Beech and Bonaparte
engineering p.c.

an affiliate of Geosyntec Consultants

10211 Wincopin Circle, Floor 4
Columbia, Maryland 21044
PH 410.381.4333
FAX 410.381.4499
www.geosyntec.com

12 August 2016

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

Subject: **Agency Review Draft**
Former Scott Technologies Site(#808049)
Site Characterization Work Plan Addendum #1
1051 South Main Street, City of Elmira, Chemung County, NY

Dear Mr. Schneider:

On behalf of Unisys Corporation (Unisys), Geosyntec Consultants, Inc. and its New York engineering affiliate, Beech and Bonaparte Engineering, P.C. (collectively, Geosyntec) are submitting this Addendum #1 to the Site Characterization Work Plan (SC Work Plan) for the Former Scott Technologies Site (Site #808049) (Site) in Elmira, New York. Unisys has been conducting Site Characterization activities at the Site in accordance with an Order on Consent and Administrative Settlement (Order) with New York State Department of Environmental Conservation (NYSDEC or agency) dated 16 July 2014. The SC Work Plan was submitted on 5 December 2014 and accepted by NYSDEC on 30 April 2015. Site Characterization field activities were conducted between 9 October and 4 November 2015. Findings and recommendations were reported in the Site Characterization Data Report submitted to NYSDEC on 13 May 2016. This addendum presents plans for additional characterization of Site soils and for characterization of holding pond sediments.

BACKGROUND

The Site is located at 1051 South Main Street in Elmira, Chemung County, New York (see **Figure 1**) and is currently occupied by Southern Tier Commerce Center (STCC). A Preliminary Site Assessment (PSA) for the entire Former Sperry Remington Site was completed in 1988 on behalf of Unisys and submitted to NYSDEC (Dames & Moore, 1988). The Site has been the subject of additional environmental investigations between 1992 and 2012. In June 2013, NYSDEC identified potential areas of concern (PAOCs) at the Site based on new information related to historical use of the property and previous environmental investigations results.

Scott Technologies Inc. (STI), a former owner of the Site, entered into a Voluntary Cleanup Agreement with NYSDEC in January 1999 to conduct investigation and remedial activities at the Site. Prior actions included the removal of four (4) registered underground storage tanks (USTs) in 1993 (Versar, 1993) and voluntary investigations. STI conducted a voluntary remedial action between October 1999 and March 2000 (URS, 2000) that included removal and disposal of low voltage PCB capacitors, cleaning or

decommissioning of tanks/vessels, concrete clarification chambers or above ground storage tanks (ASTs), and excavation of polycyclic aromatic hydrocarbons (PAHs) in soil. PAHs in soils identified as exceeding the NYSDEC-approved cleanup goal total PAH concentration of less than or equal to 100 milligrams per kilogram (mg/kg) were excavated to depth of up to three (3) feet in areas north and east of Building 88 as shown on **Figure 2**. The total excavated area was approximately 0.75 acres. Supplemental investigation of the holding pond on the north side of the Site was conducted in 2002 (URS, 2002). Remedial activities for the holding pond were deemed unnecessary by NYSDEC due to a determination of low risk to wildlife and human health as documented in the 2004 NYSDEC fact sheet for the voluntary cleanup (NYSDEC, 2004). Holding pond sediments were identified as a PAOC by NYSDEC in June 2013.

STI conducted additional voluntary remedial action in the former recreation area (FRA) in October 2004 following pre-characterization of soils in March 2004. The constituents of potential concern (COPCs) and approved clean up goals by NYSDEC for the FRA relevant to this Site Characterization were lead (1,000 mg/kg) and total PAHs (100 mg/kg). Shallow soils were excavated to depths of two (2) to eight (8) inches as shown on **Figure 2**. Approximately eighty-six (86) tons of hazardous fill material and one hundred and four (104) tons of non-hazardous fill material were excavated and transported off-Site for disposal. Deed restrictions were filed with Chemung County Clerk's Office in July 2005 that limited potential future use of the Site to commercial or industrial uses with the exception of day care facilities and also required maintenance of the vegetative cover. In August 2005, STI submitted a Site Management Plan (SMP) for the FRA that described procedures for excavation and maintenance of the existing vegetative cover, fencing and signage. The SMP was approved by NYSDEC in correspondence dated 13 October 2005. Voluntary cleanup activities at the Site were declared by NYSDEC to have been satisfactorily completed in October 2006.

PREVIOUS SITE CHARACTERIZATION ACTIVITIES

Previous Site Characterization activities included inspection of the former combined industrial sewer, soil investigation, and groundwater investigation. Surface (zero to two [0-2] inches below ground surface [bgs]) and shallow subsurface (two to twenty-four [2-24] inches bgs) soil samples were collected to characterize PAOCs not addressed by previous investigations and voluntary actions. Soil analytical results were compared to NYSDEC-approved cleanup goals for previous voluntary remedial actions at the STCC facility and the FRA. Previously approved cleanup goals for the voluntary remedial actions conducted by STI should be considered applicable and relevant for consistency with prior actions at the Site. Those criteria are total PAH[1] concentrations[2] equal to or less than one hundred (100) mg/kg for the

[1] Total PAH concentrations: sum of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene,

STCC facility and the FRA and lead concentrations equal to or less than one thousand (1,000) mg/kg for the FRA. For COPCs that are the focus of this Site Characterization where cleanup goals were not previously established, screening criteria are Soil Cleanup Objectives (SCOs) presented in 6 NYCRR Subpart 375 as appropriate based on current and potential land use. The current land use of the STCC facility and surrounding areas is considered to be industrial. The area outside the fenced portion of the FRA to the southwest is adjacent to residential properties.

PCB, PAH and metal COPCs were detected in soils above screening criteria were found in the area south of Building 88 and the FRA. The extent of COPC exceedances in surface and shallow subsurface soils are presented in **Figures 3A** and **3B**, respectively, for PCBs. Similarly, exceedances for PAHs and metals are presented in **Figures 4A/B** and **5A/B**, respectively. In the findings of the SC Data Report, additional characterization of COPCs in soil was recommended as follows:

- Additional delineation of PAHs in surface and subsurface soil in the vicinity of locations STI-B24 and STI-B25 which had total PAH concentrations greater than one hundred (100) ppm; and

- Additional delineation of PCBs in the area around STI-B27 which had total PCB concentrations above the Industrial SCO of twenty-five (25) mg/kg; and

- Additional delineation of chromium in surface soil around STI-B32, including separate analyses for hexavalent chromium.

PREVIOUS HOLDING POND INVESTIGATION

Sampling of holding pond sediments by Versar[3] in 1991 and by NYSDEC in 1992 had detected PCBs and metals at concentrations above NYSDEC sediment screening criteria but additional investigation of the holding pond was not considered to be necessary at that time. Sampling of sediments in adjacent Coldbrook Creek by NYSDEC in 2000[4] detected higher concentration of PCBs, PAHs and metals than

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benzo(a)pyrene, indeno(1,2,3-cd)pyrene, debenzo(a,h)anthracene, and benzo(g,h,i)perylene based on PAHs reported for confirmatory samples collected during the voluntary remedial action conducted by STI in 1999-2000.

[2] Total PAH concentrations: sum of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene, fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, debenzo(a,h)anthracene, and benzo(g,h,i)perylene based on PAHs reported for confirmatory samples collected during the voluntary remedial action conducted by STI in 1999-2000.

[3] Versar, Inc., 1992. Draft Phase II - Intrusive Investigation, American LaFrance, 1051 South Main Street, Southport, Chemung County, New York. February.

[4] NYSDEC, 2001, May – October 2000 NYSDEC Sampling report, Southside High School and Adjacent Properties. City of Elmira, Chemung County.

those detected in the holding pond in 1991 and 1992, suggesting the need for additional investigation of the holding pond.

In 2002[5], STI collected sediment samples from four (4) locations in the holding pond and at one (1) location at the Site outfall to Coldbrook Creek. Surface water samples were collected from three (3) locations in the holding pond and at one (1) location at the Site outfall. Sediment and surface water sample locations in the holding pond are shown on **Figure 6**. Analytical results for benzo(a)pyrene, pesticides, PCBs and several metals in sediment from those four (4) holding pond sampling locations exceeded NYSDEC screening criteria. The discrepancy in holding pond sediment analytical results between the 2002 STI investigation and those previously collected was attributed by STI in 2002 to differences in sample location within the holding pond between sampling events. STI samples collected in 2002 were from the interior of the pond while samples collected by Versar and NYSDEC in 1991 and 1992 were collected from around the edges of the pond. Analytical data for metals and PAHs in surface water samples did not exceed NYSDEC surface water standards. As documented in the 2004 NYSDEC fact sheet for the voluntary cleanup, no further action was planned for the holding pond due to low risk to wildlife and human health.

PROPOSED SCOPE OF WORK

Soil Investigation

Proposed primary soil sample locations are presented on **Table 1** for each investigation area with sampling intervals. Soil samples will be collected to address identified data gaps in horizontal and vertical delineation. Soil boring locations are shown on **Figure 7** with boring depths. Soil samples will be collected using direct push technology (DPT) or hand augering (where appropriate or necessary) in accordance with the SC Work Plan's Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP). Delineation of COPCs to the appropriate SCO or prior approved NYSDEC cleanup standard within the first two (2) feet of soil cover will be conducted by collection of a composite shallow soil sample from zero (0) to two (2) feet bgs. Similarly, delineation of surface soil samples within in the first two (2) inches (0.17 feet) will be conducted by collection of surface soil from zero (0) to two (2) inches bgs. Soil samples will be submitted to a fixed laboratory for COPC analyses with a standard ten-day (10-day) turnaround time (TAT) in accordance with the QAPP/FSP.

Holding Pond Sediment Investigation

Proposed holding pond sediment sampling locations are shown in **Figure 6**, with sampling depth intervals and proposed analyses depicted in **Table 2**. Sediment samples will be collected to confirm the historic

[5] URS Consultants, Inc., 2002. Supplemental Investigation of the Holding Pond, American LaFrance Voluntary Cleanup. December.

sample locations depicted in **Figure 6**. Sediment will be collected with hand coring techniques, in accordance with QAPP/FSP Addendum #1 (**Attachment 1**). Sediment sampling will be conducted with the use of an aluminum flat-bottomed boat. At each location, a cellulose acetate butyrate tube will be advanced approximately three (3) feet into the sediment or until refusal. Discrete sediment samples will be collected at depths of zero (0) to six (6) inches, 6 to 12 inches, 12 to 24 inches, and 24 to 36 inches, if sediment depth allows.

Samples will be submitted to a fixed laboratory for PCB, PAH, and metals analyses with a standard ten-day (10-day) turnaround time (TAT) in accordance with the QAPP/FSP.

QUALITY ASSURANCE

Sample handling, including sample custody and sample control, will be conducted in accordance with the QAPP/FSP. Quality control samples, including field duplicates, matrix spike/matrix spike duplicates, trip blanks, and equipment blanks, will be collected at the frequency specified in the QAPP/FSP. Sediment sampling procedures are presented in QAPP/FSP Addendum #1, which is included as **Attachment 1**.

HEALTH AND SAFETY

A Site-specific Health and Safety Plan (HASP) was presented in the SC Work Plan. HASP Addendum #1 is included as **Attachment 2** to present task hazard analyses for overwater sediment collection. Each contractor will be required to prepare a project-specific HASP in accordance with DER-10 to be followed during implementation of the field program.

IDM MANAGEMENT

Solid investigation-derived material (IDM) that will be generated may include disposable personal protection equipment (PPE), disposable sampling equipment, and excavated material. Liquid IDM that will be generated will consist of water generated during decontamination of field equipment. Solid and liquid IDM will be stored in on-site fifty-five (55) gallon drums for waste characterization (if necessary) and appropriate off-site disposal in accordance with the QAPP/FSP.

SCHEDULE AND DELIVERABLES

Unisys will promptly commence the implementation of this SC Work Plan Addendum upon receipt of written approval by NYSDEC, weather permitting and pending access granted by the property owner. Completion of the work will be dependent on weather conditions and access. Once initiated, Unisys anticipates that soil and sediment sample collection will take approximately three (3) days to complete. Samples will be analyzed on ten-day (10-day) TAT and will be reviewed upon receipt.

Unisys will provide NYSDEC with unvalidated laboratory analytical reports in monthly progress reports following receipt from the laboratory. Summary tables and maps of unvalidated soil and groundwater

results will be submitted with the monthly progress following receipt of all analytical data. Data validation will begin upon receipt of all analytical data packages.

Validated soil and sediment analytical results will be submitted with the monthly progress following completion of data validation.

An updated schedule for Site Characterization activities is provided as **Attachment 3**.

CLOSING

Geosyntec appreciates the opportunity to submit this work plan to the NYSDEC and NYSDOH. If you have any questions, please contact Mr. Kevin Krueger of Unisys at (651) 687-2210.

Sincerely,

Geosyntec Consultants, Inc.

Paul Brookner, P.G.
Principal/Project Director
Geosyntec Consultants, Inc.

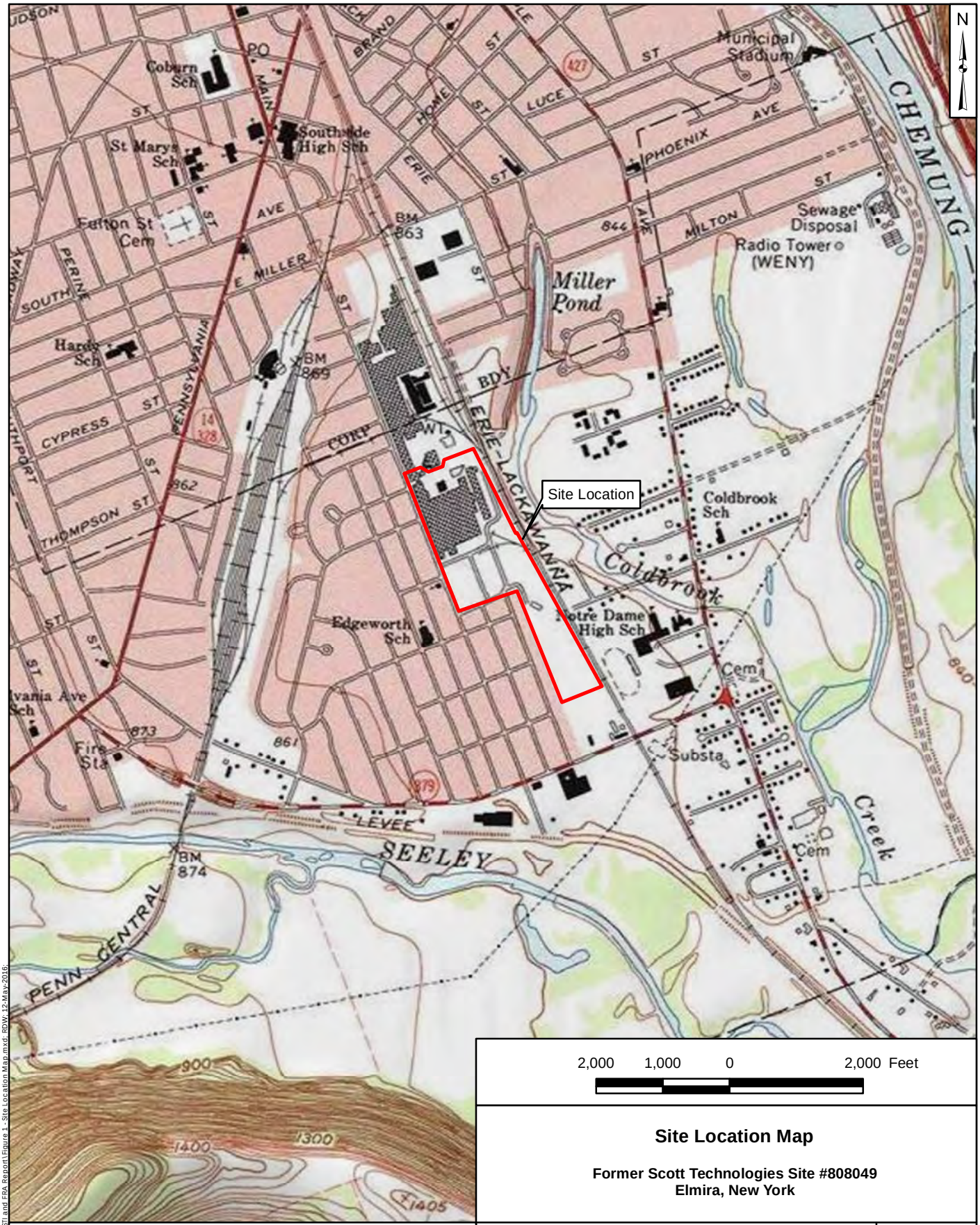
Aron Krasnopoler, Ph.D., P.E.
Project Engineer/Project Manager
Beech and Bonaparte Engineering P.C.

Attachments:
Figure 1 – Site Location Map
Figure 2 – Site Map
Figure 3A – Total PCBs in Surface Soils (0-0.17 ft bgs)
Figure 3B – Total PCBs in Shallow Subsurface Soils (0-2 ft bgs)
Figure 4A – Extent of Screening Criteria Exceedances for PAHs in Surface Soil (0-0.17 ft bgs)
Figure 4B – Extent of Screening Criteria Exceedances for PAHs in in Shallow Subsurface Soil (0-2 ft bgs)
Figure 5A – Extent of Screening Criteria Exceedances for Metals in Surface Soil (0-0.17 ft bgs)
Figure 5B – Extent of Screening Criteria Exceedances for Metals in Shallow Subsurface Soil (0-2 ft bgs)
Figure 6 - Proposed Holding Pond Sediment Sampling
Figure 7 - Proposed Soil Boring Locations
Table 1 – Proposed Soil Sampling
Table 2 – Proposed Sediment Sampling
Attachment 1 – QAPP/FSP Addendum #1
Attachment 2 – HASP Addendum #1
Attachment 3 – Project Schedule

Copies to:

Bernette Schilling, NYSDEC	Kevin Murphy, Wladis Law Firm
Benjamin Conlon, NYSDEC	Kevin Krueger, Unisys
Dawn Hettrick, NYSDOH	David Noble, Unisys
Michael Cruden, NYSDEC	John H. Paul, Beveridge & Diamond
Adam Meinstein, STCC	Michael G. Murphy, Beveridge & Diamond

FIGURES



2,000 1,000 0 2,000 Feet

Site Location Map

Former Scott Technologies Site #808049
Elmira, New York

Notes:
Topographic map accessed via ArcGIS Online and provided by National Geographic Society and i-cubed on 12 May 2016. Elmira, New York Quadrangle (1971, photorevised 1976) is shown.

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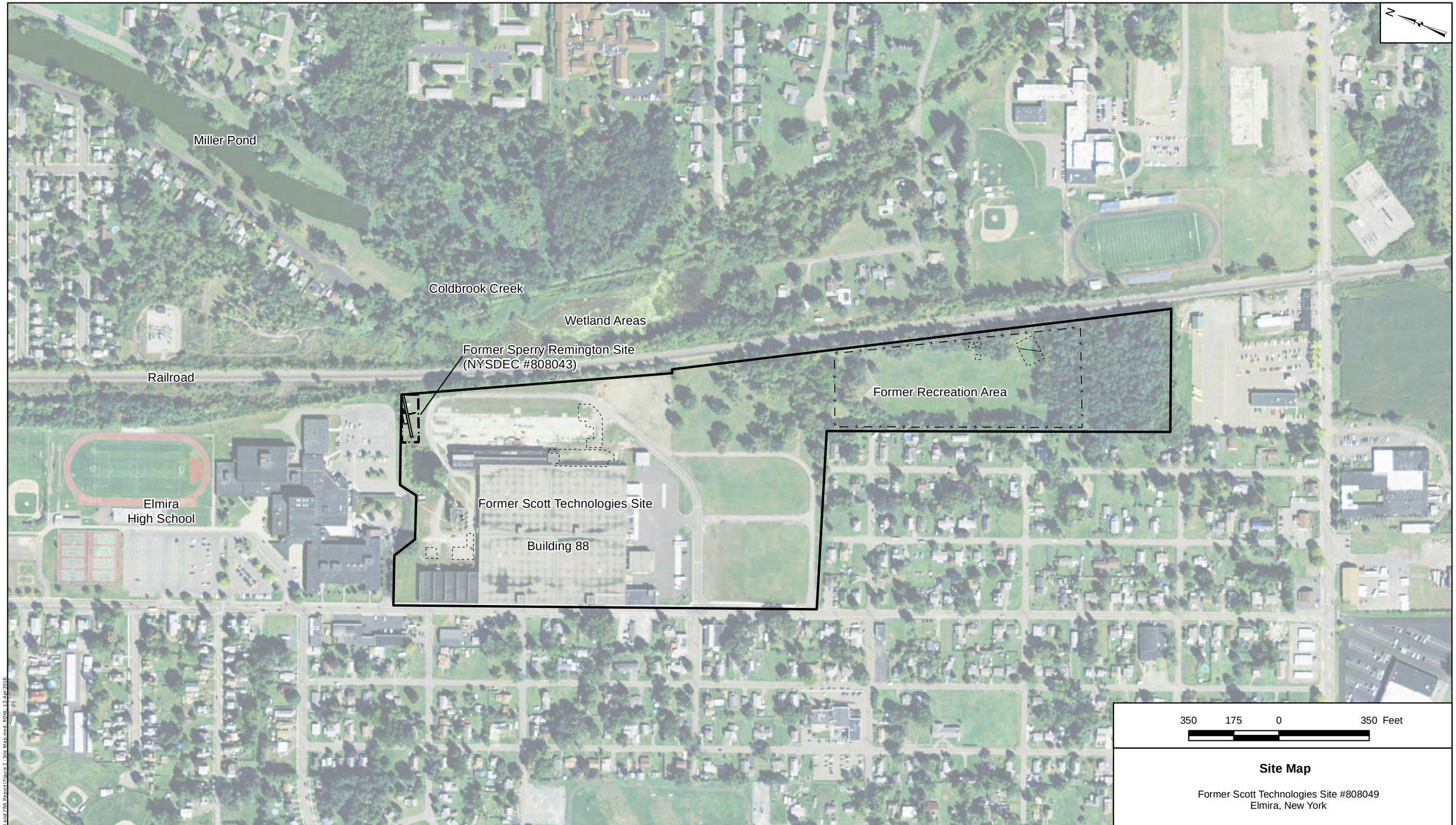
Figure 1

P:\GIS\Elmira - MN08321\Maps\SI and FRA Report\Figure 1 - Site Location Map.mxd; ROW; 12-May-2016;



Legend

- Site Boundary - Former Sperry Remington
- Approximate Areas of Excavation
- Site Boundary - STCC
- FRA Fence

Notes

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 12 April 2016. Image is dated 2 June 2010.
FRA - Former Recreation Are

Site Map

Former Scott Technologies Site #808049
Elmira, New York

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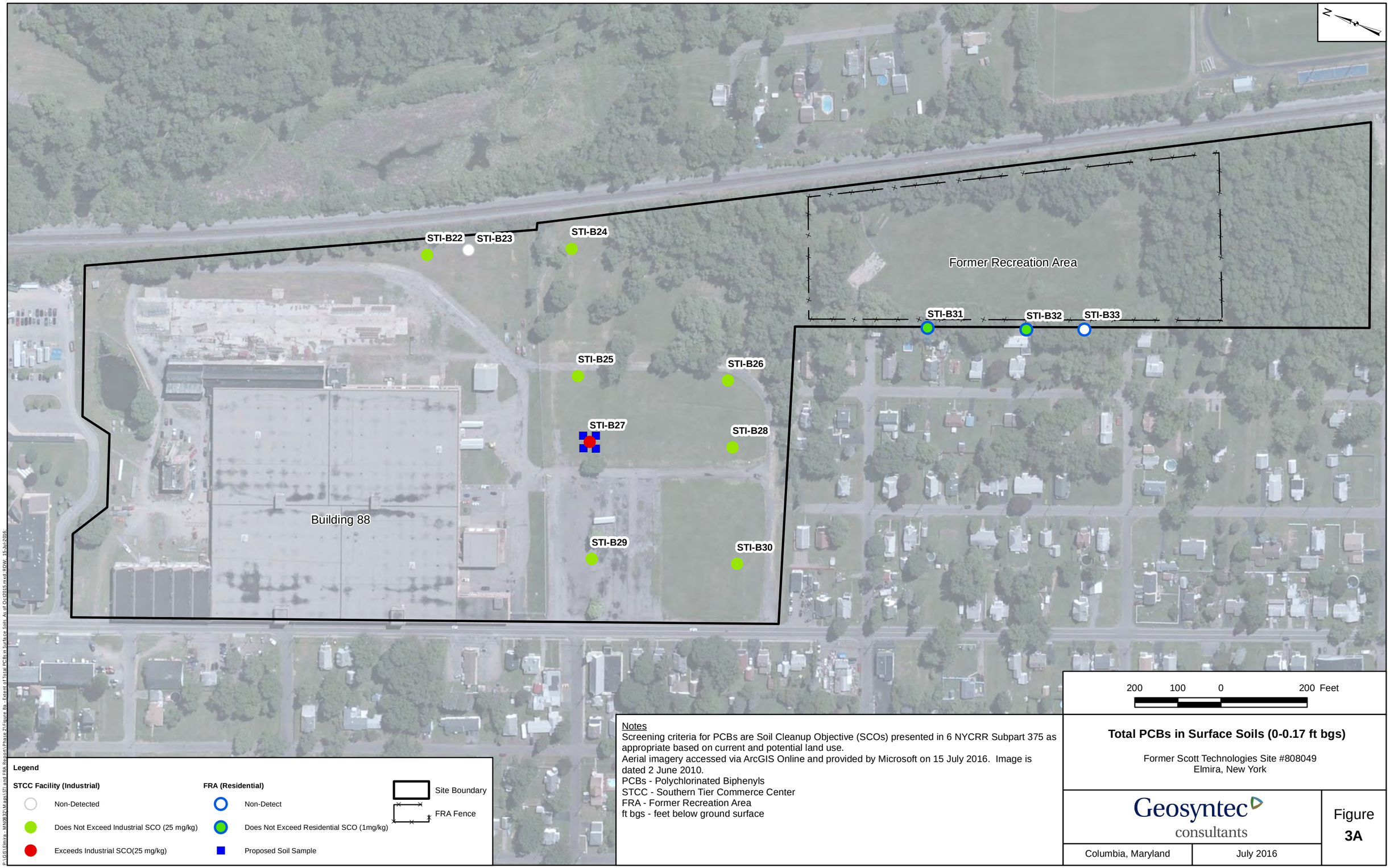
Figure **2**

P:\GIS\Elmira - MW08224\Maps\SI and FRA Report\Figure 2- Site Map.mxd RDW, 12-Apr-2016



P:\GIS\Elmira - MN\08324\Maps\SI and FBA Report\Phase 2\Figure 8a - Extent of Total PCBs in Surface Soils As of Oct2015.mxd RDW 15-Jul-2016

Notes
Screening criteria for PCBs are Soil Cleanup Objective (SCOs) presented in 6 NYCRR Subpart 375 as appropriate based on current and potential land use.
Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.
PCBs - Polychlorinated Biphenyls
STCC - Southern Tier Commerce Center
FRA - Former Recreation Area
ft bgs - feet below ground surface

Total PCBs in Surface Soils (0-0.17 ft bgs)

Former Scott Technologies Site #808049
Elmira, New York

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Figure **3A**

STI-B22
STI-B23
STI-B24
STI-B21
STI-B25
STI-B26
STI-B20
STI-B27
STI-B28
STI-B29
STI-B30
STI-B31
STI-B32
STI-B33
Former Recreation Area
Building 88
N

Legend

STCC Facility (Industrial)

- Non-Detect
- Does Not Exceed Industrial SCO (25 mg/kg)

FRA (Residential)

- Non-Detect

- Proposed Soil Sample
- Site Boundary
- FRA Fence

200 100 0 200 Feet

Notes
Screening criteria for PCBs are Soil Cleanup Objective (SCOs) presented in 6 NYCRR Subpart 375 as appropriate based on current and potential land use.
Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.
PCBs - Polychlorinated Biphenyls
STCC - Southern Tier Commerce Center
FRA - Former Recreation Area
ft bgs - feet below ground surface

Total PCBs in Shallow Subsurface Soils (0-2 ft bgs)

Former Scott Technologies Site #808049
Elmira, New York

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Figure **3B**

P:\GIS\Elmira - MN\808324\Maps\SI and FRA Report\Phase 2\Figure 3b - Extent of Total PCBs in Subsurface Soils As of Oct2015.mxd, RDW, 15-Jul-2016

Legend

Total PAHs Concentration

- 0-100 mg/kg
- > 100mg/kg

Proposed Soil Sample

Existing Clarification Chamber

Excavated Tank

Approximate Area of Tank Excavation; Excavated Clarification Chamber

Approximate Areas of Excavation

Site Boundary

FRA Fence

200 100 0 200 Feet

Extent of Screening Criteria Exceedances for PAHs in Surface Soil (0-0.17 ft bgs)

Former Scott Technologies Site #808049
Elmira, New York

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Figure **4A**

Notes and Disclaimer

Screening critieria for the STCC facility and the FRA are the previously approved cleanup goals for voluntary remedial actions (total PAHs less than or equal to 100 mg/kg). See text for details.

Areas of concern georeferenced from PDF drawings provided by New York State Department of Environmental Conservation (NYSDEC). Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.

STCC - Southern Tier Commerce Center FRA - Former Recreation Area PAHs - polycyclic aromatic hydrocarbons ft bgs - feet below ground surface

P:\GIS\Elmira - MW\MXD\2016\Maps\STI and FRA Report\Phase 2\Figure 4a - Extent of SVOCs Exceedances in Surface Soil As of Oct 2015.mxd, RDW, 15-Jul-2016

STI-B22
STI-B23
STI-B24
STI-B21
STI-B31
STI-B32
STI-B33
STI-B25
STI-B26
STI-B20
STI-B27
STI-B28
STI-B29
STI-B30

N

Legend

Total PAHs Concentration

- 0-100 mg/kg
- >100 mg/kg

Proposed Soil Sample

Existing Clarification Chamber

Excavated Tank

Approximate Area of Tank Excavation; Excavated Clarification Chamber

Approximate Areas of Excavation

Site Boundary

FRA Fence

200 100 0 200 Feet

Notes and Disclaimer

Screening critieria for the STCC facility and the FRA are the previously approved cleanup goals for voluntary remedial actions (total PAHs less than or equal to 100 mg/kg). See text for details.

Areas of concern georeferenced from PDF drawings provided by New York State Department of Environmental Conservation (NYSDEC). Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.

STCC - Southern Tier Commerce Center FRA - Former Recreation Area PAHs - polycyclic aromatic hydrocarbons ft bgs - feet below ground surface

Extent of Screening Criteria Exceedances for PAHs in in Shallow Subsurface Soil (0-2ft bgs)

Former Scott Technologies Site #808049
Elmira, New York

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Figure **4B**

P:\GIS\Elmira - MW\808321\Maps\STI and FRA Report\Phase 2\Figure 4b - Extent of SVOCs Exceedances in Subsurface Soil As of Oct 2015.mxd, RDW, 15-Jul-2016.

STI-B22
STI-B23
STI-B24
STI-B25
STI-B26
STI-B27
STI-B28
STI-B29
STI-B30
STI-B31
STI-B32
STI-B33

N

Legend

STCC Facility (Industrial)
- Does Not Exceed Screening Criteria
- Exceeds Screening Criteria

FRA (Residential)
- Does Not Exceed Screening Criteria
- Exceeds Screening Criteria
- Proposed Soil Sample

- Existing Clarification Chamber
- Excavated Tank
- Approximate Area of Tank Excavation; Excavated Clarification Chamber
- Approximate Areas of Excavation
- Site Boundary
- FRA Fence

200 100 0 200 Feet

Notes and Disclaimer
Screening criteria for metals for the STCC faciility are Industrial Soil Cleanup Objective (SCOs) presented in 6 NYCRR Subpart 375. Screening criteria the FRA are previously approved cleanup goals for lead (1,000 mg/kg) and Resdential SCOs for other metal COPCs.
Areas of concern georeferenced from PDF drawings provided by New York State Department of Environmental Conservation (NYSDEC). Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.
STCC - Southern Tier Commerce Center FRA - Former Recreation Area ft bgs - feet below ground surface

Extent of Screening Criteria Exceedances for Metals in Surface Soil (0-0.17 ft bgs)

Former Scott Technologies Site #808049
Elmira, New York

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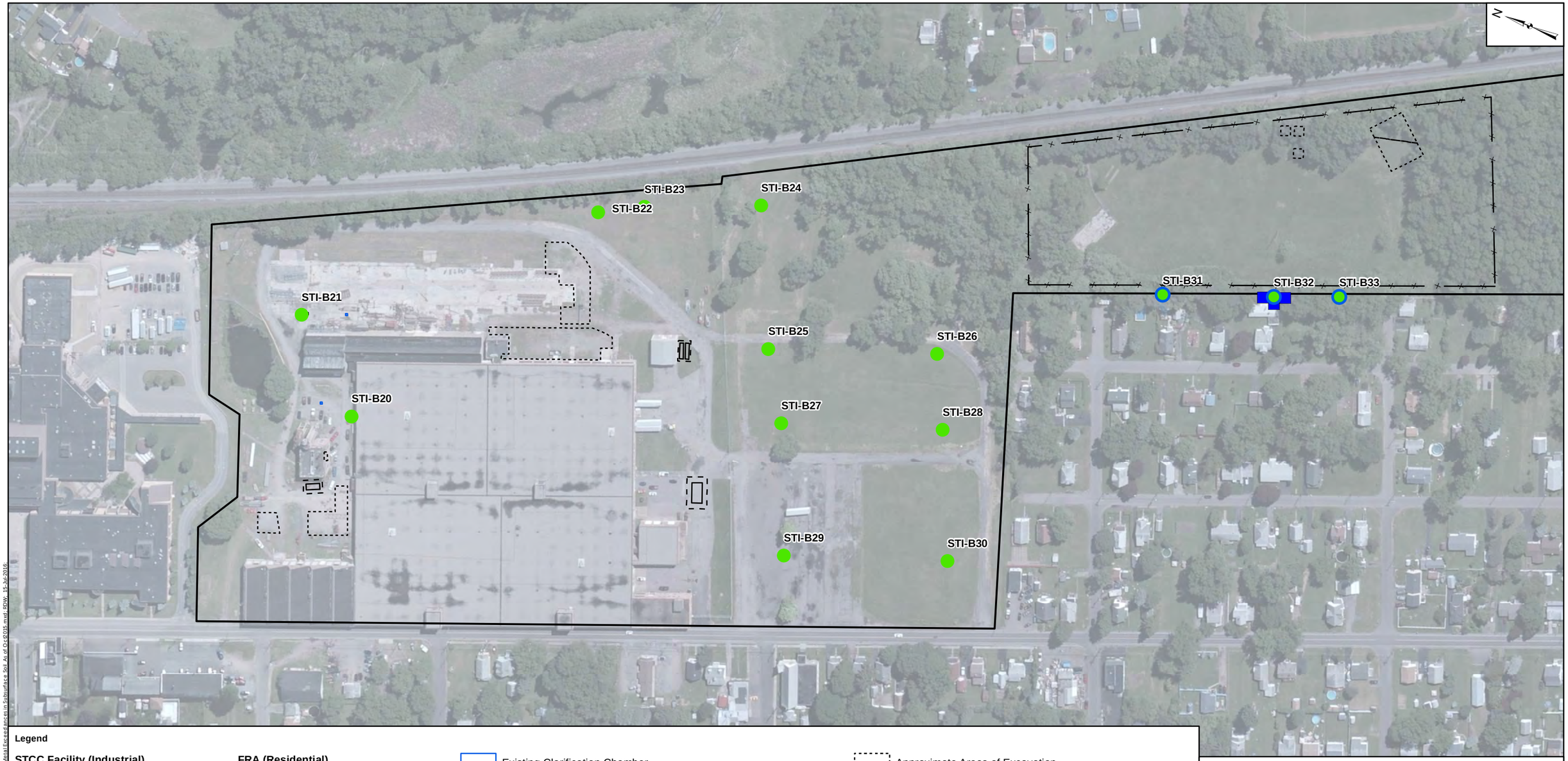
Figure **5A**

P:\GIS\Elmira - KNW0924\Maps\STI and FRA Report\Phase 2\Figure 5\5a - Extent of Metal Exceedances in Surface Soil As of Oct 2015.mxd RNW 15-Jul-2016



Legend

STCC Facility (Industrial)

- Does Not Exceed Screening Criteria
- Exceeds Screening Criteria

FRA (Residential)

- Does Not Exceed Screening Criteria
- Proposed Soil Sample

- Existing Clarification Chamber
- Excavated Tank
- Approximate Area of Tank Excavation; Excavated Clarification Chamber
- Approximate Areas of Excavation
- Site Boundary
- FRA Fence

200 100 0 200 Feet

Extent of Screening Criteria Exceedances for Metals in Shallow Subsurface Soil (0-2 ft bgs)

Former Scott Technologies Site #808049
Elmira, New York

Notes and Disclaimer

Screening criteria for metals for the STCC faciility are Industrial Soil Cleanup Objective (SCOs) presented in 6 NYCRR Subpart 375. Screening criteria the FRA are previously approved cleanup goals for lead (1,000 mg/kg) and Resdential SCOs for other metal COPCs.

Areas of concern georeferenced from PDF drawings provided by New York State Department of Environmental Conservation (NYSDEC). Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.

STCC - Southern Tier Commerce Center FRA - Former Recreation Area ft bgs - feet below ground surface

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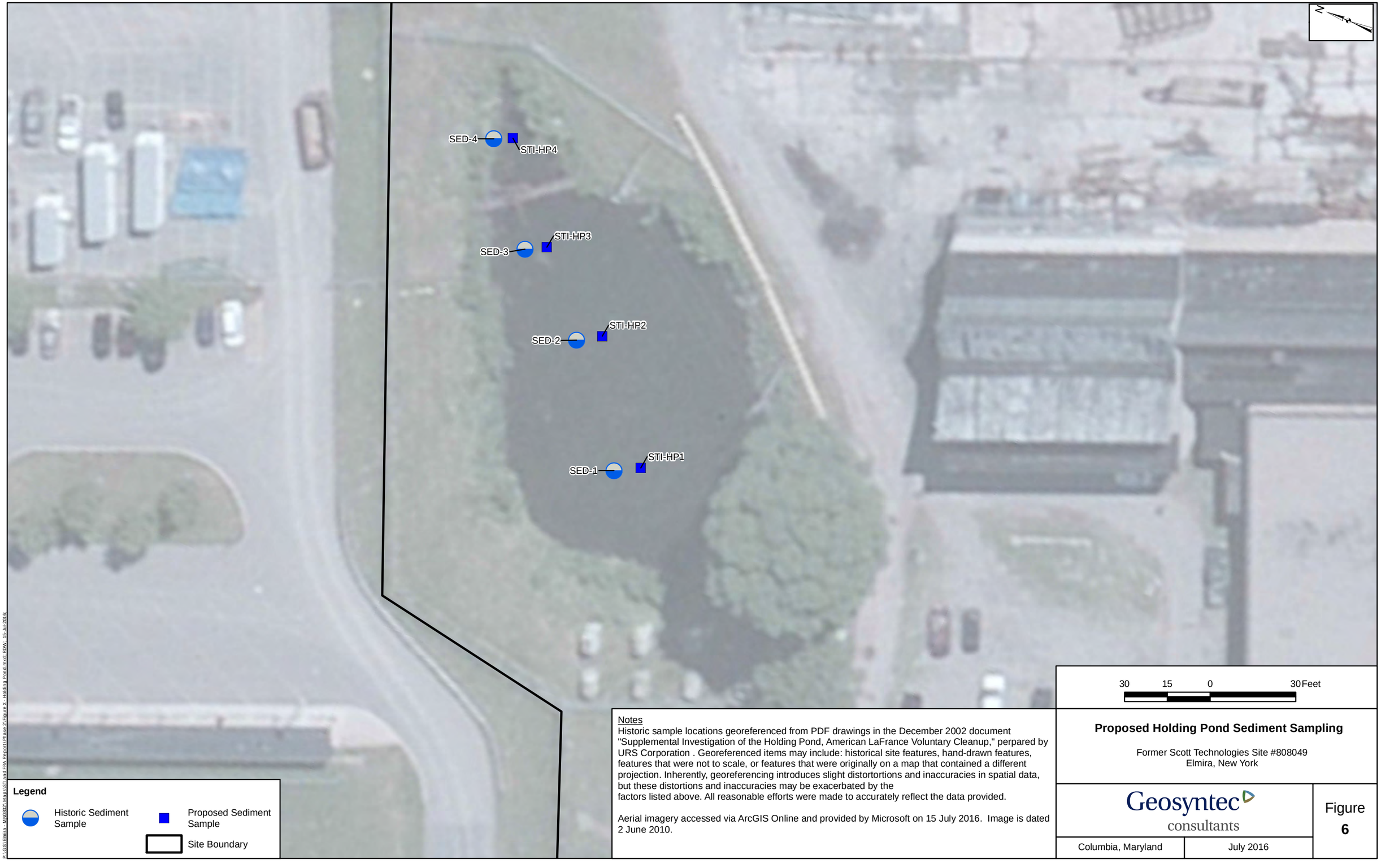
Figure **5B**

P:\GIS\Elmira - NY\MXD\2 Maps\STI and FRA Report\Phase 2\Figure 5\Fig. 5-Extent of Metal Exceedances in Subsurface Soil As of Oct2015.mxd RDW 15-Jul-2016



Legend

- Historic Sediment Sample
- Proposed Sediment Sample
- Site Boundary

30 15 0 30 Feet

Notes

Historic sample locations georeferenced from PDF drawings in the December 2002 document "Supplemental Investigation of the Holding Pond, American LaFrance Voluntary Cleanup," perpared by URS Corporation . Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.

Proposed Holding Pond Sediment Sampling

Former Scott Technologies Site #808049
Elmira, New York

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Figure 6

P:\GIS\Elmira_MA\808024 Maps\15_mxd\ FSA Report\Phase 2\Figure X - Holding Pond.mxd, RDW, 15-Jul-2016

Legend

- Proposed Boring Location (2 ft bgs)
- Existing Clarification Chamber
- Excavated Tank
- Approximate Area of Tank Excavation; Excavated Clarification Chamber
- Approximate Areas of Excavation
- Site Boundary
- FRA Fence

150 75 0 150 Feet

Proposed Soil Boring Locations

Former Scott Technologies Site #808049
Elmira, New York

Notes and Disclaimer

Areas of concern georeferenced from PDF drawings provided by New York State Department of Environmental Conservation (NYSDEC). Georeferenced items may include: historical site features, hand-drawn features, features that were not to scale, or features that were originally on a map that contained a different projection. Inherently, georeferencing introduces slight distortortions and inaccuracies in spatial data, but these distortions and inaccuracies may be exacerbated by the factors listed above. All reasonable efforts were made to accurately reflect the data provided.

Aerial imagery accessed via ArcGIS Online and provided by Microsoft on 15 July 2016. Image is dated 2 June 2010.
STCC - Southern Tier Commerce Center FRA - Former Recreation Area ft bgs - feet below ground surface

Geosyntec consultants

Columbia, Maryland | July 2016

Figure 7

P:\GIS\Elmira - MN\808324\Maps\SVI and FRA Report\Phase 2\Figure 6-Proposed Boring.mxd 40W - 15-Jul-2016

TABLES

TABLE 1
PROPOSED SOIL SAMPLING
Former Scott Technologies Site
Elmira, New York

PAOC	Proposed Field ID	Sampling Interval		Sample Analysis			Rationale
		Surface 0 to 0.17 ft bgs	Sub 1 0.17 to 2 ft bgs	PCBs	PAHs	Metals including Cr(VI)	
AOC-17	STI-B34	X	X	X			Delineation of PCBs SCO exceedance at sampling location STI-B27
	STI-B35	X	X	X			
	STI-B36	X	X	X			
	STI-B37	X	X	X			
	STI-B38	X	X		X		Delineation of total PAHs SCO exceedance at sampling location STI-B24
	STI-B39	X	X		X		
	STI-B40	X	X		X		
	STI-B41	X	X		X		
	STI-B42	X	X		X		Delineation of total PAHs SCO exceedance at sampling location STI-B25
	STI-B43	X	X		X		
	STI-B44	X	X		X		
	STI-B45	X	X		X		
AOC-17/FRA	STI-B46	X	X			X	Delineation of metals SCO exceedance at sampling location STI-B32
	STI-B47	X	X			X	
	STI-B48	X	X			X	

Notes:

PAOC - Potential Area of Concern

SCO - Restricted Residential Soil Cleanup Objective (6 NYCRR Subpart 375)

ft bgs - feet below ground surface

PCBs - Polychlorinated biphenyls

PAHs - Polynulclear aromatic hydrocarbons

Cr(VI) - Hexavalent chromium

TABLE 2
PROPOSED SEDIMENT SAMPLING
Former Scott Technologies Site
Elmira, New York

Location	Proposed Field ID	Sampling Interval				Sample Analysis			
		Sub 1 0 to 0.5 ft bgs	Sub 2 0.5 to 1 ft bgs	Sub 3 1 to 2 ft bgs	Sub 4 2 to 3 ft bgs	PCBs	PAHs	Metals	TOC
Holding Pond	STI-HP1	X	X	X	X	X	X	X	X
	STI-HP2	X	X	X	X	X	X	X	X
	STI-HP3	X	X	X	X	X	X	X	X
	STI-HP4	X	X	X	X	X	X	X	X

Notes:

ft bgs - feet below ground surface

PCBs - Polychlorinated biphenyls

PAHs - Polynulclear aromatic hydrocarbons

TOC - Total organic carbon

Attachment 1

QAPP/FSP Addendum #1

Geosyntec consultants

engineers | scientists | innovators

QUALITY ASSURANCE PROJECT PLAN (QAPP)/ FIELD SAMPLING PLAN (FSP) Addendum 1

FORMER SCOTT TECHNOLOGIES SITE

1051 SOUTH MAIN STREET
CITY OF ELMIRA, CHEMUNG COUNTY, NY

NYSDEC PROJECT 808049

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

Prepared by
Geosyntec Consultants, Inc.
10220 Old Columbia Road, Suite A
Columbia, Maryland 21046

Project Number MN0832

August 2016

Agency Review Draft

Geosyntec consultants

QUALITY ASSURANCE PROJECT PLAN (QAPP)/

FIELD SAMPLING PLAN (FSP)

ADDENDUM NO. 1

SITE CHARACTERIZATION WORK PLAN

FORMER SCOTT TECHNOLOGIES SITE –
NYSDEC PROJECT 808049

Geosyntec Consultants
10211 Wincopin Circle, 4th Floor
Columbia MD 21044

Prepared by: _____ Date: 8/11/2016

Ashwin Ranna- Staff Professional

Reviewed by: _____ Date: 8/11/2016

Aron Krasnopoler – Geosyntec Project Manager

Approved by: _____ Date: 8/11/2016

Julia K. Caprio- Geosyntec Quality Assurance Officer

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ABBREVIATIONS AND ACRONYMS

bgs Below Ground Surface

COC Chain-of-Custody

DRO Diesel Range Organics

ft Feet

FSP Field Sampling Plan

GPS Global Positioning System

GRO Gasoline Range Organics

ID Identification

IDM Investigation Derived Material

NELAP National Environmental Laboratory Accreditation Program

NYSDEC New York State Department of Environmental Conservation

PAOC Potential Areas of Concern

QAPP Quality Assurance Project Plan

SVOCs Semi-volatile Organic Compounds

TAL Target Analyte List

TAP TestAmerica Laboratories, Pittsburgh

TCL Target Compound List

TIC Tentatively Identified Compounds

TPH Total Petroleum Hydrocarbons

USEPA United States Environmental Protection Agency

VOC Volatile Organic Compound

1. INTRODUCTION

This Addendum to the Quality Assurance Project Plan (QAPP)/Field Sampling Plan (FSP) for the Former Scott technologies Site – #808049 (Site) was prepared by Geosyntec Consultants (Geosyntec) to present additional methods and procedures that will be followed during completion of the site characterization activities at the Site. This QAPP/FSP (Geosyntec, 2014) was developed using the guidelines presented in United States Environmental Protection Agency (USEPA), *Requirements for Quality Assurance Project Plans, EPA Quality Assurance/R-5* (USEPA, 2001) and the guidance presented in the New York State Department of Environmental Conservation (NYSDEC) DER-10 *Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2010).

The sampling program was designed to document waste disposal at the Site as it relates to the potential areas of concern (PAOCs), historical information and new findings. This addendum provides direction for additional sediment and soil investigation activities associated with the site characterization, which include: i) analyzing soil samples for hexavalent chromium (Section 2.27), ii) sediment sampling (Section 3.4.7) and. iii) sample labelling procedure for collected sediment samples (Section 3.7.2.3). Tables C.1, C.2, C.3, and C.4 have been updated to include the analytical method for hexavalent chromium analyses of solid samples.

2.2.7 Analytical Methods

The analytical laboratory selected for this project is TestAmerica Laboratories, Pittsburgh (TAP), PA, for soil and groundwater samples. TAP is certified by New York State through the National Environmental Laboratory Accreditation Program (NELAP) for all of the analytical methods required for the project. Laboratory analytical methods used to analyze field samples include some or all of the following analyses:

- Target Compound List (TCL) Volatile Organic Compounds (VOCs) – SW-846 method 8260C (solid and water) including the 10 highest concentration VOC tentatively identified compounds (TICs);
- TCL Semi-volatile Organic Compounds (SVOCs) – SW-846 method 8270D (solid and water) including the 20 highest concentration SVOC TICs;
- Polychlorinated Biphenyls (PCBs) – SW-846 method 8082A for solid samples and Low-Level 8082A for water samples;
- Pesticides – SW846 method 8081 for solid samples;
- Cyanide – EPA Method 9014 for solid samples;
- Target Analyte List (TAL) Metals – SW-846 methods 6010C/7471B/7470A for solid and water samples;
- Hexavalent Chromium – SW-846 method 7196A for solid and water samples;
- Total Petroleum Hydrocarbons (TPH) – Gasoline Range Organics (GRO) and Diesel Range Organics (TPH-DRO) – SW-846 8015D for water samples;

3.4.7 Sediment Sampling

Sediment samples will be collected using decontaminated hand augers, shovels, Eckman dredge, direct push core barrels, or similar sediment samplers. In some cases, disposable push tubes may be advanced through the sediment and used to collect sediment or simply assist in dewatering the sample locations. Push tubes may also be left in place in order to mark the exact sampling location in case they need to be resampled at a later date/ for Global Positioning System (GPS) locating. Sampling will likely be carried out from a boat.

The procedure for probing and collecting a sediment sample is as follows:

> Sediment sampling locations (e.g., cross-sections) will be located initially using a tape measure and the referenced physical features surrounding the holding pond within the property (e.g. building corners) or with GPS equipment. A 3/8 inch steel rod (length 4-5 feet) or equivalent will be used to probe the sediment. The probe will be sharpened on the end and calibrated in 6-inch intervals. The instructions are as follows:

1. Use a steel rod/soil probe to measure the water depth and sediment surface 3 to 5 feet (ft) away from the target location to avoid disturbing the sediment at the sampling location.
2. Advance the probe into the sediment bed, noting the depth of penetration to consolidated material and type of resistance met by the probe.
3. Move the probe laterally several feet (while maintaining the minimum 3 feet distance from the target core location) and repeat the probing at least three times.
4. Record the approximate average water depth and sediment thickness (to the nearest 0.5ft) and estimated sediment type (e.g., rock, fine-grained, coarse grained) for each of the three attempts in the field forms provided in Attachment 1. Probing locations do not need to be recorded by GPS.
5. After probing, if the estimated sediment thickness at the probing area is greater than 12 inches, attempt sample collection. If the estimated sediment thickness at the probing area is less than 12 inches, additional probing of the sediment surface will be conducted within 10 feet of the target location for deeper sediments (repeat steps 1 through 5). If sediment depth appears to be systematically less than 12 inches, make attempt at collection.
6. Once the targeted area is deemed suitable for core collection, collect the sediment sample using the appropriate size and length sampling device based on the probing information.
7. Obtain location coordinates from hand-held GPS instrument, and mark location on enlargement of sampling site specific map.
8. Section samples to the appropriate intervals and characterize each sample. Sample characterization should be conducted by a geologist or his designee. Sediment will be visually inspected to record details of the color, texture, moisture, density, and any indication of staining or obvious odor. Observations will be recorded in Attachment 1. Digital photographs will be taken.
9. Homogenize samples in a mixing container (decontaminated stainless bowl or sealable plastic bag). Transfer homogenized samples to laboratory-supplied containers and send to an off-site laboratory for contaminant of concern (COC) analysis.
10. Complete field forms (Attachment 1) with sampling and location information as outlined in Section 3.8.5 in this QAPP.
11. Manage investigative derived materials (IDM) as outlined in Section 3.5.5 of the QAPP.

3.7.2 Sample Designation

3.7.2.3 Sediment Sample Designation

Sediment sample identification (ID) will use the following nomenclature:

Site Location-Field ID-Matrix-(A/B/C/D)

Where:

Site Location: STI

Field ID: HP##

Matrix: Sediments: SED

A/B/C/D indicates the depth at which the sample is collected.

A : 0-0.5 ft below ground surface (bgs)

B: 0.5-1 ft bgs

C: 1-2 ft bgs

D:2-3 ft bgs

TABLE C.1
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - SOLID SAMPLES
Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Analytical Group	Analyte	CAS Number	Units	Analytical Method [1] Reporting Limit	Analtyical Method [1] Method Detection Limit	Screening [2] Criteria	Labortory Control Spike (LCS) % Recovery (%R)	Relative Percent Difference (RPD)	Matrix Spike/Matrix Spike Duplicate %R	RPD
VOCs/8260C	1,1,1-Trichloroethane	71-55-6	µg/Kg	5.00	0.486	680	67 -126	31	67 -126	31
	1,1,2,2-Tetrachloroethane	79-34-5	µg/Kg	5.00	0.718	-	60 -139	24	60 -139	24
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	µg/Kg	5.00	1.07	-	55 -130	37	55 -130	37
	1,1,2-Trichloroethane	79-00-5	µg/Kg	5.00	0.831	-	70 -128	22	70 -128	22
	1,1-Dichloroethane	75-34-3	µg/Kg	5.00	0.575	270	66 -124	23	66 -124	23
	1,1-Dichloroethene	75-35-4	µg/Kg	5.00	0.848	330	59 -129	25	59 -129	25
	1,2-Dibromo-3-Chloropropane	96-12-8	µg/Kg	5.00	0.749	-	35 -136	40	35 -136	40
	1,2-Dichlorobenzene	95-50-1	µg/Kg	5.00	0.798	1100	71 -124	22	71 -124	22
	1,2-Dichloroethane	107-06-2	µg/Kg	5.00	0.613	20	61 -127	23	61 -127	23
	1,2-Dichloroethene, Total	540-59-0	µg/Kg	10.0	1.28	20	70 -121	25	70 -121	25
	1,2-Dichloropropane	78-87-5	µg/Kg	5.00	0.543	-	72 -122	20	72 -122	20
	1,2,4-Trichlorobenzene	120-82-1	µg/Kg	5.00	0.882	-	51 -136	40	51 -136	40
	1,3-Dichlorobenzene	541-73-1	µg/Kg	5.00	0.656	2400	75 -118	20	75 -118	20
	1,4-Dichlorobenzene	106-46-7	µg/Kg	5.00	0.637	1800	77 -116	20	77 -116	20
	2-Butanone (MEK)	78-93-3	µg/Kg	5.00	0.882	120	35 -149	36	35 -149	36
	2-Hexanone	591-78-6	µg/Kg	5.00	0.690	-	32 -150	32	32 -150	32
	4-Methyl-2-pentanone (MIBK)	108-10-1	µg/Kg	5.00	0.653	-	44 -148	30	44 -148	30
	Acetone	67-64-1	µg/Kg	20.0	5.00	50	20 -150	40	20 -150	40
	Benzene	71-43-2	µg/Kg	5.00	0.675	60	77 -120	20	77 -120	20
	Bromoform	75-25-2	µg/Kg	5.00	0.442	-	53 -140	23	53 -140	23
	Bromomethane	74-83-9	µg/Kg	5.00	0.739	-	25 -150	40	25 -150	40
	Carbon disulfide	75-15-0	µg/Kg	5.00	0.512	-	50 -127	23	50 -127	23
	Carbon tetrachloride	56-23-5	µg/Kg	5.00	0.446	760	69 -122	22	69 -122	22
	Chlorobenzene	108-90-7	µg/Kg	5.00	0.757	1100	79 -120	20	79 -120	20
	Chlorodibromomethane	124-48-1	µg/Kg	5.00	0.710	-	70 -132	20	70 -132	20
	Chloroform	67-66-3	µg/Kg	5.00	0.585	370	72 -120	25	72 -120	25
	Chloromethane	74-87-3	µg/Kg	5.00	0.852	-	44 -131	27	44 -131	27
	Chloroethane	75-00-3	µg/Kg	5.00	1.55	-	22 -150	40	22 -150	40
	cis-1,2-Dichloroethene	156-59-2	µg/Kg	5.00	0.703	250	80 -118	20	80 -118	20
	cis-1,3-Dichloropropene	10061-01-5	µg/Kg	5.00	0.678	-	73 -120	20	73 -120	20
	Dichlorobromomethane	75-27-4	µg/Kg	5.00	0.561	-	70 -125	21	70 -125	21
	Dichlorodifluoromethane	75-71-8	µg/Kg	5.00	0.666	-	25 -150	34	25 -150	34
	Ethylbenzene	100-41-4	µg/Kg	5.00	0.643	1000	78 -125	21	78 -125	21
	1,2-Dibromoethane	106-93-4	µg/Kg	5.00	0.863	-	70 -131	20	70 -131	20
	Cyclohexane	110-82-7	µg/Kg	5.00	0.371	-	64 -130	21	64 -130	21
	Isopropylbenzene	98-82-8	µg/Kg	5.00	0.679	-	70 -133	22	70 -133	22
	Methyl acetate	79-20-9	µg/Kg	5.00	0.901	-	27 -142	40	27 -142	40
	Methyl tert-butyl ether	1634-04-4	µg/Kg	5.00	0.748	930	48 -132	36	48 -132	36
	Methylcyclohexane	108-87-2	µg/Kg	5.00	0.725	-	66 -135	23	66 -135	23
	Methylene Chloride	75-09-2	µg/Kg	5.00	0.672	50	58 -127	28	58 -127	28
	m-Xylene & p-Xylene	179601-23-1	µg/Kg	10.0	1.47	-	75 -126	21	75 -126	21
	o-Xylene	95-47-6	µg/Kg	5.00	0.779	-	83 -127	20	83 -127	20
	Styrene	100-42-5	µg/Kg	5.00	0.705	-	83 -129	20	83 -129	20
	Tetrachloroethene	127-18-4	µg/Kg	5.00	0.680	1300	78 -129	20	78 -129	20
	Toluene	108-88-3	µg/Kg	5.00	0.730	700	78 -124	21	78 -124	21
	trans-1,2-Dichloroethene	156-60-5	µg/Kg	5.00	0.596	190	77 -121	20	77 -121	20
	trans-1,3-Dichloropropene	10061-02-6	µg/Kg	5.00	0.598	-	74 -129	20	74 -129	20
	Trichloroethene	79-01-6	µg/Kg	5.00	0.658	470	76 -119	21	76 -119	21
	Trichlorofluoromethane	75-69-4	µg/Kg	5.00	0.919	-	20 -150	40	20 -150	40
	Vinyl chloride	75-01-4	µg/Kg	5.00	0.469	20	63 -124	27	63 -124	27
	Xylenes, Total	1330-20-7	µg/Kg	15.0	2.24	1600	83 -126	20	83 -126	20

TABLE C.1
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Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Analytical Group	Analyte	CAS Number	Units	Analytical Method [1] Reporting Limit	Analtyical Method [1] Method Detection Limit	Screening [2] Criteria	Labortory Control Spike (LCS) % Recovery (%R)	Relative Percent Difference (RPD)	Matrix Spike/Matrix Spike Duplicate %R	RPD
SVOCs/8270D	Acenaphthene	83-32-9	µg/Kg	67	6.41	98000	42 -104	34	42 -104	34
	Acenaphthylene	208-96-8	µg/Kg	67	7.64	107000	43 -117	36	43 -117	36
	Anthracene	120-12-7	µg/Kg	67	6.53	1000000	43 -111	35	43 -111	35
	Benzo[a]anthracene	56-55-3	µg/Kg	67	8.36	1000	45 -110	31	45 -110	31
	Benzo[a]pyrene	50-32-8	µg/Kg	67	6.68	22000	42 -114	31	42 -114	31
	Benzo[b]fluoranthene	205-99-2	µg/Kg	67	10.5	1700	37 -108	28	37 -108	28
	Benzo[g,h,i]perylene	191-24-2	µg/Kg	67	6.64	1000000	35 -127	21	35 -127	21
	Benzo[k]fluoranthene	207-08-9	µg/Kg	67	13.5	1700	39 -115	42	39 -115	42
	Bis(2-ethylhexyl) phthalate	117-81-7	µg/Kg	670	53.9	-	41 -121	31	41 -121	31
	2,2'-oxybis[1-chloropropane]	108-60-1	µg/Kg	67	7.2	-	37 -105	31	37 -105	31
	4-Bromophenyl phenyl ether	101-55-3	µg/Kg	330	29	-	43 -111	20	43 -111	20
	Butyl benzyl phthalate	85-68-7	µg/Kg	330	45.6	-	40 -117	34	40 -117	34
	Carbazole	86-74-8	µg/Kg	67	6.15	-	42 -114	35	42 -114	35
	4-Chloroaniline	106-47-8	µg/Kg	330	26.7	-	33 -102	28	33 -102	28
	2-Chloronaphthalene	91-58-7	µg/Kg	67	6.96	-	40 -104	34	40 -104	34
	4-Chlorophenyl phenyl ether	7005-72-3	µg/Kg	330	37.1	-	42 -111	37	42 -111	37
	Chrysene	218-01-9	µg/Kg	67	7.94	1000	44 -108	31	44 -108	31
	Dibenz(a,h)anthracene	53-70-3	µg/Kg	67	7.42	1100	34 -131	32	34 -131	32
	Dibenzofuran	132-64-9	µg/Kg	330	32.8	-	42 -106	33	42 -106	33
	Di-n-butyl phthalate	84-74-2	µg/Kg	330	41.8	-	44 -120	34	44 -120	34
	3,3'-Dichlorobenzidine	91-94-1	µg/Kg	330	35.3	-	24 -113	30	24 -113	30
	Diethyl phthalate	84-66-2	µg/Kg	330	36.4	-	44 -113	32	44 -113	32
	Dimethyl phthalate	131-11-3	µg/Kg	330	36.3	-	44 -111	34	44 -111	34
	2,4-Dinitrotoluene	121-14-2	µg/Kg	330	26.9	-	48 -118	33	48 -118	33
	2,6-Dinitrotoluene	606-20-2	µg/Kg	330	34.4	-	47 -119	30	47 -119	30
	Di-n-octyl phthalate	117-84-0	µg/Kg	330	35.2	-	35 -129	33	35 -129	33
	Fluoranthene	206-44-0	µg/Kg	67	7.13	1000000	40 -118	23	40 -118	23
	Fluorene	86-73-7	µg/Kg	67	8.79	386000	43 -110	37	43 -110	37
	Hexachlorobenzene	118-74-1	µg/Kg	67	7.11	-	42 -110	29	42 -110	29
	Hexachlorobutadiene	87-68-3	µg/Kg	67	7.47	-	40 -114	25	40 -114	25
	Hexachlorocyclopentadiene	77-47-4	µg/Kg	330	36	-	10 -150	33	10 -150	33
	Hexachloroethane	67-72-1	µg/Kg	330	24	-	40 -102	34	40 -102	34
	Indeno[1,2,3-cd]pyrene	193-39-5	µg/Kg	67	6.87	8200	34 -130	30	34 -130	30
	Isophorone	78-59-1	µg/Kg	330	25.1	-	39 -114	33	39 -114	33
	2-Methylnaphthalene	91-57-6	µg/Kg	67	6	-	43 -105	34	43 -105	34
	Naphthalene	91-20-3	µg/Kg	67	5.75	12000	42 -104	25	42 -104	25
	2-Nitroaniline	88-74-4	µg/Kg	1,700	149	-	41 -118	33	41 -118	33
	3-Nitroaniline	99-09-2	µg/Kg	1,700	137	-	38 -116	27	38 -116	27
	4-Nitroaniline	100-01-6	µg/Kg	1,700	135	-	37 -120	31	37 -120	31
	4-Nitrophenol	100-02-7	µg/Kg	1,700	122	-	27 -131	33	27 -131	33
	Nitrobenzene	98-95-3	µg/Kg	670	27.8	1500	40 -109	31	40 -109	31
	N-Nitrosodi-n-propylamine	621-64-7	µg/Kg	67	7.82	-	42 -108	32	42 -108	32
	N-Nitrosodiphenylamine	86-30-6	µg/Kg	330	30.9	-	41 -110	32	41 -110	32
	Phenanthrene	85-01-8	µg/Kg	67	10.6	100000	41 -107	20	41 -107	20
	Pyrene	129-00-0	µg/Kg	67	6.75	100000	39 -113	28	39 -113	28
	4-Chloro-3-methylphenol	59-50-7	µg/Kg	330	30.7	-	43 -110	31	43 -110	31
	2-Chlorophenol	95-57-8	µg/Kg	330	27.3	-	40 -105	37	40 -105	37
	2-Methylphenol	95-48-7	µg/Kg	330	23.3	330	41 -104	37	41 -104	37
	Methylphenol, 3 & 4	106-44-5	µg/Kg	330	32.7	330	43 -107	36	43 -107	36
	2,4-Dichlorophenol	120-83-2	µg/Kg	67	6.69	-	44 -110	27	44 -110	27
	2,4-Dimethylphenol	105-67-9	µg/Kg	330	52.2	-	39 -106	42	39 -106	42
	2,4-Dinitrophenol	51-28-5	µg/Kg	1,700	397	-	19 -140	43	19 -140	43

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Former Scott Technologies Site
Elmira, New York

Analytical Group	Analyte	CAS Number	Units	Analytical Method [1] Reporting Limit	Analtyical Method [1] Method Detection Limit	Screening [2] Criteria	Labortory Control Spike (LCS) % Recovery (%R)	Relative Percent Difference (RPD)	Matrix Spike/Matrix Spike Duplicate %R	RPD
SVOC's/8270D (continued)	4,6-Dinitro-2-methylphenol	534-52-1	µg/Kg	1,700	134	-	28 -130	35	28 -130	35
	2-Nitrophenol	88-75-5	µg/Kg	330	36.8	-	45 -112	30	45 -112	30
	Pentachlorophenol	87-86-5	µg/Kg	330	29.8	800	18 -125	34	18 -125	34
	Phenol	108-95-2	µg/Kg	67	7.88	330	39 -105	40	39 -105	40
	2,4,5-Trichlorophenol	95-95-4	µg/Kg	330	35.6	-	42 -110	35	42 -110	35
	2,4,6-Trichlorophenol	88-06-2	µg/Kg	330	49.9	-	43 -111	36	43 -111	36
	Acetophenone	98-86-2	µg/Kg	330	27.4	-	30 -150	40	30 -150	40
	Atrazine	1912-24-9	µg/Kg	330	32.5	-	30 -150	40	30 -150	40
	Benzaldehyde	100-52-7	µg/Kg	330	50	-	30 -150	40	30 -150	40
	1,1'-Biphenyl	92-52-4	µg/Kg	330	29.8	-	30 -150	40	30 -150	40
	Caprolactam	105-60-2	µg/Kg	1,700	252	-	30 -150	40	30 -150	40
	Bis(2-chloroethoxy)methane	111-91-1	µg/Kg	330	22	-	42 -103	35	42 -103	35
	Bis(2-chloroethyl)ether	111-44-4	µg/Kg	67	8.95	-	40 -100	33	40 -100	33
Pesticides/8081A	Aldrin	309-00-2	µg/Kg	0.0833	0.0149	190	50-150	20	50-150	20
	alpha-BHC	319-84-6	µg/Kg	0.0833	0.0136	20	50-150	20	50-150	20
	alpha-Chlordane	5103-71-9	µg/Kg	0.0833	0.0165	2900	30-150	20	30-150	20
	beta-BHC	319-85-7	µg/Kg	0.0833	0.0216	90	50-150	20	50-150	20
	4,4'-DDD	72-54-8	µg/Kg	0.0833	0.0109	14000	50-150	20	50-150	20
	4,4'-DDE	72-55-9	µg/Kg	0.0833	0.0126	17000	50-150	20	50-150	20
	4,4'-DDT	50-29-3	µg/Kg	0.0833	0.0125	94000	30-150	37	30-150	37
	delta-BHC	319-86-8	µg/Kg	0.0833	0.0128	250	20-124	20	20-124	20
	Dieldrin	60-57-1	µg/Kg	0.0833	0.0139	100	50-150	20	50-150	20
	Endosulfan I	959-98-8	µg/Kg	0.0833	0.0157	102000	50-150	23	50-150	23
	Endosulfan II	33213-65-9	µg/Kg	0.0833	0.0147	102000	50-150	33	50-150	33
	Endosulfan sulfate	1031-07-08	µg/Kg	0.0833	0.00870	920000	44-140	26	44-140	26
	Endrin	72-20-8	µg/Kg	0.0833	0.0162	60	30-150	20	30-150	20
	Endrin aldehyde	7421-93-4	µg/Kg	0.0833	0.0162	-	30-150	20	30-150	20
	Endrin ketone	53494-70-5	µg/Kg	0.0833	0.0130	-	50-150	20	50-150	20
	gamma-BHC (Lindane)	58-89-9	µg/Kg	0.0833	0.0146	100	50-150	20	50-150	20
	gamma-Chlordane	5103-74-2	µg/Kg	0.0833	0.0164	-	30-150	24	30-150	24
	Heptachlor	76-44-8	µg/Kg	0.0833	0.0185	380	50-150	20	50-150	20
	Heptachlor epoxide	1024-57-3	µg/Kg	0.0833	0.0162	-	50-150	20	50-150	20
	Methoxychlor	72-43-5	µg/Kg	0.167	0.0174	-	30-150	26	30-150	26
	Toxaphene	8001-35-2	µg/Kg	3.33	0.556	-	-	-	-	-

TABLE C.1
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - SOLID SAMPLES
Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Analytical Group	Analyte	CAS Number	Units	Analytical Method [1] Reporting Limit	Analtyical Method [1] Method Detection Limit	Screening [2] Criteria	Labortory Control Spike (LCS) % Recovery (%R)	Relative Percent Difference (RPD)	Matrix Spike/Matrix Spike Duplicate %R	RPD
PCBs/8082A	Aroclor-1016	12674-11-2	µg/Kg	0.833	0.124	-	55 -135	20	55 -135	20
	Aroclor-1221	11104-28-2	µg/Kg	0.833	0.159	-				
	Aroclor-1232	11141-16-5	µg/Kg	0.833	0.143	-				
	Aroclor-1242	53469-21-9	µg/Kg	0.833	0.136	-				
	Aroclor-1248	12672-29-6	µg/Kg	0.833	0.0788	-				
	Aroclor-1254	11097-69-1	µg/Kg	0.833	0.119	-				
	Aroclor-1260	11096-82-5	µg/Kg	0.833	0.118	-	50 -140	20	50 -140	20
	Aroclor-1262	37324-23-5	µg/Kg	0.833	0.183	-				
	Aroclor-1268	11100-14-4	µg/Kg	0.833	0.107	-				
	Polychlorinated Biphenyls, Total	1336-36-3	µg/Kg	0.833	0.183	3200				1,000
Metals/6010C & 7471B	Silver	7440-22-4	mg/Kg	0.5	0.0404	8.3	80 -120	20	75 -125	20
	Aluminum	7429-90-5	mg/Kg	20	2.08	-	80 -120	20	75 -125	20
	Arsenic	7440-38-2	mg/Kg	1	0.306	16	80 -120	20	75 -125	20
	Antimony	7440-36-0	mg/Kg	1	0.199	-	80 -120	20	75 -125	20
	Barium	7440-39-3	mg/Kg	20	0.0128	820	80 -120	20	75 -125	20
	Beryllium	7440-41-7	mg/Kg	0.4	0.0112	47	80 -120	20	75 -125	20
	Cadmium	7440-43-9	mg/Kg	0.5	0.0143	7.5	80 -120	20	75 -125	20
	Calcium	7440-70-2	mg/Kg	500	1.5	-	80 -120	20	75 -125	20
	Chromium, total	7440-47-3	mg/Kg	0.5	0.0772	19 [3]	80 -120	20	75 -125	20
	Cobalt	7440-48-4	mg/Kg	5	0.0418	-	80 -120	20	75 -125	20
	Copper	7440-50-8	mg/Kg	2.5	0.144	1720	80 -120	20	75 -125	20
	Iron	7439-89-6	mg/Kg	10	0.887	-	80 -120	20	75 -125	20
	Lead	7439-92-1	mg/Kg	1	0.102	450	80 -120	20	75 -125	20
	Magnesium	7439-95-4	mg/Kg	500	2.07	-	80 -120	20	75 -125	20
	Manganese	7439-96-5	mg/Kg	1.5	0.0889	2000	80 -120	20	75 -125	20
	Mercury	7439-97-6	mg/Kg	0.033	0.0109	130	80 -120	20	75 -125	20
	Nickel	7440-02-0	mg/Kg	4	0.0475	310	80 -120	20	75 -125	20
	Potassium	9/7/7440	mg/Kg	500	6.39	-	80 -120	20	75 -125	20
	Selenium	7782-49-2	mg/Kg	1	0.268	4	80 -120	20	75 -125	20
	Sodium	7440-23-5	mg/Kg	500	1.06	-	80 -120	20	75 -125	20
	Thallium	7440-28-0	mg/Kg	2	0.147	-	80 -120	20	75 -125	20
	Vanadium	7440-62-2	mg/Kg	5	0.175	-	80 -120	20	75 -125	20
	Zinc	7440-66-6	mg/Kg	2	0.103	2480	80 -120	20	75 -125	20
Hexavalent Chromium/ 7196A	Hexavalent Chromium	18540-29-9	mg/Kg	0.4	0.114	110	80-120	20	75-125	20
Cyanide/9014	Cyanide	74-90-8	mg/Kg	0.5	0.147	40	75 -125	20	75 -125	20

Notes:

[1] The Analytical Reporting Limit and Method Detection Limit listed are those that can be routinely achieved by the analytical laboratory.

[2] Screening criteria values are the minimum of the New York State Department of Environmental Conservation Table 375-6.8(b) Restricted Use Soil Cleanup Objectives for Industrial Land Use and Protection of Ground Water, December 2006.

[3] Screening value for total chromium is value specifed for hexavalent chromium.

- Refers to no screening criteria established
CAS - Chemical Abstracts Service
VOC - volatile organic compound
SVOC - semi-volatile organic compound
PCB - polychlorinated biphenyl
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

TABLE C.2
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - WATER SAMPLES
Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Analytical Group	Analyte	CAS Number	Units	Analytical Method [1] Reporting Limit	Analtyical Method [1] Method Detection Limit	Screening [2] Criteria	Laboratory Control Spike (LCS) % Recovery (%R)	Relative Percent Difference (RPD)	Matrix Spike/Matrix Spike Duplicate %R	RPD
VOCs/8260C	1,1,1-Trichloroethane	71-55-6	µg/L	1.00	0.286	5	63 -133	35	63 -133	35
	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	1.00	0.200	-	62 -125	35	62 -125	35
	1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	µg/L	1.00	0.320	5	46 -148	35	46 -148	35
	1,1,2-Trichloroethane	79-00-5	µg/L	1.00	0.201	1	77 -127	35	77 -127	35
	1,1-Dichloroethane	75-34-3	µg/L	1.00	0.116	5	73 -126	35	73 -126	35
	1,1-Dichloroethene	75-35-4	µg/L	1.00	0.296	5	65 -136	35	65 -136	35
	1,2-Dibromo-3-Chloropropane	**96-12-8**	µg/L	**1.00**	**0.141**	**0.04**	**37-133**	**35**	**37-133**	**35**
	1,2-Dichlorobenzene	95-50-1	µg/L	1.00	0.152	3	**77-120**	35	**77-120**	35
	1,2-Dichloroethane	**107-06-2**	µg/L	**1.00**	**0.212**	**0.6**	**68-132**	**32**	**68-132**	**32**
	1,2-Dichloroethene, Total	540-59-0	µg/L	1.00	0.512	-	**71-124**	**35**	**71-124**	**35**
	1,2-Dichloropropane	78-87-5	µg/L	1.00	0.095	1	**76-124**	**34**	**76-124**	**34**
	1,2,4-Trichlorobenzene	120-82-1	µg/L	1.00	0.271	5	**60-127**	**35**	**60-127**	**35**
	1,3-Dichlorobenzene	541-73-1	µg/L	1.00	0.105	3	76 -120	24	76 -120	24
	1,4-Dichlorobenzene	106-46-7	µg/L	1.00	0.206	3	77 -120	24	77 -120	24
	2-Butanone (MEK)	78-93-3	µg/L	5.00	0.548	50	39 -138	35	39 -138	35
	2-Hexanone	591-78-6	µg/L	5.00	0.159	50	25 -132	35	25 -132	35
	4-Methyl-2-pentanone (MIBK)	108-10-1	µg/L	5.00	0.528	-	45 -145	35	45 -145	35
	Acetone	67-64-1	µg/L	5.00	2.5	50	22 -150	35	22 -150	35
	Benzene	71-43-2	µg/L	1.00	0.11	1	80 -120	32	80 -120	32
	Bromoform	75-25-2	µg/L	1.00	0.191	50	46 -150	35	46 -150	35
	Bromomethane	74-83-9	µg/L	1.00	0.313	5	33 -150	35	33 -150	35
	Carbon disulfide	75-15-0	µg/L	1.00	0.212	60	54 -132	35	54 -132	35
	Carbon tetrachloride	56-23-5	µg/L	1.00	0.137	5	55 -150	35	55 -150	35
	Chlorobenzene	108-90-7	µg/L	1.00	0.135	5	80 -120	29	80 -120	29
	Chlorodibromomethane	124-48-1	µg/L	1.00	0.137	50	60 -140	35	60 -140	35
	Chloroform	67-66-3	µg/L	1.00	0.171	7	72 -127	35	72 -127	35
	Chloromethane	74-87-3	µg/L	1.00	0.283	5	50 -139	35	50 -139	35
	Chloroethane	75-00-3	µg/L	1.00	0.215	5	36 -142	35	36 -142	35
	cis-1,2-Dichloroethene	156-59-2	µg/L	1.00	0.237	5	70 -120	35	70 -120	35
	cis-1,3-Dichloropropene	**10061-01-5**	µg/L	**1.00**	**0.187**	**0.4**	**66 -120**	**35**	**66 -120**	**35**
	Dichlorobromomethane	75-27-4	µg/L	1.00	0.130	50	66 -130	35	66 -130	35
	Dichlorodifluoromethane	75-71-8	µg/L	1.00	0.193	5	13 -150	35	13 -150	35
	Ethylbenzene	100-41-4	µg/L	1.00	0.227	5	72 -126	33	72 -126	33
	1,2-Dibromoethane	**106-93-4**	µg/L	**1.00**	**0.180**	**0.0006**	**74 -123**	**35**	**74 -123**	**35**
	Cyclohexane	110-82-7	µg/L	1.00	0.254	-	45 -142	35	45 -142	35
	Isopropylbenzene	98-82-8	µg/L	1.00	0.164	5	58 -130	35	58 -130	35
	Methyl acetate	79-20-9	µg/L	1.00	0.138	-	47 -142	35	47 -142	35
	Methyl tert-butyl ether	1634-04-4	µg/L	1.00	0.183	10	64 -123	35	64 -123	35
	Methylcyclohexane	108-87-2	µg/L	1.00	0.261	-	45 -145	35	45 -145	35
	Methylene Chloride	75-09-2	µg/L	1.00	0.125	5	63 -129	35	63 -129	35
	m-Xylene & p-Xylene	179601-23-1	µg/L	2.00	0.406	5	73 -130	32	73 -130	32
	o-Xylene	95-47-6	µg/L	1.00	0.109	5	72 -124	33	72 -124	33
	Styrene	100-42-5	µg/L	1.00	0.097	930	71 -127	34	71 -127	34
	Tetrachloroethene	127-18-4	µg/L	1.00	0.149	5	70 -135	35	70 -135	35
	Toluene	108-88-3	µg/L	1.00	0.15	5	80 -123	35	80 -123	35
	trans-1,2-Dichloroethene	156-60-5	µg/L	1.00	0.17	5	73 -126	35	73 -126	35
	trans-1,3-Dichloropropene	**10061-02-6**	µg/L	**1.00**	**0.148**	**0.4**	**65 -125**	**35**	**65 -125**	**35**
	Trichloroethene	79-01-6	µg/L	1.00	0.143	5	73 -120	35	73 -120	35
	Trichlorofluoromethane	75-69-4	µg/L	1.00	0.199	5	44 -150	35	44 -150	35
	Vinyl chloride	75-01-4	µg/L	1.00	0.227	2	53 -138	35	53 -138	35
	Xylenes, Total	1330-20-7	µg/L	3.00	0.488	5	76 -128	32	76 -128	32

TABLE C.2
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - WATER SAMPLES
Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Analytical Group	Analyte	CAS Number	Units	Analytical Method (1) Reporting Limit	Analtyical Method (1) Method Detection Limit	Screening (2) Criteria	Laboratory Control Spike (LCS) % Recovery (%R)	Relative Percent Difference (RPD)	Matrix Spike/Matrix Spike Duplicate %R	RPD
SVOCs/8270D	Acenaphthene	83-32-9	µg/L	0.200	0.0291	20	30-150	35	30-150	35
	Acenaphthylene	208-96-8	µg/L	0.200	0.0215	-	30-150	35	30-150	35
	Anthracene	120-12-7	µg/L	0.200	0.0189	50	30-150	35	30-150	35
	Benzo[a]anthracene	**56-55-3**	µg/L	**0.200**	**0.0366**	**0.002**	**30-150**	**35**	**30-150**	**35**
	Benzo[a]pyrene	50-32-8	µg/L	0.200	0.0282	ND	30-150	35	30-150	35
	Benzo[b]fluoranthene	**205-99-2**	µg/L	**0.200**	**0.0487**	**0.002**	**30-150**	**35**	**30-150**	**35**
	Benzo[g,h,i]perylene	191-24-2	µg/L	0.200	0.0291	-	30-150	35	30-150	35
	Benzo[k]fluoranthene	**207-08-9**	µg/L	**0.200**	**0.0301**	**0.002**	**30-150**	**35**	**30-150**	**35**
	Bis(2-ethylhexyl) phthalate	117-81-7	µg/L	2.00	0.439	5	30-150	35	30-150	35
	2,2'-oxybis[1-chloropropane]	108-60-1	µg/L	1.00	0.0239	-	30-150	35	30-150	35
	4-Bromophenyl phenyl ether	101-55-3	µg/L	1.00	0.117	-	30-150	35	30-150	35
	Butyl benzyl phthalate	85-68-7	µg/L	1.00	0.213	50	30-150	35	30-150	35
	Carbazole	86-74-8	µg/L	1.00	0.0267	-	30-150	35	30-150	35
	4-Chloroaniline	106-47-8	µg/L	1.00	0.291	5	10-150	35	10-150	35
	2-Chloronaphthalene	91-58-7	µg/L	0.200	0.0307	10	30-150	35	30-150	35
	4-Chlorophenyl phenyl ether	7005-72-3	µg/L	1.00	0.0799	-	30-150	35	30-150	35
	Chrysene	**218-01-9**	µg/L	**0.200**	**0.0309**	**0.002**	**30-150**	**35**	**30-150**	**35**
	Dibenz(a,h)anthracene	53-70-3	µg/L	0.200	0.0268	-	30-150	35	30-150	35
	Dibenzofuran	132-64-9	µg/L	1.00	0.0965	-	30-150	35	30-150	35
	Di-n-butyl phthalate	84-74-2	µg/L	1.00	0.243	50	30-150	35	30-150	35
	3,3'-Dichlorobenzidine	91-94-1	µg/L	1.00	0.147	5	10-150	35	10-150	35
	Diethyl phthalate	84-66-2	µg/L	1.00	0.297	50	30-150	35	30-150	35
	Dimethyl phthalate	131-11-3	µg/L	1.00	0.183	50	30-150	35	30-150	35
	2,4-Dinitrotoluene	121-14-2	µg/L	1.00	0.214	5	30-150	35	30-150	35
	2,6-Dinitrotoluene	606-20-2	µg/L	1.00	0.137	5	30-150	35	30-150	35
	Di-n-octyl phthalate	117-84-0	µg/L	1.00	0.204	50	10-150	35	10-150	35
	Fluoranthene	206-44-0	µg/L	0.200	0.0211	50	30-150	35	30-150	35
	Fluorene	86-73-7	µg/L	0.200	0.0240	50	30-150	35	30-150	35
	Hexachlorobenzene	**118-74-1**	µg/L	**1.00**	**0.0610**	**0.04**	**30-150**	**35**	**30-150**	**35**
	Hexachlorobutadiene	**87-68-3**	µg/L	**1.00**	**0.0937**	**0.50**	**30-150**	**35**	**30-150**	**35**
	Hexachlorocyclopentadiene	77-47-4	µg/L	1.00	0.136	5	30-150	35	30-150	35
	Hexachloroethane	67-72-1	µg/L	1.00	0.139	5	30-150	35	30-150	35
	Indeno[1,2,3-cd]pyrene	**193-39-5**	µg/L	**0.200**	**0.0433**	**0.002**	**30-150**	**35**	**30-150**	**35**
	Isophorone	78-59-1	µg/L	1.00	0.0738	50	30-150	35	30-150	35
	2-Methylnaphthalene	91-57-6	µg/L	0.200	0.0192	-	30-150	35	30-150	35
	Naphthalene	91-20-3	µg/L	0.200	0.0228	10	30-150	35	30-150	35
	2-Nitroaniline	88-74-4	µg/L	5.00	0.673	5	30-150	35	30-150	35
	3-Nitroaniline	99-09-2	µg/L	5.00	0.805	5	10-150	35	10-150	35
	4-Nitroaniline	100-01-6	µg/L	5.00	0.773	5	30-150	35	30-150	35
	4-Nitrophenol	100-02-7	µg/L	5.00	0.804	-	30-150	35	30-150	35
	Nitrobenzene	**98-95-3**	µg/L	**2.00**	**0.149**	**0.40**	**30-150**	**35**	**30-150**	**35**
	N-Nitrosodi-n-propylamine	621-64-7	µg/L	1.00	0.0501	-	30-150	35	30-150	35
	N-Nitrosodiphenylamine	86-30-6	µg/L	1.00	0.122	50	30-150	35	30-150	35
	Phenanthrene	85-01-8	µg/L	0.200	0.0415	50	30-150	35	30-150	35
	Pyrene	129-00-0	µg/L	0.200	0.0226	50	30-150	35	30-150	35
	4-Chloro-3-methylphenol	59-50-7	µg/L	1.00	0.171	-	30-150	35	30-150	35
	2-Chlorophenol	95-57-8	µg/L	1.00	0.225	-	30-150	35	30-150	35
	2-Methylphenol	95-48-7	µg/L	1.00	0.187	-	30-150	35	30-150	35
	Methylphenol, 3 & 4	106-44-5	µg/L	1.00	0.209	-	30-150	35	30-150	35
	2,4-Dichlorophenol	120-83-2	µg/L	1.00	0.0671	1	30-150	35	30-150	35
	2,4-Dimethylphenol	105-67-9	µg/L	1.00	0.171	1	30-150	35	30-150	35
	2,4-Dinitrophenol	**51-28-5**	µg/L	**5.00**	**2.50**	**1**	**10-150**	**35**	**10-150**	**35**
	4,6-Dinitro-2-methylphenol	534-52-1	µg/L	5.00	1.56	-	30-150	35	30-150	35
	2-Nitrophenol	88-75-5	µg/L	1.00	0.112	-	30-150	35	30-150	35
	Pentachlorophenol	87-86-5	µg/L	1.00	0.500	1	10-150	35	10-150	35
	Phenol	108-95-2	µg/L	1.00	0.0553	1	30-150	35	30-150	35

TABLE C.2
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - WATER SAMPLES
Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Analytical Group	Analyte	CAS Number	Units	Analytical Method [1] Reporting Limit	Analtyical Method [1] Method Detection Limit	Screening [2] Criteria	Laboratory Control Spike (LCS) % Recovery (%R)	Relative Percent Difference (RPD)	Matrix Spike/Matrix Spike Duplicate %R	RPD
SVOCs/8270D (continued)	2,4,5-Trichlorophenol	95-95-4	µg/L	1.00	0.122	-	30-150	35	30-150	35
	2,4,6-Trichlorophenol	88-06-2	µg/L	1.00	0.298	-	30-150	35	30-150	35
	Acetophenone	98-86-2	µg/L	2.00	0.112	-	30-150	35	30-150	35
	Atrazine	1912-24-9	µg/L	2.00	0.223	-	30-150	35	30-150	35
	Benzaldehyde	100-52-7	µg/L	2.00	0.106	-	30-150	35	30-150	35
	1,1'-Biphenyl	92-52-4	µg/L	1.00	0.105	-	30-150	35	30-150	35
	Caprolactam	105-60-2	µg/L	5.00	1.47	-	30-150	35	30-150	35
	Bis(2-chloroethoxy)methane	111-91-1	µg/L	1.00	0.134	5	30-150	35	30-150	35
	Bis(2-chloroethyl)ether	111-44-4	µg/L	1.00	0.0317	1	30-150	35	30-150	35
PCBs/8082A - Low Level	Aroclor-1016	12674-11-2	µg/L	0.0100	0.00252	-	50 -120	30	50 -120	30
	Aroclor-1221	11104-28-2	µg/L	0.0100	0.00249	-				
	Aroclor-1232	11141-16-5	µg/L	0.0100	0.00293	-				
	Aroclor-1242	53469-21-9	µg/L	0.0100	0.00186	-				
	Aroclor-1248	12672-29-6	µg/L	0.0100	0.00227	-				
	Aroclor-1254	11097-69-1	µg/L	0.0100	0.00229	-				
	Aroclor-1260	11096-82-5	µg/L	0.0100	0.00136	-	50 -120	30	50 -120	30
	Aroclor-1262	37324-23-5	µg/L	0.0100	0.00206	-				
	Aroclor-1268	11100-14-4	µg/L	0.0100	0.00272	-				
	Polychlorinated biphenyls, Total	1336-36-3	µg/L	0.0100	0.00293	0.09				
Total Petroleum Hydocarbons/801	Diesel Range Organics [C10 - C28]	STL00019	µg/L	500	105		40 -124	30	27 -120	31
	Gasoline Range Organics [C6 - C10]	8006-61-9	µg/L	100	25		67 -132	35	63 -120	11
Metals/6010C & 7470A	Aluminum	7429-90-5	µg/L	200	41.7	2000	80-120	20	75-125	20
	Antimony	7440-36-0	µg/L	10.0	2.49	6	80-120	20	75-125	20
	Arsenic	7440-38-2	µg/L	10.0	3.02	50	80-120	20	75-125	20
	Barium	7440-39-3	µg/L	200	0.193	2000	80-120	20	75-125	20
	Beryllium	7440-41-7	µg/L	4.00	0.269	3	80-120	20	75-125	20
	Cadmium	7440-43-9	µg/L	5.00	0.166	10	80-120	20	75-125	20
	Calcium	7440-70-2	µg/L	5000	14.1	-	80-120	20	75-125	20
	Chromium	7440-47-3	µg/L	5.00	1.02	100	80-120	20	75-125	20
	Cobalt	7440-48-4	µg/L	50.0	0.394	-	80-120	20	75-125	20
	Copper	7440-50-8	µg/L	25.0	0.848	1000	80-120	20	75-125	20
	Iron	7439-89-6	µg/L	100	5.30	600	80-120	20	75-125	20
	Lead	7439-92-1	µg/L	10.0	1.45	50	80-120	20	75-125	20
	Magnesium	7439-95-4	µg/L	5000	10.9	35000	80-120	20	75-125	20
	Manganese	7439-96-5	µg/L	15.0	0.0938	600	80-120	20	75-125	20
	Nickel	7440-02-0	µg/L	40.0	0.486	200	80-120	20	75-125	20
	Potassium	7440-09-7	µg/L	5000	40.5	-	80-120	20	75-125	20
	Selenium	7782-49-2	µg/L	10.0	1.71	20	80-120	20	75-125	20
	Silver	7440-22-4	µg/L	5.00	0.266	100	80-120	20	75-125	20
	Sodium	7440-23-5	µg/L	5000	21.0	20,000	80-120	20	75-125	20
	Thallium	7440-28-0	µg/L	20.0	1.51	0.50	80-120	20	75-125	20
	Vanadium	7440-62-2	µg/L	50.0	1.06	-	80-120	20	75-125	20
	Zinc	7440-66-6	µg/L	20.0	5.98	5000	80-120	20	75-125	20
	Mercury	7439-97-6	µg/L	0.200	0.0384	1.4	80-120	20	75-125	20
Hexavalent Chromium/ 7196A	Hexavalent Chromium	18540-29-9	ug/L	10	1.9	50	85-115	20	85-115	20

Notes:

[1] The Analytical Reporting Limit and Method Detection Limit listed are those that can be routinely achieved by the analytical laboratory.

[2] Screening criteria values are Division of Technical and Opertional Guidance Series (TOGS 1.1.1) June, 1998 Table 5 New York State Groundwater Effluent Limitations Maximum Allowable Concentrations

- Refers to no screening criteria established

All concentration units are micrograms per liter

CAS - Chemical Abstracts Service

VOC - volatile organic compound

PCB - polychlorinated biphenyl

ND - non-detectable concentration by the approved analytical methods (TOGS 1.1.1)

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TABLE C.3
ANALYTICAL METHODS, CONTAINERS, PRESERVATIVES, AND HOLDING TIMES
Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Matrix	Analytical Group	Analytical Method	Containers (number, size, type)	Preservation Requirements (chemical, temperature, etc.)	Maximum Holding Time (preparation/analysis)
Solid	TCL VOCs	SW-846 8260C	Terracore kit	2 VOA vials H_2O, 1 VOA vial MEOH, frozen within 48 hours	14 days
	TCL SVOCs	SW-846 8270D	1-4 oz glass jar	Cool <6^{0}C but not frozen	14 days to extract 40 days to analyze
	Pesticides	SW-846 8081	1-4 oz glass jar	Cool <6^{0}C but not frozen	14 days to extract 40 days to analyze
	PCBS	SW-846 8082A	1-4 oz glass jar	Cool <6^{0}C but not frozen	14 days to extract 40 days to analyze
	Mercury, Total	SW-846 7471B	1-4 oz. glass jar	Cool <6^{0}C but not frozen	28 days
	Metals, Total	SW-846 6010C		Cool <6^{0}C but not frozen	180 days
	Cyanide	Method 9014	1-4 oz glass jar	Cool <6^{0}C but not frozen	14 days
	Hexavalent Chromium	Method 7196A	1-4oz glass jar	Cool <6^{0}C but not frozen	30 days to extract 7 days to analyze
Water	TCL VOCs	SW-846 8260C	3 X 40-mL glass VOA vials	HCl to pH<2, no headspace, cool to <6^{0}C, but not frozen	14 days
	TCL SVOCs	SW-846 8270D	2 - 1 L amber glass	Cool <6^{0}C but not frozen	7 days to extract 40 days to analyze
	PCBs	SW-846 8082A Low-Level	2-1 L amber glass	Cool <6^{0}C but not frozen	7 days to extract 40 days to analyze
	Mercury, Total	SW-846 7470A	1-250 ml plastic	HNO3 to pH<2, Cool <6^{0}C but not frozen	28 days
	TAL Metals	SW-846 6010C			6 months
	TPH-DRO	SW-846 8015D	1-1 L glass	Cool <6^{0}C but not frozen	7 days to extract 40 days to analyze
	TPH-GRO	SW-846 8015D	3 X 40-mL glass VOA vials	HCl to pH<2, no headspace, cool to <6^{0}C, but not frozen	14 days
	Hexavalent Chromium	Method 7196A	1x250ml plastic	Cool <6^{0}C but not frozen	24 hours

Notes:
SW-846 - USEPA "SW-846 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", April 1998, 5th edition.

^{o}C - Celcius
HCl – hydrochloric acid
L – liter
mL – milliliters
^{0}C – degrees Celsius
oz. – ounce
MEOH - methanol
DRO - diesel range organics
HVS - high volume sampling
VOA – volatile organic analyte
VOC – volatile organic compound
H_2O - water
SVOC – semi-volatile organic compound
TPH – total petroleum hydrocarbons
GRO - gasoline range organics
TCL - Target Compound List
TAL - Target Analyte List

TABLE C.4
SUMMARY OF FIELD QUALITY CONTROL SAMPLES
Quality Assurance Project Plan
Former Scott Technologies Site
Elmira, New York

Parameter	Matrix	MS/MSD[(1)]	Field Duplicate	Equipment Rinsate Blanks[(2)*]	Trip Blank	Source Blank
TCL VOCs	Soil/Solids	1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
TCL SVOCs		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
PCBs		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
TAL Metals		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
Cyanide		2 set/20 samples or less	1 per 10 samples or less	2 per 20 samples or 1 per day	NA	2 per source or 1 per day
Hexavalent Chromium		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
TCL VOCs	Aqueous	1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	1 per cooler containing VOC samples	1 per source or 1 per day
TCL SVOCs		2 set/20 samples or less	1 per 10 samples or less	2 per 20 samples or 1 per day	NA	2 per source or 1 per day
PCBs		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
TPH-Diesel Range Organics		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
TPH-Gasoline Range Orgnics		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day
Hexavalent Chromium		1 set/20 samples or less	1 per 10 samples or less	1 per 20 samples or 1 per day	NA	1 per source or 1 per day

Notes:

(1) Field personnel must collect triple volume to account for MS/MSD sample.

(2) No equipment blanks are required for disposable or dedicated field sampling equipment.

*If less than 20 samples are collected but two days are required for sample collection; two equipment rinsate samples will be collected.

NA - Not Applicable

TAL - Target Analyte List

TCL - Total Compound List

MS/MSD - Matrix Spike/Matrix Spike Duplicate

VOCs - Volatile Organic Compounds

SVOCs - Semi-volatile Organic Compounds

PCBs - Polychlorinated Biphenyls

Sampling Time: _____ **Weather Conditions:** _____ **Processing Time:** _____ **Drill Rig (model number)** _____ **Core Diameter (inches)** _____	**Sampling Personnel:** Geosyntec: **Processing/Shipping Personnel:**

Core Type: Continuous Core Split Spoon Shelby Tube

Processing Location: _____

Water depth (ft): Attempt 1: _____ Attempt 2: _____ Attempt 3: _____
Penetration depth (ft): Attempt 1: _____ Attempt 2: _____ Attempt 3: _____

Oversight During Core Collection? No Yes: _____
Oversight During Core Processing? No Yes: _____

NOTES

Number of core attempts:

Modifications to process:

Problems solved in field:

ADDITIONAL COMMENTS

Photograph of Location: Y/N
Photograph of Core Collection: Y/N

Notable Features:

Other:

Lithology/Screening			
Depth Interval (ft below mudline)	**Recovery (ft)**	**Lithologic Description**	**Sample ID**

General Soil Description: Color, Density, Moisture content, Geological modifiers, Major Constituent - CAPITALIZED, Minor Consituent (s), Geologic Description (in parentheses). Example: *Tan, loose, wet, stratified, medium SAND, little fine sand, trace coarse sand, trace silt (Till).*	**Moisture qualifiers:** Dry - No Moisture Damp - very slight moisture content, no visible water Moist - very slight moisture content, soils will not stick together Wet - enough moisture for soils to stick together Saturated - water dripping from sample	
Portion qualifiers: And (with) - 35-50% of matrix or greater Some - 20-35% of matrix - an obvious component Little/Few - 10-20% of matrix Trace - 0-10%	**Density qualifiers (Use blow count qualifiers for SPTs)**	
	Granular Soils qualifiers: Very loose, loose, medium dense, dense, very dense	**Cohesive Soils qualifiers:** Very soft, soft, medium stiff, stiff, very stiff, hard
Odor Descriptions: Slight, strong, no odor.		

Geosyntec consultants

Attachment 2

HASP Addendum #1

Geosyntec consultants

TASK HAZARD ANALYSIS (Ver. 2, June 2015)

Geosyntec HS Procedures referenced herein are available on Geosyntec's H&S SharePoint site and should be consulted, as appropriate, per project-specific needs. This THA prepared per HS-106-Accident Prevention Program, HS-204-Task Hazard Analysis, and meets the requirements for a "Site-Specific Health and Safety Plan" per Geosyntec HS Procedures and regulations referenced herein (see Section B.14.).

PART A – SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION

TASK:	Overwater Sediment Sampling		
Project Name:	Former Scotts Technology (STCC) Site,	**Project Number/Org:**	MN0832C/1751
Project Address:	Elmira, NY		
Description of Task & Worksite:	Sediment sampling of STCC Holding pond , Elmira, NY. Sampling area may be wadable or may require boat access.		

Geosyntec Personnel	**Name**	**Desktop Office Phone**	**Cell Phone**
Site Lead/HS Officer	Jay Thompson	612-253-8207	650-319-5880
Project Manager	Aron Krasnopoler	410-381-4333	202-550-7724
Project Director	Paul Brookner	612-253-8203	612-599-7473
HS Coordinator	Michael Hansen	410-910-7640	443-812-1430
Regional HS Mngr.	Mark Malchik	978-206-5777	781-392-5440
Corp. HS Director	Dale Prokopchak	804-332-6376	804-349-8067
Client Contact(s):	Kevin Krueger	651-687-2210	
Subcontractor(s):	☐ Not Applicable ☒ Applicable, provide contact information below:		
	EA: Robert Casey	315-431-4610 x1852	315-430-7429

A.2. EMERGENCY RESPONSE Based on analysis of worksite factors, client/regulatory requirements, availability of emergency services.

Consider all Relevant Risk Factors & Response Procedures *(fire/explosion, medical, chemicals/spills, security, site factors, weather, communications).*
EXPLANATORY NOTES, CLARIFICATIONS:

Available Means of Jobsite Emergency Communication/Alerting	☒ Verbal	☒ Cell Phone	☐ Land Line	☐ 2-Way Radio	☐ On-site alarm/signal system	☐ Other:
To Summon Emergency Services Police, Fire, Ambulance	☒ **DIAL 911**, for external responders	☐ **Other**:				
Other Emergency Contacts, as needed *(such as security, spill responder, utility):*						
Nearest Emergency Medical Services	Hospital Name: Arnot Ogden Medical Center					
	Address: 600 Roe Avenue, Elmira, NY 14905					
	Phone #: 607-737-4100	☒ See Attached Directions				
For **Non-Emergency Urgent Care**	☒ Contact WorkCare, 24/7 at: 888-449-7787 ☐ Other:					
Job-site **Evacuation** Procedure, Rally Point, Place of refuge:	Rally Point:	Southern Tier Commerce Center 1051 S Main St Elmira, NY 14904	Place of Refuge:	Southern Tier Commerce Center 1051 S Main St Elmira, NY 14904		
Special Emergency Equipment/Procedures						

IMPORTANT: After initial emergency response actions and incident stabilization, contact appropriate project personnel listed in Part A.1.

A.3. SUMMARY OF WORK STEPS, HAZARDS, CONTROLS Based on **PART B, "HAZARD ANALYSIS,"** and worksite/client/project factors.

Summary/outline of work steps/hazards/controls, with references to applicable Sections in Parts B and C, as applicable:

WORK STEPS	**HAZARDS**	**CONTROLS**
Back trailer/boat near sampling location	*Maneuvering Trailer*	*Use spotter while backing up*
Unload/load boat from trailer or truck bed	*Lifting*	*Use proper technique* *Use buddy system*

Approach STCC holding pond (potentially with boat)	*Uneven ground: slips/trip/falls* *Vegetation (possible poison ivy)* *Lifting heavy load*	*Walk path without boat first to check footing. Wear proper footwear.* *Long sleeves.* *Use proper lifting technique.*
Maneuver boat to/from sampling location	*Over water hazard* *Slips/trips/falls on boat*	*Wear PPE/PFD. Do not wear waders on boat. Bring rescue ring and rope on boat.* *Remain seated while boat in in motion. Minimize clutter on board; return to shore to pick up/drop off equipment if needed. Apply sand to increase traction – especially as boat gets muddy*
Collect sample	*Over-water hazard* *Capsize/person overboard hazard while sampling* *Chemical exposure hazard*	*Wear PPE/PFD. Do not wear waders on boat. Bring rescue ring and rope on boat.* *Only sample with two people on board. Only sample from the front or rear of boat with the second person as a counter balance. Retrieve sampler slowly, keeping center of gravity on the boat.* *Wear gloves and other proper PPE*
Disembark boat	*Slips/trips/falls*	*Keep landing area clear of clutter.*
(Optional) Collect wadable samples from shore	*Slips/trips/falls*	*Be aware of changing footing while in waders.*

A.4. H&S EQUIPMENT LIST List worksite equipment for worker protection; provide details in Explanatory Notes, Clarifications.

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**ROUTINE PPE**	☒ Standard work clothes appropriate for task ☒ Hard-toed boots/shoes ☒ Hardhat ☒ Safety glasses	☒ Work gloves appropriate for task ☐ Noise/hearing protection ☒ High-visibility/reflective vest ☐ Ice creepers (boot attachments)	
		☒ Basic PPE for protection from low-hazard chemical contact & dust (nitrile gloves, Tyvek suit, dust mask, boot covers).		
☒	**ROUTINE H&S EQUIPMENT/GEAR**	☒ First Aid Kit ☒ Fire extinguisher ☒ Emergency eyewash bottle(s) ☒ Insect control (repellant, wasp spray, other) ☒ Caution tape	☒ Sun protection (sunscreen, shade canopy, other) ☒ Project-supplied drinking water and/or hygiene facilities ☒ Poison ivy skin wash (Technu or similar) ☒ Vehicle emergency kit (flares, lights, reflective device) ☒ Traffic control warning devices (cones, or similar)	
		☐ Other:		
☒	**NON-ROUTINE PERSONAL PROTECTIVE EQUIPMENT (PPE)** (Indicate specific types of PPE in Explanatory Notes, Clarifications)	☐ Goggles and/or face shield ☐ Chemical protective gloves ☐ Coveralls (Tyvek, or other) ☐ Outer boots, boot covers	☐ Disposable n-95 dust mask ☐ Half-face respirator (APR), cartridges ☐ Full-face respirator (APR), cartridges ☒ Personal flotation device	☐ Fire retardant clothing ☐ Arc Flash Protection ☐ Electrical-Hazard-rated boots, gloves ☐ Personal fall apparatus
		☐ Other:		
☐	**SPECIAL HAZARD CONTROLS**	☐ Portable GFCI	☐ Lockout/tagout equipment	☐ Ventilation equipment (fan, blower)
		☐ Eyewash - 15 min. flow	☐ Emergency deluge shower	☐ Air horn, alarm
		☐ Other:		
☒	**DECON, PPE DISPOSAL**	☒ Receptacle for disposable PPE	☐ Hand washing provisions	☐ Decon solution, related supplies
		☐ Other:		
☐	**AIR MONITORING EQUIPMENT, OTHER EQUIPMENT FOR WORKER EXPOSURE TESTING**	List equipment/devices to be brought to worksite; Use in accordance with procedures in Part C:		

PART B – HAZARD ANALYSIS and CONTROLS *Complete Section B.1., then subsequent sections as applicable to the task(s).*

B.1. ROUTINE HAZARD PREPAREDNESS **This section required for all tasks.**

Explanatory Notes, Clarifications:

General Safety, Wellness, Preparedness – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.

☒ **General premises** hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location.

☒ **Weather/climate-related hazards** – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning

☒ **Plant/Insect/Animal Hazards** - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions.

☒ **Worksite traffic hazards** – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures).

☐ **Illumination hazards/night work** - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate.
☒ **Lifting, manual material handling** – use proper lifting procedures, seek help for >50 lbs.

Geosyntec Procedures: *HS-124-Heat Stress, HS-125-Cold Stress, HS-127-Ticks, HS-208-Housekeeping, HS-210-Walking and Working Surfaces, HS-401-Back Injury Prevention, HS 517 Traffic Safety*

Routine Personal Protection – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.

☒ **Head protection from overhead hazards** - Wear hardhat or "bump cap" as appropriate for hazard.
☒ **Hand protection** - Wear protective work gloves appropriate for the hazard and work tasks.
☒ **Eye protection** - Wear safety glasses (with side shield or wrap around, either clear or shaded for sun protection), or other appropriate eye protection.
☒ **Foot protection, rough terrain** - Wear work boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions.
☐ **Hearing protection** – use earplugs, earmuffs (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA.
☐ **Dust, unsanitary conditions** – For general protection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed.

Geosyntec Procedures: *HS-109-Hearing Conservation, HS 112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-207-Working Alone, HS-105-Driver and Vehicle Safety*

Tools, Equipment, Machinery – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.

☒ **Manual hand tools -** proper tool for the job, maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire."
☒ **Knives, cutting tools -** Utility/folding/collapsible knives and fixed open-bladed knives/cutting tools are *not* permitted, unless specifically authorized. Cutting tools with automatically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-*Manual Hand Tools* for additional Information.
☐ ***Working near*** **powered tools/equipment/machinery** – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection).
☐ ***Operation/use of*** **powered tools/equipment/machinery – See Section B.5.**

HS-502-Manual Hand Tools

Security– Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.

☐ **High crime, urban** – Use appropriate measures for personal security (such as buddy system, security service, work scheduling, other measures)
☐ **Working alone** - Establish "check in" procedure with supervisor/project manager.

Geosyntec Procedures: *HS-207-Working Alone*

Routine Driving Hazards – Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.

☒ **Routine work travel** - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate).
☒ **Unfamiliar location** - Plan travel route before driving (assemble maps, enter destination in GPS).
☒ **Long Distance or During Sleep Hours** – Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield.
☒ **Unfamiliar vehicle** – Become familiar with vehicle operational controls and handling characteristics before operating vehicle.

Geosyntec Procedures: *HS-105-Driver and Vehicle Safety*

B.2. SPECIAL DRIVING/TRAFFIC/TRANSPORTATION HAZARDS ☒Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS: Boat may be transported by trailer or in the back of a pickup truck. It transported in pickup truck, insure rear of boat is properly flagged.

☐	**SPECIAL DRIVING HAZARDS** Off-Road Driving or use of non-typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	☐ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. ☐ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. ☐ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. ***Geosyntec Procedure(s):*** *HS-510-All Terrain Vehicles*
☒	**TRANSPORTING MATERIALS, TOWING/HAULING LOADS** Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment.	☒ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☒ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use, and used in a manner as to prevent an unsafe condition. ☒ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.
☐	**WORKSITE TRAFFIC HAZARDS** Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	☐ Wear reflective vests where exposed to traffic hazards. ☐ Where possible, park vehicles as protective shield from oncoming traffic. ☐ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☐ Use DOT-trained flaggers or police detail where appropriate or required. ***Geosyntec Procedure(s):*** *HS-517-Traffic Safety*
☐	**RAILROAD HAZARD** Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work. **Geosyntec Procedure(s):** HS-305-Rail Operations
☒	**WATER TRANSPORTATION**	☒ Follow HS 312 "Water Transportation Safety," and Section B.3., "Water/Boating Hazards." **Geosyntec Procedure(s):** HS-312-Water Transportation Safety

☐	**AIRPORT, AIRCRAFT** Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work. ☐ Follow provisions of applicable Geosyntec HS Procedures, below: ***Geosyntec Procedure(s):*** *HS-310-Helicopter Safety, HS 311-General Aviation (Small Aircraft) Safety*
☒	**TRAFFIC/VEHICLE HAZARDS RELATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES**	☒ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"

B.3. WATER/BOATING HAZARDS ☒ Applicable ☐ Not Applicable or Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS: Slip hazard possible with muddy boots and metal surface. Sand boat for increased traction.

☒	**OPERATOR OF WATER CRAFT OR PASSENGER/WORKER ON WATER CRAFT OR PLATFORM** Hazards: Drowning, hypothermia, collision, motor/fuel hazards, navigation	☒ Wear regulatory-approved personal flotation device (PFD) or buoyant work vest. ☒ Bring emergency rescue equipment (ring buoy, reaching device, flares). Use "reach, throw, row, go" strategy. ☒ Use fuel safety practices, fire extinguisher present in boat. ☐ Have lifesaving skiff/boat available. ☒ Monitor weather, develop float plan, ensure navigation/communication equipment operable. ☒ For tidal, flash flood, dam release hazards, plan/locate work accordingly, other precautions as appropriate. ☒ Where ice/slip hazards are present adjacent to water body, and for working directly on ice over water, wear ice creepers, sand work area, or take other appropriate measures to address slip hazard. ☐ For high-hazard work over very cold water, have immersion survival suit available, as appropriate. ☐ For electrical hazards associated with water/wet locations, see Section B.8., "Electrical Hazards." ***Geosyntec Procedure(s):*** *HS-306-Working on/near Water and Ice, HS-312-Water Transportation Safety*
☒	**WORK NEAR WATER HAZARDS OR ENTERING WATER** Hazards: drowning, hypothermia from water immersion, related injuries. ☒ Wading, wetland, mud/silt ☒ Dam release, flash flood, tide ☐ Diving ☐ Ice on/near water body	

B.4. FALL HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

B.5. POWERED TOOLS, EQUIPMENT, MACHINERY ☐ Applicable ☒ Not Applicable, Not Anticipated

B.6. DRILLING ☐ Applicable ☒ Not Applicable, Not Anticipated

B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS: There a re a few personal vehicles and Semi trucks that move within the property. Special Care should be taken while entering and leaving site

☒	**HEAVY EQUIPMENT** Hazards: Struck-by, run-over, caught between (pinch points), roll over, fluid leaks, overhead hazards	☒ Follow general safe work practices for heavy equipment: • Trained/qualified persons operate all heavy equipment. • Do not get into a potential crush situation below or between equipment, or in an excavation. • No passengers on moving/operating equipment except where passenger seat/restraint is present. • Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. • Leaks or defective safety equipment should be repaired before use. • Operators required to use seatbelts. • Maintain eye contact with operator and use hand signals prior to approaching near equipment. • High visibility vests for all personnel in construction vehicle work area, on-site roadways and travel lanes. • Maximum safe slope for each vehicle will be followed. • Personnel to stay clear of, or restrict access to, swing radius and travel path of equipment. • Spill equipment available for fuel and hydraulic fluid leaks. • Equipment locked, secured, brakes set, buckets/forks lowered, when not in use. • Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. • Mark temporary roadways clearly, provide berms/stop logs where needed. ***Geosyntec Procedure(s):*** *HS-504-Heavy Equipment, HS-132-Competent Persons*
☐	**CRANES** Hazards: - electrocution by overhead utility - injury in swing radius - injury from falling load - crane tipping over due to overbalancing, high winds, unstable ground, unsafe slope, bad placement of outriggers - injury from mechanical hazards	☐ In addition to general safety practices for heavy equipment (above), as applicable: • Only qualified persons operate cranes (certificate required). • Critical Lift Plan & Checklist prepared/executed (HS 506) prior to mobilization. • Equipment to be inspected prior to mobilization and daily by crane operator. • Crane operator will remain at the controls at all times during operation. • Crane operation must be performed under the direction of an appointed signal person at all times. • Communication between crane operator and signal person will be maintained through standard hand signals or voice communication equipment. • Keep area beneath suspended loads clear of personnel. • Rigging procedures – see Mechanical Lifting, Rigging, below. ***Geosyntec Procedure(s):*** *HS-506-Cranes, HS-132-Competent Persons*
☐	**MECHANICAL LIFTING, RIGGING** Applies to lifting by crane, truck-mounted boom rig (e.g. drill rig),	☐ In addition to general safety practices for heavy equipment and cranes (above), as applicable: • Coordinate lifting operations with competent person. • Do not exceed loading limits of lifting equipment; perform work in accordance with equipment load chart.

	mechanical/electrical hoist, similar equipment. Hazards: falling loads, personnel under suspended loads.	• Slings, chains, rope, wire rope and related equipment used for lifting shall be maintained in good condition, and used in a manner as to protect from damage. • Rigging, wire rope and hoisting equipment will be inspected and maintained on a weekly basis. • Hooks will be equipped with safety latches. • Ensure anchor points for winch or other lift device (such as davit arm) are engineered for intended use. ***Geosyntec Procedure(s):*** *HS-506-Cranes*
☐	**FORKLIFT** Hazards: Struck-by, run-over, overhead hazards, caught between (pinch points), roll over, fluid leaks.	☐ In addition to general safety practices for heavy equipment (above), as applicable: • Qualified operator, per established forklift training (certificate is required). • Equipment inspected daily and documented on Forklift Preoperational Inspection Checklist. • Do not exceed lifting load limits. • Forklift shall not be moved/driven with empty forks in raised position. • When not in use, forks lowered, brake set, controls in neutral, key removed. ***Geosyntec Procedure(s):*** *HS-505-Safe Operation of Forklifts, HS-132-Competent Persons*
☐	**AERIAL LIFTS**	☐ See Section B.4., "Fall Hazards" *Geosyntec Procedure(s): HS-509-Aerial Lifts*
☐	**TRENCHING/EXCAVATION** Hazards: Cave-in, hazardous atmosphere, structures & foundations, falls into excavations	☐ Safe work practices when personnel will enter trenches/excavations: • Activities under supervision/oversight of competent person, daily inspection. • Excavated materials placed at least 2' from trench sidewall. • Prevent water accumulation in trench. • Sloping & shoring for excavations ≥20' must be approved by a professional engineer. • Sloping/shoring/trench box for excavations ≥5' when persons enter trench/excavation. • Sloping/shoring/trench box for shallow (<5') excavations with cave-in hazard . • Workers in trenches to be within 25 feet of ladder or sloped entryway. • Excavations to be protected by perimeter fencing (not barricade tape), if potential for personnel to fall into. • If potential for atmospheric hazard, see Section B.10, "Confined Space Entry, Hazardous Enclosed Spaces" ***Geosyntec Procedure(s):*** *HS-402-Excavation and Trenching, HS-132-Competent Persons*
☐	**IMPORTANT!** This work may/will include close proximity to overhead and/or underground utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"
☐	**DEMOLITION**	☐ Develop/implement demolition safety plan. ***Geosyntec Procedure(s):*** *HS-132-Competent Persons*
☐	**BLASTING**	☐ Develop/implement blasting safety plan. ***Geosyntec Procedure(s):*** *HS-307-Blasting and Use of Explosives, HS-132-Competent Persons*
☐	**PUBLIC AT RISK, SITE SECURITY**	☐ During site operations protect public (overhead protection, barriers, warning signs). ☐ During off hours, protect public with barriers, warning signs/lights, other measures as appropriate. ☐ Lock/secure hazardous materials and/or equipment.

B.8. ELECTRICAL HAZARDS	☐ Applicable	☒ Not Applicable, Not Anticipated
B.9. UTILITY RELATED HAZARDS	☐ Applicable	☒ Not Applicable, Not Anticipated
B.10. CONFINED SPACE ENTRY, HAZARDOUS ENCLOSED SPACES	☐ Applicable	☒ Not Applicable, Not Anticipated
B.11. STORAGE OF BULK MATERIALS	☐ Applicable	☒ Not Applicable, Not Anticipated
B.12. INFECTIOUS / ALLERGENIC BIOHAZARDS	☐ Applicable	☒ Not Applicable, Not Anticipated
B.13. COMMERCIAL CHEMICAL PRODUCTS	☐ Applicable	☒ Not Applicable, Not Anticipated
B.14. SITE CONTAMINANTS, CHEMICAL WASTES	☒ Applicable	☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

CHECK ALL THAT APPLY. Provide explanatory notes above.

☒ Soil/groundwater contaminants (historical release)	☐ Oxygen deficiency	☐ Corrosive, acids/caustics, strong irritants
☐ Recent release, known high concentrations	☐ Chlorinated volatile organic compounds (VOCs)	☐ Sulfides, hydrogen sulfide (H_2S)
☐ Former chemical disposal site, landfill	☐ BTEX, petroleum derived VOCs	☐ Cyanides, hydrogen cyanide (HCN)
☐ Urban fill, residual contaminants	☐ Fuel oils, petroleum, waste oil, lubricants	☐ Asbestos
☐ Containerized waste (drums, process equipment)	☐ Metals, metal compounds, metal dusts	☐ Lead paint
☐ Buried drums (known or potential)	☐ Elemental mercury	☐ Pesticides, herbicides, fungicides
☐ Large containers, potential for spills	☐ Polyaromatic hydrocarbons (PAHs)	☐ Sensitizers
☐ Contaminated building surfaces	☒ Polychlorinated biphenyls (PCBs)	☐ Radioactive contaminants
☐ Unexploded ordnance	☐ Potential for flammable vapors	☐ Other (see Explanatory Notes, above)
☐ Explosive dust	☐ Potential for flammable gas (methane)	

☒	**FOR WORK CONSISTING OF CLEANUP OPERATIONS, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATIONS at an "UNCONTROLLED HAZ. WASTE SITE" (per HAZWOPER, 29 CFR 1910.120), implement the following as applicable to the work:**

	- Implement site control plan via Exclusion Zone(s), Contaminant Reduction Zone(s) and Support Zone (aka EZ, CRZ, SZ) - Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard. - Include site map/figure depicting work locations and other relevant site-specific information. - Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field experience. - Site supervisor(s) required to have 8-hr. Supervisor training. - Site workers in EZ or CRZ to participate in Medical Monitoring program, as applicable. - Implement site-specific procedures for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response. - Conduct air monitoring, as appropriate (see Part C, "Air Monitoring, Worker Exposure Monitoring"). **IMPORTANT:** Provide supplemental information to sufficiently detail site-specific procedures for the above elements, as appropriate for the work. ***Geosyntec Procedures:*** *HS-301-HAZWOPER, HS-108-Medical Monitoring Surveillance, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, HS-405-Drum Sampling, Others as applicable*	
☐	**FOR SITE WITH CHEMICAL CONTAMINANTS OR WASTE BUT NOT REGULATED BY HAZWOPER** - Workers to be knowledgeable/aware of chemical hazards thru safety training/orientation and availability of hazard information - Implement controls to minimize worker exposure through engineering controls, work practices, PPE, as appropriate. - Conduct air monitoring/sampling to monitor/evaluate worker exposure, as applicable. ***Geosyntec Procedures:*** *HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, Others as applicable*	
☐	**OFF-SITE MIGRATION OF CONTAMINANTS**	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.
☐	**SPILL CONTAINMENT, CONTAINERS**	☐ Describe above any site-specific procedures for spill containment, container handling, as applicable. ***Geosyntec Procedures****: HS-406-Unknown Hazardous Waste Drum Handling*
B.15. RADIATION HAZARDS (Other than Sunlight)	☐ Applicable	☒ Not Applicable, Not Anticipated
B.16. HAZMAT/DANGEROUS GOODS SHIPPING/TRANSPORTATION	☐ Applicable	☒ Not Applicable, Not Anticipated

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1. AIR MONITORING (Direct-Reading Instruments)	☐ Applicable	☒ Not Applicable, Not Anticipated
C.2. OTHER WORKER EXPOSURE MONITORING	☐ Applicable	☒ Not Applicable, Not Anticipated

PART D – APPROVALS, ACKNOWLEDGEMENTS

D.1. THA PREPARATION, REVIEW/APPROVAL SIGNATURES - THA typically prepared by project staff, reviewed/approved by Project Manager, Supervisor, qualified/knowledgeable designee, with support of HS personnel as deemed appropriate by the Project Manager.			
	Printed Name	*Signature*	*Date*
THA PREPARED BY: (minimum one person)	Ashwin Ranna		6/28/2016
	Printed Name	*Signature*	*Date*
THA REVIEWED/ APPROVED BY: (minimum one person)	Aron Krasnopoler		6/29/2016

D.2. FIELD CREW ACKNOWLEDGEMENTS

GEOSYNTEC FIELD CREW

Please sign below to acknowledge you reviewed and understand this THA, participated in project safety briefing and had an opportunity to ask questions about the information herein.

Printed Name	Signature	Employee No.	Date

SUBCONTRACTOR'S FIELD CREW

Please sign below to acknowledge that this THA was made available to you, and you had an opportunity to ask questions about the information herein.

Printed Name	Signature	Company Name	Date

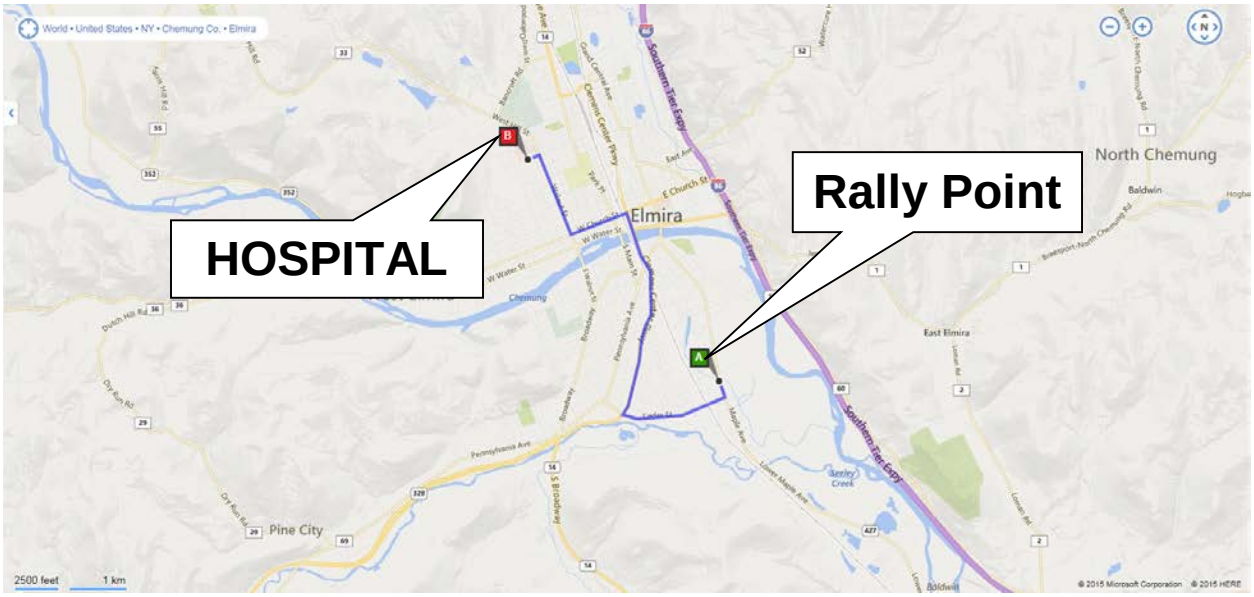
ROUTE TO HOSPITAL and/or URGENT CARE FACILITY

Arnot Ogden Medical Center
600 Roe Ave, Elmira, NY
(607) 737-4100

Written Directions to Hospital from Site:

- Drive north on S Main St toward Robert St for approximately 0.7 mi
- Turn right onto W Miller St, and then immediately turn left onto RT-14 / Clemens Center Pkwy
- Continue for approximately 1.2 mi
- Turn left onto RT-352 W / E Church St
- Continue for approximately 0.7 mi
- Turn right onto Walnut St
- Continue for approximately 0.9 mi
- Turn left onto Roe Ave
- Continue for approximately 0.1 mi
- Arrive at 600 Roe Ave, Elmira, NY
- The last intersection is Farnham St. If you reach Grove St, you've gone too far

ROUTE TO HOSPITAL and/or URGENT CARE FACILITY



Arnot Ogden Medical Center
600 Roe Ave, Elmira, NY
(607) 737-4100

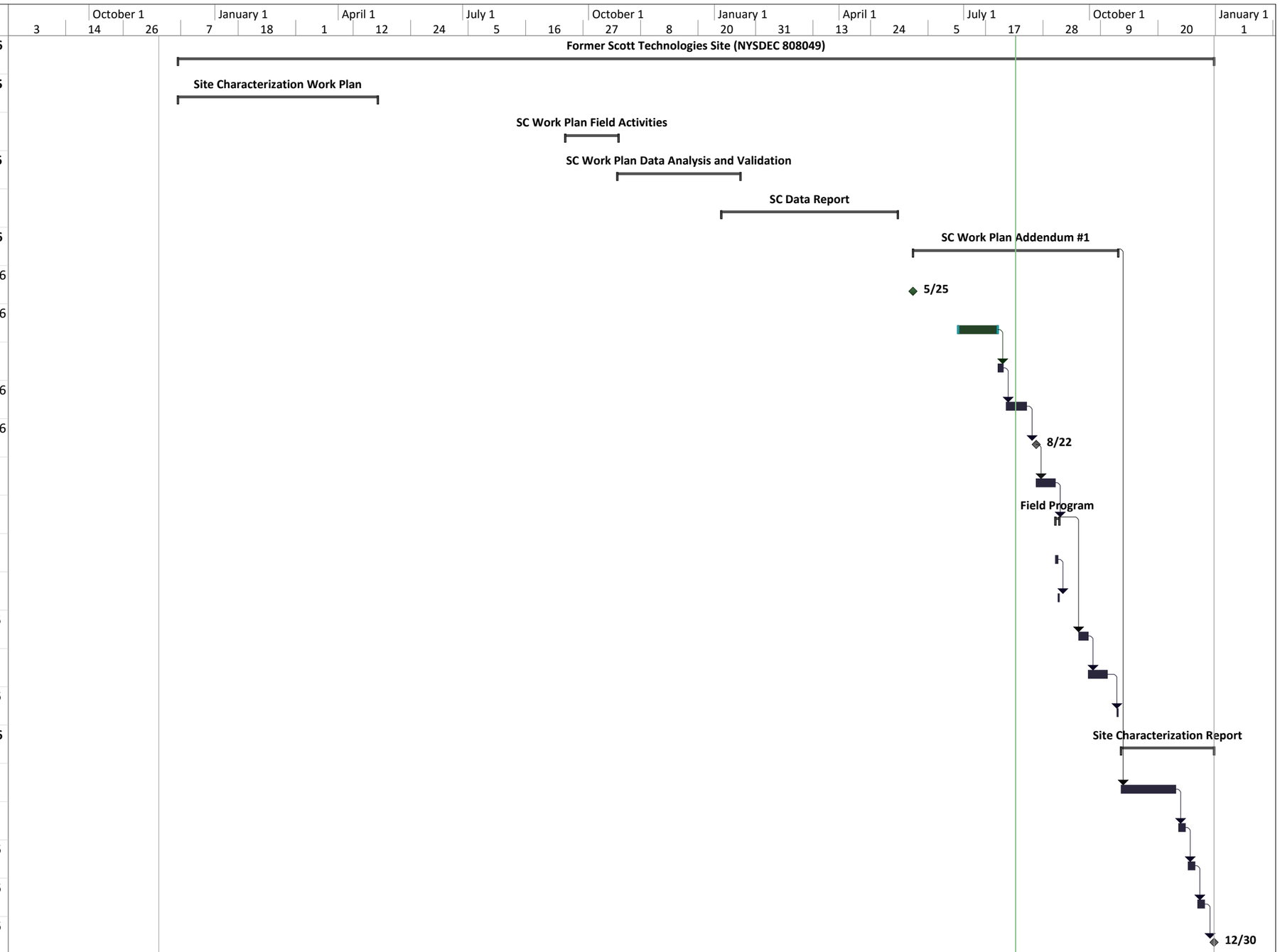
Written Directions to Hospital from Rally Point:

- Drive South on Maple Ave toward Maple Dr for approximately 0.2 mi
- Turn right onto RT-427 / Cedar St
- Continue for approximately 1.2 mi
- Turn right onto RT-14 / Clemens Center Pkwy
- Continue for approximately 2.4 mi
- Turn left onto RT-352 W / E Church St
- Continue for approximately 0.7 mi
- Turn right onto Walnut St
- Continue for approximately 0.9 mi
- Turn left onto Roe Ave
- Continue for approximately 0.1 mi
- Arrive at 600 Roe Ave, Elmira, NY
- The last intersection is Farnham StIf you reach Grove St, you've gone too far

Attachment 3

Project Schedule

ID	Task Name	Duration	Start	Finish
1	**Former Scott Technologies Site (NYSDEC 808049)**	**529 days**	**Fri 12/5/14**	**Fri 12/30/16**
2	**Site Characterization Work Plan**	**93 days**	**Fri 12/5/14**	**Thu 4/30/15**
6	**SC Work Plan Field Activities**	**29 days**	**Mon 9/14/15**	**Thu 10/22/15**
16	**SC Work Plan Data Analysis and Validation**	**64 days**	**Thu 10/22/15**	**Tue 1/19/16**
20	**SC Data Report**	**93 days**	**Wed 1/6/16**	**Fri 5/13/16**
25	**SC Work Plan Addendum #1**	**108 days**	**Wed 5/25/16**	**Fri 10/21/16**
26	Discsussion with DEC and DOH	0 days	Wed 5/25/16	Wed 5/25/16
27	Work Plan Addendum Development	21 days	Mon 6/27/16	Mon 7/25/16
28	Client Review	4 days	Tue 7/26/16	Fri 7/29/16
29	STCC Review	11 days	Mon 8/1/16	Mon 8/15/16
30	Submittal to NYSDEC	0 days	Mon 8/22/16	Mon 8/22/16
31	NYSDEC Review	2 wks	Tue 8/23/16	Mon 9/5/16
32	**Field Program**	**3 days**	**Tue 9/6/16**	**Thu 9/8/16**
33	Soil Investigation	2 days	Tue 9/6/16	Wed 9/7/16
34	Sediment Sampling	1 day	Thu 9/8/16	Thu 9/8/16
35	Data Validation	1 wk	Fri 9/23/16	Thu 9/29/16
36	STCC Review	2 wks	Fri 9/30/16	Thu 10/13/16
37	NYSDEC Meeting	1 day	Fri 10/21/16	Fri 10/21/16
38	**Site Characterization Report**	**50 days**	**Mon 10/24/16**	**Fri 12/30/16**
39	Report Preparation	6 wks	Mon 10/24/16	Fri 12/2/16
40	Client Review	1 wk	Mon 12/5/16	Fri 12/9/16
41	Revision	1 wk	Mon 12/12/16	Fri 12/16/16
42	STCC Review	1 wk	Mon 12/19/16	Fri 12/23/16
43	Submittal to NYSDEC	0 wks	Fri 12/30/16	Fri 12/30/16



Project: project.schedule.hw8080
Date: Mon 8/8/16

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