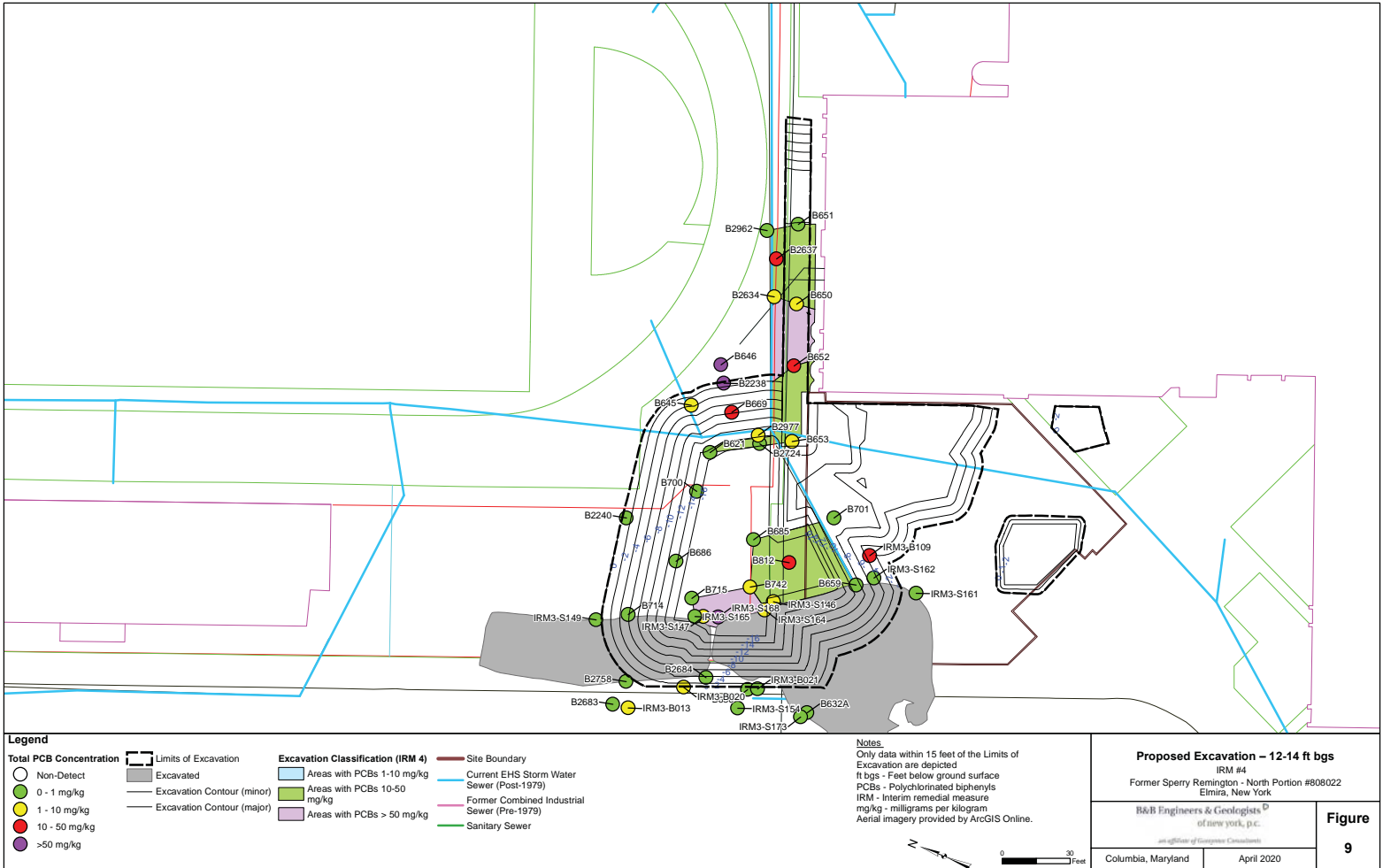
<b>Legend</b> TSCA Bottoms Non-Detect 0 - 1 mg/kg 1 - 10 mg/kg 10 - 50 mg/kg >50 mg/kg symbol"/> >50 mg/kg	<b>Limits of Excavation</b> Excavated Excavation Contour (minor) Excavation Contour (major)	<b>Excavation Classification (IRM 4)</b> Areas with PCBs 1-10 mg/kg Areas with PCBs 10-50 mg/kg Areas with PCBs > 50 mg/kg	<b>Site Boundary</b> Current EHS Storm Water Sewer (Post-1979) Former Combined Industrial Sewer (Pre-1979) Sanitary Sewer
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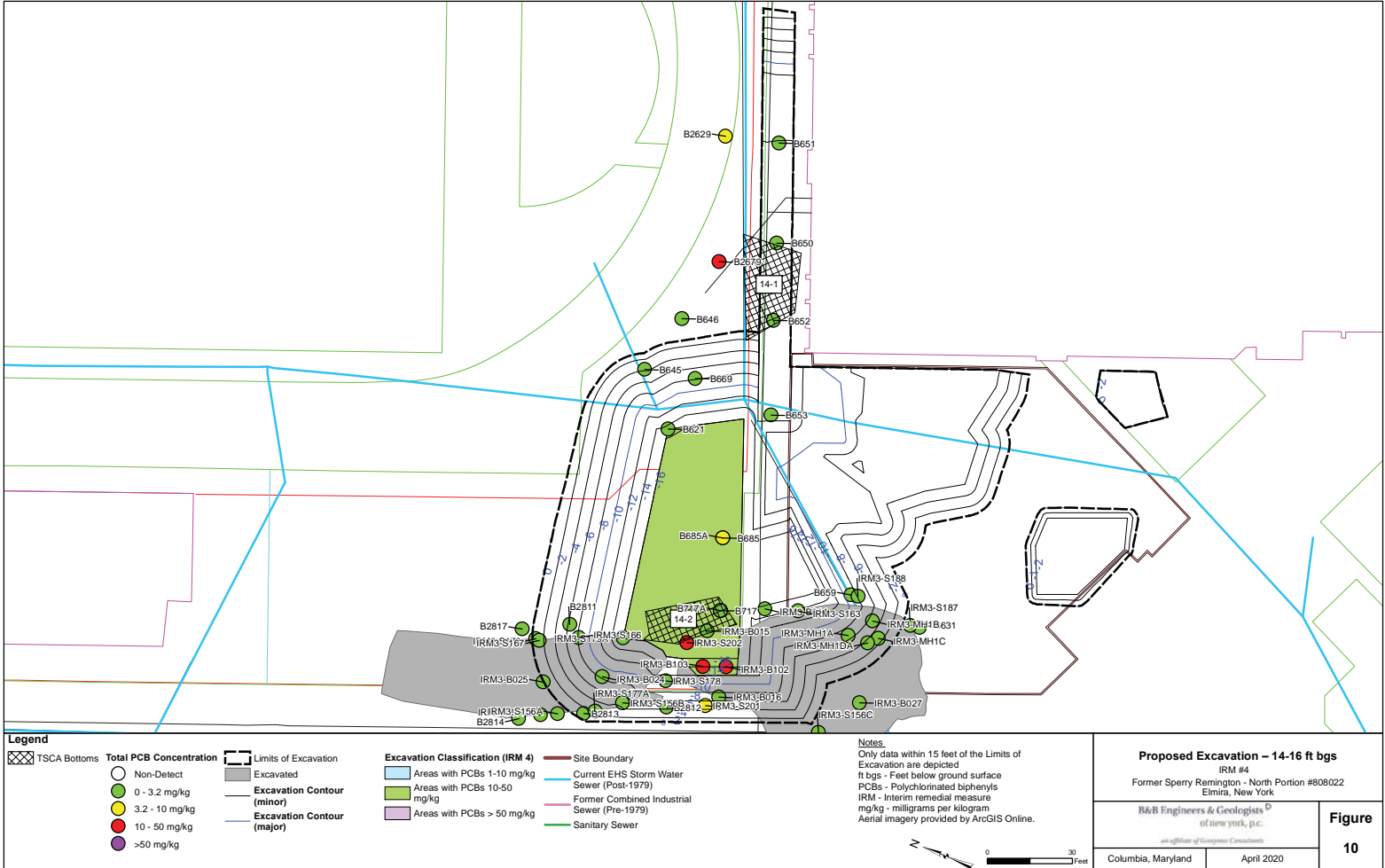
**Notes**  
 Only data within 15 feet of the Limits of Excavation are depicted  
 ft bgs - Feet below ground surface  
 PCBs - Polychlorinated biphenyls  
 mg/kg - milligrams per kilogram  
 IRM - Interim remedial measure  
 Aerial imagery provided by ArcGIS Online.

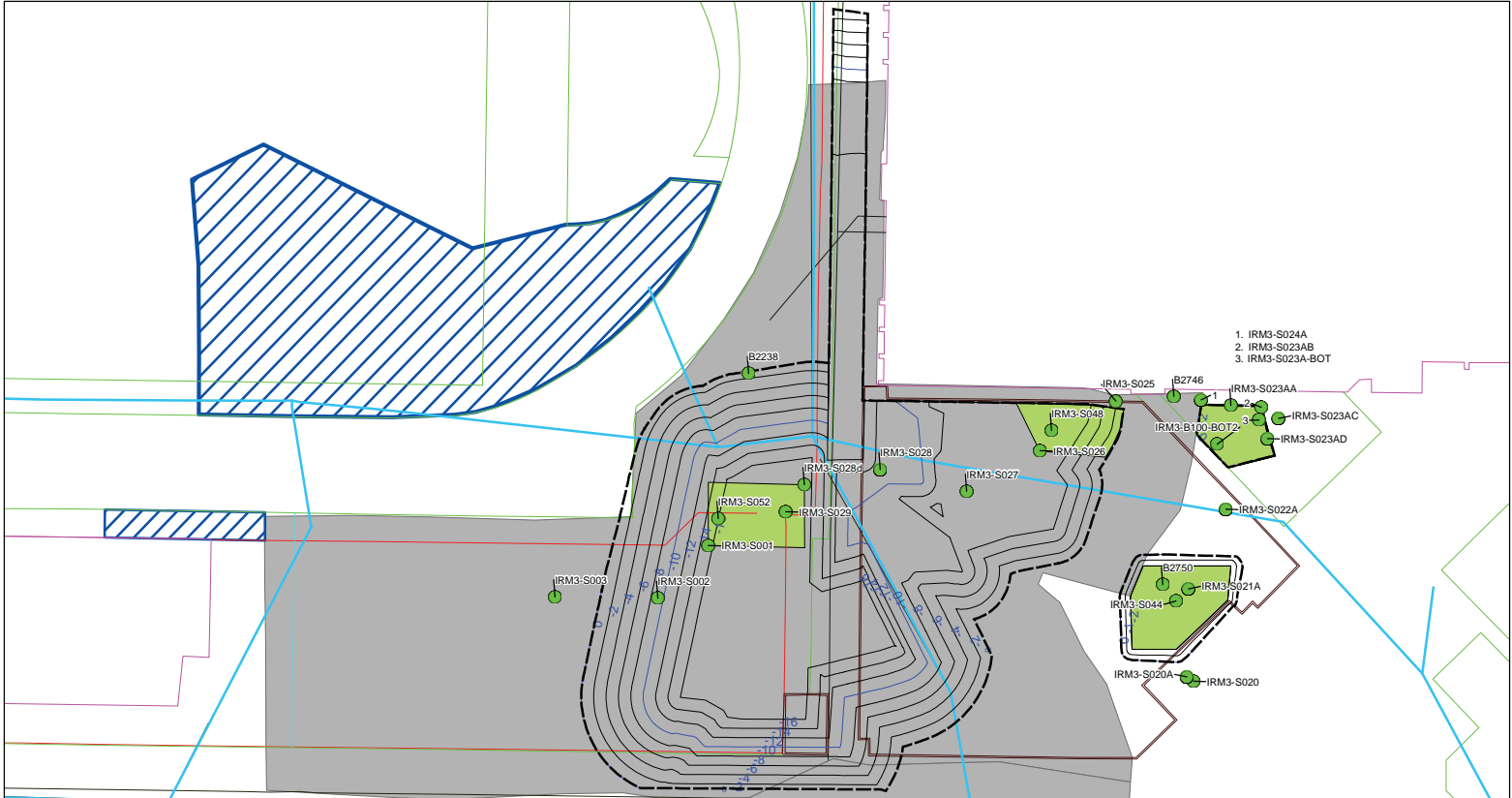
<b>Proposed Excavation – 8-10 ft bgs</b> IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York		<b>Figure</b>  <b>7</b>
B&B Engineers & Geologists of New York, P.C. <small>an affiliate of Geotechnical Consultants</small> Columbia, Maryland      April 2020		



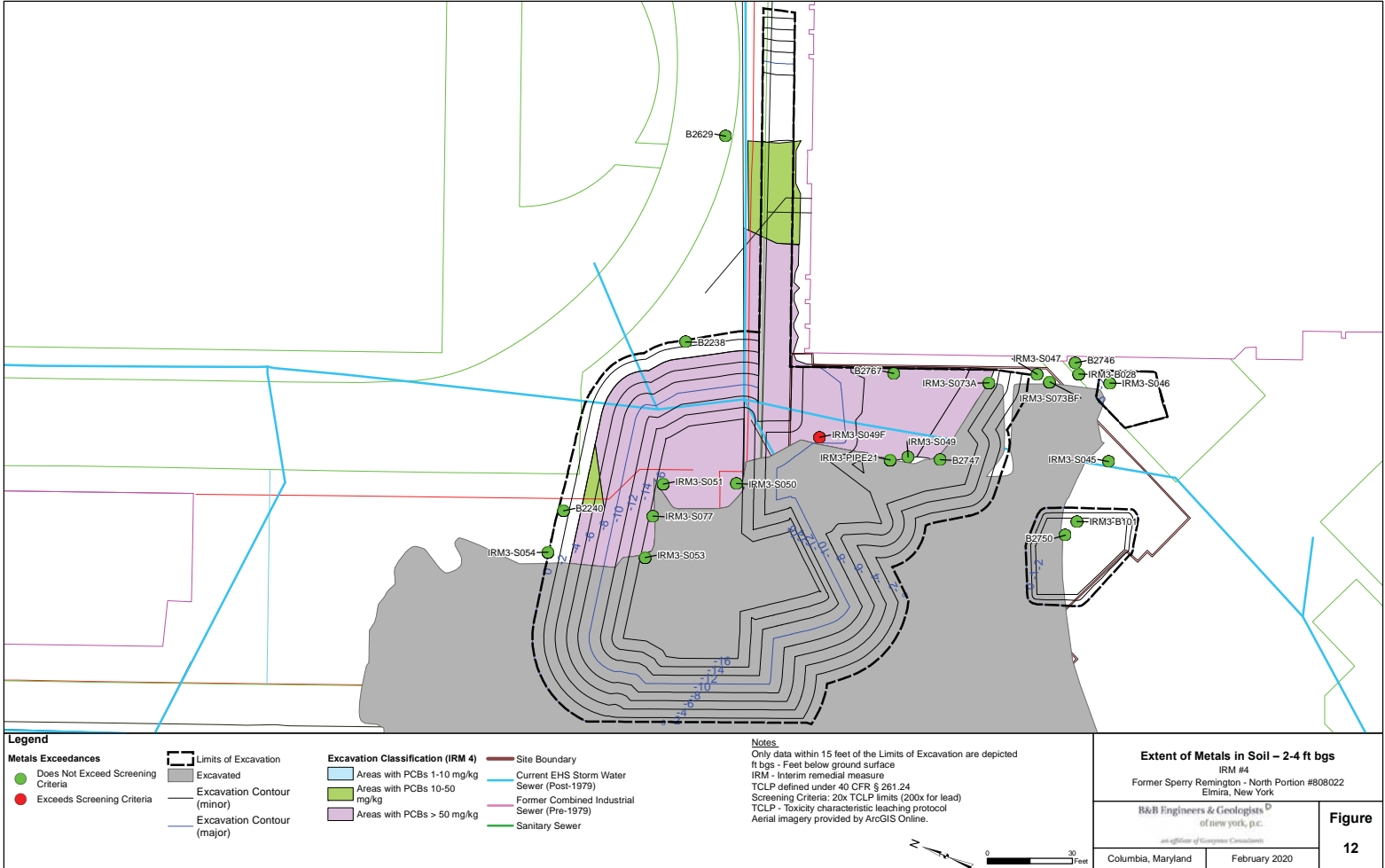






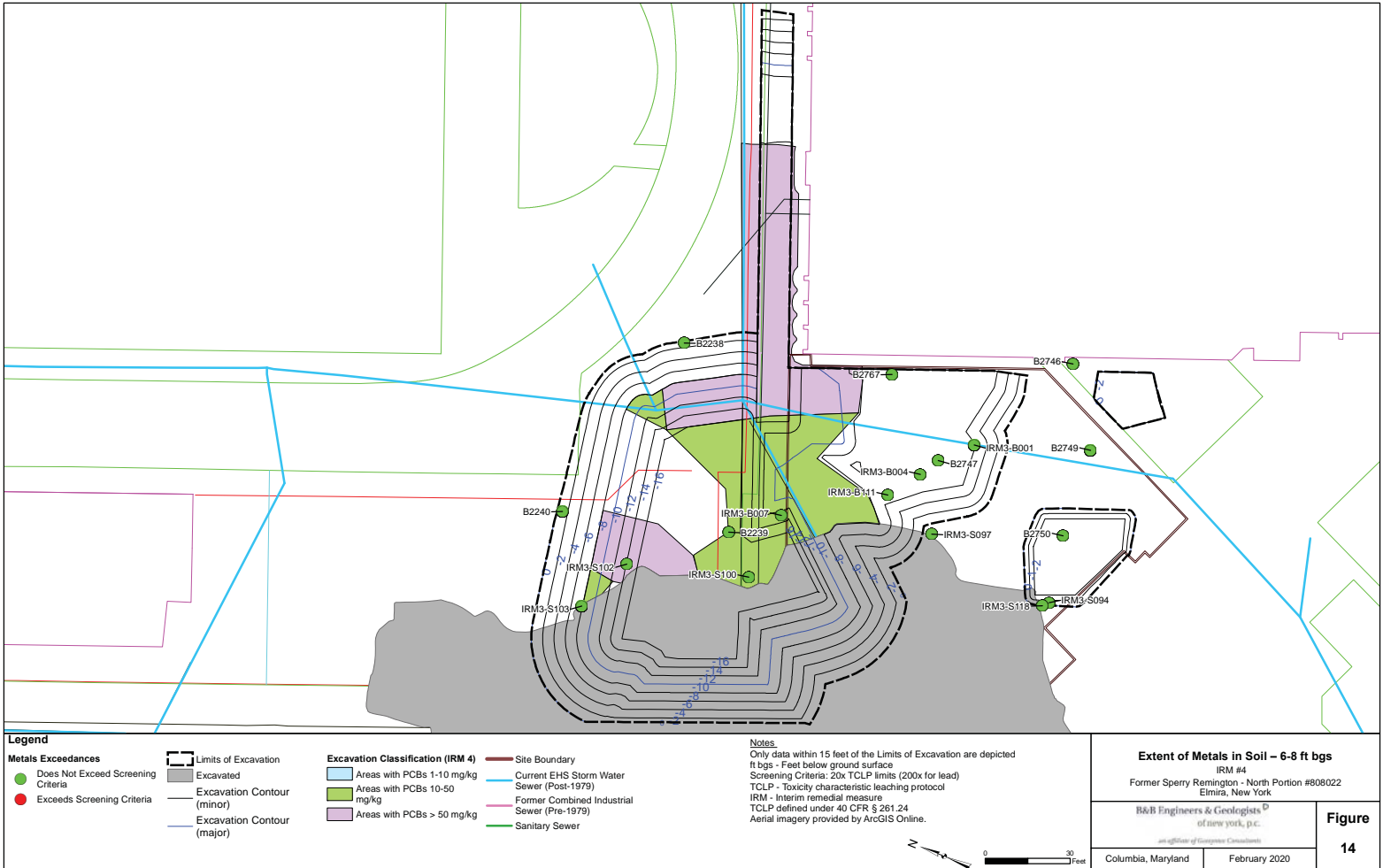


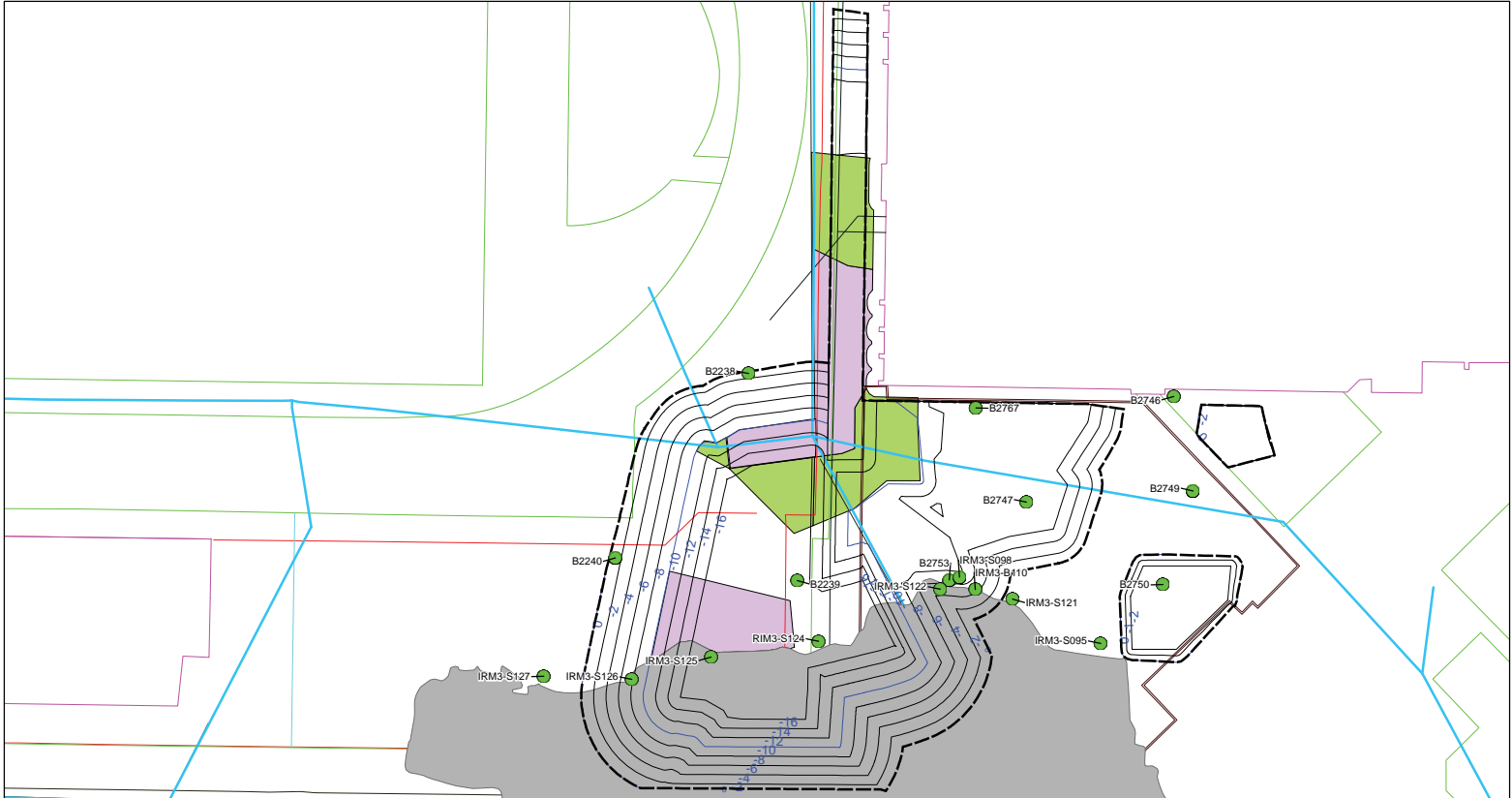
<b>Legend</b> <b>Metals Exceedances</b> ● Does Not Exceed SCOs ● Exceeds SCOs		<b>Excavation Classification (IRM 4)</b> Areas with PCBs 1-10 mg/kg Areas with PCBs 10-50 mg/kg Areas with PCBs > 50 mg/kg		<b>Excavated to 1 ft</b> Excavated Current EHS Storm Water Sewer (Post-1979) Former Combined Industrial Sewer (Pre-1979) Sanitary Sewer		<b>Notes</b> Only data within 15 feet of the Limits of Excavation are depicted ft bgs - Feet below ground surface SCOs - Restricted Residential Soil Screening Criteria (6 NYCRR PART 375) IRM - Interim remedial measure "SSH"- prefix removed from sample IDs in labels. Aerial imagery provided by ArcGIS Online.		<b>Extent of Metals in Soil - 0-2 ft bgs</b> IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York B&B Engineers & Geologists of new york, p.c. <i>an affiliate of Geosyntec Consultants</i>		<b>Figure</b> 11	
						Columbia, Maryland      February 2020					



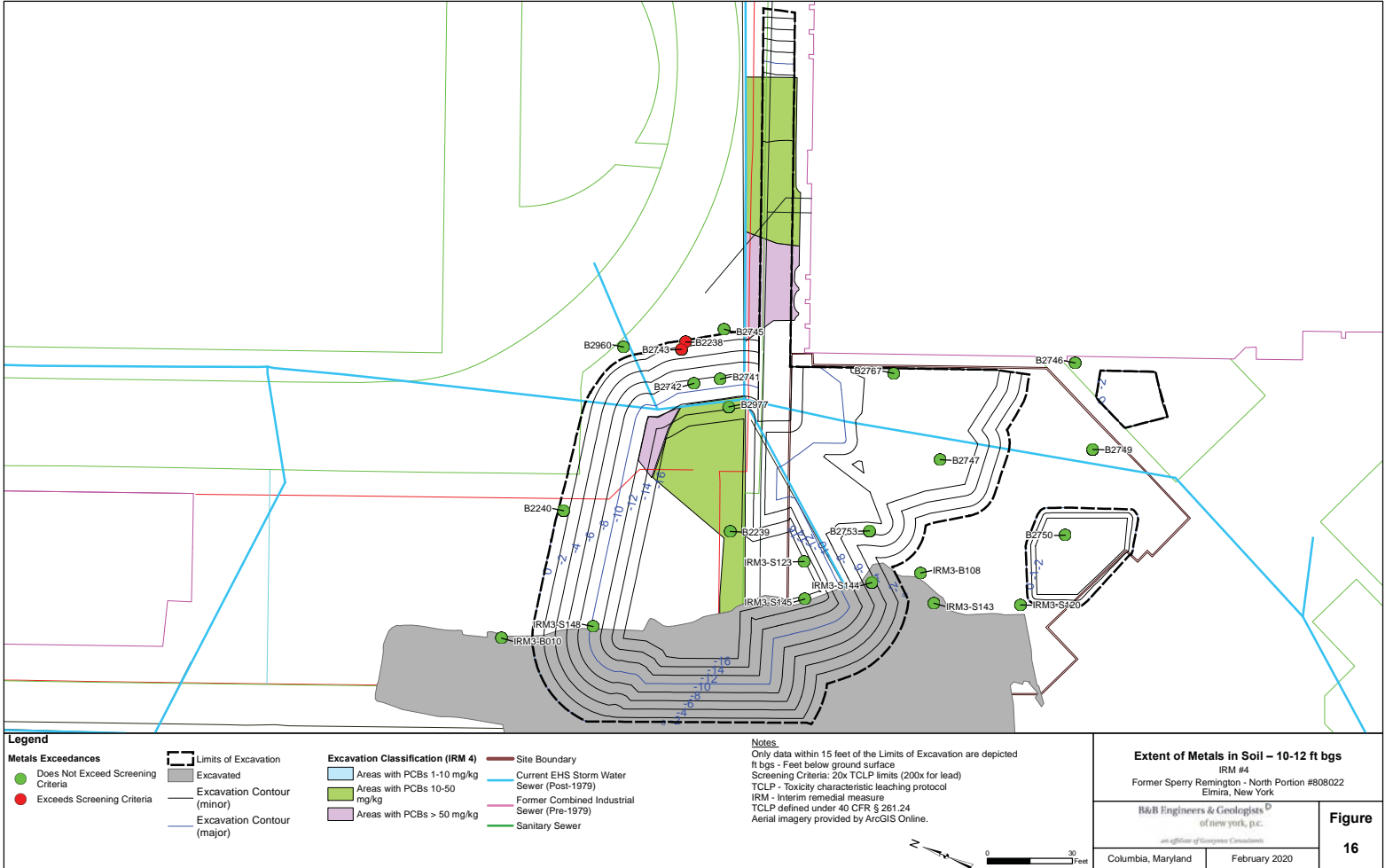


<b>Legend</b> <b>Metals Exceedances</b> ● Does Not Exceed Screening Criteria ● Exceeds Screening Criteria		<b>Limits of Excavation</b> ▭ Excavated --- Excavation Contour (minor) --- Excavation Contour (major)		<b>Excavation Classification (IRM 4)</b> ■ Areas with PCBs 1-10 mg/kg ■ Areas with PCBs 10-50 mg/kg ■ Areas with PCBs > 50 mg/kg ■ Metals-Driven		<b>Site Boundary</b> --- Current EHS Storm Water Sewer (Post-1979) --- Former Combined Industrial Sewer (Pre-1979) --- Sanitary Sewer		<b>Notes</b> Only data within 15 feet of the Limits of Excavation are depicted ft bgs - Feet below ground surface Screening Criteria: 20x TCLP limits (200x for lead) IRM - Interim remedial measure TCLP defined under 40 CFR § 261.24 TCLP - Toxicity characteristic leaching protocol Aerial imagery provided by ArcGIS Online.		<b>Extent of Metals in Soil - 4-6 ft bgs</b> IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York B&B Engineers & Geologists of new york, p.c. <small>an affiliate of Geosynapse Consultants</small> Columbia, Maryland      February 2020		<b>Figure</b> 13	
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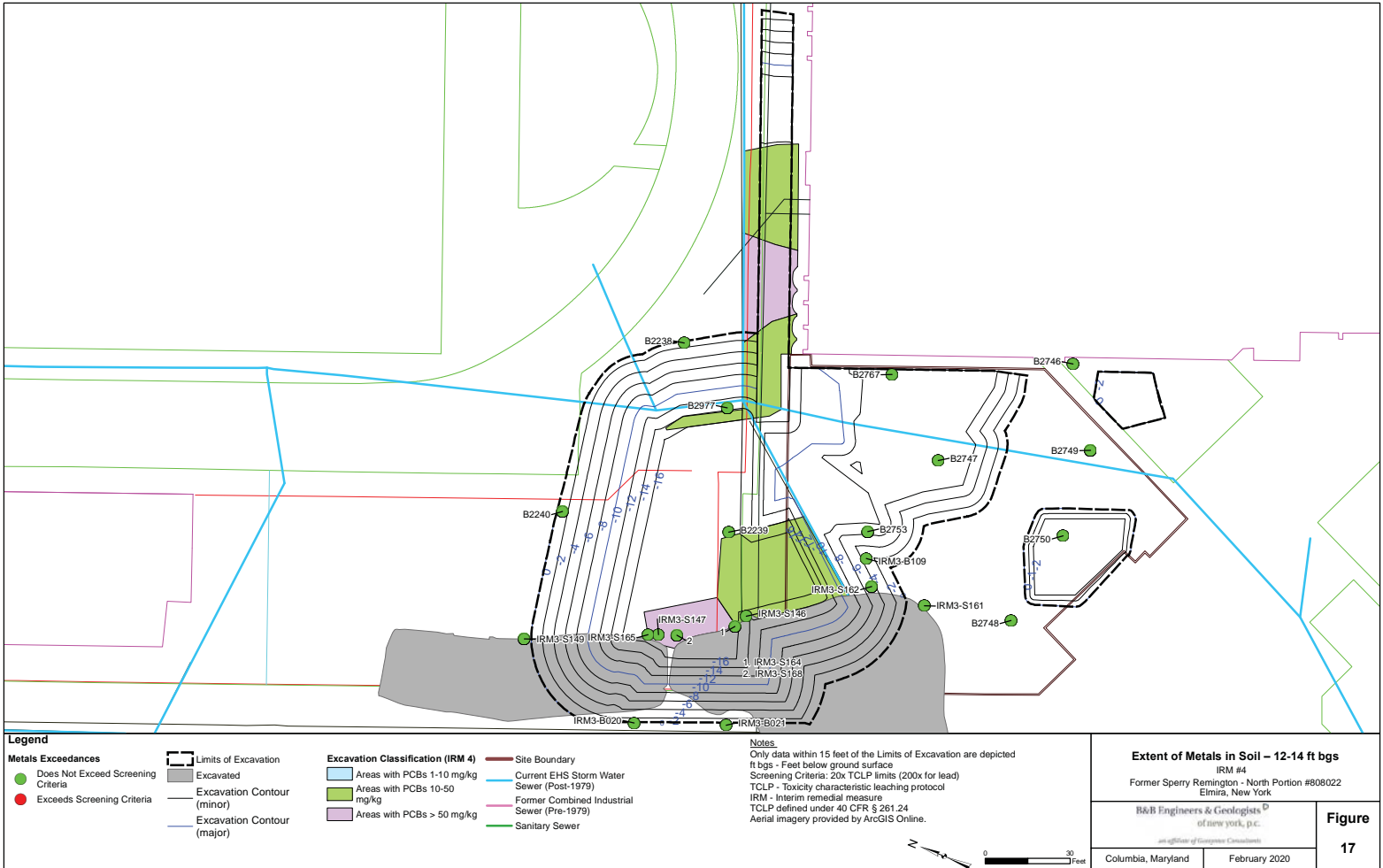


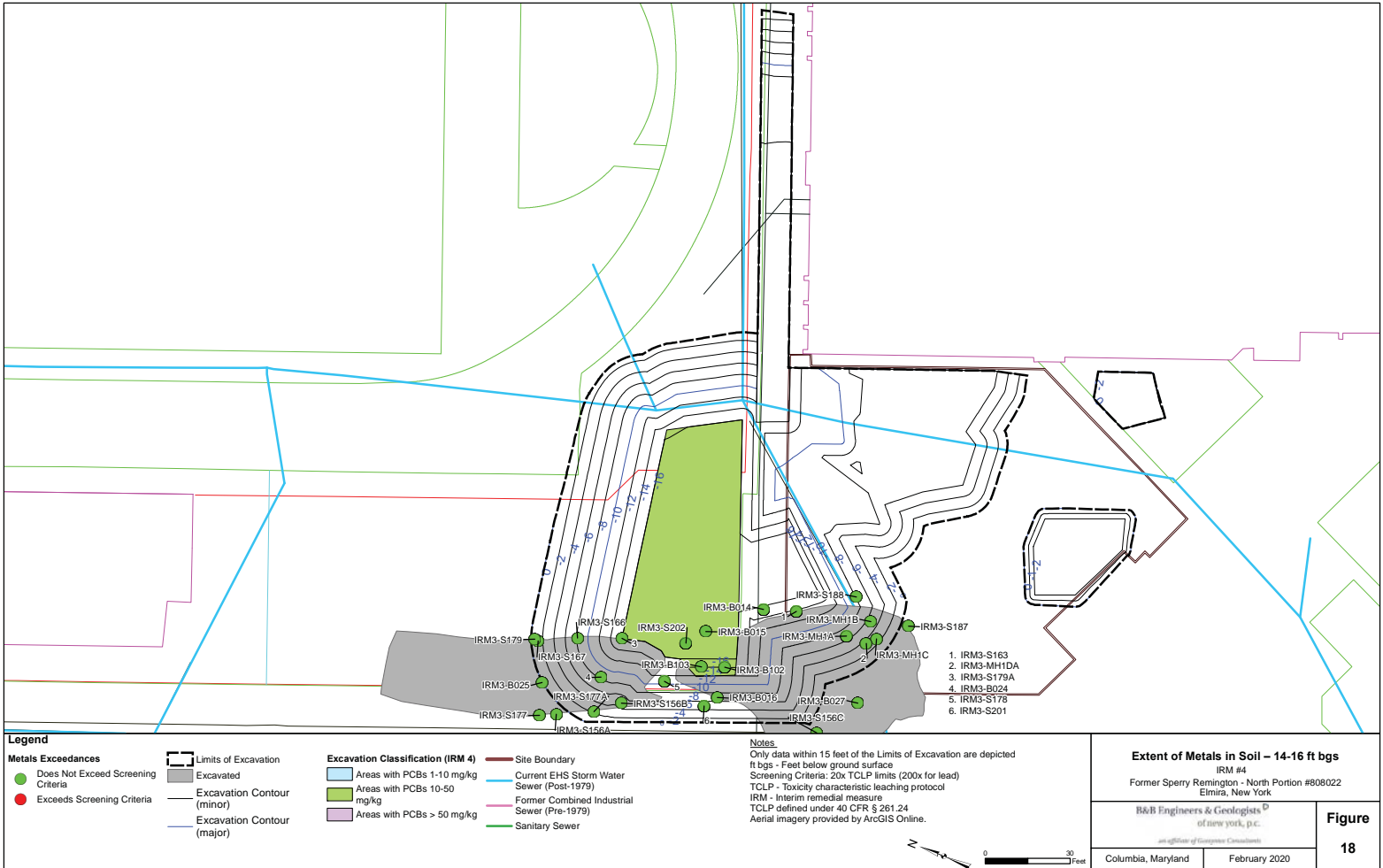


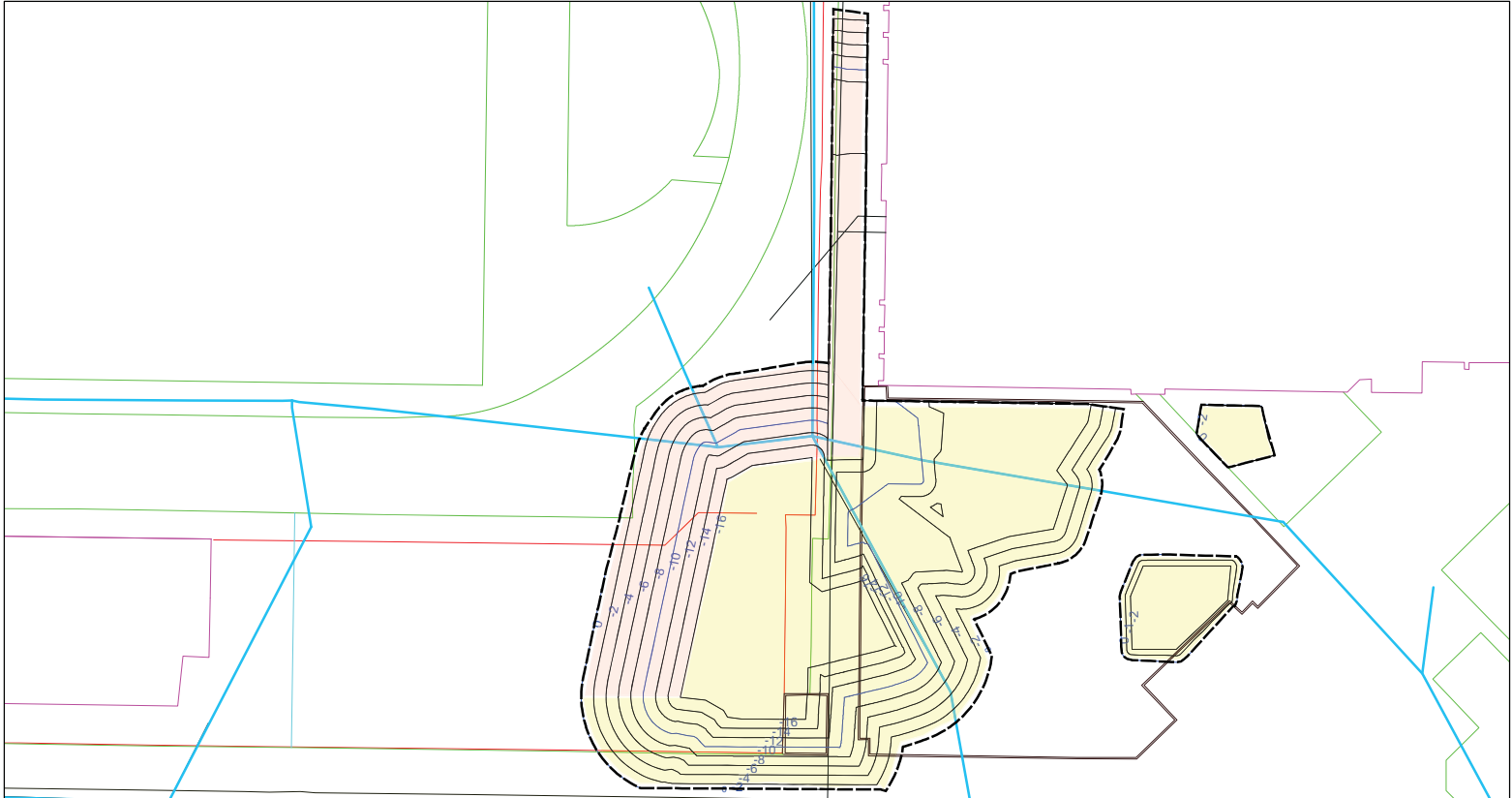
<b>Legend</b> <b>Metals Exceedances</b> ● Does Not Exceed Screening Criteria ● Exceeds Screening Criteria		<b>Excavation Classification (IRM 4)</b> ■ Areas with PCBs 1-10 mg/kg ■ Areas with PCBs 10-50 mg/kg ■ Areas with PCBs > 50 mg/kg		<b>Notes</b> Only data within 15 feet of the Limits of Excavation are depicted ft bgs - Feet below ground surface Screening Criteria: 20x TCLP limits (200x for lead) TCLP - Toxicity characteristic leaching protocol IRM - Interim remedial measure TCLP defined under 40 CFR § 261.24 Aerial imagery provided by ArcGIS Online.	
■ Limits of Excavation ■ Excavated — Excavation Contour (minor) — Excavation Contour (major)		■ Site Boundary — Current EHS Storm Water Sewer (Post-1979) — Former Combined Industrial Sewer (Pre-1979) — Sanitary Sewer		<b>Extent of Metals in Soil – 8-10 ft bgs</b> IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York B&B Engineers & Geologists of new york, p.c. <i>an affiliate of Geosynapse Consultants</i> Columbia, Maryland      February 2020	









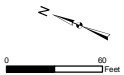


<b>Legend</b> Limits of Excavation Excavation Contour (minor) Excavation Contour (major)		Site Boundary Current EHS Storm Water Sewer (Post-1979) Former Combined Industrial Sewer (Pre-1979) Sanitary Sewer	Confirmation Sampling Area Documentation Sampling Area	<b>Notes</b> Documentation samples will be collected from the sides of the building as supports of excavation are installed.	<b>Excavation Grading Plan</b> IRM #4 Former Sperry Remington - North Portion #808022 Elmira, New York		<b>Figure</b> 19
				B&B Engineers & Geologists of New York, P.C. <small>an affiliate of Geotechnical Consultants</small> Columbia, Maryland      February 2020			



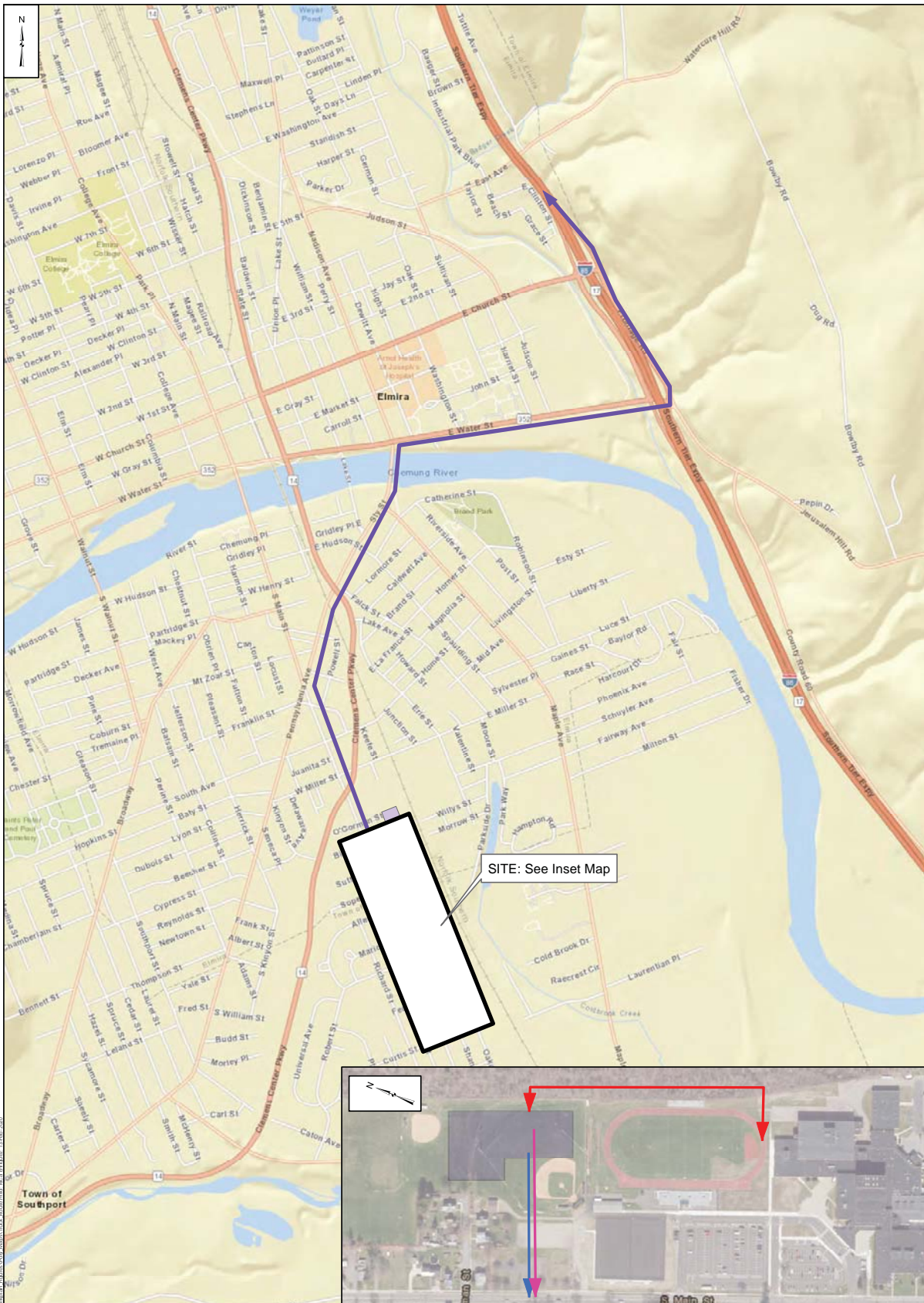
- Legend**
- Boring Refusal Depth**
- 2 ft bgs
  - 4 ft bgs
  - 6 ft bgs
  - 8 ft bgs
  - 10 ft bgs
  - 12 ft bgs
- Football Field Complex  
 Investigation Area  
 Historical Structure

**Notes**  
 ft bgs - Feet below ground surface  
 "SSHS-" prefix removed from location IDs.  
 Aerial imagery provided by ArcGIS Online.



<b>Boring Refusal and Historic Structures</b>	
Former Sperry Remington Site North Portion Elmira, New York	
B&B Engineers & Geologists of new york, p.c. <small>an affiliate of Longstreet Consultants</small>	
Columbia, Maryland	January 2020

**Figure**  
20



Legend	
	Load Out for Off-Site Hazardous Waste Disposal
	Haul Route to/from MSA for Stockpiling
	Load Out for Off-Site Non-Hazardous Waste Disposal
	Site to Off-Site Disposal
	Material Staging Area (MSA)

**Notes**

The planned on-site journey management plan for the material which will be handled during the IRM has been discussed with the City of Elmira Traffic Engineering Department. 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. Truck traffic will not take place during student arrival/departure times. Left hand turns on to South Main Street will be controlled through a flagperson.

Aerial imagery and street map accessed via ArcGIS Online and provided by Microsoft on 13 February 2020.

0.25 0.125 0 0.25 Miles

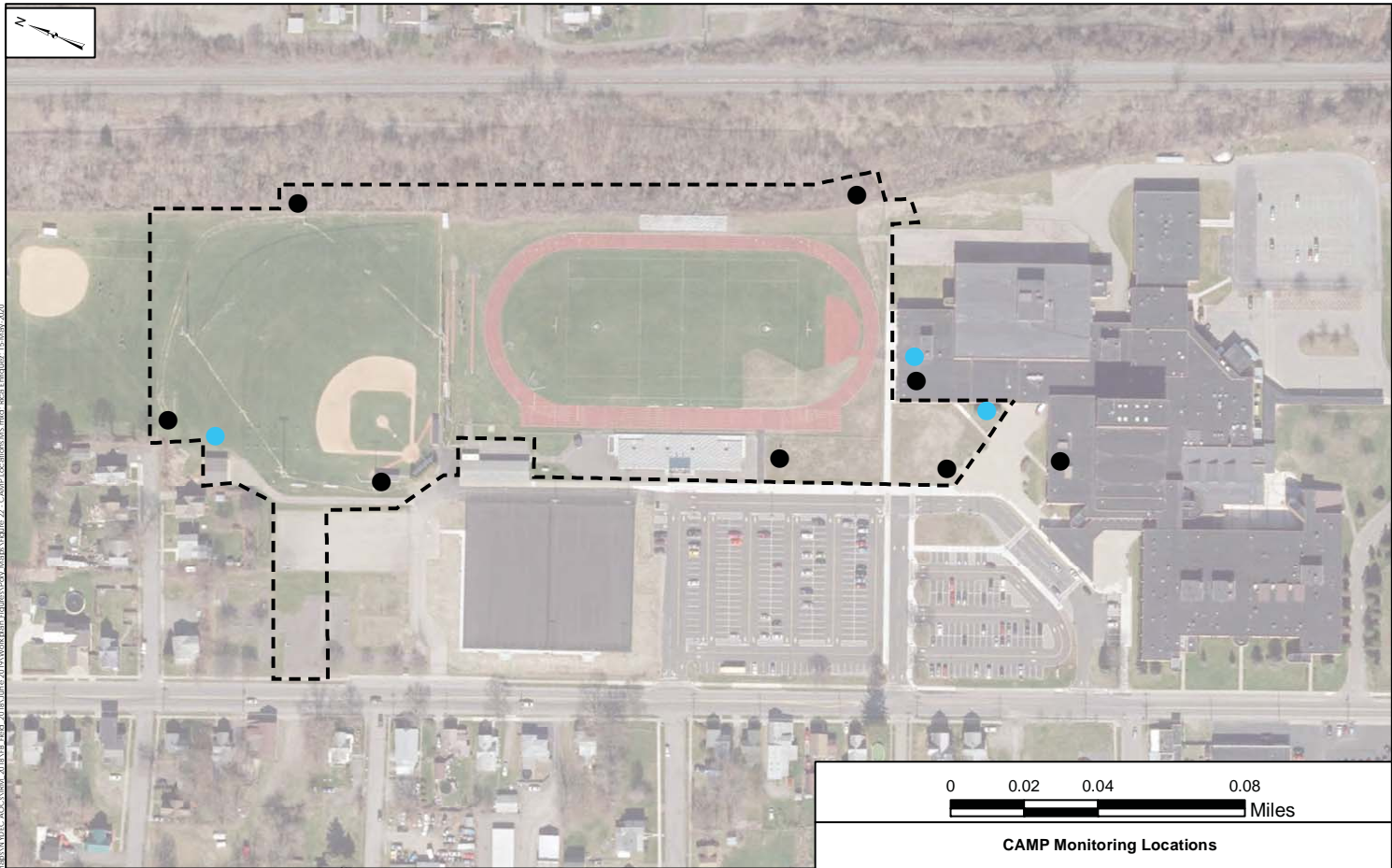
**Truck Haul Routes**

Former Sperry Remington - North Portion  
Elmira, New York

**B&B Engineers & Geologists**  
of new york, p.c.  
*an affiliate of Geosyntec Consultants*

Columbia, Maryland      February 2020

**Figure**  
**21**



Legend	
<span style="color: blue;">●</span>	TISCH Monitoring Locations
<span style="color: black;">●</span>	CAMP Locations
<span style="border-bottom: 1px dashed black; width: 20px; display: inline-block;"></span>	Limits of Disturbance/Temporary Fencing

Notes
CAMP monitoring locations are approximate and will be adjusted based on changes in wind direction, as necessary. At least one monitoring location will be upwind of the work area. Rooftop locations will remain in place.
Aerial imagery and street map accessed via ArcGIS Online and provided by Microsoft on 15 May 2020.

<b>CAMP Monitoring Locations</b> Former Sperry Remington - North Portion Elmira, New York	
<b>B&amp;B Engineers &amp; Geologists</b> of new york, p.c. <i>an affiliate of Geosyntec Consultants</i>	
Columbia, Maryland	May 2020
<b>Figure</b>  <b>22</b>	

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Appendix A  
Construction Drawings



Appendix B  
Construction Specifications

Appendix C  
Support of Excavation Design Analysis

Appendix D  
Stormwater Modeling

Appendix E  
Quality Assurance Project Plan

Appendix F  
Well Boring Logs and Production Well Flow Test  
Results

Appendix G  
Soil/Dust Control and Monitoring Plan and  
NYSDOH Generic CAMP

Appendix H  
ECSD Correspondence

Appendix I  
Health and Safety Plan