Environment

Prepared for:
Scott Technologies, Inc.
aka Scott Figgie LLC

Prepared by:
AECOM
Buffalo, NY
60155991
December 2015

Final Alternatives Analysis Report

Former Scott Aviation Facility
Lancaster, NY

Environment

Prepared for:
Scott Technologies, Inc.
aka Scott Figgie LLC

Prepared by:
AECOM
Buffalo, NY
60155991
December 2015

Final Alternatives Analysis Report

Former Scott Aviation Facility
Lancaster, NY

Dino Zack, P.G.

Prepared By [Name]

Scott Underhill, P.E.

Reviewed By [Name]

Contents

Engineering Certification x

1.0 INTRODUCTION 1

1.1 OBJECTIVE 2

1.2 REPORT ORGANIZATION 2

2.0 SITE DESCRIPTION AND HISTORY 3

2.1 EXISTING CONDITIONS 3

2.2 GEOLOGY AND HYDROLOGY 4

2.2.1 Site Geology 4

2.2.2 Site Hydrogeology 4

3.0 SUMMARY OF REMEDIAL INVESTIGATIONS 6

3.1 PHASE I ENVIRONMENTAL SITE ASSESSMENT 6

3.2 PHASE II ENVIRONMENTAL SITE INVESTIGATION 6

3.3 PRELIMINARY GROUNDWATER ASSESSMENT 6

3.4 REMEDIAL INVESTIGATION 7

3.5 SUPPLEMENTAL REMEDIAL INVESTIGATION 9

3.6 SOIL VAPOR INVESTIGATIONS 10

4.0 SUMMARY OF INTERIM REMEDIAL MEASURES 11

4.1 2005 INTERIM REMEDIAL MEASURE 11

4.2 2014 INTERIM REMEDIAL MEASURES 11

4.2.1 Storm Sewer IRM 12

4.2.2 Soil Vapor Intrusion IRM 13

4.2.3 Soil (Metals) IRM 14

4.2.4 Soil (VOCs) IRM 15

4.3 2015 INTERIM REMEDIAL MEASURE 15

4.3.1 Shallow (Only) Zone Injection 16

4.3.2 Shallow and Deep Zone Injection 17

4.3.3 Storm Sewer Bedding Injection 17

4.3.4 Post-Injection Groundwater Performance Monitoring 18

5.0 REMEDIAL GOALS AND REMEDIAL ACTION OBJECTIVES 19

5.1 REMEDIAL ACTION GOALS..19

5.2 REMEDIAL ACTION OBJECTIVES 19

6.0 DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES 21

6.1 ASSEMBLY OF POTENTIAL REMEDIAL ALTERNATIVES..21

6.2 INITIAL SCREENING OF REMEDIAL TECHNOLOGIES..21

7.0 REMEDIAL ACTION ALTERNATIVES 23

7.1 ALTERNATIVE 1 – NO ACTION...23

7.2 ALTERNATIVE 2 – SOIL EXCAVATION OF >100 µG/L TVOC, TARGETED SOIL EXCAVATION, AND SSD 23

7.3 ALTERNATIVE 2A – SOIL EXCAVATION OF >10,000 µG/L TVOC, TARGETED SOIL EXCAVATION, MNA AND SSD...24

7.4 ALTERNATIVE 3 – TARGETED SOIL EXCAVATION, ENHANCED BIOREMEDIATION OF GROUNDWATER, AND SSD 25

7.5 ALTERNATIVE 4 – TARGETED SOIL EXCAVATION, ISCO OF GROUNDWATER AND SSD 27

7.6 ALTERNATIVE 4A – TARGETED SOIL EXCAVATION, FOCUSED IN-SITU ISCO OF GROUNDWATER>10,000 µG/L TVOC, AND SSD 28

7.7 ALTERNATIVE 4B – TARGETED SOIL EXCAVATION, ENHANCED BIOREMEDIATION OF GROUNDWATER, FOCUSED IN-SITU ISCO OF GROUNDWATER >10,000 µG/L TVOC, AND SSD..29

8.0 GENERAL RESPONSE ACTION AND IDENTIFICATION OF REMEDIAL TECHNOLOGIES 30

9.0 DETAILED ANALYSIS OF RETAINED REMEDIAL ALTERNATIVES 32

9.1 EVALUATION CRITERIA 32

9.1.1 Overall Protection of Human Health and the Environment...32

9.1.2 Compliance with Standards, Criteria, and Guidance 32

9.1.3 Long-Term Effectiveness and Permanence..32

9.1.4 Reduction of Toxicity, Mobility or Volume 32

9.1.5 Short-term Effectiveness 32

9.1.6 Implementability...33

9.1.7 Cost...33

9.1.8 Land Use 33

9.1.9 Community Acceptance....33
9.1.10 Green Remediation....33
9.2 REMEDIATION TARGET AREAS....33
9.3 COST EVALUATION APPROACH....33
9.4 COMMON ELEMENTS....34

10.0 COMPARATIVE ANALYSES OF REMEDIAL ALTERNATIVES.... 36

10.1 COMPARATIVE ANALYSIS OF ALTERNATIVES....36
10.1.1 Overall Protection of Human Health and the Environment....36
10.1.2 Compliance with Standards, Criteria and Guidance....36
10.1.3 Long-Term Effectiveness and Permanence....37
10.1.4 Reduction of Toxicity, Mobility, and Volume....37
10.1.5 Short-Term Effectiveness....37
10.1.6 Implementability....37
10.1.7 Cost....37
10.1.8 Land Use....37
10.1.9 Green Remediation....38
10.1.10 Community Acceptance....38

11.0 RECOMMENDED REMEDIAL ALTERNATIVE.... 39

12.0 REFERENCES.... 41

Appendices

Appendix A Environmental Easement

Appendix B Cost Estimate Detail

List of Tables

Table 1	Groundwater Monitoring Water Level Data
Table 2	Surface Soil VOC Results
Table 3	Surface Soil SVOC Results
Table 4	Surface Soil Metals Results
Table 5	Surface Soil PCB and Pesticide Results
Table 6	Subsurface Soil VOC Results
Table 7	Subsurface Soil SVOC Results
Table 8	Subsurface Soil Metals Results
Table 9	Subsurface Soil PCB and Pesticide Results
Table 10	RI Groundwater VOC Results
Table 11	Groundwater SVOC Results
Table 12	Groundwater Metal Results
Table 13	Groundwater PCB and Pesticide Results
Table 14	RI Groundwater VOC Results in Temporary Piezometers
Table 15	Subslab and Indoor Air TO-15 Results 2010 and 2014
Table 16	SRI Groundwater VOC Results
Table 17	SRI Groundwater VOC Results in Catch Basins
Table 18	Air TO-15 July 2013 Results
Table 19	Air TO-15 Results Compared to Guidance Values
Table 20	Former IRM Area Soil VOC Results
Table 21	Groundwater IRM Post Injection VOC Results
Table 22	Baseline and Post Injection TOC Results
Table 23	Baseline and Post Injection Monitored Natural Attenuation Data Comparison
Table 24	Criteria Comparison and Ranking of Remedial Alternatives

Table 25 Preliminary Screening of Technologies for Groundwater

Table 26 Preliminary Screening of Technologies for Soil

Table 27 Preliminary Screening of Technologies for Soil Vapor

Table 28 Initial Screening of Remedial Technologies

Table 29 Summary of Planning Level Costs for Remedial Alternatives

List of Figures

Figure 1 Site Location Map

Figure 2 Facility Site Layout

Figure 3 Monitoring Well and Piezometer Locations

Figure 4 Cross-Section A-A'

Figure 5 Shallow Overburden Groundwater Surface Elevation Contours (July 22, 2015)

Figure 6 Deep Overburden Groundwater Surface Elevation Contours (June 22, 2015)

Figure 7 Total VOC Contaminant Plume based on Shallow Overburden Groundwater Data (August 2010)

Figure 8 Total VOC Contaminant Plume based on Deep Overburden Groundwater Data (August 2010)

Figure 9 Proposed Subslab Depressurization System Area

Figure 10 Total Chlorinated VOCs in All Media

Figure 11 Soil Vapor Point Sample Locations

Figure 12 Shallow TVOC Plume with Completed Storm Sewer IRM Locations

Figure 13 Metals and VOC Soil Excavation IRM Locations

Figure 14 MW-41B IRM Confirmation Locations and Results

Figure 15 DPT-8 IRM Confirmation Locations and Results

Figure 16 Injection Zone Details

Figure 17 TCE Contaminant Plume based on Shallow Overburden Groundwater Data (July 2015)

Figure 18 TCE Contaminant Plume based on Deep Overburden Groundwater Data (July 2015)

Figure 19 Alternative 2A – Soil Excavation of >10,000 ug/L TVOC

List of Acronyms

1,1,1-TCA	1,1,1-trichloroethane
1,1-DCE	1,1-dichlorethene
AAR	Alternatives Analysis Report
ASTM	American Society for Testing and Materials
BASE	Building Assessment and Survey Evaluation
BCP	Brownfield Cleanup Program
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CHP	catalyzed hydrogen peroxide
cis-1,2-DCE	cis-1,2-dichloroethene
COPC	Constituent of Potential Concern
cm/sec	centimeters per second
CVOC	chlorinated volatile organic compound
Dhc	Dehalococcoides
DER	Division of Environmental Remediation
Dhb	Dehalobacter
ESA	Environmental Site Assessment
ESI	Environmental Site Investigation
EVO	emulsified vegetable oil
ft	feet
gpm	gallons per minute
GRA	General Response Action
HPT	Hydraulic Profiling Tool
IRM	Interim Remedial Measure
IRM/SSI	Interim Remedial Measure/Supplemental Site Investigation
ISCO	in-situ chemical oxidation
MIP	Membrane Interface Probe
MNA	monitored natural attenuation
NYCRR	New York State Official Compilation of Codes, Rules, and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYSEG	New York State Electric and Gas
O&M	operations and maintenance
ORP	oxidation-reduction potential
PCB	polychlorinated biphenyl(s)
PGA	Preliminary Groundwater Assessment
PID	photoionization detector
PPM	parts per million
PVC	polyvinyl chloride
RAO	Remedial Action Objectives
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
RIR	Remedial Investigation Report
SCG	Standards, Criteria, and Guidance
SCO	Soil Cleanup Objectives
SMP	Site Management Plan
sq ft	square feet
SRI	Supplemental Remedial Investigation
SRIR	Supplemental Remedial Investigation Report
SSD	subslab depressurization

SVI	soil vapor intrusion
SVOC	semi-volatile organic compound
TAGM	Technical and Administrative Guidance Memorandum
TCE	trichloroethene
TCLP	Toxicity Characteristics Leaching Procedure
TOGS	Technical and Operational Guidance Series
TVOC	total volatile organic compound(s)
μg/L	microgram per liter
USEPA	United States Environmental Protection Agency
VOC	volatile organic compound
Wt %	weight percent

Engineering Certification

I, Scott Underhill, certify I am currently a NYS registered professional engineer and that this Final Alternatives Analysis Report for the Former Scott Aviation Facility Site, NYSDEC Site Code No. C915233, was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the Division of Environmental Remediation (DER) Technical Guidance for Site Investigation and Remediation (DER10) and that all activities were performed in full accordance with DER-approved work plan and any DER-approved modifications.

Respectfully submitted,
AECOM Technical Services, Inc.

STATE OF NEW YORK
SCOTT ANDREW UNDERHILL
075332
LICENSED PROFESSIONAL ENGINEER

__________________________ December 10, 2015
Scott Underhill Date
Registered Professional Engineer
New York License No. 075332

1.0 INTRODUCTION

On behalf of Scott Technologies, Inc. (aka Scott Figgie LLC), hereinafter “Scott”, AECOM Technical Services, Inc. (AECOM) has prepared this Final Alternatives Analysis Report (AAR) under the guidance of New York State Department of Environmental Conservation’s (NYSDEC) Brownfield Cleanup Program (BCP) for the former Scott Aviation Facility Area 1 site (Site) located at 225 Erie Street, Village of Lancaster, Erie County, New York. A Site Location Map is shown on **Figure 1,** and a plan view of the Site layout is shown on **Figure 2**.

On September 1, 2004, the former Scott Aviation Facility was sold by Scott Technologies, Inc. to the current facility owner/operator, AVOX Systems Inc. (AVOX). On September 11, 2008, Scott Technologies, Inc. submitted an application for the Site to enter the NYSDEC BCP, per Title 6 New York State Official Compilation of Codes, Rules, and Regulations (NYCRR) Part 375-3.4 (Applications), effective December 14, 2006. Scott Technologies, Inc. applied for entry into NYSDEC BCP as a participant to investigate and remediate, as appropriate, potential areas of environmental concern associated with the Site. On July 8, 2009, NYSDEC approved the application and Scott Technologies, Inc. was accepted into the BCP program as a participant.

A Draft AAR (AECOM, April 2013) was developed based upon findings of the remedial investigation (RI) and the subsequent and supplemental remedial investigation (SRI).

This Final AAR has been completed in accordance with NYSDEC Division of Environmental Remediation (DER) Draft Brownfield Cleanup Program Guide (BCP Guide) (NYSDEC, May 2004), 6 NYCRR Part 375 Environmental Remediation Programs (NYSDEC, December 14, 2006), and NYSDEC DER Technical Guidance for Site Investigation and Remediation (DER-10) (NYSDEC, May 3, 2010). This report summarizes the current Site conditions to support developing and evaluating potential remedial alternatives to achieve the established remedial objectives and meet the threshold and primary balancing criteria, as defined in DER-10. This AAR recommends the remedy that best achieves protectiveness and balances public acceptance, technical practicability, and cost.

During 2014 and 2015, several interim remedial measures (IRMs) were completed in an effort to meet:

- NYSDEC Subpart 375-6 Commercial Use Soil Cleanup Objectives (SCOs);
- NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 - Standards for the Protection of Drinking Water (NYSDEC, June 1998); and
- New York State Department of Health (NYSDOH) guidelines for volatile chemicals and decision matrices listed in NYSDOH final “Guidance for Evaluating Soil Vapor Intrusion in the State of New York” (SVI Guidance) (October 2006).

The Site currently meets the Commercial Use SCOs. As described in Section 4.0:

- Groundwater remediation has been completed, and the ongoing analysis of samples is showing a decrease in Constituents of Potential Concern (COPC).
- Subslab vapor issues have been mitigated, which decreased the concentrations in the indoor air samples and lowered the action level from ‘mitigation’ to ‘monitoring’.

Note a soil vapor intrusion (SVI) investigation, targeting the storm sewer as a transport pathway, has been completed; the report is currently being reviewed by NYSDEC and NYSDOH; refer to Section 3.6.

This Final AAR is built off the Draft AAR (AECOM, April 2013), although through completed IRMs, the Site has reached "no further action" status. Future monitoring will be performed per the final Site Management Plan (SMP).

1.1 OBJECTIVE

The primary purpose of an AAR is to identify and evaluate the most appropriate remedial alternatives to eliminate or mitigate, through the proper application of scientific and engineering principles, any significant threats to the public health and to the environment presented by contaminants present in Site environmental media.

The ultimate goal of the AAR is to select an appropriate final remedy that will allow continued use of the Site as an active facility. This AAR presents the remedy selection process and the final selected remedy for the subject Site based on a risk-based, land use approach. The final selected remedy will remediate the Site under Track 2 of the BCP to conditions suitable for future commercial, or less restrictive, use and/or redevelopment of the Site.

1.2 REPORT ORGANIZATION

This AAR is organized as follows:

- Section 1 – Introduction: This section provides an overview of the project.
- Section 2 – Site Description and History: This section provides a description of the Site and a summary of the Site's history including geology and hydrogeology.
- Section 3 – Summary of Remedial Investigations: This section describes the chronological history of previous Site assessment and investigation activities conducted at the Site.
- Section 4 – Summary of Interim Remedial Measures: This section describes the IRMs completed at the Site.
- Section 5 – Remedial Goals and Remedial Action Objectives: This section presents the goals and objectives of the proposed remedy.
- Section 6 – Development of Remedial Alternatives: This section provides the potential remedial actions applicable to the Site.
- Section 7 – General Response Action and Identification of Remedial Technologies: This section presents remedial approaches encompassing those actions that will satisfy the RAOs.
- Section 8 – Initial Screening of Remedial Technologies: This section provides a description of the basis for, and a summary of, the initial screening of remedial technologies.
- Section 9 – Detailed Analysis of Retained Remedial Alternatives: This section presents the detailed analysis of retained potential remedial alternatives to address the presence of Site contaminant concentrations exceeding relevant regulatory criteria in environmental media.
- Section 10 – Comparative Analyses of Remedial Alternatives: This section presents the comparative analyses of the remedial alternatives for the Site.
- Section 11 – Recommended Remedial Alternative: This section presents a recommendation for the Site remedy and justification of the selection.
- Section 12 – References: This section presents a list of references used in the preparation of this AAR.

2.0 SITE DESCRIPTION AND HISTORY

The AVOX facility is located in the Village and Town of Lancaster, Erie County, New York. The overall facility is currently used as a manufacturing, development, testing, and distribution facility for commercial aircraft and military supplied-air systems.

The overall property includes manufacturing plants (Plants 1, 2, and 3), support buildings, and asphalt-paved driveways and parking areas (**Figure 2**). Buildings and pavement cover roughly 65 percent of the Plant 1, 2, and 3 manufacturing area. Grassy and undeveloped areas comprise the remainder of the overall property. A tributary to Plum Creek (known as Spring Creek) flows within a culvert beneath the area between Plants 2 and 3.

The 62,000 square foot Plant 1 (225 Erie Street) resides south of Erie Street, on the central parcel of a 6.4-acre combination of three adjoining parcels. The three adjacent parcels include: a vacant 1.1-acre parcel zoned light industrial to the west of the central parcel; a 3.8-acre central parcel zoned light industrial on which Plant 1 is located; and a vacant 1.6-acre parcel zoned residential to the east of the central parcel. Support buildings located on the central parcel include: a small pre-fabricated storage shed for hazardous materials and wastes; a records retention building; a paint storage shed; a grounds keeping equipment shed; a 3,000-gallon elevated steel aboveground storage tank containing liquid oxygen; and a 100,000-gallon water tower for process use and fire protection.

The 42,000 square foot Plant 2 (25 Walter Winter Drive) and the 30,000 square foot Plant 3 (27 Walter Winter Drive) are located on an 8.4-acre parcel north of Plant 1, and north of Erie Street. The Plant 2 and Plant 3 Areas also contain a small metal building west of Plant 2 that houses a groundwater treatment system, and a storm water detention pond northwest of Plant 2.

An undeveloped 10.1-acre parcel north of the Plant 2 and Plant 3 Area is referred to as the Northern Area. The Northern Area is separated from the Plant 2 / Plant 3 Area by a 100-foot wide parcel owned by New York State Electric & Gas containing a power line that traverses the area in an east-west orientation.

The BCP boundary for Area 1 (i.e., the “Site”) is located west and southwest of Plant 1, as shown on the Environmental Easement (**Appendix A**).

2.1 EXISTING CONDITIONS

The Site currently consists of facility roads and grassy areas located on the west and south/southwest sides of AVOX Plant 1. A storm sewer system is located on the Site. That storm sewer is connected to the Plant 1 roof drainage system, and also drains surface water from the Site. The storm sewer discharges to Spring Creek, and is not connected to the residential properties on Erie Street in the vicinity of the Site. Soil excavation, per the 2014 IRM, and subsequent backfilling has been completed in areas exceeding the Commercial Use SCOs for soil. Following excavation and repairs to the storm sewer, per the 2014 IRM, all areas have been backfilled and restored to pre-existing conditions (i.e., lawn). In addition, following the 2015 IRM, areas damaged as a result of injection activities were restored to pre-existing conditions (i.e., lawn and asphalt pavement).

2.2 GEOLOGY AND HYDROLOGY

2.2.1 Site Geology

The native soils underlying the Site generally consist of interbedded silts and clays with discontinuous sporadic fine sand lenses (shallow overburden). A thin coarse-grained layer is located above the bedrock (deep overburden). Based on the deep overburden wells, the average thickness of the overburden extends to approximately 21 feet (ft) below ground surface (bgs); ranging from 20 ft in the south to 26 ft in the north (at the six deep overburden monitoring wells, refusal was between 20 ft bgs and 26 ft bgs).

Bedrock cores were collected and logged from monitoring well MW-41B; bedrock was encountered at 21.5 ft bgs, and competent bedrock was encountered at 22 ft bgs. The core indicates black shale (Marcellus Formation). A distinct weathered bedrock zone at the base of the deep overburden was not identified. Bedrock cores collected from 24.8 ft bgs to the bottom of the boring (34.8 ft bgs) indicated three potential fractures (two 1 to 1.5-inch horizontal fracture zones and one inclined fracture). Multiple mechanical breaks were observed in the rock core as a result of the fissile nature of the shale. A description of the bedrock core and elevations of the fractures are presented on the stratigraphic borehole log for this well in Appendix A of the Remedial Investigation Report (RIR) (AECOM, September 2011); overburden logs are also presented in Appendix A of the RIR and in Appendix A of the Supplemental Remedial Investigation Report (SRIR (AECOM, April 2012). Refer to **Figure 3** for location of the current monitoring well network and to **Figure 4** for a cross section across the Site.

2.2.2 Site Hydrogeology

Groundwater is first encountered at the Site in the shallow overburden. Depth to groundwater across the Site was measured during six comprehensive rounds of water level measurements; three during the Site RI, two during the SRI, and one following the 2015 IRM. The table below presents the average depth to water from the monitoring wells for each zone for each round:

Zone/Date	**June 2010 (ft bgs)**	**August 2010 (ft bgs)**	**October 2010 (ft bgs)**	**April 2011 (ft bgs)**	**June 2011 (ft bgs)**	**July 2015 (ft bgs)**
Shallow Overburden	2.82	4.98	7.13	3.92	2.46	3.58
Deep Overburden*	5.06	5.79	6.94	5.56	4.11	5.55
Bedrock*	9.20	9.50	10.28	9.63	6.96	8.31

*The groundwater within the deep overburden and bedrock appears to be semi-confined.

Table 1 provides a summary of groundwater elevations collected in June 2010, August 2010, October 2010, April 2011, June 2011, and July 2015.

As depicted on **Figure 5,** measured groundwater elevations in the shallow overburden at the Site are generally flat, with localized highs and lows as measured in July 2015. A west-northwest flow direction in the shallow overburden can be inferred from the data as measured during the June 2011 and previous groundwater elevation measurements.

As depicted on **Figure 6**, measured groundwater flow direction in the deep overburden at the Site is to the northwest, as measured in July 2015. This flow direction is consistent with previous groundwater elevation measurements.

Measured groundwater elevations at the one bedrock well fluctuated over the five measured events between 6.96 ft bgs and 10.28 ft bgs.

Seasonal variations in groundwater elevations were noted between each set of measurements collected. From a seasonal perspective, it is anticipated that water levels across the Site would rise during the spring and winter seasons, and drop during the summer and fall seasons.

Results of the in-situ hydraulic conductivity tests performed in the monitoring wells at the Site are presented in Appendix I of the RIR (AECOM, September, 2011). RI data showed that hydraulic conductivity values range from 1.49E-03 centimeters per second (cm/sec) to 3.13E-05 cm/sec in the shallow overburden, and range from 4.72E-03 cm/sec to 8.96E-05 cm/sec in the deep overburden. Hydraulic conductivity testing was not performed in the bedrock monitoring well. The hydraulic conductivity values ranged as presented in the following table:

Monitoring Well	**Rising Head**	**Falling Head**	**Geometric Mean**
Shallow Overburden			
MW-35S	1.01E-03 cm/sec	2.19E-03 cm/sec	1.49E-03 cm/sec
MW-37S	Not available	3.13E-05 cm/sec	3.13E-05 cm/sec
Geometric mean			**2.16E-04** cm/sec
Deep Overburden			
MW-39D	4.96E-03 cm/sec	4.50E-03 cm/sec	4.72E-03 cm/sec
MW-38D	Not available	8.96E-05 cm/sec	8.96E-05 cm/sec
Geometric mean			**6.50E-04** cm/sec

Groundwater in the vicinity of the Site is not a source of potable water, nor is it likely to become one in the future. Residents are supplied with potable water by the Town of Lancaster. There is no significant groundwater aquifer in the overburden soils above the bedrock, and the hydraulic conductivity value is such that extracting groundwater for other uses would be infeasible.

3.0 SUMMARY OF REMEDIAL INVESTIGATIONS

The following sections describe the chronological history of previous site assessment and investigation activities conducted at the Site.

3.1 PHASE I ENVIRONMENTAL SITE ASSESSMENT

In 2004, a Phase I Environmental Site Assessment (ESA) was conducted at a level of effort consistent with American Society for Testing and Materials (ASTM) Standard Practice E1527-00 to evaluate the environmental status of the overall Former Scott Aviation property. During the detailed study of historical aerial photographs (included in Appendix E of the Phase I ESA Report) an area of potentially disturbed soil was noted on the west side of Plant 1, south of the existing visitor parking area, and just outside the Plant 1 western perimeter fence line on the adjacent vacant parcel (Earth Tech, April 2004). To address environmental concerns described in the Phase I ESA Report, including the area of potentially disturbed soil on the west side of Plant 1, a Phase II Environmental Site Investigation (ESI) was completed in 2004 for the overall Former Scott Aviation property, as described in the following section.

3.2 PHASE II ENVIRONMENTAL SITE INVESTIGATION

The Phase II ESI was conducted at a level of effort consistent with ASTM Standard Practice E1903-97, Guide for Environmental Site Assessments. A complete summary of the Phase II ESI of Area 1 is presented in the Phase II ESI Summary Report (Earth Tech, June 2004).

Based on the environmental concerns described in the Phase I ESA, a visual inspection of the area west of Plant 1 was performed. During this inspection, Earth Tech personnel noted miscellaneous debris (empty steel compressed gas cylinder, fire brick, etc.) scattered across the ground surface and partially buried. On March 29, 2004, seven test pits were excavated on the west side of the Plant 1 perimeter fence to investigate the extent of the miscellaneous debris.

Residual paint sludge (yellow, amber, and green colors detected in the soil) of unknown origin was observed in two of the test pits. The paint sludge was located approximately 18 to 24 inches bgs, was less than one foot thick (typically six inches), and encompassed approximately 150 square feet in area (determined from a visual inspection of the test pits). Soil samples were collected from below the observed paint sludge and were submitted for volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), and Target Analyte List metals plus cyanide analysis. Laboratory analyses indicated elevated concentrations of VOCs and SVOCs. To address the elevated VOC and SVOC concentrations, an Interim Remedial Measure/Supplemental Site Investigation (IRM/SSI) was completed in 2005.

3.3 PRELIMINARY GROUNDWATER ASSESSMENT

The purpose of the Preliminary Groundwater Assessment (PGA) was to assess the nature and extent of VOCs in groundwater in the vicinity of Area 1 and an additional Area 2 (not part of the Site) located to the northeast of Plant 2. The PGA Report (Earth Tech, January 2008) was developed in accordance with the Draft DER-10 *Technical Guidance for Site Investigation and*

Remediation (NYSDEC, December 2002). A summary of the PGA results for Area 1 is provided below.

The PGA at Area 1 was completed in three separate phases: Phase I – February / March 2006; Phase II - May 2006; and Phase III - May 2007. Based on lithologic characterization activities during the PGA, subsurface materials encountered in Area 1 were determined to be primarily comprised of silts and clays with sand lenses (identified as the shallow overburden unit), underlain by a thin, coarser-grained silt, sand, and gravel layer (identified as the deep overburden unit) located immediately above bedrock. Per the borings advanced for this assessment, the depth to bedrock (refusal) ranged from 18 to 23.5 ft bgs at Area 1.

Temporary piezometers were installed and screened across the water table (shallow overburden groundwater) at 18 boring locations. Groundwater samples from the deep overburden unit were collected using a Geoprobe® SP-15 sampling tool adjacent to the 18 shallow overburden unit locations.

Shallow overburden groundwater surface elevations were measured periodically at Area 1 during and following each phase of the PGA. The shallow overburden groundwater flow direction beneath Area 1 was primarily inward, towards the existing on-site storm water sewer system.

Groundwater samples were collected from each of the temporary piezometers installed at Area 1 and analyzed for VOCs. Additionally, a subset of the groundwater samples in Area 1 was also analyzed for SVOCs.

A total of 26 VOCs and four SVOCs were detected in groundwater at Area 1. Eighteen of the 26 VOCs were detected at concentrations exceeding their respective Title 6 NYCRR Part 703 Class GA Groundwater Standards in one or more wells. The VOC with the largest areal extent was trichloroethene (TCE). The maximum detection in Area 1 for TCE in shallow overburden groundwater was 90,000 micrograms per liter (μg/L), and in deep overburden groundwater was 6,600 μg/L. Four SVOCs (2,4-dimethylphenol, 2-methylphenol, 4-methylphenol, and phenol) were detected in one location, at concentrations exceeding their respective Title 6 NYCRR Part 703 Class GA Groundwater Standards (1 μg/L, respectively). Concentrations at this one location ranged from 45 μg/L to 280 μg/L. Based on the data collected during the three phases of the PGA, the lateral extent of VOCs and SVOCs was delineated in both overburden groundwater units, and was limited in aerial extent to within the existing facility property boundary wes/southwest of Plant 1.

3.4 REMEDIAL INVESTIGATION

The BCP RI began in December 2010 with the completion of soil borings, the installation of monitoring wells, completion of hydraulic conductivity testing and geotechnical soil analysis, and the collection of soil, groundwater and vapor samples for chemical analysis. This initial work was completed during the summer of 2010. The RI was conducted in accordance with AECOM's Remedial Investigation/Alternatives Analysis (RI/AA) Work Plan dated February 2010 and the letter Addendum to the RI/AA Work Plan dated May 13, 2010.

During the RI, surface soil samples were collected from zero to two inches bgs at designated locations using a decontaminated stainless steel trowel.

Summarized results for RI surface soil are below (refer to **Tables 2, 3, 4, and 5** for surface soil VOC, SVOC, metals, and polychlorinated biphenyls (PCB)/pesticide data, respectively):

- No VOC, PCB, or pesticide was detected above the Commercial Use SCOs in the surface soil at the Site.

- SVOC benzo(a)pyrene was present in three surface soil samples at concentrations slightly greater than the Commercial Use SCO. Benzo(a)pyrene is a typical byproduct of fossil fuel combustion, and the low levels observed during this sampling event were typical of urban background (note: Active railroad tracks are adjacent to the Site). Therefore, benzo(a)pyrene in soil is not considered a COPC.

- Two metals (cadmium and nickel) were observed above Commercial Use SCOs at two boring locations.

Subsurface soil sampling was to evaluate VOC, SVOC, metals, pesticide, and PCB concentrations in the on-site subsurface soils. Soil samples were collected continuously during soil boring and/or monitoring well installation. Samples were collected based on the results of the photoionization detector (PID) screening and other field observations (i.e., interval immediately above the water table elevation if there were no PID detections). Samples were collected from eight locations for VOC analysis and from 10 locations for SVOC, metals, pesticide, and PCB analysis.

Summarized results for RI subsurface soil are below (refer to **Tables 6, 7, 8, and 9** for surface soil VOC, SVOC, metals, and PCB/pesticide data, respectively):

- No SVOC, PCB, or pesticide was detected above the applicable standards in the subsurface soil at the Site.

- VOC concentrations for subsurface soil were below the unrestricted use SCO with the exception of acetone and methylene chloride (common laboratory contaminants) at borings DPT8-2A and DPT8-2B, which were below Commercial Use SCOs.

- Metal concentrations in subsurface soil were below Commercial Use SCOs, with the exception of total mercury, copper, and/or cadmium at borings DPT8-1A and DPT8-2A.

Three new shallow overburden groundwater monitoring wells (MW-35S, MW-36S, and MW-37S), six new deep overburden groundwater monitoring wells (MW-35D, MW-36D, MW-37D, MW-38D, MW-39D, and MW-40D), and one new bedrock monitoring well (MW-41B) were installed as part of the RI/AA work plan scope to evaluate on-Site groundwater conditions. Four temporary piezometers (TP-1, TP-2, TP-3, and TP-4) were installed in Area 1 to evaluate the storm sewer bedding of the existing site storm sewer system. RI groundwater sampling was performed in June 2010 and August 2010. All shallow and deep groundwater monitoring wells were sampled for VOCs, while a select number of wells were also sampled for SVOC, metals, PCB, and pesticides. The temporary piezometers were sampled for VOCs. Results for RI groundwater sampling completed under the RI confirmed the presence of VOCs in the Site overburden groundwater.

Refer to **Figures 7** and **8** for shallow and deep overburden TVOC contaminant plumes respectively. Refer to **Tables 10, 11, 12,** and **13** for groundwater monitoring well VOC, SVOC, metals, and PCB/pesticide data, respectively, and to **Table 14** for temporary piezometer VOC results. Results from RI groundwater sampling are summarized below:

- Observed impacts at the Site appear to mainly exist in the groundwater as VOCs. Twenty VOCs consisting mainly of chlorinated VOCs and benzene, toluene, ethylbenzene, and xylene (BTEX) chemicals were identified as groundwater COPCs for this Site. VOC data were compared to TOGS 1.1.1 Protection of Drinking Water Standards. In the temporary piezometers, three VOCs (1,1,1-trichloroethane [1,1,1-TCA], 1,1,2-trichloro-1,2,2-trifluoroethane, and 1,1-dichloroethene) were detected at concentrations greater than the associated groundwater standard in 2 of the 4 sampled temporary piezometers.

- Few SVOCs were detected, and only in concentrations below the TOGS 1.1.1 Protection of Drinking Water Standards.
- Iron, magnesium, and sodium were detected at concentrations greater than TOGS 1.1.1 Protection of Drinking Water Standards, but are not considered COPCs because these compounds are often found naturally.
- No PCBs were detected, and only one pesticide was tentatively detected in one groundwater sample at a concentration greater than TOGS 1.1.1 Protection of Drinking Water Standards.

As part of the RI, an initial SVI investigation was completed in June 2010. The investigation was completed in accordance with NYSDOH's SVI Guidance. The SVI evaluation included concurrent collection of subslab soil vapor and lowest level indoor air samples in three locations: SS-1 (Compressor Room), SS-2 (Boiler Room), and SS-3 (Warehouse Room), and ambient outdoor air sampling. In the RI, it was determined that subslab soil vapor concentrations of VOCs, including TCE, were present at elevated concentrations beneath the Boiler Room and the Compressor Room, but that mitigation was not immediately necessary because Site conditions were such that the affected area was not frequently accessed. However, if Site conditions change (e.g., concrete slab deterioration, revised work schedules), the conditions could result in an indoor air quality concern. Refer to **Figure 9** for the location of the subslab area of concern, and to **Table 15** for Air TO-15 results for subslab and indoor air sample results.

A fish and wildlife impact analysis determined that the small, isolated vegetated areas on Site provide limited habitat for wildlife. The Site is surrounded by developments (rail line, industrial and residential properties, roads, etc.). The vegetated areas on Site show no stress due to the presence of COPCs.

Refer to the RI Report for complete data results (AECOM, September 2011).

3.5 SUPPLEMENTAL REMEDIAL INVESTIGATION

An SRI, completed in June 2011, included the installation of additional monitoring wells, groundwater sampling, and an evaluation of the storm sewer system that was located throughout the BCP Site.

The SRI was conducted in accordance with the work plan developed for the RI and the associated Addendum. Groundwater samples were collected from three newly installed groundwater wells (MW-42S, MW-43S and MW-44S), and analyzed for VOCs. Analytical results indicated that a number of VOCs in the groundwater sample collected from MW-42S were present at concentrations exceeding the TOGS 1.1.1 Protection of Drinking Water Standards, and from MW-43S were present at concentrations just exceeding the TOGS 1.1.1 Protection of Drinking Water Standards. MW-44S was non-detect for VOCs, and defined the southern limit of the VOC plume (AECOM, April 2012). Refer to **Table 16** and the SRI Report for groundwater VOC results (AECOM, April 2012).

Storm sewer catch basins and groundwater within the associated pipe bedding were also sampled for VOCs as a part of the SRI, although they are likely influenced by groundwater, as the overburden groundwater elevation is high throughout the Site.

Compounds detected in the catch basins were also detected in the groundwater. In addition, only two compounds (1,1,1-TCA and 1,1,2-trichloro-1,2,2-trifluoroethane) were detected in the outfall to the tributary that had also been detected in the catch basins. These compounds were detected at concentrations significantly lower than were detected in the Site catch basins, and below regulatory limits. Additional compounds bromodichloromethane, chloroform, and dibromochloromethane were detected at low concentrations in the outfall, but were not detected in any of the catch basins during the SRI or previous sampling events. The Site is only one of many properties whose stormwater feeds into the storm sewer main at Erie Street, which discharges at the referenced outfall. It is likely that these compounds are not Site-related. Refer to **Table 17** and to the SRI Report for complete storm sewer evaluation data results (AECOM, April 2012).

3.6 SOIL VAPOR INVESTIGATIONS

AECOM completed SVI investigations in July 2013 and September 2013, and submitted letter reports to the NYSDEC following each event (AECOM, August 2013; and AECOM, October 2013). AECOM completed an additional SVI investigation in July 2015, and submitted a letter report to the NYSDEC (AECOM, September 2015).

Based on NYSDEC comments on the draft AAR, AECOM completed a targeted SVI investigation for the Site in July 2013. The purpose of that SVI investigation was to assess whether soil vapor in the vicinity of a nearby residence at 205 Erie Street contained chlorinated volatile organic compounds (CVOC) at concentrations sufficiently elevated to represent a potential indoor air quality issue for the nearby buildings (AECOM, August 2013). A second investigation and report was completed in September 2013 to follow up on one TCE detection in soil vapor above the method detection limit. Six soil boring points (B-1 to B-6), groundwater grab samples, and soil vapor samples were included in the September 2013 investigation. This investigation took place hydraulically downgradient of Area 1, between the Site and 205 Erie Street, and focused on eight key CVOCs that should be considered as part of an SVI analysis for the residence: 1,1,1-TCA; 1,1,2-trichloroethane; 1,1-dichloroethane; 1,1-dichloroethene (1,1-DCE); chloroethane; cis-1,2-dichloroethene (cis-1,2-DCE); TCE; and vinyl chloride.

No key CVOCs were reported in any of the soil or groundwater samples. Acetone was reported in one soil sample (12 micrograms per kilogram). Acetone was also reported in five of the six groundwater samples and in the trip blank. The only other VOC reported was 2-butanone. AECOM reviewed historical soil, groundwater, soil vapor, and stormwater data from the northern portion of Area 1 to assess the potential relationship between the low-level TCE concentration reported in SV-1 in July 2013 and the Area 1 contamination (AECOM, October 2013). Refer to **Figure 10** for locations of the 2013 SVI sample points and the total key CVOC concentrations in soil, groundwater, storm water, soil vapor, and ambient air based on data collected between 2010 and 2013, and to **Table 18** for SVI data results from 2013.

In July 2015, AECOM performed an additional SVI investigation to further evaluate SVI concerns along the storm sewer bedding, and in front of the three closest residences to the Site (refer to **Figure 11** for locations of SVI sample points). Results of this investigation are detailed in a letter report to the NYSDEC (AECOM, September 2015).

4.0 SUMMARY OF INTERIM REMEDIAL MEASURES

Data collected during the site and remedial investigations were used to develop three IRM programs at the Site. An initial IRM was conducted in 2005 to address contaminants in soil in a small area west of Plant 1. During a conference call between NYSDEC, Scott Technologies, AECOM, and AVOX on February 28, 2014, the NYSDEC recommended moving forward with the BCP cleanup in advance of an approved Final AAR, by completing additional IRMs to address soil, groundwater, and soil vapor impacts at the Site. The following subsections summarize the IRMs completed at the Site.

4.1 2005 INTERIM REMEDIAL MEASURE

On June 28, 2005, in accordance with the IRM/SSI Work Plan, Earth Tech (predecessor to AECOM) performed an initial excavation of the buried paint sludge material located to the west of Plant 1. Residual paint sludge material and a minimum 1-ft buffer of soil vertically and horizontally around the visible material were removed. The initial excavation footprint was approximately 14 ft by 18 ft, and the depth of the excavation ranged between 3.5 and 4 ft bgs; refer to **Figure 2** for the approximate location of the 2005 IRM.

Three sidewall and one floor confirmation soil samples were collected and submitted for VOCs and phenols analysis. All sidewall sample results were below NYSDEC Subpart 375-6 Unrestricted Use SCOs. In one of the excavation floor confirmation soil samples, the sample was collected at or below typical shallow overburden groundwater depths, and contained concentrations of 1,1-DCE, cis-1,2-DCE, ethylbenzene, toluene, 1,1,1-TCA, TCE, and total xylenes that exceeded NYSDEC Subpart 375-6 Unrestricted Use SCOs. As a result, an additional two feet of soil was excavated vertically within the existing excavation footprint on July 11, 2005, extending the total excavation depth to approximately 6 ft bgs.

One confirmation soil sample was collected for VOCs and phenols analysis at the bottom of the subsequent excavation. Analytical results from the sample indicated TAGM 4046 soil criteria exceedances for toluene (17 ppm), 1,1,1-TCA; (51 ppm), TCE (43 ppm), and xylenes (41 ppm). The laboratory data package for the confirmation soil samples is included in Appendix A of the PGA Report (Earth Tech, January 2008). The scope of work for the IRM only addressed vadose zone soil; therefore, further excavation was not completed during the IRM because groundwater was encountered at approximately 6 ft bgs. In addition, no remaining visible paint sludge material was observed in the soil excavation footprint.

As a result of the elevated VOC and SVOC (phenol only) concentrations detected in soil in the excavation bottom at Area 1 during the 2005 IRM, a PGA was performed in 2006 and 2007.

4.2 2014 INTERIM REMEDIAL MEASURES

As described in the sections above, several Site investigations and a prior IRM (performed in 2005 for VOCs in soil) have previously been conducted at the Site. As such, the objective of the 2014 IRMs was to address issues identified at the Site from previous investigations (refer to **Figures 9, 12,** and **13** for boiler room SVI areas, areas of storm sewer IRM, and metals/VOCs soil remediation areas respectively). These areas of concern were addressed under four IRMs as summarized below:

1) Prevention of groundwater infiltration into the storm sewer piping in the footprint of the total VOC shallow groundwater plume in Area 1 (>20 micrograms per liter), by sealing the storm sewer pipes and roof drain pipes entering the five catch basins, and by preventing off-site migration of groundwater within the storm sewer gravel bedding by installing several non-permeable "plugs" around the storm sewer piping and gravel pipe bedding;

2) Mitigation of SVI concerns in the AVOX boiler room;

3) Excavation of shallow soils in selected locations, to a depth of 2 ft bgs, that were identified as containing certain metals (cadmium, copper, nickel, and total mercury) exceeding Commercial Use SCOs; and

4) Additional excavation of the former (2005) IRM area to a depth of 8 ft bgs, to address VOCs in soil exceeding Unrestricted Use SCOs at approximately 6 ft bgs. Elevated VOCs included 1,1-dichloroethene, cis-1,2-DCE, ethylbenzene, toluene, 1,1,1-TCA, TCE, and total xylenes.

4.2.1 Storm Sewer IRM

The primary goal of the Storm Sewer IRM was to address the potential for groundwater to infiltrate an existing storm sewer system through unsealed pipe joints and at catch basins where storm sewer pipes discharge into concrete catch basins. The section of storm water pipe between CB-2 and CB-W was constructed of 6-inch diameter polyvinyl chloride (PVC), the west half of which was perforated within the footprint of the pre-determined total volatile organic compounds (TVOC) >20 μg/l shallow groundwater plume. **Figure 12** shows the configuration of the storm sewer system within Area 1. The storm sewer piping network is connected to six concrete catch basins. Additionally, several roof drains from Plant 1 are connected into the system via catch basins. Roof drain piping is PVC and tightly jointed per a video survey performed in March 2014.

Construction began with the excavation of storm sewer pipe joints and replacement of the perforated pipe between CB-W and CB-2 with a solid pipe. All pipe joints identified within the >20 μg/l TVOC groundwater plume were exposed via excavation of surrounding soil, and sealed with a bentonite / Portland cement grout mixture. Pipes entering catch basins CB-W, CB-E, CB-2, and CB-3, were exposed via excavating the soil around the catch basins, and each annulus was sealed. The annulus of each roof drain pipe entering a catch basin was also sealed with grout on the exterior of the catch basin, to prevent groundwater infiltration into the catch basin around that piping.

The secondary goal of this IRM was to prevent potentially contaminated shallow groundwater from migrating off-site from the storm sewer pipe gravel bedding within the footprint of the >20 μg/l TVOC groundwater plume. Following excavation and sealing of the storm water pipe joints, seven impermeable plugs were installed around the piping and through the pipe bedding into native soil. These impermeable plugs were formed by excavating a trench approximately 6 ft long perpendicular to the alignment of the storm sewer pipe by approximately 2 ft wide, and vertically through the pipe bedding into native soils. A wooden form was installed in the trench and filled with a bentonite / Portland cement grout mixture. Following solidification of the grout, the wooden frame was removed. After allowing the grout to cure for approximately 1 week, the excavation was backfilled.

Refer to **Figure 12** for the location of the pipe joint repairs, replaced perforated pipe section, and impermeable plugs.

Following excavation, pipe joint sealing, and impermeable plug installation in the pipe bedding, remaining excavated areas were backfilled in compliance with DER-10 soil reuse, and the area disturbed by IRM activities was restored.

4.2.2 Soil Vapor Intrusion IRM

A subslab depressurization system (SSD) system was proposed in the June 2014 Remedial Action Work Plan (RAWP) to mitigate vapor concerns identified by subslab indoor vapor sample data collected in 2010 in the southwestern corner of the existing Plant 1 building, specifically the boiler room (**Figure 9**), which is normally unoccupied.

SSD communication testing of the boiler room was conducted in September 2014, and a SSD system design was drafted. Subsequently, floor cracks and floor perforations were sealed, and re-sampling was conducted between November 2014 and December 2014 (AECOM, January 2015).

Based on the analytical results from the subslab vapor evaluation, ten compounds were detected in the subslab sample, four compounds were detected in the indoor air sample, and two compounds were detected in the concurrent ambient (outdoor) air sample. There were considerably fewer compounds detected during the 2014 event compared to the event performed in 2010, and at significantly lower concentrations (refer to **Table 15**).

The attached **Table 19** matches the seven compounds identified in the 2010 and 2014 samples to Table 3.1 in the DOH Guidance document; the concentrations of two compounds triggering 'mitigation' in 2010 were reduced to 'monitoring' status.

Comparing the 2014 TCE concentrations of indoor air and subslab air to DOH Guidance Soil Vapor / Indoor Air Matrix 1 (note: carbon tetrachloride and vinyl chloride were not detected), the recommended action is to "monitor".

Comparing the 2014 tetrachloroethylene (PCE), cis-1,2-DCE, 1,1-DCE, and 1,1,1-TCA concentrations of indoor air and subslab air to DOH Guidance Soil Vapor / Indoor Air Matrix 2, the recommended action based on the PCE concentration is to 'monitor'. 'No further action' is recommended based on the cis-1,2-DCE, 1,1-DCE and 1,1,1-TCA concentrations. The subslab concentration of PCE in 2014 was less than half of what the concentration of PCE had been in 2010. Likewise, the concentrations of cis-1,2-DCE, 1,1-DCE and 1,1,1-TCA dropped by an order of magnitude.

The ambient (outdoor) air sample exhibited trace levels of two VOCs. In general, the analytical results from a field duplicate corroborated the concentrations identified in the parent sample (AS-1R), with the addition of two compounds.

Conclusions from the 2014 indoor air/subslab vapor sampling include:

- The 2014 indoor air sample did not detect any chlorinated VOCs listed in the DOH Guidance document.
- The 2014 subslab vapor sample detected 1,1,1-TCA, cis-1,2-DCE, 1,1-DCE, PCE, and TCE. According to the DOH decision matrices, PCE and TCE concentrations trigger an action of

'monitor' only, while the 1,1,1-TCA, cis-1,2-DCE, and 1,1-DCE concentrations are below an action level.

- Low concentrations of 1,1,1-TCA, cis-1,2-DCE, and TCE were detected in the ambient (outdoor) air sample.
- Prior to the collection of the 2014 samples, floor cracks were patched and the foundation perforations sealed, which minimized the movement of subslab vapor contaminants into the building. The changes have significantly decreased the concentrations in the indoor air samples, and lowered the action level from 'mitigation' to 'monitoring'.

Based on the 2014 indoor air/subslab vapor sampling, following improvement to the slab conditions, no mitigation of the subslab vapor is required. Currently, there are approximately 30 people who work in Plant 1 for shipping/receiving and maintenance. The boiler room is currently occupied less than three hours per day. Monitoring of the indoor air and subslab vapor should be performed if the use of the boiler room changes. If necessary, based upon changing conditions in the boiler room, installation of a subslab mitigation system will be re-evaluated.

4.2.3 Soil (Metals) IRM

Excavation of shallow soils containing metals above Commercial Use SCOs was proposed in the June 2014 RAWP as the way to remediate multiple areas within the Site. Two metals (cadmium and nickel) were observed above Commercial Use SCOs at boring location MW-41B at the 0 to 0.2 ft bgs interval (i.e., surface soil); refer to **Table 4** for historical soil results. An initial horizontal excavation limit was established using a 20 ft by 20 ft (400 square feet [sq ft]) area centered on the boring, with an excavation depth of 1 ft; approximately 15 cubic yards of soil was excavated from MW-41B area.

Excavation of subsurface soils containing metals above NYSDEC Subpart 375-6 Commercial Use SCOs was also proposed in the RAWP to address detections at locations DPT8-1 and DPT8-2. Nickel and cadmium were detected at the 0 to 0.2 ft bgs (surface soil) interval at DPT8-2. Total mercury, copper, and cadmium exceedances were detected at the 0 to 2 ft bgs interval at DPT8-1, and cadmium and nickel were detected at the 0 to 0.2 ft bgs interval at DPT8-2. Refer to **Table 4** for historical soil results. An initial horizontal excavation limit was established using a 20 ft by 20 ft area centered on each of the borings, with an excavation depth of 2 ft from ground surface. Approximately 30 cubic yards of soil was excavated from each of those two locations.

Soil was excavated to 1 ft bgs in the vicinity of monitoring well MW-41B, with all confirmatory side wall and bottom samples passing metal Commercial Use SCOs for the target parameters. Refer to **Figure 14** for the locations of confirmation samples and chemical-boxes comparing historical exceedances against confirmation data. Following receipt of passing sample confirmation data, and with concurrence from the NYSDEC, the excavated area was backfilled with imported soil that met NYSDEC Unrestricted Use SCOs, and restored to pre-excavation conditions.

Soil was excavated to 2 ft bgs in the vicinity of DPT8-1 and DPT8-2 per the RAWP. Confirmatory side wall samples collected from the south sidewall at DPT8-1 and from the north sidewall at DPT8-2 exceeded select metals Commercial Use SCOs, while the in remaining confirmatory side wall samples from each boring the metal concentrations were below Commercial Use SCOs. An additional 2 ft wide by 2 ft deep excavation was performed on the south side wall of DPT8-1 and on the north side wall of DPT8-2. Follow-up confirmatory side wall samples collected from the DPT8-1 south sidewall and the DPT8-2 north sidewall revealed metal concentrations below Commercial Use SCOs. Refer to **Figure 15** for the locations of confirmation samples and chemical-boxes comparing historical exceedances against confirmation data. Following receipt of passing sample confirmation data, and with concurrence from the NYSDEC, the excavated area was backfilled with imported soil that met NYSDEC Unrestricted Use SCOs, and paved with asphalt to pre-excavation conditions.

4.2.4 Soil (VOCs) IRM

VOC concentrations from a bottom soil confirmation sample collected in 2005 following an IRM soil excavation were found to be in exceedance of the Unrestricted Use SCO. The sample was collected at or below typical shallow overburden groundwater depths, and contained concentrations of 1,1-DCE, cis-1,2-DCE, ethylbenzene, toluene, 1,1,1-TCA, TCE, and total xylenes that exceeded Unrestricted Use SCOs. An initial horizontal excavation limit was established following the same footprint of the previously excavated area (approximately 14 ft by 18 ft, by 6 ft deep).

Excavation began with the removal of the 0 to 6 ft bgs interval of soil within the initial horizontal excavation limit; this soil was clean backfill imported during the 2005 IRM. Sampling of the 0 to 6 ft bgs soil interval demonstrated VOC levels remained below Unrestricted Use SCOs, permitting the reuse of that soil as backfill (with NYSDEC approval).

Elevated PID headspace readings on side wall and bottom samples were observed following excavation of the 6 to 8 ft bgs interval, and reported to NYSDEC. Due to the interval of observed elevated PID readings being below average shallow groundwater elevations, an additional 2 ft of soil was removed from the side walls (where physical constraints allowed) and from the bottom of the excavation. The additional excavated soil was stockpiled on polyethylene sheeting, along with the 6 to 8 ft bgs interval, sampled for toxicity characteristics leaching procedure (TCLP) analysis, and covered until TCLP analysis determined the excavated soil to be non-RCRA-regulated. That soil was then shipped to an approved non-hazardous-waste landfill for disposal.

Characterization samples from the expanded sidewalls and bottom of the excavation were collected, and resulted in VOC detections exceeding Unrestricted Use SCOs (refer to **Table 20** for characterization sample results and to **Figure 14** for approximate sample locations). Prior to backfilling, and with approval from the NYSDEC, 270 pounds of Klozur® CR, engineered calcium peroxide, was placed on the bottom of the excavation area and mixed with the small amount of groundwater that had accumulated in the excavation. Fill from the 2005 IRM and imported fill in compliance with NYSDEC DER-10 was used to backfill the excavation areas created for this IRM. Areas affected by the intrusive activity of this IRM were restored to pre-excavation conditions.

4.3 2015 INTERIM REMEDIAL MEASURE

Analytical data for groundwater samples collected during the RI and SRI from the shallow and deep overburden wells identified the presence of VOCs exceeding TOGS 1.1.1 Protection of Drinking Water Standards. There were no exceedances of TOGS 1.1.1 Protection of Drinking Water Standards in the bedrock groundwater. The most frequently detected VOCs were TCE and cis-1,2-DCE. The greatest VOC concentrations were detected in the area of the previously-excavated source area during the 2005 IRM. At perimeter wells, VOCs were either not detected or were detected at concentrations below or slightly above TOGS 1.1.1 Protection of Drinking Water Standards for TCE. The delineation of TCE is complete to the north, south, east and west (to northeast corner of building) of the historic source area. See **Tables 10** and **16** for a summary of groundwater VOC data collected during the RI and SRI.

The preferred IRM method for groundwater remediation was determined to be enhanced bioremediation through injections. Injections at the Site were completed between April 13, 2015 and May 5, 2015. Per the 2015 IRM RAWP, the treatment area was divided into two target depths zones: a 12,600 square foot (sq. ft) shallow injection zone, and a 20,025 sq. ft deep injection zone. In general, the shallow zone is defined as groundwater from 5 to 15 ft bgs, and the deep zone is defined as groundwater from 15 to 25 ft bgs. Refer to **Figure 16** for locations of completed of injection points. The chosen injectate was an amended lactate solution combined with zero-valent iron (ZVI) that is available commercially as ABC+®; details are in the approved 2015 IRM RAWP (AECOM, March 2015). Injection of the ABC+® was performed through 1.5-inch injection rods penetrated into the subsurface with a direct-push Geoprobe® rig.

In general, injection points were spaced 15 ft apart. Injections were completed using the “bottom-up” method as described in the 2015 IRM RAWP (AECOM, March 2015); the bottom-up method was proposed based upon field conditions indicating silt and clay soils present at the site. Injection intervals and locations of “shallow only” and “deep and shallow” injection points were based upon data obtained during a membrane interface probe / hydraulic profiling tool (MIP/HPT) pre-design investigation performed in November 2014; refer to the 2015 IRM RAWP for MIP/HPT data.

At each injection location, injections were performed at several discrete intervals. Determination of the number and spacing of intervals depended upon the vertical remediation target thickness and soil hydraulic conductivity within the contaminated zone. During drilling and injecting, field observations necessitated that some intervals (especially shallow injection intervals) were eliminated at some locations. The volume for skipped intervals was divided among the remaining intervals, injected into the deepest interval, or eliminated altogether, depending on field conditions; refer to the 2015 Groundwater IRM CCR for additional information on the injection intervals and process (AECOM, August 2015).

4.3.1 Shallow (Only) Zone Injection

A total of 41 of the 47 planned injection point locations were successfully completed in the “shallow only” zone. Six of the 47 planned injection locations were not completed to avoid interference with utilities or as a result of observed breakthrough along the south and west sections of the injection grid; refer to **Figure 16** for locations of completed injection points. Approximately 23,370 pounds of ABC+® were injected to treat the shallow (only) zone at approximately 570 pounds of ABC+® per point (67 percent by weight (wt. %) ABC® and 33 wt. % ZVI). Mixed at approximately a 15 wt. % solution, this resulted in approximately 16,000 gallons of solution. Each injection point received approximately 390 gallons, divided up among intervals that had the highest permeability as listed below. The injection design targeted these vertical intervals. The injection intervals listed in the table below were based on the 2014 MIP/HPT pre-design investigation.

Target Injection Zones for Shallow (Only) Overburden	Depths of Injections
MIP-2 Zone	7, 8, 11, and 12 ft bgs
MIP-3 Zone	5, 7, 9, 10, 12, 13, and 14 ft bgs
MIP-4 Zone	4, 6, 8, and 11 ft bgs

Target Injection Zones for Shallow (Only) Overburden	Depths of Injections
MIP-6 Zone	3, 4, 5, 6, 7, 8, 9, 10, 12, and 14 ft bgs
MIP-7 Zone	7, 8, and 10 ft bgs
MIP-9 Zone	3, 5, and 8 ft bgs
MIP-10 Zone	8, 10, 12, and 14 ft bgs
MIP-11 Zone	2, 5, 6, 8, 10, 11, 12, 13, and 14 ft bgs

4.3.2 Shallow and Deep Zone Injection

A total of 79 of the 89 planned injection points were successfully completed in the combined “shallow and deep” zone. Ten of the 89 planned injection locations were not completed to avoid interference with utilities or as a result of observed breakthrough along the south and west sections of the injection grid; refer to **Figure 16** for locations of completed injection points. Approximately 59,800 pounds of ABC+® was required to treat the shallow and deep zone at 757 pounds of ABC+® per point (57 wt. % ABC® and 43 wt. % ZVI).

Mixed at approximately a 15 wt. % solution, this resulted in approximately 40,300 gallons of solution. Each injection point received approximately 510 gallons, divided up among intervals that had the highest permeability as listed below. The injection intervals listed below were based on the 2014 MIP/HPT pre-design investigation.

Target Injection Zones for Shallow + Deep Overburden	Depths of Injections
MIP-1 Zone	4, 6, 7, 10, 11, 12, 13, 14, 15, 16, 18 and 20 ft bgs
MIP-2 Zone	7, 8, 11, 12, 13, 14, 15, 16, 18, and 20 ft bgs
MIP-3 Zone	5, 7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19 and 20 ft bgs
MIP-8 Zone	4, 6 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20 ft bgs
MIP-10 Zone	8, 10, 12, 13,14, 15, 16, 17, 18, 19, and 20 ft bgs
MIP-11 Zone	2, 5, 6, 8, 10, 11, 12, 13, 14, 15, 16, 18, 20 and 22 ft bgs

Note that the MIP-2, MIP-3, MIP-10, and MIP-11 injection zones contain both “shallow” and “shallow and deep” injection points. This is because the MIP/HPT injection zone is determined by the geology, while the specific injection depths are determined by both the geology and the extent of vertical contamination.

4.3.3 Storm Sewer Bedding Injection

Per the 2015 IRM RAWP, additional injection points were completed adjacent to the storm sewer system to reduce VOCs in the vicinity of the sewer pipe and to apply treatment into the storm sewer pipe bedding. The storm sewer targeted injections occurred on April 13, 2015 and April 14, 2015. Injection points were performed approximately five to six ft offset (upgradient) from the storm sewer line to establish a biobarrier that groundwater must flow through before entering the storm sewer bedding. Injection locations within the footprint of the TVOC plume that were adjacent to the storm sewer also addressed the storm sewer bedding. Injections associated with the storm sewer bedding were completed between 4 and 6 ft bgs. To protect the existing subsurface utility, injections immediately adjacent to the storm sewer consisted of only ABC® (without ZVI). Three locations were completed along the storm sewer bedding. Refer to **Figure 16** for locations of injection points.

4.3.4 Post-Injection Groundwater Performance Monitoring

Post-injection groundwater sampling was performed in late July 2015. Groundwater sampling used low-flow techniques in accordance with the approved RI/AA Work Plan (AECOM, February 2010) and the letter Addendum to the RI/AA Work Plan (AECOM, May 13, 2010). Post-injection performance monitoring was used to evaluate total organic carbon (TOC) concentrations, contaminant concentrations and transformations, the distribution of the ABC+® in the subsurface, and groundwater geochemistry, and to document the initial extent of VOC degradation. Groundwater quality parameters were measured in the field, with particular attention to pH, specific conductance, oxygen reduction potential, and dissolved oxygen, which will be used to evaluate the generation and distribution of reducing conditions over multiple groundwater sampling events. Discrete samples were collected and analyzed for monitored natural attenuation (MNA) parameters including sulfate, iron (ferrous), phosphorus, biological oxygen demand, carbon demand, nitrogen (nitrate, nitrite, ammonia), alkalinity, methane, carbon dioxide, and manganese. Two Bio-Trap® samplers were also deployed to measure changes in *Dehalococcoides* (Dhc) concentrations compared to baseline values.

Refer to **Figure 3** for the locations of the groundwater monitoring wells included in the performance monitoring program. VOC groundwater data from the July 2015 post-injection sampling event demonstrates a reduction of Site COPCs (refer to **Table 21** for post-injection VOC groundwater data). Post-injection TCE concentrations are plotted on **Figure 17** for the shallow overburden contaminant groundwater plume and on **Figure 18** for the deep overburden contaminant groundwater plume. A comparison of pre-injection and post-injection TOC data shows an available carbon source in the shallow and deep overburden groundwater zones for continued biodegradation of VOCs (refer to Table 22). Pre-injection and post-injection MNA data also demonstrates biodegrading of VOCs in groundwater is actively occurring (refer to **Table 23**). The post-injection groundwater sampling was performed approximately two months following the completion of the injection program, and is based on the reductions of chlorinated volatile organic compounds (CVOCs). The sampling program proposed in the final Site Management Plan (SMP) is expected to show further reductions. Long term post-injection groundwater monitoring will be used to assess the effectiveness of the injection efforts and to determine if additional injections or bioaugmentation are needed.

5.0 REMEDIAL GOALS AND REMEDIAL ACTION OBJECTIVES

The goals of the NYSDEC remedial program are to meet the SCOs, and to be protective of human health and the environment. At a minimum, "the remedy must eliminate or mitigate all significant threats to public health and the environment presented by the hazardous substances and hazardous waste disposal at the Site through proper application of scientific and engineering principles" (NYSDEC, 2010).

The proposed future use of the Site is continued use as commercial/industrial property (per its zoning), which is consistent with the objective of achieving Commercial Use SCOs.

5.1 REMEDIAL ACTION GOALS

The primary goals of any remedial action are that the action:

- Is protective of human health and the environment;
- Maintains that protection over time; and
- Minimizes untreated waste.

The remedy selection process has been performed in a manner consistent with established State and USEPA guidance. All soil identified to contain concentrations of compounds above their applicable Commercial Use SCOs were removed from the Site during IRMs as described in Section 4 above. The subslab vapor concern at the boiler room was addressed, and will be monitored per the SMP. Remediation of groundwater was performed during IRMs; note that groundwater remediation also addressed potential SVI issues within the storm sewer system. Both groundwater and soil vapor will be monitored per the SMP.

5.2 REMEDIAL ACTION OBJECTIVES

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

<u>Groundwater</u>

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.

- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

6.0 DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES

6.1 ASSEMBLY OF POTENTIAL REMEDIAL ALTERNATIVES

This section describes the potential remedial actions that were identified as possibly being applicable to the Site. The remedial actions presented are generally constant with those identified in previous remedial alternative evaluations, including those presented in "*Presumptive Remedy for Metals in Soil Sites*", EPA 540-F-98-054 (USEPA, 1999), and presented in NYSDEC DER-15 "*Presumptive/Proven Remedial Technologies*" (NYSDEC, February 27, 2007).

As previously stated, groundwater remediation has been completed, as well as remediation of Site soils to meet Commercial Use SCOs for metals, PCBs, pesticides, and SVOCs, and Unrestricted Use SCOs for VOCs. Additionally, the storm sewer system concerns have been addressed. Subslab soil vapor at the boiler room is currently not an issue, unless the intended use of that building is changed, at which time the subslab soil conditions would be re-investigated. Lastly, potential SVI concerns associated with the storm sewer system have been assessed; an evaluation report has been submitted to NYSDEC and NYSDOH for review.

The continued use of the Site as a commercial facility is consistent with the requirements Commercial Use SCOs. The evaluation of alternatives has been limited to determining if the proposed remedy meets the stated remedial objectives for current and future use. Each remedy alternative is presented below, with a brief description and a qualitative analysis of projected costs to implement.

6.2 INITIAL SCREENING OF REMEDIAL TECHNOLOGIES

Technologies that are labeled general response actions (GRAs) and technologies labeled as applicable or potentially applicable in Section 7.0 (**Tables 25**, **26**, and **27**) have undergone a process of initial screening. The purpose of an initial screening is to eliminate remedial technologies that may not be effective based on anticipated Site conditions and/or that cannot be implemented technically at the Site, as well as to more narrowly focus the list of alternatives that will be developed and evaluated in greater detail. Specifically, the initial screening reviewed each technology in terms of effectiveness in providing protection to human health and in reducing toxicity, mobility, or volume of the waste; implementability; and relative cost. The initial screening process was guided by NYSDEC's Selection of Remedial Actions at Inactive Hazardous Waste Sites (TAGM 4030) as well as the National Contingency Plan and USEPA RI/FS guidance (USEPA, 1988; USEPA, 1990]). **Table 28** presents the initial screening evaluation of each specific technology.

Technologies retained from this initial screening process were grouped into potential remedial alternatives for discussion in Section 7.0. Based upon the screening of technologies presented in **Table 28**, the following alternatives have undergone detailed evaluation:

For unsaturated soil, based on the limited extent and shallow depths of identified contaminated soil, excavation is the selected remedy for the ease of implementation and because it will not limit Site reuse. Excavation for impacted unsaturated soil will be included as a component of all of the groundwater alternatives.

For soil vapor, SSD would be the selected remedy based on the RI and SRI results as the preferred engineering control technology by regulators and practitioners. Following further investigations and mitigation of subslab soil gas, additional remediation is not needed until the use or occupancy of the boiler room changes. The SSD system will, however, be carried through the screening review. Potential impacted soil vapor as a result of groundwater impacts within and adjacent to the storm sewer system would be treated under the groundwater alternative.

Alternative 1 – No Action (all media, required for baseline)

Alternative 2 – Soil Excavation of >100 µg/L TVOC, Targeted Soil Excavation, and SSD

Alternative 2A – Soil Excavation of >10,000 µg/L TVOC, Targeted Soil Excavation, and SSD

Alternative 3 – Targeted Soil Excavation, Enhanced Bioremediation of Groundwater, and SSD

Alternative 4 – Targeted Soil Excavation, ISCO of Groundwater, and SSD

Alternative 4A – Targeted Soil Excavation, Focused In-Situ ISCO of Groundwater>10,000 µg/L TVOC, and SSD

Alternative 4B – Targeted Soil Excavation, Enhanced Bioremediation of Groundwater, Focused In-situ Chemical Oxidation of Groundwater >10,000 µg/L TVOC, and SSD

7.0 REMEDIAL ACTION ALTERNATIVES

7.1 ALTERNATIVE 1 – NO ACTION

Alternative 1 (No Action) is developed as a baseline to which other alternatives can be compared, in accordance with USEPA RI/FS Guidance [USEPA, 1988]. Under this alternative, no remedial action is taken and, as a result, only naturally occurring processes would be working to achieve RAOs. The time to achieve RAOs under Alternative 1 would likely exceed 100 years, based on the mixture of VOCs and the areal extent of the VOC groundwater contamination, although natural attenuation is occurring. No costs are presented, as no remedial action would be performed. The detailed analysis of Alternative 1 compared to the evaluation criteria is presented in **Table 24**.

7.2 ALTERNATIVE 2 – SOIL EXCAVATION OF >100 µG/L TVOC, TARGETED SOIL EXCAVATION, AND SSD

Under this alternative, contaminated soil within the groundwater plume >100 µg/L of TVOC identified through previous Site investigations would be excavated and transported to an appropriate landfill or treatment facility. This alternative would remove saturated soil and groundwater contaminated with VOCs, in addition to the limited excavation of shallow soils for metals, and revisiting the 2005 IRM area. Excavation of soils in a groundwater hot spot area can accelerate clean up time for groundwater by reducing matrix diffusion and/or can be used to complement other remedies.

Site preparation activities for soil excavation would include the placement of erosion control materials and equipment decontamination areas to prevent migration of contaminated soil off-site. Sheet piling would be required near Plant 1 (approximately 75 linear ft) to preserve the structural integrity of the building. The removal, transportation, and disposal of contaminated soils can be accomplished with standard construction equipment. Excavated soil would be screened, segregated, and stockpiled prior to being disposed off-site. Safety precautions would include a community air monitoring program to protect people on adjacent properties from the possible presence of airborne volatile contaminants and dust. One challenge to excavating all contaminated soil is that significant volumes of potentially impacted water would need to be removed from within the excavation pit, during both excavation and backfilling activities. With a shallow water table (~3 to 6 ft), dewatering would be required, and water discharge and permitting requirements would need to be determined. For this AAR, it is assumed that construction water and stormwater would be treated on-site via an air stripper and/or activated carbon and disposed off-site (likely to a publically owned treatment works). After excavation is complete, clean backfill would be placed back into the entire excavation with compaction and restoration. It is assumed that site preparation, excavation, backfilling, and restoration activities would be completed in approximately five to six months. Bottom and sidewall limits of excavation soil samples would be collected and analyzed for VOCs. Additional soil collection for VOC analysis would be performed for soil characterization prior to land disposal.

Based upon RI sub-slab indoor vapor sampling and groundwater sampling results and assumed VOC concentrations below the building, this AAR assumes that the SSD system will only be needed for a limited area in the southwestern corner of the existing Plant 1 building, namely the boiler room (**Figure 9**, approximately 10 ft by 30 ft). The boiler room is a stand-alone building with metal walls and roof, and a poured concrete floor. It is anticipated that the SSD system would consist of floor sealing, sub-slab vertical suction (or passive venting), and a small blower (if determined required from pilot testing).

The primary capital costs for this alternative include soil excavation, disposal, backfill, and dewatering costs. For the AAR cost estimate, a range of soil disposal scenarios is provided (hazardous vs. non-hazardous). Operations and maintenance (O&M) costs would be minimal with successful implementation of this alternative, but would include groundwater monitoring to evaluate reductions in groundwater concentrations inside and outside of the excavation area. A detailed analysis of Alternative 2 (Excavation) compared with the evaluation criteria is presented in **Table 24**. Refer to **Appendix B** for cost estimates.

DER-10 requires evaluation of an alternative that can achieve Unrestricted Use of the site. This excavation alternative would be performed such that all soils that fail to meet Unrestricted Use SCOs would be excavated and disposed off-site.

7.3 ALTERNATIVE 2A – SOIL EXCAVATION OF >10,000 µG/L TVOC, TARGETED SOIL EXCAVATION, MNA AND SSD

Under this sub-alternative, soil excavation would be performed within the areas with the most contaminated groundwater, generally within the 10,000 µg/L TVOC isopleths for the shallow and deep zones, as shown on **Figure 19.** The excavation footprint areas would be approximately 7,000 sq ft for the shallow zone, which includes the area near point A1-GP13 between the two 10,000 µg/L contoured shapes. Inside that area, approximately 1,600 sq ft would be removed to the top of bedrock (approximately 40 ft by 40 ft area around MW-38D). This area would also include soils not excavated during the 2005 IRM. By removing the most contaminated soil, it is anticipated that groundwater concentrations throughout the rest of the Site would decrease through natural attenuation, which is defined as "a variety of physical, chemical, or biological processes that, under favorable conditions, act without human intervention to reduce the mass, toxicity, mobility, volume or concentration of contaminants in soil and groundwater" (USEPA, 1999). Such in-situ processes include biodegradation, dispersion, dilution, sorption, volatilization, and chemical or biological stabilization, transformation, or destruction of contaminants. Similar methods for excavation, dewatering, and backfill would be performed as described in Alternative 2; however, only limited shoring should be needed, as the focused excavation areas are generally further away from Plant 1.

Implementation of MNA would require installation of additional monitoring wells and environmental monitoring, including biological and geochemical parameters, to evaluate attenuation reactions. For this AAR, it is assumed that groundwater samples would be collected semi-annually for up to five years, with annual sampling thereafter for a period of 21 years. Institutional controls could also be implemented to minimize the potential for human exposure by restricting resource usage, potentially including water use restrictions.

Based upon RI sub-slab indoor vapor sampling and groundwater sampling results and assumed VOC concentrations below the building, this AAR assumes that the SSD system will only be needed for a limited area in the southwestern corner of the existing Plant 1 building, namely the boiler room (**Figure 9**, approximately 10 ft by 30 ft). The boiler room is a stand-alone building with metal walls and roof, and a poured concrete floor. It is anticipated that the SSD system would consist of floor sealing, sub-slab vertical suction (or passive venting), and a small blower (if determined required from pilot testing).

The primary capital costs for this alternative include soil excavation, disposal, backfill, dewatering, and well installation costs. For the AAR cost estimate, a range of disposal scenarios is provided (hazardous vs. non-hazardous). O&M costs would include groundwater monitoring to evaluate reductions in concentrations and the success of natural attenuation processes inside and outside of the excavation area. A summary of the costs estimated for Alternative 2A is presented in **Appendix B**, and a detailed analysis of Alternative 2A compared with the evaluation criteria is presented in **Table 24**.

7.4 ALTERNATIVE 3 – TARGETED SOIL EXCAVATION, ENHANCED BIOREMEDIATION OF GROUNDWATER, AND SSD

This alternative consists of injection of amendment(s) to enhance biological processes that convert contaminants to less harmful compounds. Commonly applied remediation technologies utilize reductive processes for CVOCs and aerobic processes for BTEX compounds. Therefore, a single bioremediation technology is not applicable for treating all VOC contaminants detected in Site groundwater. However, a significant fraction (70-100%) of the TVOC contamination in groundwater consists of CVOCs, with only the area south of Plant 1 having elevated concentrations of BTEX constituents (primarily toluene and xylene). Therefore, for the purposes of this AAR, the detailed evaluation has assumed enhanced bioremediation using reductive dechlorination.

Under this alternative, treatment of CVOCs would be achieved by amending the groundwater to create reducing groundwater conditions conducive to the progressive dechlorination of TCE and 1,1,1-TCA by bacteria. Naturally occurring microorganisms create hydrogen, which replaces chlorine on chlorinated VOCs. Biotic dechlorination of TCE yields cis-1,2-DCE, with subsequent biotic dechlorination reactions producing vinyl chloride and eventually ethene. Similarly, biotic dechlorination of 1,1,1-TCA sequentially yields 1,1-dichlorethane and chloroethane. Activity of dehalogenating microbes is most favorable under reducing groundwater conditions when dissolved oxygen is negligible, pH is between 6.0 and 8.5, and the oxidation-reduction potential (ORP) is below -100 mV. Biotic dechlorination daughter products are present in Site groundwater, which suggests that some reductive dechlorination is naturally occurring. Biodegradation of CVOCs can be accelerated through the addition of a carbon source (as a food source and electron donor), the addition of nutrients, and/or bioaugmentation to increase the number of dechlorinating bacteria. Reductive dechlorination of chloroethane to ethane does not readily occur; however, aerobic biodegradation of chloroethane has been observed and would be anticipated to occur as the Site ORP returns to baseline conditions.

Several proprietary and non-proprietary reductive amendments are available for groundwater remediation, including emulsified vegetable oil (EVO), hydrogen release compounds, molasses, lactate, and soluble oils. Proprietary formulations include readily available carbon as well as slow-release carbon, which allows for extended release time, and nutrients required for biotic growth. Variations of these products include addition of zero valent iron or reduced (ferrous) iron complexes for promotion of abiotic chemical dechlorination in addition to biodegradation.

An injection system for enhanced biodegradation would consist of chemical tanks, mixers, pumps, piping, and fittings. Injections would be performed using a regularly-spaced grid throughout the treatment area. Injection can be performed through semi-permanent PVC wells or through direct-push rods. For this AAR, it is assumed that injection would be performed through semi-permanent PVC wells to allow for multiple future injections and allow for future data collection. Direct injection would offer some capital cost savings, but rig mobilization would be required to perform future injections. The injection strategy would be finalized during remedial design. In order to remediate the full saturated overburden (approximately 3 ft to 21 ft bgs), it is assumed that each injection location would consist of several PVC wells (injection points) with screens located at different intervals that are installed in separate boreholes positioned within shallow saturated overburden (4 ft to 15 ft bgs) and the deep saturated overburden (15 ft to 21 ft bgs) just above or slightly into weathered bedrock. Due to the low permeability of the subsurface, injection rates and pressures would be relatively low (approximately 0.5 to 1.5 gallons per minute [gpm] at 5 to 10 psi) to avoid mounding of remedial solutions above the ground surface or out of nearby wells. An injection apparatus could be manifolded to divert and monitor injection flow into multiple injection wells simultaneously, to decrease overall time required for injection activities. The anticipated lifetime of the injected amendments would range from three months to three years, based upon the specific amendment chosen and dosage applied. For this AAR, follow-up carbon enhancement addition is assumed.

This alternative also assumes that bioaugmentation would be performed. Microorganisms capable of degrading TCE to cis-1,2-DCE are omnipresent in subsurface environments (AFCEE, 2004). However, only specific strains of bacteria are known to fully dechlorinate 1,1,1-TCA to ethane (*Dehalobacter* (Dhb)) and TCE to ethene (*Dehalococcoides* (Dhc)), and these bacteria are not present in the subsurface at all Sites or uniformly at a given Site. Advantages of bioaugmentation are that, for a relatively small additional cost, remediation time is often shorter than enhanced biodegradation using the microbes already present in the subsurface. That bioaugmentation would enhance bioremediation of both TCE and 1,1,1-TCA, as 1,1,1-TCA has been shown to inhibit Dhc. Groundwater geochemical parameters, including dissolved oxygen, pH, and ORP, would be monitored following addition of the carbon substrate amendments to evaluate the changing groundwater geochemistry to determine when conditions become favorable for bioaugmentation of Dhc microbes. For this AAR, it is assumed that microorganism cultures would be injected approximately three to six months after completion of initial injection of electron donor.

Remediation monitoring would be performed to evaluate the distribution of the electron donor in the subsurface, assess contaminant destruction, and determine progress towards attainment of the cleanup objectives. Groundwater geochemical parameters, including dissolved oxygen, pH, and ORP, would be monitored to evaluate the changing conditions as they become favorable for biodegradation. In order to monitor remedial progress, monitoring of biological degradation parameters, including ethene, ethane, methane, chloride, as well as VOCs and some metals, would be conducted following injection. This alternative may result in temporary mobilization of some metals (including arsenic, iron, and manganese) due to the creation of reducing conditions and the potential for a decrease in pH. Laboratory analysis for metals would be performed prior to commencement of groundwater remedial activities to determine baseline metal concentrations, and during performance monitoring to evaluate this potential effect. Typically, geochemical conditions will return to pre-injection conditions at some time following the injection, and metals will again become immobile.

Based upon RI sub-slab indoor vapor sampling and groundwater sampling results and assumed VOC concentrations below the building, this AAR assumes that the SSD system will only be needed for a limited area in the southwestern corner of the existing Plant 1 building, namely the boiler room (**Figure 9**, approximately 10 ft by 30 ft). The boiler room is a stand-alone building with metal walls and roof, and a poured concrete floor. It is anticipated that the SSD system would consist of floor sealing, sub-slab vertical suction (or passive venting), and a small blower (if determined required from pilot testing).

The primary capital costs associated with this alternative are carbon addition/electron donor additive and associated chemical additives, installation of injection points, bioaugmentation cultures, and injection labor and equipment. Additional O&M costs include performance monitoring and future follow-up injection of carbon amendments. A summary of the costs estimated for Alternative 3 is presented in **Appendix B**, and a detailed analysis of Alternative 3 compared with the evaluation criteria is presented in **Table 24**.

7.5 ALTERNATIVE 4 – TARGETED SOIL EXCAVATION, ISCO OF GROUNDWATER AND SSD

In-situ chemical oxidation (ISCO) acts to reduce the mass of organic contaminants through the direct injection of a strong oxidizing agent into the subsurface. Nearly all organic contaminants can be oxidized to non-hazardous end products of water, carbon dioxide, and inorganic chloride (ITRC, 2005), and ISCO of on-site VOCs has been demonstrated at numerous sites. Successful delivery of the oxidant to the contaminant is the primary factor controlling performance of the remedy, and is dependent upon geologic conditions, injection location, transport, and natural oxidant demand in the subsurface. Several chemical oxidants are available for contaminant remediation, including permanganate, activated persulfate, catalyzed hydrogen peroxide (CHP), and ozone.

Activated persulfate is a robust oxidant approach that is capable of oxidizing BTEX and CVOCs. Sodium persulfate needs to be activated to be used for remedial chemical oxidation to generate even more oxidizing free radicals. Iron, base, acid, and hydrogen peroxide are potential activators. CHP is a very robust ISCO approach for oxidation of a wide range of VOCs. Iron is used to catalyze hydrogen peroxide to generate an array of oxidizing free radicals. CHP has been shown to improve desorption of VOCs from soil, but subsurface persistence of CHP is relatively short (hours to days). Ozone is a gaseous oxidant, so delivery would be difficult, and the propagation of the oxidant would be slow in the low permeability soils observed beneath the Site. Permanganate is particularly effective for oxidizing double bonds, but chlorinated ethanes are recalcitrant to permanganate oxidation. Therefore, ozone and permanganate will not be evaluated. Activated persulfate or CHP would both be applicable oxidants for the Site. For this AAR, activated persulfate was assumed for generating a cost estimate. It should be noted that 1,1,1-TCA is more recalcitrant to oxidation than other VOCs, and bench-scale treatability and/or field pilot-scale testing would be conducted to optimize treatment.

An ISCO injection system would consist of tanks, mixers, pumps, piping, and fittings. All components would need to be compatible for use with strong chemical oxidants. Like in-situ bioremediation (Alternative 3), ISCO injections can be performed through installed semi-permanent wells or through direct-push rods. For this AAR, it is assumed that injection would be performed through semi-permanent PVC wells, to allow for multiple future injections and future data collection. Direct injection would offer some capital cost savings, but rig mobilization would be required to perform future injections. The injection strategy would be finalized during remedial design. Similar to Alternative 3, a grid system of wells would be installed in order to provide sufficient distribution of the oxidant in the subsurface. Multiple injection intervals would be treated at each location to remediate the full saturated overburden (approximately 3 ft to 21 ft bgs). Multiple injections are often required to achieve groundwater regulatory cleanup goals (McGuire, et. al, 2006; ITRC, 2005). For this AAR, three injection events are estimated to be required to complete treatment, and follow-up injections are anticipated to be sequentially smaller in treatment areas and volumes.

A wide range of naturally occurring reactants other than the target contaminant(s), including organic matter and reduced metals species, also react with chemical oxidants. Oxidant demand attributed to soil and organic matter within soil (also termed non-target, natural, or background demand) is typically greater than the demand from target contaminants. Laboratory testing to estimate the Total Oxidant Demand would be completed to assist the Remedial Design and selecting dosage(s).

Remediation monitoring would be performed to evaluate the distribution of the oxidant in the subsurface, assess contaminant destruction, and determine progress toward attainment of the cleanup objectives. Groundwater geochemical parameters, including dissolved oxygen, pH, ORP, and conductivity would be monitored to evaluate the changing conditions as a result of ISCO injections. In addition, persulfate test kits and sulfate analysis would be used to evaluate oxidant persistence and distribution. This alternative may result in temporary mobilization of some metals due to creation of oxidizing conditions (chromium) or decrease in pH (arsenic, iron and manganese) which are potential outcomes depending on the native soil conditions (buffer capacity) and specific oxidant-activator pairing selected. Laboratory analysis for metals would be performed prior to commencement of groundwater remedial activities to determine baseline metal concentrations and during performance monitoring to evaluate this potential effect. Typically, geochemical conditions will return to pre-injection conditions at some time following the injection, and metals will again become immobile.

Based upon RI sub-slab indoor vapor sampling and groundwater sampling results and assumed VOC concentrations below the building, this AAR assumes that the SSD system will only be needed for a limited area in the southwestern corner of the existing Plant 1 building, namely the boiler room (**Figure 9**, approximately 10 ft by 30 ft). The boiler room is a stand-alone building with metal walls and roof, and a poured concrete floor. It is anticipated that the SSD system would consist of floor sealing, sub-slab vertical suction (or passive venting), and a small blower (if determined required from pilot testing).

The primary capital costs associated with this alternative are installation of ISCO injection points, injection apparatus, oxidant chemicals, and injection labor and materials. Additional O&M costs include performance monitoring and follow-up injections. A summary of the costs estimated for Alternative 4 is presented in **Appendix B** and a detailed analysis of Alternative 4 compared with the evaluation criteria is presented in **Table 24**.

7.6 ALTERNATIVE 4A – TARGETED SOIL EXCAVATION, FOCUSED IN-SITU ISCO OF GROUNDWATER>10,000 µG/L TVOC, AND SSD

Under this sub-alternative, ISCO would be performed within the areas with the most contaminated groundwater. Outside of the ISCO treatment area, MNA would be implemented to evaluate reductions in VOC concentrations from natural processes, after reducing the contaminant mass and concentrations in the most contaminated areas that are serving as a source of groundwater contamination. The ISCO treatment area for this sub-alternative will generally lie within the >10,000 µg/L TVOC isopleths for the shallow and deep zones as shown on **Figure 19** (similar to Alternative 2A). The approximate treatment footprint for this sub-alternative would be 7,000 sq ft for the shallow zone, which includes the area near point A1-GP13 between the two 10,000 ug/L contoured shapes. Within this ISCO area, for the deep interval approximately 1,600 square feet would be treated to the top of bedrock (approximately 40 ft x 40 ft area around MW-38D). ISCO would be performed as described in Alternative 4, except in a smaller area. It is assumed that three injections will be performed in this smaller area.

For the MNA component of this sub-alternative, additional monitoring wells will be installed. In addition, groundwater samples will be analyzed for additional parameters to evaluate natural attenuation processes, including alkalinity, methane/ethane/ethene, and TOC in addition to periodic quantification of Dhc and Dhb bacteria.

Based upon RI sub-slab indoor vapor sampling and groundwater sampling results and assumed VOC concentrations below the building, this AAR assumes that the SSD system will only be needed for a limited area in the southwestern corner of the existing Plant 1 building, namely the boiler room (**Figure 9**, approximately 10 ft by 30 ft). The boiler room is a stand-alone building with metal walls and roof, and a poured concrete floor. It is anticipated that the SSD system would consist of floor sealing, sub-slab vertical suction (or passive venting), and a small blower (if determined required from pilot testing).

The primary capital costs associated with this alternative are installation of ISCO injection points, injection apparatus, oxidant chemicals, injection labor and materials, and the installation of additional monitoring wells. Additional O&M costs include performance monitoring and follow-up injections. A summary of the costs estimated for Alternative 4A is presented in **Appendix B**, and a detailed analysis of Alternative 4A compared with the evaluation criteria is presented in **Table 24**.

7.7 ALTERNATIVE 4B – TARGETED SOIL EXCAVATION, ENHANCED BIOREMEDIATION OF GROUNDWATER, FOCUSED IN-SITU ISCO OF GROUNDWATER >10,000 µG/L TVOC, AND SSD

Under this sub-alternative, ISCO would be performed within the areas with the most contaminated groundwater (as described in Alternative 4A). Outside of the ISCO treatment area, enhanced bioremediation via reductive dechlorination would be implemented (as described in Alternative 3). The injection of a chemical oxidant would render groundwater conditions more oxidizing within and immediately downgradient of the ISCO injections. Enhanced bioremediation for CVOCs is most favorable under reducing conditions; therefore it is assumed that ISCO and bioremediation injections would not be performed at the same time or immediately in sequence. For the purposes of this AAR, it is assumed that two injections of chemical oxidant would be performed within the area of highly contaminated groundwater, and approximately 9 to 12 months after the second ISCO injection, carbon substrate to stimulate bioremediation by reductive dechlorination would be injected to the areas outside of the ISCO injection area. Performance monitoring would determine if a third ISCO injection is needed and/or if injections for enhanced bioremediation would have to occur in the future within the focused ISCO area.

Based upon RI sub-slab indoor vapor sampling and groundwater sampling results and assumed VOC concentrations below the building, this AAR assumes that the SSD system will only be needed for a limited area in the southwestern corner of the existing Plant 1 building, namely the boiler room (**Figure 9**, approximately 10 ft by 30 ft). The boiler room is a stand-alone building with metal walls and roof, and a poured concrete floor. It is anticipated that the SSD system would consist of floor sealing, sub-slab vertical suction (or passive venting), and a small blower (if determined required from pilot testing).

The primary capital costs associated with this alternative are installation of injection points, injection apparatus, oxidant chemicals, bioremediation amendments, injection labor and materials, and the installation of additional monitoring wells. Additional O&M costs include performance monitoring and follow-up injections. A summary of the costs estimated for Alternative 4B is presented in **Appendix B**, and a detailed analysis of Alternative 4B compared with the evaluation criteria is presented in **Table 24**.

8.0 GENERAL RESPONSE ACTION AND IDENTIFICATION OF REMEDIAL TECHNOLOGIES

GRAs are remedial approaches encompassing those actions that will satisfy the RAOs. General response actions may include treatment, containment, removal, disposal, institutional controls, or a combination of these, if required, to address varied Site environmental problems and to be effective in meeting all the RAOs. GRAs and potentially applicable remedial technologies for addressing RAOs for each medium of concern are presented in **Tables 25**, **26**, and **27** for groundwater, soil, and soil vapor, respectively.

The following GRA descriptions have been generated in accordance with the guidelines in NYSDEC's DER-10. Brief descriptions of specific technologies for each media are provided in **Tables 25**, **26**, and **27**.

Limited Action involves institutional controls that restrict access to contaminated areas through physical and/or administrative measures. Limited Action also includes long-term monitoring. The institutional control response is not intended to reduce the toxicity, mobility, or volume of hazardous Site constituents, but to reduce the potential for human and wildlife exposure to these constituents.

Containment actions include control, isolation, and encapsulation technologies that involve little or no treatment, but provide protection of human health and the environment by reducing mobility of contaminants and/or eliminating pathways of exposure. Since these technologies consist primarily of physical barriers to control migration, contaminant toxicity and volume are not reduced significantly within the contained area.

Removal/Treatment/Disposal actions include technologies that act to reduce the volume, toxicity, and/or mobility of contaminants. These technologies include in-situ treatment, removal, ex-situ treatment, and destruction. Treatment methods reduce contaminant volume, toxicity, and/or mobility by treating contamination to acceptable cleanup levels. Destruction technologies permanently and irreversibly destroy or detoxify contaminants to acceptable cleanup levels, thereby reducing contaminant volume, toxicity, and mobility. Disposal actions include both on-site and off-site technologies, including reuse/recycling, and/or landfill disposal.

No remedial activities would be implemented under a "No Action" general response action; however, it is considered throughout the AAR process as a baseline against which other general response actions and technologies can be compared.

The general response actions and associated technologies identified for each medium include one or a combination of the following on-site actions:

<u>Overburden Groundwater</u>

- No Action
- Limited Action, including institutional controls

- In-situ Treatment
- Removal and Treatment

Soil

- No Action
- Limited Action, including institutional controls
- In-situ Treatment
- Removal

Soil Vapor

- No action
- Engineering Control
- Physical/Ex-situ Treatment

9.0 DETAILED ANALYSIS OF RETAINED REMEDIAL ALTERNATIVES

The technologies and process options retained from the initial screening process were combined to develop remedial alternatives to undergo detailed analysis. A range of alternatives was developed that would satisfy the Site-specific remedial goals and RAOs. A detailed analysis of each alternative provides conceptual design, primary estimated capital and operating costs, and approximate remediation time to attain remedial goals. The specific evaluation criteria are described in Section 7.1.

9.1 EVALUATION CRITERIA

Each of the retained remedial alternatives was evaluated using the criteria set forth in NYSDEC's DER-10, Section 4.1(e): Technical Guidance for Site Investigation and Remediation (NYSDEC, 2010a), as well as the USEPA Guidance for Conducting RI/FS Studies under CERCLA (USEPA, 1988]).

9.1.1 Overall Protection of Human Health and the Environment

This criterion is an evaluation of the remedy's ability to protect human health and the environment, assessing how risks posed through each existing or potential pathway of exposure are eliminated, reduced or controlled through the removal, treatment, engineering controls or institutional controls. The remedy's ability to achieve each RAO is evaluated.

9.1.2 Compliance with Standards, Criteria, and Guidance

This criterion is an evaluation of the remedy's ability to meet applicable environmental laws, regulations, standards, and guidance.

9.1.3 Long-Term Effectiveness and Permanence

This criterion is an evaluation of the long-term effectiveness and permanence of the remedy after implementation.

9.1.4 Reduction of Toxicity, Mobility or Volume

This criterion is an evaluation of the remedy's ability to reduce the toxicity, mobility or volume of the materials.

9.1.5 Short-term Effectiveness

The potential short-term adverse impact(s) and risks of the remedy upon the community, the workers, and the environment during implementation are evaluated.

9.1.6 Implementability

This criterion is an evaluation of the feasibility of technical and administrative implementation.

9.1.7 Cost

Capital, operation, maintenance and monitoring costs are estimated for the remedy and presented on a present worth basis.

9.1.8 Land Use

This criterion is an evaluation of the current, intended and reasonably anticipated future use of the Site and its surroundings, as it relates to an alternative or remedy, when Unrestricted Use SCOs would not be achieved.

9.1.9 Community Acceptance

Community acceptance is typically evaluated following a public comment period, after a remedy has been proposed.

9.1.10 Green Remediation

This criterion is an evaluation of the extent to which green and sustainable practices and technologies are incorporated into the remedy during its implementation. NYSDEC DER-31(NYSDEC, 2010b) establishes a preference for remediating Sites in the most sustainable manner while still meeting legal, regulatory, and program requirements.

9.2 REMEDIATION TARGET AREAS

For purposes of the planning level design generated for the detailed evaluation and comparison of remedial alternatives, this AAR assumes that remediation is targeted for groundwater within the 100 µg/L and greater TVOC isopleths for shallow and deep groundwater, plus 10 percent of this area as contingency. For shallow groundwater (approximately 3 to 15 ft bgs), an area of 24,000 sq ft is used, and for deep groundwater (approximately 15 to 21 ft bgs) an area of approximately 7,000 sq ft is used for the detailed evaluation. Many in-situ remedial technologies become inefficient, and therefore cost prohibitive, when concentrations of total chlorinated VOCs are less than 100 µg/L. It is assumed that natural attenuation would address contamination outside of these target areas.

9.3 COST EVALUATION APPROACH

As part of the detailed evaluation, planning level costs were developed for each alternative, and in some cases, multiple scenarios have been presented. These costs were based on general assumptions and elements likely to become part of each alternative (conceptual planning). The planning level costs presented are intended to provide a measure of total estimated resource costs over time, and the accuracy of these estimates is expected to be between -30 and +50 percent [USACE/USEPA, 2000]. Contingencies were estimated as suggested in *A Guide to Developing and Documenting Estimates during the Feasibility Study* (USACE/USEPA, 2000). In addition, net present value costs were estimated for future costs for each alternative.

Detailed cost backup calculations are provided in **Appendix B**.

9.4 COMMON ELEMENTS

All groundwater alternatives, except for the Alternative 1 (No Action), include the following common elements:

- Targeted excavation of shallow soil locations with metals concentrations that exceed Commercial Use SCO criteria;
- Targeted excavation of deeper soil below the water table in the location of the 2005 IRM to address VOCs containing soil still present that exceeded the protection of groundwater SCGs;
- Storm Sewer action;
- SSD for the Plant 1 building;
- Site management; and
- Institutional Controls.

To mitigate contaminated groundwater entering the storm sewer and eventually discharging at the outfall in Spring Creek, all alternatives will include protective measures implemented directly to the storm sewer. Within the VOC plume area, there are approximately 300 linear feet of 12-inch diameter pipe, approximately 150 feet of 6-inch diameter pipe, and four catch basins. A range of actions for the sewer line would be considered based on the cost, schedule, and visual appearance of the pipe and connections, and could include repair or replacement of individual sections or joints, encasing the sewer pipe with an impermeable material, pouring concrete around the sewer pipe, and/or complete replacement of the pipe run. Temporary bypass measures would be provided to maintain operation of the storm sewer, which has a base flow of approximately 10 gpm. In addition, remediation to reduce VOC concentrations in the groundwater around the storm sewer by the chosen alternative will also reduce the VOCs entering the storm sewer and eventually potentially discharging at the outfall.

Based upon RI and SRI subslab indoor vapor sampling and groundwater sampling results and assumed VOC concentrations below the building, this AAR assumes that the SSD system will only be needed for a limited area in the southwestern corner of the existing Plant 1 building, namely the boiler room (**Figure 9**, approximately 10 ft by 30 ft). The boiler room is a stand-alone building with metal walls and roof, and a poured concrete floor. It is anticipated that the SSD system would consist of floor sealing, subslab vertical suction (or passive venting), and a small blower (if determined required from pilot testing). [Note: As mentioned in previous sections, the 2013 AECOM investigations indicated that an SSD system is not required; however, this alternative's analysis is based on RI and SRI results and the determination to not require an SSD is explained in Section 10.0 where the IRM summaries and achievement of remedial objectives are discussed.]

Targeted shallow excavations would be performed for unsaturated soil that exceeds Commercial Use SCOs for metals (copper, cadmium, and total mercury) in soil. An area of approximately 20 ft by 20 ft and a second area of approximately 20 ft by 40 ft are estimated for removal to depths of two feet, as shown on **Figures 14** and **15**. This excavation area is easy to access, and will eliminate the need for land use controls to continue commercial use of property.

A targeted deeper excavation, revisiting the area of the 2005 IRM, would be performed for saturated soil with VOCs results in excess of the protection of groundwater SCOs (refer to **Figure 14**). Upon completion of additional excavation an ISCO/ERD amendment could be placed at the bottom of the excavation.

Public potable water is used at the Site and the surrounding properties. However, because groundwater concentrations exceed NYS water quality standards and guidance values for Class GA groundwater, Institutional Controls to implement groundwater use prohibitions may be put in place to minimize any future exposure risks from contaminated groundwater. Institutional Controls could be removed from the property after groundwater remedial goals are met. In addition, the NYSDEC approval letter of the SRIR dated June 1, 2012, stated that this AAR must evaluate treatment for subsurface soil that exceeds groundwater SCOs. The limited number of subsurface vadose zone soil samples that exceeded groundwater protection SCOs are co-located within the area and volume described above and shown on **Figure 13**, and therefore would be appropriately managed by the proposed shallow excavation.

10.0 COMPARATIVE ANALYSES OF REMEDIAL ALTERNATIVES

10.1 COMPARATIVE ANALYSIS OF ALTERNATIVES

After individual evaluation of each alternative based on the criteria defined in Section 7.1, comparative analyses were conducted to evaluate the relative performance of each alternative. The purpose of the analyses was to identify the advantages and disadvantages of each alternative relative to the others so that key tradeoffs could be identified and balanced. Overall protection of human health and the environment and compliance with SCGs must be met by any selected alternative. Tradeoffs among the alternatives are related to five criteria: long-term effectiveness and permanence; reduction of toxicity, mobility and volume; short-term effectiveness; implementability; and cost. The remediation timeframes for each alternative are important to consider when comparing short-term effectiveness, compliance with SCGs, protection of human health and environment, and land use. State and community acceptance would be addressed following regulatory review and a public comment period after a remedy has been recommended. **Table 24** also summarizes the comparative analysis of the alternatives and ranks each alternative for each of the criteria.

10.1.1 Overall Protection of Human Health and the Environment

All alternatives, with the exception of Alternative 1, would be protective of human health and the environment by eliminating potential exposure pathways, either by removal, treatment or containment of impacted soils in addition to limiting exposure pathways to intrusive activities, as in the current Site environment. The Excavation alternative (and subalternatives) is considered more protective by physically removing the contamination from the Site. Subalternatives that include MNA are considered less protective by only relying on natural attenuation processes to reduce contaminant concentrations over time.

10.1.2 Compliance with Standards, Criteria and Guidance

All alternatives would meet the SCGs for groundwater over time via natural attenuation. They would achieve overall protection of human health and the environment by the remedial actions and/or the implementation of groundwater MNA. However, alternatives would meet SCGs in varying periods of time based on the degree of active remediation proposed.

Chemical specific SCGs would be met with implementation of excavation, chemical oxidation, and/or enhanced bioremediation alternatives; and with MNA subalternatives and Alternative 1 over a longer period of time. All alternatives would be implemented such that action-specific and location-specific SCGs would be met.

10.1.3 Long-Term Effectiveness and Permanence

All of the alternatives except for Alternative 1 would result in permanent reduction and/or containment of impacted media. Alternative 1 would be least effective because it would involve no removal, immobilization or containment of impacted materials, relying on prolonged natural attenuation to treat VOC-impacted media without monitoring or administrative means to confirm its progress, and no reduction in metals concentrations would occur. The in-situ treatment alternatives ranked slightly lower than the excavation alternative where contamination is removed from the Site.

10.1.4 Reduction of Toxicity, Mobility, and Volume

All of the alternatives except for Alternative 1 would eliminate the toxicity, mobility, and volume of contaminants. The Excavation alternative does not reduce volume or toxicity, unless treatment is performed at a disposal facility, since typically contaminated soil is only moved from the Site to a disposal facility.

10.1.5 Short-Term Effectiveness

All Alternatives except Alternative 1 would include measures to minimize and mitigate exposure risks to the community, the workers and the environment during implementation. The Excavation alternatives (Alternatives 2 and 2A) result in higher potential exposure to contamination from exposed materials, dust, and volatilized organic vapors. The Chemical Oxidation alternative (Alternative 4) would require handling strong chemical oxidants, so personal protective equipment and materials resistant to them would be necessary (and would need to be properly disposed after treatment has been completed).

10.1.6 Implementability

Each of the presented alternatives could be implemented, although the degree of difficulty varies between the alternatives. The Excavation alternatives (2 and 2A) would face the greatest challenges for implementability due to the required extensive dewatering, proximity to buildings, and presence of subsurface utilities. In-situ treatment alternatives can more easily be implemented, with widely available equipment and remediation amendments as well as the least disturbance to the Site.

10.1.7 Cost

The AAR cost estimates for each of the alternatives are summarized and compared in **Table 29**. Cost is inversely proportional to anticipated time to meet SCGs, and directly proportional to certainty of treatment. The in-situ remediation costs are lower than excavation costs, with enhanced bioremediation being less expensive to implement than ISCO. Subalternatives that include MNA offer significant cost savings.

10.1.8 Land Use

Each of the presented alternatives includes some degree of Institutional Controls until SCGs are attained which would alter land use to be protective of human health and the environment, with the exception of Alternative 1 and Unrestricted Use SCO criteria. In addition to Institutional Controls, each alternative would have varying degrees of impacts on land use. Excavation alternatives would have the highest short term impact on land use, but the lowest impact on future land use by removing the source material. MNA subalternatives would have the most impact on future land use by requiring institutional controls for the longest period of time.

10.1.9 Green Remediation

All remediation and construction activities pose an environmental impact from vehicle usage, chemical and materials manufacture, sampling activities, and laboratory analysis. The alternatives were evaluated using guidance provided in DER-31 and include a range of environmental impacts. Excavation would have the greatest environmental impact due to the heavy vehicle usage to excavate and transport contaminated materials off-Site. Generally, in-situ remediation technologies can be completed more sustainably than removal/ex-situ processes. The MNA subalternatives rely on natural processes which are viewed favorably by DER-31.

10.1.10 Community Acceptance

Community acceptance is typically evaluated following a public comment period, after a remedy has been proposed. For the evaluated alternatives, short-term community impacts, long term land use, and overall protection of human health and the environment are anticipated to be the most important aspects to consider for local area stakeholders.

11.0 RECOMMENDED REMEDIAL ALTERNATIVE

Alternative 3 – Targeted Soil Excavation, Enhanced Bioremediation of Groundwater, and SSD is the recommended alternative for remediation, based upon the detailed evaluation and comparative analysis (**Table 24**). This technology is readily implementable, and is a technically-proven remediation approach that has been demonstrated at numerous field sites for in-situ treatment of CVOCs, which are the groundwater contaminants that are the highest concentrations and most widespread. This is the lowest estimated cost alternative for treatment of the full contaminated area. In addition, bioremediation enhances naturally occurring processes and is considered a "greener" technology than others evaluated. This alternative also poses significantly fewer risks to site workers for implementation. Other advantages of enhanced bioremediation are that injected amendments have an active persistence that is significantly longer than chemical oxidants, which reduces the potential for rebound of contaminant concentrations in groundwater and will likely require fewer (if any) subsequent injection mobilization events. Additionally, as conditions become more reducing, and therefore favorable for biotic reductive dechlorination, microbes grow and multiply in the subsurface, and biodegrading microbes are not exhausted as occurs with a chemical oxidant. It is also anticipated that the community would accept this technology as it will target the significant area of the VOC plume and will not result in significantly increased noise and traffic, which would occur as a result of extensive excavation alternatives.

Alternative 3 would also include discrete excavation of shallow soils to address metals exceeding appropriate NYSDEC soil standards for Commercial Use SCOs, and additional excavation of VOC contaminated soils left in place during the 2005 IRM (**Figure 13**), installation of a SSD system to operate beneath a portion of Plant 1 (**Figure 9**), and mitigation actions to reduce VOCs (aqueous and vapor phases) infiltrating into the storm sewer system.

As described in Section 4.0, IRMs have been implemented since the draft AAR was submitted in April 2013 that have addressed the impacts identified during previous investigations (refer to Section 3.0):

- Enhanced bioremediation of Site groundwater has been successfully implemented per the 2015 IRM RAWP. Long term MNA and VOC monitoring of groundwater will be performed per the Final SMP.

- Soils with identified metals above the Commercial Use SCOs have been excavated and transported off site for disposal per the 2014 IRM RAWP.

- Additional excavation of soils identified with VOC concentrations exceeding Unrestricted Use SCOs was completed in one location per the 2014 IRM RAWP. Prior to backfilling the excavation, Klozur® CR, an engineered calcium peroxide, was placed on the bottom of the excavation area, and mixed with the small amount of groundwater that had accumulated within the excavation, to treat remaining VOC impacted soils.

- Subslab soil vapor issues at the Boiler Room have been mitigated as described in the January 2015 Subslab Vapor Evaluation. Per the indoor air/subslab vapor sampling performed following mitigation activities, further mitigation of the subslab vapor is not warranted. Per the Final SMP, if occupancy or use of the boiler room changes, monitoring of the subslab and indoor air will be required.

- The storm sewer system was addressed per the 2014 IRM RAWP and 2015 RAWP by sealing pipe joints and penetrations at the catch basins, and stopping potential groundwater migrating through pipe bedding by the installation of multiple impermeable plugs around the pipes. Furthermore, to address potential residual VOC in the pipe bedding and soil vapor issues, targeted injections of ABC® were performed.

12.0 REFERENCES

AECOM, September 2015. “Storm Sewer Soil Vapor Intrusion Evaluation Former Scott Aviation Facility Area 1, Lancaster, New York”.

AECOM, August 2015. “Construction Completion Report - 2015 Interim Remedial Measure – Groundwater Treatment, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, March 2015. “Final Remedial Action Work Plan - 2015 Interim Remedial Measure – Groundwater Treatment, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, January 2015. “Subslab Vapor Evaluation - Former Scott Aviation Facility Area 1 BCP Site, NYSDEC Site Code No. C915233, Lancaster, New York”.

AECOM, June 2014. “Draft Interim Remedial Measures Action Work Plan, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, October 2013. “Soil Vapor Intrusion Evaluation – Supplemental Soil and Groundwater Data Report”, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, August 2013. “Soil Vapor Intrusion Evaluation”, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, April 2013. “Draft Alternatives Analysis Report, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, April 2012. “Supplemental Remedial Investigation, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, September 2011. “Remedial Investigation Report, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, May 2010. “Addendum to Remedial Investigation/Alternatives Analysis Work Plan, Former Scott Aviation Facility Area 1, Lancaster New York”.

AECOM, February 2010. “Remedial Investigation/Alternatives Analysis Work Plan, Former Scott Aviation Facility Area 1, Lancaster New York”.

NYSDEC, May 2010. “New York State Department of Environmental Conservation, Division of Environmental Remediation, DER-10 Technical Guidance for Site Investigation and Remediation”.

Earth Tech, January 2008. "Preliminary Groundwater Assessment Report", Former Scott Aviation Facility, Lancaster, New York.

NYSDEC, 2006. Rules and Regulations, 6 NYCRR Subpart 375-6, Remedial Program Soil Cleanup Objectives, dated December 14, 2006.

NYSDEC, May 2004. "Draft Brownfield Cleanup Program Guide".

AFCEE, August 2004. "Principles and Practices of Enhanced Anaerobic Bioremediation of Chlorinated Solvents": Air Force Center for Environmental Excellence, Brooks City-Base, Texas.

Earth Tech, June 2004. "Phase II Environmental Site Investigation", Tyco/Scott Aviation Facility, Lancaster, New York.

Earth Tech, April 2004. "Phase I Environmental Site Assessment and Modified Compliance Assessment", Tyco/Scott Aviation Facility, Lancaster, New York.

NYSDEC, June 1998. "Division of Water Technical and Operational Guidance Series (1.1.1), Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations".

NYSDEC, October 1994. "Fish and Wildlife Impact Analysis for Inactive Hazardous Waste Sites (FWIA)".

NYSDEC, August 2010. "New York State Department of Environmental Conservation, Division of Environmental Remediation, DER-31 Green Remediation".

NYSDEC, February 2007. "Program Policy DER-15, *Presumptive/Proven Remedial Technologies".*

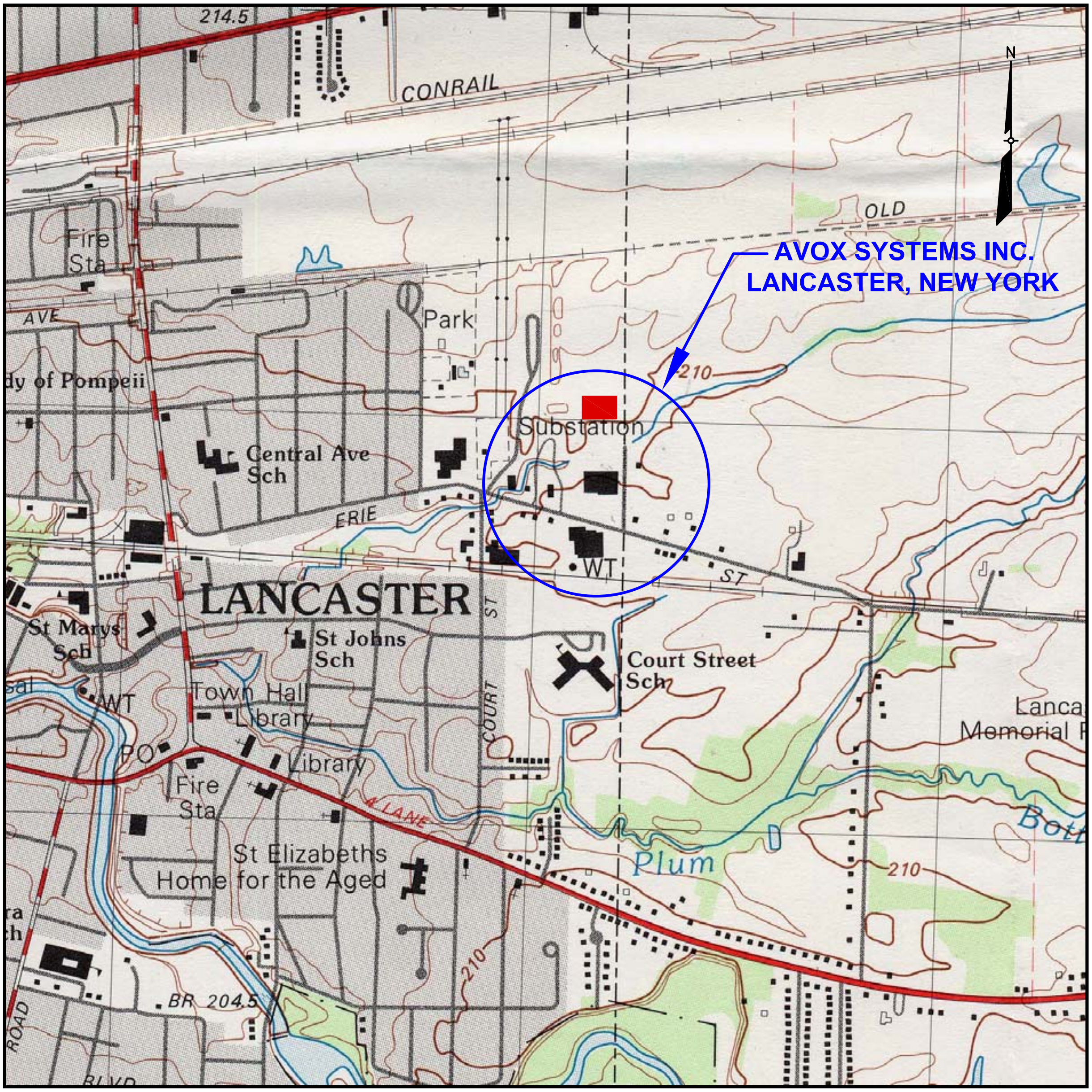
NYSDOH, October 2006. "Guidance for Evaluating Soil Vapor Intrusion in the State of New York".

USEPA, July 2000. "A Guide to Developing and Documenting Estimates during the Feasibility Study".

USEPA, 1999f. "United States Environmental Protection Agency Presumptive Remedy for Metals-in-Soil Sites. EPA Document No. 540-F-98-054".

USEPA, October 1988. "Guidance for Conducting RI/FS Studies under CERCLA".

Figures



SOURCE:
1982 GEOLOGIC SURVEY 7.5 X 15 MINUTE TOPOGRAPHIC QUADRANGLE
LANCASTER, NEW YORK

LEGEND

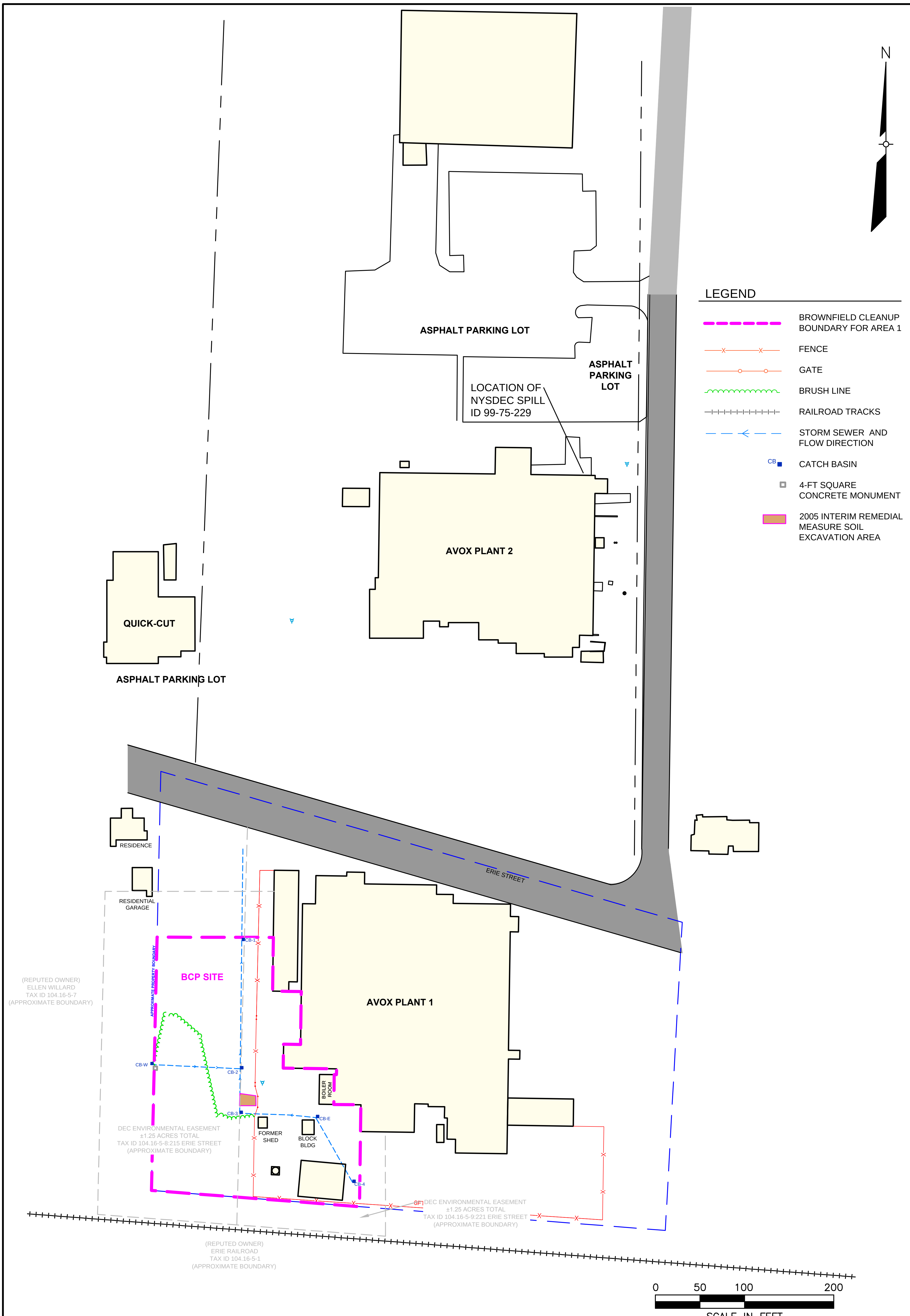
AVOX PLANT 3 ADDED AFTER PUBLICATION OF LANCASTER, NEW YORK TOPOGRAPHIC QUADRANGLE.

0 1000 2000
SCALE IN FEET

AECOM

FIGURE 1
SITE LOCATION MAP

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

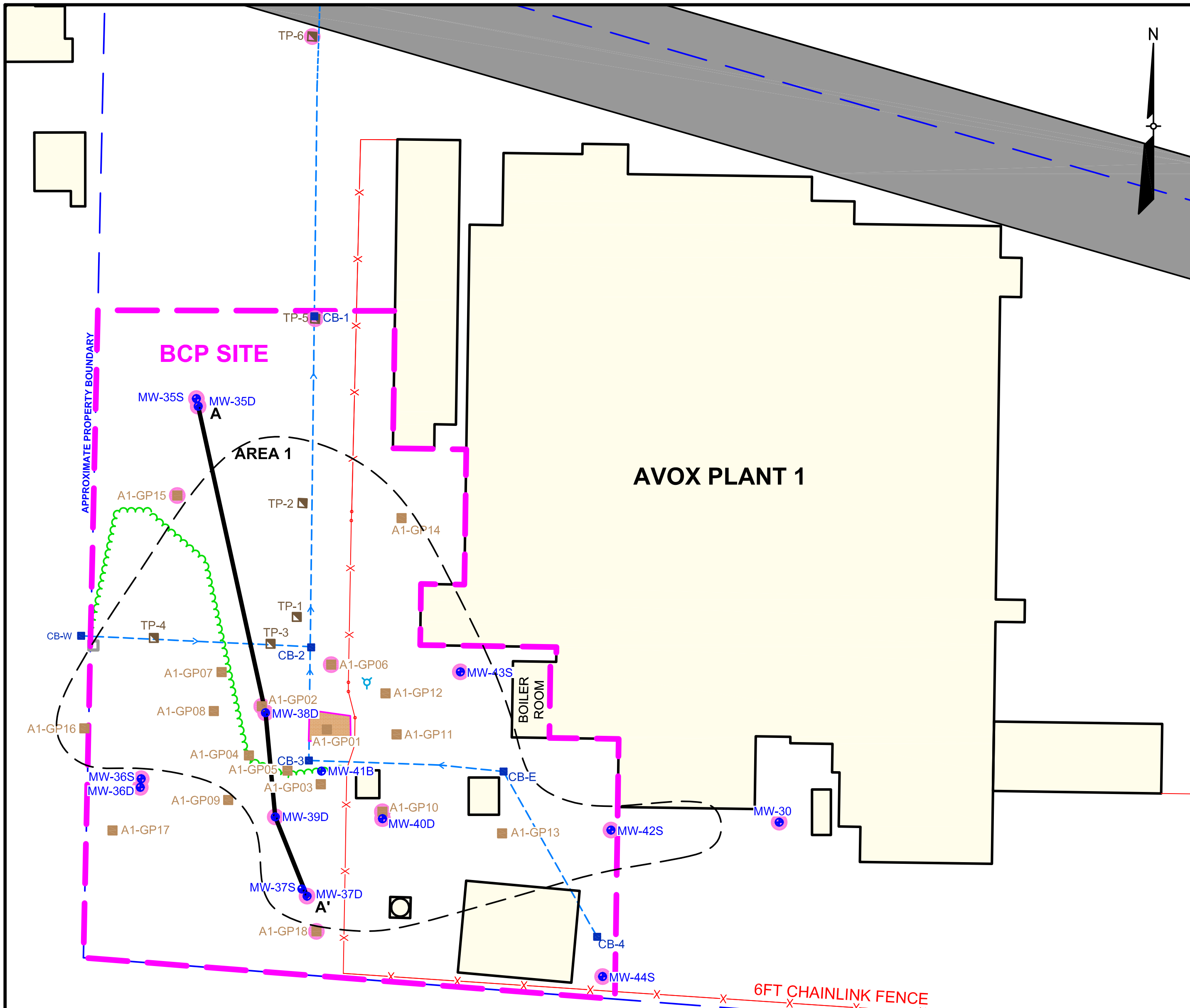


AECOM

FIGURE 2
SITE LAYOUT MAP

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_125 Site Layout Map.dwg, 12/8/2015 4:41:34 PM, Splawnm



LEGEND

MW-35S	MONITORING WELL LOCATION (SURVEYED)
A1-GP13	PIEZOMETER LOCATION (SURVEYED)
TP-1	TEMPORARY PIEZOMETER LOCATION
	POST-INJECTION PERFORMANCE MONITORING LOCATION
	EXTENT OF TOTAL VOC CONTOUR BOUNDARY
	BROWNFIELD CLEANUP BOUNDARY FOR AREA 1
A — A'	CROSS-SECTION LOCATION
	FENCE
	BRUSH LINE
	STORM SEWER AND FLOW DIRECTION
CB-1	CATCH BASIN
	4-FT SQUARE CONCRETE MONUMENT

Location ID	Investigative Phase	Date Completed	Screen Interval (ft bgs)
MW-30	ESI Phase II	7/7/2005	10 - 20
A1-GP01S	PGA Phase I	2/27/2006	5 - 15
A1-GP02S		2/27/2006	5 - 15
A1-GP03S		2/27/2006	5 - 15
A1-GP04S		2/27/2006	5 - 15
A1-GP05S		2/27/2006	5 - 15
A1-GP06S		2/27/2006	5 - 15
A1-GP07S	PGA Phase II	5/16/2006	5 - 15
A1-GP08S		5/16/2006	5 - 15
A1-GP09S		5/16/2006	5 - 15
A1-GP10S		5/16/2006	5 - 15
A1-GP11S		5/15/2006	5 - 15
A1-GP12S[1]		5/16/2006	5 - 15
A1-GP13S	PGA Phase III	5/22/2007	5 - 15
A1-GP14S		5/22/2007	5 - 15
A1-GP15S		5/23/2007	5 - 15
A1-GP16S		5/23/2007	5 - 15
A1-GP17S		5/23/2007	5 - 15
A1-GP18S		5/24/2007	5 - 15
A1-GP12S[2]	RI	5/27/2010	5 - 15
MW-35S		5/26/2010	5 - 15
MW-35D		5/26/2010	21 - 26
MW-36S		6/4/2010	5 - 15
MW-36D		6/4/2010	16 - 21
MW-37S		5/28/2010	4.5 - 14.5
MW-37D		5/28/2010	15 - 20
MW-38D		6/3/2010	16 - 21
MW-39D		6/3/2010	15 - 20
MW-40D		6/2/2010	17.8 - 22.8
MW-40B		6/1/2010	24.8 - 34.8
TP-1		6/24/2010	2.9 - 5.4
TP-2		6/24/2010	1.5 - 4
TP-3		6/24/2010	1.4 - 3.9
TP-4		6/24/2010	1 - 3.5
MW-42S	SRI	3/28/2011	5 - 15
MW-43S		3/28/2011	5 - 15
MW-44S		5/19/2011	6 - 15
TP-5		5/19/2011	1 - 6
TP-6	2015 IRM	4/13/2015	4 - 9

Notes:

1. This well was damaged and subsequently replaced during the RI field activities.
2. This well is a replacement well for the well with the same identification that was installed during Phase II of the PGA.

ft bgs - feet below ground surface
ESI - Environmental Site Investigation
PGA - Preliminary Groundwater Assessment
RI - Remedial Investigation
SRI - Supplimental Remedial Investigation

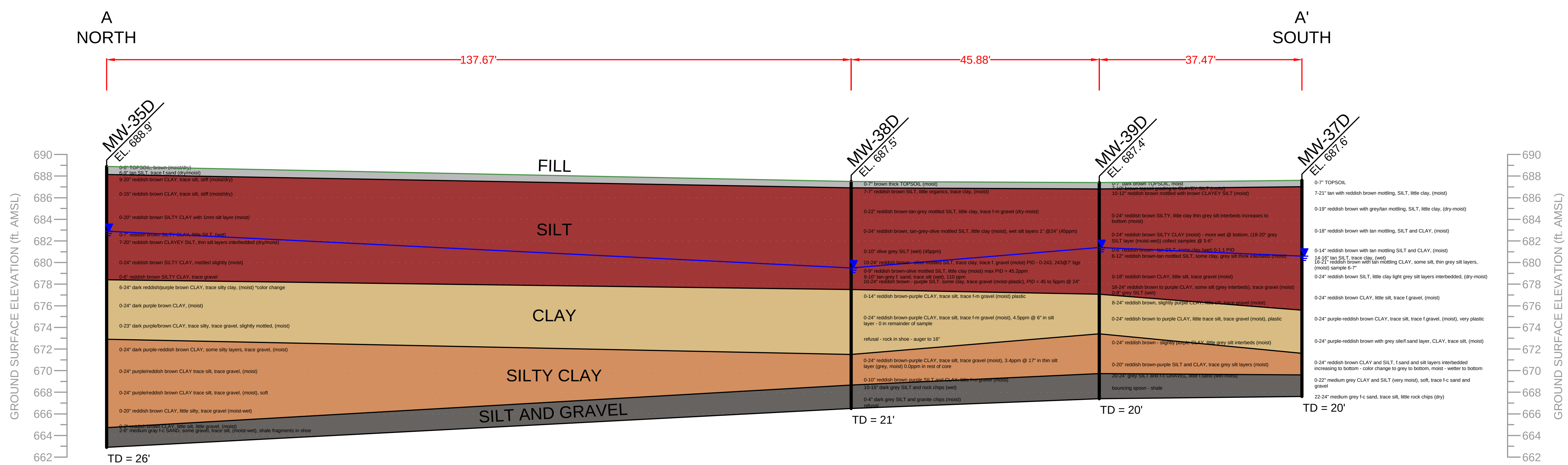
0 35 70 140
SCALE IN FEET

AECOM

FIGURE 3
MONITORING WELL, PIEZOMETER AND CATCH BASIN LOCATIONS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_126 MW Loc Map.dwg, 12/8/2015 4:42:02 PM, Splawnm



LEGEND:

- FILL
- SILT
- CLAY
- SILTY CLAY
- SILT AND GRAVEL

TD = TOTAL DEPTH

GROUNDWATER ELEVATION (ft AMSL)

HORIZONTAL SCALE: 0 10 20 40 SCALE IN FEET

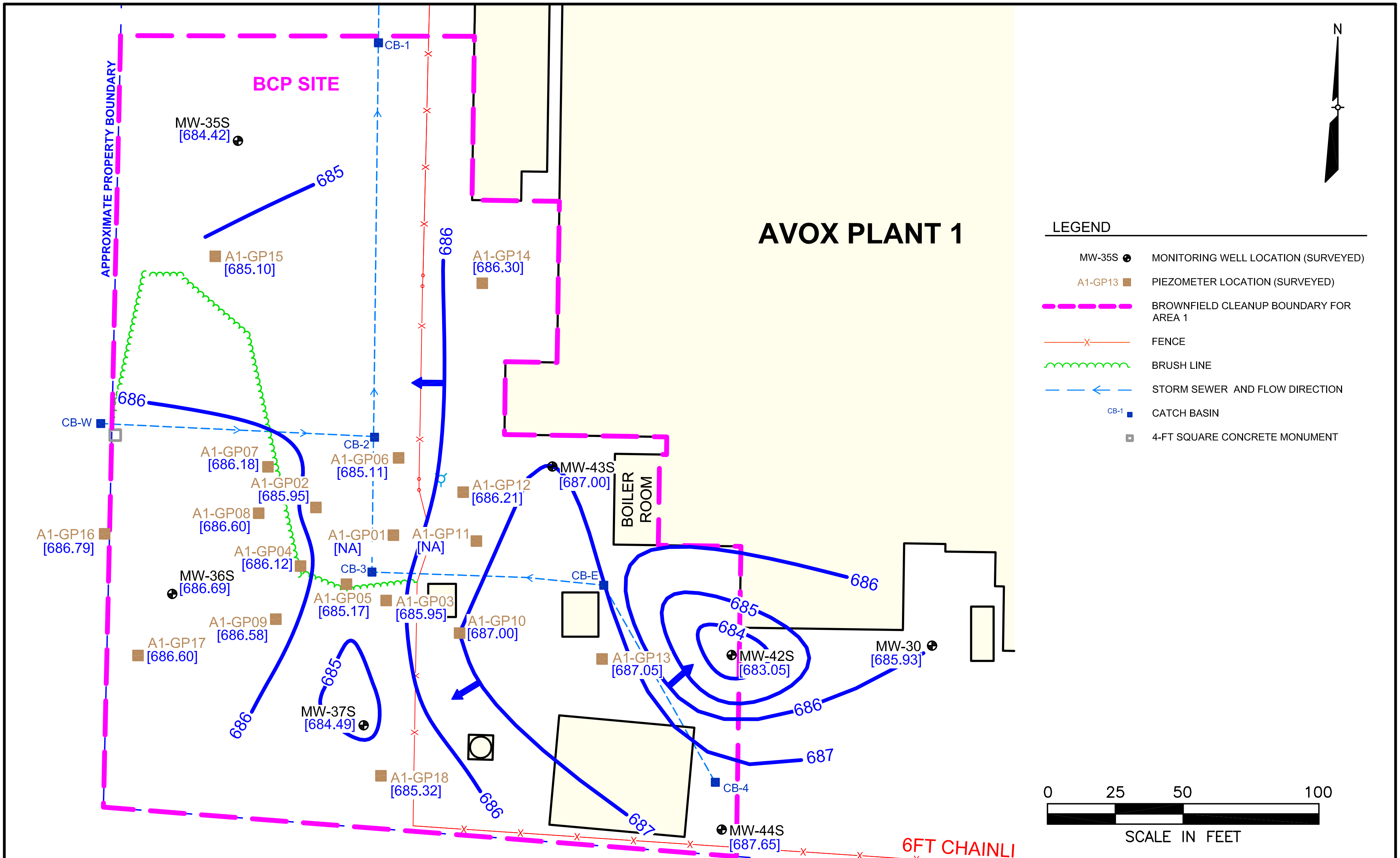
VERTICAL SCALE 2x EXAGGERATION: 0 5 10 20 SCALE IN FEET

AECOM

10 Patewood Drive, Building 6, Suite 500
Greenville, SC 29615
T: (864) 234-3000 F: (864) 234-3069
www.aecom.com

FIGURE 4
GEOLOGIC CROSS-SECTION

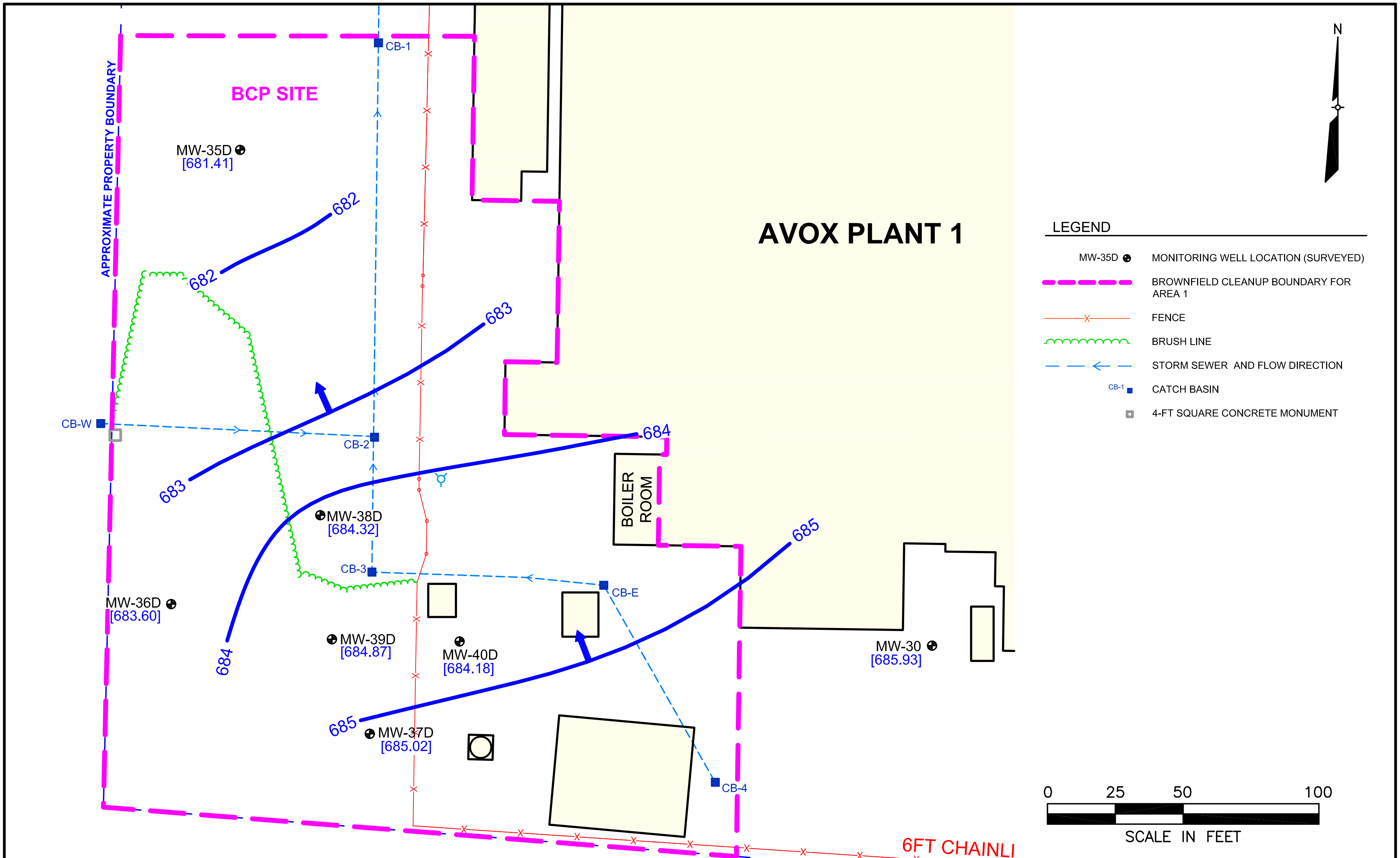
FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK



AECOM

FIGURE 5
SHALLOW OVERBURDEN GROUNDWATER SURFACE ELEVATION CONTOURS
JULY 22, 2015
FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

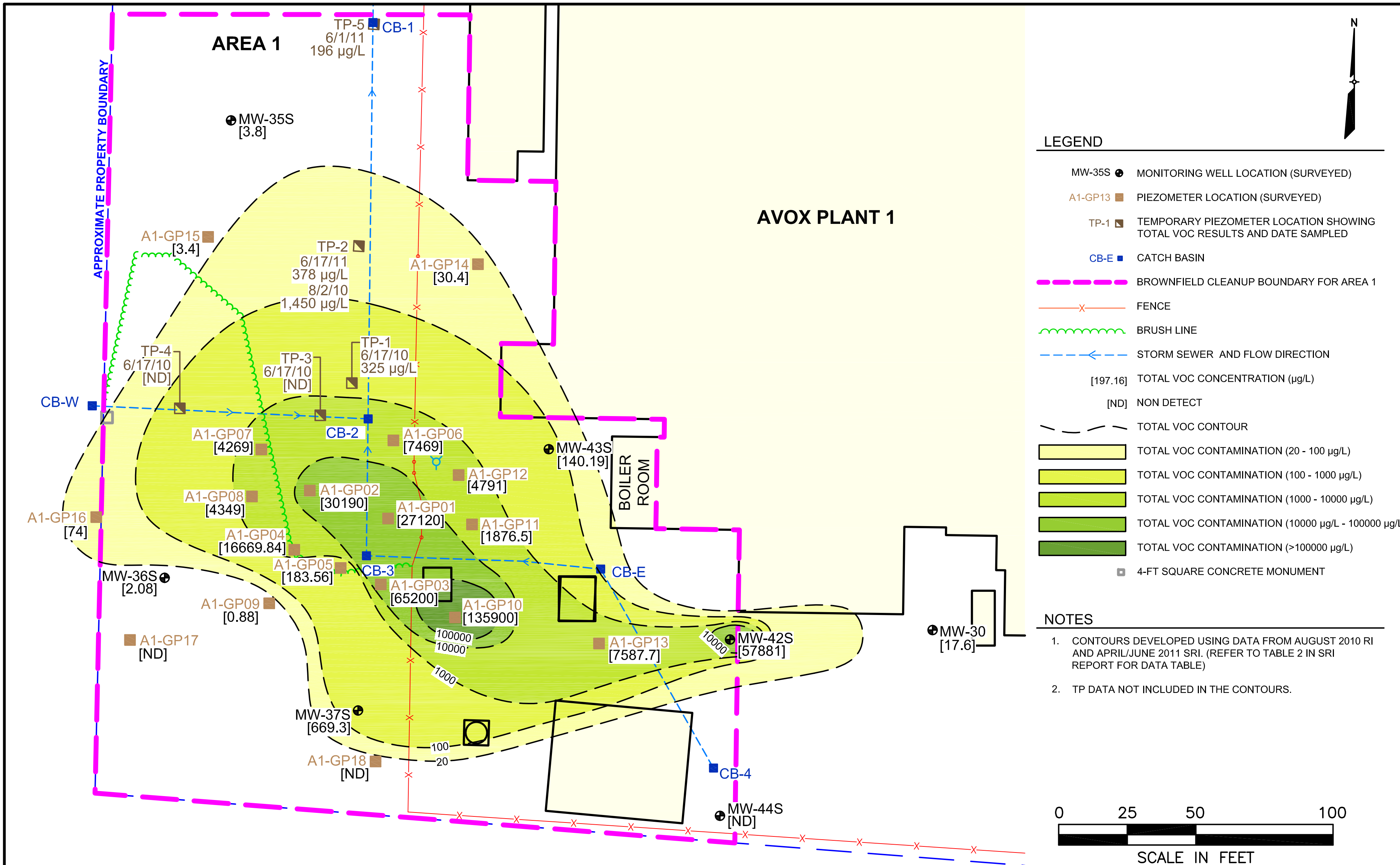
L:\work\60147012\CADD\60155991_127 Shallow Overburden GW Surface Conts_July2015.dwg, 12/8/2015 4:43:38 PM, Splawnm



AECOM

FIGURE 6
DEEP OVERBURDEN GROUNDWATER SURFACE ELEVATION CONTOURS
JULY 22, 2015
FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

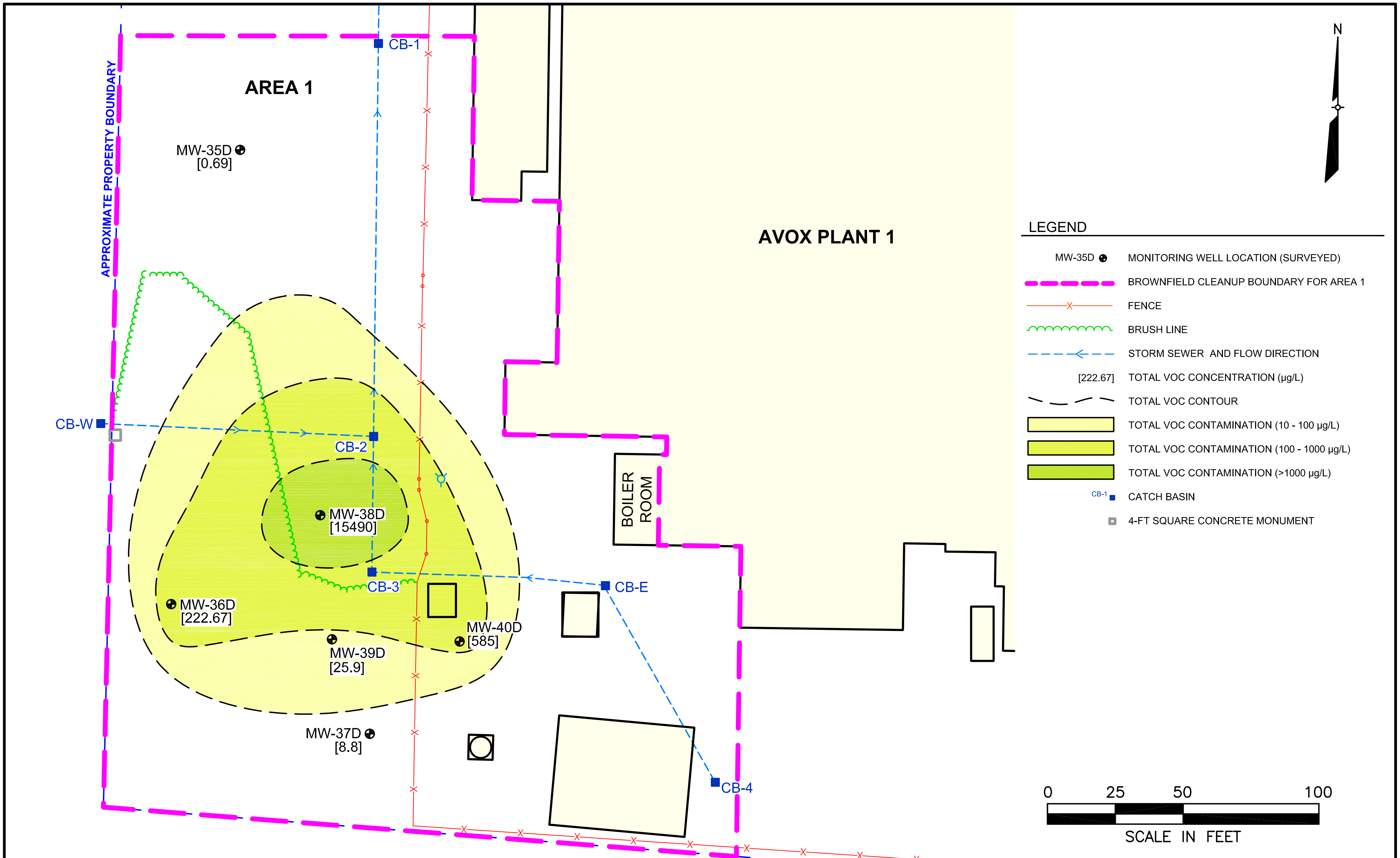
L:\work\60147012\CADD\60155991_128 Deep Overburden GW Surface Conts_July2015.dwg, 12/8/2015 3:55:09 PM, Splawnm



AECOM

FIGURE 7
PRE-INJECTION SHALLOW OVERBURDEN GROUNDWATER TOTAL VOC CONTAMINATE PLUME
FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

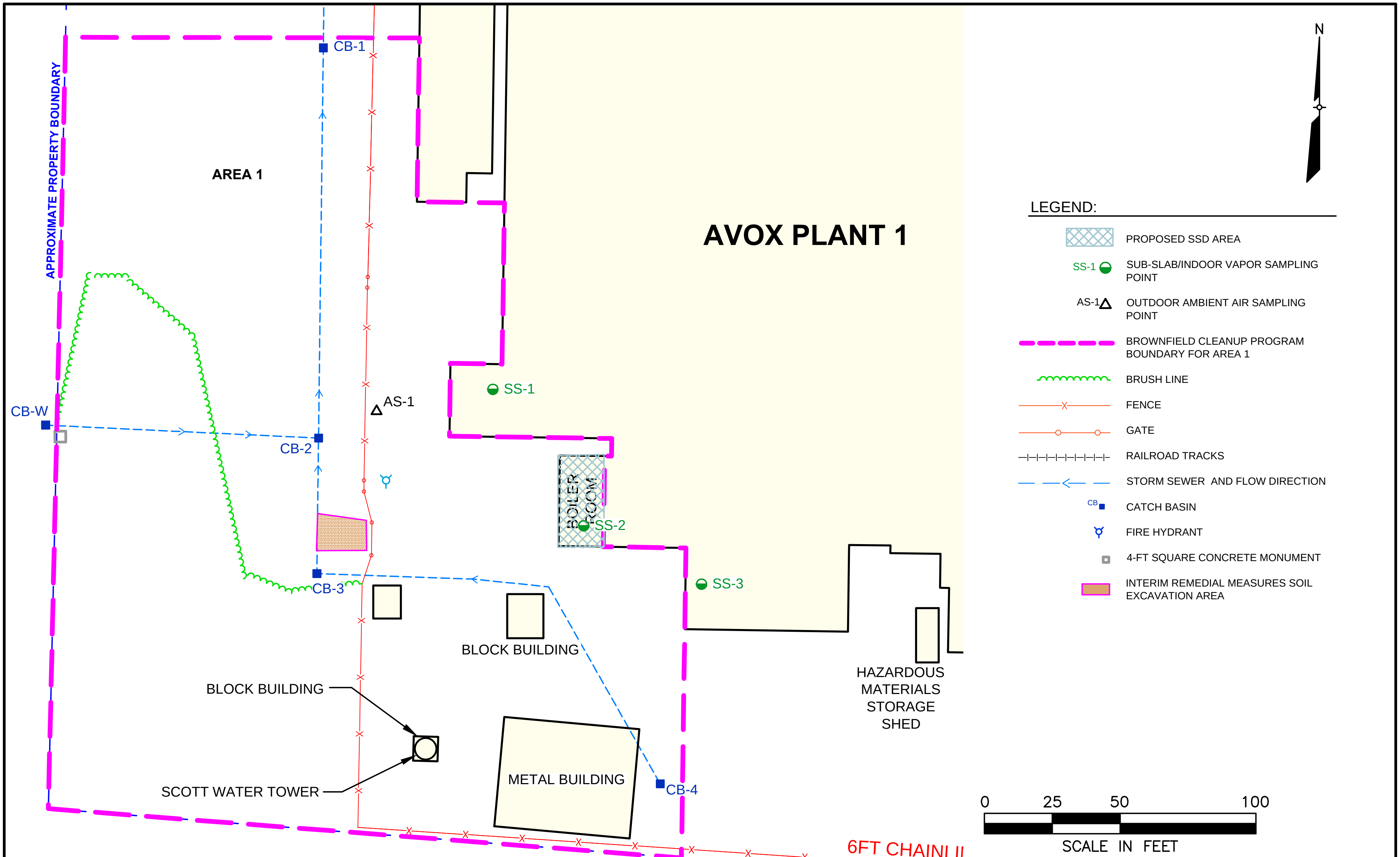
L:\work\60147012\CADD\60155991_130 Total VOC Contaminant Plume_Aug2010.dwg, 12/9/2015 3:05:18 PM, Splawnm



AECOM

FIGURE 8
PRE-INJECTION DEEP OVERBURDEN GROUNDWATER TOTAL VOC CONTAMINATE PLUME
FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_132 Total VOC Contaminant Plume_Deep Overburden GW Data_Aug2010.dwg, 12/9/2015 3:06:21 PM, Splawnm

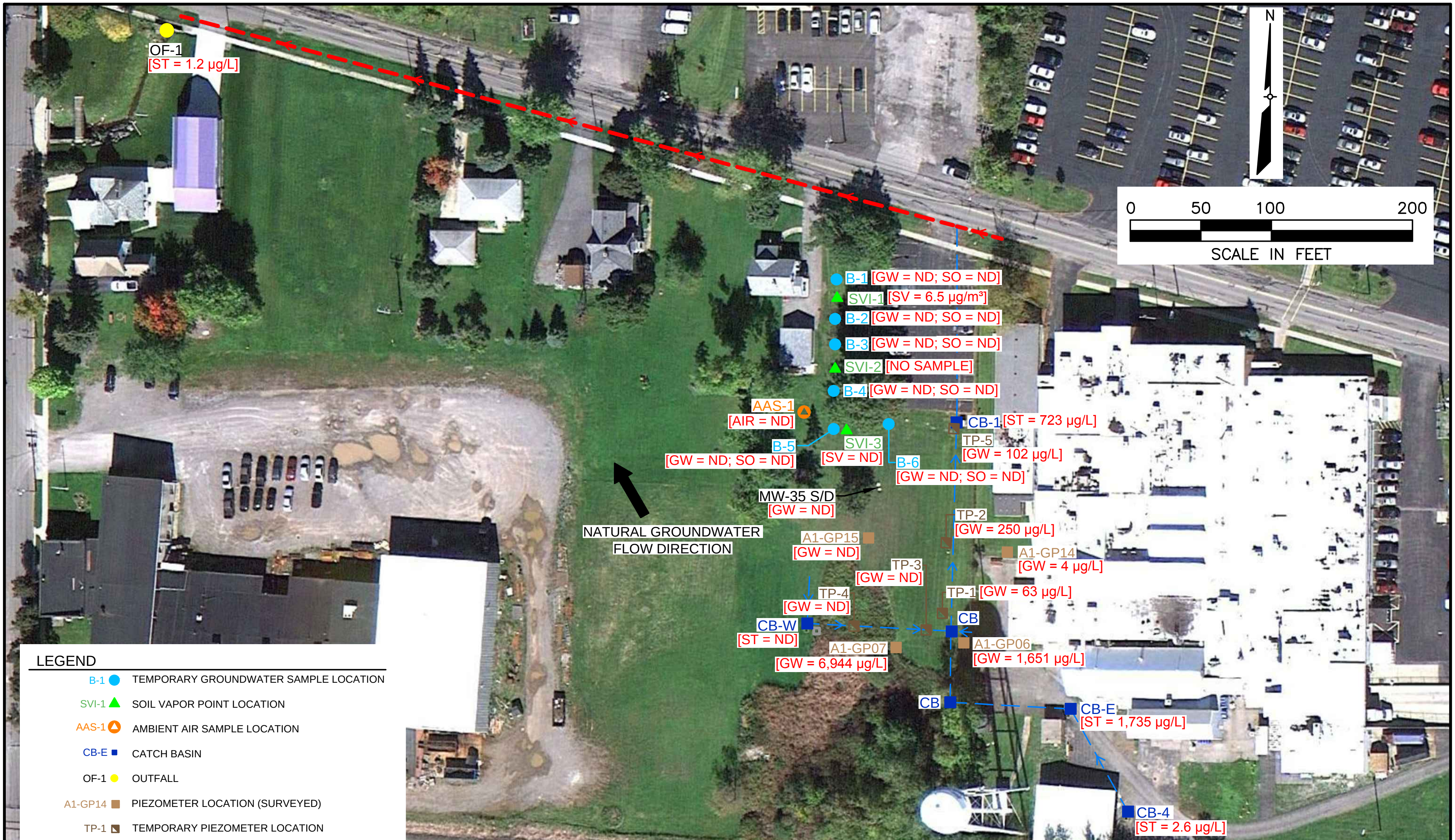


AECOM

FIGURE 9
PROPOSED SUB-SLAB DEPRESSURIZATION SYSTEM AREA

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_141 Proposed Sub-Slab Depressurization System Area.dwg, 12/9/2015 3:16:45 PM, Splawnm



LEGEND

B-1	TEMPORARY GROUNDWATER SAMPLE LOCATION
SVI-1	SOIL VAPOR POINT LOCATION
AAS-1	AMBIENT AIR SAMPLE LOCATION
CB-E	CATCH BASIN
OF-1	OUTFALL
A1-GP14	PIEZOMETER LOCATION (SURVEYED)
TP-1	TEMPORARY PIEZOMETER LOCATION
	STORM SEWER AND FLOW DIRECTION
	ESTIMATED STORM SEWER LOCATION

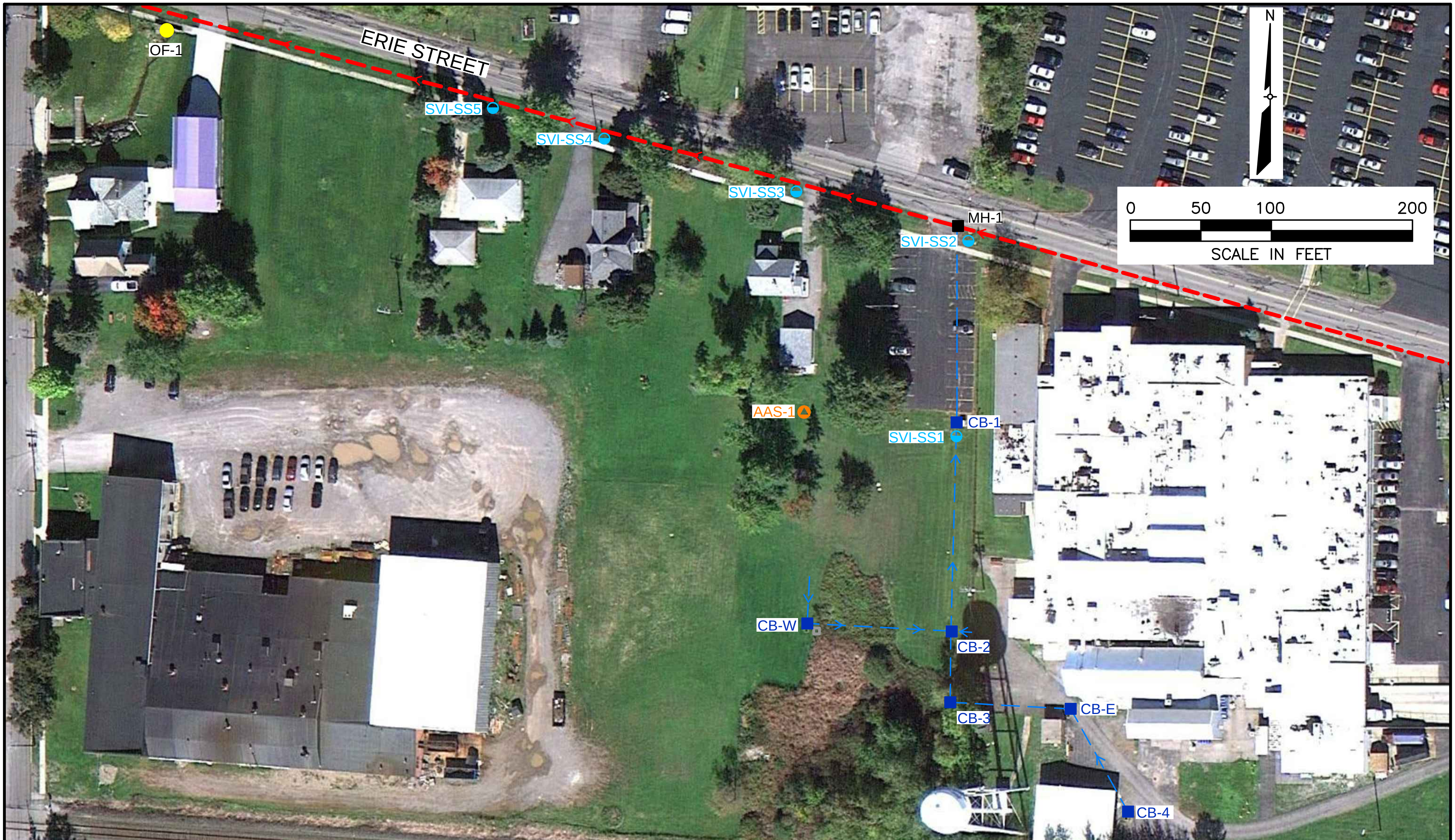
TOTAL VOC CONCENTRATION

ND	NON DETECT
GW	GROUNDWATER IN µg/L
SO	SOIL IN µg/kg
ST	STORMWATER IN µg/L
SV	SOIL VAPOR IN µg/m³

AECOM

FIGURE 10
TOTAL CHLORINATED VOCs IN ALL MEDIA
AREA 1 NORTH

FORMER SCOTT AVIATION FACILITY BCP SITE
LANCASTER, NEW YORK



LEGEND

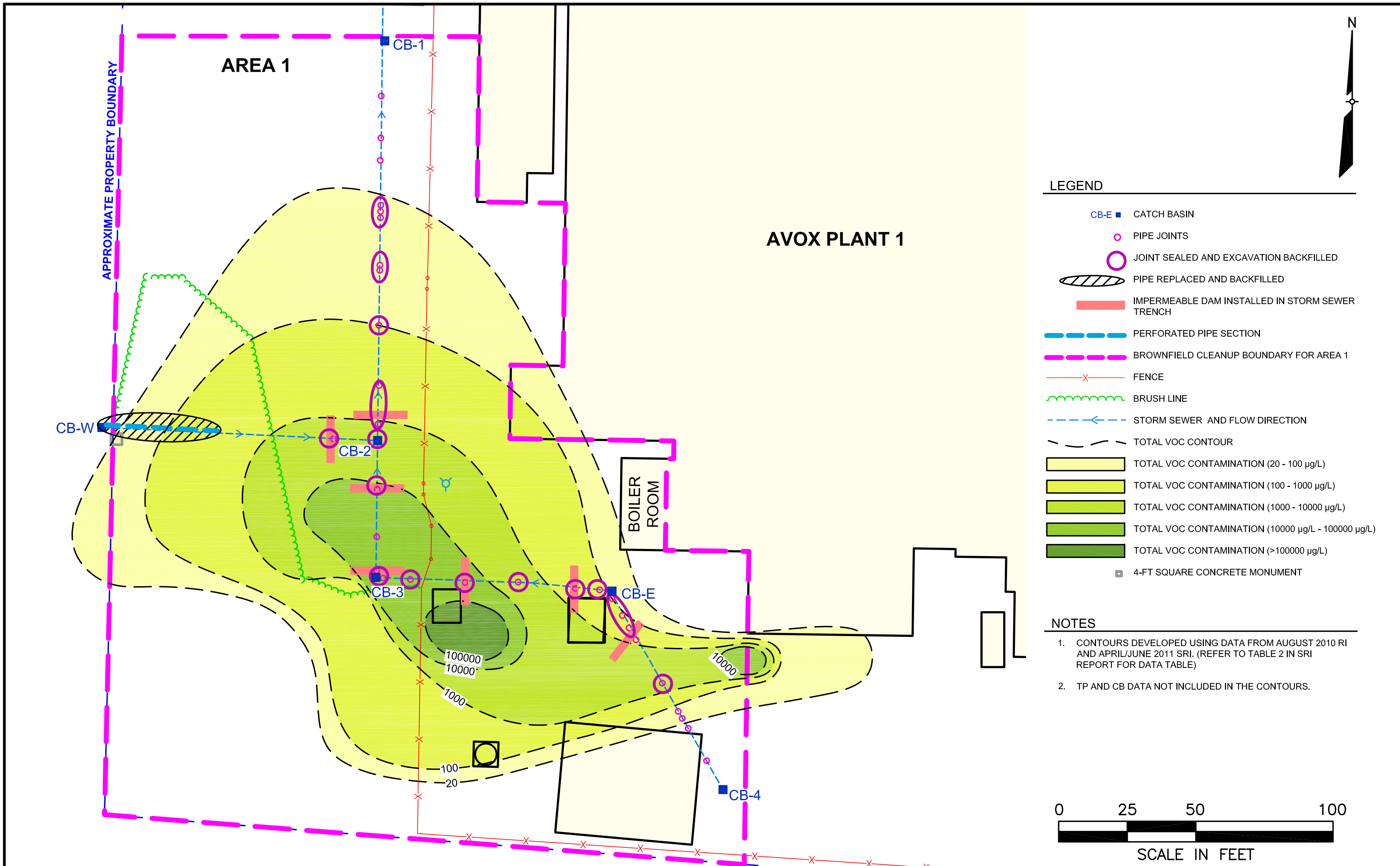
SVI-SS1	SOIL VAPOR POINT SAMPLE LOCATION
AAS-1	AMBIENT AIR SAMPLE LOCATION
CB-E	CATCH BASIN
OF-1	OUTFALL
MH-1	MANHOLE
	STORM SEWER AND FLOW DIRECTION
	ESTIMATED STORM SEWER LOCATION

AECOM

FIGURE 11
SOIL VAPOR POINT SAMPLE LOCATIONS

FORMER SCOTT AVIATION FACILITY BCP SITE
LANCASTER, NEW YORK

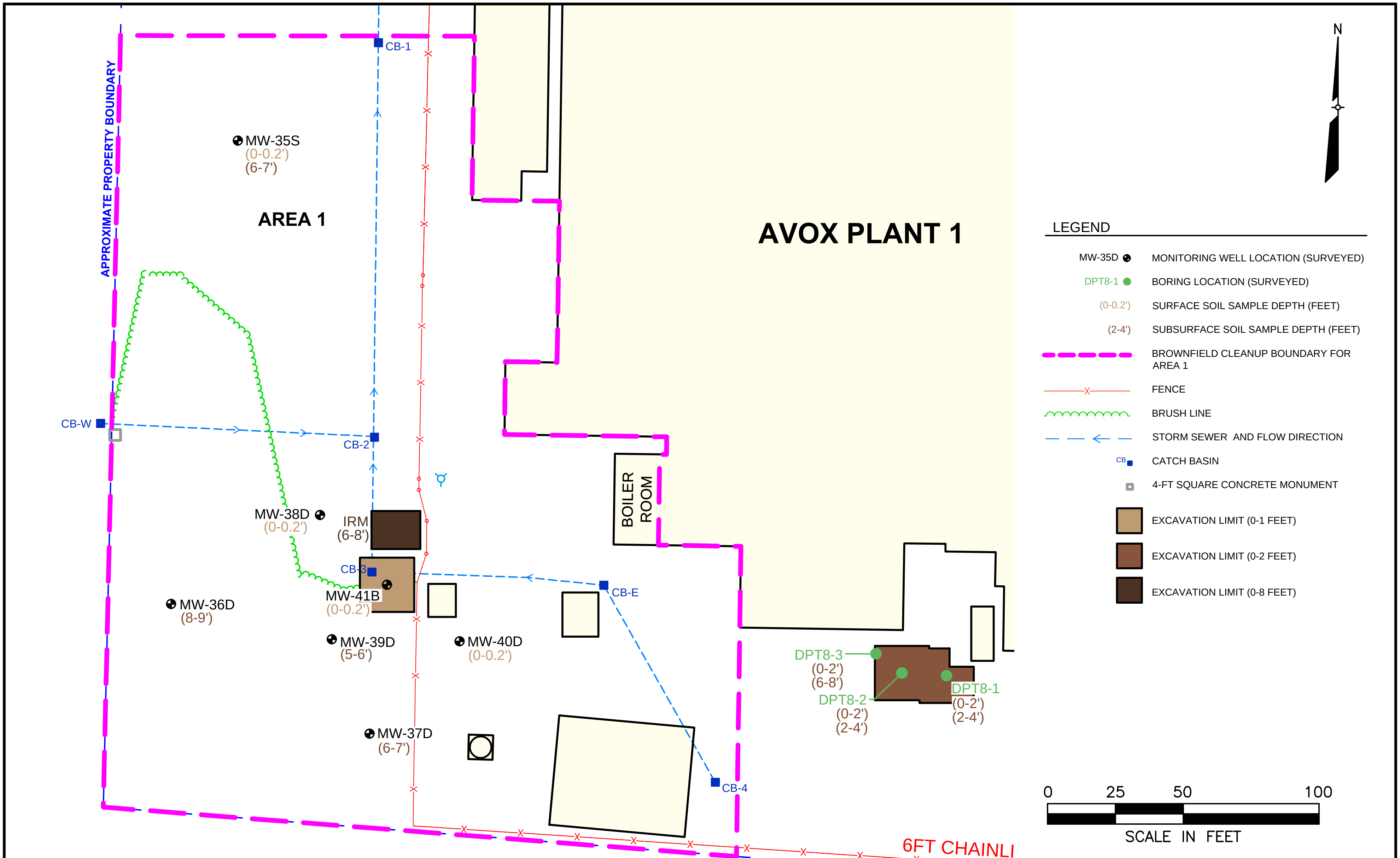
L:\work\60147012\CADD\60155991_116 Soil Vapor Point Sample Locs.dwg, 9/10/2015 6:00:09 PM, Stubblefieldr



AECOM

FIGURE 12
SHALLOW TVOC PLUME WITH
COMPLETED STORM SEWER IRM LOCATIONS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

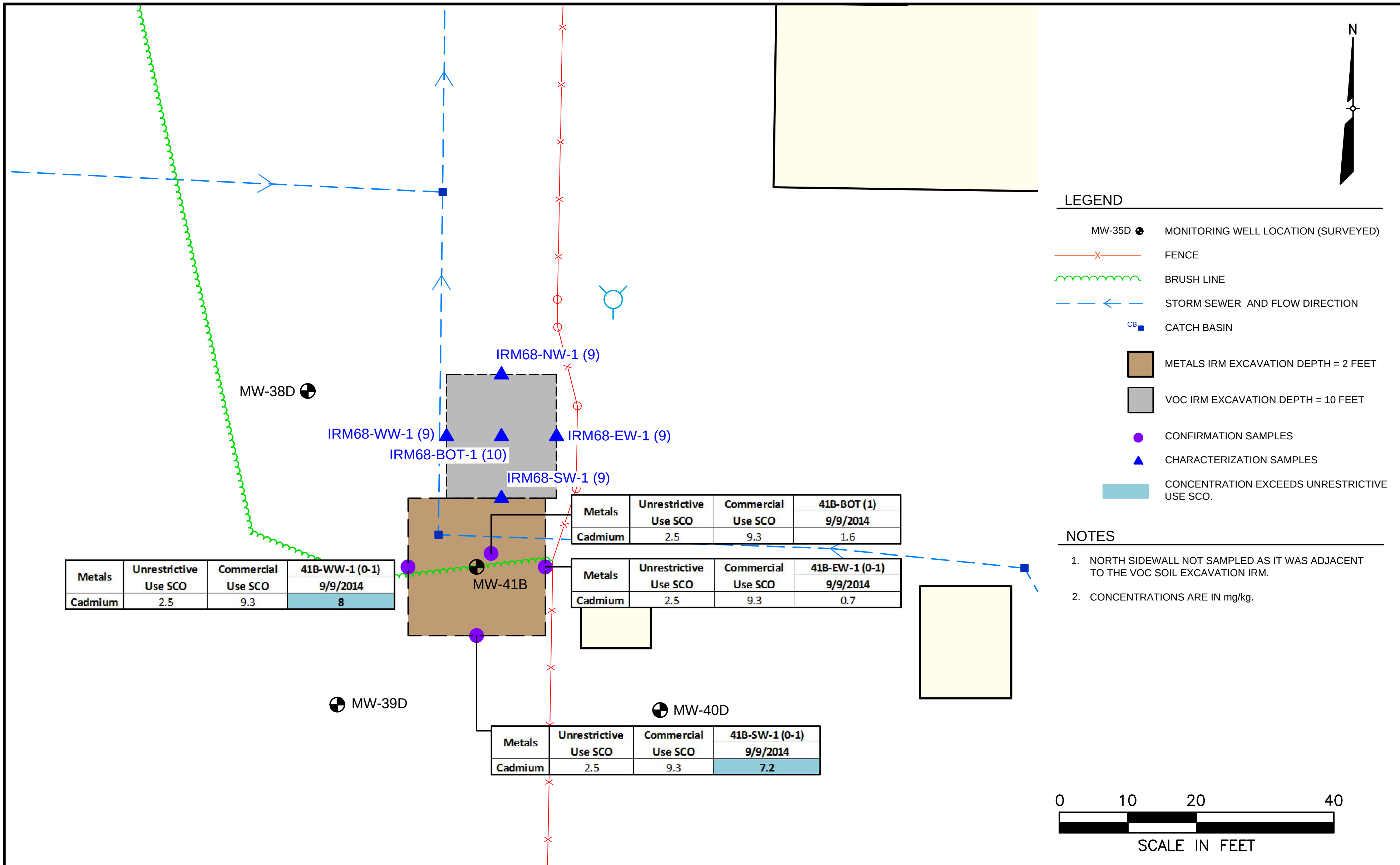


AECOM

FIGURE 13
SURFACE AND SUBSURFACE SOIL RI SAMPLE LOCATION AND EXCAVATION LIMITS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_143 Surface and Subsurface Soil RI Sam Loc and Excavation Limits.dwg, 12/9/2015 3:19:42 PM, Splawnm



Metals	Unrestrictive Use SCO	Commercial Use SCO	41B-BOT (1) 9/9/2014
Cadmium	2.5	9.3	1.6

Metals	Unrestrictive Use SCO	Commercial Use SCO	41B-WW-1 (0-1) 9/9/2014
Cadmium	2.5	9.3	8

Metals	Unrestrictive Use SCO	Commercial Use SCO	41B-EW-1 (0-1) 9/9/2014
Cadmium	2.5	9.3	0.7

Metals	Unrestrictive Use SCO	Commercial Use SCO	41B-SW-1 (0-1) 9/9/2014
Cadmium	2.5	9.3	7.2

LEGEND

- MW-35D — MONITORING WELL LOCATION (SURVEYED)
- FENCE
- BRUSH LINE
- STORM SEWER AND FLOW DIRECTION
- CB — CATCH BASIN
- METALS IRM EXCAVATION DEPTH = 2 FEET
- VOC IRM EXCAVATION DEPTH = 10 FEET
- CONFIRMATION SAMPLES
- CHARACTERIZATION SAMPLES
- CONCENTRATION EXCEEDS UNRESTRICTIVE USE SCO.

NOTES

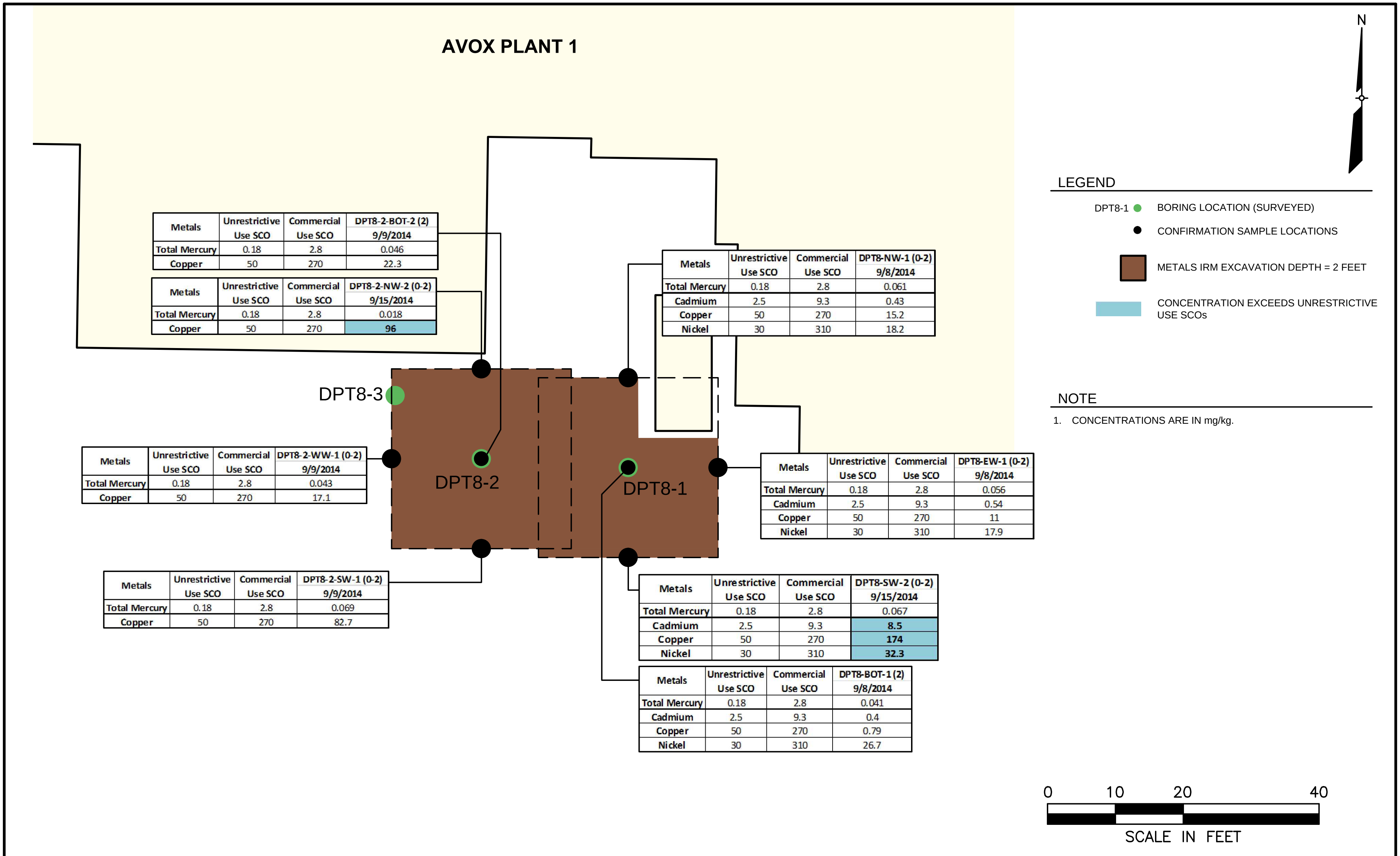
1. NORTH SIDEWALL NOT SAMPLED AS IT WAS ADJACENT TO THE VOC SOIL EXCAVATION IRM.
2. CONCENTRATIONS ARE IN mg/kg.

AECOM

FIGURE 14
MW-41B IRM CONFIRMATION LOCATIONS AND RESULTS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_144 MW41B IRM Confirmation Locs and Results.dwg, 12/9/2015 3:20:48 PM, Splawnm



Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-2-BOT-2 (2) 9/9/2014
Total Mercury	0.18	2.8	0.046
Copper	50	270	22.3

Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-2-NW-2 (0-2) 9/15/2014
Total Mercury	0.18	2.8	0.018
Copper	50	270	**96**

Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-NW-1 (0-2) 9/8/2014
Total Mercury	0.18	2.8	0.061
Cadmium	2.5	9.3	0.43
Copper	50	270	15.2
Nickel	30	310	18.2

Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-2-WW-1 (0-2) 9/9/2014
Total Mercury	0.18	2.8	0.043
Copper	50	270	17.1

Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-EW-1 (0-2) 9/8/2014
Total Mercury	0.18	2.8	0.056
Cadmium	2.5	9.3	0.54
Copper	50	270	11
Nickel	30	310	17.9

Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-2-SW-1 (0-2) 9/9/2014
Total Mercury	0.18	2.8	0.069
Copper	50	270	82.7

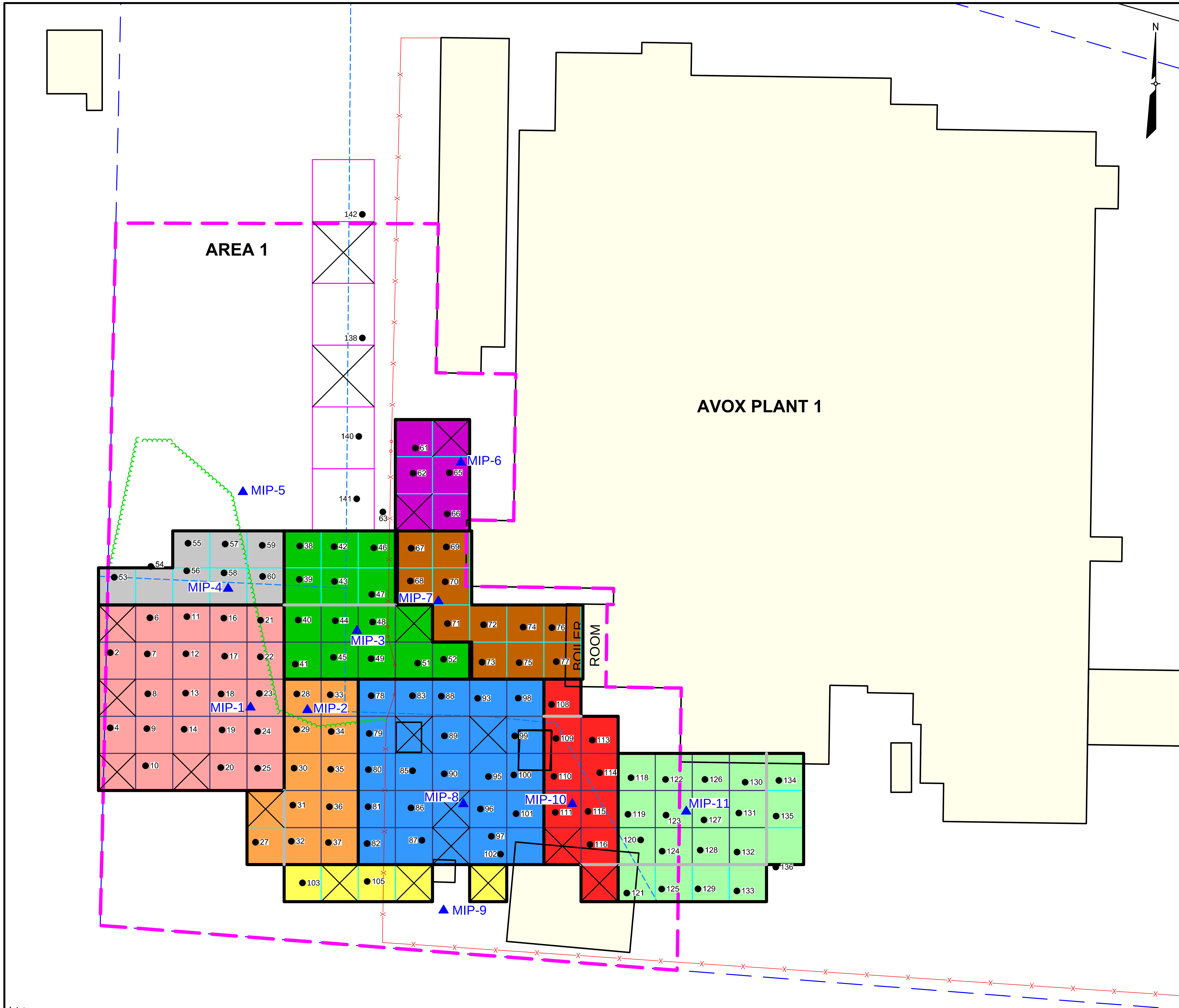
Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-SW-2 (0-2) 9/15/2014
Total Mercury	0.18	2.8	0.067
Cadmium	2.5	9.3	**8.5**
Copper	50	270	**174**
Nickel	30	310	**32.3**

Metals	Unrestrictive Use SCO	Commercial Use SCO	DPT8-BOT-1 (2) 9/8/2014
Total Mercury	0.18	2.8	0.041
Cadmium	2.5	9.3	0.4
Copper	50	270	0.79
Nickel	30	310	26.7

AECOM

FIGURE 15
DPT-8 IRM CONFIRMATION LOCATIONS AND RESULTS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK



LEGEND

- MIP-11 MIPHPT BORING LOCATION ZONE
- BROWNFIELD CLEANUP BOUNDARY FOR AREA 1
- FENCE
- BRUSH LINE
- STORM SEWER AND FLOW DIRECTION
- SEWER LINE INJECTION: 4, 5, 6 ft.
- MIP-1: 4, 6, 7, 10, 11, 12, 13, 14, 15, 16, 18, 20 ft.
- MIP-2: 7, 8, 11, 12, 13, 14, 15, 16, 18, 20 ft.
- MIP-2: 7, 8, 11, 12 ft.
- MIP-3: 5, 7, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20 ft.
- MIP-3: 5, 7, 9, 10, 12, 13, 14 ft.
- MIP-4: 4, 6, 8, 11 ft.
- MIP-6: 3, 4, 5, 6, 7, 8, 9, 10, 12, 14 ft.
- MIP-7: 7, 8, 10 ft.
- MIP- 8: 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 ft.
- MIP-9: 3, 5, 8 ft.
- MIP-10: 8, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20 ft.
- MIP-10: 8, 10, 12, 13, 14 ft.
- MIP-11: 2, 5, 6, 8, 10, 11, 12, 13, 14, 15, 16, 18, 20, 22 ft.
- MIP-11: 2, 5, 6, 8, 10, 11, 12, 13, 14 ft.

0 20 40 80

SCALE IN FEET

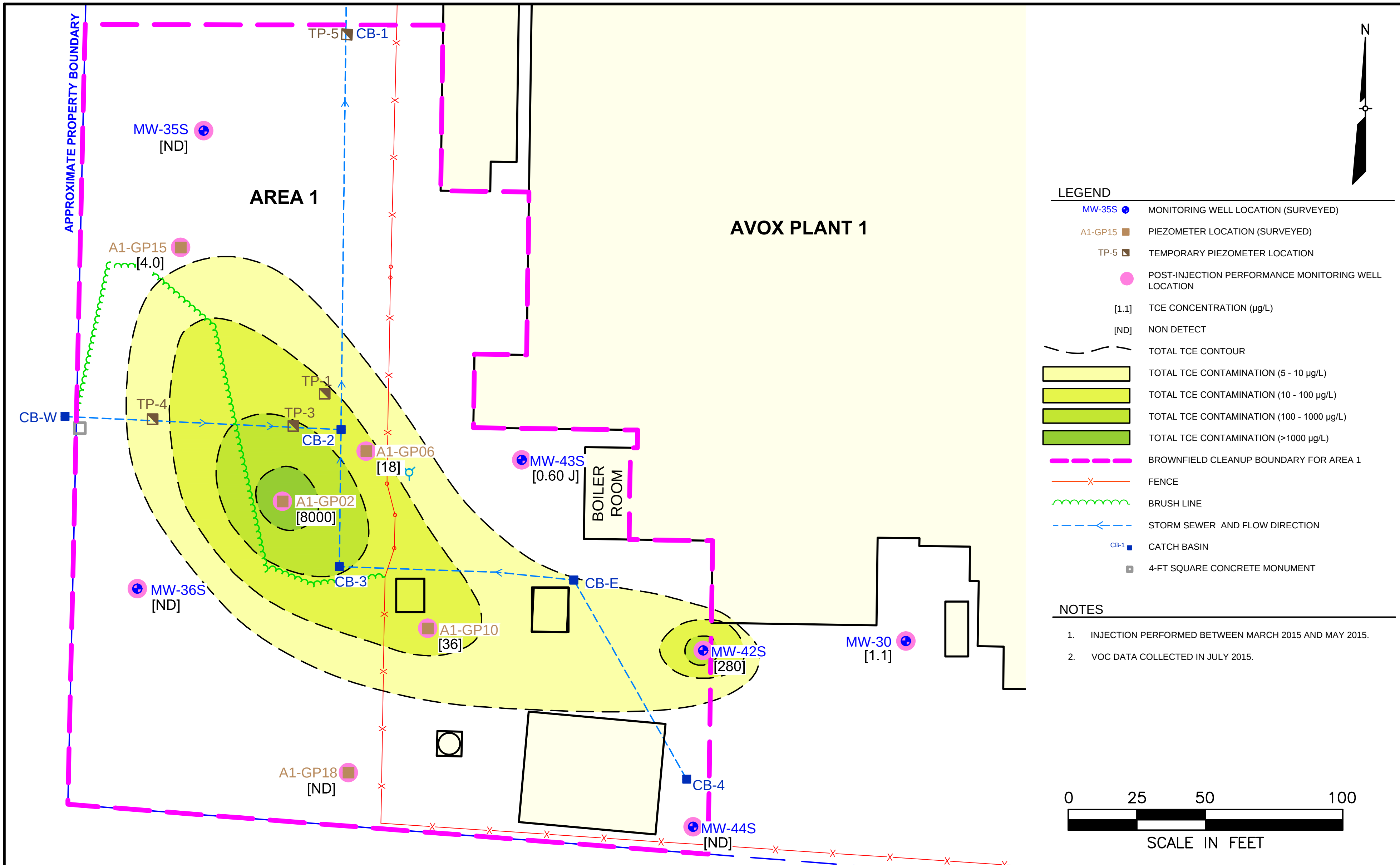
AECOM

10 Patewood Drive, Building 6, Suite 500
Greenville, SC 29615
T: (864) 234-3000 F: (864) 234-3069
www.aecom.com

FIGURE 16
INJECTION ZONE DETAILS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_146 Injection Zone Details.dwg, 12/9/2015 3:22:46 PM, Splawnm



LEGEND

MW-35S	MONITORING WELL LOCATION (SURVEYED)
A1-GP15	PIEZOMETER LOCATION (SURVEYED)
TP-5	TEMPORARY PIEZOMETER LOCATION
	POST-INJECTION PERFORMANCE MONITORING WELL LOCATION
[1.1]	TCE CONCENTRATION (µg/L)
[ND]	NON DETECT
	TOTAL TCE CONTOUR
	TOTAL TCE CONTAMINATION (5 - 10 µg/L)
	TOTAL TCE CONTAMINATION (10 - 100 µg/L)
	TOTAL TCE CONTAMINATION (100 - 1000 µg/L)
	TOTAL TCE CONTAMINATION (>1000 µg/L)
	BROWNFIELD CLEANUP BOUNDARY FOR AREA 1
	FENCE
	BRUSH LINE
	STORM SEWER AND FLOW DIRECTION
CB-1	CATCH BASIN
	4-FT SQUARE CONCRETE MONUMENT

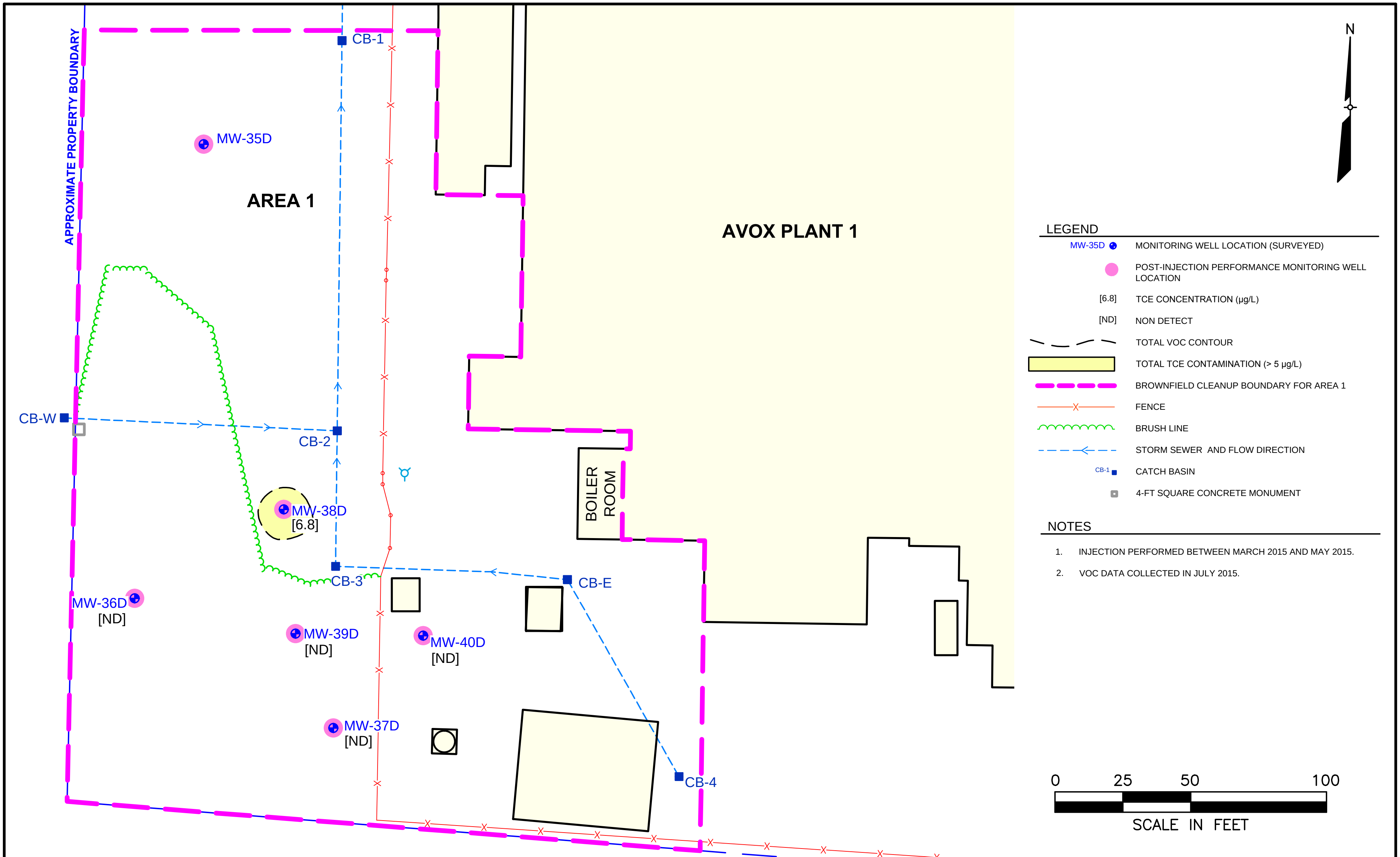
NOTES

1. INJECTION PERFORMED BETWEEN MARCH 2015 AND MAY 2015.
2. VOC DATA COLLECTED IN JULY 2015.

AECOM

FIGURE 17
SHALLOW OVERBURDEN POST-INJECTION PERFORMANCE MONITORING WELL LOCATIONS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

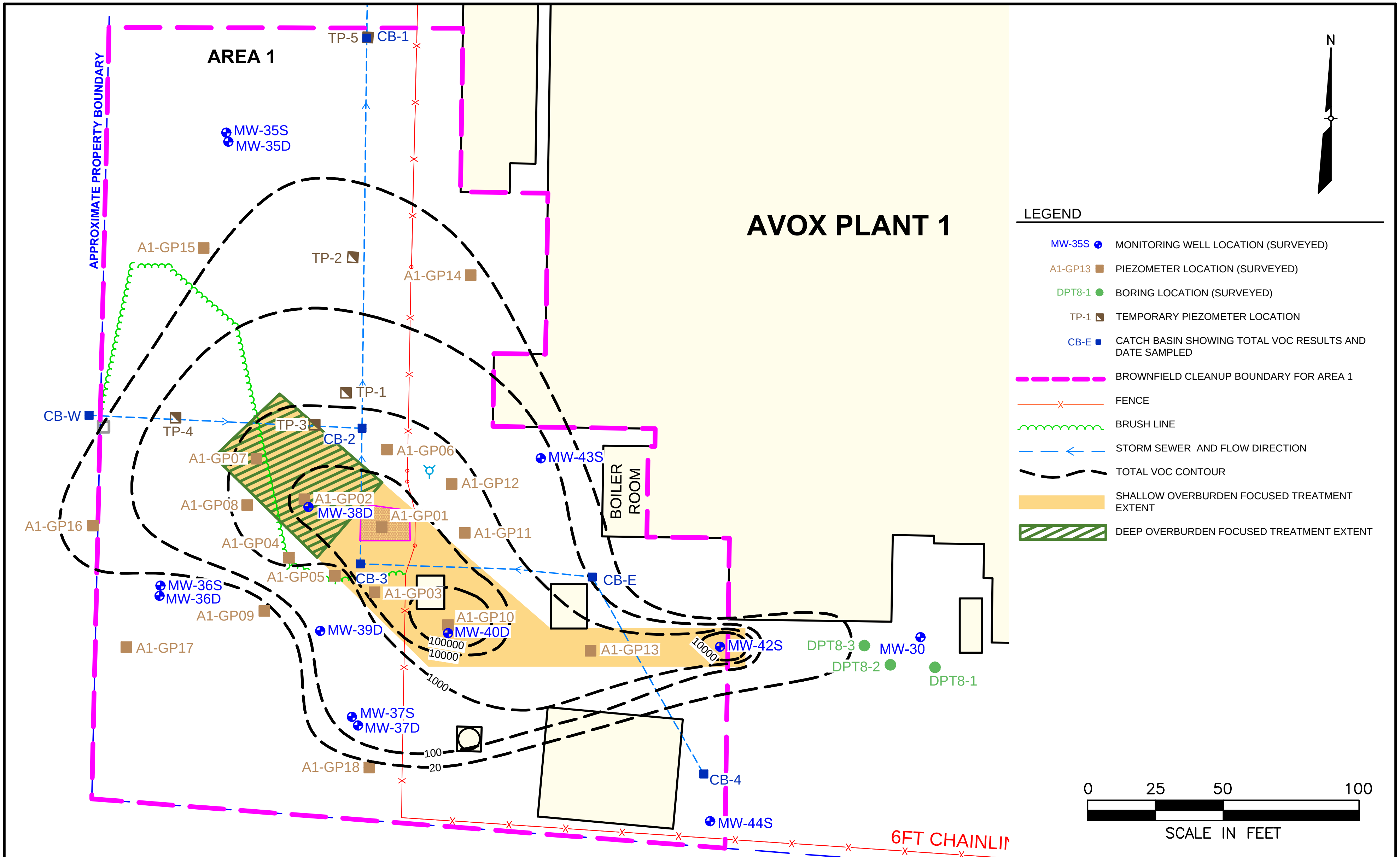


AECOM

FIGURE 18
DEEP OVERBURDEN POST-INJECTION PERFORMANCE MONITORING WELL LOCATIONS

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60155991_148 Deep Overburden Post-Inj Performance MW Locs.dwg, 12/9/2015 3:27:55 PM, Splawnm



AECOM

FIGURE 19
PRELIMINARY GROUNDWATER REMEDIATION TREATMENT AREAS FOR MNA SUBALTERNATIVES

FORMER SCOTT AVIATION FACILITY AREA 1
LANCASTER, NEW YORK

L:\work\60147012\CADD\60147012_149 Preliminary GW Remediation Treatment Areas for MNA Subalts.dwg, 12/9/2015 3:34:19 PM, Splawnm

Tables

Table 1
Groundwater Elevation Data
Scott Aviation BCP Site

Monitoring Point Identification	Top of Casing Elevation	June 16, 2010		August 2, 2010		October 21, 2010		April 7, 2011		June 1, 2011		July 22, 2015	
		Depth to Groundwater (feet from TOC)	Groundwater Elevation (feet AMSL)	Depth to Groundwater (feet from TOC)	Groundwater Elevation (feet AMSL)	Depth to Groundwater (feet from TOC)	Groundwater Elevation (feet AMSL)	Depth to Groundwater (feet from TOC)	Groundwater Elevation (feet AMSL)	Depth to Groundwater (feet from TOC)	Groundwater Elevation (feet AMSL)	Depth to Groundwater (feet from TOC)	Groundwater Elevation (feet AMSL)
Monitoring Wells													
MW-30[1]	689.69	2.92	686.77	3.71	685.98	NA	NA	NA	NA	NA	NA	3.76	685.93
MW-35S	688.56	1.84	686.72	5.70	682.86	10.23	678.33	0.40	688.16	0.60	687.96	4.14	684.42
MW-35D	688.40	8.00	680.40	7.77	680.63	9.17	679.23	9.85	678.55	5.08	683.32	6.99	681.41
MW-36S	689.82	3.00	686.82	5.25	684.57	4.99	684.83	2.83	686.99	3.01	686.81	3.13	686.69
MW-36D	689.66	5.30	684.36	6.08	683.58	7.35	682.31	5.83	683.83	4.65	685.01	6.06	683.60
MW-37S	690.10	3.50	686.60	5.25	684.85	6.16	683.94	2.86	687.24	3.21	686.89	5.61	684.49
MW-37D	690.05	4.20	685.85	5.30	684.75	6.35	683.70	4.31	685.74	3.80	686.25	5.03	685.02
MW-38D	689.66	5.70	683.96	6.28	683.38	7.46	682.20	6.00	683.66	4.81	684.85	5.34	684.32
MW-39D	689.72	3.85	685.87	4.94	684.78	6.05	683.67	3.98	685.74	3.50	686.22	4.85	684.87
MW-40D	689.19	3.33	685.86	4.34	684.85	5.26	683.93	3.38	685.81	2.84	686.35	5.01	684.18
MW-41B	689.78	9.20	680.58	9.50	684.85	10.28	683.93	9.63	680.15	6.96	682.82	8.31	681.47
MW-42S	689.08	NA	NA	NA	NA	NA	NA	10.90	678.18	1.15	687.93	6.03	683.05
MW-43S	689.13	NA	NA	NA	NA	NA	NA	2.60	686.53	2.65	686.48	2.13	687.00
MW-44S	688.96	NA	NA	NA	NA	NA	NA	NA	NA	4.15	684.81	1.31	687.65
A1-GP01-S	689.96	NA	NA	5.55	684.41	6.20	683.76	1.95	688.01	2.98	686.98	NA	NA
A1-GP02-S	689.82	3.05	686.77	5.30	684.52	5.50	684.32	3.20	686.62	3.53	686.29	3.87	685.95
A1-GP03-S	690.70	4.38	686.32	6.54	684.16	7.59	683.11	4.78	685.92	5.10	685.60	4.75	685.95
A1-GP04-S	690.46	3.61	686.85	6.12	684.34	8.80	681.66	3.80	686.66	3.80	686.66	4.34	686.12
A1-GP05-S	690.38	4.80	685.58	6.36	684.02	7.40	682.98	4.55	685.83	4.75	685.63	5.21	685.17
A1-GP06-S	687.71	3.40	684.31	3.20	684.51	3.92	683.79	2.23	685.48	2.10	685.61	2.60	685.11
A1-GP07-S	690.47	3.70	686.77	6.20	684.27	6.86	683.61	3.95	686.52	4.20	686.27	4.29	686.18
A1-GP08-S	689.68	2.75	686.93	5.04	684.64	5.80	683.88	2.70	686.98	2.87	686.81	3.08	686.60
A1-GP09-S	689.36	2.45	686.91	5.80	683.56	7.80	681.56	2.37	686.99	2.55	686.81	2.78	686.58
A1-GP10-S	689.10	1.27	687.83	3.92	685.18	2.40	686.70	2.03	687.07	2.55	686.55	2.10	687.00
A1-GP11-S	689.34	4.04	685.30	4.50	684.84	4.70	684.64	4.25	685.09	4.10	685.24	NA	NA
A1-GP12-S	689.50	2.28	687.22	2.98	686.52	3.32	686.18	2.77	686.73	2.78	686.72	3.29	686.21
A1-GP13-S	689.69	1.34	688.35	3.55	686.14	4.56	685.13	3.25	686.44	3.10	686.59	2.64	687.05
A1-GP14-S	689.43	1.50	687.93	3.04	686.39	2.20	687.23	1.75	687.68	2.60	686.83	3.13	686.30
A1-GP15-S	687.69	0.54	687.15	4.40	683.29	7.64	680.05	0.10	687.59	1.20	686.49	2.59	685.10
A1-GP16-S	689.86	3.00	686.86	5.21	684.65	5.80	684.06	2.89	686.97	3.00	686.86	3.07	686.79
A1-GP17-S	690.11	3.16	686.95	6.40	683.71	5.82	684.29	3.12	686.99	3.28	686.83	3.51	686.60
A1-GP18-S	690.37	6.90	683.47	5.25	685.12	5.25	685.12	3.90	686.47	3.70	686.67	5.05	685.32

Notes:
1. Well is screened across both shallow and deep overburden units.
TOC - Top of Casing
AMSL - Above Mean Sea Level
NA - Not Available
S - well is screened in shallow overburden
D - well is screened in deep overburden
B - well is screened in bedrock

Table 2
Surface Soil VOC Results
Scott Aviation BCP Site

Sample Designation Laboratory Identification Date Sampled	CAS Number	Unrestricted Use	Protection of Public Health Commercial Use	SS-MW-41B2-0-0.2 RTE1487-05 5/27/2010		SS-MW-40D-0-0.2 RTE1487-06 5/27/2010		SS-MW-38D-0-0.2 RTE1487-07 5/27/2010		SS-DPT8-2C-(0-0.2) RTF0541-01 6/2/2010	
BTEX Compounds (mg/Kg)											
Benzene	71-43-2	0.06	44	0.00046	UJ	0.00029	U	0.00032	U	0.00028	U
Ethylbenzene	100-41-4	1	390	0.00065	UJ	0.00041	U	0.00045	U	0.00039	U
Toluene	108-88-3	0.7	500	0.00071	UJ	0.00044	U	0.00049	U	0.00043	U
Xylene (mixed)	1330-20-7	0.26	500	0.0016	UJ	0.00099	U	0.0011	U	0.00095	U
Total BTEX (mg/Kg)	NA	NL	NL	---	U	---	U	---	U	---	U
Other VOCs (mg/Kg)											
1,1,1-Trichloroethane	71-55-6	0.68	500	0.00068	UJ	0.00043	U	0.00047	U	0.00041	U
1,1,2,2-Tetrachloroethane	79-34-5	NL	NL	0.0015	UJ	0.00095	U	0.0011	U	0.00092	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NL	NL	0.0021	UJ	0.0013	U	0.0015	U	0.0013	U
1,1,2-Trichloroethane	79-00-5	NL	NL	0.0012	UJ	0.00076	U	0.00085	U	0.00073	U
1,1-Dichloroethane	75-34-3	0.27	240	0.0011	UJ	0.00072	U	0.00079	U	0.00069	U
1,1-Dichloroethene	75-35-4	0.33	500	0.0012	UJ	0.00072	U	0.0008	U	0.00069	U
1,2,4-trichlorobenzene	120-82-1	NL	NL	0.00057	UJ	0.00036	U	0.0004	U	0.00034	U
1,2-Dibromo-3-chloropropane	96-12-8	NL	NL	0.0047	UJ	0.0029	U	0.0033	U	0.0028	U
1,2-Dibromoethane	106-93-4	NL	NL	0.0012	UJ	0.00076	U	0.00084	U	0.00073	U
1,2-Dichlorobenzene	95-50-1	1.1	500	0.00074	UJ	0.00046	U	0.00051	U	0.00044	U
1,2-Dichloroethane	107-06-2	0.02	30	0.00047	UJ	0.0003	U	0.00033	U	0.00028	U
1-3 dichloropropane	78-87-5	NL	NL	0.0047	UJ	0.0029	U	0.0033	U	0.0028	U
1,3-Dichlorobenzene	541-73-1	2.4	280	0.00048	UJ	0.0003	U	0.00033	U	0.00029	U
1,4-Dichlorobenzene	106-46-7	1.8	130	0.0013	UJ	0.00082	U	0.00091	U	0.00079	U
Methyl ethyl ketone	78-93-3	0.12	500	0.0034	UJ	0.0022	U	0.0024	U	0.0021	U
2-Hexanone	591-78-6	NL	NL	0.0047	UJ	0.0029	U	0.0033	U	0.0028	U
4-Methyl-2-Pentanone	108-10-1	NL	NL	0.0031	UJ	0.0019	U	0.0021	U	0.0019	U
Acetone	67-64-1	0.05	500	0.0079	UJ	0.005	U	0.0055	U	0.0048	U
Bromodichloromethane	75-27-4	NL	NL	0.0013	UJ	0.00079	U	0.00087	U	0.00076	U
Bromoform	75-25-2	NL	NL	0.0047	UJ	0.0029	U	0.0033	U	0.0028	U
Bromomethane	74-83-9	NL	NL	0.00085	UJ	0.00053	U	0.00059	U	0.00051	U
Carbon Disulfide	75-15-0	NL	NL	0.0047	UJ	0.0029	U	0.0033	U	0.0028	U
Carbon tetrachloride	56-23-5	0.76	22	0.00091	UJ	0.00057	U	0.00063	U	0.00055	U
Chlorobenzene	108-90-7	1.1	500	0.0012	UJ	0.00078	U	0.00086	U	0.00075	U
Chloroethane	75-00-3	NL	NL	0.0021	UJ	0.0013	U	0.0015	U	0.0013	U
Chloroform	67-66-3	0.37	350	0.00058	UJ	0.00036	U	0.0004	U	0.00035	U
Chloromethane	74-87-3	NL	NL	0.00057	UJ	0.00036	U	0.00039	U	0.00034	U
cis -1,2-Dichloroethene	156-59-2	0.25	500	0.0012	UJ	0.00075	U	0.00083	U	0.00072	U
cis-1,3-Dichloropropene	10061-01-5	NL	NL	0.0014	UJ	0.00085	U	0.00094	U	0.00081	U
Cyclohexane	110-82-7	NL	NL	0.0013	UJ	0.00082	U	0.00091	U	0.00079	U
Dibromochloromethane	124-48-1	NL	NL	0.0012	UJ	0.00075	U	0.00083	U	0.00072	U
Dichlorodifluoromethane	75-71-8	NL	NL	0.00078	UJ	0.00049	U	0.00054	U	0.00047	U
Isopropylbenzene	98-82-8	NL	NL	0.0014	UJ	0.00089	U	0.00098	U	0.00085	U
Methyl acetate	79-20-9	NL	NL	0.0018	UJ	0.0011	U	0.0012	U	0.0011	U
Methyl tert-butyl ether	1634-04-4	0.93	500	0.00093	UJ	0.00058	U	0.00064	U	0.00055	U
Methylcyclohexane	108-87-2	NL	NL	0.0014	UJ	0.00089	U	0.00099	U	0.00086	U
Methylene chloride	75-09-2	0.05	500	0.013	UJ	0.0027	U	0.0065	U	0.019	U
Styrene	100-42-5	NL	NL	0.00047	UJ	0.00029	U	0.00033	U	0.00028	U
Tetrachloroethene	127-18-4	1.3	150	0.0094	UJ	0.0059	U	0.0065	U	0.00076	U
trans-1,2-Dichloroethene	156-60-5	0.19	500	0.00097	UJ	0.00061	U	0.00067	U	0.00058	U
trans-1,3-Dichloropropene	10061-02-6	NL	NL	0.0041	UJ	0.0026	U	0.0029	U	0.0025	U
Trichloroethene	79-01-6	0.47	200	0.0021	UJ	0.0013	U	0.0014	U	0.0012	U
Trichlorofluoromethane	75-69-4	NL	NL	0.00089	UJ	0.00056	U	0.00062	U	0.00053	U
Vinyl chloride	75-01-4	0.02	13	0.0011	UJ	0.00072	U	0.00079	U	0.00069	U
Total VOCs (mg/Kg) (Note 1)	NA	NL	NL	---	U	---	U	---	U	---	U

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the Unrestricted Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.
Note 1 - Total VOCs includes BTEX compounds.

Table 3
Surface Soil SVOC Results
Scott Aviation BCP Site

Sample Designation / Laboratory Identification / Date Sampled	CAS Number	Unrestricted Use	Protection of Public Health Commercial Use	SS-MW-35S-0-0.2 RTE1487-01 5/26/2010		SS-MW-41B2-0-0.2 RTE1487-05 5/27/2010		SS-MW-40D-0-0.2 RTE1487-06 5/27/2010		SS-MW-38D-0-0.2 RTE1487-07 5/27/2010		SS-DPT8-2C-(0-0.2) RTF0541-01 6/2/2010	
PAH Compounds (mg/Kg)													
2-Methylnaphthalene	91-57-6	NL	NL	0.003	U	0.02	UJ	0.012	U	0.0027	U	0.047	U
Acenaphthene	83-32-9	20	500	0.003	U	0.39	J	0.14	J	0.021	J	0.21	J
Acenaphthylene	208-96-8	100	500	0.027	J	0.014	UJ	0.096	J	0.0018	U	0.031	U
Anthracene	120-12-7	100	500	0.06	J	1	J	0.44	J	0.055	J	0.53	J
Benzo(a)anthracene	56-55-3	1	5.6	0.24	J	**3.3**	**J**	**1.6**		0.24		**2.4**	**J**
Benzo(a)pyrene	50-32-8	1	1	0.24	J	**3.7**	**J**	**1.8**		0.27		**2.5**	**J**
Benzo(b)fluoranthene	205-99-2	1	5.6	0.28		**4.6**	**J**	**1.9**		0.3		**2.9**	**J**
Benzo(ghi)perylene	191-24-2	100	500	0.16	J	2.7	J	1.2		0.19	J	1.7	J
Benzo(k)fluoranthene	207-08-9	0.8	56	0.1	J	1.3	J	0.81	J	0.14	J	1.2	J
Chrysene	218-01-9	1	56	0.23	J	**3.4**	**J**	**1.6**		0.26		**2.2**	**J**
Dibenz(a,h)anthracene	53-70-3	0.33	0.56	0.036	J	**0.58**	**J**	0.29	J	0.042	J	0.4	J
Fluoranthene	206-44-0	100	500	0.51		7.6	J	3.2		0.52		4.7	
Fluorene	86-73-7	30	500	0.0058	U	0.42	J	0.17	J	0.022	J	0.17	J
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	5.6	0.14	J	**2.2**	**J**	**1.1**		0.16	J	1.4	J
Naphthalene	91-20-3	12	500	0.0042	U	0.028	UJ	0.016	U	0.0037	U	0.064	U
Phenanthrene	85-01-8	100	500	0.27		4.7	J	1.7		0.27		2.8	J
Pyrene	129-00-0	100	500	0.4		6	J	2.5		0.41		4.2	
Total PAHs (mg/Kg)	NA	NL	NL	2.693		41.89		18.546		2.9		27.31	
Other SVOCs (mg/Kg)													
1,1'-Biphenyl	92-52-4	NL	NL	0.016	U	0.1	UJ	0.062	U	0.014	U	0.24	U
2,2'-oxybis(1-Chloropropane)	108-60-1	NL	NL	0.026	U	0.17	UJ	0.1	U	0.023	U	0.4	U
2,4,5-Trichlorophenol	95-95-4	NL	NL	0.055	U	0.36	UJ	0.22	U	0.049	U	0.84	U
2,4,6-Trichlorophenol	88-06-2	NL	NL	0.017	U	0.11	UJ	0.065	U	0.015	U	0.25	U
2,4-Dichlorophenol	120-83-2	NL	NL	0.013	U	0.087	UJ	0.052	U	0.012	U	0.2	U
2,4-Dimethylphenol	105-67-9	NL	NL	0.068	U	0.45	UJ	0.27	U	0.06	U	1	U
2,4-Dinitrophenol	51-28-5	NL	NL	0.088	U	0.58	UJ	0.35	U	0.078	U	1.3	U
2,4-Dinitrotoluene	121-14-2	NL	NL	0.039	U	0.26	UJ	0.15	U	0.035	U	0.6	U
2,6-Dinitrotoluene	606-20-2	NL	NL	0.062	U	0.41	UJ	0.24	U	0.055	U	0.94	U
2-Chloronaphthalene	91-58-7	NL	NL	0.017	U	0.11	UJ	0.066	U	0.015	U	0.26	U
2-Chlorophenol	95-57-8	NL	NL	0.013	U	0.085	UJ	0.05	U	0.011	U	0.2	U
2-Methylphenol (o-cresol)	95-48-7	0.33	500	0.0077	U	0.051	UJ	0.03	U	0.0069	U	0.12	U
2-Nitroaniline	88-74-4	NL	NL	0.081	U	0.53	UJ	0.32	U	0.072	U	1.2	U
2-Nitrophenol	88-75-5	NL	NL	0.011	U	0.076	UJ	0.045	U	0.01	U	0.18	U
3,3'-Dichlorobenzidine	91-94-1	NL	NL	0.22	U	1.5	UJ	0.87	U	0.2	U	3.4	U
3-Nitroaniline	99-09-2	NL	NL	0.058	U	0.38	UJ	0.23	U	0.051	U	0.88	U
4,6-Dinitro-2-methylphenol	534-52-1	NL	NL	0.087	U	0.58	UJ	0.34	U	0.077	U	1.3	U
4-Bromophenyl phenyl ether	101-55-3	NL	NL	0.08	U	0.53	UJ	0.32	U	0.071	U	1.2	U
4-Chloro-3-methylphenol	59-50-7	NL	NL	0.01	U	0.069	UJ	0.041	U	0.0092	U	0.16	U
4-Chloroaniline	106-47-8	NL	NL	0.074	U	0.49	UJ	0.29	U	0.065	U	1.1	U
4-Chlorophenyl phenyl ether	7005-72-3	NL	NL	0.0054	U	0.036	UJ	0.021	U	0.0048	U	0.082	U
4-Methylphenol (p-cresol)	106-44-5	0.33	500	0.014	U	0.093	UJ	0.055	U	0.012	U	0.21	U
4-Nitroaniline	100-01-6	NL	NL	0.028	U	0.19	UJ	0.11	U	0.025	U	0.43	U
4-Nitrophenol	100-02-7	NL	NL	0.061	U	0.4	UJ	0.24	U	0.054	U	0.93	U
Acetophenone	98-86-2	NL	NL	0.013	U	0.086	UJ	0.051	U	0.011	U	0.2	U
Atrazine	1912-24-9	NL	NL	0.011	U	0.074	UJ	0.044	U	0.0099	U	0.17	U
Benzaldehyde	100-52-7	NL	NL	0.028	U	0.18	UJ	0.11	U	0.024	U	0.42	U
bis(2-Chloroethoxy)methane	111-91-1	NL	NL	0.014	U	0.091	UJ	0.054	U	0.012	U	0.21	U
bis(2-Chloroethyl) ether	111-44-4	NL	NL	0.022	U	0.14	UJ	0.085	U	0.019	U	0.33	U
bis(2-Ethylhexyl) phthalate	117-81-7	NL	NL	0.081	U	0.54	UJ	0.32	U	0.072	U	1.2	U
Butyl benzyl phthalate	85-68-7	NL	NL	0.068	U	0.45	UJ	0.27	U	0.06	U	1	U
Caprolactam	105-60-2	NL	NL	0.11	U	0.72	UJ	0.43	U	0.096	U	1.7	U
Carbazole	86-74-8	NL	NL	0.019	J	0.7	J	0.25	J	0.038	J	0.32	J
Dibenzofuran	132-64-9	7	350	0.0026	U	0.19	J	0.01	U	0.0023	U	0.04	U
Diethyl phthalate	131-11-3	NL	NL	0.0076	U	0.05	UJ	0.03	U	0.0067	U	0.12	U
Dimethyl phthalate	84-66-2	NL	NL	0.0066	U	0.043	UJ	0.026	U	0.0058	U	0.1	U
Di-n-butyl phthalate	84-74-2	NL	NL	0.087	U	0.58	UJ	0.34	U	0.077	U	1.3	U
Di-n-octyl phthalate	117-84-0	NL	NL	0.0059	U	0.039	UJ	0.023	U	0.0052	U	0.09	U
Hexachlorobenzene	118-74-1	0.33	6	0.012	U	0.083	UJ	0.049	U	0.011	U	0.19	U
Hexachlorobutadiene	87-68-3	NL	NL	0.013	U	0.085	UJ	0.051	U	0.011	U	0.2	U
Hexachlorocyclopentadiene	77-47-4	NL	NL	0.076	U	0.5	UJ	0.3	U	0.067	U	1.2	U
Hexachloroethane	67-72-1	NL	NL	0.019	U	0.13	UJ	0.077	U	0.017	U	0.3	U
Isophorone	78-59-1	NL	NL	0.013	U	0.083	UJ	0.049	U	0.011	U	0.19	U
Nitrobenzene	98-95-3	NL	NL	0.011	U	0.074	UJ	0.044	U	0.0099	U	0.17	U
N-Nitrosodi-n-propylamine	621-64-7	NL	NL	0.02	U	0.13	UJ	0.078	U	0.018	U	0.3	U
N-Nitrosodiphenylamine	86-30-6	NL	NL	0.014	U	0.091	UJ	0.054	U	0.012	U	0.21	U
Pentachlorophenol	87-86-5	0.8	6.7	0.086	U	0.57	UJ	0.34	U	0.077	U	1.3	U
Phenol	108-95-2	0.33	500	0.026	U	0.18	UJ	0.1	U	0.023	U	0.4	U
Total SVOCs (mg/Kg) (Note 1)	**NA**	NL	NL	2.712		42.78		18.796		2.938		27.63	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the Unrestricterd Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.
Note 1 - Total SVOCs includes all of the PAH and SVOC compounds.

Table 4
Surface Soil Metals Results
Scott Aviation BCP Site

Sample Designation / Laboratory Identification / Date Sampled	CAS Number	Unrestricted Use	Protection of Public Health Commercial Use	SS-MW-35S-0-0.2 RTE1487-01 5/26/2010		SS-MW-41B2-0-0.2 RTE1487-05 5/27/2010		SS-MW-40D-0-0.2 RTE1487-06 5/27/2010		SS-MW-38D-0-0.2 RTE1487-07 5/27/2010		SS-DPT8-2C-(0-0.2) RTF0541-01 6/2/2010	
Aluminum	7429-90-5	NL	NL	12600		20900	J	9280		13500		5570	
Antimony	7440-36-0	NL	NL	21.9	UJ	28.3	UJ	17.2	UJ	19.5	UJ	18.4	U
Arsenic	7440-38-2	13	16	6.5		12	J	3.5		5.5		4.7	
Barium	7440-39-3	350	400	48.7		142	J	66.7		81.1		112	
Beryllium	7440-41-7	7.2	590	0.601		0.776	J	0.356		0.495		0.487	
Cadmium	7440-43-9	2.5	9.3	0.293	U	**19.9**	**J**	1.33		1.77		**23.5**	
Calcium	7440-70-2	NL	NL	2670		21800	J	9220		11500		160000	D08
Chromium	7440-47-3	30[c]	1500	14.6		**322**	**J**	**38.8**		**50.1**		**575**	
Cobalt	7440-48-4	NL	NL	6.01		12.2	J	5.26		7.56		3.92	
Copper	7440-50-8	50	270	15.1		**123**	J	43.1		38		**147**	
Iron	7439-89-6	NL	NL	17100		34500	J	13900		20700		16200	
Lead	7439-92-1	63	1,000	37.9		305	J	81.3		58.6		**768**	
Magnesium	7439-95-4	NL	NL	2180		8050	J	4940		5780		14700	
Manganese	7439-96-5	1,600	10,000	152	J	607	J	309	J	366	J	370	
Total Mercury	7439-97-6	0.18	2.8	0.0615		**0.569**	**J**	0.0861		0.0243	U	0.113	
Nickel	7440-02-0	30	310	15.3		**83.9**	**J**	14.5		20.8		**621**	
Potassium	7440-09-7	NL	NL	827		2490	J	920		1410		498	
Selenium	7782-49-2	3.9	1,500	5.9	U	7.5	UJ	4.6	U	5.2	U	4.9	U
Silver	7440-22-4	2	1,500	0.731	U	1.36	J	0.575	U	0.648	U	NA	
Sodium	7440-23-5	NL	NL	205	U	264	UJ	161	U	182	U	206	
Thallium	7440-28-0	NL	NL	8.8	U	11.3	UJ	6.9	U	7.8	U	7.4	U
Vanadium	7440-62-2	NL	NL	21.7		34.7	J	15.8		22.5		11.8	
Zinc	7440-66-6	109	10,000	73.2		**646**	**J**	**221**		**159**		**448**	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
D08 = Dilution for target analyte(s).
Bold value - compound detected at concentration greater than Unrestricted Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.

Table 5
Surface Soil PCBs and Pesticides Results
Scott Aviation BCP Site

Sample Designation	**CAS Number**	**Unrestricted Use**	**Protection of Public Health**	**SS-MW-35S-0-0.2**		**SS-MW-41B2-0-0.2**		**SS-MW-40D-0-0.2**		**SS-MW-38D-0-0.2**		**SS-DPT8-2C-(0-0.2)**	
Laboratory Identification				**RTE1487-01**		**RTE1487-05**		**RTE1487-06**		**RTE1487-07**		**RTF0541-01**	
Date Sampled			**Commercial Use**	**5/26/2010**		**5/27/2010**		**5/27/2010**		**5/27/2010**		**6/2/2010**	
Organochlorine Pesticides (mg/Kg)													
Aldrin	309-00-2	0.005	0.68	0.0006	U	0.0082	UJ	0.00095	U	0.0053	U	0.0047	U
alpha-BHC	319-84-6	0.02	3.4	0.00044	U	0.006	UJ	0.0007	U	0.0039	U	0.0034	U
beta-BHC	319-85-7	0.036	3	0.00026	U	0.0036	UJ	0.00042	U	0.0023	U	0.0021	U
delta-BHC	319-86-8	0.04	500	0.00032	U	0.0044	UJ	0.0018	J	0.0028	U	0.0025	U
Chlordane (alpha)	5103-71-9	0.094	24	0.0012	U	0.017	UJ	0.0019	U	0.011	U	0.0095	U
Chlordane	NL	NL	NL	0.0054	U	0.074	UJ	0.0086	U	0.048	U	0.042	U
4,4'-DDD	72-54-8	0.0033	92	0.00048	U	0.0065	UJ	0.0016	J	0.0042	U	0.0037	U
4,4'-DDE	72-55-9	0.0033	62	0.00037	U	0.005	UJ	0.00058	U	0.0032	U	0.0029	U
4,4'-DDT	50-29-3	0.0033	47	0.0014	J	0.0034	UJ	0.00039	U	0.0022	U	0.009	J
Dieldrin	60-57-1	0.005	1.4	0.00059	U	0.008	UJ	0.00093	U	0.0052	U	0.0046	U
Endosulfan I	959-98-8	2.4	200	0.00031	U	0.0042	UJ	0.0039	U	0.0027	U	0.0024	U
Endosulfan II	33213-65-9	2.4	200	0.00044	U	0.006	UJ	0.0007	U	0.0039	U	0.0034	U
Endosulfan sulfate	1031-07-8	2.4	200	0.00046	U	0.0062	UJ	0.00072	U	0.004	U	0.0035	U
Endrin	72-20-8	0.014	89	0.00034	U	0.034	UJ	0.00053	U	0.003	U	0.0026	U
Endrin aldehyde		NL	NL	0.00063	U	0.0086	UJ	0.00099	U	0.0055	U	0.0049	U
Endrin keytone	NL	NL	NL	0.0006	U	0.0082	UJ	0.00095	U	0.0053	U	0.0047	U
gamma-BHC (Lindane)	58-89-9	0.1	9.2	0.00043	U	0.0058	UJ	0.00067	U	0.0037	U	0.0033	U
gamma-Chlordane	NL	NL	NL	0.00078	U	0.011	UJ	0.0012	U	0.0068	U	0.006	U
Heptachlor	76-44-8	0.042	15	0.00038	U	0.0052	UJ	0.0006	U	0.0034	U	0.003	U
Heptachlor epoxide	NL	NL	NL	0.00063	U	0.0086	UJ	0.001	U	0.0056	U	0.0049	U
Methoxychlor	NL	NL	NL	0.00034	U	0.0046	UJ	0.00053	U	0.003	U	0.0026	U
Toxaphene	NL	NL	NL	0.014	U	0.19	UJ	0.022	U	0.13	U	0.11	U
PCBs (mg/Kg)													
Aroclor 1016	12674-11-2	NL	NL	0.0048	U	0.033	UJ	0.0038	U	0.0042	U	0.0037	U
Aroclor 1221	11104-28-2	NL	NL	0.0048	U	0.033	UJ	0.0038	U	0.0042	U	0.0037	U
Aroclor 1232	11141-16-5	NL	NL	0.0048	U	0.033	UJ	0.0038	U	0.0042	U	0.0037	U
Aroclor 1242	53469-21-9	NL	NL	0.0053	U	0.036	UJ	0.0042	U	0.0047	U	0.0041	U
Aroclor 1248	12672-29-6	NL	NL	0.0048	U	0.033	UJ	0.0038	U	0.0042	U	0.0037	U
Aroclor 1254	11097-69-1	NL	NL	0.0052	U	0.11	J	0.021	J	0.034		0.004	U
Aroclor 1260	11096-82-5	NL	NL	0.011	U	0.15	J	0.034	J	0.01	U	0.038	J
Total PCBs (mg/Kg)	NA	0.1	1	---	U	**0.26**		0.055		0.034		0.038	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than Unrestricted Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.

Table 6
Subsurface Soil VOC Results
Scott Aviation BCP Site

Sample Designation	CAS Number	Unrestricted Use	Protection of Public Health	SS-MW-35S-6-7	SS-DUPLICATE-1	SS-DPT8-1A-(0-2)	SS-DPT8-1B-(2-4)	SS-DPT8-2A-(0-2)	SS-DPT8-2B-(2-4)	SS-DPT8-3B-(6-8)	SS-DPT8-3A-(0-2)	SS-MW-36D-(8-9)
Laboratory Identification			Commercial Use	RTE1487-02	RTE1487-03	RTF0541-02	RTF0541-03	RTF0541-04	RTF0541-05	RTF0541-06	RTF0541-07	RTF0542-02
Date Sampled				5/26/2010	5/26/2010	6/2/2010	6/2/2010	6/2/2010	6/2/2010	6/2/2010	6/2/2010	6/4/2010
BTEX Compounds (mg/Kg)												
Benzene	71-43-2	0.06	44	0.0003 U	0.00034 U	0.00033 U	0.00029 U	0.0022 U	0.0012 U	0.00029 U	0.0003 U	0.00029 U
Ethylbenzene	100-41-4	1	390	0.00042 U	0.00048 U	0.00046 U	0.019	0.0031 U	0.0017 U	0.00041 U	0.00043 U	0.0004 U
Toluene	108-88-3	0.7	500	0.00046 U	0.00052 U	0.0067 U	0.006 U	0.048 J	0.041 J	0.0059 U	0.0062 U	0.0058 U
Xylene (mixed)	1330-20-7	0.26	500	0.001 U	0.0012 U	0.0035 J	0.0063 J	0.064 J	0.0042 U	0.00099 U	0.0063 J	0.00098 U
Total BTEX (mg/Kg)	NA	NL	NL	--- U	--- U	0.0035	0.0253	0.112	0.041	--- U	0.0063	--- U
Other VOCs (mg/Kg)												
1,1,1-Trichloroethane	71-55-6	0.68	500	0.00044 U	0.0005 U	0.00049 U	0.00043 U	0.0032 U	0.0018 U	0.00043 U	0.00045 U	0.00042 U
1,1,2,2-Tetrachloroethane	79-34-5	NL	NL	0.00098 U	0.0011 U	0.0011 U	0.00097 U	0.0072 U	0.0041 U	0.00095 U	0.001 U	0.00095 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NL	NL	0.0014 U	0.0016 U	0.0015 U	0.0014 U	0.01 U	0.0057 U	0.0013 U	0.0014 U	0.0013 U
1,1,2-Trichloroethane	79-00-5	NL	NL	0.00079 U	0.0009 U	0.00088 U	0.00077 U	0.0058 U	0.0033 U	0.00077 U	0.00081 U	0.00076 U
1,1-Dichloroethane	75-34-3	0.27	240	0.00074 U	0.00084 U	0.013	0.052	0.0054 U	0.0031 U	0.00072 U	0.00076 U	0.00071 U
1,1-Dichloroethene	75-35-4	0.33	500	0.00074 U	0.00085 U	0.00082 U	0.00073 U	0.0054 U	0.0031 U	0.00072 U	0.00076 U	0.00071 U
1,2,4-trichlorobenzene	120-82-1	NL	NL	0.00037 U	0.00042 U	0.00041 U	0.00036 U	0.0027 U	0.0015 U	0.00036 U	0.00038 U	0.00035 U
1,2-Dibromo-3-chloropropane	96-12-8	NL	NL	0.003 U	0.0035 U	0.0034 U	0.003 U	0.022 U	0.013 U	0.0029 U	0.0031 U	0.0029 U
1,2-Dibromoethane	106-93-4	NL	NL	0.00078 U	0.00089 U	0.00086 U	0.00076 U	0.0057 U	0.0032 U	0.00076 U	0.0008 U	0.00075 U
1,2-Dichlorobenzene	95-50-1	1.1	500	0.00047 U	0.00054 U	0.00053 U	0.00047 U	0.0035 U	0.002 U	0.00046 U	0.00049 U	0.00046 U
1,2-Dichloroethane	107-06-2	0.02	30	0.0003 U	0.00035 U	0.0032 J	0.0003 U	0.0022 U	0.0013 U	0.0003 U	0.00031 U	0.00029 U
1-3 dichloropropane	78-87-5	NL	NL	0.003 U	0.0035 U	0.0034 U	0.003 U	0.022 U	0.013 U	0.0029 U	0.0031 U	0.0029 U
1,3-Dichlorobenzene	541-73-1	2.4	280	0.00031 U	0.00036 U	0.00035 U	0.00031 U	0.0023 U	0.0013 U	0.0003 U	0.00032 U	0.0003 U
1,4-Dichlorobenzene	106-46-7	1.8	130	0.00085 U	0.00097 U	0.00094 U	0.00083 U	0.0062 U	0.0035 U	0.00082 U	0.00087 U	0.00082 U
Methyl ethyl ketone	78-93-3	0.12	500	0.0022 U	0.0025 U	0.0044 J	0.004 J	0.03 J	0.0092 U	0.0022 U	0.0056 J	0.0021 U
2-Hexanone	591-78-6	NL	NL	0.003 U	0.0035 U	0.0034 U	0.003 U	0.022 U	0.013 U	0.0029 U	0.0031 U	0.0029 U
4-Methyl-2-Pentanone	108-10-1	NL	NL	0.002 U	0.0023 U	0.0022 U	0.002 U	0.015 U	0.0082 U	0.0019 U	0.002 U	0.0019 U
Acetone	67-64-1	0.05	500	0.0051 U	0.0058 U	0.034 U	0.04 U	**3.8**	**3**	0.029 U	0.042 U	0.029 U
Bromodichloromethane	75-27-4	NL	NL	0.00081 U	0.00093 U	0.0009 U	0.0008 U	0.0059 U	0.0034 U	0.00079 U	0.00083 U	0.00078 U
Bromoform	75-25-2	NL	NL	0.003 U	0.0035 U	0.0034 U	0.003 U	0.022 U	0.013 U	0.0029 U	0.0031 U	0.0029 U
Bromomethane	74-83-9	NL	NL	0.00054 U	0.00062 U	0.00061 U	0.00054 U	0.004 U	0.0023 U	0.00053 U	0.00056 U	0.00053 U
Carbon Disulfide	75-15-0	NL	NL	0.003 U	0.0035 U	0.0034 U	0.003 U	0.022 U	0.013 U	0.0029 U	0.0031 U	0.0029 U
Carbon tetrachloride	56-23-5	0.76	22	0.00058 U	0.00067 U	0.00065 U	0.00058 U	0.0043 U	0.0024 U	0.00057 U	0.0006 U	0.00056 U
Chlorobenzene	108-90-7	1.1	500	0.0008 U	0.00091 U	0.00089 U	0.00079 U	0.0059 U	0.0033 U	0.00078 U	0.00082 U	0.00077 U
Chloroethane	75-00-3	NL	NL	0.0014 U	0.0016 U	0.0034 J	0.0098	0.01 U	0.0057 U	0.0013 U	0.0014 U	0.0013 U
Chloroform	67-66-3	0.37	350	0.00037 U	0.00043 U	0.00042 U	0.00037 U	0.0027 U	0.0015 U	0.00036 U	0.00038 U	0.00036 U
Chloromethane	74-87-3	NL	NL	0.00036 U	0.00042 U	0.00041 U	0.00036 U	0.0027 U	0.0015 U	0.00036 U	0.00037 U	0.00035 U
cis -1,2-Dichloroethene	156-59-2	0.25	500	0.00077 U	0.00088 U	0.00086 U	0.00076 U	0.0057 U	0.0032 U	0.00075 U	0.00079 U	0.00075 U
cis-1,3-Dichloropropene	10061-01-5	NL	NL	0.00087 U	0.00099 U	0.00097 U	0.00086 U	0.0064 U	0.0036 U	0.00085 U	0.00089 U	0.00084 U
Cyclohexane	110-82-7	NL	NL	0.00085 U	0.00097 U	0.00094 U	0.00083 U	0.0062 U	0.025 U	0.00082 U	0.00087 U	0.00082 U
Dibromochloromethane	124-48-1	NL	NL	0.00077 U	0.00088 U	0.00086 U	0.00076 U	0.0057 U	0.0032 U	0.00075 U	0.00079 U	0.00075 U
Dichlorodifluoromethane	75-71-8	NL	NL	0.0005 U	0.00057 U	0.00056 U	0.00049 U	0.0037 U	0.0021 U	0.00049 U	0.00051 U	0.00048 U
Isopropylbenzene	98-82-8	NL	NL	0.00091 U	0.001 U	0.001 U	0.0009 U	0.0067 U	0.0038 U	0.00089 U	0.00094 U	0.00088 U
Methyl acetate	79-20-9	NL	NL	0.0011 U	0.0013 U	0.0013 U	0.0011 U	0.0082 U	0.0047 U	0.0011 U	0.0012 U	0.0011 U
Methyl tert-butyl ether	1634-04-4	0.93	500	0.00059 U	0.00068 U	0.00066 U	0.00058 U	0.0044 U	0.0025 U	0.00058 U	0.00061 U	0.00057 U
Methylcyclohexane	108-87-2	NL	NL	0.00092 U	0.001 U	0.001 U	0.0009 U	0.0067 U	0.0038 U	0.00089 U	0.00094 U	0.00089 U
Methylene chloride	75-09-2	0.05	500	0.019 U	0.022 U	0.019 U	0.019 U	**0.14 J**	**0.079 J**	0.019 U	0.012 U	0.019 U
Styrene	100-42-5	NL	NL	0.0003 U	0.00035 U	0.00034 U	0.0003 U	0.0022 U	0.0013 U	0.00029 U	0.00031 U	0.00029 U
Tetrachloroethene	127-18-4	1.3	150	0.006 U	0.00093 U	0.0009 U	0.0008 U	0.0059 U	0.0034 U	0.00079 U	0.00083 U	0.00078 U
trans-1,2-Dichloroethene	156-60-5	0.19	500	0.00062 U	0.00071 U	0.00069 U	0.00061 U	0.0046 U	0.0026 U	0.00061 U	0.00064 U	0.0006 U
trans-1,3-Dichloropropene	10061-02-6	NL	NL	0.0027 U	0.003 U	0.003 U	0.0026 U	0.02 U	0.011 U	0.0026 U	0.0027 U	0.0026 U
Trichloroethene	79-01-6	0.47	200	0.0013 U	0.0015 U	0.0015 U	0.0013 U	0.0098 U	0.0055 U	0.0013 U	0.0014 U	0.0013 U
Trichlorofluoromethane	75-69-4	NL	NL	0.00057 U	0.00065 U	0.00064 U	0.00056 U	0.0042 U	0.0024 U	0.00056 U	0.00059 U	0.00055 U
Vinyl chloride	75-01-4	0.02	13	0.00074 U	0.00084 U	0.00082 U	0.00073 U	0.0054 U	0.0031 U	0.00072 U	0.00076 U	0.00071 U
Total VOCs (mg/Kg) (Note 1)	NA	NL	NL	--- U	--- U	0.0275	0.0911	4.082	3.12	--- U	0.0119	--- U

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the Unrestricted Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.
Note 1 - Total VOCs includes BTEX compounds.

Table 7
Subsurface Soil SVOC Results
Scott Aviation BCP Site

Sample Designation	CAS Number	Unrestricted Use	Protection of Public Health	SS-MW-35S-6-7	SS-DUPLICATE-1	SS-MW-37D-6-7	SS-DPT8-1A-(0-2)	SS-DPT8-1B-(2-4)	SS-DPT8-2A-(0-2)	SS-DPT8-2B-(2-4)	SS-DPT8-3B-(6-8)	SS-DPT8-3A-(0-2)	SS-MW-39D-(5-6)	SS-MW-36D-(8-9)
Laboratory Identification				**RTE1487-02**	**RTE1487-03**	**RTE1487-08**	**RTF0541-02**	**RTF0541-03**	**RTF0541-04**	**RTF0541-05**	**RTF0541-06**	**RTF0541-07**	**RTF0542-01**	**RTF0542-02**
Date Sampled			**Commercial Use**	**5/26/2010**	**5/26/2010**	**5/28/2010**	**6/2/2010**	**6/2/2010**	**6/2/2010**	**6/2/2010**	**6/2/2010**	**6/2/2010**	**6/3/2010**	**6/4/2010**
PAH Compounds (mg/Kg)														
2-Methylnaphthalene	91-57-6	NL	NL	0.0025 U	0.0028 U	0.0031 U	0.055 U	0.012 U	0.0027 U	0.0027 U	0.0024 U	0.013 U	0.0025 U	0.0024 U
Acenaphthene	83-32-9	20	500	0.0024 U	0.0027 U	0.003 U	0.054 U	0.012 U	0.01 J	0.0026 U	0.0023 U	0.013 U	0.0024 U	0.0024 U
Acenaphthylene	208-96-8	100	500	0.0017 U	0.02 J	0.0021 U	0.037 U	0.0083 U	0.0018 U	0.0018 U	0.0016 U	0.0087 U	0.0017 U	0.0016 U
Anthracene	120-12-7	100	500	0.0053 U	0.037 J	0.0065 U	0.12 U	0.026 U	0.031 J	0.0056 U	0.0051 U	0.027 U	0.0052 U	0.0052 U
Benzo(a)anthracene	56-55-3	1	5.6	0.0036 U	0.17 J	0.0044 U	0.53 J	0.018 U	0.094 J	0.0038 U	0.0034 U	0.018 U	0.0035 U	0.0035 U
Benzo(a)pyrene	50-32-8	1	1	0.005 U	0.19 J	0.0061 U	0.11 U	0.025 U	0.079 J	0.0053 U	0.0048 U	0.026 U	0.0049 U	0.0049 U
Benzo(b)fluoranthene	205-99-2	1	5.6	0.004 U	0.21 J	0.0049 U	0.089 U	0.02 U	0.096 J	0.0043 U	0.0038 U	0.021 U	0.004 U	0.0039 U
Benzo(ghi)perylene	191-24-2	100	500	0.0025 U	0.13 J	0.0031 U	0.055 U	0.012 U	0.056 J	0.0026 U	0.0024 U	0.013 U	0.0024 U	0.0024 U
Benzo(k)fluoranthene	207-08-9	0.8	56	0.0023 U	0.081 J	0.0028 U	0.05 U	0.011 U	0.035 J	0.0024 U	0.0022 U	0.012 U	0.0022 U	0.0022 U
Chrysene	218-01-9	1	56	0.0021 U	0.18 J	0.0026 U	0.55 J	0.01 U	0.09 J	0.0022 U	0.002 U	0.011 U	0.002 U	0.002 U
Dibenz(a,h)anthracene	53-70-3	0.33	0.56	0.0024 U	0.027 J	0.003 U	0.054 U	0.012 U	0.0026 U	0.0026 U	0.0023 U	0.013 U	0.0024 U	0.0024 U
Fluoranthene	206-44-0	100	500	0.003 U	0.35	0.0037 U	0.67 J	0.015 U	0.21 J	0.0032 U	0.0029 U	0.015 U	0.003 U	0.0029 U
Fluorene	86-73-7	30	500	0.0048 U	0.0053 U	0.0059 U	0.11 U	0.023 U	0.016 J	0.0051 U	0.0045 U	0.025 U	0.0047 U	0.0046 U
Indeno(1,2,3-cd)pyrene	193-39-5	0.5	5.6	0.0057 U	0.12 J	0.0071 U	0.13 U	0.028 U	0.047 J	0.0061 U	0.0055 U	0.029 U	0.0056 U	0.0056 U
Naphthalene	91-20-3	12	500	0.0034 U	0.0038 U	0.0042 U	0.076 U	0.017 U	0.0037 U	0.0037 U	0.0033 U	0.018 U	0.0034 U	0.0034 U
Phenanthrene	85-01-8	100	500	0.0043 U	0.19 J	0.0054 U	0.54 J	0.021 U	0.19 J	0.0046 U	0.0041 U	0.022 U	0.0043 U	0.0042 U
Pyrene	129-00-0	100	500	0.0013 U	0.29	0.0017 U	0.79 J	0.0066 U	0.22	0.0014 U	0.0013 U	0.0069 U	0.0013 U	0.0013 U
Total PAHs (mg/Kg)	NA	NL	NL	--- U	1.995	--- U	3.08	--- U	1.174	--- U	--- U	--- U	--- U	--- U
Other SVOCs (mg/Kg)														
1,1'-Biphenyl	92-52-4	NL	NL	0.013 U	0.014 U	0.016 U	0.28 U	0.063 U	0.014 U	0.014 U	0.012 U	0.066 U	0.013 U	0.013 U
2,2'-oxybis(1-Chloropropane)	108-60-1	NL	NL	0.022 U	0.024 U	0.027 U	0.48 U	0.11 U	0.023 U	0.023 U	0.021 U	0.11 U	0.021 U	0.021 U
2,4,5-Trichlorophenol	95-95-4	NL	NL	0.045 U	0.05 U	0.056 U	1 U	0.22 U	0.048 U	0.048 U	0.043 U	0.23 U	0.044 U	0.044 U
2,4,6-Trichlorophenol	88-06-2	NL	NL	0.014 U	0.015 U	0.017 U	0.3 U	0.067 U	0.015 U	0.015 U	0.013 U	0.07 U	0.013 U	0.013 U
2,4-Dichlorophenol	120-83-2	NL	NL	0.011 U	0.012 U	0.013 U	0.24 U	0.053 U	0.012 U	0.012 U	0.01 U	0.056 U	0.011 U	0.011 U
2,4-Dimethylphenol	105-67-9	NL	NL	0.056 U	0.062 U	0.069 U	1.2 U	0.28 U	0.06 U	0.06 U	0.053 U	0.29 U	0.055 U	0.054 U
2,4-Dinitrophenol	51-28-5	NL	NL	0.072 U	0.081 U	0.089 U	1.6 U	0.36 U	0.077 U	0.077 U	0.069 U	0.37 U	0.071 U	0.07 U
2,4-Dinitrotoluene	121-14-2	NL	NL	0.032 U	0.036 U	0.039 U	0.71 U	0.16 U	0.034 U	0.034 U	0.031 U	0.17 U	0.032 U	0.031 U
2,6-Dinitrotoluene	606-20-2	NL	NL	0.05 U	0.056 U	0.062 U	1.1 U	0.25 U	0.054 U	0.054 U	0.048 U	0.26 U	0.05 U	0.049 U
2-Chloronaphthalene	91-58-7	NL	NL	0.014 U	0.015 U	0.017 U	0.31 U	0.068 U	0.015 U	0.015 U	0.013 U	0.072 U	0.014 U	0.014 U
2-Chlorophenol	95-57-8	NL	NL	0.011 U	0.012 U	0.013 U	0.23 U	0.052 U	0.011 U	0.011 U	0.01 U	0.054 U	0.01 U	0.01 U
2-Methylphenol (o-cresol)	95-48-7	0.33	500	0.0063 U	0.0071 U	0.0078 U	0.14 U	0.031 U	0.0068 U	0.0068 U	0.0061 U	0.033 U	0.0063 U	0.0062 U
2-Nitroaniline	88-74-4	NL	NL	0.066 U	0.074 U	0.082 U	1.5 U	0.33 U	0.071 U	0.071 U	0.063 U	0.34 U	0.065 U	0.065 U
2-Nitrophenol	88-75-5	NL	NL	0.0094 U	0.011 U	0.012 U	0.21 U	0.047 U	0.01 U	0.01 U	0.009 U	0.049 U	0.0093 U	0.0092 U
3,3'-Dichlorobenzidine	91-94-1	NL	NL	0.18 U	0.2 U	0.22 U	4 U	0.89 U	0.19 U	0.19 U	0.17 U	0.94 U	0.18 U	0.18 U
3-Nitroaniline	99-09-2	NL	NL	0.047 U	0.053 U	0.059 U	1.1 U	0.23 U	0.051 U	0.051 U	0.045 U	0.25 U	0.047 U	0.046 U
4,6-Dinitro-2-methylphenol	534-52-1	NL	NL	0.071 U	0.08 U	0.088 U	1.6 U	0.35 U	0.076 U	0.076 U	0.068 U	0.37 U	0.07 U	0.07 U
4-Bromophenyl phenyl ether	101-55-3	NL	NL	0.066 U	0.073 U	0.081 U	1.5 U	0.32 U	0.07 U	0.07 U	0.063 U	0.34 U	0.065 U	0.064 U
4-Chloro-3-methylphenol	59-50-7	NL	NL	0.0085 U	0.0095 U	0.01 U	0.19 U	0.042 U	0.0091 U	0.0091 U	0.0081 U	0.044 U	0.0084 U	0.0083 U
4-Chloroaniline	106-47-8	NL	NL	0.061 U	0.068 U	0.075 U	1.3 U	0.3 U	0.065 U	0.065 U	0.058 U	0.31 U	0.06 U	0.059 U
4-Chlorophenyl phenyl ether	7005-72-3	NL	NL	0.0044 U	0.0049 U	0.0054 U	0.097 U	0.022 U	0.0047 U	0.0047 U	0.0042 U	0.023 U	0.0043 U	0.0043 U
4-Methylphenol (p-cresol)	106-44-5	0.33	500	0.011 U	0.013 U	0.014 U	0.25 U	0.057 U	0.012 U	0.012 U	0.011 U	0.059 U	0.011 U	0.011 U
4-Nitroaniline	100-01-6	NL	NL	0.023 U	0.026 U	0.028 U	0.51 U	0.11 U	0.025 U	0.025 U	0.022 U	0.12 U	0.023 U	0.022 U
4-Nitrophenol	100-02-7	NL	NL	0.05 U	0.056 U	0.062 U	1.1 U	0.25 U	0.053 U	0.053 U	0.048 U	0.26 U	0.049 U	0.049 U
Acetophenone	98-86-2	NL	NL	0.011 U	0.012 U	0.013 U	0.23 U	0.052 U	0.011 U	0.011 U	0.01 U	0.055 U	0.01 U	0.01 U
Atrazine	1912-24-9	NL	NL	0.0092 U	0.01 U	0.011 U	0.2 U	0.045 U	0.0098 U	0.0098 U	0.0088 U	0.047 U	0.0091 U	0.009 U
Benzaldehyde	100-52-7	NL	NL	0.023 U	0.025 U	0.028 U	0.5 U	0.11 U	0.024 U	0.024 U	0.022 U	0.12 U	0.022 U	0.022 U
bis(2-Chloroethoxy)methane	111-91-1	NL	NL	0.011 U	0.013 U	0.014 U	0.25 U	0.055 U	0.012 U	0.012 U	0.011 U	0.058 U	0.011 U	0.011 U
bis(2-Chloroethyl) ether	111-44-4	NL	NL	0.018 U	0.02 U	0.022 U	0.39 U	0.088 U	0.019 U	0.019 U	0.017 U	0.092 U	0.018 U	0.017 U
bis(2-Ethylhexyl) phthalate	117-81-7	NL	NL	0.091 J	0.074 U	0.082 U	1.5 U	0.33 U	0.41	0.49	0.22	0.34 U	0.95	0.11 J
Butyl benzyl phthalate	85-68-7	NL	NL	0.055 U	0.062 U	0.069 U	1.2 U	0.27 U	0.059 U	0.059 U	0.053 U	0.29 U	0.055 U	0.054 U
Caprolactam	105-60-2	NL	NL	0.089 U	0.1 U	0.11 U	2 U	0.44 U	0.095 U	0.095 U	0.085 U	0.46 U	0.088 U	0.087 U
Carbazole	86-74-8	NL	NL	0.0024 U	0.02 J	0.003 U	0.053 U	0.012 U	0.014 J	0.0026 U	0.0023 U	0.012 U	0.0024 U	0.0023 U
Dibenzofuran	132-64-9	7	350	0.0021 U	0.0024 U	0.0027 U	0.048 U	0.011 U	0.0023 U	0.0023 U	0.0021 U	0.011 U	0.0021 U	0.0021 U
Diethyl phthalate	131-11-3	NL	NL	0.0062 U	0.007 U	0.0077 U	0.14 U	0.031 U	0.0067 U	0.0067 U	0.006 U	0.032 U	0.0062 U	0.0061 U
Dimethyl phthalate	84-66-2	NL	NL	0.0054 U	0.006 U	0.0067 U	0.12 U	0.027 U	0.0058 U	0.0058 U	0.0052 U	0.028 U	0.0053 U	0.0053 U
Di-n-butyl phthalate	84-74-2	NL	NL	0.071 U	0.08 U	0.088 U	1.6 U	0.35 U	0.076 U	0.076 U	0.068 U	1.3 U	0.071 U	0.07 U
Di-n-octyl phthalate	117-84-0	NL	NL	0.0048 U	0.0054 U	0.006 U	0.11 U	0.024 U	0.0052 U	0.0052 U	0.0046 U	0.025 U	0.0048 U	0.0047 U
Hexachlorobenzene	118-74-1	0.33	6	0.01 U	0.011 U	0.013 U	0.23 U	0.051 U	0.011 U	0.011 U	0.0098 U	0.053 U	0.01 U	0.01 U
Hexachlorobutadiene	87-68-3	NL	NL	0.011 U	0.012 U	0.013 U	0.23 U	0.052 U	0.011 U	0.011 U	0.01 U	0.055 U	0.01 U	0.01 U
Hexachlorocyclopentadiene	77-47-4	NL	NL	0.062 U	0.07 U	0.077 U	1.4 U	0.31 U	0.067 U	0.067 U	0.06 U	0.32 U	0.062 U	0.061 U
Hexachloroethane	67-72-1	NL	NL	0.016 U	0.018 U	0.02 U	0.35 U	0.079 U	0.017 U	0.017 U	0.015 U	0.083 U	0.016 U	0.016 U
Isophorone	78-59-1	NL	NL	0.01 U	0.012 U	0.013 U	0.23 U	0.051 U	0.011 U	0.011 U	0.0099 U	0.053 U	0.01 U	0.01 U
Nitrobenzene	98-95-3	NL	NL	0.0091 U	0.01 U	0.011 U	0.2 U	0.045 U	0.0098 U	0.0098 U	0.0088 U	0.047 U	0.009 U	0.0089 U
N-Nitrosodi-n-propylamine	621-64-7	NL	NL	0.016 U	0.018 U	0.02 U	0.36 U	0.081 U	0.017 U	0.017 U	0.016 U	0.084 U	0.016 U	0.016 U
N-Nitrosodiphenylamine	86-30-6	NL	NL	0.011 U	0.013 U	0.014 U	0.25 U	0.056 U	0.012 U	0.012 U	0.011 U	0.058 U	0.011 U	0.011 U
Pentachlorophenol	87-86-5	0.8	6.7	0.071 U	0.079 U	0.088 U	1.6 U	0.35 U	0.076 U	0.076 U	0.068 U	0.37 U	0.07 U	0.069 U
Phenol	108-95-2	0.33	500	0.022 U	0.024 U	0.027 U	0.48 U	0.11 U	0.023 U	0.023 U	0.021 U	0.11 U	0.021 U	0.021 U
Total SVOCs (mg/Kg) (Note 1)	NA	NL	NL	0.091	2.015	--- U	3.08	--- U	1.598	0.49	0.22	--- U	0.95	0.11

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the Unrestricterd Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO .
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.
Note 1 - Total SVOCs includes all of the PAH and SVOC compounds.

Table 8
Subsurface Soil Metals Results
Scott Aviation BCP Site

Sample Designation Laboratory Identification Date Sampled	CAS Number	Unrestricted Use	Protection of Public Health Commercial Use	SS-MW-35S-6-7 RTE1487-02 5/26/2010	SS-DUPLICATE-1 RTE1487-03 5/26/2010	SS-MW-37D-6-7 RTE1487-08 5/28/2010	SS-DPT8-1A-(0-2) RTF0541-02 6/2/2010	SS-DPT8-1B-(2-4) RTF0541-03 6/2/2010	SS-DPT8-2A-(0-2) RTF0541-04 6/2/2010	SS-DPT8-2B-(2-4) RTF0541-05 6/2/2010	SS-DPT8-3B-(6-8) RTF0541-06 6/2/2010	SS-DPT8-3A-(0-2) RTF0541-07 6/2/2010	SS-MW-39D-(5-6) RTF0542-01 6/3/2010	SS-MW-36D-(8-9) RTF0542-02 6/4/2010
Aluminum	7429-90-5	NL	NL	11000	9380	15100	24500	11200	24100	14500	10500	13600	12000	9760
Antimony	7440-36-0	NL	NL	17.2 UJ	21.9 UJ	23.1 UJ	21.5 U	16.6 U	19.8 U	20.7 U	16.6 U	18.8 U	19 U	16.5 U
Arsenic	7440-38-2	13	16	7.7	4.3	12.1	14.7	5.5	7.9	8.3	7.7	5.5	7.7	6.2
Barium	7440-39-3	350	400	72.5	37.7	98.5	90.5	83.5	82.2	98.2	118	84.4	92.1	81.3
Beryllium	7440-41-7	7.2	590	0.483	0.353	0.67	0.505	0.531	0.487	0.68	0.5	0.564	0.576	0.483
Cadmium	7440-43-9	2.5	9.3	0.315	0.381	0.371	**18.6**	0.874	**18**	0.317	0.276	0.944	0.372	0.238
Calcium	7440-70-2	NL	NL	48200	2280	47000	7820	57500	45300	59200	58500	2700	63200	55600
Chromium	7440-47-3	30[c]	1500	15.5	11.3	21.2	**932**	24	**1140**	20.9	15.4	**299**	19.3	14.8
Cobalt	7440-48-4	NL	NL	8.01	4.6	13.3	9.53	9.52	22.8	13.7	13.2	10.3	7.97	8.22
Copper	7440-50-8	50	270	24	11.8	30.9	**577**	23.4	**859**	26.8	21.5	16	24.1	18.7
Iron	7439-89-6	NL	NL	22100	12500	30300	27700	20900	20900	26500	21500	23300	24000	18800
Lead	7439-92-1	63	1,000	10.6	28.5	15.2	337	13.9	**547**	12.4	11.1	31.3	10.5	9.4
Magnesium	7439-95-4	NL	NL	15400	1710	17500	4270	18500	24400	18200	19400	2930	18700	19900
Manganese	7439-96-5	1,600	10,000	337 J	124 J	473 J	291	513	603	809	730	555	352	406
Total Mercury	7439-97-6	0.18	2.8	0.0253 U	0.0409	0.09	**5.09 D08**	0.047	**0.566**	0.0263 U	0.0243	0.0612	0.026 U	0.0243 U
Nickel	7440-02-0	30	310	23.9	11.3	**34.4**	**43**	25.2	**101**	**32.1**	**32.3**	15.8	24.1	22.2
Potassium	7440-09-7	NL	NL	1970	641	2900	1150	2420	1220	2120	2200	1290	2500	2370
Selenium	7782-49-2	3.9	1,500	4.6 U	5.8 U	6.2 U	5.7 U	4.4 U	5.3 U	5.5 U	4.4 U	5 U	5.1 U	4.4 U
Silver	7440-22-4	2	1,500	0.573 U	0.73 U	0.77 U	NA	NA	NA	NA	NA	NA	NA	NA
Sodium	7440-23-5	NL	NL	174	204 U	224	273	221	244	199	203	175 U	213	192
Thallium	7440-28-0	NL	NL	6.9 U	8.8 U	9.2 U	8.6 U	6.7 U	7.9 U	8.3 U	6.7 U	7.5 U	7.6 U	6.6 U
Vanadium	7440-62-2	NL	NL	20	15.2	27.8	26.3	21.4	22.6	26.1	20.1	27.1	24.5	18.8
Zinc	7440-66-6	109	10,000	61	60.3	80.5	**1630 D08**	65.9	**1460 D08**	71.8	61.9	103	67.6	59.9

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
D08 = Dilution for target analyte(s).
Bold value - compound detected at concentration greater than Unrestricted Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.

Table 9
Subsurface Soil Pesticides and PCBs Results
Scott Aviation BCP Site

Sample Designation	CAS Number	Unrestricted Use	Protection of Public Health	SS-MW-35S-6-7		SS-DUPLICATE-1		SS-MW-37D-6-7		SS-DPT8-2C-(0-0.2)		SS-DPT8-1A-(0-2)		SS-DPT8-1B-(2-4)	
Laboratory Identification				RTE1487-02		RTE1487-03		RTE1487-08		RTF0541-01		RTF0541-02		RTF0541-03	
Date Sampled			Commercial Use	5/26/2010		5/26/2010		5/28/2010		6/2/2010		6/2/2010		6/2/2010	
Organochlorine Pesticides (mg/Kg)															
Aldrin	309-00-2	0.005	0.68	0.0005	U	0.00056	U	0.00062	U	0.0047	U	0.028	U	0.0005	U
alpha-BHC	319-84-6	0.02	3.4	0.00036	U	0.00041	U	0.00045	U	0.0034	U	0.02	U	0.00036	U
beta-BHC	319-85-7	0.036	3	0.00022	U	0.00025	U	0.00027	U	0.0021	U	0.012	U	0.00022	U
delta-BHC	319-86-8	0.04	500	0.00027	U	0.0003	U	0.00033	U	0.0025	U	0.015	U	0.00027	U
Chlordane (alpha)	5103-71-9	0.094	24	0.001	U	0.0011	U	0.0013	U	0.0095	U	0.056	U	0.001	U
Chlordane	NL	NL	NL	0.0045	U	0.005	U	0.0056	U	0.042	U	0.25	U	0.0045	U
4,4'-DDD	72-54-8	0.0033	92	0.00039	U	0.00044	U	0.00049	U	0.0037	U	0.022	U	0.00099	J
4,4'-DDE	72-55-9	0.0033	62	0.0003	U	0.00034	U	0.00038	U	0.0029	U	0.017	U	0.0003	U
4,4'-DDT	50-29-3	0.0033	47	0.00021	U	0.00023	U	0.00026	U	0.009	J	0.011	U	0.00021	U
Dieldrin	60-57-1	0.005	1.4	0.00048	U	0.00055	U	0.0006	U	0.0046	U	0.027	U	0.00049	U
Endosulfan I	959-98-8	2.4	200	0.00025	U	0.00029	U	0.00032	U	0.0024	U	0.014	U	0.00026	U
Endosulfan II	33213-65-9	2.4	200	0.00036	U	0.00041	U	0.00045	U	0.0034	U	0.02	U	0.00036	U
Endosulfan sulfate	1031-07-8	2.4	200	0.00038	U	0.00042	U	0.00047	U	0.0035	U	0.021	U	0.00038	U
Endrin	72-20-8	0.014	89	0.00028	U	0.00031	U	0.00035	U	0.0026	U	0.015	U	0.00028	U
Endrin aldehyde		NL	NL	0.00052	U	0.00058	U	0.00064	U	0.0049	U	0.029	U	0.00052	U
Endrin keytone	NL	NL	NL	0.0005	U	0.00056	U	0.00062	U	0.0047	U	0.028	U	0.0005	U
gamma-BHC (Lindane)	58-89-9	0.1	9.2	0.00035	U	0.0004	U	0.00044	U	0.0033	U	0.02	U	0.00035	U
gamma-Chlordane	NL	NL	NL	0.00064	U	0.00072	U	0.0008	U	0.006	U	0.036	U	0.00064	U
Heptachlor	76-44-8	0.042	15	0.00032	U	0.00036	U	0.00039	U	0.003	U	0.018	U	0.00032	U
Heptachlor epoxide	NL	NL	NL	0.00052	U	0.00059	U	0.00065	U	0.0049	U	0.029	U	0.00052	U
Methoxychlor	NL	NL	NL	0.00028	U	0.00031	U	0.00035	U	0.0026	U	0.015	U	0.00028	U
Toxaphene	NL	NL	NL	0.012	U	0.013	U	0.015	U	0.11	U	0.65	U	0.012	U
PCBs (mg/Kg)															
Aroclor 1016	12674-11-2	NL	NL	0.0039	U	0.0044	U	0.0049	U	0.0037	U	0.044	U	0.004	U
Aroclor 1221	11104-28-2	NL	NL	0.0039	U	0.0044	U	0.0049	U	0.0037	U	0.044	U	0.004	U
Aroclor 1232	11141-16-5	NL	NL	0.0039	U	0.0044	U	0.0049	U	0.0037	U	0.044	U	0.004	U
Aroclor 1242	53469-21-9	NL	NL	0.0044	U	0.0049	U	0.0055	U	0.0041	U	0.049	U	0.0044	U
Aroclor 1248	12672-29-6	NL	NL	0.004	U	0.0045	U	0.0049	U	0.0037	U	0.044	U	0.004	U
Aroclor 1254	11097-69-1	NL	NL	0.0043	U	0.0048	U	0.0053	U	0.004	U	0.047	U	0.0043	U
Aroclor 1260	11096-82-5	NL	NL	0.0094	U	0.011	U	0.012	U	0.038	J	0.28	J	0.0095	U
Total PCBs (mg/Kg)	NA	0.1	1	---	U	---	U	---	U	0.038		**0.28**		---	U

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than Unrestricted Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.

Table 9
Subsurface Soil Pesticides and PCBs Results
Scott Aviation BCP Site

Sample Designation	**CAS Number**	**Unrestricted Use**	**Protection of Public Health**	**SS-DPT8-2A-(0-2)**		**SS-DPT8-2B-(2-4)**		**SS-DPT8-3B-(6-8)**		**SS-DPT8-3A-(0-2)**		**SS-MW-39D-(5-6)**		**SS-MW-36D-(8-9)**	
Laboratory Identification				**RTF0541-04**		**RTF0541-05**		**RTF0541-06**		**RTF0541-07**		**RTF0542-01**		**RTF0542-02**	
Date Sampled			**Commercial Use**	**6/2/2010**		**6/2/2010**		**6/2/2010**		**6/2/2010**		**6/3/2010**		**6/4/2010**	
Organochlorine Pesticides (mg/Kg)															
Aldrin	309-00-2	0.005	0.68	0.0027	U	0.00054	U	0.00049	U	0.0026	U	0.0005	U	0.00049	U
alpha-BHC	319-84-6	0.02	3.4	0.002	U	0.0004	U	0.00036	U	0.0019	U	0.00036	U	0.00036	U
beta-BHC	319-85-7	0.036	3	0.0012	U	0.00024	U	0.00021	U	0.0011	U	0.00022	UJ	0.00021	U
delta-BHC	319-86-8	0.04	500	0.0014	U	0.00029	U	0.00026	U	0.0014	U	0.00027	UJ	0.00026	U
Chlordane (alpha)	5103-71-9	0.094	24	0.0054	U	0.0011	U	0.00099	U	0.0052	U	0.001	U	0.00098	U
Chlordane	NL	NL	NL	0.024	U	0.0049	U	0.0044	U	0.023	U	0.0045	U	0.0044	U
4,4'-DDD	72-54-8	0.0033	92	0.0021	U	0.00043	U	0.00039	U	0.002	U	0.00039	U	0.00038	U
4,4'-DDE	72-55-9	0.0033	62	0.0016	U	0.00033	U	0.0003	U	0.0016	U	0.0003	U	0.0003	U
4,4'-DDT	50-29-3	0.0033	47	0.0011	U	0.00022	U	0.0002	U	0.0011	U	0.00021	U	0.0002	U
Dieldrin	60-57-1	0.005	1.4	0.006	J	0.00053	U	0.00048	U	0.0025	U	0.00049	U	0.00047	U
Endosulfan I	959-98-8	2.4	200	0.0014	U	0.00028	U	0.00025	U	0.0013	U	0.00025	U	0.00025	U
Endosulfan II	33213-65-9	2.4	200	0.002	U	0.0004	U	0.00036	U	0.0019	U	0.00036	U	0.00036	U
Endosulfan sulfate	1031-07-8	2.4	200	0.002	U	0.00041	U	0.00037	U	0.0019	U	0.00038	U	0.00037	U
Endrin	72-20-8	0.014	89	0.0015	U	0.0003	U	0.00027	U	0.0014	U	0.00028	U	0.00027	U
Endrin aldehyde		NL	NL	0.0028	U	0.00056	U	0.00051	U	0.0027	U	0.00052	UJ	0.0005	U
Endrin keytone	NL	NL	NL	0.0027	U	0.00054	U	0.00049	U	0.0026	U	0.0005	U	0.00049	U
gamma-BHC (Lindane)	58-89-9	0.1	9.2	0.0019	U	0.00038	U	0.00035	U	0.0018	U	0.00035	U	0.00034	U
gamma-Chlordane	NL	NL	NL	0.0035	U	0.0007	U	0.00063	U	0.0033	U	0.00064	U	0.00063	U
Heptachlor	76-44-8	0.042	15	0.0017	U	0.00035	U	0.00031	U	0.0016	U	0.00032	U	0.00031	U
Heptachlor epoxide	NL	NL	NL	0.0028	U	0.00057	U	0.00051	U	0.0027	U	0.00052	U	0.00051	U
Methoxychlor	NL	NL	NL	0.0015	U	0.0003	U	0.00027	U	0.0014	U	0.00028	U	0.00027	U
Toxaphene	NL	NL	NL	0.063	U	0.013	U	0.012	U	0.06	U	0.012	U	0.011	U
PCBs (mg/Kg)															
Aroclor 1016	12674-11-2	NL	NL	0.017	U	0.0043	U	0.0039	U	0.041	U	0.004	U	0.0039	U
Aroclor 1221	11104-28-2	NL	NL	0.017	U	0.0043	U	0.0039	U	0.041	U	0.004	U	0.0039	U
Aroclor 1232	11141-16-5	NL	NL	0.017	U	0.0043	U	0.0039	U	0.041	U	0.004	U	0.0039	U
Aroclor 1242	53469-21-9	NL	NL	0.019	U	0.0048	U	0.0043	U	0.045	U	0.0044	U	0.0043	U
Aroclor 1248	12672-29-6	NL	NL	0.017	U	0.0043	U	0.0039	U	0.041	U	0.004	U	0.0039	U
Aroclor 1254	11097-69-1	NL	NL	0.018	U	0.0047	U	0.0042	U	0.044	U	0.0043	U	0.0042	U
Aroclor 1260	11096-82-5	NL	NL	0.099	J	0.01	U	0.0093	U	0.097	U	0.0095	U	0.0093	U
Total PCBs (mg/Kg)	NA	0.1	1	0.099		---	U	---	U	---	U	---	U	---	U

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than Unrestricted Use SCO.
Shaded value - compound detected at concentration greater than the Commercial Use SCO.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.

Table 10
RI Groundwater VOC Results
Scott Aviation BCP

			June 2010																
			Shallow Overburden																
Sample Designation		**NYSDEC**	**MW-30**	**MW-35S**	**MW-36S**	**GW-DUPLICATE-1**	**MW-37S**	**A1-GP01-S**	**A1-GP02-S**	**A1-GP03-S**	**A1-GP04-S**	**A1-GP05-S**	**A1-GP06-S**	**A1-GP07-S**	**A1-GP08-S**	**A1-GP09-S**	**A1-GP10-S**	**A1-GP11-S**	**A1-GP12-S**
Laboratory Identification	**CAS**	**Groundwater Guidance or**	**RTF1140-16**	**RTF1140-14**	**RTF1140-05**	**RTF1140-03**	**RTF1140-19**	**RTF1213-18**	**RTF1213-13**	**RTF1213-15**	**RTF1213-09**	**RTF1213-17**	**RTF1213-14**	**RTF1213-08**	**RTF1213-10**	**RTF1213-11**	**RTF1213-05**	**RTF1213-01**	**RTF1213-02**
Date Sampled	**Number**	**Standard Value (Note 1)**	**6/18/2010**	**6/17/2010**	**6/17/2010**	**6/17/2010**	**6/18/2010**	**6/22/2010**	**6/22/2010**	**6/21/2010**	**6/22/2010**	**6/21/2010**	**6/21/2010**	**6/22/2010**	**6/22/2010**	**6/22/2010**	**6/21/2010**	**6/21/2010**	**6/21/2010**
BTEX Compounds (ug/L)																			
Benzene	71-43-2	1 s	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	20 U	20 U	20 U	20 U	0.41 U	8.2 U	16 U	10 U	0.41 U	0.41 U	**0.5** J	0.41 U
Toluene	100-41-4	5 s	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	**1500**	26 U	26 U	26 U	0.51 U	10 U	20 U	13 U	0.51 U	**8**	0.51 U	0.51 U
Ethylbenzene	108-88-3	5 s	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	**100** J	37 U	37 U	37 U	0.74 U	15 U	30 U	18 U	0.74 U	**2** J	0.74 U	0.74 U
Xylenes (total)	1330-20-7	5 s	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	**790**	33 U	33 U	33 U	0.66 U	13 U	26 U	16 U	0.66 U	**16**	0.66 U	0.66 U
Total BTEX Compounds (ug/L)	NA	NL	--- U	--- U	--- U	--- U	--- U	2390	--- U	--- U	--- U	--- U	--- U	--- U	--- U	--- U	26	0.5	--- U
Other VOCs (ug/L)																			
1,1,1-Trichloroethane	71-55-6	5 s	0.82 U	0.82 U	0.82 U	0.82 U	**130**	**37000**	41 U	**18000**	41 U	**56**	**620**	33 U	20 U	0.82 U	**55000**	**2** J	0.82 U
1,1,2,2-Tetrachloroethane	79-34-5	5 s	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	11 U	11 U	11 U	11 U	0.21 U	4.3 U	8.5 U	5.3 U	0.21 U	0.21 U	0.21 U	0.21 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	0.31 U	0.31 U	0.31 U	0.31 U	**4.4** J	**4400**	15 U	15 U	15 U	0.31 U	**660**	12 U	7.7 U	0.31 U	**1400** J	**1.7** J	**0.44** J
1,1,2-Trichloroethane	79-00-5	1 s	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	**210** J	12 U	**58** J	12 U	0.23 U	4.6 U	9.2 U	5.8 U	0.23 U	**84**	**0.83** J	0.23 U
1,1-Dichloroethane	75-34-3	5 s	**2.1** J	0.38 U	0.38 U	0.38 U	**50**	**3300**	19 U	**3800**	19 U	**28**	**890**	15 U	9.6 U	0.38 U	**43000**	**33**	**6**
1,1-Dichloroethene	75-35-4	5 s	0.29 U	0.29 U	0.29 U	0.29 U	**5.8**	**3100**	15 U	**3100**	15 U	**11**	**63** J	12 U	7.3 U	0.29 U	**1300** J	**2.2** J	**5.2**
1,2,4-Trichlorobenzene	120-82-1	5 s	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	20 U	20 U	20 U	20 U	0.41 U	8.2 U	16 U	10 U	0.41 U	0.41 U	0.41 U	0.41 U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	20 U	20 U	20 U	20 U	0.39 U	7.9 U	16 U	9.8 U	0.39 U	0.39 U	0.39 U	0.39 U
1,2-Dibromoethane	106-93-4	0.0006 s	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	36 U	36 U	36 U	36 U	0.73 U	15 U	29 U	18 U	0.73 U	0.73 U	0.73 U	0.73 U
1,2-Dichlorobenzene	95-50-1	3 s	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	40 U	40 U	40 U	40 U	0.79 U	16 U	32 U	20 U	0.79 U	0.79 U	0.79 U	0.79 U
1,2-Dichloroethane	107-06-2	0.6 s	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	**29** J	11 U	59 J	11 U	0.21 U	4.3 U	8.6 U	5.4 U	0.21 U	**77**	0.21 U	0.21 U
1,2-Dichloropropane	78-87-5	1 s	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	36 U	36 U	36 U	36 U	0.72 U	14 U	29 U	18 U	0.72 U	0.72 U	0.72 U	0.72 U
1,3-Dichlorobenzene	541-73-1	3 s	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	39 U	39 U	39 U	39 U	0.78 U	16 U	31 U	20 U	0.78 U	0.78 U	0.78 U	0.78 U
1,4-Dichlorobenzene	106-46-7	3 s	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	42 U	42 U	42 U	42 U	0.84 U	17 U	34 U	21 U	0.84 U	0.84 U	0.84 U	0.84 U
2-Butanone	78-93-3	50 g	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	**160** J	66 U	66 U	66 U	1.3 U	26 U	53 U	33 U	1.3 U	**96**	1.3 U	1.3 U
2-Hexanone	591-78-6	50 g	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	62 U	62 U	62 U	62 U	1.2 U	25 U	50 U	31 U	1.2 U	1.2 U	1.2 U	1.2 U
4-Methyl-2-pentanone	108-10-1	NL	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	100 U	100 U	100 U	100 U	2.1 U	42 U	84 U	52 U	2.1 U	**2.6** J	2.1 U	2.1 U
Acetone	67-64-1	50 g	3 U	3 U	3 U	**4.2** J	3 U	**200** J	150 U	150 U	150 U	3 U	60 U	120 U	75 U	3 U	3 U	3 U	3 U
Bromodichloromethane	75-27-4	50 g	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	19 U	19 U	19 U	19 U	0.39 U	7.7 U	15 U	9.6 U	0.39 U	0.39 U	0.39 U	0.39 U
Bromoform	75-25-2	50 g	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	13 U	13 U	13 U	13 U	0.26 U	5.1 U	10 U	6.4 U	0.26 U	0.26 U	0.26 U	0.26 U
Bromomethane	74-83-9	5 s	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	34 U	34 U	34 U	34 U	0.69 U	14 U	28 U	17 U	0.69 U	0.69 U	0.69 U	0.69 U
Carbon disulfide	75-15-0	60 g	0.19 U	**1.4** J	**1.2** J	**1.2** J	**2** J	9.7 U	9.7 U	9.7 U	9.7 U	0.19 U	3.9 U	7.8 U	4.8 U	0.19 U	**0.87** J	0.19 U	0.19 U
Carbon tetrachloride	56-23-5	5 s	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	13 U	13 U	13 U	13 U	0.27 U	5.3 U	11 U	6.7 U	0.27 U	0.27 U	0.27 U	0.27 U
Chlorobenzene	108-90-7	5 s	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	38 U	38 U	38 U	38 U	0.75 U	15 U	30 U	19 U	0.75 U	0.75 U	0.75 U	0.75 U
Chloroethane	75-00-3	5 s	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	16 U	16 U	16 U	16 U	0.32 U	6.5 U	13 U	8.1 U	0.32 U	10000 U	0.32 U	0.32 U
Chloroform	67-66-3	7 s	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	17 U	17 U	17 U	17 U	0.34 U	6.7 U	13 U	8.4 U	0.34 U	**7.3**	0.34 U	0.34 U
Chloromethane	74-87-3	5 s	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	17 U	17 U	17 U	17 U	0.35 U	6.9 U	14 U	8.6 U	0.35 U	**0.46** J	0.35 U	0.35 U
cis-1,2-Dichloroethene	156-59-2	5 s	**6.4**	0.81 U	**2.6** J	**2.4** J	0.81 U	**22000**	**6400**	**7100**	**3000**	**16**	**32** J	**2000**	**1100**	0.81 U	10000 U	**520**	**1100**
cis-1,3-Dichloropropene	10061-01-5	0.4 s	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	18 U	18 U	18 U	18 U	0.36 U	7.1 U	14 U	8.9 U	0.36 U	0.36 U	0.36 U	0.36 U
Cyclohexane	110-82-7	NL	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	9 U	9 U	9 U	9 U	0.18 U	3.6 U	7.2 U	4.5 U	0.18 U	0.18 U	0.18 U	0.18 U
Dibromochloromethane	124-48-1	50 g	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	16 U	16 U	16 U	16 U	0.32 U	6.4 U	13 U	8.1 U	0.32 U	0.32 U	0.32 U	0.32 U
Dichlorodifluoromethane	75-71-8	5 s	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	34 U	34 U	34 U	34 U	0.68 U	14 U	27 U	17 U	0.68 U	**1.2** J	0.68 U	**1.2** J
Isopropylbenzene	98-82-8	5 s	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	40 U	40 U	40 U	40 U	0.79 U	16 U	32 U	20 U	0.79 U	0.79 U	0.79 U	0.79 U
Methyl acetate	79-20-9	NL	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	25 U	25 U	25 U	25 U	0.5 U	10 U	20 U	13 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	1634-04-4	10 g	0.16 U	0.16 U	0.16 U	0.16 U	**0.62** J	8 U	8 U	8 U	8 U	0.16 U	3.2 U	6.4 U	4 U	0.16 U	0.16 U	0.16 U	0.16 U
Methylcyclohexane	108-87-2	NL	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	8 U	8 U	8 U	8 U	0.16 U	3.2 U	6.4 U	4 U	0.16 U	0.16 U	0.16 U	0.16 U
Methylene chloride	75-09-2	5 s	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	22 U	22 U	22 U	22 U	0.44 U	8.8 U	18 U	11 U	0.44 U	**17**	0.44 U	0.44 U
Styrene	100-42-5	5 s	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	36 U	36 U	36 U	36 U	0.73 U	15 U	29 U	18 U	0.73 U	0.73 U	0.73 U	0.73 U
Tetrachloroethene	127-18-4	5 s	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	18 U	18 U	18 U	18 U	0.36 U	7.3 U	15 U	9.1 U	0.36 U	**1.2** J	0.36 U	0.36 U
trans-1,2-Dichloroethene	156-60-5	5 s	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	**80** J	**94** J	45 U	45 U	0.9 U	18 U	36 U	22 U	0.9 U	**1.3** J	**11**	**29**
trans-1,3-Dichloropropene	10061-02-6	0.4 s	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	18 U	18 U	18 U	18 U	0.37 U	7.4 U	15 U	9.2 U	0.37 U	0.37 U	0.37 U	0.37 U
Trichloroethene	79-01-6	5 s	**1.4** J	0.46 U	**7.2**	**7.1**	**5.5**	**4500**	**11000**	**1500**	**14000**	**1.6** J	**46** J	**4900**	**1600**	0.46 U	**92**	**300**	**600**
Trichlorofluoromethane	75-69-4	5 s	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	44 U	44 U	44 U	44 U	0.88 U	18 U	35 U	22 U	0.88 U	0.88 U	0.88 U	0.88 U
Vinyl chloride	75-01-4	2 s	**4.9** J	0.9 U	0.9 U	0.9 U	0.9 U	**63** J	45 U	45 U	**160** J	0.9 U	18 U	**44** J	22 U	0.9 U	**41**	**33**	**130**
Total VOCs (ug/L) (Note 2)	NA	NL	14.8	1.4	11	14.9	198.32	77432	17494	33558	17160	112.6	2311	6944	2700	--- U	101147.9	904.23	1871.84

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit.
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 10
RI Groundwater VOC Results
Scott Aviation BCP

			June 2010														August 2010		
			Shallow Overburden						Deep Overburden							Bedrock	Shallow Overburden		
Sample Designation		**NYSDEC**	**A1-GP13-S**	**A1-GP14-S**	**A1-GP15-S**	**A1-GP16-S**	**A1-GP17-S**	**A1-GP18-S**	**MW-35D**	**MW-36D**	**MW-37D**	**MW-38D**	**MW-39D**	**MW-40D**	**GW-DUPLICATE-2**	**MW-41B2**	**MW-30**	**MW-35S**	**MW-36S**
Laboratory Identification	**CAS**	**Groundwater Guidance or**	**RTF1213-04**	**RTF1213-03**	**RTF1140-09**	**RTF1140-08**	**RTF1140-06**	**RTF1140-18**	**RTF1140-15**	**RTF1140-04**	**RTF1140-20**	**RTF1213-12**	**RTF1140-17**	**RTF1213-06**	**RTF1213-07**	**RTF1140-07**	**RTH0401-01**	**RTH0401-07**	**RTH0401-02**
Date Sampled	**Number**	**Standard Value (Note 1)**	**6/21/2010**	**6/21/2010**	**6/17/2010**	**6/17/2010**	**6/17/2010**	**6/18/2010**	**6/17/2010**	**6/17/2010**	**6/18/2010**	**6/22/2010**	**6/18/2010**	**6/21/2010**	**6/21/2010**	**6/17/2010**	**8/3/2010**	**8/2/2010**	**8/3/2010**
BTEX Compounds (ug/L)																			
Benzene	71-43-2	1 s	**22**	**1.3 J**	0.41 U	2 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	20 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
Toluene	100-41-4	5 s	**43**	0.51 U	0.51 U	2.6 U	**0.51 J**	0.51 U	0.51 U	0.51 U	0.51 U	**300**	0.51 U	0.51 U	0.51 U	**1.3 J**	0.51 U	0.51 U	0.51 U
Ethylbenzene	108-88-3	5 s	**96**	0.74 U	0.74 U	3.7 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	**270**	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U
Xylenes (total)	1330-20-7	5 s	**1600**	0.66 U	0.66 U	3.3 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	**730 J**	0.66 U	**1.1 J**	**1.1 J**	**0.71 J**	0.66 U	0.66 U	0.66 U
Total BTEX Compounds (ug/L)	NA	NL	1761	1.3	--- U	--- U	0.51	--- U	--- U	--- U	--- U	1300	--- U	1.1	1.1	2.01	--- U	--- U	--- U
Other VOCs (ug/L)																			
1,1,1-Trichloroethane	71-55-6	5 s	**2.2 J**	0.82 U	0.82 U	4.1 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	41 U	**17**	**23**	**22**	0.82 U	0.82 U	0.82 U	0.82 U
1,1,2,2-Tetrachloroethane	79-34-5	5 s	0.21 U	0.21 U	0.21 U	1.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	11 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	**6.6**	0.31 U	0.31 U	1.5 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	15 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U
1,1,2-Trichloroethane	79-00-5	1 s	**7**	0.23 U	0.23 U	1.2 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	12 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U
1,1-Dichloroethane	75-34-3	5 s	**400**	0.38 U	0.38 U	1.9 U	0.38 U	0.38 U	0.38 U	0.38 U	0.38 U	19 U	**4.7 J**	**260**	**240**	0.38 U	**2.4 J**	0.38 U	0.38 UJ
1,1-Dichloroethene	75-35-4	5 s	**10**	0.29 U	0.29 U	1.5 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	15 U	**2.3 J**	**1.8 J**	**1.7 J**	0.29 U	0.29 U	0.29 U	0.29 U
1,2,4-Trichlorobenzene	120-82-1	5 s	0.41 U	0.41 U	0.41 U	2 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	20 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	0.39 U	0.39 U	0.39 U	2 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	20 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
1,2-Dibromoethane	106-93-4	0.0006 s	0.73 U	0.73 U	0.73 U	3.6 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	36 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
1,2-Dichlorobenzene	95-50-1	3 s	0.79 U	0.79 U	0.79 U	4 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	40 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U
1,2-Dichloroethane	107-06-2	0.6 s	**6.8**	0.21 U	0.21 U	1.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	11 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
1,2-Dichloropropane	78-87-5	1 s	0.72 U	0.72 U	0.72 U	3.6 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	36 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U
1,3-Dichlorobenzene	541-73-1	3 s	0.78 U	0.78 U	0.78 U	3.9 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	39 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U
1,4-Dichlorobenzene	106-46-7	3 s	0.84 U	0.84 U	0.84 U	4.2 U	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	42 U	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U
2-Butanone	78-93-3	50 g	1.3 U	1.3 U	1.3 U	6.6 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	66 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U	1.3 U
2-Hexanone	591-78-6	50 g	1.2 U	1.2 U	1.2 U	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	62 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U
4-Methyl-2-pentanone	108-10-1	NL	2.1 U	2.1 U	**9.3 J**	10 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	100 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Acetone	67-64-1	50 g	**7 J**	3 U	23 J	15 U	3 U	3 U	**4.1 J**	3 U	3 U	150 U	3 U	**3.4 J**	3 U	**5.7 J**	3 U	**3.8 J**	3 U
Bromodichloromethane	75-27-4	50 g	0.39 U	0.39 U	0.39 U	1.9 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	19 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U
Bromoform	75-25-2	50 g	0.26 U	0.26 U	0.26 U	1.3 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	13 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U
Bromomethane	74-83-9	5 s	0.69 U	0.69 U	0.69 U	3.4 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	34 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U
Carbon disulfide	75-15-0	60 g	0.19 U	0.19 U	**0.52 J**	0.97 U	0.19 U	0.19 U	**0.71 J**	0.19 U	0.19 U	9.7 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Carbon tetrachloride	56-23-5	5 s	0.27 U	0.27 U	0.27 U	1.3 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	13 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U
Chlorobenzene	108-90-7	5 s	0.75 U	0.75 U	0.75 U	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	38 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U
Chloroethane	75-00-3	5 s	**160**	0.32 U	0.32 U	1.6 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	16 U	0.32 U	**1.4 J**	**1.3 J**	0.32 U	0.32 U	0.32 U	0.32 U
Chloroform	67-66-3	7 s	0.34 U	0.34 U	0.34 U	1.7 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	17 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U
Chloromethane	74-87-3	5 s	0.35 U	0.35 U	0.35 U	1.7 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	17 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
cis-1,2-Dichloroethene	156-59-2	5 s	**550**	0.81 U	0.81 U	**19 J**	0.81 U	0.81 U	0.81 U	0.81 U	0.81 U	**4400**	0.81 U	**1.2 J**	**1.2 J**	0.81 U	**7.7**	0.81 U	**1.5 J**
cis-1,3-Dichloropropene	10061-01-5	0.4 s	0.36 U	0.36 U	0.36 U	1.8 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	18 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
Cyclohexane	110-82-7	NL	**2.5 J**	0.18 U	0.18 U	0.9 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	9 U	0.18 U	0.18 U	0.18 U	**2.3 J**	0.18 U	0.18 U	0.18 U
Dibromochloromethane	124-48-1	50 g	0.32 U	0.32 U	0.32 U	1.6 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	16 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U
Dichlorodifluoromethane	75-71-8	5 s	0.68 U	0.68 U	0.68 U	3.4 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	34 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U
Isopropylbenzene	98-82-8	5 s	0.79 U	0.79 U	0.79 U	4 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	40 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U
Methyl acetate	79-20-9	NL	0.5 U	0.5 U	0.5 U	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	25 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
Methyl tert-butyl ether	1634-04-4	10 g	0.16 U	0.16 U	0.16 U	0.8 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	8 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U
Methylcyclohexane	108-87-2	NL	**23**	0.16 U	0.16 U	0.8 U	**0.56 J**	0.16 U	0.16 U	0.16 U	0.16 U	8 U	0.16 U	0.16 U	0.16 U	**5.1**	0.16 U	0.16 U	0.16 U
Methylene chloride	75-09-2	5 s	**8.3**	0.44 U	0.44 U	2.2 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	22 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U
Styrene	100-42-5	5 s	0.73 U	0.73 U	0.73 U	3.6 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	36 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U
Tetrachloroethene	127-18-4	5 s	**0.6 J**	0.36 U	0.36 U	1.8 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	**230 J**	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U
trans-1,2-Dichloroethene	156-60-5	5 s	**13**	**1.3 J**	0.9 U	4.5 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	45 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	0.37 U	0.37 U	0.37 U	1.8 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	18 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U
Trichloroethene	79-01-6	5 s	**3.9 J**	0.46 U	0.46 U	2.3 U	0.46 U	0.46 U	0.46 U	**2.1 J**	0.46 U	**11000**	0.46 U	**2.8 J**	**2.8 J**	0.46 U	**1.6 J**	0.46 U	**0.58 J**
Trichlorofluoromethane	75-69-4	5 s	0.88 U	0.88 U	0.88 U	4.4 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	44 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U
Vinyl chloride	75-01-4	2 s	**770**	**4 J**	0.9 U	4.5 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	45 U	0.9 U	0.9 U	0.9 U	0.9 U	**5.9**	0.9 U	0.9 U
Total VOCs (ug/L) (Note 2)	NA	NL	3731.9	6.6	9.82	19	1.07	--- U	4.81	2.1	--- U	16930	24	294.7	270.1	13.1	17.6	3.8	2.08

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit.
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 10
RI Groundwater VOC Results
Scott Aviation BCP

Sample Designation	CAS	NYSDEC	GW-DUPLICATE-1	MW-37S	A1-GP01-S	A1-GP02-S	A1-GP03-S	A1-GP04-S	A1-GP05-S	A1-GP06-S	A1-GP07-S	A1-GP08-S	A1-GP09-S	A1-GP10-S	A1-GP11-S	A1-GP12-S	A1-GP13-S	A1-GP14-S	A1-GP15-S
			August 2010																
			Shallow Overburden																
Laboratory Identification	CAS	Groundwater Guidance or	RTH0401-06	RTH0401-10	RTH0401-14	RTH0401-15	RTH0401-16	RTH0401-17	RTH0401-18	RTH0401-19	RTH0401-20	RTH0402-01	RTH0402-02	RTH0402-03	RTH0402-04	RTH0402-05	RTH0402-06	RTH0402-07	RTH0402-08
Date Sampled	Number	Standard Value (Note 1)	8/2/2010	8/3/2010	8/4/2010	8/4/2010	8/4/2010	8/4/2010	8/4/2010	8/4/2010	8/4/2010	8/4/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/3/2010	8/2/2010
BTEX Compounds (ug/L)																			
Benzene	71-43-2	1 s	0.41 U	1.6 U	100 U	82 U	160 U	1.4 J	0.41 U	8.2 U	20 U	10 U	0.41 U	510 U	4.1 U	8.2 U	34 J	5.5	0.41 U
Toluene	100-41-4	5 s	0.51 U	2 U	340 J	100 U	200 U	1.6 J	0.51 U	10 U	26 U	13 U	0.51 U	640 U	5.1 U	10 U	63	0.51 U	0.51 U
Ethylbenzene	108-88-3	5 s	0.74 U	3 U	180 U	150 U	300 U	0.75 J	0.74 U	15 U	37 U	18 U	0.74 U	920 U	7.4 U	15 U	120	0.74 U	0.74 U
Xylenes (total)	1330-20-7	5 s	0.66 U	2.6 U	160 U	130 U	260 U	0.66 U	0.66 U	13 U	33 U	16 U	0.66 U	820 U	6.6 U	13 U	2000	0.66 U	0.66 U
Total BTEX Compounds (ug/L)	NA	NL	--- U	--- U	340	--- U	--- U	3.75	--- U	--- U	--- U	--- U	--- U	--- U	--- U	--- U	2217	5.5	--- U
Other VOCs (ug/L)																			
1,1,1-Trichloroethane	71-55-6	5 s	0.82 U	200	7500	160 U	39000	14	98	1700	41 U	20 U	0.82 U	84000	8.2 U	16 U	8.2 U	0.82 U	0.82 U
1,1,2,2-Tetrachloroethane	79-34-5	5 s	0.21 U	0.85 U	53 U	43 U	85 U	0.21 U	0.21 U	4.3 U	11 U	5.3 U	0.21 U	270 U	2.1 U	4.3 U	2.1 U	0.21 U	0.21 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	0.31 U	6.3 J	1000 J	62 U	120 U	1.7 J	0.31 U	1900	15 U	7.7 U	0.31 U	1900 J	14 J	6.2 U	17 J	0.31 U	0.31 U
1,1,2-Trichloroethane	79-00-5	1 s	0.23 U	0.92 U	180 J	46 U	92 U	0.59 J	0.23 U	16 J	12 U	5.8 U	0.23 U	290 U	2.3 U	4.6 U	13 J	0.23 U	0.23 U
1,1-Dichloroethane	75-34-3	5 s	0.38 UJ	440	2000	77 U	6200	13	38	3200	19 U	9.6 U	0.38 U	48000	68	14 J	620	1 J	0.38 U
1,1-Dichloroethene	75-35-4	5 s	0.29 U	20	760 J	59 U	5600	20	21	270	15 U	7.3 U	0.29 U	2000 J	6.5 J	17 J	46 J	0.29 U	0.29 U
1,2,4-Trichlorobenzene	120-82-1	5 s	0.41 U	1.6 U	100 U	82 U	160 U	0.41 U	0.41 U	8.2 U	20 U	10 U	0.41 U	510 U	4.1 U	8.2 U	4.1 U	0.41 U	0.41 U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	0.39 U	1.6 U	98 U	79 U	160 U	0.39 U	0.39 U	7.9 U	20 U	9.8 U	0.39 U	490 U	3.9 U	7.9 U	3.9 U	0.39 U	0.39 U
1,2-Dibromoethane	106-93-4	0.0006 s	0.73 U	2.9 U	180 U	150 U	290 U	0.73 U	0.73 U	15 U	36 U	18 U	0.73 U	910 U	7.3 U	15 U	7.3 U	0.73 U	0.73 U
1,2-Dichlorobenzene	95-50-1	3 s	0.79 U	3.2 U	200 U	160 U	320 U	0.79 U	0.79 U	16 U	40 U	20 U	0.79 U	990 U	7.9 U	16 U	7.9 U	0.79 U	0.79 U
1,2-Dichloroethane	107-06-2	0.6 s	0.21 U	0.86 U	54 U	43 U	86 U	0.21 U	0.21 U	4.3 U	11 U	5.4 U	0.21 U	270 U	2.1 U	4.3 U	14 J	0.21 U	0.21 U
1,2-Dichloropropane	78-87-5	1 s	0.72 U	2.9 U	180 U	140 U	290 U	0.72 U	0.72 U	14 U	36 U	18 U	0.72 U	900 U	7.2 U	14 U	7.2 U	0.72 U	0.72 U
1,3-Dichlorobenzene	541-73-1	3 s	0.78 U	3.1 U	200 U	160 U	310 U	0.78 U	0.78 U	16 U	39 U	20 U	0.78 U	980 U	7.8 U	16 U	7.8 U	0.78 U	0.78 U
1,4-Dichlorobenzene	106-46-7	3 s	0.84 U	3.4 U	210 U	170 U	340 U	0.84 U	0.84 U	17 U	42 U	21 U	0.84 U	1000 U	8.4 U	17 U	8.4 U	0.84 U	0.84 U
2-Butanone	78-93-3	50 g	1.3 U	5.3 U	330 U	260 U	530 U	1.3 U	1.3 U	26 U	66 U	33 U	1.3 U	1600 U	13 U	26 U	13 U	1.3 U	1.3 U
2-Hexanone	591-78-6	50 g	1.2 U	5 U	310 U	250 U	500 U	1.2 U	1.2 U	25 U	62 U	31 U	1.2 U	1600 U	12 U	25 U	12 U	1.2 U	1.2 U
4-Methyl-2-pentanone	108-10-1	NL	2.1 U	8.4 U	520 U	420 U	840 U	2.1 U	2.1 U	42 U	100 U	52 U	2.1 U	2600 U	21 U	42 U	21 U	2.1 U	2.1 U
Acetone	67-64-1	50 g	3 U	12 U	750 U	600 U	1200 U	3 U	3 U	60 U	150 U	75 U	3 U	3800 U	30 U	60 U	30 U	5.2 J	3.4 J
Bromodichloromethane	75-27-4	50 g	0.39 U	1.5 U	96 U	77 U	150 U	0.39 U	0.39 U	7.7 U	19 U	9.6 U	0.39 U	480 U	3.9 U	7.7 U	3.9 U	0.39 U	0.39 U
Bromoform	75-25-2	50 g	0.26 U	1 U	64 U	51 U	100 U	0.26 U	0.26 U	5.1 U	13 U	6.4 U	0.26 U	320 U	2.6 U	5.1 U	2.6 U	0.26 U	0.26 U
Bromomethane	74-83-9	5 s	0.69 U	2.8 U	170 U	140 U	280 U	0.69 U	0.69 U	14 U	34 U	17 U	0.69 U	860 U	6.9 U	14 U	6.9 U	0.69 U	0.69 U
Carbon disulfide	75-15-0	60 g	0.19 U	0.78 U	48 U	39 U	78 U	0.19 U	0.19 U	3.9 U	9.7 U	4.8 U	0.19 U	240 U	1.9 U	3.9 U	1.9 U	0.19 U	0.19 U
Carbon tetrachloride	56-23-5	5 s	0.27 U	1.1 U	67 U	53 U	110 U	0.27 U	0.27 U	5.3 U	13 U	6.7 U	0.27 U	330 U	2.7 U	5.3 U	2.7 U	0.27 U	0.27 U
Chlorobenzene	108-90-7	5 s	0.75 U	3 U	190 U	150 U	300 U	0.75 U	0.75 U	15 U	38 U	19 U	0.75 U	940 U	7.5 U	15 U	7.5 U	0.75 U	0.75 U
Chloroethane	75-00-3	5 s	0.32 U	1.3 U	81 U	65 U	130 U	0.32 U	0.32 U	6.5 U	16 U	8.1 U	0.32 U	400 U	3.2 U	6.5 U	180	0.62 J	0.32 U
Chloroform	67-66-3	7 s	0.34 U	1.3 U	84 U	67 U	130 U	0.34 U	0.34 U	6.7 U	17 U	8.4 U	0.34 U	420 U	3.4 U	6.7 U	3.4 U	0.34 U	0.34 U
Chloromethane	74-87-3	5 s	0.35 U	1.4 U	86 U	69 U	140 U	0.35 U	0.35 U	6.9 U	17 U	8.6 U	0.35 U	430 U	3.5 U	6.9 U	3.5 U	0.74 J	0.35 U
cis-1,2-Dichloroethene	156-59-2	5 s	1.4 J	3.2 U	15000	10000	12000	3100	22	130	1300	2400	0.81 U	1000 U	1000	2900	2200	0.88 J	0.81 U
cis-1,3-Dichloropropene	10061-01-5	0.4 s	0.36 U	1.4 U	89 U	71 U	140 U	0.36 U	0.36 U	7.1 U	18 U	8.9 U	0.36 U	440 U	3.6 U	7.1 U	3.6 U	0.36 U	0.36 U
Cyclohexane	110-82-7	NL	0.18 U	0.72 U	45 U	36 U	72 U	0.18 U	0.18 U	3.6 U	9 U	4.5 U	0.18 U	220 U	1.8 U	3.6 U	5.7 J	0.18 U	0.18 U
Dibromochloromethane	124-48-1	50 g	0.32 U	1.3 U	81 U	64 U	130 U	0.32 U	0.32 U	6.4 U	16 U	8.1 U	0.32 U	400 U	3.2 U	6.4 U	3.2 U	0.32 U	0.32 U
Dichlorodifluoromethane	75-71-8	5 s	0.68 U	2.7 U	170 U	140 U	270 U	0.68 U	0.68 U	33 J	34 U	17 U	0.68 U	850 U	6.8 U	14 U	6.8 U	0.68 U	0.68 U
Isopropylbenzene	98-82-8	5 s	0.79 U	3.2 U	200 U	160 U	320 U	0.79 U	0.79 U	16 U	40 U	20 U	0.79 U	990 U	7.9 U	16 U	7.9 U	0.79 U	0.79 U
Methyl acetate	79-20-9	NL	0.5 U	2 U	130 U	100 U	200 U	0.5 U	0.5 U	10 U	25 U	13 U	0.5 U	630 U	5 U	10 U	5 U	0.5 U	0.5 U
Methyl tert-butyl ether	1634-04-4	10 g	0.16 U	0.64 U	40 U	32 U	64 U	0.16 U	0.16 U	3.2 U	8 U	4 U	0.16 U	200 U	1.6 U	3.2 U	1.6 U	0.16 U	0.16 U
Methylcyclohexane	108-87-2	NL	0.16 U	0.64 U	40 U	32 U	64 U	0.16 U	0.16 U	3.2 U	8 U	4 U	0.16 U	200 U	1.6 U	3.2 U	36 J	0.16 U	0.16 U
Methylene chloride	75-09-2	5 s	0.44 U	1.8 U	110 U	88 U	180 U	0.44 U	0.44 U	8.8 U	22 U	11 U	0.44 U	550 U	4.4 U	8.8 U	50 U	0.44 U	0.44 U
Styrene	100-42-5	5 s	0.73 U	2.9 U	180 U	150 U	290 U	0.73 U	0.73 U	15 U	36 U	18 U	0.73 U	910 U	7.3 U	15 U	7.3 U	0.73 U	0.73 U
Tetrachloroethene	127-18-4	5 s	0.36 U	1.5 U	91 U	73 U	150 U	1.8 J	0.36 U	7.3 U	18 U	9.1 U	0.36 U	460 U	3.6 U	7.3 U	3.6 U	0.36 U	0.36 U
trans-1,2-Dichloroethene	156-60-5	5 s	0.9 U	3.6 U	220 U	190 J	360 U	35	0.96 J	18 U	45 U	22 U	0.9 U	1100 U	28 J	120	28 J	6.2	0.9 U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	0.37 U	1.5 U	92 U	74 U	150 U	0.37 U	0.37 U	7.4 U	18 U	9.2 U	0.37 U	460 U	3.7 U	7.4 U	3.7 U	0.37 U	0.37 U
Trichloroethene	79-01-6	5 s	0.58 J	3 J	340 J	20000	2400	13000	2.4 J	200	2900	1900	0.88 J	570 U	700	1500	11 J	0.46 U	0.46 U
Trichlorofluoromethane	75-69-4	5 s	0.88 U	3.5 U	220 U	180 U	350 U	0.88 U	0.88 U	18 U	44 U	22 U	0.88 U	1100 U	8.8 U	18 U	8.8 U	0.88 U	0.88 U
Vinyl chloride	75-01-4	2 s	0.9 U	3.6 U	220 U	180 U	360 U	480 J	1.2 J	20 J	69 J	49 J	0.9 U	1100 U	60	240	2200	11	0.9 U
Total VOCs (ug/L) (Note 2)	NA	NL	1.98	669.3	27120	30190	65200	16669.84	183.56	7469	4269	4349	0.88	135900	1876.5	4791	7587.7	30.4	3.4

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit.
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 10
RI Groundwater VOC Results
Scott Aviation BCP

			August 2010										
			Shallow Overburden			Deep Overburden							Bedrock
Sample Designation		NYSDEC	A1-GP16-S	A1-GP17-S	A1-GP18-S	MW-35D	MW-36D	MW-37D	MW-38D	MW-39D	MW-40D	GW-DUPLICATE-2	MW-41B2
Laboratory Identification	CAS	Groundwater Guidance or	RTH0402-09	RTH0402-10	RTH0402-11	RTH0401-08	RTH0401-09	RTH0401-11	RTH0401-12	RTH0401-03	RTH0401-13	RTH0402-13	RTH0401-04
Date Sampled	Number	Standard Value (Note 1)	8/2/2010	8/3/2010	8/2/2010	8/2/2010	8/2/2010	8/3/2010	8/4/2010	8/3/2010	8/3/2010	8/3/2010	8/2/2010
BTEX Compounds (ug/L)													
Benzene	71-43-2	1 s	2 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	82 U	0.41 U	1.6 U	0.41 U	0.41 U
Toluene	100-41-4	5 s	2.6 U	0.51 U	0.51 U	0.51 U	0.51 U	0.51 U	100 U	0.51 U	2 U	0.51 U	**2** J
Ethylbenzene	108-88-3	5 s	3.7 U	0.74 U	0.74 U	0.74 U	0.74 U	0.74 U	150 U	0.74 U	3 U	0.74 U	0.74 U
Xylenes (total)	1330-20-7	5 s	3.3 U	0.66 U	0.66 U	0.66 U	0.66 U	0.66 U	**260** J	0.66 U	2.6 U	0.66 U	0.66 U
Total BTEX Compounds (ug/L)	NA	NL	--- U	--- U	--- U	--- U	--- U	--- U	260	--- U	--- U	--- U	2
Other VOCs (ug/L)													
1,1,1-Trichloroethane	71-55-6	5 s	4.1 U	0.82 U	0.82 U	0.82 U	0.82 U	0.82 U	160 U	**13**	**25**	**26**	0.82 U
1,1,2,2-Tetrachloroethane	79-34-5	5 s	1.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	43 U	0.21 U	0.85 U	0.21 U	0.21 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	1.5 U	0.31 U	0.31 U	0.31 U	0.31 U	0.31 U	62 U	0.31 U	1.2 U	**2** J	0.31 U
1,1,2-Trichloroethane	79-00-5	1 s	1.2 U	0.23 U	0.23 U	0.23 U	0.23 U	0.23 U	46 U	0.23 U	0.92 U	0.23 U	0.23 U
1,1-Dichloroethane	75-34-3	5 s	1.9 U	0.38 U	0.38 U	0.38 U	0.38 UJ	0.38 U	77 U	**5.8**	**550**	**1100**	0.38 U
1,1-Dichloroethene	75-35-4	5 s	1.5 U	0.29 U	0.29 U	0.29 U	0.29 U	0.29 U	59 U	**3.1** J	**6** J	**3.9** J	0.29 U
1,2,4-Trichlorobenzene	120-82-1	5 s	2 U	0.41 U	0.41 U	0.41 U	0.41 U	0.41 U	82 U	0.41 U	1.6 U	0.41 U	0.41 U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	2 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	79 U	0.39 U	1.6 U	0.39 U	0.39 U
1,2-Dibromoethane	106-93-4	0.0006 s	3.6 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	150 U	0.73 U	2.9 U	0.73 U	0.73 U
1,2-Dichlorobenzene	95-50-1	3 s	4 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	160 U	0.79 U	3.2 U	0.79 U	0.79 U
1,2-Dichloroethane	107-06-2	0.6 s	1.1 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	43 U	0.21 U	0.86 U	**0.71** J	0.21 U
1,2-Dichloropropane	78-87-5	1 s	3.6 U	0.72 U	0.72 U	0.72 U	0.72 U	0.72 U	140 U	0.72 U	2.9 U	0.72 U	0.72 U
1,3-Dichlorobenzene	541-73-1	3 s	3.9 U	0.78 U	0.78 U	0.78 U	0.78 U	0.78 U	160 U	0.78 U	3.1 U	0.78 U	0.78 U
1,4-Dichlorobenzene	106-46-7	3 s	4.2 U	0.84 U	0.84 U	0.84 U	0.84 U	0.84 U	170 U	0.84 U	3.4 U	0.84 U	0.84 U
2-Butanone	78-93-3	50 g	6.6 U	1.3 U	1.3 U	1.3 U	**200**	1.3 U	260 U	1.3 U	5.3 U	1.3 U	1.3 U
2-Hexanone	591-78-6	50 g	6.2 U	1.2 U	1.2 U	1.2 U	1.2 U	1.2 U	250 U	1.2 U	5 U	1.2 U	1.2 U
4-Methyl-2-pentanone	108-10-1	NL	10 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	420 U	2.1 U	8.4 U	2.1 U	2.1 U
Acetone	67-64-1	50 g	15 U	3 U	3 U	3 U	**21** J	**7.7** J	600 U	**4** J	12 U	**7.4** J	**6.8** J
Bromodichloromethane	75-27-4	50 g	1.9 U	0.39 U	0.39 U	0.39 U	0.39 U	0.39 U	77 U	0.39 U	1.5 U	0.39 U	0.39 U
Bromoform	75-25-2	50 g	1.3 U	0.26 U	0.26 U	0.26 U	0.26 U	0.26 U	51 U	0.26 U	1 U	0.26 U	0.26 U
Bromomethane	74-83-9	5 s	3.4 U	0.69 U	0.69 U	0.69 U	0.69 U	0.69 U	140 U	0.69 U	2.8 U	0.69 U	0.69 U
Carbon disulfide	75-15-0	60 g	0.97 U	0.19 U	0.19 U	**0.69** J	**0.93** J	**1.1** J	39 U	0.19 U	**4** J	**3.7** J	**1.1** J
Carbon tetrachloride	56-23-5	5 s	1.3 U	0.27 U	0.27 U	0.27 U	0.27 U	0.27 U	53 U	0.27 U	1.1 U	0.27 U	0.27 U
Chlorobenzene	108-90-7	5 s	3.8 U	0.75 U	0.75 U	0.75 U	0.75 U	0.75 U	150 U	0.75 U	3 U	0.75 U	0.75 U
Chloroethane	75-00-3	5 s	1.6 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	65 U	0.32 U	1.3 U	**2.9** J	0.32 U
Chloroform	67-66-3	7 s	1.7 U	0.34 U	0.34 U	0.34 U	0.34 U	0.34 U	67 U	0.34 U	1.3 U	0.34 U	0.34 U
Chloromethane	74-87-3	5 s	1.7 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	69 U	0.35 U	1.4 U	0.35 U	0.35 U
cis-1,2-Dichloroethene	156-59-2	5 s	**69**	0.81 U	0.81 U	0.81 U	0.81 U	0.81 U	**13000**	0.81 U	3.2 U	**2** J	0.81 U
cis-1,3-Dichloropropene	10061-01-5	0.4 s	1.8 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	71 U	0.36 U	1.4 U	0.36 U	0.36 U
Cyclohexane	110-82-7	NL	0.9 U	0.18 U	0.18 U	0.18 U	0.18 U	0.18 U	36 U	0.18 U	0.72 U	0.18 U	**1.5** J
Dibromochloromethane	124-48-1	50 g	1.6 U	0.32 U	0.32 U	0.32 U	0.32 U	0.32 U	64 U	0.32 U	1.3 U	0.32 U	0.32 U
Dichlorodifluoromethane	75-71-8	5 s	3.4 U	0.68 U	0.68 U	0.68 U	0.68 U	0.68 U	140 U	0.68 U	2.7 U	0.68 U	0.68 U
Isopropylbenzene	98-82-8	5 s	4 U	0.79 U	0.79 U	0.79 U	0.79 U	0.79 U	160 U	0.79 U	3.2 U	0.79 U	0.79 U
Methyl acetate	79-20-9	NL	2.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	100 U	0.5 U	2 U	0.5 U	0.5 U
Methyl tert-butyl ether	1634-04-4	10 g	0.8 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	32 U	0.16 U	0.64 U	0.16 U	0.16 U
Methylcyclohexane	108-87-2	NL	0.8 U	0.16 U	0.16 U	0.16 U	0.16 U	0.16 U	32 U	0.16 U	0.64 U	0.16 U	**3.5** J
Methylene chloride	75-09-2	5 s	2.2 U	0.44 U	0.44 U	0.44 U	0.44 U	0.44 U	88 U	0.44 U	1.8 U	0.44 U	0.44 U
Styrene	100-42-5	5 s	3.6 U	0.73 U	0.73 U	0.73 U	0.73 U	0.73 U	150 U	0.73 U	2.9 U	0.73 U	0.73 U
Tetrachloroethene	127-18-4	5 s	1.8 U	0.36 U	0.36 U	0.36 U	0.36 U	0.36 U	**130** J	0.36 U	1.5 U	0.36 U	0.36 U
trans-1,2-Dichloroethene	156-60-5	5 s	4.5 U	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	180 U	0.9 U	3.6 U	0.9 U	0.9 U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	1.8 U	0.37 U	0.37 U	0.37 U	0.37 U	0.37 U	74 U	0.37 U	1.5 U	0.37 U	0.37 U
Trichloroethene	79-01-6	5 s	2.3 U	0.46 U	0.46 U	0.46 U	**0.74** J	0.46 U	**2100**	0.46 U	1.8 U	**1.9** J	0.46 U
Trichlorofluoromethane	75-69-4	5 s	4.4 U	0.88 U	0.88 U	0.88 U	0.88 U	0.88 U	180 U	0.88 U	3.5 U	0.88 U	0.88 U
Vinyl chloride	75-01-4	2 s	**5** J	0.9 U	0.9 U	0.9 U	0.9 U	0.9 U	180 U	0.9 U	3.6 U	**1.2** J	0.9 U
Total VOCs (ug/L) (Note 2)	NA	NL	74	--- U	--- U	0.69	222.67	8.8	15490	25.9	585	1151.71	14.9

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit.
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 11
Groundwater SVOC Results
Scott Aviation BCP Site

			June 2010								August 2010							
			Shallow Overburden				Deep Overburden		Bedrock		Shallow Overburden				Deep Overburden		Bedrock	
Sample Identification	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-36S		GW-DUPLICATE-1 (MW-36S)		MW-39D		MW-41B2		MW-36S		GW-DUPLICATE-1 (MW-36S)		MW-39D		MW-41B2	
Laboratory Identification			RTF1140-05		RTF1140-03		RTF1140-17		RTF1140-07		RTH0401-02		RTH0401-06		RTH0401-03		RTH0401-04	
Date Sampled			6/17/2010		6/17/2010		6/18/2010		6/17/2010		8/3/2010		8/2/2010		8/3/2010		8/2/2010	
PAH Compounds (ug/L)																		
2-Methylnaphthalene	91-57-6	NL	0.59	U	0.59	U	0.57	U	0.58	U	0.57	U	0.58	U	0.57	U	0.58	U
Acenaphthene	83-32-9	20 g	0.4	U	0.41	U	0.39	U	0.39	U	0.39	U	0.4	U	0.39	U	0.39	U
Acenaphthylene	208-96-8	NL	0.37	U	0.38	U	0.36	U	0.37	U	0.36	U	0.37	U	0.36	U	0.37	U
Anthracene	120-12-7	50 g	0.27	U	0.28	U	0.26	U	0.27	U	0.27	U	0.27	U	0.26	U	0.27	U
Benzo(a)anthracene	56-55-3	0.002 g	0.35	U	0.36	U	0.34	U	0.35	U	0.34	U	0.35	U	0.34	U	0.35	U
Benzo(a)pyrene	50-32-8	ND	0.46	U	0.47	U	0.44	U	0.45	U	0.45	U	0.46	U	0.44	U	0.45	U
Benzo(b)fluoranthene	205-99-2	0.002 g	0.33	U	0.34	U	0.32	U	0.33	U	0.33	U	0.33	U	0.32	U	0.33	U
Benzo(ghi)perylene	191-24-2	NL	0.34	U	0.35	U	0.33	U	0.34	U	0.33	U	0.34	U	0.33	U	0.34	U
Benzo(k)fluoranthene	207-08-9	0.002 g	0.72	U	0.72	U	0.69	U	0.7	U	0.7	U	0.71	U	0.69	U	0.7	U
Chrysene	218-01-9	0.002 g	0.32	U	0.33	U	0.31	U	0.32	U	0.32	U	0.32	U	0.31	U	0.32	U
Dibenz(a,h)anthracene	53-70-3	NL	0.41	U	0.42	U	0.4	U	0.4	U	0.4	U	0.41	U	0.4	U	0.4	U
Fluoranthene	206-44-0	50 g	0.39	U	0.4	U	0.38	U	0.38	U	0.38	U	0.39	U	0.38	U	0.38	U
Fluorene	86-73-7	50 g	0.35	U	0.36	U	0.34	U	0.35	U	0.34	U	0.35	U	0.34	U	0.35	U
Indeno(1,2,3-cd)pyrene	193-39-5	0.002 g	0.46	UJ	0.47	UJ	0.44	UJ	0.45	UJ	0.45	U	0.46	U	0.44	U	0.45	U
Naphthalene	91-20-3	10 g	0.75	U	0.75	U	0.72	U	0.73	U	0.73	U	0.74	U	0.72	U	0.73	U
Phenanthrene	85-01-8	50 g	0.43	U	0.44	U	0.42	U	0.42	U	0.42	U	0.43	U	0.42	U	0.42	U
Pyrene	129-00-0	50 g	0.33	U	0.34	U	0.32	U	0.33	U	0.33	U	0.33	U	0.32	U	0.33	U
Total PAHs (ug/L)	NA	NL	---	U	---	U	---	U	---	U	---	U	---	U	---	U	---	U
Other SVOCs (ug/L)																		
1,1'-Biphenyl	92-52-4	5 s	0.64	U	0.65	U	0.62	U	0.63	U	0.62	U	0.63	U	0.62	U	0.63	U
2,2'-oxybis(1-Chloropropane)	108-60-1	NL	0.51	U	0.51	U	0.49	U	0.5	U	0.5	U	0.5	U	0.49	U	0.5	U
2,4,5-Trichlorophenol	95-95-4	NL	0.47	U	0.48	U	0.45	U	0.46	U	0.46	U	0.47	U	0.45	U	0.46	U
2,4,6-Trichlorophenol	88-06-2	NL	0.6	U	0.6	U	0.58	U	0.59	U	0.58	U	0.59	U	0.58	U	0.59	U
2,4-Dichlorophenol	120-83-2	5 s	0.5	U	0.5	U	0.48	U	0.49	U	0.49	U	0.5	U	0.48	U	0.49	U
2,4-Dimethylphenol	105-67-9	50 g	0.49	U	0.5	U	0.47	U	0.48	U	0.48	U	0.49	U	0.47	U	0.48	U
2,4-Dinitrophenol	51-28-5	10 g	2.2	U	2.2	U	2.1	U	2.1	U	2.1	U	2.2	U	2.1	U	2.1	U
2,4-Dinitrotoluene	121-14-2	5 s	0.44	U	0.44	U	0.42	U	0.43	U	0.43	U	0.43	U	0.42	U	0.43	U
2,6-Dinitrotoluene	606-20-2	5 s	0.39	U	0.4	U	0.38	U	0.38	U	0.38	U	0.39	U	0.38	U	0.38	U
2-Chloronaphthalene	91-58-7	10 g	0.45	U	0.46	U	0.43	U	0.44	U	0.44	U	0.45	U	0.43	U	0.44	U
2-Chlorophenol	95-57-8	NL	0.52	U	0.52	U	0.5	U	0.51	U	0.51	U	0.51	U	0.5	U	0.51	U
2-Methylphenol	95-48-7	NL	0.39	U	0.4	U	0.38	U	0.38	U	0.38	U	0.39	U	0.38	U	0.38	U
2-Nitroaniline	88-74-4	5 s	0.41	U	0.42	U	0.4	U	0.4	U	0.4	U	0.41	U	0.4	U	0.4	U
2-Nitrophenol	88-75-5	NL	0.47	U	0.48	U	0.45	U	0.46	U	0.46	U	0.47	U	0.45	U	0.46	U

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit.
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total for SVOCs inlcudes PAHs.

Table 11
Groundwater SVOC Results
Scott Aviation BCP Site

			June 2010				August 2010			
			Shallow Overburden		Deep Overburden	Bedrock	Shallow Overburden		Deep Overburden	Bedrock
Sample Identification		NYSDEC	MW-36S	GW-DUPLICATE-1 (MW-36S)	MW-39D	MW-41B2	MW-36S	GW-DUPLICATE-1 (MW-36S)	MW-39D	MW-41B2
Laboratory Identification	CAS	Groundwater Guidance or	RTF1140-05	RTF1140-03	RTF1140-17	RTF1140-07	RTH0401-02	RTH0401-06	RTH0401-03	RTH0401-04
Date Sampled	Number	Standard Value (Note 1)	6/17/2010	6/17/2010	6/18/2010	6/17/2010	8/3/2010	8/2/2010	8/3/2010	8/2/2010
3,3'-Dichlorobenzidine	91-94-1	5 s	0.39 U	0.4 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U
3-Nitroaniline	99-09-2	5 s	0.47 U	0.48 U	0.45 U	0.46 U	0.46 U	0.47 U	0.45 U	0.46 U
4,6-Dinitro-2-methylphenol	534-52-1	NL	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
4-Bromophenyl phenyl ether	101-55-3	NL	0.44 U	0.45 U	0.42 U	0.43 U	0.43 U	0.44 U	0.42 U	0.43 U
4-Chloro-3-methylphenol	59-50-7	NL	0.44 U	0.45 U	0.42 U	0.43 U	0.43 U	0.44 U	0.42 U	0.43 U
4-Chloroaniline	106-47-8	5 s	0.58 U	0.58 U	0.56 U	0.57 U	0.56 U	0.57 U	0.56 U	0.57 U
4-Chlorophenyl phenyl ether	7005-72-3	NL	0.34 U	0.35 U	0.33 U	0.34 U	0.33 U	0.34 U	0.33 U	0.34 U
4-Methylphenol	106-44-5	NL	0.35 U	0.36 U	0.34 U	0.35 U	0.34 U	0.35 U	0.34 U	0.35 U
4-Nitroaniline	100-01-6	5 s	0.25 U	0.25 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
4-Nitrophenol	100-02-7	NL	1.5 U	1.5 U	1.4 U	1.5 U	1.5 U	1.5 U	1.4 U	1.5 U
Acetophenone	98-86-2	NL	0.53 U	0.53 U	0.51 U	0.52 U	0.52 U	0.52 U	0.51 U	0.52 U
Atrazine	1912-24-9	7.5 s	0.45 U	0.46 U	0.43 U	0.44 U	0.44 U	0.45 U	0.43 U	0.44 U
Benzaldehyde	100-52-7	NL	0.26 U	0.26 U	0.25 U	0.26 U	0.26 U	0.26 U	0.25 U	0.26 U
bis(2-Chloroethoxy)methane	111-91-1	5 s	0.34 U	0.35 U	0.33 U	0.34 U	0.33 U	0.34 U	0.33 U	0.34 U
bis(2-Chloroethyl) ether	111-44-4	1 s	0.39 U	0.4 U	0.38 U	0.38 U	0.38 U	0.39 U	0.38 U	0.38 U
bis(2-Ethylhexyl) phthalate	117-81-7	5 s	1.8 U	1.8 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U	1.7 U
Butyl benzyl phthalate	85-68-7	50 g	0.41 U	0.42 U	0.4 U	0.4 U	0.4 U	0.41 U	0.4 U	0.4 U
Caprolactam	105-60-2	NL	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Carbazole	86-74-8	NL	0.29 U	0.3 U	0.28 U	0.29 U	0.29 U	0.29 U	0.28 U	0.29 U
Di-n-butyl phthalate	84-74-2	50 s	**0.54 J**	**0.4 J**	0.29 U	**0.35 J**	9.6 U	9.7 U	9.4 U	9.6 U
Di-n-octyl phthalate	117-84-0	NL	0.46 U	0.47 U	0.44 U	0.45 U	0.45 U	0.46 U	0.44 U	0.45 U
Dibenzofuran	132-64-9	NL	0.5 U	0.5 U	0.48 U	0.49 U	0.49 U	0.5 U	0.48 U	0.49 U
Diethyl phthalate	131-11-3	50 g	0.22 U	0.22 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U	0.21 U
Dimethyl phthalate	84-66-2	50 g	0.35 U	0.36 U	0.34 U	0.82 J	0.34 U	0.35 U	0.34 U	0.35 U
Hexachlorobenzene	118-74-1	0.4 s	0.5 U	0.5 U	0.48 U	0.49 U	0.49 U	0.5 U	0.48 U	0.49 U
Hexachlorobutadiene	87-68-3	0.5 s	0.67 U	0.67 U	0.64 U	0.65 U	0.65 U	0.66 U	0.64 U	0.65 U
Hexachlorocyclopentadiene	77-47-4	5 s	0.58 U	0.58 U	0.56 U	0.57 U	0.56 U	0.57 U	0.56 U	0.57 U
Hexachloroethane	67-72-1	5 s	0.58 U	0.58 U	0.56 U	0.57 U	0.56 U	0.57 U	0.56 U	0.57 U
Isophorone	78-59-1	50 g	0.42 U	0.43 U	0.41 U	0.41 U	0.41 U	0.42 U	0.41 U	0.41 U
N-Nitrosodi-n-propylamine	621-64-7	50 g	0.53 U	0.53 U	0.51 U	0.52 U	0.52 U	0.52 U	0.51 U	0.52 U
N-Nitrosodiphenylamine	86-30-6	50 g	0.5 U	0.5 U	0.48 U	0.49 U	0.49 U	0.5 U	0.48 U	0.49 U
Nitrobenzene	98-95-3	0.4	0.28 U	0.29 U	0.27 U	0.28 U	0.28 U	0.28 U	0.27 U	0.28 U
Pentachlorophenol	87-86-5	1 s	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U	2.1 U
Phenol	108-95-2	1 s	0.38 U	0.39 U	0.37 U	0.38 U	0.37 U	0.38 U	0.37 U	0.38 U
Total SVOCs (ug/L) (Note 2)	NA	NL	0.54	0.4	--- U	0.35	--- U	--- U	--- U	--- U

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit.
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total for SVOCs inlcudes PAHs.

Table 12
Groundwater Metals Results
Scott Aviation BCP Site

			June 2010					August 2010				
			Shallow Overburen			Deep Overburden	Bedrock	Shallow Overburen			Deep Overburden	Bedrock
Sample Identification		**NYSDEC**	**MW-30**	**MW-36S**	**GW-DUPLICATE-1 (MW-36S)**	**MW-39D**	**MW-41B2**	**MW-30**	**GW-DUPLICATE-1 (MW-36S)**	**MW-36S**	**MW-39D**	**MW-41B2**
Laboratory Identification	**CAS**	**Groundwater Guidance or**	**RTF1140-16**	**RTF1140-05**	**RTF1140-03**	**RTF1140-17**	**RTF1140-07**	**RTH0401-01**	**RTH0401-06**	**RTH0401-02**	**RTH0401-03**	**RTH0401-04**
Date Sampled	**Number**	**Standard Value (Note 1)**	**6/18/2010**	**6/17/2010**	**6/17/2010**	**6/18/2010**	**6/17/2010**	**8/3/2010**	**8/2/2010**	**8/3/2010**	**8/3/2010**	**8/2/2010**
Metals (ug/L)												
Aluminum	7429-90-5	NL	200 U	200 U	200 U	200 U	**1940**	200 U	200 U	200 U	200 U	**203**
Antimony	7440-36-0	3 s	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Arsenic	7440-38-2	25 s	**19**	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Barium	7440-39-3	1,000 s	**208**	**81.4**	**80.3**	**144**	**79.2**	**205**	**85**	**83**	**148**	**44.7**
Beryllium	7440-41-7	3 g	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Cadmium	7440-43-9	5 s	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Calcium	7440-70-2	NL	**64,800**	**110,000**	**107,000**	**45,000**	**60,200**	**67,700**	**110,000**	**107,000**	**47,200**	**51,700**
Chromium	7440-47-3	50 s	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U	4 U
Cobalt	7440-48-4	NL	**4.4**	**8.8**	**9**	4 U	4 U	**4.7**	**7.5**	**7.2**	4 U	4 U
Copper	7440-50-8	200 s	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Iron	7439-89-6	300 s	**7780**	**53**	50 U	**1170**	**1,430**	**4,510**	50 U	50 U	**3510**	**582**
Lead	7439-92-1	25 s	5 U	5 U	5 U	5 U	5 U	5 UJ	**5.5 J**	5 UJ	5 UJ	5 UJ
Magnesium	7439-95-4	35,000 s	**62,500**	**109,000**	**105,000**	**61,500**	**54,300**	**68,100**	**114,000**	**111,000**	**65,700**	**25,400**
Manganese	7439-96-5	300 s	**55.4**	**33.3**	**31.6**	**67.8**	**45.2**	**57.7**	**65.9**	**63.1**	**79.8**	**32.1**
Mercury	7439-97-6	0.7 s	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	100 s	**15.6**	10 U	10 U	10 U	10 U	**15.4**	10 U	10 U	10 U	10 U
Potassium	7439-97-6	NL	**2,500**	**1,230**	**1,120**	**2,870**	**9,710**	**2,870**	**3,400**	**3,270**	**2,760**	**8,960**
Selenium	7782-49-2	10 s	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U	15 U
Silver	7440-22-4	50 s	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U	3 U
Sodium	7440-23-5	20,000 s	**47,700**	**50,000**	**49,000**	**35,900**	**132,000**	**49,800**	**50,300**	**48,800**	**36,400**	**135,000**
Thallium	7440-28-0	0.5 g	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Vanadium	7440-62-2	NL	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Zinc	7440-66-6	2,000 g	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit.
Shaded value - compound detected at a concentration greater than the groundeater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].

Table 13
Groundwater PCBs and Pesticides Results
Scott Aviation BCP Site

		June 2010				August 2010			
		Shallow Overburden		Deep Overburden	Bedrock	Shallow Overburden		Deep Overburden	Bedrock
Sample Identification	**NYSDEC**	**MW-36S**	**GW-DUPLICATE-1**	**MW-39D**	**MW-41B2**	**MW-36S**	**GW-DUPLICATE-1**	**MW-39D**	**MW-41B2**
Lab ID	**Groundwater Guidance or**	**RTF1140-05**	**RTF1140-03**	**RTF1140-17**	**RTF1140-07**	**RTH0401-02**	**RTH0401-06**	**RTH0401-03**	**RTH0401-04**
Date Sampled	**Standard Value (Note 1)**	**6/17/2010**	**6/17/2010**	**6/18/2010**	**6/17/2010**	**8/3/2010**	**8/2/2010**	**8/3/2010**	**8/2/2010**
Pesticide Compounds (µg/L)									
4,4'-DDD	0.3 s	0.0088 U	0.0088 U	0.0087 U	0.0088 U	0.0089 U	0.0088 U	0.0087 U	0.0087 U
4,4'-DDE	0.2 s	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U	0.011 U
4,4'-DDT	0.2 s	0.011 U	0.011 U	0.01 U	0.01 U	0.049 U	**0.040 J**	0.01 U	0.01 U
Aldrin	ND s	0.0063 U	0.0063 U	0.0062 U	0.0063 U	0.0064 U	0.0063 U	0.0062 U	0.0062 U
alpha-BHC	0.01 s	0.0063 U	0.0063 U	0.0062 U	0.0063 U	0.0064 U	0.048 U	0.0062 U	0.0062 U
alpha-Chlordane	NL	**0.023 J**	**0.019 J**	0.014 U	0.014 U	0.014 U	**0.016 J**	0.014 U	0.014 U
beta-BHC	0.04 s	0.024 U	0.024 U	0.023 U	0.024 U	0.049 U	0.024 U	0.023 U	0.023 U
Chlordane	0.05 s	0.028 U	0.028 U	0.027 U	0.028 U	0.028 U	0.028 U	0.027 U	0.027 U
delta-BHC	0.04 s	0.0097 U	0.0097 U	0.0095 U	0.0096 U	0.0098 U	**0.013 NJ**	**0.015 J**	**0.012 J**
Dieldrin	0.004 s	0.0094 U	0.048 U	0.0092 U	0.0093 U	0.0095 U	0.0094 U	0.0092 U	0.0092 U
Endosulfan I	NL	0.011 U	0.011 U	0.01 U	0.01 U	**0.093 NJ**	**0.072 J**	0.01 U	0.01 U
Endosulfan II	NL	0.012 U	0.012 U	0.011 U	0.011 U	0.049 U	0.012 U	0.011 U	0.011 U
Endosulfan sulfate	NL	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U	0.015 U
Endrin	ND s	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U	0.013 U
Endrin aldehyde	5 s	0.016 U	0.016 U	0.015 U	0.016 U	0.016 U	0.016 U	0.015 U	0.015 U
Endrin ketone	5 s	0.012 U	0.012 U	0.011 U	0.011 U	0.012 U	0.012 U	0.011 U	0.011 U
gamma-BHC (Lindane)	0.05 s	0.0058 U	0.0058 U	0.0057 U	0.0057 U	0.0058 U	**0.011 NJ**	**0.011 NJ**	0.0057 U
gamma-Chlordane	NL	0.011 U	0.011 U	0.01 U	0.01 U	0.011 U	**0.013 NJ**	0.01 U	0.01 U
Heptachlor	0.04 s	0.0082 U	0.0082 U	0.008 U	0.0081 U	0.0083 U	0.0082 U	0.008 U	0.008 U
Heptachlor epoxide	0.03 s	0.0051 U	0.0051 U	0.005 U	0.005 U	**0.049 NJ**	**0.026 NJ**	0.005 U	0.005 U
Methoxychlor	35 s	0.014 U	0.014 U	0.013 U	0.013 U	0.014 U	0.014 U	0.013 U	0.013 U
Toxaphene	0.06 s	0.12 U	0.12 U	0.11 U	0.11 U	0.12 U	0.12 U	0.11 U	0.11 U
PCB Compounds (µg/L)									
Aroclor 1016	NL	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Aroclor 1221	NL	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Aroclor 1232	NL	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Aroclor 1242	NL	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Aroclor 1248	NL	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U	0.17 U
Aroclor 1254	NL	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Aroclor 1260	NL	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U	0.24 U
Total PCBs (µg/L)	**0.09 (Note 2)**	--- U	--- U	--- U	--- U	--- U	--- U	--- U	--- U

Notes:
NL = Not listed.
ND = Detections are greater than the groundwater standard or guidance value.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
NJ = Presumptively present at estimated quantity.
µg/L = micrograms per liter
Bold value - compound detected at concentration greater than the reporting limit
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Applies to the sum of PCB compounds.

Table 14
RI Groundwater VOC Results in Temporary Piezometers
Scott Aviation BCP Site

Sample Designation / Laboratory Identification / Date Sampled	CAS Number	NYSDEC Groundwater Guidance or Standard Value[1]	June 2010								August 2010	
Sample Designation			TP-1		TP-2		TP-3		TP-4		TP-2	
Laboratory Identification			RTF1140-12		RTF1140-13		RTF1140-10		RTF1140-11		RTH0402-12	
Date Sampled			6/17/2010		6/17/2010		6/17/2010		6/17/2010		8/2/2010	
BTEX Compounds (ug/L)												
Benzene	71-43-2	1 s	5	U	5	U	25	U	25	U	25	U
Toluene	100-41-4	5 s	5	U	5	U	25	U	25	U	25	U
Ethylbenzene	108-88-3	5 s	5	U	5	U	25	U	25	U	25	U
Xylenes (total)	1330-20-7	5 s	15	U	15	U	25	U	25	U	75	U
Total BTEX Compounds (ug/L)	NA	NL	---	U	---	U	---	U	---	U	---	U
Other VOCs (ug/L)												
1,1,1-Trichloroethane	71-55-6	5 s	**63**		**74**		25	U	25	U	**230**	
1,1,2,2-Tetrachloroethane	79-34-5	5 s	5	U	5	U	25	U	25	U	25	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	**240**		**290**		25	U	25	U	**1200**	
1,1,2-Trichloroethane	79-00-5	1 s	5	U	5	U	25	U	25	U	25	U
1,1-Dichloroethane	75-34-3	5 s	**1.4**	**J**	**0.64**	**J**	25	U	25	U	25	U
1,1-Dichloroethene	75-35-4	5 s	**4.8**	**J**	**5.7**		25	U	25	U	**20**	**J**
1,2,4-Trichlorobenzene	120-82-1	5 s	5	U	5	U	25	U	25	U	25	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	5	U	5	U	25	U	25	U	25	U
1,2-Dibromoethane	106-93-4	0.0006 s	5	U	5	U	25	U	25	U	25	U
1,2-Dichlorobenzene	95-50-1	3 s	5	U	5	U	25	U	25	U	25	U
1,2-Dichloroethane	107-06-2	0.6 s	5	U	5	U	25	U	25	U	25	U
1,2-Dichloropropane	78-87-5	1 s	5	U	5	U	25	U	25	U	25	U
1,3-Dichlorobenzene	541-73-1	3 s	5	U	5	U	25	U	25	U	25	U
1,4-Dichlorobenzene	106-46-7	3 s	5	U	5	U	25	U	25	U	25	U
2-Butanone	78-93-3	50 g	25	U	25	U	120	U	120	U	120	U
2-Hexanone	591-78-6	50 g	25	U	25	U	120	U	120	U	120	U
4-Methyl-2-pentanone	108-10-1	NL	25	U	25	U	120	U	120	U	120	U
Acetone	67-64-1	50 g	**9**	**J**	**6.4**	**J**	120	U	120	U	120	U
Bromodichloromethane	75-27-4	50 g	5	U	5	U	25	U	25	U	25	U
Bromoform	75-25-2	50 g	5	U	5	U	25	U	25	U	25	U
Bromomethane	74-83-9	5 s	5	U	5	U	25	U	25	U	25	U
Carbon disulfide	75-15-0	60 g	**0.8**	**J**	5	U	25	U	25	U	25	U
Carbon tetrachloride	56-23-5	5 s	5	U	5	U	25	U	25	U	25	U
Chlorobenzene	108-90-7	5 s	5	U	5	U	25	U	25	U	25	U
Chloroethane	75-00-3	5 s	5	U	5	U	25	U	25	U	25	U
Chloroform	67-66-3	7 s	5	U	5	U	25	U	25	U	25	U
Chloromethane	74-87-3	5 s	5	U	5	U	25	U	25	U	25	U
cis-1,2-Dichloroethene	156-59-2	5 s	**3.8**	**J**	**0.83**	**J**	25	U	25	U	25	U
cis-1,3-Dichloropropene	10061-01-5	0.4 s	5	U	5	U	25	U	25	U	25	U
Cyclohexane	110-82-7	NL	5	U	5	U	25	U	25	U	25	U
Dibromochloromethane	124-48-1	50 g	5	U	5	U	25	U	25	U	25	U
Dichlorodifluoromethane	75-71-8	5 s	5	U	5	U	25	U	25	U	25	U
Isopropylbenzene	98-82-8	5 s	5	U	5	U	25	U	25	U	25	U
Methyl acetate	79-20-9	NL	5	U	5	U	25	U	25	U	25	U
Methyl tert-butyl ether	1634-04-4	10 g	5	U	5	U	25	U	25	U	25	U
Methylcyclohexane	108-87-2	NL	5	U	5	U	25	U	25	U	25	U
Methylene chloride	75-09-2	5 s	5	U	5	U	25	U	25	U	25	U
Styrene	100-42-5	5 s	5	U	5	U	25	U	25	U	25	U
Tetrachloroethene	127-18-4	5 s	5	U	5	U	25	U	25	U	25	U
trans-1,2-Dichloroethene	156-60-5	5 s	5	U	5	U	25	U	25	U	25	U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	5	U	5	U	25	U	25	U	25	U
Trichloroethene	79-01-6	5 s	**2.1**	**J**	**0.9**	**J**	25	U	25	U	25	U
Trichlorofluoromethane	75-69-4	5 s	5	U	5	U	25	U	25	U	25	U
Vinyl chloride	75-01-4	2 s	5	U	5	U	25	U	25	U	25	U
Total VOCs (ug/L)[2]	NA	NL	**325**		**378**		---	U	---	U	**1450**	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit
Shaded value - Compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 15
Subslab and Indoor Air TO-15 Results 2010 and 2014
Scott Aviation BCP Site

Type of Sample	CAS No.	NYSDOH Air Guidline Value	AMBIENT		AMBIENT		AMBIENT		AMBIENT		SUBSLAB		INDOOR		SUBSLAB		INDOOR		SUBSLAB		INDOOR		SUBSLAB		INDOOR	
Sample ID			AS-1		AS-DUPLICATE		AS-1R		AS-R-DUPLICATE		SS-1-SUBSLAB		SS-1-INDOOR		SS-2-SUBSLAB		SS-2-INDOOR		SS-2R-SUBSLAB		SS-2R-INDOOR		SS-3-SUBSLAB		SS-3-INDOOR	
Laboratory ID			RTF0696-01		RTF0696-06		200-26139-3		200-26139-4		RTF0696-03		RTF0696-02		RTF0696-04		RTF0696-05		200-26139-1		200-26139-2		RTF0696-08		RTF0696-07	
Sampling Date			6/2/2010		6/2/2010		12/24/2014		12/24/2014		6/2/2010		6/2/2010		6/2/2010		6/2/2010		12/24/2014		12/24/2014		6/2/2010		6/2/2010	
Compound (μg/m³)																										
1,1,1-Trichloroethane	71-55-6	NA	-	U	**3.4**	J	-	U	-	U	**42**		-	U	**430**		**2.5**		**43**		-	U	**2.6**		-	U
1,1,2,2-Tetrachloroethane	79-34-5	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,1,2-Trichloroethane	79-00-5	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,1-Dichloroethane	75-34-3	NA	-	U	-	U	-	U	-	U	**100**		-	U	**73**		-	U	**9.6**		-	U	**2.8**		-	U
1,1-Dichloroethene	75-35-4	NA	-	U	**0.83**	J	-	U	-	U	-	U	-	U	**67**		-		**2**		-	U	-	U	-	U
1,2,4-Trichlorobenzene	120-82-1	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,2,4-Trimethylbenzene	95-63-6	NA	-	U	**1.4**	J	-	U	-	U	-	U	-	U	**180**		**1.2**		-	U	-	U	**20**		-	U
1,2-Dibromoethane	106-93-4	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,2-Dichlorobenzene	95-50-1	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,2-Dichloroethane	107-06-2	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,2-Dichloropropane	78-87-5	NA	-	U	**1.6**	J	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,3,5-Trimethylbenzene	108-67-8	NA	-	U	-	U	-	U	-	U	-	U	-	U	**64**		-	U	-	U	-	U	**8.4**		-	U
1,3-Butadiene	106-99-0	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,3-Dichlorobenzene	541-73-1	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,4-Dichlorobenzene	106-46-7	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
2,2,4-trimethylpentane	540-84-1	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
2-Chlorotoluene	95-49-8	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
4-ethyltoluene	622-96-8	NA	-	U	-	U	-	U	-	U	-	U	-	U	**26**		-	U	-	U	-	U	**1.9**		-	U
Allyl chloride	107-05-1	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Benzene	71-43-2	NA	-	U	**2.4**	J	-	U	-	U	-	U	-	U	**35**		**2.3**		-	U	**0.82**		**7.0**		-	U
Bromodichloromethane	75-27-4	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Bromoform	75-25-2	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Bromomethane	74-83-9	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Carbon disulfide	75-15-0	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	**31**		-	U
Carbon tetrachloride	56-23-5	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Chlorobenzene	108-90-7	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Chloroethane	75-00-3	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Chloroform	67-66-3	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Chloromethane	74-87-3	NA	**1.3**		**1.2**		-	U	**1.1**		-	U	**1.2**		-	U	**1.3**		-	U	**1**		-	U	**1.3**	
cis-1,2-Dichloroethene	156-59-2	NA	-	U	**1.5**	J	-	U	-	U	**32**		-	U	**390**		**1.6**		**85**		-	U	-	U	-	U
cis-1,3-Dichloropropene	10061-01-5	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Cyclohexane	110-83-8	NA	-	U	**1.1**	J	-	U	-	U	-	U	-	U	**480**		-	U	-	U	-	U	**18**		-	U
Dibromochloromethane	124-48-1	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Ethylbenzene	100-41-4	NA	-	U	**1.3**	J	-	U	-	U	-	U	**2.0**		**56**		**1.5**		-	U	-	U	**4.8**		**1.0**	
Freon 11 (trichlorofluoromethane)	75-69-4	NA	**1.4**		**1.7**		**1.2**		**1.2**		-	U	**1.3**		**24**		**1.6**		**5.1**		**1.1**		**1.3**		**1.6**	
Freon 113	76-13-1	NA	**2.0**		**2.5**		-	U	-	U	**5200**		**6.2**		**1300**		**2.8**		-	U	-	U	-	U	**1.9**	
Freon 114	76-14-2	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Freon 12	75-71-8	NA	**3.0**		**4.0**		-	U	-	U	-	U	**3.1**		-	U	**3.0**		-	U	-	U	**5.4**		**12**	
Freon TF	NA	NA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**140**		-	U	-	-		
Heptane	142-82-5	NA	-	U	**1.1**	J	-	U	-	U	-	U	-	U	**200**		**0.98**		-	U	-	U	**34**		-	U
Hexachloro-1,3-butadiene	87-68-3	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Hexane	110-54-3	NA	-	U	**2.4**	J	-	U	-	U	-	U	-	U	**240**		**2.5**		**1.2**		-	U	**32**		-	U
m&p-Xylene	179601-23-1	NA	-	U	**4.3**	J	-	U	-	U	-	U	**7.4**		**290**		**4.8**		-	U	-	U	**34**		**3.0**	
Methylene chloride	75-09-2	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	**17**	
o-Xylene	95-47-6	NA	-	U	**1.4**	J	-	U	-	U	-	U	**1.5**		**91**		**1.7**		-	U	-	U	**12**		**1.0**	
Styrene	100-42-5	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Tetrachloroethylene	127-18-4	30	-	U	-	U	-	U	**2.9**		-	U	-	U	**670**		-	U	**220**		-	U	-	U	-	U
Toluene	108-88-3	NA	**1.1**	J	**11**	J	**0.74**		**0.77**		-	U	**21**		**120**		**9.8**		-	U	**0.8**		**27**		**1.5**	
trans-1,2-Dichloroethene	156-60-5	NA	-	U	-	U	-	U	-	U	**40**		-	U	**12**		-	U	**2.3**		-	U	-	U	-	U
trans-1,3-Dichloropropene	10061-02-6	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Trichloroethene	79-01-6	2	-	U	**1.5**	J	-	U	-	U	**150**		-	U	**640**		**1.5**		**150**		-	U	**4.5**		-	U
Vinyl Bromide	593-60-02	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Vinyl chloride	75-01-4	NA	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U

Notes:
All units in micrograms per cubic meter (μg/m³)
1 - Sample AS-DUPLICATE is a duplicate sample of AS-1 and AS-R-DUPLICATE is a duplicate sample of AS-1R.
Bold - compound detected in a concentration greater than the method reporting limits.
NA - NYSDOH air guidline values not established.
NL - Not listed - data not available for background concentrations for these compounds.
U - The compound was analyzed for, but was not detected above the method reporting limit.
J - The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.

Table 16
SRI Groundwater VOC Results
Scott Aviation BCP Site

			SRI April 2011						SRI June 2011			
			Shallow Overburden						Shallow Overburden			
Sample Designation	**CAS**	**NYSDEC**	**MW-42S**		**MW-43S**		**Duplicate MW-43S**		**MW-44S**		**Duplicate MW-44S**	
Laboratory Identification		**Groundwater Guidance or**	**480-3472-2**		**480-3472-3**		**480-3472-1FD**		**480-5581-1**		**480-5581-5**	
Date Sampled	**Number**	**Standard Value (Note 1)**	**4/7/2011**		**4/7/2011**		**4/7/2011**		**6/1/2011**		**6/1/2011**	
BTEX Compounds (ug/L)												
Benzene	71-43-2	1 s	**1.9**		1	UJ	**0.44**		1	U	1	U
Toluene	100-41-4	5 s	**1100**		**1.5**		**1.5**		1	U	1	U
Ethylbenzene	108-88-3	5 s	1	U	1	U	1	U	1	U	1	U
Xylenes (total)	1330-20-7	5 s	1	U	**1.7**	**J**	**1.5**	**J**	2	U	2	U
Total BTEX Compounds (ug/L)	NA	NL	1,102		3.2		3.4		---	U	---	U
Other VOCs (ug/L)												
1,1,1-Trichloroethane	71-55-6	5 s	**25000**		**15**		**17**		1	U	1	U
1,1,2,2-Tetrachloroethane	79-34-5	5 s	1	U	1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	**1700**		**7.4**		**6**		1	U	1	U
1,1,2-Trichloroethane	79-00-5	1 s	**240**	**J**	1	U	1	U	1	U	1	U
1,1-Dichloroethane	75-34-3	5 s	**8550**		**13**		**14**		1	U	1	U
1,1-Dichloroethene	75-35-4	5 s	**6100**		**3.5**	**J**	**2**	**J**	1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	5 s	1	U	1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	1	U	1	U	1	U	1	U	1	U
1,2-Dibromoethane	106-93-4	0.0006 s	1	U	1	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	3 s	1	U	1	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	0.6 s	**76**		1	U	1	U	1	U	1	U
1,2-Dichloropropane	78-87-5	1 s	1	U	1	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	3 s	1	U	1	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	3 s	1	U	1	U	1	U	1	U	1	U
2-Butanone	78-93-3	50 g	**510**	**J**	**3.3**	**J**	**3**		10	U	10	U
2-Hexanone	591-78-6	50 g	**11**		5	U	5	U	5	U	5	U
4-Methyl-2-pentanone	108-10-1	NL	**3.5**	**J**	5	U	5	U	5	U	5	U
Acetone	67-64-1	50 g	**400**		**13**		**15**		10	U	10	U
Bromodichloromethane	75-27-4	50 g	1	U	1	U	1	U	1	U	1	U
Bromoform	75-25-2	50 g	1	U	1	U	1	U	1	U	1	U
Bromomethane	74-83-9	5 s	1	U	1	U	1	U	1	U	1	U
Carbon disulfide	75-15-0	60 g	**9**		**1.1**		**0.99**	**J**	1	U	1	U
Carbon tetrachloride	56-23-5	5 s	1	U	1	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	5 s	1	U	1	U	1	U	1	U	1	U
Chloroethane	75-00-3	5 s	**100**	**J**	**12**		**11**		1	U	1	U
Chloroform	67-66-3	7 s	**4.8**		1	U	1	U	1	UJ	0.46	J
Chloromethane	74-87-3	5 s	1	U	1	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	5 s	**1000**		**34**		**33**		1	U	1	U
cis-1,3-Dichloropropene	10061-01-5	0.4 s	1	U	1	U	1	U	1	U	1	U
Cyclohexane	110-82-7	NL	1	U	1	U	1	U	1	U	1	U
Dibromochloromethane	124-48-1	50 g	1	U	1	U	1	U	1	U	1	U
Dichlorodifluoromethane	75-71-8	5 s	1	U	1	UJ	**12**	**J**	1	U	1	U
Isopropylbenzene	98-82-8	5 s	1	U	1	U	1	U	1	U	1	U
Methyl acetate	79-20-9	NL	1	U	1	U	1	U	1	U	1	U
Methyl tert-butyl ether	1634-04-4	10 g	1	U	1	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	NL	1	U	**0.69**	**J**	**0.61**		1	U	1	U
Methylene chloride	75-09-2	5 s	**11**		1	U	1	U	1	U	1	U
Styrene	100-42-5	5 s	1	U	1	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5 s	**5.6**		1	U	1	U	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	5 s	**31**		1	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	1	U	1	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5 s	**13000**		**15**		**16**		1	U	1	U
Trichlorofluoromethane	75-69-4	5 s	1	U	1	U	1	U	1	U	1	U
Vinyl chloride	75-01-4	2 s	**27**		**19**		**22**		1	U	1	U
Total VOCs (ug/L) (Note 2)	NA	NL	57,881		140.19		156.04		---	U	0.46	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 17
SRI Groundwater VOC Results in Catch Basins
Scott Aviation BCP Site

Sample Designation / Laboratory Identification / Date Sampled	CAS Number	NYSDEC Groundwater Guidance or Standard Value[1]	June 2011										October 2011					
Sample Designation			TP-5-06/01/2011		CB-1-06/01/2011		CB-1-06/16/2011		CB-E-06/16/2011		CB-W-06/16/2011		CB-1-10/07/2011		CB-4-10/07/2011		OF-1-10/07/2011	
Laboratory Identification			480-5581-1		480-5581-1		480-6205-1		480-6205-3		480-6205-2		480-10892-1		480-10892-2		480-10892-3	
Date Sampled			6/1/2011		6/1/2011		6/16/2011		6/16/2011		6/16/2011		10/7/2011		10/7/2011		10/7/2011	
BTEX Compounds (ug/L)																		
Benzene	71-43-2	1 s	0.41	U	0.41	U	0.41	U	**0.7**	**J**	2.1	U	1	U	1	U	1	U
Toluene	100-41-4	5 s	0.51	U	**1.9**		0.51	U	0.51	U	**61**		1	U	1	U	1	U
Ethylbenzene	108-88-3	5 s	0.74	U	0.74	U	0.74	U	0.74	U	3.7	U	1	U	1	U	1	U
Xylenes (total)	1330-20-7	5 s	0.66	U	**1**	**J**	0.66	U	0.66	U	3.3	U	1	U	1	U	1	U
Total BTEX Compounds (ug/L)	NA	NL	---	U	**2.9**		---	U	**0.7**		**61**		---	U	---	U	---	U
Other VOCs (ug/L)																		
1,1,1-Trichloroethane	71-55-6	5 s	**83**		**420**		**120**		**230**		4.1	U	**170**		**1.4**		**1.2**	
1,1,2,2-Tetrachloroethane	79-34-5	5 s	0.21	U	0.21	U	0.21	U	0.21	U	1.1	U	1	U	1	U	1	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	**60**	J	**400**	**J**	**220**		**140**		1.6	U	**260**		1	U	**1.5**	
1,1,2-Trichloroethane	79-00-5	1 s	0.23	U	**1.6**		**0.87**	**J**	**10**		1.2	U	**1.4**		1	U	1	U
1,1-Dichloroethane	75-34-3	5 s	**12**		**53**		**18**		**110**		1.9	U	**26**		1	U	1	U
1,1-Dichloroethene	75-35-4	5 s	**7.2**		**41**		**14**		**93**		1.5	U	**28**		1	U	1	U
1,2,4-Trichlorobenzene	120-82-1	5 s	0.41	U	0.41	U	0.41	U	0.41	U	2.1	U	1	U	1	U	1	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	0.39	U	0.39	U	0.39	U	0.39	U	2	U	1	U	1	U	1	U
1,2-Dibromoethane	106-93-4	0.0006 s	0.73	U	0.73	U	0.73	U	0.73	U	3.7	U	1	U	1	U	1	U
1,2-Dichlorobenzene	95-50-1	3 s	0.79	U	0.79	U	0.79	U	0.79	U	4	U	1	U	1	U	1	U
1,2-Dichloroethane	107-06-2	0.6 s	0.21	U	0.21	U	0.21	U	**2**		1.1	U	1	U	1	U	1	U
1,2-Dichloropropane	78-87-5	1 s	0.72	U	0.72	U	0.72	U	0.72	U	3.6	U	1	U	1	U	1	U
1,3-Dichlorobenzene	541-73-1	3 s	0.78	U	0.78	U	0.78	U	0.78	U	3.9	U	1	U	1	U	1	U
1,4-Dichlorobenzene	106-46-7	3 s	0.84	U	0.84	U	0.84	U	0.84	U	4.2	U	1	U	1	U	1	U
2-Butanone	78-93-3	50 g	1.3	U	1.3	U	1.3	U	1.3	U	6.6	U	10	U	10	U	10	U
2-Hexanone	591-78-6	50 g	1.2	U	1.2	U	1.2	U	1.2	U	6.2	U	5	U	5	U	5	U
4-Methyl-2-pentanone	108-10-1	NL	2.1	U	2.1	U	2.1	U	2.1	U	11	U	5	U	5	U	5	U
Acetone	67-64-1	50 g	3	U	**61**		**390**	J	3	U	**15**	**J**	1	U	1	U	1	U
Bromodichloromethane	75-27-4	50 g	0.39	U	0.39	U	0.39	U	0.39	U	2	U	1	U	1	U	**5.9**	
Bromoform	75-25-2	50 g	0.26	U	0.26	U	0.26	U	0.26	U	1.3	U	1	U	1	U	1	U
Bromomethane	74-83-9	5 s	0.69	U	0.69	U	0.69	U	0.69	U	3.5	U	1	U	1	U	1	U
Carbon disulfide	75-15-0	60 g	0.19	U	0.19	U	0.19	U	0.19	U	0.95	U	1	U	1	U	1	U
Carbon tetrachloride	56-23-5	5 s	0.27	U	0.27	U	0.27	U	0.27	U	1.4	U	1	U	1	U	1	U
Chlorobenzene	108-90-7	5 s	0.75	U	0.75	U	0.75	U	0.75	U	3.8	U	1	U	1	U	1	U
Chloroethane	75-00-3	5 s	0.32	U	**2.8**		**0.6**	**J**	**10**		1.6	U	1	U	1	U	1	U
Chloroform	67-66-3	7 s	0.34	U	0.34	U	0.34	U	0.34	U	1.7	U	1	U	1	U	**13**	
Chloromethane	74-87-3	5 s	0.35	U	0.35	U	0.35	U	0.35	U	1.8	U	1	U	1	U	1	U
cis-1,2-Dichloroethene	156-59-2	5 s	**23**		**140**		**51**		**1200**		4.1	U	**52**		1	U	1	U
cis-1,3-Dichloropropene	10061-01-5	0.4 s	0.36	U	0.36	U	0.36	U	0.36	U	1.8	U	1	U	1	U	1	U
Cyclohexane	110-82-7	NL	0.18	U	0.18	U	0.18	U	0.18	U	0.9	U	1	U	1	U	1	U
Dibromochloromethane	124-48-1	50 g	0.32	U	0.32	U	0.32	U	0.32	U	1.6	U	1	U	1	U	**2.6**	
Dichlorodifluoromethane	75-71-8	5 s	0.68	U	0.68	U	0.68	U	0.68	U	3.4	U	1	U	1	U	1	U
Isopropylbenzene	98-82-8	5 s	0.79	U	0.79	U	0.79	U	0.79	U	4	U	1	U	1	U	1	U
Methyl acetate	79-20-9	NL	0.5	U	0.5	U	0.5	U	0.5	U	2.5	U	1	U	1	U	1	U
Methyl tert-butyl ether	1634-04-4	10 g	0.16	U	0.16	U	0.16	U	0.16	U	0.8	U	1	U	1	U	1	U
Methylcyclohexane	108-87-2	NL	0.16	U	0.16	U	0.16	U	0.16	U	0.8	U	1	U	1	U	1	U
Methylene chloride	75-09-2	5 s	0.44	U	0.44	U	0.44	U	**1.2**		2.2	U	1	U	1	U	1	U
Styrene	100-42-5	5 s	0.73	U	0.73	U	0.73	U	0.73	U	3.7	U	1	U	1	U	1	U
Tetrachloroethene	127-18-4	5 s	0.36	U	**0.5**	**J**	0.36	U	**8.8**		1.8	U	**0.73**	**J**	1	U	1	U
trans-1,2-Dichloroethene	156-60-5	5 s	0.9	U	**1.8**		**1.5**		**4.6**		4.5	U	1	U	1	U	1	U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	0.37	U	0.37	U	0.37	U	0.37	U	1.9	U	1	U	1	U	1	U
Trichloroethene	79-01-6	5 s	**8.8**		**59**		**18**		**60**		2.3	U	**22**		**1.2**		1	U
Trichlorofluoromethane	75-69-4	5 s	0.88	U	0.88	U	0.88	U	0.88	U	4.4	U	1	U	1	U	1	U
Vinyl chloride	75-01-4	2 s	**1.6**		**8.4**		**1.4**		**22**		4.5	U	1	U	1	U	1	U
Total VOCs (ug/L)[2]	NA	NL	**196**		**1,192**		**835**		**1892**		**76**		**560**		**2.6**		**24**	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit
Shaded value - compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 18
Air TO-15 Results July 2013
Scott Aviation BCP Site

Type of Sample	NYSDOH Air Guidline Value	AMBIENT		AMBIENT		SOIL VAPOR		SOIL VAPOR	
Sample ID		Ambient		Duplicate		SVI-1		SVI-3R	
Laboratory ID		480-41972-4		480-41972-5		480-41972-1		480-42018-2	
Sampling Date		7/12/2013		7/12/2013		7/12/2013		7/15/2013	
Compound (µg/m³)									
1,1,1-Trichloroethane	NA	0.22	U	0.22	U	5.5	U	1.1	U
1,1,2,2-Tetrachloroethane	NA	0.27	U	0.27	U	6.9	U	1.4	U
1,1,2-Trichloroethane	NA	0.22	U	0.22	U	5.5	U	1.1	U
1,1-Dichloroethane	NA	0.16	U	0.16	U	4	U	0.81	U
1,1-Dichloroethene	NA	0.16	U	0.16	U	4	U	0.79	U
1,2,4-Trichlorobenzene	NA	NA		NA		19	U	3.7	U
1,2,4-Trimethylbenzene	NA	NA		NA		**7.8**		0.98	U
1,2-Dibromoethane	NA	0.31	U	0.31	U	7.7	U	1.5	U
1,2-Dichlorobenzene	NA	NA		NA		6	U	1.2	U
1,2-Dichloroethane	NA	0.32	U	0.32	U	4	U	0.81	U
1,2-Dichloroethene, Total	NA	0.16	U	0.16	U	4	U	0.79	U
1,2-Dichloropropane	NA	0.37	U	0.37	U	4.6	U	0.92	U
1,2-Dichlorotetrafluoroethane	NA	0.28	U	0.28	U	7	U	1.4	U
1,3,5-Trimethylbenzene	NA	0.39	U	0.39	U	4.9	U	0.98	U
1,3-Butadiene	NA	0.18	U	0.18	U	2.2	U	0.44	U
1,3-Dichlorobenzene	NA	NA		NA		6	U	1.2	U
1,4-Dichlorobenzene	NA	NA		NA		6	U	1.2	U
1,4-Dioxane	NA	NA		NA		90	U	18	U
2,2,4-Trimethylpentane	NA	**0.45**		**0.55**		4.7	U	0.93	U
2-Chlorotoluene	NA	NA		NA		5.2	U	1	U
3-Chloropropene	NA	0.25	U	0.25	U	7.8	U	1.6	U
4-Ethyltoluene	NA	0.20	U	0.20	U	4.9	U	0.98	U
4-Isopropyltoluene	NA	NA		NA		5.5	U	1.1	U
Acetone	NA	NA		NA		59	U	**28**	
Benzene	NA	**0.64**		**0.86**		**5.4**		**0.67**	
Benzyl chloride	NA	NA		NA		5.2	U	1	U
Bromodichloromethane	NA	0.27	U	0.27	U	**22**		1.3	U
Bromoethene(Vinyl Bromide)	NA	0.35	U	0.35	U	4.4	U	0.87	U
Bromoform	NA	0.41	U	0.41	U	10	U	2.1	U
Bromomethane	NA	0.31	U	0.31	U	3.9	U	0.78	U
Carbon disulfide	NA	NA		NA		**55**		**6.6**	
Carbon tetrachloride	NA	**0.48**		**0.49**		6.30	U	1.30	U
Chlorobenzene	NA	NA		NA		4.6	U	0.92	U
Chloroethane	NA	0.21	U	**0.34**		6.6	U	1.3	U
Chloroform	NA	**0.20**		**0.22**		**670**		0.98	U
Chloromethane	NA	NA		NA		5.2	U	**1.7**	
cis-1,2-Dichloroethene	NA	0.16	U	0.16	U	4.00	U	0.79	U
cis-1,3-Dichloropropene	NA	0.18	U	0.18	U	4.50	U	0.91	U
Cumene	NA	NA		NA		4.9	U	0.98	U
Cyclohexane	NA	**0.29**		**0.57**		**4.2**		0.69	U
Dibromochloromethane	NA	0.34	U	0.34	U	8.5	U	1.7	U
Dichlorodifluoromethane	NA	**2.0**		**1.9**		12	U	**2.5**	
Ethylbenzene	NA	**0.26**		**0.35**		**6.1**		0.87	U
Freon 22	NA	NA		NA		8.8	U	1.8	U
Freon TF	NA	NA		NA		7.7	U	1.5	U
Hexachlorobutadiene	NA	NA		NA		11	U	2.1	U
Isopropyl alcohol	NA	NA		NA		61.00	U	12.00	U
m,p-Xylene	NA	**0.77**		**1.2**		**19.00**		2.20	U
Methyl Butyl Ketone (2-Hexanone)	NA	NA		NA		10	U	2	U
Methyl Ethyl Ketone	NA	NA		NA		7.4	U	**8.8**	
methyl isobutyl ketone	NA	NA		NA		10	U	2	U
Methyl methacrylate	NA	NA		NA		10	U	2	U
Methyl tert-butyl ether	NA	0.14	U	0.14	U	3.6	U	0.72	U
Methylene Chloride	NA	1.4	U	**3.1**		8.7	U	1.7	U
Naphthalene	NA	NA		NA		13	U	2.6	U
n-Butane	NA	NA		NA		**49**		1.2	U
n-Butylbenzene	NA	NA		NA		5.50	U	1.10	U
n-Heptane	NA	0.26		**0.78**		**6.90**		0.82	U
n-Hexane	NA	0.69		**1.7**		**14**		**0.78**	
n-Propylbenzene	NA	NA		NA		4.9	U	0.98	U
sec-Butylbenzene	NA	NA		NA		5.5	U	1.1	U
Styrene	NA	NA		NA		4.3	U	0.85	U
tert-Butyl alcohol	NA	NA		NA		76	U	15	U
tert-Butylbenzene	NA	NA		NA		5.5	U	1.1	U
Tetrachloroethene	30	0.27	U	0.27	U	6.8	U	1.4	U
Tetrahydrofuran		NA		NA		74	U	15	U
Toluene	NA	**1.3**		**2.7**		**18.00**		**5.00**	
trans-1,2-Dichloroethene	NA	0.16	U	0.16	U	4.00	U	0.79	U
trans-1,3-Dichloropropene	NA	0.18	U	0.18	U	4.5	U	0.91	U
Trichloroethene	2	0.21	U	**0.39**		**6.2**		1.1	U
Trichlorofluoromethane	NA	**0.91**		**1.0**		5.6	U	**1.6**	
Vinyl chloride	NA	0.20	U	0.20	U	2.6	U	0.51	U
Xylene (total)	NA	**1.1**		**1.6**		**25**		0.87	U
Xylene, o-	NA	**0.34**		**0.44**		**5.6**		0.87	U

Notes:
All units in micrograms per cubic meter (µg/m³)
Sample "Duplicate" is a duplicate sample of "Ambient".
Bold - Compound detected in a concentration greater than the method detection limits.
U - The compound was analyzed for, but was not detected above the method detection limit.
NA - Not available.
Yellow shaded cells indicate compounds that represent the primary site contaminants of concern (COC).

Table 19
Air TO-15 Results Compared to Guidance Values
Scott Aviation BCP Site

Type of Sample	AMBIENT		AMBIENT		AMBIENT		AMBIENT		SUBSLAB		SUBSLAB		INDOOR		INDOOR	
Sample ID	AS-1		AS-DUP		AS-1R		AS-R-DUP		SS-2-SUBSLAB		SS-2R-SUBSLAB		SS-2-INDOOR		SS-2R-INDOOR	
Laboratory ID	RTF0696-01		RTF0696-06		200-26139-3		200-26139-4		RTF0696-04		200-26139-1		RTF0696-05		200-26139-2	
Sampling Date	6/2/2010		6/2/2010		12/24/2014		12/24/2014		6/2/2010		12/24/2014		6/2/2010		12/24/2014	
Compound (µg/m³)																
1,1,1-Trichloroethane	-	U	**3.4**	**J**	-	U	-	U	**430**		**43**		**2.5**		-	U
cis-1,2-Dichloroethene	-	U	**1.5**	**J**	-	U	-	U	**390**		**85**		**1.6**		-	U
Vinyl chloride	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
1,1-Dichloroethene	-	U	**0.83**	**J**	-	U	-	U	**67**		**2**		-	U	-	U
Carbon tetrachloride	-	U	-	U	-	U	-	U	-	U	-	U	-	U	-	U
Tetrachloroethylene	-	U	-	U	-	U	**2.9**		**670**		**220**		-	U	-	U
Trichloroethene	-	U	**1.5**	**J**	-	U	-	U	**640**		**150**		**1.5**		-	U

Notes:
All units in micrograms per cubic meter (µg/m³)
Sample AS-DUPLICATE is a duplicate sample of AS-1 and AS-R-DUPLICATE is a duplicate of AS-1R.
U - The material was analyzed for but not detected at or above the reporting limit.
J - The analyte was positively identified. The associated numerical value is the approximate concentration of the analyte in the sample.
Bold - compound detected in a concentration greater than the method reporting limit.

Take reasonable and practical actions to identify source(s) and reduce exposures
Monitoring required based on NYSDOH Guidance (2006)
Mitigation required based on NYSDOH Guidance (2006)

Table 20
Former IRM Area Soil VOC Results
Scott Aviation BCP Site

Sample Designation	**CAS Number**	**Unrestricted Use**	**IRM68-SW-1 (9)**		**IRM68-EW-1 (9)**		**IRM68-BOT-1 (10)**		**IRM68-NW-1 (9)**		**IRM68-WW-1 (9)**	
Laboratory Identification			**480-66937-11**		**480-66937-12**		**480-66937-14**		**480-67016-2**		**480-67016-3**	
Date Sampled			**9/9/2014**		**9/9/2014**		**9/9/2014**		**9/10/2014**		**9/10/2014**	
BTEX Compounds (mg/Kg)												
Benzene	71-43-2	0.06	0.002	J	0.075	U	0.0024	J	0.06	U	0.06	U
Ethylbenzene	100-41-4	1	**6.9**	**DL**	0.075	U	0.11		0.2		**1.8**	
Toluene	108-88-3	0.7	**11**	**DL**	0.052	J	**5.4**	**DL**	**5.5**		**4**	
Xylene (mixed)	1330-20-7	0.26	**42**	**DL**	0.1	J	**6.3**	**DL**	**11**		**12**	**DL**
Total BTEX (mg/Kg)	NA	NL	59.902		0.152		11.8124		16.7		17.8	
Other VOCs (mg/Kg)												
1,1,1-Trichloroethane	71-55-6	0.68	**80**	**DL**	**25**	**DL**	**66**	**DL**	**110**	**DL**	**19**	**DL**
1,1,2,2-Tetrachloroethane	79-34-5	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
1,1,2-Trichloroethane	79-00-5	NL	0.073		0.027	J	1.7	U	0.32		0.14	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	NL	1.3	U	7.5	DL	5.4	DL	41	DL	5.5	
1,1-Dichloroethane	75-34-3	0.27	**2**	**DL**	**0.82**		**2.6**	**DL**	**1.6**		0.12	
1,1-Dichloroethene	75-35-4	0.33	**15**	**DL**	**5.3**		**15**	**DL**	**23**	**DL**	**4.2**	
1,2,4-trichlorobenzene	120-82-1	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
1,2-Dibromo-3-chloropropane	96-12-8	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
1,2-Dibromoethane	106-93-4	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
1,2-Dichlorobenzene	95-50-1	1.1	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
1,2-Dichloroethane	107-06-2	0.02	0.0061		0.075	U	0.017		**0.028**	**J**	0.06	U
1-2 Dichloropropane	78-87-5	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
1,3-Dichlorobenzene	541-73-1	2.4	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
1,4-Dichlorobenzene	106-46-7	1.8	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Methyl ethyl ketone	78-93-3	0.12	0.026	U	0.38	U	**0.26**		0.3	U	0.3	U
2-Hexanone	591-78-6	NL	0.026	U	0.38	U	0.026	U	0.3	U	0.3	U
4-Methyl-2-Pentanone	108-10-1	NL	0.0056	J	0.38	U	0.037		0.021	J	0.36	
Acetone	67-64-1	0.05	**0.068**		0.38	U	**0.52**		0.3	U	0.3	U
Bromodichloromethane	75-27-4	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Bromoform	75-25-2	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Bromomethane	74-83-9	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Carbon Disulfide	75-15-0	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Carbon tetrachloride	56-23-5	0.76	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Chlorobenzene	108-90-7	1.1	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Chloroethane	75-00-3	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Chloroform	67-66-3	0.37	0.0051	U	0.075	U	0.00091	J	0.06	U	0.06	U
Chloromethane	74-87-3	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
cis -1,2-Dichloroethene	156-59-2	0.25	**33**	**DL**	**5.5**		**1.5**	**J DL**	**0.37**		**2.4**	
cis-1,3-Dichloropropene	10061-01-5	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Cyclohexane	110-82-7	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Dibromochloromethane	124-48-1	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Dichlorodifluoromethane	75-71-8	NL	0.0051	U	0.075	U	0.0034	J	0.06	U	0.06	U
Isopropylbenzene	98-82-8	NL	0.0074		0.075	U	0.0011	J	0.012	J	0.029	J
Methyl acetate	79-20-9	NL	0.0051	U	0.095		0.0052	U	0.06	U	0.032	J
Methyl tert-butyl ether	1634-04-4	0.93	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Methylcyclohexane	108-87-2	NL	0.026		0.075	U	0.0053		0.06	U	0.06	U
Methylene chloride	75-09-2	0.05	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Styrene	100-42-5	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Tetrachloroethene	127-18-4	1.3	0.0052		0.17		0.016		0.044	J	0.017	J
trans-1,2-Dichloroethene	156-60-5	0.19	0.039		0.075	U	0.02		0.06	U	0.06	U
trans-1,3-Dichloropropene	10061-02-6	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Trichloroethene	79-01-6	0.47	**15**	**DL**	**9.6**	**DL**	**110**	**DL**	**6.8**	**DL**	**0.78**	
Trichlorofluoromethane	75-69-4	NL	0.0051	U	0.075	U	0.0052	U	0.06	U	0.06	U
Vinyl chloride	75-01-4	0.02	0.0065		0.075	U	0.0039	U	0.06	U	0.06	U
Total VOCs (mg/Kg) (Note 1)	NA	NL	205.0658		54.164		213.19311		199.895		50.378	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at or above the reporting limit. The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
DL = Dilution; re-analysis
Bold value - compound detected at concentration greater than the Unrestricted Use SCO's.
NYSDEC Subpart 375-6, Remedial Program Soil Cleanup Objectives, December 14, 2006.
Note 1 - Total VOCs includes BTEX compounds.

Table 21
Groundwater IRM Post-Injection VOC Results
Scott Aviation BCP Site

Sample Designation		NYSDEC	MW-30		MW-35S		MW-36S		A1-GP02-S		A1-GP06-S		A1-GP10-S	
Laboratory Identification	**CAS**	**Groundwater Guidance or**	**480-84790-10**		**480-84681-8**		**480-84790-3**		**480-84681-3**		**480-84624-3**		**480-84681-5**	
Date Sampled	**Number**	**Standard Value (Note 1)**	**07/29/2015**		**07/28/2015**		**07/29/2015**		**07/28/2015**		**07/27/2015**		**7/28/2015**	
BTEX Compounds (ug/L)														
Benzene	71-43-2	1 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Toluene	108-88-3	5 s	1.0	U	1.0	U	1.0	U	100	U	**15**		25	U
Ethylbenzene	100-41-4	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Xylenes (total)	1330-20-7	5 s	2.0	U	2.0	U	2.0	U	200	U	2.0	U	50	U
Total BTEX Compounds (ug/L)	NA	NL	---	U	---	U	---	U	---	U	15		---	U
Other VOCs (ug/L)														
1,1,1-Trichloroethane	71-55-6	5 s	1.0	U	1.0	U	1.0	U	100	U	**110**		**12000**	
1,1,2,2-Tetrachloroethane	79-34-5	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	1.0	U	1.0	U	1.0	U	100	U	**300**		**430**	
1,1,2-Trichloroethane	79-00-5	1 s	1.0	U	1.0	U	1.0	U	100	U	**4.1**		25	U
1,1-Dichloroethane	75-34-3	5 s	**1.4**		1.0	U	0.52	J	100	U	**3300**		**2900**	
1,1-Dichloroethene	75-35-4	5 s	1.0	U	1.0	U	1.0	U	34	J	**60**		**1600**	
1,2,4-Trichlorobenzene	120-82-1	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
1,2-Dibromoethane	106-93-4	0.0006 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
1,2-Dichlorobenzene	95-50-1	3 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
1,2-Dichloroethane	107-06-2	0.6 s	1.0	U	1.0	U	1.0	U	100	U	**3.1**		**9.6**	**J**
1,2-Dichloropropane	78-87-5	1 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
1,3-Dichlorobenzene	541-73-1	3 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
1,4-Dichlorobenzene	106-46-7	3 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
2-Butanone	78-93-3	50 g	10	U	10	U	**170**		1000	U	**140**		**380**	
2-Hexanone	591-78-6	50 g	5.0	U	5.0	U	**28**		500	U	5.0	U	130	U
4-Methyl-2-pentanone	108-10-1	NL	5.0	U	5.0	U	5.0	U	500	U	5.0	U	130	U
Acetone	67-64-1	50 g	10	U	10	U	**400**		360	J	**50**		**950**	
Bromodichloromethane	75-27-4	50 g	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Bromoform	75-25-2	50 g	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Bromomethane	74-83-9	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Carbon disulfide	75-15-0	60 g	1.0	U	1.0	U	**2.1**		100	U	0.34	J	25	U
Carbon tetrachloride	56-23-5	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Chlorobenzene	108-90-7	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Chloroethane	75-00-3	5 s	1.0	U	1.0	U	1.0	U	100	U	**36**		25	U
Chloroform	67-66-3	7 s	1.0	U	1.0	U	1.0	U	100	U	0.68	J	16	J
Chloromethane	74-87-3	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
cis-1,2-Dichloroethene	156-59-2	5 s	**5.2**		1.0	U	**1.4**		**23000**		**270**		**45**	
cis-1,3-Dichloropropene	10061-01-5	0.4 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Cyclohexane	110-82-7	NL	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Dibromochloromethane	124-48-1	50 g	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Dichlorodifluoromethane	75-71-8	5 s	1.0	U	1.0	U	1.0	U	100	U	**190**		25	U
Isopropylbenzene	98-82-8	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Methyl acetate	79-20-9	NL	2.5	U	2.5	U	2.5	U	250	U	**16**		63	U
Methyl tert-butyl ether	1634-04-4	10 g	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Methylcyclohexane	108-87-2	NL	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Methylene chloride	75-09-2	5 s	1.0	U	1.0	U	1.0	U	92	J	1.0	U	20	J
Styrene	100-42-5	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Tetrachloroethene	127-18-4	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
trans-1,2-Dichloroethene	156-60-5	5 s	1.0	U	1.0	U	1.0	U	**120**		**3.2**		25	U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Trichloroethene	79-01-6	5 s	**1.1**		1.0	U	1.0	U	**8000**		**18**		**36**	
Trichlorofluoromethane	75-69-4	5 s	1.0	U	1.0	U	1.0	U	100	U	1.0	U	25	U
Vinyl chloride	75-01-4	2 s	**1.4**		1.0	U	1.0	U	**140**		**16**		25	U
Total VOCs (ug/L) (Note 2)	NA	NL	9.1		---	U	602.02		31,746		4,532.42		18,386.60	
Total Organic Carbon (mg/L)	NA	NL	**3.7**		**2**	**B**	**1130**	**B**	**3700**		**1420**		**1570**	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit.
The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit
Shaded value - Compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 21
Groundwater IRM Post-Injection VOC Results
Scott Aviation BCP Site

Sample Designation / Laboratory Identification / Date Sampled	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	A1-GP15-S 480-84790-6 07/29/2015		A1-GP18-S 480-84624-4 07/27/2015		MW-35D 480-84681-4 07/28/2015		MW-36D 480-84790-4 07/29/2015		MW-37D 480-84790-5 07/29/2015		MW-38D 480-84624-1 07/27/2015	
BTEX Compounds (ug/L)														
Benzene	71-43-2	1 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Toluene	108-88-3	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Ethylbenzene	100-41-4	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	3.8	J
Xylenes (total)	1330-20-7	5 s	2.0	U	2.0	U	2.0	U	2.0	U	2.0	U	4.8	J
Total BTEX Compounds (ug/L)	NA	NL	---	U	---	U	---	U	---	U	---	U	8.6	J
Other VOCs (ug/L)														
1,1,1-Trichloroethane	71-55-6	5 s	**3.0**		1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,1,2,2-Tetrachloroethane	79-34-5	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,1,2-Trichloroethane	79-00-5	1 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,1-Dichloroethane	75-34-3	5 s	1.0	U	1.0	U	1.0	U	0.57	J	1.0	U	4.0	U
1,1-Dichloroethene	75-35-4	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,2,4-Trichlorobenzene	120-82-1	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,2-Dibromoethane	106-93-4	0.0006 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,2-Dichlorobenzene	95-50-1	3 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,2-Dichloroethane	107-06-2	0.6 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,2-Dichloropropane	78-87-5	1 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,3-Dichlorobenzene	541-73-1	3 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
1,4-Dichlorobenzene	106-46-7	3 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
2-Butanone	78-93-3	50 g	10	U	**130**		10	U	**130**		**280**		40	U
2-Hexanone	591-78-6	50 g	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	20	U
4-Methyl-2-pentanone	108-10-1	NL	5.0	U	5.0	U	5.0	U	5.0	U	5.0	U	20	U
Acetone	67-64-1	50 g	**11**		**140**		10	U	10	U	**50**		40	U
Bromodichloromethane	75-27-4	50 g	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Bromoform	75-25-2	50 g	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Bromomethane	74-83-9	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Carbon disulfide	75-15-0	60 g	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Carbon tetrachloride	56-23-5	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Chlorobenzene	108-90-7	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Chloroethane	75-00-3	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Chloroform	67-66-3	7 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Chloromethane	74-87-3	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
cis-1,2-Dichloroethene	156-59-2	5 s	**6.5**		**3.0**		1.0	U	1.0	U	1.0	U	**390**	
cis-1,3-Dichloropropene	10061-01-5	0.4 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Cyclohexane	110-82-7	NL	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Dibromochloromethane	124-48-1	50 g	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Dichlorodifluoromethane	75-71-8	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Isopropylbenzene	98-82-8	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Methyl acetate	79-20-9	NL	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	10	U
Methyl tert-butyl ether	1634-04-4	10 g	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Methylcyclohexane	108-87-2	NL	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Methylene chloride	75-09-2	5 s	1.0	U	1.0	U	1.0	U	0.67	J	1.0	U	4.0	U
Styrene	100-42-5	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Tetrachloroethene	127-18-4	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
trans-1,2-Dichloroethene	156-60-5	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Trichloroethene	79-01-6	5 s	**4.0**		1.0	U	1.0	U	1.0	U	1.0	U	**6.8**	
Trichlorofluoromethane	75-69-4	5 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	4.0	U
Vinyl chloride	75-01-4	2 s	1.0	U	1.0	U	1.0	U	1.0	U	1.0	U	**60**	
Total VOCs (ug/L) (Note 2)	NA	NL	24.5		273.0		---	U	131.24		330		465.4	
Total Organic Carbon (mg/L)	NA	NL	**3.6**	**B**	**829**	**B**	**3.3**	**B**	**4880**	**B**	**1060**	**B**	**7240**	

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit.
The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit
Shaded value - Compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 21
Groundwater IRM Post-Injection VOC Results
Scott Aviation BCP Site

Sample Designation / Laboratory Identification / Date Sampled	CAS Number	NYSDEC Groundwater Guidance or Standard Value (Note 1)	MW-39D 480-84790-7 07/29/2015		MW-40D 480-84624-2 07/27/2015		MW-42S 480-84624-5 07/27/2015		MW-43S 480-84790-1 07/29/2015		MW-44S 480-84790-2 07/29/2015	
BTEX Compounds (ug/L)												
Benzene	71-43-2	1 s	1.0	U	100	U	200	U	**1.3**		5.0	U
Toluene	108-88-3	5 s	1.0	U	100	U	**590**		0.97	J	5.0	U
Ethylbenzene	100-41-4	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Xylenes (total)	1330-20-7	5 s	2.0	U	200	U	400	U	1.7	J	10	U
Total BTEX Compounds (ug/L)	NA	NL	---	U	---	U	590		3.97		---	U
Other VOCs (ug/L)												
1,1,1-Trichloroethane	71-55-6	5 s	1.0	U	100	U	**1700**		1.0	U	5.0	U
1,1,2,2-Tetrachloroethane	79-34-5	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	5 s	1.0	U	100	U	**660**		1.0	U	5.0	U
1,1,2-Trichloroethane	79-00-5	1 s	1.0	U	100	U	71	J	1.0	U	5.0	U
1,1-Dichloroethane	75-34-3	5 s	0.80	J	**12000**		**9700**		**29**		5.0	U
1,1-Dichloroethene	75-35-4	5 s	1.0	U	64	J	**2400**		1.0	U	5.0	U
1,2,4-Trichlorobenzene	120-82-1	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
1,2-Dibromo-3-chloropropane	96-12-8	0.04 s	1.0	U	100	U	200	U	1.0	U	5.0	U
1,2-Dibromoethane	106-93-4	0.0006 s	1.0	U	100	U	200	U	1.0	U	5.0	U
1,2-Dichlorobenzene	95-50-1	3 s	1.0	U	100	U	200	U	1.0	U	5.0	U
1,2-Dichloroethane	107-06-2	0.6 s	1.0	U	100	U	44	J	1.0	U	5.0	U
1,2-Dichloropropane	78-87-5	1 s	1.0	U	100	U	200	U	1.0	U	5.0	U
1,3-Dichlorobenzene	541-73-1	3 s	1.0	U	100	U	200	U	1.0	U	5.0	U
1,4-Dichlorobenzene	106-46-7	3 s	1.0	U	100	U	200	U	1.0	U	5.0	U
2-Butanone	78-93-3	50 g	**420**		260	J	2000	U	**250**		50	U
2-Hexanone	591-78-6	50 g	5.0	U	500	U	1000	U	3.1	J	25	U
4-Methyl-2-pentanone	108-10-1	NL	5.0	U	500	U	1000	U	5.0	U	25	U
Acetone	67-64-1	50 g	**18**		1000	U	2000	U	**980**		50	U
Bromodichloromethane	75-27-4	50 g	1.0	U	100	U	200	U	1.0	U	5.0	U
Bromoform	75-25-2	50 g	1.0	U	100	U	200	U	1.0	U	5.0	U
Bromomethane	74-83-9	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Carbon disulfide	75-15-0	60 g	1.0	U	100	U	200	U	1.0	U	0.96	J
Carbon tetrachloride	56-23-5	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Chlorobenzene	108-90-7	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Chloroethane	75-00-3	5 s	1.0	U	**1100**		**170**	**J**	**13**		5.0	U
Chloroform	67-66-3	7 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Chloromethane	74-87-3	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
cis-1,2-Dichloroethene	156-59-2	5 s	1.0	U	100	U	**6700**		**46**		5.0	U
cis-1,3-Dichloropropene	10061-01-5	0.4 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Cyclohexane	110-82-7	NL	1.0	U	100	U	200	U	1.0	U	5.0	U
Dibromochloromethane	124-48-1	50 g	1.0	U	100	U	200	U	1.0	U	5.0	U
Dichlorodifluoromethane	75-71-8	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Isopropylbenzene	98-82-8	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Methyl acetate	79-20-9	NL	**21**		250	U	500	U	2.5	U	13	U
Methyl tert-butyl ether	1634-04-4	10 g	1.0	U	100	U	200	U	1.0	U	5.0	U
Methylcyclohexane	108-87-2	NL	1.0	U	100	U	200	U	1.0	U	5.0	U
Methylene chloride	75-09-2	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Styrene	100-42-5	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Tetrachloroethene	127-18-4	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
trans-1,2-Dichloroethene	156-60-5	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
trans-1,3-Dichloropropene	10061-02-6	0.4 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Trichloroethene	79-01-6	5 s	1.0	U	100	U	**280**		0.60	J	5.0	U
Trichlorofluoromethane	75-69-4	5 s	1.0	U	100	U	200	U	1.0	U	5.0	U
Vinyl chloride	75-01-4	2 s	1.0	U	100	U	200	U	**7.0**		5.0	U
Total VOCs (ug/L) (Note 2)	NA	NL	459.80		13,424		22,315		1,332.67		0.96	
Total Organic Carbon (mg/L)	NA	NL	**3340**	**B**	**1260**		**1560**		**2060**	**B**	**31.6**	**B**

Notes:
NA = Not analyzed, not applicable.
NL = Not listed.
U = The material was analyzed for but not detected at, or above, the reporting limit.
The associated numerical value is the sample quantitation limit.
J = The associated numerical value is an estimated quantity.
Bold value - compound detected at concentration greater than the reporting limit
Shaded value - Compound detected in a concentration greater than the groundwater standard or guidance value.
s = Standard Value
g = Guidance Value
Note 1 - Guidance or Standard Values - NYSDEC, Division of Water, TOGS (1.1.1) [NYSDEC, 1998, with addenda through 2004].
Note 2 - Total VOCs includes BTEX compounds.

Table 22
Baseline and Post Injection TOC Results
Scott Aviation BCP Site

Sample Designation	Date Sampled	Total Organic Carbon (mg/L)
MW-30	07/29/2015	3.7
MW-35S	3/11/2015	2.4
	07/28/2015	2 B
MW-36S	3/10/2015	2.0
	07/29/2015	1130 B
A1-GP02-S	3/10/2015	3.3
	07/28/2015	3700
A1-GP06-S	3/11/2015	5.5
	07/27/2015	1420
A1-GP10-S	3/11/2015	2.7
	7/28/2015	1570
A1-GP15-S	3/11/2015	2.2
	7/29/2015	3.6 B
A1-GP18-S	3/11/2015	1.0
	7/27/2015	829 B
MW-35D	3/12/2015	4.7
	7/28/2015	3.3 B

Sample Designation	Date Sampled	Total Organic Carbon (mg/L)
MW-36D	3/10/2015	1.2
	7/29/2015	4880 B
MW-37D	3/10/2015	0.65 J
	7/29/2015	1060 B
MW-38D	3/10/2015	2.5
	7/27/2015	7240
MW-39D	3/10/2015	0.55 J
	07/29/2015	3340 B
MW-40D	3/11/2015	1.8
	07/27/2015	1260
MW-42S	3/12/2015	15.7
	07/27/2015	1560
MW-43S	3/12/2015	2.1
	07/29/2015	2060 B
MW-44S	07/29/2015	31.6 B

Note 1: MW-30 and MW-44S were not sampled as part of the pre-injection baseline.
J = The associated numerical value is an estimated quantity.
B= Compound was found in the blank and sample.

Table 23
Baseline and Post Injection Monitored Natural Attenuation Data Comparison
Scott Aviation BCP Site

Well ID		MW35D		MW38D		MW40D		A1-GP6S		A1-GP10S		A1-GP18S	
Sample Date		11/5/2014	7/28/2015	11/5/2014	7/27/2015	11/6/2014	7/27/2015	11/5/2014	7/27/2015	11/5/2014	7/28/2015	11/5/2014	7/27/2015
Electron Acceptors	Dissolved Oxygen (mg/L)	0.87	0.90	0.21	0.36	0.46	0.56	1.00	0.63	2.15	4.31	3.11	0.89
	Nitrate (mg/L)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	Manganese (mg/L)	0.050	0.021	0.025	2	0.0020	0.44	0.047	1.6	0.042	22	2.3	0.83
	Ferric Iron (mg/L)	2.3	ND	0.98	397	0.24	59.7	0.27	45.5	0.63	2.3	121	17.8
	Sulfate (mg/L)	9.1	4.4	4.8	ND	ND	ND	22.0	ND	8.3	ND	27.8	ND
Biodegradation Intermediates and End Products	Carbon Dioxide (mg/L)	3.2	1.6	5.5	79	1.4	7.6	9.5	10	9.8	39	8.2	17
	Methane (mg/L)	3.9	2.9	1.2	0.0064	1.4	1.8	0.044	0.66	0.091	0.091	0.26	0.52
	Nitrite (mg/L)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nutrients	Phosphorus (mg/L)	0.0091	ND	0.27	2.3	ND	0.92	ND	0.42	ND	0.044	0.65	1.2
	Ammonia (mg/L)	0.37	0.32	0.14	0.49	0.61	0.2	0.23	0.19	0.033	0.039	0.18	0.24
Oxygen Demand	COD (mg/L)	18.7	ND	229	33600	12.9	4220	19.6	3220	27.4	4400	ND	2440
	BOD (mg/L)	5.2	5.6	68.2	18900	2.7	2890	ND	3410	3.0	>3531.33	ND	1140
Bioindicators	Total Alkalinity (mg/L)	260	256	489	5150	291	1900	376	2430	388	2650	359	1100
	Ferrous Iron (mg/L)	0.12	4.8	ND	105	ND	44.3	ND	27.6	0.17	2.3	ND	2.1
Field Parameters	ORP (mV)	-56.6	-104.4	-114.6	-57.6	-14	-108.9	-57.4	-106.2	-68.2	13.4	-69.7	-40.5
	Temperature (°C)	12.98	13.97	12.85	17.39	12.18	15.85	12.74	15.83	12.65	15.90	12.36	14.30
	pH	7.47	7.71	7.7	5.67	8.31	6.54	7.19	6.8	6.9	6.33	7.3	6.08
	Conductivity (mS/cm)	0.399	0.454	0.658	5.771	0.624	2.820	0.759	3.365	1.007	3.454	0.587	3.265
Ethane/Ethene	Ethane (mg/L)	NA	0.0015 J	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
	Ethene (mg/L)	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND
Iron (Method 200.7)	Iron (mg/L)	NA	0.49	NA	502	NA	104	NA	73.1	NA	4.6	NA	19.9
Acids	Acetic Acid (mg/L)	NA	ND	NA	2420	NA	1300	NA	1730	NA	1270	NA	329
	Formic Acid (mg/L)	NA	ND	NA	693	NA	ND	NA	14.4	NA	15.2	NA	ND
	Lactic Acid (mg/L)	NA	ND	NA	746	NA	ND	NA	ND	NA	ND	NA	ND
	n-Butyric Acid (mg/L)	NA	ND	NA	1860	NA	95	NA	137	NA	131.00	NA	111
	Propionic Acid (mg/L)	NA	ND	NA	966	NA	672	NA	836	NA	1510	NA	446
	Pyruvic Acid (mg/L)	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND

COD - Chemical Oxygen Demand
BOD - Biological Demand
ORP - Oxygen Reduction Potential
mg/L- milligrams per liter
mV - millivolts
°C - degrees Celsius
mS/cm - milli-Siemens per centimeter
NA = Not available.
ND = not detected.

Table 24
Criteria Comparison and Ranking of Remedial Alternatives
Scott Aviation BCP Site

Alternative	Overall Protection of Human Health & the Environment	Compliance with ARARs	Long-Term Effectiveness and Permanence	Reduction of Toxicity, Mobility, and Volume through Treatment	Short-Term Effectiveness	Implementability	Land Use	Green Remediation	GW Alternative Cost [1] (Net Present Value, $million)	Overall Ranking
Groundwater Remedial Alternatives (Ranking scale of 1 through 4, with 1 being most favorable and 4 being least favorable)										(Ranked 1-7 based on sum of ranking criteria)
Alternative 1 No Action	4 Alternative 1 would be least effective without any removal, immobilization, or containment of impacted materials, with only natural attenuation to treat impacted media without monitoring or administrative means to prevent exposure.	4 Chemical SCGs will be met over a longer period of time; however, the alternative does not include monitoring to assess concentrations in site media.	4 Alternative 1 would be least effective as it does not involve removal, immobilization or containment of impacted materials, without monitoring or administrative means to prevent exposure.	4 Alternative 1 would reduce volume and toxicity over time due to natural attenuation. However, alternative does not include monitoring to evaluate reduction.	1 Alternative 1 requires no action.	1 Alternative 1 requires no technical or administrative action, and therefore is easy to implement.	4 Alternative 1 includes no action. This alternative would have the least impact on the site area; however, known contamination remains in place reducing potential for redevelopment and potential property values.	4 Alternative 1 requires no action, but includes no removal, immobilization, or containment of impacted materials and does not include monitoring or administrative means to prevent exposure.	Not Ranked This alternative is required by DER-10 and is retained as a baseline alternative for comparison purposes. No cost generated.	**7**
Alternative 2 Excavation (unrestricted use alternative)	1 Alternative would be most protective with removal and off-site disposal of all contaminated material	1 Alternative would meet chemical specific SCGs in the shortest period of time. Action- and location-specific ARARs will be met.	1 Alternative (excavation) permanently removes contaminants.	2 Alternative will result in permanent reduction in mobility, but does not reduce volume or toxicity (unless treatment performed at disposal facility).	4 Alternative has high potential exposure to contamination during excavation to exposed materials, dust, and volatilized organic vapors. Site-specific HASP and CAMP would to confirm that dust or volatilized organic vapors are within acceptable levels and specify additional engineering controls (e.g., use of water sprays and/or foam to suppress dust/vapors/odors) are needed. There is limited potential exposure to contamination during well installation and sampling.	4 Alternative could be implemented, but with difficulty associated with dewatering for working below water table and deep excavation work in soils immediately adjacent to existing buildings and utilities.	1 Alternative may have the most adverse short term impact; however, backfill and compaction of the excavation can be implemented to minmize effects to existing geotechnical properties. There will be significant temporary land use disruptions, but no land use restrictions when the work is completed.	4 Alternative would require off-site disposal of excavated material. Transportation of this material to an off-site landfill will have a large carbon footprint, especially since the nearest disposal facility is at least one hour drive from the site.	4 $5.1 - $6.5	**5**
Alternative 2A Excavation with Monitored Natural Attenuation	3 Alternative would be less protective because it does not involve the removal, immobilization, or containment of all impacted materials, with only monitored natural attenuation to treat impacted media. However, instiutional controls would limit exposure to ecological and human health receptors.	3 Chemical SCGs will be met over a longer period of time. Action- and location-specific ARARs will be met.	3 Alternative is effective at preventing/minimizing exposure; however, contamination left in place. Reduction in contamination by natural attenuation processes is permanent.	3 In the excavation area, Alternative would result in permanent reduction of mobility but does not reduce volume or toxicity (unless treatment performed at disposal facility). Volume and toxicity would be reduced over time due to natural attenuation.	3 Alternative has high potential exposure to contamination during excavation to exposed materials, dust, and volatilized organic vapors. Site-specific HASP and CAMP would to confirm that dust or volatilized organic vapors are within acceptable levels and specify additional engineering controls (e.g., use of water sprays and/or foam to suppress dust/vapors/odors) are needed. There is limited potential exposure to contamination during well installation and sampling.	3 Alternative could be implemented, but with difficulty associated with dewatering for working below water table and deep excavation work in soils immediately adjacent to existing buildings and utilities.	3 Alternatives with monitored natural attenuation anticipated to attain SCGs in the longest period of time; thereby requiring land use restrictions on a larger area and for the longest period of time than other alternatives.	2 Alternative requires off-site disposal of excavated material, but a lower volume than Alternative 2. Alternative relies on natural processes in less contaminated areas to reduce volume, toxicity, and mobility, which is viewed favorably by DER 31. Limited environmental impact will occur from sampling activities at the site and laboratory activities.	3 $2.6 - $2.8	**6**
Alternative 3 Enhanced Bioremediation	2 Alternative would be protective by permanantely destroying site contaminants by biodegradation. This alternative may require several applications to achieve remediation.	2 Alternative would meet chemical specific SCGs in shorter time than only relying on natural processes, but longer than excavation or chemical oxidation alternatives. Action- and location-specific ARARs will be met.	2 Alternative permanently treats/removes contaminants by in-situ bioremediation. Several applications may be required to treat all mass and volume of contaminants.	1 Alternative will result in permanent reduction in volume, toxicity, and mobility through in-situ treatment.	1 Site remediation workers would face minimal risks associated with bioremediation injection; proper PPE will be used by workers. There is limited potential exposure to contamination during well installation and sampling.	2 Alternative could be implemented readily with a degree of certainty. Numerous bioremediation amendment products are commercially available, and no special equipment is required for bioremediation injection. Several applications may be necessary to achieve complete treatment. Design would need to consider difficulties of treating site overburden including lower permeabiility soils, shallow water table, and presence of subsurface utilities.	2 Alternative utilizes in-situ remediation to treat contamination in place. Injection wells or injection points will have minimal adverse impact to land use. Technology is anticipated to meet SCGs (and more area with less restricted land use) more quickly than natural attenuation alternatives.	2 Alternative B treats contaminants in the ground without any removal activities. Carbon footprint limited to injection pumps and mixers and sampling activities. Alternative enhances natural processes.	2 $1.9	**1**
Alternative 4 In-situ oxidation	2 Alternative would be protective by permanantely destroying site contaminants by oxidation. This alternative may require several applications to achieve remediation.	2 Alternative would meet chemical specific SCGs in shorter time than on alternatives relying on natural attenuation processes. Action- and location-specific ARARs will be met.	3 Alternative permanently treats/removes contaminants by in-situ oxidation. Several applications may be required to treat all mass and volume of contaminants. However, 1,1,1-TCA can be recalcitrant to some oxidants, and rebound can occur after ISCO injections.	1 Alternative will result in permanent reduction in volume, toxicity, and mobility through in-situ treatment.	2 Site remediation workers will be exposed to strong oxidants; proper PPE will be used by workers. There is limited potential exposure to contamination during injection, well installation, or sampling.	2 Alternative could be implemented readily with a degree of certainty. Several applications of oxidant treatment may be necessary to achieve complete treatment. Design would need to consider difficulties of treating site overburden including lower permeability soils, shallow water table, and presence of subsurface utilities.	2 Alternative utilizes in-situ remediation to treat contamination in place. Injection wells or injection points will have minimal adverse impact to land use. Technology is anticipated to meet SCGs (and more area with less restricted land use) more quickly than other in-situ alternatives.	2 Alternative treats contaminants in the ground without any removal activities. Carbon footprint limited to delivery of chemicals, injection pumps and mixers and sampling activities.	3 $2.2	**2**
Alternative 4A In-situ oxidation with Monitored Natural Attenuation	3 Alternative would be protective by permanantely destroying site contaminants by oxidation or other natural attenuation processes. This alternative would require several applications and extended time to achieve remediation criteria.	3 Chemical SCGs will be met over a longer period of time. Action- and location-specific ARARs will be met.	3 Alternative permanently treats/removes contaminants by in-situ oxidation and natural attenuation processes.	2 Alternative will result in permanent reduction in volume, toxicity, and mobility through in-situ treatment and natural attenuation processes.	2 Site remediation workers will be exposed to strong oxidants; proper PPE will be used by workers. There is limited potential exposure to contamination during injection, well installation, or sampling.	2 Alternative could be implemented readily with a degree of certainty. Several applications of oxidant treatment may be necessary to achieve complete treatment.	2 Alternatives with monitored natural attenuation anticipated to attain SCGs in the longest period of time; thereby requiring land use restrictions on a larger area and for the longest period of time than other alternatives.	1 Alternative treats contaminants in the ground without any removal activities. Carbon footprint limited to injection pumps and mixers and sampling activities. Alternative relies on natural processes in less contaminated areas to reduce volume, toxicity, and mobility, which is viewed favorably by DER 31. Alternative applies less chemicals to the subsurface than other alternatives.	1 $1.6	**3**
Alternative 4B In-situ oxidation with Enhanced Bioremediation	2 Alternative would be protective because it would permanantely destroy site contaminants by oxidation or bioremediation. This alternative may require several applications to achieve remediation.	2 Alternative would meet chemical specific SCGs in shorter time than on alternatives relying on natural attenuation processes. Action- and location-specific ARARs will be met.	2 Alternative permanently treats/removes contaminants by in-situ oxidation and bioremediation processes.	1 Alternative will result in permanent reduction in volume, toxicity, and mobility through in-situ treatment.	2 Site remediation workers will be exposed to strong oxidants; proper PPE will be used by workers. There is limited potential exposure to contamination during well installation and sampling.	3 Alternative could be implemented readily with a degree of certainty. Several applications of oxidant and/or bioremediation amendments may be necessary to achieve complete treatment.	2 Alternative utilizes in-situ remediation to treat contamination in place. Injection wells or injection points will not adversely impact land use, and this technology is anticipated to meet SCGs (and more area with less restricted land use) more quickly than natural attenuation alternatives.	2 Alternative treats contaminants in the ground without any removal activities. Carbon footprint limited to injection pumps and mixers and sampling activities.	3 $1.9	**3**

Notes:

1. For comparison of alternatives, Net Present Value costs reported in this table are for the Groundwater Alternative components only and do not include the common elements of surface excavation, sub-slab depressurization system, and storm sewer actions.

Table 25
Preliminary Screening of Technologies for Groundwater
Scott Aviation BCP Site

Overview of Groundwater Impacts	
Shallow Groundwater (Overburden Aquifer): **Comingled CVOC, BTEX impacts south and west of Plant 1 (Area 1). One well had an exceedance of a heptachlor epoxide (pesticide). Limited sodium, magnesium, and iron impacts.** **Deep Groundwater (Overburden Aquifer):** **Comingled CVOC, BTEX impacts southwest of Plant 1. Limited sodium, magnesium, and iron impacts.** **Bedrock Aquifer:** **Limited sodium, magnesium, and iron impacts.**	**GRAs and subsequent screening apply to CVOCs and BTEX in the shallow and deep overburden aquifer. The single pesticide exceedance may be addressed during remediation of the groundwater plume (within the boundaries of the VOC plume). Metals are attributed to naturally occurring geochemistry and likely represent regional conditions.**

General Response Actions	Technology	Process	Description	Applicability to Area 1
No Action	(n/a)	(n/a)	(n/a)	**Applicable - Retained as a baseline to compare other remedial alternatives against.**
Limited Action	Institutional Controls	Environmental Easement	Non-physical means of enforcing a restriction on the site that limits exposure and use of impacted groundwater and prevents actions that would interfere with the remedial program.	**Applicable- May be required in addition to remediation, depending on future site use and selected remedy.**
		Zoning / Ordinance		
		Current Site Use		
		Site Management Plan		
	Environmental Monitoring	Groundwater Monitoring	Monitoring natural attenuation mechanisms, and plume mobility. Assumes plume is stable.	**Applicable- May first require mitigation of storm sewer pathway**
		Monitored Natural Attenuation		
Containment	Physical Containment	Slurry Wall, Solidification, Sheet Pile	Geotechnical methods for the isolation of source areas, thus preventing the ongoing migration of contaminants. Methods include sheet pile walls, diaphragm walls and bentonite slurry walls. Barrier will likely alter natural groundwater flow paths.	Not Applicable- This is a passive technology that would not treat VOCs within the plume, and therefore volatilization and indoor air exposures would remain. Requires significant civil works to install barrier wall. May be feasible in future phase if remediation works are unsuccessful.
	Hydraulic Containment	Induced Drawdown - Pump and Treat	Proven method for containment of dissolved phase contaminants. Extraction wells intercept groundwater and recirculate back to upgradient injection locations until contaminants have attenuated.	Not Applicable- Low permeability soils make this technology infeasible. Requires installation of extraction wells, and relies completely on attenuation for remediation. Requires long-term infrastructure and operation which does not meet Site objectives.
In-situ Treatment	Biological Treatment	Aerobic	Aerobic bioremediation enhances biodegradation of with the addition of oxygen and/or limiting nutrients to subsurface.	**Potentially Applicable - Aerobic bioremediation process will not treat all site contaminants and is only applicable to BTEX compounds or specific CVOCs (e.g., chloroethane, vinyl chloride) found in groundwater at the Site. Could be applied as a polish step after another remedial technology.**
		Anaerobic	Anaerobic bioremediation enhances anaerobic reductive degradation by adding electron donor (carbon substrate and/or nutrients) to stimulate the microbial activity of dechlorinating bacteria.	**Applicable - Anaerobic bioremediation is highly effective for CVOCs found in groundwater at the Site, but is generally not effective for BTEX. Based on presence of daughter products, reductive degradation may be occurring naturally. Process could also be applied as a polish step after another remedial technology.**
		Bioaugmentation	Bioaugmentation comprises adding a known contaminant-degrading microbial culture (e.g. KB-1) to accelerate the bioremediation process.	**Potentially Applicable- Different bacteria would be required for different site contaminant classes (BTEX vs. CVOCs), and each require different groundwater conditions and/or enhancements. Additional microbial cultures may enhance and/or increase the rate of biodegradation at the Site.**
	Chemical Treatment	In-situ Chemical Oxidation (Injection)	Apply chemical oxidant into subsurface for oxidation/destruction of contaminants in soil and groundwater. Strong oxidants require careful handling procedures.	**Applicable- Chemical oxidation has been demonstrated to directly treat BTEX and CVOC contaminants; however, treatment of 1,1,1-TCA is more difficult than other CVOCs. Injection into lower permeability soils requires conservative design and more injection points. In-situ soil mixing allows for effective contact between oxidants and VOCs but may limit redevelopment schedule/reuse.**
		In-Situ Chemical Oxidation (Soil Mixing)		
		In-situ Chemical Reduction	Inject amendments to treat subsurface contaminants through reduction reactions (i.e., zero valent iron).	**Applicable- In-situ Chemical Reduction most commonly applied for CVOCs. Additives can be added to also encourage treatment of BTEX. In-situ chemical reduction also enhances bioremediation of CVOCs by reductive dechlorination.**

Table 25
Preliminary Screening of Technologies for Groundwater
Scott Aviation BCP Site

Overview of Groundwater Impacts	
<u>Shallow Groundwater (Overburden Aquifer):</u> **Comingled CVOC, BTEX impacts south and west of Plant 1 (Area 1). One well had an exceedance of a heptachlor epoxide (pesticide). Limited sodium, magnesium, and iron impacts.** **<u>Deep Groundwater (Overburden Aquifer):</u>** **Comingled CVOC, BTEX impacts southwest of Plant 1. Limited sodium, magnesium, and iron impacts.** **<u>Bedrock Aquifer:</u>** **Limited sodium, magnesium, and iron impacts.**	**GRAs and subsequent screening apply to CVOCs and BTEX in the shallow and deep overburden aquifer. The single pesticide exceedance may be addressed during remediation of the groundwater plume (within the boundaries of the VOC plume). Metals are attributed to naturally occurring geochemistry and likely represent regional conditions.**

General Response Actions	Technology	Process	Description	Applicability to Area 1
In-situ Treatment	Physical Treatment	Air Sparging	Strips VOCs from groundwater through addition of air below treatment zone, transferring VOCs to vapor phase for extraction and can enhance aerobic biodegradation by injecting air and providing oxygen source.	Not Applicable- Low permeability soils make this technology infeasible
In-situ Treatment	Physical Treatment	Electrical Resistive Heating (ERH)/Thermal Conductive Heating (TCH)	In-situ thermal remediation generates heat in-situ or applies heat directly to the subsurface, raising the temperature to above the boiling point of the target VOC contaminants (typically ~100°C or greater) and evaporating VOCs from the soil. Vapors are collected from the subsurface through soil vapor extraction wells for subsequent above-ground treatment.	**Applicable- In-situ thermal treatment is more expensive than other in-situ treatment processes, but can complete treatment in a shorter time frame. Technology is applicable to both unsaturated and saturated soil. HDPE storm sewer and utilities as well as active operations on the site may complicate design.**
In-situ Treatment	Physical Treatment	Pump and Treat	Impacted groundwater is pumped from the subsurface and treated ex-situ using air strippers, adsorption, and/or filtration	Not Applicable - Low permeability soils make this technology infeasible. Technology may provide plume containment but contaminant removal could be limited in diffusion-limiting clay geology. Pump and treat requires long-term infrastructure and operation which does not meet Site objectives.
In-situ Treatment	Physical Treatment	High Vacuum Multi-phase Extraction (MPE)	Utilize high vacuums to extract groundwater and expose impacted upper saturated zone soil for vapor extraction. Provides aggressive contaminant removal. Ideally applied in 48-hour continuous events.	Not Applicable- Low permeability soils make this technology infeasible
Removal	Excavation	Off-Site Disposal	Contaminated soils would be removed and transported to an off-site disposal facility.	**Applicable - Excavation of soil can be an effective alternative for well-delineated "hot spots" to reduce contaminant mass. Excavation is anticipated to be more expensive than in-situ treatment processes, but requires less treatment time . Technology is applicable to both unsaturated and saturated soil.**
Removal	Excavation	On-Site Treatment and Backfill	Contaminated soils will be excavated and thermally treated. The treated soils will be backfilled.	Not Applicable - Thermal soil treatment units are applicable for CVOCs and BTEX; however, due to the small treatment area and volume, on-site treatment will not be cost effective.

Area 1 Catch Basin Network

Remedies listed as "Applicable" in Area 1 are applicable for the groundwater in the vicinity of the catch basin network. Currently, the catch basin network intercepts the groundwater table and conveys impacted groundwater to a nearby creek. The following remedies are potentially applicable depending on the remedial approach chosen from the list above:

-Seal catch basin structures and associated piping; and/or

-Remove stormwater utilities, regrade paved areas, and install drainage swale east of the Site to control Site stormwater

Conclusion

The following technologies were identified as applicable or potentially applicable for the site conditions and will undergo initial screening.
1) No Action (retained as a baseline)
2) Limited Action (Institutional Controls, Environmental Monitoring)
3) In-Situ Biological Treatment (Aerobic, Anaerobic, and/or Bioaugmentation)
4) In-Situ Chemical Oxidation
5) In-situ Chemical Reduction
6) In-situ Thermal Treatment
7) Excavation and Off-site Disposal

Table 26
Preliminary Screening of Technologies for Soil
Scott Aviation BCP Site

Overview of Soil Impacts				
Surface Soil Impacts: Limited PAHs, metals from 0 to 0.2 ft bgs in sample locations south and west of Plant 1 **Subsurface Soil Impacts:** Limited VOCs (acetone and methylene chloride) south of Plant 1, may be associated with laboratory contamination.			**GRAs and subsequent screening apply to metals and PAHs in surface soil.**	
General Response Actions	**Technology**	**Process**	**Description**	**Applicability to Area 1**
No action	(n/a)	(n/a)	(n/a)	**Applicable- Retained as a baseline to compare other remedial alternatives against.**
Limited action	Institutional Controls	Environmental Easement Zoning / Ordinance Current Site Use Site Management Plan	Non-physical means of enforcing a restriction on the site that limits exposure to impacted materials and prevents actions that would interfere with the remedial program.	**Applicable- Limited surface soil impacts may be addressed by institutional controls and may be required for contamination left in place.**
Containment	On-Site Capping	Asphalt cap HDPE cap Clay cap Soil cover RCRA Landfill	Capping provides a physical barrier capable of limiting exposure to impacted soil. Capping may also provide a barrier which prevents infiltration of precipitation and subsequent leaching issues.	**Applicable- Based on limited surface soil impacts, capping may provide cost-effective remedy.**
In-situ treatment	In-situ Solidification	Bucket/blender, Auger Rig, Pressure Jet Grout - Portland, bentonite, fly ash, slag, activated carbon, blend	Solidification seeks to reduce the potential mobility of soil contaminants. Treatment is possible when mixed with solidification materials.	Not Applicable- Cost prohibitive based on limited soil impacts.
	Physical treatment	Solidification / Stabilization Soil flushing Surfactant enhanced recovery Electro kinetic separation Vitrification Thermal resistivity Electromagnetic heating Heat enhanced recovery Soil vapor extraction	Physical treatment technologies	Not Applicable - Due to the small treatment area and volume, on-site treatment will not be cost effective.
	Thermal treatment	Electrical Resistive Heating (ERH)/Thermal Conductive Heating (TCH)	In-situ thermal remediation generates heat in-situ or applies heat directly to the subsurface, raising the temperature to above the boiling point of the target VOC contaminants (typically ~100oC or greater) and evaporating VOCs from the soil. Vapors are collected from the subsurface through soil vapor extraction wells for subsequent above-ground treatment.	Not applicable- Technology does not address metals impacts.
Removal	Excavation	Off-site Disposal	Excavate soils from impacted areas, requires on-site treatment and/or disposal	**Applicable- Based on limited shallow soil impacts, excavation and disposal may provide cost-effective remedy.**
		On-Site Treatment and Backfill	Excavated soils treated on site by one of the treatment options listed above (in-situ treatment).	Not Applicable- Based on limited impacts in surface and shallow soil, technologies not practical for the Site.

Conclusion

The following technologies were identified as applicable or potentially applicable for the site conditions and will undergo initial screening:
1) No Action
2) Institutional Controls (Limited Action)
3) Capping (Containment)
4) Excavation and Off-site Disposal (Removal)

Table 27
Preliminary Screening of Technologies for Soil Vapor
Scott Aviation BCP Site

Overview of Soil Vapor Impacts				
Soil Vapor Impacts: Soil vapor was sampled in three locations within the Plant 1 building. One location within the boiler room was identified as requiring mitigation for TCE exceedances.			**GRAs and subsequent screening apply to CVOCs in the vicinity of the boiler room.**	
General Response Actions	**Technology**	**Process**	**Description**	**Applicability to Area 1 Building**
No action	(n/a)	(n/a)	(n/a)	**Applicable - Retained as a baseline to compare other remedial alternatives against.**
Engineering Control	Vapor Barrier	Seal/install barrier beneath building slab	A seal and/or barrier is installed to address the vapor intrusion pathway. The source is not treated, exposure is mitigated.	Not Applicable- May require demolition of existing slab to install barrier. May interrupt site operations for a considerable amount of time.
	Sub-slab Depressurization	Installation of an active or passive vapor mitigation system to provide alternative pathway to atmosphere	Installation of vapor collection points beneath the slab, piping routes vapor to atmosphere. Active or passive vacuum is applied for enhanced transport of vapors.	**Applicable- Can be installed in a minimally invasive way. Proven technology to mitigate soil vapor intrusion.**
	HVAC Modification	Room pressurization	HVAC system is modified to apply positive pressure to mitigate vapor intrusion.	**Potentially Applicable- Depending on building construction and room layout.**
		Passive ventilation	Mitigation occurs by dilution through increased ventilation.	**Potentially Applicable- Depending on building construction and room layout.**
Physical/Ex-situ Treatment	Soil vapor extraction and subsequent treatment	Will address contamination in unsaturated (vadose) zone and prevent impacted vapor from entering the building.	Installation of vapor collection points beneath the slab and/or exterior of the building, vapors are treated ex-situ.	Not Applicable - Based on low permeability of soil and shallow groundwater, may require several extraction points to get an effective radius of influence. May not be practical given site constraints.
Conclusion				
The following technologies were identified as applicable or potentially applicable for the site conditions and will undergo initial screening: **1) No Action (retained as a baseline)** **2) Sub-slab Depressurization (Exposure Mitigation)** **3) HVAC Modification (Exposure Mitigation)**				

Initial Screening of Remedial Technologies
Table 28a – No Action (all media)

No Action: No remedial activities are included under this alternative. No environmental sampling is performed. No actions are proposed to limit exposure to contaminants.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• None	• No action makes this the easiest technology alternative to implement	• No capital costs • No O&M costs
Disadvantages	**Disadvantages**	**Disadvantages**
• Does not mitigate on-site risk or mitigate exposures • Does not comply with SCGs • Does not reduce the contaminant concentrations, or limit plume mobility, toxicity, or volume of contamination. • No restriction on groundwater use would be implemented.	• Additional remedial actions may be required in the future	• Additional remedial actions may be required in the future

Conclusion: The No Action alternative is not protective of human health or the environment. It does not reduce on-site risk or mobility. However, it is used as a baseline in comparison with other alternatives. **This alternative will be retained for detailed analysis.**

.

Initial Screening of Remedial Technologies
Table 28b – Limited Action (all media)

<u>Limited Action:</u> Limited action would include institutional controls to limit exposure to contamination and environmental monitoring to evaluate contaminant concentrations over time in order to quantify risk.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Mitigate on-site risk by reducing exposure to human and environmental receptors • Natural attenuation will reduce contaminant concentrations over time.	• Limited actions can make this response action easy to implement • Environmental sampling is standard practice for contaminated sites.	• Limited capital costs • Low O&M costs
Disadvantages	**Disadvantages**	**Disadvantages**
• Does not comply with all SCGs • Does not reduce the contaminant concentrations, or limit plume mobility, toxicity, or volume of contamination in a reasonable period of time.	• Additional remedial actions may be required in the future • Institutional controls can be difficult to implement for properties not owned by the responsible party and/or can inhibit property transaction.	• Additional remedial actions may be required in the future • O&M costs for monitoring and reporting may be required for a long time into the future.

Conclusion: Limited Action can be protective of human health and the environment by minimizing exposure to contaminants. However, it does not actively reduce contamination concentrations, mass, or mobility in a reasonable period of time. **This technology is not retained for detailed analysis as a stand-alone alternative. However, limited action including institutional controls and/or monitored natural attenuation may be useful to incorporate into other remedial alternatives.** .

Initial Screening of Remedial Technologies
Table 28c – Enhanced Biodegradation (groundwater)

Enhanced Biodegradation: Natural microbial processes are enhanced through the introduction of electron donors (enhancement) and/or microbial populations (bioaugmentation) via injection to reduce concentrations of VOCs.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Treatment technology has been shown to be effective in reducing mass of organic contaminants. • Does not generate large amounts of waste material.	• Easily implemented because remedial actions are limited to injection and monitoring.	• Lower capital cost than other remedial technologies being screened • Does not generate large amounts of waste material requiring disposal.
Disadvantages	**Disadvantages**	**Disadvantages**
• Site contaminants likely require both anaerobic (chlorinated VOCs) and aerobic (BTEX) treatment zones. • Short term effectiveness is likely to be low due to the likely presence highly concentrated source areas. • More toxic byproducts can be generated from incomplete biodegradation (i.e., vinyl chloride from TCE or chloroethane from 1,1,1-TCA).	• Delivery of injected substrates less effective in lower permeability soils • Additional remedial actions may be required in the future for polishing. • Processes create reducing environment which may mobilize inorganic contaminants.	• Bioaugmentation (addition of microbes) may be required if microbes required for complete dechlorination are not present • Long term monitoring costs required to demonstrate remediation effectiveness.

Conclusion: This alternative would protect human health and the environment by limiting exposure to contaminated groundwater and reducing contaminant mass and concentration in overburden groundwater over time. It has been effective at other sites with similar needs and can be relatively less expensive than other remedies undergoing screening. **This alternative is retained for detailed analysis**.

Initial Screening of Remedial Technologies
Table 28d – In-Situ Chemical Oxidation (groundwater)

In-Situ Chemical Oxidation: In-situ chemical oxidation (ISCO) acts to reduce the mass of organic contaminants through the direct injection of a strong oxidizing agent into the subsurface to breakdown contaminants into byproducts in the ground.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Treatment technology has been shown to be effective in reducing mass of BTEX and chlorinated VOCs. • Treatment is performed in a short time period. • Does not generate large amounts of waste material.	• Easily implemented because remedial actions are limited to oxidant injection and monitoring. • Does not require particular geochemical conditions.	• Capital costs are relatively low. • Does not generate large amounts of waste material requiring disposal.
Disadvantages	**Disadvantages**	**Disadvantages**
• 1,1,1-TCA (a primary site contaminant) is more difficult to oxidize than other VOCs • Change in groundwater pH and/or oxidation state can increase mobility of several metals.	• More than one oxidant injections may be required, depending on the oxidant chosen, and based on the elevated concentrations present. • Delivery of injected substrates less effective in lower permeability soils	• Long term monitoring costs required to demonstrate remediation effectiveness.

Conclusion: This alternative would protect human health and the environment by limiting exposure to contaminated groundwater and reducing contaminant mass and concentration in groundwater, and can be relatively less expensive than other remedies undergoing screening. **This alternative is retained for detailed analysis.**

Initial Screening of Remedial Technologies
Table 28e – In-Situ Chemical Reduction (groundwater)

<u>In-situ Chemical Reduction:</u> This technology applies zero valent iron (ZVI) along with a carbon substrate reduce the mass and concentration of chlorinated VOCs by treatment via biological, chemical, and physical processes.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Technology has been demonstrated to be effective in reducing mass of chlorinated VOCs. • Does not generate large amounts of waste material. • Contaminants treated in-situ by both biotic and abiotic reactions.	• Easily implemented because remedial actions are limited to injection and monitoring. • Does not require particular geochemical conditions.	• Does not generate large amounts of waste material.
Disadvantage	**Disadvantage**	**Disadvantage**
• Developing technology whose effectiveness has been demonstrated less frequently than other in-situ remediation technologies. • Technology not demonstrated for treatment of BTEX	• Injection of ZVI requires high injection pressures (100-300 psi) • Limited number of subcontractors who have equipment to inject ZVI • Delivery of injected substrates less effective in lower permeability soils • Processes create an extremely reducing environment which may mobilize inorganic contaminants.	• Capital costs are higher than other in-situ remediation technologies. • Long term monitoring costs required to demonstrate remediation effectiveness.

Conclusion: This alternative would protect human health and the environment by limiting exposure to contaminated groundwater and reducing contaminant mass and concentration in groundwater. However, due to the shallow groundwater table, the lower permeability of site soils, and the high injection pressures required, this technology is likely to lead to minor fracturing, preferential pathways, and/or daylighting which would limit effectiveness of the treatment. **Thus, this alternative is not retained for detailed evaluation; however, targeted use of ZVI could be considered for an enhanced bioremediation alternative for areas of highest concentrations.**

Initial Screening of Remedial Technologies
Table 28f – In-Situ Thermal Remediation (groundwater)

In-situ Thermal Reduction: This technology heats up the subsurface to increase the temperature above the boiling point of water to enhance stripping and volatilization of VOCs. Vapors are collected for treatment.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Effective in reducing contaminant source mass. Boiling points of site-specific VOCs are within the operating range of the technology. • Treatment of soil and groundwater is uniform in vertical and horizontal directions, regardless of soil type. • May be able to treat soil to below residential and non-residential remedial standards to avoid engineering controls and institutional controls. • Short operation time (several months) with low probability of contamination rebound	• Very timely to remediate residual contaminant source mass areas and residual groundwater in treatment areas. • Non-intrusive, except for installation of thermal points and vacuum extraction points. • Contaminated areas are relatively accessible. • No groundwater dewatering is required.	• No long term O&M costs • Lower costs associated with shorter anticipated monitoring time.
Disadvantages	**Disadvantages**	**Disadvantages**
• Limited effectiveness for treating VOCs in weathered bedrock/bedrock	• High demand for limited thermal remediation specialty contractors. • Thermal remediation system may require installation of additional electrical infrastructure. • Treatment or off-site disposal required for collected condensate. • Existing PVC utilities and wells will need to be abandoned and replaced with stainless steel wells. • Permits may be required for treatment and/or discharge of wastewater and/or vapor stream.	• High costs associated with electric demand and utilities required for heating. • High capital costs associated with design and construction of thermal remediation system. • New monitoring wells need to be installed constructed of steel materials. • Treatment and/or disposal of generated wastewater.

Conclusion: This alternative would protect human health and the environment by limiting exposure to contaminated groundwater and reducing contaminant mass and concentration in groundwater. However, this technology is significantly more expensive than other in-situ technologies. In addition, the storm sewer line and any other PVC utilities could be damaged by the high temperatures and would require complete replacement with materials resistant to high temperatures. **Thus, this alternative is not retained for detailed evaluation.**

Initial Screening of Remedial Technologies
Table 28g – Soil Excavation (soil and/or groundwater)

Soil Excavation: Under this technology, shallow soil and/or saturated soil within areas of contaminated groundwater would be excavated to remove contaminant source zones with the soil transported to an appropriate landfill or treatment facility. By removing the saturated soils, less contamination would be available to dissolve into groundwater and migrate off-site.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Effective for rapidly reducing contaminant mass. • Reduces the time to remediate lower concentrations of residual source mass using other remedial technologies. • May be able to meet residential and/or non-residential remedial standards to avoid engineering/institutional source area controls.	• Contamination source areas are accessible, especially for surface soils. • Excavation can be easily implemented with conventional construction equipment. • Very timely.	• Low cost to excavate using conventional construction equipment. • No O&M costs
Disadvantages	**Disadvantages**	**Disadvantages**
• May not be effective for all of the dissolved concentrations in groundwater. • Potential for short-term risks to workers and community from emissions during excavation and transport.	• Large volumes of soil may need to be excavated to remove all saturated areas. • Structural supports and management of utilities may be needed to excavate all areas. • High water table will require dewatering and treatment of groundwater. • Excavation of saturated soils will require more planning for dewatering and associated treatment and disposal.	• Large volume of soil likely needed, thus high disposal costs would be incurred. • High cost for disposal if soil is characterized as hazardous soil. • Need to import clean fill to backfill open excavations. • Cost associated with sheeting/shoring. • Cost associated with dewatering, treatment, and disposal.

Conclusion: Excavation and disposal is a very common procedure for soil remediation, but less so for addressing groundwater contamination. Due to the deep excavation likely required and the high costs associated with disposal with large volumes of soil, this alternative is not recommended for further evaluation. **Soil excavation is retained for detailed analysis for vadose zone soil, but is not retained for detailed analysis for saturated zone soil.**

Initial Screening of Remedial Technologies
Table 28h – Soil Capping (Containment) (soil)

Soil Excavation: Under this technology, contaminated shallow soil on the site would be contained beneath an engineered cap consisting of clean fill and geotextile materials to provide a physical barrier limiting exposure to impacted soil. Capping may also provide a barrier which prevents infiltration of precipitation and subsequent leaching issues.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Eliminates direct contact with contaminated soils. • Prevents infiltration of precipitation, controlling migration of soil contamination.	Implementation and success of capping is well documented.	• Transportation and disposal costs can be avoided. • Minimal O&M cost.
Disadvantages	**Disadvantages**	**Disadvantages**
• Does not reduce the toxicity or volume of the contaminants in place.	• Can limit site reuse, especially if soil cap areas need to be raised • Contamination left in place and will require future O&M and reporting. • Institutional controls may be required	• Site preparation such as reshaping and contouring may be needed outside of the cap areas. • Long term O&M and reporting required.

Conclusion Soil capping would reduce risk to human receptors from shallow contaminated soil. However, by leaving contamination in place, this technology would limit site reuse, require long-term O&M, and likely also require institutional controls. **This alternative is not retained for detailed evaluation.**

Initial Screening of Remedial Technologies
Table 28i – Sub-Slab Depressurization (soil vapor)

<u>Sub-Slab Depressurization:</u> Installation of vapor collection points beneath a building slab mitigates indoor air inhalation risk by routing vapor to atmosphere.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Proven technology to mitigate soil vapor intrusion.	• System installed in a minimally invasive way. • Technology is the preferred by regulators and practitioners compared to other engineering controls for soil vapor, especially for an existing building	• Low capital costs • Low O&M costs
Disadvantages	**Disadvantages**	**Disadvantages**
• Does not reduce contaminant concentrations or limit mobility, toxicity, or volume of contamination in the ground.	• Engineered controls will be required with any redevelopment over an area with vapor intrusion issues.	• Long term O&M costs

Conclusion: Sub-Slab Depressurization has been demonstrated to be protective of human health risks associated with vapor intrusion and inhalation. **This alternative will be retained for detailed analysis.**

Initial Screening of Remedial Technologies
Table 28j – HVAC Modification (soil vapor)

<u>HVAC Modification:</u> HVAC systems for buildings are modified to mitigate vapor intrusion by increasing ventilation and/or applying positive pressure in rooms.

EFFECTIVENESS	IMPLEMENTABILITY	COST
Advantages	**Advantages**	**Advantages**
• Proven technology to mitigate soil vapor intrusion.	• Depending on building construction and room layout can be protective about vapor intrusion risks. •	• Potential low capital costs • Low O&M costs
Disadvantages	**Disadvantages**	**Disadvantages**
• Does not reduce contaminant concentrations or limit mobility, toxicity, or volume of contamination in the ground.	• Depending on building construction and room layout, HVAC modification may not fully mitigate vapor intrusion. • Can be difficult to implement on existing buildings • Engineered controls will be required with any redevelopment over an area with vapor intrusion issues.	• Long term O&M costs

Conclusion: HVAC modification has been demonstrated to be protective of human health risks associated with vapor intrusion and inhalation; however, this technology is not applicable to all buildings or rooms and is a less preferred alternative with environmental regulators. **This alternative will not be retained for detailed analysis.**

.

Table 29
Summary of Planning Level Costs for Remedial Alternatives
Scott Aviation BCP Site

Alternative (Cost in Millions)	**Alternative 2 Excavation** (Unrestricted Use)		**Alternative 2A Focused Excavation + MNA**		**Alternative 3 Enhanced Bioremediation**	**Alternative 4 In-situ Chemical Oxidation**	**Alternative 4A Focused ISCO + MNA**	**Alternative 4B Focused ISCO + Enhanced Bioremediation**
Process Description	Excavation, dewatering, and off-site disposal of contaminated media (soil disposal assume 100% haz)	Excavation, dewatering, and off-site disposal of contaminated media (soil disposal assume 50% haz/50% non-haz)	Excavation, dewatering, and off-site disposal of area of most contaminanted groundwater, monitored natural attenuation for remainder of plume (soil disposal assume 100% haz)	Excavation, dewatering, and off-site disposal of area of most contaminanted groundwater, monitored natural attenuation for remainder of plume (soil disposal assume 75% haz)	Injection of amendments to enhance natural microbial processes in addition to adding microbe cultures to augment desired native microbe populations.	Injection of chemical oxidant into subsurface for oxidation/destruction of contaminants in soil and groundwater.	Injection of chemical oxidant into areas with most contaminated groundwater with monitored natural attenuation for remainder of plume	Injection of chemical oxidant into areas with most contaminated groundwater with enhanced bioremediation for remainder of plume
Total Capital Cost	$6.4	$5.0	$2.0	$1.9	$1.0	$1.7	$0.76	$0.88
Future Cost	$0.02	$0.02	$0.74	$0.74	$0.67	$0.60	$1.12	$1.04
TOTAL GW ALTERNATIVE COST	**$6.4**	**$5.0**	**$2.8**	**$2.6**	**$1.6**	**$2.3**	**$1.9**	**$1.9**
TOTAL NET PRESENT VALUE ALTERNATIVE COST	**$6.4**	**$5.0**	**$2.5**	**$2.4**	**$1.6**	**$2.2**	**$1.6**	**$1.8**
SHALLOW EXCAVATION COST	**$0.16**							
STORM SEWER								
SUB SLAB DEPRESSURIZATION	**$0.12**							
TOTAL COST CONTINGENCY AND SENSITIVITY (GW ALTERNATIVE + COMMON ELEMENTS)								
-30%	**$4.7**	**$3.7**	**$2.0**	**$1.8**	**$1.3**	**$1.8**	**$1.3**	**$1.5**
50%	**$10.0**	**$7.5**	**$3.8**	**$3.5**	**$2.3**	**$3.4**	**$2.4**	**$2.7**
Remedy Construction and Implementation Time (from Notice to Proceed)	6 - 18 months		6 - 12 months		3-5 years (2-3 Injection events)	3-4 years (2-3 ISCO Injection events)	3-4 years (2-3 ISCO Injection events)	3-4 years (2-3 ISCO Injection events)
Period of Performance - Remediation & Post-Remediation Monitoring	Assume 1 - 2 years performance monitoring sampling to demonstrate criteria attainment		Assume 20 years of monitored natural attenuation sampling demonstrate criteria attainment		Assume 3-5 years performance monitoring sampling after last injection for additional natural attenuation and to demonstrate criteria attainment	Assume 2-4 years performance monitoring sampling after ISCO for additional natural attenuation and to demonstrate criteria attainment	Assume 20 years of monitored natural attenuation sampling demonstrate criteria attainment	Assume 3-5 years performance monitoring sampling after last injection for additional natural attenuation and to demonstrate criteria attainment
Overall Time to Achieve Site Closure	3 years		21 years		6 - 10 years	5 - 8 years	23 years	8 - 10 years

Appendix A

Environmental Easement

Young / Sommer LLC

YOUNG SOMMER WARD RITZENBERG BAKER & MOORE LLC

COUNSELORS AT LAW

EXECUTIVE WOODS, FIVE PALISADES DRIVE, ALBANY, NY 12205
Phone: 518-438-9907 • Fax: 518-438-9914

www.youngsommer.com

JEFFREY S. BAKER
DAVID C. BRENNAN
JOSEPH F. CASTIGLIONE
MICHAEL J. MOORE
JAMES A. MUSCATO II
J. MICHAEL NAUGHTON
ROBERT A. PANASCI
KENNETH S. RITZENBERG
DEAN S. SOMMER
KEVIN M. YOUNG

LAURA K. BOMYEA
E. HYDE CLARKE
LAUREN L. HUNT
ALLYSON M. PHILLIPS
KRISTIN LAVIOLETTE PRATT
JESSICA R. VIGARS

SENIOR COUNSEL
DOUGLAS H. WARD

OF COUNSEL
SUE H.R. ADLER
ELIZABETH M. MORSS
SCOTT P. OLSON
STEPHEN C. PRUDENTE
KRISTIN CARTER ROWE

PARALEGALS
ALLYSSA T. MOODY
AMY S. YOUNG

Writer's Telephone Extension: 253
amoody@youngsommer.com

November 16, 2015

VIA FEDEX
Erie County Clerk
Old County Hall
92 Franklin Street, 1st Floor
Buffalo, New York 14202

RE: New York State Dept. of Environmental Conservation Environmental Easement
CROSS REFERENCE: Book 11272 Page 5892, dated 07/11/14, recorded 12/01/14
Easement Location: 215 and 221 Erie Street, Village of Lancaster, County of Erie
Tax Map Nos. 104.16-5-8 and 104.16-5-9

Dear Sir/Madam:

Enclosed please find for recording an original Environmental Easement between the New York State Department of Environmental Conservation and Avox Systems, Inc., as well as an original TP-584 form. Also enclosed is a check in the amount of $115.50 to cover the associated filing fees:

Statutory Recording Fee (including cover page)	$ 50.00
Per written side of page 11 pages at $5.00 per page	$ 55.00
Form TP-584 (NYS Transfer Tax form)	$ 10.00
Cross-reference	$ 0.50
TOTAL	**$115.50**

Kindly record the enclosed easement and return in the envelope provided.

Should anything more be required or you have any questions, please contact me at (518) 438-9907 ext 253.

Thank you for your attention to this matter.

Very truly yours,

Allyssa T. Moody
Paralegal

Enclosures
cc via email: Bradford Burns, Esq., NYSDEC
Jennifer Davide, Facility Manager, Avox Systems
Daniel Edmundson, Esq., Counsel, Avox Systems
Hollister Hill, Esq., Troutman Sanders LLP
Joseph Janeczek, Tyco
Robert Panasci, Esq., Young/Sommer LLC
Stuart Rixman , Tyco
Matthew Tanzer, Tyco
Kevin Young, Esq., Young/Sommer LLC
Dino Zack, P.G., Aecom

ERIE COUNTY CLERK'S OFFICE

County Clerk's Recording Page

Return to:
A MOODY
YOUNG SOMMER LLC
5 PALISADES DR
ALBANY, NY 12205

Party 1:
AVOX SYSTEMS INC

Party 2:
NEW YORK STATE DEPT OF
ENVIRONMENTAL CONSERVATION COM

Book Type: D Book: 11288 Page: 3551

Page Count: 12
Doc Type: EASEMENT/RTWY
Rec Date: 11/19/2015
Rec Time: 02:59:33 PM
Control #: 2015239086
UserID: Kathy
Trans #: 15189533
Document Sequence Number
TT2015008540

Recording Fees:

RECORDING	$80.00
COE CO $1 RET	$1.00
COE STATE $14.25 GEN	$14.25
COE STATE $4.75 RM	$4.75
TP584	$10.00
MARKOFF FEE	$0.50

Consideration Amount: 1.00

BASIC MT	$0.00
SONYMA MT	$0.00
ADDL MT/NFTA	$0.00
SP MT/M-RAIL	$0.00
NY STATE TT	$0.00
ROAD FUND TT	$0.00

Total: $110.50

STATE OF NEW YORK
ERIE COUNTY CLERK'S OFFICE

WARNING – THIS SHEET CONSTITUTES THE CLERK'S ENDORSEMENT REQUIRED BY SECTION 319&316-a (5) OF THE REAL PROPERTY LAW OF THE STATE OF NEW YORK. DO NOT DETACH. THIS IS NOT A BILL.

Christopher L. Jacobs
County Clerk

ENVIRONMENTAL EASEMENT

AVOX SYSTEMS, INC.,

TO

THE PEOPLE OF THE STATE OF NEW YORK.

RECORD & RETURN TO:

Robert A. Panasci, Esq.
Young/Sommer, LLC
Executive Woods
Five Palisades Drive, Suite 300
Albany, New York 12205

(E)

CROSS REFERENCE: Book 11272 Page 5892, dated 07/11/14, recorded 12/01/14

785-11
239086

ENVIRONMENTAL EASEMENT GRANTED PURSUANT TO ARTICLE 71, TITLE 36 OF THE NEW YORK STATE ENVIRONMENTAL CONSERVATION LAW

THIS INDENTURE made this 6th day of November, 2015, between Owner(s) Avox Systems, Inc., having an office at 225 Erie Street, Lancaster, NY 14086, County of Erie, State of New York (the "Grantor"), and The People of the State of New York (the "Grantee."), acting through their Commissioner of the Department of Environmental Conservation (the "Commissioner", or "NYSDEC" or "Department" as the context requires) with its headquarters located at 625 Broadway, Albany, New York 12233,

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to encourage the remediation of abandoned and likely contaminated properties ("sites") that threaten the health and vitality of the communities they burden while at the same time ensuring the protection of public health and the environment; and

WHEREAS, the Legislature of the State of New York has declared that it is in the public interest to establish within the Department a statutory environmental remediation program that includes the use of Environmental Easements as an enforceable means of ensuring the performance of operation, maintenance, and/or monitoring requirements and the restriction of future uses of the land, when an environmental remediation project leaves residual contamination at levels that have been determined to be safe for a specific use, but not all uses, or which includes engineered structures that must be maintained or protected against damage to perform properly and be effective, or which requires groundwater use or soil management restrictions; and

WHEREAS, the Legislature of the State of New York has declared that Environmental Easement shall mean an interest in real property, created under and subject to the provisions of Article 71, Title 36 of the New York State Environmental Conservation Law ("ECL") which contains a use restriction and/or a prohibition on the use of land in a manner inconsistent with engineering controls which are intended to ensure the long term effectiveness of a site remedial program or eliminate potential exposure pathways to hazardous waste or petroleum; and

WHEREAS, Grantor, is the owner of real property located at the address of 215 and 221 Erie Street in the Village of Lancaster, County of Erie and State of New York, known and designated on the tax map of the County Clerk of Erie as tax map parcel numbers: Section 104.16 Block 5 Lots 8 and 9, being the same as a portion of the property conveyed to Grantor by deed dated July 11, 2014 and recorded in the Erie County Clerk's Office in Liber and Page 11272/5892. ✓ The property subject to this Environmental Easement (the "Controlled Property") comprises approximately 1.25 +/- acres, and is hereinafter more fully described in the Land Title Survey dated February, 2015 prepared by AECOM, which will be attached to the Site Management Plan. The Controlled Property description is set forth in and attached hereto as Schedule A; and

WHEREAS, the Department accepts this Environmental Easement in order to ensure the protection of public health and the environment and to achieve the requirements for remediation established for the Controlled Property until such time as this Environmental Easement is extinguished pursuant to ECL Article 71, Title 36; and

NOW THEREFORE, in consideration of the mutual covenants contained herein and the terms and conditions of Brownfield Cleanup Agreement Index Number: B9-0794-08-12, Grantor conveys to Grantee a permanent Environmental Easement pursuant to ECL Article 71, Title 36 in, on, over, under, and upon the Controlled Property as more fully described herein ("Environmental Easement")

1. Purposes. Grantor and Grantee acknowledge that the Purposes of this Environmental Easement are: to convey to Grantee real property rights and interests that will run with the land in perpetuity in order to provide an effective and enforceable means of encouraging the reuse and redevelopment of this Controlled Property at a level that has been determined to be safe for a specific use while ensuring the performance of operation, maintenance, and/or monitoring requirements; and to ensure the restriction of future uses of the land that are inconsistent with the above-stated purpose.

2. Institutional and Engineering Controls. The controls and requirements listed in the Department approved Site Management Plan ("SMP") including any and all Department approved amendments to the SMP are incorporated into and made part of this Environmental Easement. These controls and requirements apply to the use of the Controlled Property, run with the land, are binding on the Grantor and the Grantor's successors and assigns, and are enforceable in law or equity against any owner of the Controlled Property, any lessees and any person using the Controlled Property.

A. (1) The Controlled Property may be used for:

Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv)

(2) All Engineering Controls must be operated and maintained as specified in the Site Management Plan (SMP);

(3) All Engineering Controls must be inspected at a frequency and in a manner defined in the SMP;

(4) The use of groundwater underlying the property is prohibited without necessary water quality treatment_as determined by the NYSDOH or the Erie County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain written approval to do so from the Department;

(5) Groundwater and other environmental or public health monitoring must be performed as defined in the SMP;

(6) Data and information pertinent to Site Management of the Controlled Property must be reported at the frequency and in a manner defined in the SMP;

(7) All future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the SMP;

(8) Monitoring to assess the performance and effectiveness of the remedy must be performed as defined in the SMP;

(9) Operation, maintenance, monitoring, inspection, and reporting of any mechanical or physical components of the remedy shall be performed as defined in the SMP;

(10) Access to the site must be provided to agents, employees or other representatives of the State of New York with reasonable prior notice to the property owner to assure compliance with the restrictions identified by this Environmental Easement.

B. The Controlled Property shall not be used for Residential or Restricted Residential purposes as defined in 6NYCRR 375-1.8(g)(2)(i) and (ii), and the above-stated engineering controls may not be discontinued without an amendment or extinguishment of this Environmental Easement.

C. The SMP describes obligations that the Grantor assumes on behalf of Grantor, its successors and assigns. The Grantor's assumption of the obligations contained in the SMP which may include sampling, monitoring, and/or operating a treatment system, and providing certified reports to the NYSDEC, is and remains a fundamental element of the Department's determination that the Controlled Property is safe for a specific use, but not all uses. The SMP may be modified in accordance with the Department's statutory and regulatory authority. The Grantor and all successors and assigns, assume the burden of complying with the SMP and obtaining an up-to-date version of the SMP from:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, New York 12233
Phone: (518) 402-9553

D. Grantor must provide all persons who acquire any interest in the Controlled Property a true and complete copy of the SMP that the Department approves for the Controlled Property and all Department-approved amendments to that SMP.

E. Grantor covenants and agrees that until such time as the Environmental Easement is extinguished in accordance with the requirements of ECL Article 71, Title 36 of the ECL, the property deed and all subsequent instruments of conveyance relating to the Controlled Property shall state in at least fifteen-point bold-faced type:

This property is subject to an Environmental Easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the Environmental Conservation

Law.

F. Grantor covenants and agrees that this Environmental Easement shall be incorporated in full or by reference in any leases, licenses, or other instruments granting a right to use the Controlled Property.

G. Grantor covenants and agrees that it shall, at such time as NYSDEC may require, submit to NYSDEC a written statement by an expert the NYSDEC may find acceptable certifying under penalty of perjury, in such form and manner as the Department may require, that:

(1) the inspection of the site to confirm the effectiveness of the institutional and engineering controls required by the remedial program was performed under the direction of the individual set forth at 6 NYCRR Part 375-1.8(h)(3).

(2) the institutional controls and/or engineering controls employed at such site:

(i) are in-place;

(ii) are unchanged from the previous certification, or that any identified changes to the controls employed were approved by the NYSDEC and that all controls are in the Department-approved format; and

(iii) that nothing has occurred that would impair the ability of such control to protect the public health and environment;

(3) the owner will continue to allow access to such real property to evaluate the continued maintenance of such controls;

(4) nothing has occurred that would constitute a violation or failure to comply with any site management plan for such controls;

(5) the report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

(6) to the best of his/her knowledge and belief, the work and conclusions described in this certification are in accordance with the requirements of the site remedial program, and generally accepted engineering practices; and

(7) the information presented is accurate and complete.

3. Right to Enter and Inspect. Grantee, its agents, employees, or other representatives of the State may enter and inspect the Controlled Property in a reasonable manner and at reasonable times to assure compliance with the above-stated restrictions.

4. Reserved Grantor's Rights. Grantor reserves for itself, its assigns, representatives, and successors in interest with respect to the Property, all rights as fee owner of the Property, including:

A. Use of the Controlled Property for all purposes not inconsistent with, or limited by the terms of this Environmental Easement;

B. The right to give, sell, assign, or otherwise transfer part or all of the underlying fee interest to the Controlled Property, subject and subordinate to this Environmental Easement;

5. Enforcement

A. This Environmental Easement is enforceable in law or equity in perpetuity by

Grantor, Grantee, or any affected local government, as defined in ECL Section 71-3603, against the owner of the Property, any lessees, and any person using the land. Enforcement shall not be defeated because of any subsequent adverse possession, laches, estoppel, or waiver. It is not a defense in any action to enforce this Environmental Easement that: it is not appurtenant to an interest in real property; it is not of a character that has been recognized traditionally at common law; it imposes a negative burden; it imposes affirmative obligations upon the owner of any interest in the burdened property; the benefit does not touch or concern real property; there is no privity of estate or of contract; or it imposes an unreasonable restraint on alienation.

B. If any person violates this Environmental Easement, the Grantee may revoke the Certificate of Completion with respect to the Controlled Property.

C. Grantee shall notify Grantor of a breach or suspected breach of any of the terms of this Environmental Easement. Such notice shall set forth how Grantor can cure such breach or suspected breach and give Grantor a reasonable amount of time from the date of receipt of notice in which to cure. At the expiration of such period of time to cure, or any extensions granted by Grantee, the Grantee shall notify Grantor of any failure to adequately cure the breach or suspected breach, and Grantee may take any other appropriate action reasonably necessary to remedy any breach of this Environmental Easement, including the commencement of any proceedings in accordance with applicable law.

D. The failure of Grantee to enforce any of the terms contained herein shall not be deemed a waiver of any such term nor bar any enforcement rights.

6. Notice. Whenever notice to the Grantee (other than the annual certification) or approval from the Grantee is required, the Party providing such notice or seeking such approval shall identify the Controlled Property by referencing the following information:

County, NYSDEC Site Number, NYSDEC Brownfield Cleanup Agreement, State Assistance Contract or Order Number, and the County tax map number or the Liber and Page or computerized system identification number.

Parties shall address correspondence to:

Site Number: C915233
Office of General Counsel
NYSDEC
625 Broadway
Albany New York 12233-5500

With a copy to:

Site Control Section
Division of Environmental Remediation
NYSDEC
625 Broadway
Albany, NY 12233

All notices and correspondence shall be delivered by hand, by registered mail or by Certified mail and return receipt requested. The Parties may provide for other means of receiving and communicating notices and responses to requests for approval.

7. Recordation. Grantor shall record this instrument, within thirty (30) days of execution of

this instrument by the Commissioner or her/his authorized representative in the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

8. Amendment. Any amendment to this Environmental Easement may only be executed by the Commissioner of the New York State Department of Environmental Conservation or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

9. Extinguishment. This Environmental Easement may be extinguished only by a release by the Commissioner of the New York State Department of Environmental Conservation, or the Commissioner's Designee, and filed with the office of the recording officer for the county or counties where the Property is situated in the manner prescribed by Article 9 of the Real Property Law.

10. Joint Obligation. If there are two or more parties identified as Grantor herein, the obligations imposed by this instrument upon them shall be joint and several.

Remainder of Page Intentionally Left Blank

IN WITNESS WHEREOF, Grantor has caused this instrument to be signed in its name.

Avox System, Inc.:

By: ______________________

Print Name: Ibrahim Youssef

Title: President Date 10/9/15

Grantor's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ERIE)

On the 9th day of October, in the year 2015, before me, the undersigned, personally appeared IBRAHIM YOUSSEF, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/~~her/their~~ capacity(ies), and that by his/~~her/their~~ signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

Bonnie L Nowak
Notary Public - State of New York

BONNIE L. NOWAK
Notary Public, State of New York
Qualified in Erie County
My Commission Expires August 31, 2017

THIS ENVIRONMENTAL EASEMENT IS HEREBY ACCEPTED BY THE PEOPLE OF THE STATE OF NEW YORK, Acting By and Through the Department of Environmental Conservation as Designee of the Commissioner,

By: ______________________________
Robert W. Schick, Director
Division of Environmental Remediation

Grantee's Acknowledgment

STATE OF NEW YORK)
) ss:
COUNTY OF ALBANY)

On the 6th day of November, in the year 2015 before me, the undersigned, personally appeared Robert W. Schick, personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name is (are) subscribed to the within instrument and acknowledged to me that he/she/ executed the same in his/her/ capacity as Designee of the Commissioner of the State of New York Department of Environmental Conservation, and that by his/her/ signature on the instrument, the individual, or the person upon behalf of which the individual acted, executed the instrument.

____
Notary Public - State of New York

David J. Chiusano
Notary Public, State of New York
No. 01CH5032146
Qualified in Schenectady County
Commission Expires August 22, 2018

SCHEDULE "A" PROPERTY DESCRIPTION

ALL THAT TRACT OR PARCEL OF LAND situate in the Village of Lancaster, County of Erie, and State of New York being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

Commencing at the intersection of the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the east, and the lands of Ellen Willard (Reputed Owner) on the west, with the centerline of Erie Street, said point being 594.20' southeasterly from the intersection of the centerline of said Erie Street with the centerline of Court Street;

Thence S01°12'46"W along the aforementioned boundary division line a distance of 186.00' to the true point or place of beginning;

Thence in an easterly and southerly direction through the lands of said Scott Aviation Inc. the following 15 courses and distances:

1) N90°00'00"E a distance of 130.48' to the face of the building;

2) S01°06'47"W along the said face of the building a distance of 44.41' to a building corner;

3) S88°53'13"E continuing along the face of said building a distance of 0.15' to an angle point thereon;

4) S01°06'47"E continuing along the face of said building a distance of 15.97' to a building corner;

5) S88°53'13"E continuing along the face of said building a distance of 31.58' to the intersection of the projection of this line, with the building face of another wall of the same building;

6) S00°26'34"W continuing along the face of said building a distance of 59.12' to a building corner;

7) N89°17'09"W continuing along the face of said building a distance of 19.00' to a building corner;

8) S00°42'51"W continuing along the face of said building a distance of 26.95' to a building corner;

9) S89°17'09"E continuing along the face of said building a distance of 59.80' to a building corner;

10) S00°56'24"W continuing along the face of said building a distance of 6.50' to a building corner;

11) N89°03'36"W continuing along the face of said building a distance of 1.80' to the intersection of said building face with the east wall of the boiler room;

12) S02°17'07"E along the east wall of aforementioned boiler room a distance of 33.68' to the southerly face of Scott Aviation facility;

13) S89°11'49"E continuing along the southerly face of said building a distance of 30.47' to a building corner;

14) S00°44'33"W continuing along the face of said building a distance of 29.95' to a building corner;

15) S00°44'33"W continuing along the projection of the aforementioned building face a distance of 84.47' to the intersection of said course with the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the north, and the lands of the Erie Railroad (Reputed Owner) on the south;

Thence N85°41'33"W along the aforementioned boundary division line a distance of 233.45' to the intersection of said line with the aforementioned boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the east, and the lands of Ellen Willard (Reputed Owner) on the west;

Thence N01°12'46"E along the aforementioned boundary division line a distance of 285.05' to the point of beginning. Containing 1.25 acres of land, more or less.

The bearings used in this description are tied into the New York State Plane Coordinate System (NAD' 83, West Zone) as established on site by GPS observations.

TP-584 (4/13)

New York State Department of Taxation and Finance

Combined Real Estate Transfer Tax Return, Credit Line Mortgage Certificate, and Certification of Exemption from the Payment of Estimated Personal Income Tax

Recording office time stamp

See Form TP-584-I, Instructions for Form TP-584, *before completing this form. Print or type.*

Schedule A — Information relating to conveyance

Grantor/Transferor	Name *(if individual, last, first, middle initial)* (☐ *check if more than one grantor)*			Social security number
☐ Individual	AVOX SYSTEMS INC.			
☒ Corporation	Mailing address			Social security number
☐ Partnership	225 ERIE STREET			
☐ Estate/Trust	City: LANCASTER	State: NY	ZIP code: 14086	Federal EIN: 26-3112854
☐ Single member LLC	Single member's name if grantor is a single member LLC *(see instructions)*			Single member EIN or SSN
☐ Other				

Grantee/Transferee	Name *(if individual, last, first, middle initial)* (☐ *check if more than one grantee)*			Social security number
☐ Individual	THE PEOPLE OF THE STATE OF NEW YORK			
☐ Corporation	Mailing address			Social security number
☐ Partnership	625 BROADWAY			
☐ Estate/Trust	City: ALBANY	State: NY	ZIP code: 12233	Federal EIN: 14-6013200
☐ Single member LLC	Single member's name if grantee is a single member LLC *(see instructions)*			Single member EIN or SSN
☒ Other				

Location and description of property conveyed

Tax map designation – Section, block & lot *(include dots and dashes)*	SWIS code (six digits)	Street address	City, town, or village	County
140.16-5-8; 140.16-5-9		215 ERIE STREET; 221 ERIE STREET	VIL OF LANCASTER	ERIE

Type of property conveyed *(check applicable box)*

1 ☐ One- to three-family house
2 ☐ Residential cooperative
3 ☐ Residential condominium
4 ☐ Vacant land
5 ☒ Commercial/Industrial
6 ☐ Apartment building
7 ☐ Office building
8 ☐ Other ______________

Date of conveyance: 11 / 06 / 2013 (month / day / year)

Percentage of real property conveyed which is residential real property 0 % *(see instructions)*

Condition of conveyance *(check all that apply)*

a. ☐ Conveyance of fee interest

b. ☐ Acquisition of a controlling interest (state percentage acquired ______%)

c. ☐ Transfer of a controlling interest (state percentage transferred ______%)

d. ☐ Conveyance to cooperative housing corporation

e. ☐ Conveyance pursuant to or in lieu of foreclosure or enforcement of security interest *(attach Form TP-584.1, Schedule E)*

f. ☐ Conveyance which consists of a mere change of identity or form of ownership or organization *(attach Form TP-584.1, Schedule F)*

g. ☐ Conveyance for which credit for tax previously paid will be claimed *(attach Form TP-584.1, Schedule G)*

h. ☐ Conveyance of cooperative apartment(s)

i. ☐ Syndication

j. ☐ Conveyance of air rights or development rights

k. ☐ Contract assignment

l. ☐ Option assignment or surrender

m. ☐ Leasehold assignment or surrender

n. ☐ Leasehold grant

o. ☒ Conveyance of an easement

p. ☐ Conveyance for which exemption from transfer tax claimed *(complete Schedule B, Part III)*

q. ☐ Conveyance of property partly within and partly outside the state

r. ☐ Conveyance pursuant to divorce or separation

s. ☐ Other *(describe)* ______________

For recording officer's use	Amount received	Date received	Transaction number
	Schedule B., Part I $ Schedule B., Part II $		

Schedule B — Real estate transfer tax return (Tax Law, Article 31)

Part I – Computation of tax due

1 Enter amount of consideration for the conveyance *(if you are claiming a total exemption from tax, check the exemption claimed box, enter consideration and proceed to Part III)* ☐ **Exemption claimed**	1.	0	
2 Continuing lien deduction *(see instructions if property is taken subject to mortgage or lien)*	2.	0	
3 Taxable consideration *(subtract line 2 from line 1)*	3.	0	
4 Tax: $2 for each $500, or fractional part thereof, of consideration on line 3	4.	0	
5 Amount of credit claimed for tax previously paid *(see instructions and attach Form TP-584.1,* Schedule G*)*	5.	0	
6 Total tax due* *(subtract line 5 from line 4)*	6.	0	

Part II – Computation of additional tax due on the conveyance of residential real property for $1 million or more

1 Enter amount of consideration for conveyance *(from* Part I, *line 1)*	1.		
2 Taxable consideration *(multiply line 1 by the percentage of the premises which is residential real property, as shown in* Schedule A*)*	2.		
3 Total additional transfer tax due* *(multiply line 2 by 1% (.01))*	3.		

Part III – Explanation of exemption claimed on Part I, line 1 *(check any boxes that apply)*

The conveyance of real property is exempt from the real estate transfer tax for the following reason:

a. Conveyance is to the United Nations, the United States of America, the state of New York, or any of their instrumentalities, agencies, or political subdivisions (or any public corporation, including a public corporation created pursuant to agreement or compact with another state or Canada) .... a ☐

b. Conveyance is to secure a debt or other obligation .... b ☐

c. Conveyance is without additional consideration to confirm, correct, modify, or supplement a prior conveyance .... c ☐

d. Conveyance of real property is without consideration and not in connection with a sale, including conveyances conveying realty as bona fide gifts .... d ☐

e. Conveyance is given in connection with a tax sale .... e ☐

f. Conveyance is a mere change of identity or form of ownership or organization where there is no change in beneficial ownership. (This exemption cannot be claimed for a conveyance to a cooperative housing corporation of real property comprising the cooperative dwelling or dwellings.) Attach Form TP-584.1, Schedule F .... f ☐

g. Conveyance consists of deed of partition .... g ☐

h. Conveyance is given pursuant to the federal Bankruptcy Act .... h ☐

i. Conveyance consists of the execution of a contract to sell real property, without the use or occupancy of such property, or the granting of an option to purchase real property, without the use or occupancy of such property .... i ☐

j. Conveyance of an option or contract to purchase real property with the use or occupancy of such property where the consideration is less than $200,000 and such property was used solely by the grantor as the grantor's personal residence and consists of a one-, two-, or three-family house, an individual residential condominium unit, or the sale of stock in a cooperative housing corporation in connection with the grant or transfer of a proprietary leasehold covering an individual residential cooperative apartment .... j ☐

k. Conveyance is not a conveyance within the meaning of Tax Law, Article 31, section 1401(e) *(attach documents supporting such claim)* .... k ☐

*The total tax (from Part I, line 6 and Part II, line 3 above) is due within 15 days from the date conveyance. Please make check(s) payable to the county clerk where the recording is to take place. If the recording is to take place in the New York City boroughs of Manhattan, Bronx, Brooklyn, or Queens, make check(s) payable to the ***NYC Department of Finance.*** If a recording is not required, send this return and your check(s) made payable to the ***NYS Department of Taxation and Finance,*** directly to the NYS Tax Department, RETT Return Processing, PO Box 5045, Albany NY 12205-5045.

Schedule C — Credit Line Mortgage Certificate (Tax Law, Article 11)

Complete the following only if the interest being transferred is a fee simple interest.
I (we) certify that: *(check the appropriate box)*

1. ☒ The real property being sold or transferred is not subject to an outstanding credit line mortgage.

2. ☐ The real property being sold or transferred is subject to an outstanding credit line mortgage. However, an exemption from the tax is claimed for the following reason:

   ☐ The transfer of real property is a transfer of a fee simple interest to a person or persons who held a fee simple interest in the real property (whether as a joint tenant, a tenant in common or otherwise) immediately before the transfer.

   ☐ The transfer of real property is (A) to a person or persons related by blood, marriage or adoption to the original obligor or to one or more of the original obligors or (B) to a person or entity where 50% or more of the beneficial interest in such real property after the transfer is held by the transferor or such related person or persons (as in the case of a transfer to a trustee for the benefit of a minor or the transfer to a trust for the benefit of the transferor).

   ☐ The transfer of real property is a transfer to a trustee in bankruptcy, a receiver, assignee, or other officer of a court.

   ☐ The maximum principal amount secured by the credit line mortgage is $3,000,000 or more, and the real property being sold or transferred is **not** principally improved nor will it be improved by a one- to six-family owner-occupied residence or dwelling.

   Please note: for purposes of determining whether the maximum principal amount secured is $3,000,000 or more as described above, the amounts secured by two or more credit line mortgages may be aggregated under certain circumstances. See TSB-M-96(6)-R for more information regarding these aggregation requirements.

   ☐ Other *(attach detailed explanation)*.

3. ☐ The real property being transferred is presently subject to an outstanding credit line mortgage. However, no tax is due for the following reason:

   ☐ A certificate of discharge of the credit line mortgage is being offered at the time of recording the deed.

   ☐ A check has been drawn payable for transmission to the credit line mortgagee or his agent for the balance due, and a satisfaction of such mortgage will be recorded as soon as it is available.

4. ☐ The real property being transferred is subject to an outstanding credit line mortgage recorded in __________________ (insert liber and page or reel or other identification of the mortgage). The maximum principal amount of debt or obligation secured by the mortgage is __________________. No exemption from tax is claimed and the tax of __________________ is being paid herewith. *(Make check payable to county clerk where deed will be recorded or, if the recording is to take place in New York City but not in Richmond County, make check payable to the **NYC Department of Finance.**)*

Signature (both the grantor(s) and grantee(s) must sign)

The undersigned certify that the above information contained in schedules A, B, and C, including any return, certification, schedule, or attachment, is to the best of his/her knowledge, true and complete, and authorize the person(s) submitting such form on their behalf to receive a copy for purposes of recording the deed or other instrument effecting the conveyance.

[signature]	President	[signature] Andrew Gnoghlone	Attorney
Grantor signature	Title	Grantee signature	Title
Grantor signature	Title	Grantee signature	Title

Reminder: Did you complete all of the required information in Schedules A, B, and C? Are you required to complete Schedule D? If you checked *e*, *f*, or *g* in Schedule A, did you complete Form TP-584.1? Have you attached your check(s) made payable to the county clerk where recording will take place or, if the recording is in the New York City boroughs of Manhattan, Bronx, Brooklyn, or Queens, to the ***NYC Department of Finance***? If no recording is required, send your check(s), made payable to the ***Department of Taxation and Finance,*** directly to the NYS Tax Department, RETT Return Processing, PO Box 5045, Albany NY 12205-5045.

Schedule D - Certification of exemption from the payment of estimated personal income tax (Tax Law, Article 22, section 663)

Complete the following only if a fee simple interest or a cooperative unit is being transferred by an individual or estate or trust.

If the property is being conveyed by a referee pursuant to a foreclosure proceeding, proceed to Part II, and check the second box under *Exemptions for nonresident transferor(s)/seller(s)* and sign at bottom.

Part I - New York State residents

If you are a New York State resident transferor(s)/seller(s) listed in Schedule A of Form TP-584 (or an attachment to Form TP-584), you must sign the certification below. If one or more transferors/sellers of the real property or cooperative unit is a resident of New York State, **each** resident transferor/seller must sign in the space provided. If more space is needed, please photocopy this Schedule D and submit as many schedules as necessary to accommodate all resident transferors/sellers.

Certification of resident transferor(s)/seller(s)

This is to certify that at the time of the sale or transfer of the real property or cooperative unit, the transferor(s)/seller(s) as signed below was a resident of New York State, and therefore is not required to pay estimated personal income tax under Tax Law, section 663(a) upon the sale or transfer of this real property or cooperative unit.

Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date

Note: A resident of New York State may still be required to pay estimated tax under Tax Law, section 685(c), but not as a condition of recording a deed.

Part II - Nonresidents of New York State

If you are a nonresident of New York State listed as a transferor/seller in Schedule A of Form TP-584 (or an attachment to Form TP-584) but are not required to pay estimated personal income tax because one of the exemptions below applies under Tax Law, section 663(c), check the box of the appropriate exemption below. If any one of the exemptions below applies to the transferor(s)/seller(s), that transferor(s)/seller(s) is not required to pay estimated personal income tax to New York State under Tax Law, section 663. **Each** nonresident transferor/seller who qualifies under one of the exemptions below must sign in the space provided. If more space is needed, please photocopy this Schedule D and submit as many schedules as necessary to accommodate all nonresident transferors/sellers.

If none of these exemption statements apply, you must complete Form IT-2663, *Nonresident Real Property Estimated Income Tax Payment Form*, or Form IT-2664, *Nonresident Cooperative Unit Estimated Income Tax Payment Form.* For more information, see *Payment of estimated personal income tax,* on page 1 of Form TP-584-I.

Exemption for nonresident transferor(s)/seller(s)

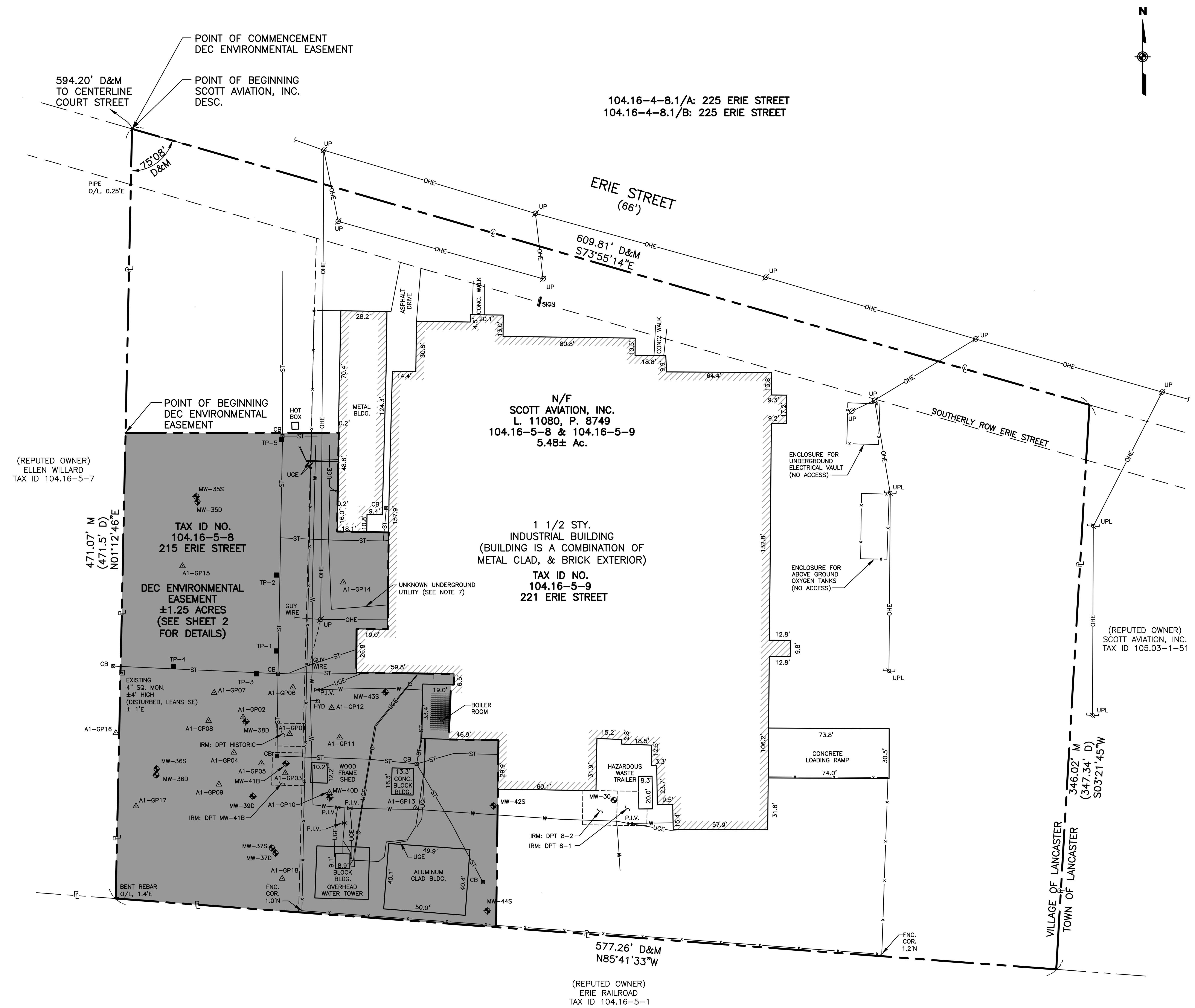
This is to certify that at the time of the sale or transfer of the real property or cooperative unit, the transferor(s)/seller(s) (grantor) of this real property or cooperative unit was a nonresident of New York State, but is not required to pay estimated personal income tax under Tax Law, section 663 due to one of the following exemptions:

☐ The real property or cooperative unit being sold or transferred qualifies in total as the transferor's/seller's principal residence (within the meaning of Internal Revenue Code, section 121) from ________ (Date) to ________ (Date) *(see instructions).*

☐ The transferor/seller is a mortgagor conveying the mortgaged property to a mortgagee in foreclosure, or in lieu of foreclosure with no additional consideration.

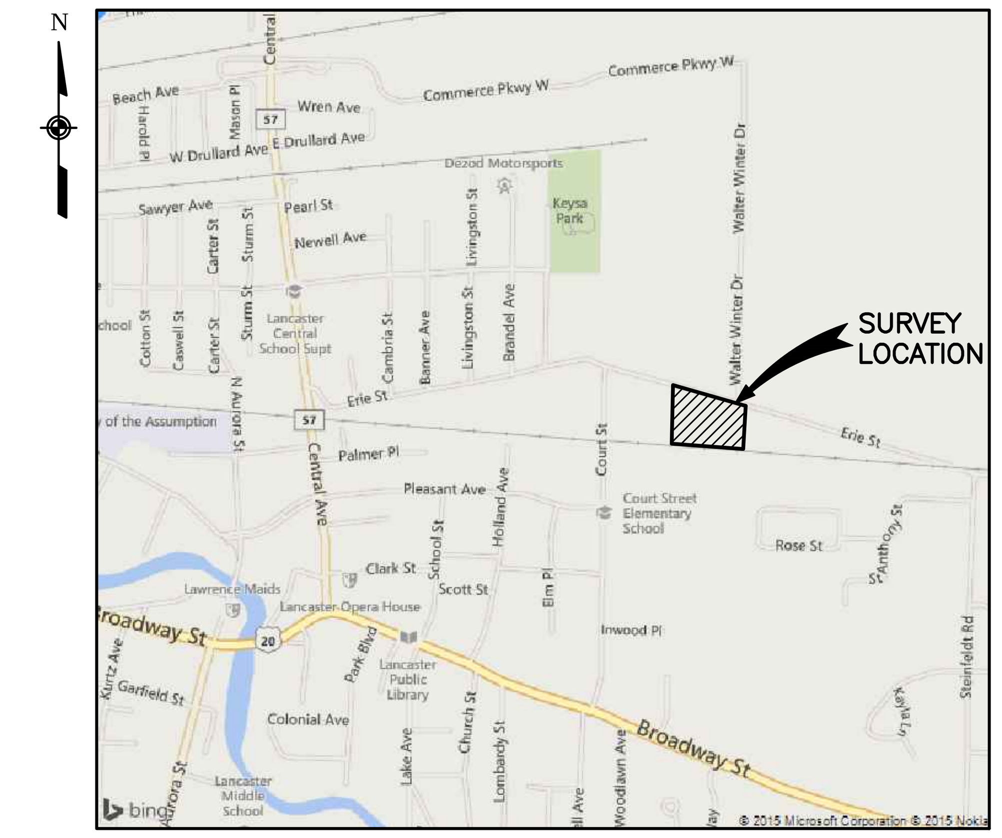
☐ The transferor or transferee is an agency or authority of the United States of America, an agency or authority of the state of New York, the Federal National Mortgage Association, the Federal Home Loan Mortgage Corporation, the Government National Mortgage Association, or a private mortgage insurance company.

Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date
Signature	Print full name	Date



NOTES

1) SEE DWG 2 OF 2 AND ENVIRONMENTAL EASEMENT DETAIL FOR ADDITIONAL NOTES, RECORD LEGAL DESCRIPTION & ENVIRONMENTAL EASEMENT AREA DESCRIPTION



SITE VICINITY MAP
NOT TO SCALE

ABBREVIATIONS

N.	NORTH	EP	EDGE OF PAVEMENT
S.	SOUTH	EXIST.	EXISTING
W.	WEST	UP	UTILITY POLE
E.	EAST	UPT	UTILITY POLE W/ TRANSFORMER
℞	PROPERTY LINE	UPL	UTILITY POLE W/LIGHT
D.	DEED	OHE	OVERHEAD ELECTRIC
D&M	DEEDED & MEASURED	OHE/T	OVERHEAD ELECTRIC & TELEPHONE
MS.	MEASURED	IP	IRON PIPE
NO.	NUMBER	CONC.	CONCRETE
MON.	MONUMENT		
O/L	ON LINE		

LEGEND

CB	CATCH BASIN/DI	P.I.V.	POST INDICATOR VALVE
HYD	HYDRANT	—OHE—	OVERHEAD ELECTRIC
		—UGE—	UNDERGROUND ELECTRIC
UP	UTILITY POLE	—G—	GAS LINE
UPL	UTILITY POLE W/LIGHT	—W—	WATERLINE
MW-38D	MONITORING WELL	—ST—	STORM SEWER
TP-2	TEST PIT	—x—x—	FENCE
A1-GP01	PIEZOMETER	—℞—	PROPERTY LINE

NOTES:

1. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF AN ABSTRACT OF TITLE AND IS SUBJECT TO ANY STATE OF FACTS THAT MAY BE REVEALED BY AN EXAMINATION OF SUCH.
2. THE BEARINGS ON THIS SITE ARE REFERENCED TO THE NEW YORK STATE PLANE COORDINATE SYSTEM (WEST ZONE NAD '83) AND WERE ESTABLISHED ON SITE BY GPS OBSERVATION.
3. THE PROPERTY IS KNOWN AS FOLLOWS:
   225 ERIE AVENUE, TAX ID PARCELS 104.16-4-8.1/A & 104.16-4-8.1/B
   215 ERIE AVENUE, TAX ID PARCEL 104.16-5-8
   221 ERIE AVENUE, TAX ID PARCEL 104.16-5-9
   VILLAGE OF LANCASTER
   LIBER 11272 PAGE 5892
   TRACT 1; PARCELS 1-6, 8, & 9
4. THE SURVEY WAS COMPLETED WITH +/- 12" OF SNOW ON THE GROUND, AND WITH MANY PILES OF SNOW ON SITE. ITEMS ON AND/OR NEAR THE GROUND MAY NOT HAVE BEEN OBSERVED DURING THE FIELD WORK. THE LIMITS OF GROUND FEATURES SUCH AS EDGE OF PAVEMENT, SIDEWALKS, AND CONCRETE PADS WERE NOT ABLE TO BE LOCATED IN MANY INSTANCES.
5. NO MONUMENTATION WAS RECOVERED IN THE FIELD ALONG THE TOWN/VILLAGE OF LANCASTER LINE.
6. IRM LOCATIONS ON SURVEY ARE BASED UPON FIELD SKETCHES AND SHOULD BE CONSIDERED TO BE APPROXIMATE.
7. LOCATION OF UNDERGROUND UTILITIES BASED UPON AN UNDERGROUND SURVEY COMPLETED BY CARDNO, INC. AND LOCATED BY URS ON JANUARY 19, 2015.

10 0 10 20
SCALE IN METERS
1 METER = 3.28083333 U.S. SURVEY FEET

40' 0 40'
SCALE IN FEET

NYSDEC ENVIRONMENTAL EASEMENT SURVEY

SCOTT AVIATION, INC.
225 ERIE STREET
VILLAGE OF LANCASTER
ERIE COUNTY, NEW YORK

FORMER SCOTT TECHNOLOGIES, INC. FACILITY (AREA 1) SITE
NYSDEC SITE No. C915233

SITUATE IN:
GREAT LOT NO. 10, SECTION 7, TOWNSHIP NO. 11, RANGE NO. 6
OF THE HOLLAND LAND COMPANY'S SURVEY

This property is subject to an environmental easement held by the New York State Department of Environmental Conservation pursuant to Title 36 of Article 71 of the New York Environmental Conservation Law. The engineering and institutional controls for this Easement are set forth in more detail in the Site Management Plan (SMP). A copy of the SMP must be obtained by any party with an interest in the property. The SMP can be obtained from NYS Department of Environmental Conservation, Division of Environmental Remediation, Site Control Section, 625 Broadway, Albany, NY 12233 or at derweb@dec.ny.gov.

ENVIRONMENTAL EASEMENT AREA ACCESS

THE NYSDEC OR THEIR AGENT MAY ACCESS THE ENVIRONMENTAL EASEMENT AREA AS SHOWN HEREON AS PROVIDED IN THE ENVIRONMENTAL EASEMENT

WARNING:

IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	Date	Revision Description

REVISIONS

AECOM
New York
257 West Genesee Street, Suite 400
Buffalo, New York 14202-2657
(716)856-5636 – (716)856-2545 fax

DRAWN BY: ELB
CHECKED BY: MDR
SCALE: AS SHOWN
DATE: FEBRUARY 2015
DWG. 1 OF 2

URS JOB NO. 11177339

STATE OF NEW YORK
MICHAEL D. ROZESKI
050523
LICENSED LAND SURVEYOR

THIS MAP VOID UNLESS EMBOSSED WITH NEW YORK STATE LICENSED LAND SURVEYORS SEAL MICHAEL D. ROZESKI NO. 050523

J:\Projects\SURVEY\11177339\SCOTT AVIATION EASEMENT SURVEYREV5-19-15.dwg 1:1 6/29/15-3, JJS

RECORD LEGAL DESCRIPTION

TRACT 1
PARCEL I: (Erie County Clerk Instrument Deed Book 11080, Page 8749)

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street 762.93 feet southeasterly from the intersection with the center line of Court Street; running thence southerly at an interior angle of 75°8' 436.29 feet to the north line of the lands of the Erie Railroad Company, thence easterly along the north line of said Erie Railroad lands, 50.06 feet; thence northerly 426.53 feet to a point in the center line of Erie Street which is 51.73 feet southeasterly of the point of beginning; and thence westerly along the center line of Erie Street 51.73 feet to the point of beginning.

PARCEL II:

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street at the northeast corner of lands conveyed to Uniloy Accessories Corporation by deed recorded in said Clerk's Office in Liber 3062 of Deeds at page 587 (being Parcel I above); running thence southerly along the east line of lands so conveyed to Uniloy Accessories Corporation 426.53 feet to the north line of lands of the Erie Railroad Company; thence easterly along the lands of said Erie Railroad lands 85.17 feet; thence northerly parallel with the east line of lands conveyed to Abbie Curren Schultz by deed recorded in said Clerk's Office in Liber 3062 of Deeds at page 591, 408.80 feet to the center line of Erie Street; and thence westerly along the center line of Erie Street 87.54 feet to the point of beginning.

PARCEL III:

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street 902.20 feet east of its intersection with the center line of Court Street, said point of beginning also being the northeast corner of lands conveyed to Uniloy Accessories Corporation by deed recorded in said Clerk's Office in Liber 3130 of Deeds at page 431 (being Parcel II above); running thence easterly along the center line of Erie Street 51.71 feet to the northeast corner of lands conveyed to Abbie Curren Schultz by deed recorded in said Clerk's Office in Liber 3062 of Deeds at page 591; thence southerly along the east line of lands so conveyed 398.40 feet to the north line of lands of the Erie Railroad Company; thence westerly along the north line of lands of the Erie Railroad 50.05 feet to the southeast corner of lands conveyed to Uniloy Accessories Corporation by deed aforesaid; and thence northerly along the east line of lands so conveyed 408.80 feet to the point of beginning.

PARCEL IV:

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street 762.93 feet southeasterly from its intersection with the center line of Court Street, said point of beginning also being the northwest corner of lands conveyed to Uniloy Accessories Corporation by deed recorded in said Clerk's Office in Liber 3062 of Deeds at page 587 (being Parcel I above); running thence southerly along the westerly line of lands so conveyed to Uniloy Accessories Corporation 436.29 feet to the north line of lands of the Erie Railroad Company; thence westerly along said north line of the Erie Railroad lands 40.05 feet; thence northerly parallel with the west line of lands conveyed to Uniloy Accessories Corporation by deed aforesaid, 445.24 feet to the center line of Erie Street; and thence southeasterly along the center line of Erie Street 41.37 feet to the place of beginning.

PARCEL V:

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street 953.91 feet east of its intersection with the center line of Court Street, which point of beginning is also the northeast corner of lands to Scott Aviation Corporation by deed recorded in said Clerk's Office in Liber 3218 of Deeds at page 422 (being Parcel III above); running thence easterly along the center line of Erie Street 51.71 feet; thence southerly parallel with the east line of lands so conveyed to Scott Aviation Corporation 388 feet to the north line of Erie Railroad lands; thence westerly along the north line of Erie Railroad lands 50.05 feet to the southeast corner of lands conveyed to Scott Aviation Corporation by deed aforesaid; and thence northerly along said east line, 398.40 feet to the point of beginning.

PARCEL VI:

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street at the northeast corner of lands conveyed to Scott Aviation Corporation by Johanna Curren, by deed dated April 1, 1944 recorded in Liber 3535 of Deeds at page 411, May 11, 1944 and being 1,005.62 feet more or less easterly along the center line of Erie Street from its intersection with the center line of Court Street; thence easterly along the center line of Erie Street 186.88 feet more or less to the east line of the Village of Lancaster, being also the westerly line of Lot No. 8; thence southerly along said easterly line of the Village of Lancaster 347.34 feet more or less to the northerly line of the Erie Railroad Company's right of way; thence westerly along the northerly line of the Erie Railroad Company's right of way 179.63 feet more or less to the said easterly line of lands of Scott Aviation Corporation conveyed by said Johanna Curran; thence northerly along said easterly line of the lands of Scott Aviation Corporation 308 feet more or less to the point of beginning.

PARCEL VIII:

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street, distant 712.59 feet easterly from the center line of Court Street; running thence easterly along the center line of Erie Street, 10.34 feet to the west line of land conveyed to Scott Aviation Corporation by deed recorded in Erie County Clerk's Office in Liber 3303 of Deeds at page 251; thence southerly along said westerly line 411 feet to the lands of the Erie Railroad; thence westerly along the Railroad's lands 10 feet; thence northerly 413.43 feet to the point of beginning.

PARCEL IX:

All that tract or parcel of land, situate in the Village of Lancaster, Town of Lancaster, County of Erie, State of New York, being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

BEGINNING in the center line of Erie Street 594.20 feet southeasterly from the intersection of the center line of Erie Street with the center line of Court Street, which point of beginning is also the northeast corner of lands conveyed to Edward J. Kader by deed recorded in Erie County Clerk's Office in Liber 3305 of Deeds at page 544; thence southeasterly along the center line of Erie Street 118.19 feet to the westerly line of lands conveyed to Scott Aviation Corporation by deed recorded in Erie County Clerk's Office in Liber 6578 of Dedds at page 455; thence northerly along the westerly line of lands so conveyed to Scott Aviation Corporation by deed aforesaid 447.57 feet to the northerly line of lands of the Erie Railroad Company; running thence westerly and along the northerly line of the lands of the Erie Railroad Company 112.25 feet to the easterly line of lands conveyed to Edward J. Kader by deed recorded in Erie County Clerk's Office in Liber 3305 of Deeds at page 544; thence northerly along the easterly line of lands so conveyed to Edward J. Kader by deed aforesaid 417.5 feet to the center line of Erie Street at the point or place of beginning.

SURVEY DESCRIPTION

ALL THAT TRACT OR PARCEL OF LAND situate in the Village of Lancaster, County of Erie, and State of New York being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

Beginning at the intersection of the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the east, and the lands of Ellen Willard (Reputed Owner) on the west, with the centerline of Erie Street, said point being 594.20' southeasterly from the intersection of the centerline of said Erie Street with the centerline of Court Street;

Thence S73°55'14"E along the centerline of said Erie Street a distance of 609.81' to the intersection of said centerline with the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the west (Tax ID #104.16-5-9) and the lands of Scott Aviation Inc. (Reputed Owner) on the east (Tax ID #105.03-1-51), said line also described as the boundary division line between the Village of Lancaster on the west, and the Town of Lancaster on the east;

Thence S03°21'45"W along the aforementioned boundary division line to the intersection of the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the north, and the lands of the Erie Railroad (Reputed Owner) on the south;

Thence N85°41'33"W along the aforementioned boundary division line a distance of 577.26' to the intersection of said boundary division line with the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the east, and the lands of Ellen Willard (Reputed Owner) on the west;

Thence N01°12'46"E along the aforementioned boundary division line a distance of 471.07' to the point of beginning. Containing 5.48 acres of land, more or less.

The bearings used in this description are tied into the New York State Plane Coordinate System (NAD' 83, West Zone) as established on site by GPS observations.

DEC ENVIRONMENTAL EASEMENT DESCRIPTION

ALL THAT TRACT OR PARCEL OF LAND situate in the Village of Lancaster, County of Erie, and State of New York being part of Lot No. 10, Section 7, Township 11, Range 6 of the Holland Land Company's Survey, bounded and described as follows:

Commencing at the intersection of the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the east, and the lands of Ellen Willard (Reputed Owner) on the west, with the centerline of Erie Street, said point being 594.20' southeasterly from the intersection of the centerline of said Erie Street with the centerline of Court Street;

Thence S01°12'46"W along the aforementioned boundary division line a distance of 186.00' to the true point or place of beginning;

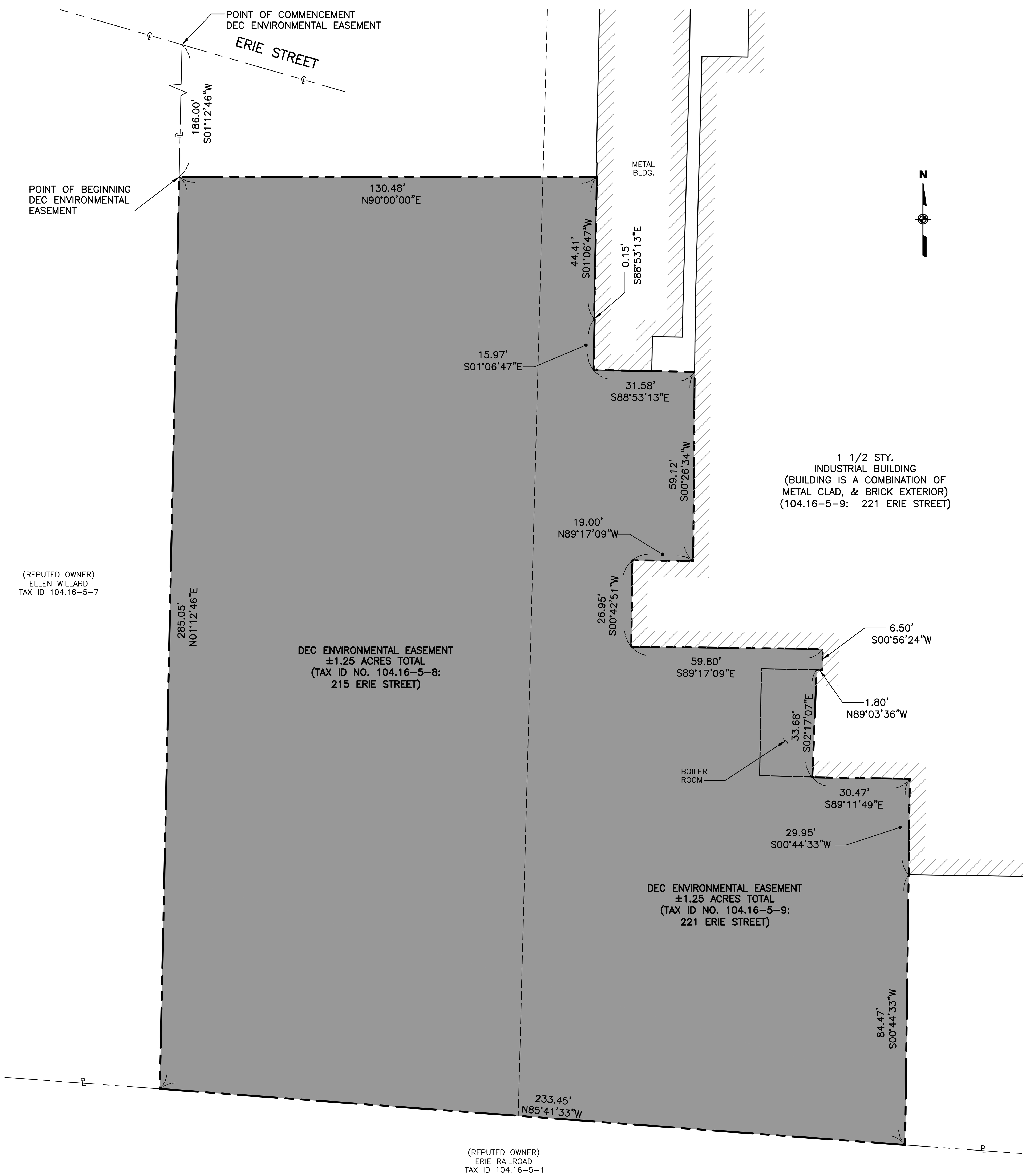
Thence in an easterly and southerly direction through the lands of said Scott Aviation Inc. the following 15 courses and distances:

1) N90°00'00"E a distance of 130.48' to the face of the building;
2) S01°06'47"W along the said face of the building a distance of 44.41' to a building corner;
3) S88°53'13"E continuing along the face of said building a distance of 0.15' to an angle point thereon;
4) S01°06'47"E continuing along the face of said building a distance of 15.97' to a building corner;
5) S88°53'13"E continuing along the face of said building a distance of 31.58' to the intersection of the projection of this line, with the building face of another wall of the same building;
6) S00°26'34"W continuing along the face of said building a distance of 59.12' to a building corner;
7) N89°17'09"W continuing along the face of said building a distance of 19.00' to a building corner;
8) S00°42'51"W continuing along the face of said building a distance of 26.95' to a building corner;
9) S89°17'09"E continuing along the face of said building a distance of 59.80' to a building corner;
10) S00°56'24"W continuing along the face of said building a distance of 6.50' to a building corner;
11) N89°03'36"W continuing along the face of said building a distance of 1.80' to the intersection of said building face with the east wall of the boiler room;
12) S02°17'07"E along the east wall of aforementioned boiler room a distance of 33.68' to the southerly face of Scott Aviation facility;
13) S89°11'49"E continuing along the southerly face of said building a distance of 30.47' to a building corner;
14) S00°44'33"W continuing along the face of said building a distance of 29.95' to a building corner;
15) S00°44'33"W continuing along the projection of the aforementioned building face a distance of 84.47' to the intersection of said course with the boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the north, and the lands of the Erie Railroad (Reputed Owner) on the south;

Thence N85°41'33"W along the aforementioned boundary division line a distance of 233.45' to the intersection of said line with the aforementioned boundary division line between the lands of Scott Aviation Inc. (Reputed Owner) on the east, and the lands of Ellen Willard (Reputed Owner) on the west;

Thence N01°12'46"E along the aforementioned boundary division line a distance of 285.05' to the point of beginning. Containing 1.25 acres of land, more or less.

The bearings used in this description are tied into the New York State Plane Coordinate System (NAD' 83, West Zone) as established on site by GPS observations.



DEC ENVIRONMENTAL EASEMENT DETAIL

10 0 10 20
SCALE IN METERS
1 METER = 3.28083333 U.S. SURVEY FEET

20' 0 20'
SCALE IN FEET

WARNING:

IT IS A VIOLATION OF SECTION 7209, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON OTHER THAN WHOSE SEAL APPEARS ON THIS DRAWING, TO ALTER IN ANY WAY AN ITEM ON THIS DRAWING. IF AN ITEM IS ALTERED, THE ALTERING ENGINEER SHALL AFFIX TO TO THE ITEM HIS SEAL AND THE NOTATION "ALTERED BY" FOLLOWED BY HIS SIGNATURE AND THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

No.	Date	Revision Description

REVISIONS

AECOM
New York
257 West Genesee Street, Suite 400
Buffalo, New York 14202-2657
(716)856-5636 – (716)856-2545 fax

DRAWN BY: ELB
CHECKED BY: MDR
SCALE: AS SHOWN
DATE: FEBRUARY 2015
DWG. 2 OF 2

URS JOB NO. 11177339

STATE OF NEW YORK
MICHAEL D. ROZESKI
050523
LICENSED LAND SURVEYOR

THIS MAP VOID UNLESS EMBOSSED WITH NEW YORK STATE LICENSED LAND SURVEYORS SEAL MICHAEL D. ROZESKI NO. 050523

NYSDEC ENVIRONMENTAL EASEMENT SURVEY

SCOTT AVIATION, INC.
225 ERIE STREET
VILLAGE OF LANCASTER
ERIE COUNTY, NEW YORK

FORMER SCOTT TECHNOLOGIES, INC. FACILITY (AREA 1) SITE
NYSDEC SITE No. C915233

SITUATE IN:
GREAT LOT NO. 10, SECTION 7, TOWNSHIP NO. 11, RANGE NO. 6
OF THE HOLLAND LAND COMPANY'S SURVEY

J:\Projects\SURVEY\11177339\SCOTT AVIATION EASEMENT SURVEYREV5-19-15.dwg 1:1
6/29/15-2, ELB

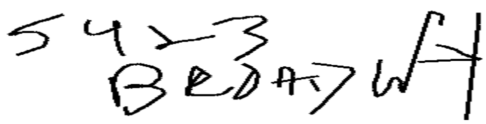
Date: December 3, 2015

Allyssa Moody:

The following is in response to your December 3, 2015 request for delivery information on your Certified Mail™ item number 9171999991703619334374. The delivery record shows that this item was delivered on December 3, 2015 at 11:19 am in LANCASTER, NY 14086. The scanned image of the recipient information is provided below.

Signature of Recipient :

Address of Recipient :



Thank you for selecting the Postal Service for your mailing needs.

If you require additional assistance, please contact your local Post Office or postal representative.

Sincerely,
United States Postal Service

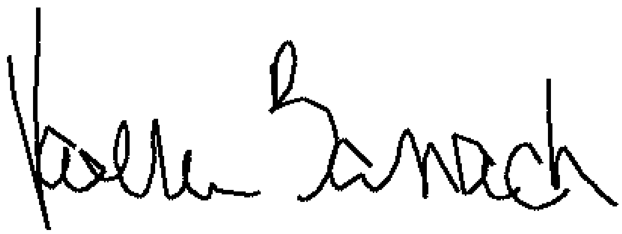
UNITED STATES POSTAL SERVICE

Date: December 3, 2015

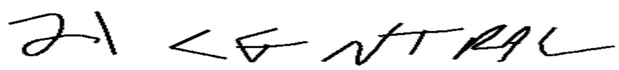
Allyssa Moody:

The following is in response to your December 3, 2015 request for delivery information on your Certified Mail™ item number 9171999991703619334381. The delivery record shows that this item was delivered on December 3, 2015 at 10:22 am in LANCASTER, NY 14086. The scanned image of the recipient information is provided below.

Signature of Recipient :



Address of Recipient :



Thank you for selecting the Postal Service for your mailing needs.

If you require additional assistance, please contact your local Post Office or postal representative.

Sincerely,
United States Postal Service

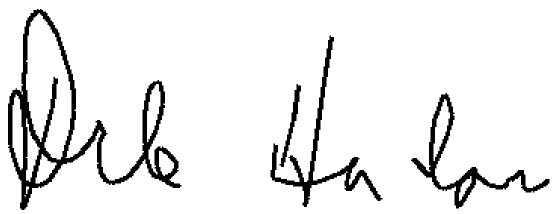
UNITED STATES POSTAL SERVICE

Date: December 3, 2015

Allyssa Moody:

The following is in response to your December 3, 2015 request for delivery information on your Certified Mail™ item number 9171999991703619334398. The delivery record shows that this item was delivered on December 3, 2015 at 10:57 am in BUFFALO, NY 14202. The scanned image of the recipient information is provided below.

Signature of Recipient :



Address of Recipient :

Thank you for selecting the Postal Service for your mailing needs.

If you require additional assistance, please contact your local Post Office or postal representative.

Sincerely,
United States Postal Service

Appendix B

Cost Estimate Detail

Appendix A
Cost Estimate Detail
Former Scott Aviation Facility Area 1
Lancaster, New York

Alternative (Cost in Millions)	Alternative 2 Excavation (Unrestricted Use)		Alternative 2A Focused Excavation + MNA		Alternative 3 Enhanced Bioremediation	Alternative 4 In-situ Chemical Oxidation	Alternative 4A Focused ISCO + MNA	Alternative 4B Focused ISCO + Enhanced Bioremediation
Process Description	Excavation, dewatering, and off-site disposal of contaminated media (soil disposal assume 100% haz)	Excavation, dewatering, and off-site disposal of contaminated media (soil disposal assume 50% haz/50% non-haz)	Excavation, dewatering, and off-site disposal of area of most contaminanted groundwater, monitored natural attenuation for remainder of plume (soil disposal assume 100% haz)	Excavation, dewatering, and off-site disposal of area of most contaminanted groundwater, monitored natural attenuation for remainder of plume (soil disposal assume 75% haz)	Injection of amendments to enhance natural microbial processes in addition to adding microbe cultures to augment desired native microbe populations.	Injection of chemical oxidant into subsurface for oxidation/destruction of contaminants in soil and groundwater.	Injection of chemical oxidant into areas with most contaminated groundwater with monitored natural attenuation for remainder of plume	Injection of chemical oxidant into areas with most contaminated groundwater with enhanced bioremediation for remainder of plume
Total Capital Cost	$6.4	$5.0	$2.0	$1.9	$1.0	$1.7	$0.76	$0.88
Future Cost	$0.02	$0.02	$0.74	$0.74	$0.67	$0.60	$1.12	$1.04
TOTAL GW ALTERNATIVE COST	**$6.4**	**$5.0**	**$2.8**	**$2.6**	**$1.6**	**$2.3**	**$1.9**	**$1.9**
TOTAL NET PRESENT VALUE ALTERNATIVE COST	**$6.4**	**$5.0**	**$2.5**	**$2.4**	**$1.6**	**$2.2**	**$1.6**	**$1.8**
SHALLOW EXCAVATION COST	**$0.12**							
STORM SEWER	**Will be remediated by default by using any of the Alternatives listed above**							
SUB SLAB DEPRESSURIZATION	**$0.06**							
TOTAL COST CONTINGENCY AND SENSITIVITY (GW ALTERNATIVE + COMMON ELEMENTS)								
-30%	**$4.6**	**$3.6**	**$1.9**	**$1.8**	**$1.2**	**$1.7**	**$1.2**	**$1.4**
50%	**$9.8**	**$7.5**	**$3.8**	**$3.5**	**$2.3**	**$3.4**	**$2.4**	**$2.7**
Remedy Construction and Implementation Time (from Notice to Proceed)	6 - 18 months		6 - 12 months		3-5 years (2-3 Injection events)	3-4 years (2-3 ISCO Injection events)	3-4 years (2-3 ISCO Injection events)	3-4 years (2-3 ISCO Injection events)
Period of Performance - Remediation & Post-Remediation Monitoring	Assume 1 - 2 years performance monitoring sampling to demonstrate criteria attainment		Assume 20 years of monitored natural attenuation sampling demonstrate criteria attainment		Assume 3-5 years performance monitoring sampling after last injection for additional natural attenuation and to demonstrate criteria attainment	Assume 2-4 years performance monitoring sampling after ISCO for additional natural attenuation and to demonstrate criteria attainment	Assume 20 years of monitored natural attenuation sampling demonstrate criteria attainment	Assume 3-5 years performance monitoring sampling after last injection for additional natural attenuation and to demonstrate criteria attainment
Overall Time to Achieve Site Closure	3 years		21 years		6 - 10 years	5 - 8 years	23 years	8 - 10 years

Summary of Engineering Assumptions for Planning Level Costs for Remedial Alternatives
Former Scott Aviation Facility, Lancaster, NY

Horizontal and Vertical Extents of Remediation

The AAR assumes that remediation is targeted for groundwater within the 100 to 1,000 ug/L Total VOC isopleths for shallow and deep groundwater, in addition to 10 percent of this area as contingency.

Shallow overburden 3-15 feet, Area = 29000 sq ft

Deep Overburden 15-21 feet, Area = 12500 sq ft

Average shallow extent of treatment (ft.) = 3-5 to 15 feet bgs [lacrustine silts and clay interbedded with thin sand lens; K values in 2 wells = 1x10-3 and 3x10-5 cm/s]

Average deep extent of treatment (ft.) = 15-21 feet bgs – [coarser grained layer (silt, sand, gravel) right above bedrock; K values in 2 wells 5x10-3 and 9x10-5 cm/s]

Depth to water (ft.) = 3 feet

The same area/thickness/volume was assumed for all technologies where planning level costs generated

Horizontal and Vertical Extents of Focused Remediation (to be used with MNA)

The AAR assumes that focused treatment for groundwater within the 10,000 ug/L Total VOC isopleths for shallow and deep groundwater, with monitored natural attenuation outside of the remediation area.

Shallow overburden 3-15 feet, Area = 7,000 sq ft

Deep Overburden 15-21 feet, Area = 1,600 sq ft

Alternative-Specific Assumptions

<u>Excavation (Alternative 2 and Alternatve 2A)</u>

3 disposal scenarios evaluated (100% hazardous, 50% hazardous & 50% non-hazardous, and 25% hazardous & 75% non-hazardous)

Dewatering will be required. Water discharge and permitting requirements need to be determined

Assume sheet piling (~75') near building

<u>Enhanced Bioremediation (Alternative 3)</u>

Assume treatment is focused on chlorinated VOCs via reductive dechlorination

Cost estimate information based pricing information provided by Tersus and modified based on AECOM experience with this other in-situ remediation.

Three discrete injection events assumed in the cost estimate, with each 65% of the previous.

Injection assumed using installed wells as multiple injection events are included

Field pilot test assumed within the cost estimate

Injection rate of ~1.5 gallon per minute assumed based on AECOM experience injecting in similar soils. This is a critical design parameter for finalizing cost

<u>In-Situ Chemical Oxidation (Alternative 4, Alternative 4A, Alternative 4B)</u>

Cost estimate prepared based on AECOM experience and using several recent cost quotations for chemicals and labor&equipment

Base activated persulfate assumed as the oxidant based on demonstrated ability to oxidize all site VOCs

Three discrete injection events assumed in the cost estimate, with each 65% of the previous
(Focused ISCO scenarios assume 2nd injection is the same as the 1st and the 3rd injection is 65% of previous)

Injection assumed using installed wells as multiple injection events are included

Field pilot test assumed within the cost estimate

Injection rate of ~1.5 gallon per minute assumed based on AECOM experience injecting in similar soils. This is a critical design parameter for finalizing cost

<u>Monitored Natural Attenuation (Alternative 2A and Alternative 4A)</u>

Assume installation of 5 additional well pairs

Assume semi-annual sampling for 5 years and annual sampling for years 6 through 15

<u>Thermal Remediation</u>

Cost estimate information based on "ball park" estimate prepared by TRS, who implements thermal remediation by Electric Resistive Heating (ERH)

The TRS quote includes assumed costs for work plans, permitting, drilling, soil disposal, electrical connection and usage, vapor treatment, confirmatory sampling and well abandonment.

Xylene was selected as the controlling contaminant as it is the least volatile of the contaminants listed.

Sub-Slab Depressurization System (all Alternatives)
Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN & PERMITTING					
Additional Air Sampling	1	allowance	$15,000	$15,000	Allowance to confirm extent, labor, materials, and analysis
Remedial Design	40	hours	$115	$4,600	Include design, specifications, and contract documents
Permit Preparation	25	hours	$115	$2,875	Specific permits to be determined but could include air, building, or other
SUBTOTAL				**$22,475**	
ASSESSMENT AND INSTALLATION					Cost estimates from AECOM experience at similar sites
Slab Seal/Repair	10	Hour	$100	$1,000	
System Installation Labor	48	Hour	$100	$4,800	Two workers for 3 days
Electrician Installation Labor	20	Hour	$125	$2,500	
Small shed	1	each	$5,000	$5,000	
SSD Equipment	1	Lump Sum	$6,500	$6,500	Blower, knock out drum, suction points, control panel with alarm
Engineering Procurement & Coordination	6	hours	$100	$600	
Engineering Oversight	3	days	$1,000	$3,000	Oversight of SSD subcontractor
Project Management	10	hours	$150	$1,500	Assume 2 hours per day during construction + 4 hours for planning and coordination
SUBTOTAL				**$24,900**	
FUTURE COSTS					
Future Year					
Performance Monitoring Equipment Rental	1	Days	$350	$350	
Sampling and GAC Change Oversight	0	Days	$1,100	$0	
GAC changeout and disposal (2 drums)	0	Allowance	$1,500	$0	
Laboratory Analyses (VOC)	2	Samples	$175	$350	
Rental Vehicle	1	days	$75	$75	
Mileage/Misc Expenses	0	Allowance	$500	$0	
Data Evaluation and Summary Report	16	hours	$100	$1,600	
SUBTOTAL FUTURE YEAR				$2,375	
Assume annual Vapor GAC change out and sampling					

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	1	$2,375	1.00	$2,375	
2	1	$2,375	0.96	$2,273	
3	1	$2,375	0.92	$2,175	
4	1	$2,375	0.88	$2,081	
5	1	$2,375	0.84	$1,992	
6	1	$2,375	0.80	$1,906	
6	1	$2,375	0.80	$1,906	
7	1	$2,375	0.77	$1,824	
8	1	$2,375	0.73	$1,745	
9	1	$2,375	0.70	$1,670	
10	1	$2,375	0.67	$1,598	
11	1	$2,375	0.64	$1,529	
12	1	$2,375	0.62	$1,463	
13	1	$2,375	0.59	$1,400	
14	1	$2,375	0.56	$1,340	
15	1	$2,375	0.54	$1,282	
16	1	$2,375	0.52	$1,227	
17	1	$2,375	0.49	$1,174	
18	1	$2,375	0.47	$1,124	
19	1	$2,375	0.45	$1,075	
20	1	$2,375	0.43	$1,029	
21	1	$2,375	0.41	$985	
22	1	$2,375	0.40	$942	
23	1	$2,375	0.38	$902	
24	1	$2,375	0.36	$863	
25	1	$2,375	0.35	$826	
26	1	$2,375	0.33	$790	
27	1	$2,375			
28	1	$2,375	0.30	$724	
29	1	$2,375	0.29	$692	
30	1	$2,375	0.28	$663	
FUTURE COST TOTALS		$71,250		$39,202	

ALTERNATIVE COST SUMMARY		
Capital Cost	$24,900	$24,900
Future Costs	$71,250	$39,202
TOTAL	**$96,150**	**$64,102**

Shallow Soil Excavation (all Alternatives)
Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN & PERMITTING					
Remedial Design	60	hours	$115	$6,900	Include design, specifications, and contract documents
Permit Preparation	20	hours	$115	$2,300	Specific permits to be determined but could include air, building, or other
SUBTOTAL				**$9,200**	
EXCAVATION AND FIELD ACTIVITIES					
Equipment Mobilization	1	Lump Sum	$2,500	$2,500	
Excavation & Handling of Soils (includes 1 additional foot)	208	CY	$20	$4,160	
Community Air Monitoring	3	Day	$1,000	$3,000	
Confirmation Sampling (including data validation)	10	Sample	$150	$1,500	
Clean Fill Material	208	CY	$9	$1,872	
Place & Compact	208	CY	$6	$1,248	
Seeding/asphalt	1875	SF	$1.00	$1,875	
Well Installation- Install 2 Mon Wells Post Excavation	2	Each	$1,500.00	$3,000	Install two shallow monitoring wells to evaluate groundwater impacts from excavation
Misc. Supplies and PPE (Well Installation)	1	LS	$1,000.00	$1,000	
Drum Disposal (Well Installation)	1	Each	$250.00	$250	
Engineering Procurement & Coordination	12	hours	$100	$1,200	Assume 8 hours for excavation, 4 hours for drilling
Engineering Oversight	10.5	person days	$1,000	$10,500	assume 1 full time and 1 half time staff throughout excavation, equipment mob/demob, well installation
Project Management	29	hours	$150	$4,350	assume 2 hours per day during field activities + 15 hours for procurement/coordination
SUBTOTAL (without disposal)				**$36,455**	
Disposal Scenario 1					
Transportation and Disposal; 0% of Soils (Non-HAZ)	0	Ton	$85	$0	
Transportation and Disposal: 100% of Soils (HAZ)	208	Ton	$200	$41,600	
Disposal Scenario 2					
Transportation and Disposal; 25% of Soils (Non-HAZ)	52	Ton	$85	$4,420	
Transportation and Disposal: 75% of Soils (HAZ)	156	Ton	$200	$31,200	
Disposal Scenario 3					
Transportation and Disposal; 50% of Soils (Non-HAZ)	104	Ton	$85	$8,840	
Transportation and Disposal: 50% of Soils (HAZ)	104	Ton	$200	$20,800	
		Scenario 1	**Scenario 2**	**Scenario 3**	
CAPITAL COST SUBTOTAL		**$87,255**	**$81,275**	**$75,295**	
Contingency	**30%**	$26,177	$24,383	$22,589	
TOTAL CAPITAL COSTS		**$113,432**	**$105,658**	**$97,884**	

Shallow Soil Excavation (all Alternatives)
Former Scott Aviation Facility - Lancaster, NY

FUTURE COSTS					
Future Year 1					
Low Flow Sampling Rental Equipment	0	Days	$500	$220	Semi-annual sampling one year after excavation (two monitoring wells)
Sampling Staff	0	Person-Days	$950	$0	
Laboratory Analyses (VOC)	0	Samples	$100	$0	
Rental Vehicle	0	days	$75	$0	
Mileage/Misc Expenses	1	Allowance	$500	$500	
Data Evaluation and Summary Report	10	hours	$100	$1,000	
SUBTOTAL FUTURE YEAR 1				$1,720	
Contingency	**30%**			$516	
TOTAL FUTURE YEAR 1				$2,236	
Future Year 2					
Performance Monitoring	1	Future Year 1	$720	$720	annual sampling in year 2 same scope as Year 1
Data Evaluation and Summary Report	20	hours	$100	$2,000	
SUBTOTAL FUTURE YEAR 2				$2,720	
Contingency	**30%**			$816	
TOTAL FUTURE YEAR 2				$3,536	

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	1	$2,236	1.00	$2,236	
2	1	$3,536	0.96	$3,384	
FUTURE COST TOTALS		$3,536		$3,384	

ALTERNATIVE COST SUMMARY			
	Scenario 1	**Scenario 2**	**Scenario 3**
Total Capital Cost	$113,432	$105,658	$97,884
Total Future Costs	$3,536	$3,536	$3,536
TOTAL COST	**$116,968**	**$109,194**	**$101,420**
TOTAL NET PRESENT VALUE COST	**$116,815**	**$109,041**	**$101,267**

Excavation (Alternative 2)
Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN & PERMITTING					
Remedial Design	250	hours	$115	$28,750	design includes dewatering and sheeting
Permit Preparation	80	hours	$115	$9,200	
SUBTOTAL				**$37,950**	
EXCAVATION AND FIELD ACTIVITIES					
Equipment Mobilization	1	Lump Sum	$25,000	$25,000	
Sheet Pile Mobilization	1	Lump Sum	$30,000	$30,000	
Temporary Facilities	1	Lump Sum	$5,000	$5,000	
Sheet Pile Materials	4620	SF	$33	$152,460	Sheet pile to 21 feet, 220 linear feet
Sheet Pile Installation/Removal, bracing install/removal	4620	SF	$15	$69,300	
Excavation & Handling of Soils (includes 15% for sloping)	18200	CY	$20	$364,000	
Stockpile Storage Area	1	LS	$10,000	$10,000	
Confirmation Soil Sampling	52	Sample	$100.00	$5,200	assume 1 per 350 CY, including validation
Community Air Monitoring	67	Day	$1,000	$67,000	assume 250 CY excacation per day, plus 10%
Confirmation Sampling (including data validation)	67	Sample	$150	$10,050	
Clean Fill Material	18200	CY	$9	$163,800	
Place & Compact	18200	CY	$6	$109,200	
Seeding	24000	SF	$0.50	$12,000	
Frac Tank Rental	81	DY	$35.00	$2,835	Excavation time plus 2 weeks for water handling and disposal afterwards
Carbon Units, Hose&Bag filters, Disposal of spent media	1	Allowance	$15,000	$15,000	
Pump Rental	17	WK	$500	$8,500	
Weekly Maintenance and Operation	17	WK	$500	$8,500	
Well Installation- Install 8 Mon Wells Post Excavation	8	Each	$1,800.00	$14,400	Allowance based on AECOM experience at other sites
Misc. Supplies and PPE (Well Installation)	1	LS	$1,000.00	$1,000	
Drum Disposal (Well Installation)	2	Each	$250.00	$500	
Engineering Procurement & Coordination	40	hours	$100	$4,000	
Engineering Oversight	110	days	$1,000	$110,000	assume 1 full time and 1 half time staff throughout excavation, equipment mob/demob, well installation, wastewater handling
Project Management	250	hours	$125	$31,250	assume 2 hours per day during field activities + 30 hours for procurement/coordination
SUBTOTAL (without disposal)				**$1,218,995**	
Disposal Scenario 1					
Transportation and Disposal; 0% of Soils (Non-HAZ)	0	Ton	$85	$0	
Transportation and Disposal: 100% of Soils (HAZ)	18200	Ton	$200	$3,640,000	
Disposal Scenario 2					
Transportation and Disposal; 25% of Soils (Non-HAZ)	4550	Ton	$85	$386,750	
Transportation and Disposal: 75% of Soils (HAZ)	13650	Ton	$200	$2,730,000	
Disposal Scenario 3					
Transportation and Disposal; 50% of Soils (Non-HAZ)	9100	Ton	$85	$773,500	
Transportation and Disposal: 50% of Soils (HAZ)	9100	Ton	$200	$1,820,000	
		Scenario 1	**Scenario 2**	**Scenario 3**	
CAPITAL COST SUBTOTAL		**$4,896,945**	**$4,373,695**	**$3,850,445**	
Contingency	**30%**	$1,469,084	$1,312,109	$1,155,134	
TOTAL CAPITAL COSTS		**$6,366,029**	**$5,685,804**	**$5,005,579**	

Excavation (Alternative 2)
Former Scott Aviation Facility - Lancaster, NY

FUTURE COSTS					
Future Year 1					
Low Flow Sampling Rental Equipment	6	Days	$500	$3,220	Semi-annual sampling one year after excavation
Sampling Staff	10	Person-Days	$950	$9,500	10 wells, assume 2 wells per person per day
Laboratory Analyses (VOC)	22	Samples	$100	$2,200	2 YSI, 2 peristaltic pumps, 2 water levels, 2 Turb Meters, PID (Pine Environmental, 12-20-11)
Rental Vehicle	6	days	$75	$450	
Mileage/Misc Expenses	2	Allowance	$500	$1,000	
Data Evaluation and Summary Report	60	hours	$100	$6,000	
SUBTOTAL FUTURE YEAR 1				$22,370	
Contingency	**30%**			$6,711	
TOTAL FUTURE YEAR 1				$29,081	
Future Year 2					
Performance Monitoring	0.5	Future Year 1	$16,370	$8,185	annual sampling in year 2 (half costs for labor, rental, and lab from year 1)
Data Evaluation and Summary Report	60	hours	$100	$6,000	
SUBTOTAL FUTURE YEAR 2				$14,185	
Contingency	**30%**			$4,256	
TOTAL FUTURE YEAR 2				$18,441	

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	1	$29,081	1.00	$29,081	
2	1	$18,441	0.96	$17,646	
FUTURE COST TOTALS		$18,441		$17,646	

ALTERNATIVE COST SUMMARY

	Scenario 1	Scenario 2	Scenario 3
Total Capital Cost	$6,366,029	$5,685,804	$5,005,579
Total Future Costs	$18,441	$18,441	$18,441
TOTAL COST	**$6,384,469**	**$5,704,244**	**$5,024,019**
TOTAL NET PRESENT VALUE COST	**$6,383,675**	**$5,703,450**	**$5,023,225**

Focused In-Situ Chemical Oxidation with Monitored Natural Attenuation (Alternative 4A)
Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN & PERMITTING					
Remedial Design	200	hours	$115	$23,000	design includes dewatering and sheeting
Permit Preparation	80	hours	$115	$9,200	
SUBTOTAL				$32,200	
DRILLING AND INJECTION WELL INSTALLATION					
Driller Mobilization/Demobilization (include Decon Pad)	1	Lump Sum	$1,500	$1,500	Assume 2 rigs mobilized
Drill Rig and Labor	10	rig-days	$1,500	$15,000	Assume direct-push rig for well installation (110'/d) plus per diem
1.5" Prepack Screens (5' length) for injection wells	125	each	$125	$15,625	55 shallow inj wells, 15 deep injection wells (4-14', 15-21') = 1100 feet of drilling
1.5" PVC Riser and materials for injection wells	500	LF	$8	$4,000	Riser 5' and 15' = 500 feet; 2 x 5' screens per shallow well + 1 x 5' screen for deep well
Protective Stick Ups	70	wells	$100	$7,000	
Drums	11	drums	$75	$825	Assume 1 drum per 8 wells
CAMP Equipment Rental	1	week	$500	$500	Assume 1 PID and 1 Dust Track (Pine Environmental 12-20-11)
Soil Disposal	11	drums	$300	$3,300	
Engineering Procurement & Coordination	30	hours	$100	$3,000	
SUBTOTAL				$50,750	
MONITORED NATURAL ATTENUATION - WELL INSTALLATION AND BASELINE SAMPLING					
Engineering Design, MNA Workplan, Oversight	1	Lump Sum	$29,000	$29,000	See MNA Backup Cost Estimate
MNA Well Installation and Subcontractors	1	Lump Sum	$19,500	$19,500	See MNA Backup Cost Estimate
Baseline MNA Sampling Event	1	Lump Sum	$30,095	$30,095	See MNA Backup Cost Estimate
SUBTOTAL				$78,595	
EXCAVATION AND FIELD ACTIVITIES					
Equipment Mobilization	1	Lump Sum	$25,000	$25,000	
Sheet Pile Mobilization	1	Lump Sum	$30,000	$30,000	
Temporary Facilities	1	Lump Sum	$5,000	$5,000	
Sheet Pile Materials	1500	SF	$33	$49,500	Sheet pile to 15 feet, 100 linear feet
Sheet Pile Installation/Removal, bracing install/removal	1500	SF	$15	$22,500	
Excavation & Handling of Soils (includes 15% for sloping)	4800	CY	$20	$96,000	
Stockpile Storage Area	1	LS	$10,000	$10,000	
Confirmation Soil Sampling	14	Sample	$100	$1,400	assume 1 per 350 CY, including validation
Community Air Monitoring	21	Day	$1,000	$21,000	assume 250 CY excacation per day, plus 10%
Confirmation Sampling (including data validation)	21	Sample	$150	$3,150	
Clean Fill Material	4800	CY	$9	$43,200	
Place & Compact	4800	CY	$6	$28,800	
Seeding	7000	SF	$0.50	$3,500	
Frac Tank Rental	35	DY	$35.00	$1,225	Excavation time plus 2 weeks for water handling and disposal afterwards
Carbon Units, Hose&Bag filters, Disposal of spent media	1	Allowance	$15,000	$15,000	
Pump Rental	7	WK	$500	$3,500	
Weekly Maintenance and Operation	7	WK	$500	$3,500	
Well Installation- Install 8 Mon Wells Post Excavation	4	Each	$1,500.00	$6,000	
Misc. Supplies and PPE (Well Installation)	1	LS	$1,000.00	$1,000	
Drum Disposal (Well Installation)	2	Each	$250.00	$500	
Engineering Procurement & Coordination	40	hours	$100	$4,000	
Engineering Oversight	56	days	$1,000	$56,000	assume 1 full time and 1 half time staff throughout excavation, equipment mob/demob, well installation, wastewater handling
Project Management	142	hours	$125	$17,750	assume 2 hours per day during field activities + 30 hours for procurement/coordination
SUBTOTAL (without disposal)				$447,525	
Disposal Scenario 1					
Transportation and Disposal; 0% of Soils (Non-HAZ)	0	Ton	$85	$0	
Transportation and Disposal: 100% of Soils (HAZ)	4800	Ton	$200	$960,000	
Disposal Scenario 2					
Transportation and Disposal; 25% of Soils (Non-HAZ)	1200	Ton	$85	$102,000	
Transportation and Disposal: 75% of Soils (HAZ)	3600	Ton	$200	$720,000	
Disposal Scenario 3					
Transportation and Disposal; 50% of Soils (Non-HAZ)	2400	Ton	$85	$204,000	
Transportation and Disposal: 50% of Soils (HAZ)	2400	Ton	$200	$480,000	
		Scenario 1	**Scenario 2**	**Scenario 3**	
CAPITAL COST SUBTOTAL		**$1,569,070**	**$1,431,070**	**$1,293,070**	
Contingency	**30%**	$470,721	$429,321	$387,921	
TOTAL CAPITAL COSTS		**$2,039,791**	**$1,860,391**	**$1,680,991**	

Focused In-Situ Chemical Oxidation with Monitored Natural Attenuation (Alternative 4A)
Former Scott Aviation Facility - Lancaster, NY

FUTURE COSTS					
Future Year 1 - 5 (Annual Cost)					
MNA Sampling	1	Event	$30,095	$30,095	See MNA Backup Cost Estimate (assume 2 MNA events for 5 years)
SUBTOTAL FUTURE YEAR 1 - 5				$30,095	
Contingency	**30%**			$9,029	
TOTAL FUTURE YEAR 1 - 5				$39,124	
Future Year 6 - 20 (Annual Cost)					Perform MNA Annual Sampling
Performance Monitoring with Summary Report	1	Event	$30,095	$30,095	
Contingency	**30%**			$9,029	
TOTAL FUTURE YEAR 6-20				$39,124	

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	2	$39,124	1.00	$39,124	
2	2	$39,124	0.96	$37,439	
3	2	$39,124	0.92	$35,827	
4	2	$39,124	0.88	$34,284	
5	2	$39,124	0.84	$32,807	
6	1	$39,124	0.80	$31,395	
7	1	$39,124	0.77	$30,043	
8	1	$39,124	0.73	$28,749	
9	1	$39,124	0.70	$27,511	
10	1	$39,124	0.67	$26,326	
11	1	$39,124	0.64	$25,193	
12	1	$39,124	0.62	$24,108	
13	1	$39,124	0.59	$23,070	
14	1	$39,124	0.56	$22,076	
15	1	$39,124	0.54	$21,126	
16	1	$39,124	0.52	$20,216	
17	1	$39,124	0.49	$19,345	
18	1	$39,124	0.47	$18,512	
19	1	$39,124	0.45	$17,715	
20	1	$39,124	0.43	$16,952	
FUTURE COST TOTALS		$743,347		$492,694	

ALTERNATIVE COST SUMMARY

	Scenario 1	Scenario 2	Scenario 3
Total Capital Cost	$2,039,791	$1,860,391	$1,680,991
Total Future Costs	$743,347	$743,347	$743,347
TOTAL COST	**$2,783,138**	**$2,603,738**	**$2,424,338**
TOTAL NET PRESENT VALUE COST	**$2,532,485**	**$2,353,085**	**$2,173,685**

Enhanced Bioremediation (Alternative 3)
Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN, PERMITTING					
Remedial Design	175	hours	$115	$20,125	
Permit Preparation	80	hours	$115	$9,200	
SUBTOTAL				**$29,325**	
DRILLING AND INJECTION WELL INSTALLATION					
Driller Mobilization/Demobilization (include Decon Pad)	1	Lump Sum	$1,500	$1,500	Assume 2 rigs mobilized
Drill Rig and Labor	39	rig-days	$1,500	$58,500	Assume direct-push rig for well installation (110'/d) plus per diem
1.5" Prepack Screens (5' length) for injection wells	443	each	$125	$55,375	180 shallow inj wells, 83 deep injection wells (4-14', 15-21') = 4,265 feet of drilling
1.5" PVC Riser and materials for injection wells	2215	LF	$8	$17,720	Riser 5' and 15' = 2525 feet; 2 x 5' screens per shallow well + 1 x 5' screen for deep well
Protective Stick Ups	263	wells	$100	$26,300	
Drums	33	drums	$75	$2,475	Assume 1 drum per 8 wells
CAMP Equipment Rental	4	week	$500	$2,000	Assume 1 PID and 1 Dust Track (Pine Environmental 12-20-11)
Soil Disposal	33	drums	$300	$9,900	
Engineering Procurement & Coordination	30	hours	$100	$3,000	
Engineering Oversight	468	hours	$100	$46,800	assume 2 staff (Geologist/Scientist 3) for oversight and CAMP; 10 hrs/day + 20% for markout, misc
Project Management	45	hours	$125	$5,625	assume 2 hours per day during field activities + 6 hours for procurement/coordination
SUBTOTAL				**$229,195**	
BIOREMEDIATION INJECTION (ROUND 1)					Labor, equipment, and mobilization costs based on 2011 Redox Tech quote
Injection Subcontractor (mobilization)	1	Lump Sum	$20,000	$20,000	Assume injection volume equal to 20% of total pore volume
Injection Subcontractor (labor and equipment)	54	days	$3,500	$189,000	Assume injection rate of 1.5 gpm based on soil types and AECOM experience
					Field injection days assumes 6 active injection points, 5.5 hrs/day injection time, and 2 days each for mob/demob
Carbon Substrate/Chemicals					
Water Soluble Oil	26	drums	$1,200	$31,200	Chemical costs from Tersus Environmental Quote (March 2012)
Bioremediation Nutrients	26	5g pail	$225	$5,850	
Quick release carbon substrate	13	gallons	$1,000	$13,000	
Injection Subcontractor (per diem)	54	days	$525	$28,350	Assume 3 person crew for subcontractor
Engineering Procurement & Coordination	40	hours	$100	$4,000	assume Engineer 3/4
Engineering Oversight	54	days	$1,000	$54,000	assume Geologist/Scientist 3 for oversight
Engineering Oversight	10	days	$1,150	$11,500	assume 20% for Engineer 3/4
Project Management	24	hours	$125	$3,000	assume 1.5 hours per day during field activities + 24 hours for procurement/coordination
Misc Oversight Materials and PPE	1	Lump Sum	$300	$300	Log book, gloves, face shield, eye wash station
Injection Oversight Rental Equipment	11	weeks	$250	$2,750	Assume no formal CAMP; assume 1 PID & 1 water level meter (Pine Environmental 12-20-11)
Rental Vehicle for Oversight	11	weeks	$175	$1,925	assume pick up truck or SUV (base rental and gas/mileage etc..)
Field Test Kits/Monitoring Supplies	1	Allowance	$1,500	$1,500	
Travel Expenses	1	Allowance	$2,000	$2,000	mileage, per diem for PM and ISCO Engineer
SUBTOTAL				**$368,375**	
BIOAUGMENTATION					
Injection Labor	22	Days	$1,000	$22,220	assume 0.4 Liters of microbe culture solution per injection well
Bioaugmentation Inoculum	105.2	Liters	$450	$47,560	assume bioaugment 12 wells per day
Materials and Equipment	22	Days	$350	$7,700	pumps, deaeration supplies
Rental Vehicle	23	days	$75	$1,725	assume pick up truck or SUV (base rental and gas/mileage etc..)
Mileage/Misc Expenses	1	Allowance	$500	$500	
SUBTOTAL				**$79,705**	

Enhanced Bioremediation (Alternative 3)
Former Scott Aviation Facility - Lancaster, NY

PERFORMANCE MONITORING (Per Round)					
Low Flow Sampling Rental Equipment	3	Days	$500	$1,720	
Sampling Staff	6	Person-Days	$950	$5,700	10 wells, assume 2 wells per person per day
Laboratory Analyses (VOC,TOC,M/E/E, metals)	12	Samples	$400	$4,800	2 YSI, 2 peristaltic pumps, 2 water levels, 2 Turb Meters, PID (Pine Environmental, 12-20-11)
Rental Vehicle	4	days	$75	$300	
Mileage/Misc Expenses	1	Allowance	$500	$500	
Data Evaluation and Summary Report	60	hours	$100	$6,000	assume pick up truck or SUV (base rental and gas/mileage etc..)
SUBTOTAL				**$19,020**	
CAPITAL COST SUBTOTAL				**$744,640**	Assume 2 performance monitoring sampling events 3 and 9 months after injection
Contingency	**30%**			$223,392	
TOTAL CAPITAL COSTS				**$968,032**	

FUTURE COSTS					
Future Year 1					
Performance Monitoring with Summary Report	2	Event	$19,020	$38,040	
SUBTOTAL FUTURE YEAR 1				$38,040	
Contingency	**30%**			$11,412	
TOTAL FUTURE YEAR 1				$49,452	
Future Year 2					
Remediation Design Addendum	60	hours	$115	$6,900	
Bioremediation Injection (Round 2)	(assume 50% of round 1)			$184,188	Labor, equipment, chemicals, oversight
Performance Monitoring with Summary Report	2	Event	$19,020	$38,040	
SUBTOTAL FUTURE YEAR 2				$229,128	
Contingency	**30%**			$68,738	
TOTAL FUTURE YEAR 2				$297,866	
Future Year 3					
Performance Monitoring with Summary Report	2	Event	$19,020	$38,040	
SUBTOTAL FUTURE YEAR 3				$38,040	
Contingency	**30%**			$11,412	
TOTAL FUTURE YEAR 3				$49,452	
Future Year 4					
Remediation Design Addendum	60	hours	$115	$6,900	
Bioremediation Injection (Round 3)	(assume 50% of round 2)			$92,094	Labor, equipment, chemicals, oversight
Performance Monitoring with Summary Report	2	Event	$19,020	$38,040	
SUBTOTAL FUTURE YEAR 4				$137,034	
Contingency	**30%**			$41,110	
TOTAL FUTURE YEAR 4				$178,144	
Future Year 5 - 9 (Annual Cost)					
Performance Monitoring with Summary Report	(assume same as PM Round 1)			$19,020	assume annual performance monitoring sampling
Contingency	**30%**			$5,706	
TOTAL FUTURE YEAR 5 - 9				$24,726	

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	1	$49,452	1.00	$49,452	
2	1	$297,866	0.96	$285,039	
3	1	$49,452	0.92	$45,285	
4	1	$178,144	0.88	$156,107	
5	1	$24,726	0.84	$20,734	
6	1	$24,726	0.80	$19,841	
7	1	$24,726	0.77	$18,987	
8	1	$24,726	0.73	$18,169	
9	1	$24,726	0.70	$17,387	
10	1	$24,726	0.67	$16,638	
FUTURE COST TOTALS		$673,818		$598,188	

ALTERNATIVE COST SUMMARY	Total Cost	Net Present Value
Capital Cost	$968,032	$968,032
Future Costs	$673,818	$598,188
TOTAL	**$1,641,850**	**$1,566,220**

In-Situ Chemical Oxidation (Alternative 4)
Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN, PERMITTING, PILOT TEST EVALUATION					
ISCO Pilot Test	1	Lump Sum	$125,000	$125,000	Assume all costs for design, monitoring, chemicals, and injection labor and equipment
Remedial Design and PilotTest Evaluation	175	hours	$115	$20,125	
Permit Preparation	80	hours	$115	$9,200	
SUBTOTAL				**$154,325**	
DRILLING AND INJECTION WELL INSTALLATION					
Driller Mobilization/Demobilization (include Decon Pad)	1	Lump Sum	$1,500	$1,500	Assume 2 rigs mobilized
Drill Rig and Labor	39	rig-days	$1,500	$58,500	Assume direct-push rig for well installation (110'/d) plus per diem
1.5" Prepack Screens (5' length) for injection wells	443	each	$125	$55,375	180 shallow inj wells, 83 deep injection wells (4-14', 15-21') = 4,265 feet of drilling
1.5" PVC Riser and materials for injection wells	2215	LF	$8	$17,720	Riser 5' and 15' = 2525 feet; 2 x 5' screens per shallow well + 1 x 5' screen for deep well
Protective Stick Ups	263	wells	$100	$26,300	
Drums	33	drums	$75	$2,475	Assume 1 drum per 8 wells
CAMP Equipment Rental	4	week	$500	$2,000	Assume 1 PID and 1 Dust Track (Pine Environmental 12-20-11)
Soil Disposal	33	drums	$300	$9,900	
Engineering Procurement & Coordination	30	hours	$100	$3,000	
Engineering Oversight	468	hours	$100	$46,800	assume 2 staff (Geologist/Scientist 3) for oversight and CAMP; 10 hrs/day + 20% for markout, misc
Project Management	45	hours	$125	$5,625	assume 2 hours per day during field activities + 6 hours for procurement/coordination
SUBTOTAL				**$229,195**	
ISCO INJECTION (ROUND 1)					
ISCO Injection Subcontractor (mobilization)	1	Lump Sum	$20,000	$20,000	
ISCO Injection Subcontractor (labor)	54	days	$2,250	$121,500	Assume injection volume equal to 20% of total pore volume
ISCO Injection Subcontractor (equipment)	54	days	$2,025	$109,350	Assume injection rate of 1.5 gpm based on soil types and AECOM experience
Oxidant/Chemicals					Field injection days assumes 6 active injection points, 5.5 hrs/day injection time, and 2 days each for mob/demot
					ISCO labor, equipment , mobilization, and chemical costs based on 2011 ISOTEC quote for similar size site in V
Persulfate	257300	pounds	$2	$439,983	
NaOH (25%)	345700	pounds	$0	$76,054	
Catalyst	0	gallons	$1	$0	
ISCO Injection Subcontractor (per diem)	54	days	$525	$28,350	Assume 3 person crew for subcontractor
Engineering Procurement & Coordination	40	hours	$100	$4,000	assume Engineer 3/4
Engineering Oversight	54	days	$1,000	$54,000	assume Geologist/Scientist 3 for oversight
Engineering Oversight	10	days	$1,150	$11,500	assume 20% for Engineer 3/4
Project Management	105	hours	$125	$13,125	assume 1.5 hours per day during field activities + 24 hours for procurement/coordination
Misc Oversight Materials and PPE	1	Lump Sum	$300	$300	Log book, gloves, face shield, eye wash station
Injection Oversight Rental Equipment	11	weeks	$250	$2,750	Assume no formal CAMP; assume 1 PID & 1 water level meter (Pine Environmental 12-20-11)
Rental Vehicle for Oversight	11	weeks	$175	$1,925	assume pick up truck or SUV (base rental and gas/mileage etc..)
Persulfate Field Test Kits	5.4	Each	$115	$621	FMC, 10 tests each (including shipping)
Travel Expenses	1	Allowance	$2,000	$2,000	mileage, per diem for PM and ISCO Engineer
SUBTOTAL				**$885,458**	
PERFORMANCE MONITORING (ROUND 1)					
Low Flow Sampling Rental Equipment	3	Days	$500	$1,720	Assume groundwater sampling event 6 months after injection
Sampling Staff	6	Person-Days	$950	$5,700	10 wells, assume 2 wells per person per day
Laboratory Analyses (VOC,metals @ 30% of wells)	12	Samples	$150	$1,800	2 YSI, 2 peristaltic pumps, 2 water levels, 2 Turb Meters, PID (Pine Environmental, 12-20-11)
Rental Vehicle	4	days	$75	$300	
Mileage/Misc Expenses	1	Allowance	$500	$500	
Data Evaluation and Summary Report	60	hours	$100	$6,000	assume pick up truck or SUV (base rental and gas/mileage etc..)
SUBTOTAL				**$16,020**	
CAPITAL COST SUBTOTAL				**$1,284,998**	
Contingency	**30%**			$385,499	
TOTAL CAPITAL COSTS				**$1,670,497**	

In-Situ Chemical Oxidation (Alternative 4)
Former Scott Aviation Facility - Lancaster, NY

FUTURE COSTS					
Future Year 1					
Remediation Design Addendum	60	hours	$115	$6,900	
ISCO Injection (Round 2)	(assume 65% of round 1)			$575,548	Labor, equipment, chemicals, oversight
Performance Monitoring with Summary Report (Round 2)	(assume same as PM Round 1)			$16,020	
SUBTOTAL FUTURE YEAR 1				$598,468	
Contingency	**30%**			$179,540	
TOTAL FUTURE YEAR 1				$778,008	
Future Year 2					
Remediation Design Addendum	60	hours	$115	$6,900	
ISCO Injection (Round 3)	(assume 65% of round 2)			$374,106	Labor, equipment, chemicals, oversight
Performance Monitoring with Summary Report (Round 3)	(assume same as PM Round 1)			$16,020	
SUBTOTAL FUTURE YEAR 2				$397,026	
Contingency	**30%**			$119,108	
TOTAL FUTURE YEAR 2				$516,134	
Future Year 3 - 6 (Annual Cost)					
Performance Monitoring with Summary Report	(assume same as PM Round 1)			$16,020	assume annual performance monitoring sampling
Contingency	**30%**			$4,806	
TOTAL FUTURE YEAR 3- 6				$20,826	

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	1	$778,008	1.00	$778,008	
2	1	$516,134	0.96	$493,908	
3	1	$20,826	0.92	$19,071	
4	1	$20,826	0.88	$18,250	
5	1	$20,826	0.84	$17,464	
6	1	$20,826	0.80	$16,712	
FUTURE COST TOTALS		$599,438		$565,404	

ALTERNATIVE COST SUMMARY	Total Cost	Net Present Value
Capital Cost	$1,670,497	$1,670,497
Future Costs	$599,438	$565,404
TOTAL	**$2,269,935**	**$2,235,902**

Focused In-Situ Chemical Oxidation with Monitored Natural Attenuation (Alternative 4A)

Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN, PERMITTING, PILOT TEST EVALUATION					
ISCO Pilot Test	1	Lump Sum	$125,000	$125,000	Assume all costs for design, monitoring, chemicals, and injection labor and equipment
Remedial Design and PilotTest Evaluation	150	hours	$115	$17,250	
Permit Preparation	80	hours	$115	$9,200	
SUBTOTAL				**$151,450**	
DRILLING AND INJECTION WELL INSTALLATION					
Driller Mobilization/Demobilization (include Decon Pad)	1	Lump Sum	$1,500	$1,500	Assume 2 rigs mobilized
Drill Rig and Labor	10	rig-days	$1,500	$15,000	Assume direct-push rig for well installation (110'/d) plus per diem
1.5" Prepack Screens (5' length) for injection wells	125	each	$125	$15,625	55 shallow inj wells, 15 deep injection wells (4-14', 15-21') = 1100 feet of drilling
1.5" PVC Riser and materials for injection wells	500	LF	$8	$4,000	Riser 5' and 15' = 500 feet; 2 x 5' screens per shallow well + 1 x 5' screen for deep well
Protective Stick Ups	70	wells	$100	$7,000	
Drums	11	drums	$75	$825	Assume 1 drum per 8 wells
CAMP Equipment Rental	1	week	$500	$500	Assume 1 PID and 1 Dust Track (Pine Environmental 12-20-11)
Soil Disposal	11	drums	$300	$3,300	
Engineering Procurement & Coordination	20	hours	$100	$2,000	
Engineering Oversight	120	hours	$100	$12,000	assume 2 staff (Geologist/Scientist 3) for oversight and CAMP; 10 hrs/day + 20% for markout, misc
Project Management	16	hours	$125	$2,000	assume 2 hours per day during field activities + 6 hours for procurement/coordination
SUBTOTAL				**$63,750**	
MONITORED NATURAL ATTENUATION - WELL INSTALLATION AND BASELINE SAMPLING					
Engineering Design, MNA Workplan, Oversight	1	Lump Sum	$29,000	$29,000	See MNA Backup Cost Estimate
MNA Well Installation and Subcontractors	1	Lump Sum	$19,500	$19,500	See MNA Backup Cost Estimate
Baseline MNA Sampling Event	1	Lump Sum	$30,095	$30,095	See MNA Backup Cost Estimate
SUBTOTAL				**$78,595**	
ISCO INJECTION (ROUND 1)					
ISCO Injection Subcontractor (mobilization)	1	Lump Sum	$20,000	$20,000	
ISCO Injection Subcontractor (labor)	17	days	$2,250	$38,250	Assume injection volume equal to 20% of total pore volume
ISCO Injection Subcontractor (equipment)	17	days	$2,025	$34,425	Assume injection rate of 1.6 gpm based on soil types and AECOM experience
Oxidant/Chemicals					Field injection days assumes 6 active injection points, 5.5 hrs/day injection time, and 2 days each for mob/demob
					ISCO labor, equipment, mobilization, and chemical costs based on 2011 ISOTEC quote for similar size site in VT
Persulfate	68100	pounds	$2	$116,451	
NaOH (25%)	91500	pounds	$0	$20,130	
Catalyst	0	gallons	$1	$0	
ISCO Injection Subcontractor (per diem)	17	days	$525	$8,925	Assume 3 person crew for subcontractor
Engineering Procurement & Coordination	40	hours	$100	$4,000	assume Engineer 3/4
Engineering Oversight	17	days	$1,000	$17,000	assume Geologist/Scientist 3 for oversight
Engineering Oversight	3	days	$1,150	$3,450	assume 20% for Engineer 3/4
Project Management	49.5	hours	$125	$6,188	assume 1.5 hours per day during field activities + 24 hours for procurement/coordination
Misc Oversight Materials and PPE	1	Lump Sum	$300	$300	Log book, gloves, face shield, eye wash station
Injection Oversight Rental Equipment	4	weeks	$250	$1,000	Assume no formal CAMP; assume 1 PID & 1 water level meter (Pine Environmental 12-20-11)
Rental Vehicle for Oversight	4	weeks	$175	$700	assume pick up truck or SUV (base rental and gas/mileage etc.)
Persulfate Field Test Kits	2	Each	$115	$230	FMC, 10 tests each (including shipping)
Travel Expenses	1	Allowance	$2,000	$2,000	mileage, per diem for PM and ISCO Engineer
SUBTOTAL				**$273,049**	
PERFORMANCE MONITORING (ROUND 1)					
Low Flow Sampling Rental Equipment	3	Days	$500	$1,720	Assume groundwater sampling event 6 months after injection
Sampling Staff	6	Person-Days	$950	$5,700	10 wells, assume 2 wells per person per day
Laboratory Analyses (VOC,metals @ 30% of wells)	12	Samples	$150	$1,800	2 YSI, 2 peristaltic pumps, 2 water levels, 2 Turb Meters, PID (Pine Environmental, 12-20-11)
Rental Vehicle	4	days	$75	$300	
Mileage/Misc Expenses	1	Allowance	$500	$500	
Data Evaluation and Summary Report	60	hours	$100	$6,000	assume pick up truck or SUV (base rental and gas/mileage etc.)
SUBTOTAL				**$16,020**	
CAPITAL COST SUBTOTAL				**$582,864**	
Contingency	**30%**			$174,859	
TOTAL CAPITAL COSTS				**$757,723**	

Focused In-Situ Chemical Oxidation with Monitored Natural Attenuation (Alternative 4A)
Former Scott Aviation Facility - Lancaster, NY

FUTURE COSTS						
Future Year 1						
Remediation Design Addendum	60	hours	$115	$6,900		
ISCO Injection (Round 2)	(assume 100% of round 1)			$273,049	Labor, equipment, chemicals, oversight	
Performance Monitoring with Summary Report (Round 2)	(assume same as PM Round 1)			$16,020		
MNA Sampling	1	Event	$30,095	$30,095	See MNA Backup Cost Estimate (assume 1 MNA event in addition to ISCO Performance Monitoring)	
SUBTOTAL FUTURE YEAR 1				$326,064		
Contingency	**30%**			$97,819		
TOTAL FUTURE YEAR 1				$423,883		
Future Year 2						
Remediation Design Addendum	60	hours	$115	$6,900		
ISCO Injection (Round 3)	(assume 65% of round 2)			$177,482	Labor, equipment, chemicals, oversight	
Performance Monitoring with Summary Report (Round 3)	(assume same as PM Round 1)			$16,020		
MNA Sampling	1	Event	$30,095	$30,095	See MNA Backup Cost Estimate (assume 1 MNA event in addition to ISCO Performance Monitoring)	
SUBTOTAL FUTURE YEAR 2				$230,497		
Contingency	**30%**			$69,149		
TOTAL FUTURE YEAR 2				$299,645		
Future Year 3 - 5 (Annual Cost)					Perform MNA Semi-Annual Sampling	
Performance Monitoring with Summary Report	2	Event	$30,095	$60,190		
Contingency	**30%**			$18,057		
TOTAL FUTURE YEAR 3- 5				$78,247		
Future Year 6 - 20 (Annual Cost)					Perform MNA Annual Sampling	
Performance Monitoring with Summary Report	1	Event	$30,095	$30,095		
Contingency	**30%**			$9,029		
TOTAL FUTURE YEAR 6-20				$39,124		

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	1	$423,883	1.00	$423,883	
2	1	$299,645	0.96	$286,742	
3	1	$78,247	0.92	$71,653	
4	1	$78,247	0.88	$68,568	
5	1	$78,247	0.84	$65,615	
6	1	$39,124	0.80	$31,395	
7	1	$39,124	0.77	$30,043	
8	1	$39,124	0.73	$28,749	
9	1	$39,124	0.70	$27,511	
10	1	$39,124	0.67	$26,326	
11	1	$39,124	0.64	$25,193	
12	1	$39,124	0.62	$24,108	
13	1	$39,124	0.59	$23,070	
14	1	$39,124	0.56	$22,076	
15	1	$39,124	0.54	$21,126	
16	1	$39,124	0.52	$20,216	
17	1	$39,124	0.49	$19,345	
18	1	$39,124	0.47	$18,512	
19	1	$39,124	0.45	$17,715	
20	1	$39,124	0.43	$16,952	
FUTURE COST TOTALS		$1,121,239		$844,915	

ALTERNATIVE COST SUMMARY	Total Cost	Net Present Value
Capital Cost	$757,723	$757,723
Future Costs	$1,121,239	$844,915
TOTAL	**$1,878,962**	**$1,602,637**

Focused In-Situ Chemical Oxidation with Enhanced Bioremediation (Alternative 4B)
Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN, PERMITTING, PILOT TEST EVALUATION					
ISCO Pilot Test	1	Lump Sum	$125,000	$125,000	Assume all costs for design, monitoring, chemicals, and injection labor and equipment
Remedial Design and PilotTest Evaluation	200	hours	$115	$23,000	
Permit Preparation	80	hours	$115	$9,200	
SUBTOTAL				**$157,200**	
DRILLING AND INJECTION WELL INSTALLATION					
Driller Mobilization/Demobilization (include Decon Pad)	1	Lump Sum	$1,500	$1,500	Assume 2 rigs mobilized
Drill Rig and Labor	39	rig-days	$1,500	$58,500	Assume direct-push rig for well installation (110'/d) plus per diem
1.5" Prepack Screens (5' length) for injection wells	443	each	$125	$55,375	180 shallow inj wells, 83 deep injection wells (4-14', 15-21') = 4,265 feet of drilling
1.5" PVC Riser and materials for injection wells	2215	LF	$8	$17,720	Riser 5' and 15' = 2525 feet; 2 x 5' screens per shallow well + 1 x 5' screen for deep well
Protective Stick Ups	263	wells	$100	$26,300	
Drums	33	drums	$75	$2,475	Assume 1 drum per 8 wells
CAMP Equipment Rental	4	week	$500	$2,000	Assume 1 PID and 1 Dust Track (Pine Environmental 12-20-11)
Soil Disposal	33	drums	$300	$9,900	
Engineering Procurement & Coordination	30	hours	$100	$3,000	
Engineering Oversight	468	hours	$100	$46,800	assume 2 staff (Geologist/Scientist 3) for oversight and CAMP; 10 hrs/day + 20% for markout, misc
Project Management	45	hours	$125	$5,625	assume 2 hours per day during field activities + 6 hours for procurement/coordination
SUBTOTAL				**$229,195**	
FOCUSED ISCO INJECTION (ROUND 1)					
ISCO Injection Subcontractor (mobilization)	1	Lump Sum	$20,000	$20,000	
ISCO Injection Subcontractor (labor)	17	days	$2,250	$38,250	Assume injection volume equal to 20% of total pore volume
ISCO Injection Subcontractor (equipment)	17	days	$2,025	$34,425	Assume injection rate of 1.6 gpm based on soil types and AECOM experience
Oxidant/Chemicals					Field injection days assumes 6 active injection points, 5.5 hrs/day injection time, and 2 days each for mob/demob
					ISCO labor, equipment, mobilization, and chemical costs based on 2011 ISOTEC quote for similar size site in VT
Persulfate	68100	pounds	$2	$116,451	
NaOH (25%)	91500	pounds	$0	$20,130	
Catalyst	0	gallons	$1	$0	
ISCO Injection Subcontractor (per diem)	17	days	$525	$8,925	Assume 3 person crew for subcontractor
Engineering Procurement & Coordination	40	hours	$100	$4,000	assume Engineer 3/4
Engineering Oversight	17	days	$1,000	$17,000	assume Geologist/Scientist 3 for oversight
Engineering Oversight	3	days	$1,150	$3,450	assume 20% for Engineer 3/4
Project Management	49.5	hours	$125	$6,188	assume 1.5 hours per day during field activities + 24 hours for procurement/coordination
Misc Oversight Materials and PPE	1	Lump Sum	$300	$300	Log book, gloves, face shield, eye wash station
Injection Oversight Rental Equipment	4	weeks	$250	$1,000	Assume no formal CAMP; assume 1 PID & 1 water level meter (Pine Environmental 12-20-11)
Rental Vehicle for Oversight	4	weeks	$175	$700	assume pick up truck or SUV (base rental and gas/mileage etc..)
Persulfate Field Test Kits	2	Each	$115	$230	FMC, 10 tests each (including shipping)
Travel Expenses	1	Allowance	$2,000	$2,000	mileage, per diem for PM and ISCO Engineer
SUBTOTAL				**$273,049**	
PERFORMANCE MONITORING (ROUND 1)					
Low Flow Sampling Rental Equipment	3	Days	$500	$1,720	Assume groundwater sampling event 6 months after injection
Sampling Staff	6	Person-Days	$950	$5,700	10 wells, assume 2 wells per person per day
Laboratory Analyses (VOC,metals @ 30% of wells)	12	Samples	$150	$1,800	2 YSI, 2 peristaltic pumps, 2 water levels, 2 Turb Meters, PID (Pine Environmental, 12-20-11)
Rental Vehicle	4	days	$75	$300	
Mileage/Misc Expenses	1	Allowance	$500	$500	
Data Evaluation and Summary Report	60	hours	$100	$6,000	assume pick up truck or SUV (base rental and gas/mileage etc..)
SUBTOTAL				**$16,020**	
CAPITAL COST SUBTOTAL				**$675,464**	
Contingency	**30%**			$202,639	
TOTAL CAPITAL COSTS				**$878,103**	

Focused In-Situ Chemical Oxidation with Enhanced Bioremediation (Alternative 4B)
Former Scott Aviation Facility - Lancaster, NY

FUTURE COSTS					
Future Year 1					
Remediation Design Addendum	60	hours	$115	$6,900	
ISCO Injection (Round 2)	(assume 100% of round 1)			$273,049	Labor, equipment, chemicals, oversight
Performance Monitoring with Summary Report (Round 2)	(assume same as PM Round 1)			$16,020	ISCO Performance Monitoring
SUBTOTAL FUTURE YEAR 1				$295,969	
Contingency	**30%**			$88,791	
TOTAL FUTURE YEAR 1				$384,759	
Future Year 2					
Remediation Design Addendum	60	hours	$115	$6,900	
ISCO Injection (Round 3)	(assume 65% of round 2)			$177,482	Labor, equipment, chemicals, oversight
Enhanced Bioremediation Injection					
Injection Subcontractor (mobilization)	1	Lump Sum	$20,000	$20,000	Assume injection volume equal to 20% of total pore volume
Injection Subcontractor (labor and equipment)	41	days	$3,500	$143,500	Assume injection rate of 1.5 gpm based on soil types and AECOM experience
					Field injection days assumes 6 active injection points, 5.5 hrs/day injection time, and 2 days each for mob/demob
Carbon Substrate/Chemicals					
Water Soluble Oil	21	drums	$1,200	$25,200	Chemical costs from Tersus Environmental Quote (March 2012)
Bioremediation Nutrients	21	5g pail	$225	$4,725	
Quick release carbon substrate	10.5	gallons	$1,000	$10,500	
Injection Subcontractor (per diem)	41	days	$525	$21,525	Assume 3 person crew for subcontractor
Engineering Procurement & Coordination	40	hours	$100	$4,000	assume Engineer 3/4
Engineering Oversight	41	days	$1,000	$41,000	assume Geologist/Scientist 3 for oversight
Engineering Oversight	8	days	$1,150	$9,200	assume 20% for Engineer 3/4
Project Management	24	hours	$125	$3,000	assume 1.5 hours per day during field activities + 24 hours for procurement/coordination
Misc Oversight Materials and PPE	1	Lump Sum	$300	$300	Log book, gloves, face shield, eye wash station
Injection Oversight Rental Equipment	9	weeks	$250	$2,250	Assume no formal CAMP; assume 1 PID & 1 water level meter (Pine Environmental 12-20-11)
Rental Vehicle for Oversight	9	weeks	$175	$1,575	assume pick up truck or SUV (base rental and gas/mileage etc..)
Field Test Kits/Monitoring Supplies	1	Allowance	$1,500	$1,500	
Travel Expenses	1	Allowance	$2,000	$2,000	mileage, per diem for PM and ISCO Engineer
SUBTOTAL				**$290,275**	
Bioremediation Performance Monitoring with Summary Report (Round 1)				$19,020	Same as Enhanced Bioremediation Performance Monitoring Round 1 (see Alternative 3)
SUBTOTAL FUTURE YEAR 2				$493,677	
Contingency	**30%**			$148,103	
TOTAL FUTURE YEAR 2				$641,779	
Future Year 3					
Performance Monitoring with Summary Report	2	Event	$19,020	$38,040	
SUBTOTAL FUTURE YEAR 3				$38,040	
Contingency	**30%**			$11,412	
TOTAL FUTURE YEAR 3				$49,452	
Future Year 4					
Remediation Design Addendum	60	hours	$115	$6,900	
Bioremediation Injection (Round 2)	(assume 50% of 1st bioremediation)			$145,138	Labor, equipment, chemicals, oversight
Performance Monitoring with Summary Report	2	Event	$175	$350	
SUBTOTAL FUTURE YEAR 4				$152,388	
Contingency	**30%**			$45,716	
TOTAL FUTURE YEAR 4				$198,104	
Future Year 5 - 10 (Annual Cost)					
Performance Monitoring with Summary Report	(assume same as PM Round 1)			$19,020	assume annual performance monitoring sampling
Contingency	**30%**			$5,706	
TOTAL FUTURE YEAR 5 - 10				$24,726	

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Focused In-Situ Chemical Oxidation with Enhanced Bioremediation (Alternative 4B)
Former Scott Aviation Facility - Lancaster, NY

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	1	$384,759	1.00	$384,759	
2	1	$641,779	0.96	$614,143	
3	1	$49,452	0.92	$45,285	
4	1	$198,104	0.88	$173,598	
5	1	$24,726	0.84	$20,734	
6	1	$24,726	0.80	$19,841	
7	1	$24,726	0.77	$18,987	
8	1	$24,726	0.73	$18,169	
9	1	$24,726	0.70	$17,387	
10	1	$24,726	0.67	$16,638	
FUTURE COST TOTALS		$1,037,691		$944,783	

ALTERNATIVE COST SUMMARY	Total Cost	Net Present Value
Capital Cost	$878,103	$878,103
Future Costs	$1,037,691	$944,783
TOTAL	**$1,915,794**	**$1,822,885**

Monitored Natural Attenuation Cost Estimate (for Alternatives 2A and 4A)

Former Scott Aviation Facility - Lancaster, NY

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
CAPITAL COSTS					
ENGINEERING DESIGN AND OVERSIGHT					
MNA initial work plan/remedial action plan	100	hours	$115	$11,500	
Engineering Procurement & Coordination	30	hours	$100	$3,000	
Engineering Oversight	125	hours	$100	$12,500	assume 2 staff (Geologist/Scientist 3) for oversight and CAMP; 10 hrs/day + 25% for planning, markout and survey
Project Management	16	hours	$125	$2,000	assume 2 hours per day during field activities + 6 hours for procurement/coordination
SUBTOTAL				**$29,000**	
SUBCONTRACTORS					
Driller Mobilization/Demobilization (include Decon Pad)	1	Lump Sum	$1,500	$1,500	
Drill Rig and Labor (Auger Rig)	5	days	$1,800	$9,000	Install 5 new monitoring wells pairs (to depths of 15 and 21 feet)
PVC Well Materials (riser, screen, sand, grout, flush mount)	10	wells	$450	$4,500	Assume auger rig installs one well pair per day
CAMP Equipment Rental	1	week	$500	$500	Assume 1 PID and 1 Dust Track (Pine Environmental 12-20-11)
Soil Disposal	5	drums	$300	$1,500	
Survey New Wells and Map	1	allowance	$2,500	$2,500	
SUBTOTAL				**$19,500**	
CAPITAL COST SUBTOTAL				**$48,500**	
Contingency	**30%**			$14,550	
TOTAL CAPITAL COSTS				**$82,550**	

DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL COST	ESTIMATE/SOURCE NOTES
FUTURE COSTS					
MNA SAMPLING (1 ROUND)					
Low Flow Sampling Rental Equipment	5	Days	$500	$2,720	2 YSI, 2 peristaltic pumps, 2 water levels, 2 Turb Meters, PID (Pine Environmental, 12-20-11)
Sampling Staff	10	Person-Days	$950	$9,500	20 total wells, assume 2 wells per person per day
Laboratory Analyses	20	Samples	$550	$11,000	VOCs, metals, methane/ethane/ethene, TOC, alkalinity, sulfate, nitrate/nitrite, chloride, phosphate + 30% QA/QC, analytical costs from quotes received in 2012 by AECOM
Rental Vehicle	5	days	$75	$375	assume pick up truck or SUV (base rental and gas/mileage etc..)
Per Diem/Mileage/Misc Expenses	1	Allowance	$1,000	$1,000	
Data Evaluation and Summary Report	50	hours	$110	$5,500	
SUBTOTAL				**$30,095**	
Contingency	**30%**			$9,029	
TOTAL MNA SAMPLING EVENT				**$39,124**	

Monitored Natural Attenuation Cost Estimate (for Alternatives 2A and 4A)
Former Scott Aviation Facility - Lancaster, NY

Assume semi-annual sampling for 5 years and annual sampling until Year 30

Future Year	Events Per Year	Base Cost	NPV Discount Factor	Net Present Value	(assume Real Discount Rate of 4.5%)
1	2	$78,247	1.00	$78,247	
2	2	$78,247	0.96	$74,878	
3	2	$78,247	0.92	$71,653	
4	2	$78,247	0.88	$68,568	
5	2	$78,247	0.84	$65,615	
6	1	$39,124	0.80	$31,395	
6	1	$39,124	0.80	$31,395	
7	1	$39,124	0.77	$30,043	
8	1	$39,124	0.73	$28,749	
9	1	$39,124	0.70	$27,511	
10	1	$39,124	0.67	$26,326	
11	1	$39,124	0.64	$25,193	
12	1	$39,124	0.62	$24,108	
13	1	$39,124	0.59	$23,070	
14	1	$39,124	0.56	$22,076	
15	1	$39,124	0.54	$21,126	
16	1	$39,124	0.52	$20,216	
17	1	$39,124	0.49	$19,345	
18	1	$39,124	0.47	$18,512	
19	1	$39,124	0.45	$17,715	
20	1	$39,124	0.43	$16,952	
21	1	$39,124	0.41	$16,222	
22	1	$39,124	0.40	$15,524	
23	1	$39,124	0.38	$14,855	
24	1	$39,124	0.36	$14,216	
25	1	$39,124	0.35	$13,603	
26	1	$39,124	0.33	$13,018	
27	1	$39,124	0.32	$12,457	
28	1	$39,124	0.30	$11,921	
29	1	$39,124	0.29	$11,407	
30	1	$39,124	0.28	$10,916	
FUTURE COST TOTALS		$1,330,199		$798,584	