

Revised Periodic Review Report (April 12, 2018 through April 19, 2019)

Former Scott Aviation Facility (Area 1)
Lancaster, New York
NYSDEC Site Code No. C915233



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1,1-DCA	1,1-dichloroethane
1,1-DCE	1,1-dichloroethene
1,2-DCA	1,2-dichloroethane
1,1,1-TCA	1,1,1-trichloroethane
1,1,2-TCA	1,1,2-trichloroethane
AAR	Alternatives Analysis Report
ABC®	Anaerobic Biochem
ABC+®	Anaerobic Biochem with Zero Valence Iron
AECOM	AECOM Technical Services, Inc.
AMSL	above mean sea level
AVOX	AVOX Systems Inc
BCP	Brownfield Cleanup Program
bgs	below ground surface
CCR	Construction Completion Report
cis-1,2 DCE	cis-1,2-dichloroethene
cm/sec	centimeters per second
COC	contaminants of concern
COPC	constituents of potential concern
CVOC	chlorinated volatile organic compound
DHC	<i>Dehalococcoides</i>
ERD	Enhanced Reductive Dechlorination
ESA	Environmental Site Assessment
ft	feet
HPT	hydraulic profiling tool
IC/EC	Institutional Controls/Engineering Controls
IRM	interim remedial measure
K	hydraulic conductivity
Matrix	Matrix Environmental Technologies, Inc.
mg/L	milligrams per liter
MIP	membrane interface probe
MNA	monitored natural attenuation

NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O&M	operation and maintenance
PCB	polychlorinated biphenyl
PCE	Tetrachloroethene (Perchloroethene)
PGA	Preliminary Groundwater Assessment
PID	photoionization detector
PRR	Periodic Review Report
QA/QC	quality assurance / quality control
RAO	remedial action objective
RAWP	Remedial Action Work Plan
RI	remedial investigation
SCO	soil cleanup objective
SMP	Site Management Plan
SRI	Supplemental Remedial Investigation
SVI	soil vapor intrusion
Sq	square
SVOC	semi volatile organic compound
TCE	trichloroethene
TOC	total organic carbon
TOGS	Technical and Operational Guidance Series
TVOC	total volatile organic compounds
µg/L	micrograms per liter
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VC	vinyl chloride
VOC	volatile organic compound
XSD	halogen specific detector
ZVI	zero valence iron

Executive Summary

On September 1, 2004, the former Scott Aviation Facility (three plant 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 area located adjacent to the southwest corner of the Plant 1 property (the "Site", also known as Area 1) to enter the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP), per Title 6 New York Codes, Rules, and Regulations 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 was accepted into the BCP program as a participant (NYSDEC Site Code No. C915233). Scott Technologies, a successor to Figgie International, is now known as Scott Figgie LLC. In December 2015, AVOX was added to the BCP as a Volunteer.

Soil, groundwater, surface water, and soil vapor impacts at the Site were outlined in reports submitted to the NYSDEC that describe the results of a series of investigations which took place over several years. Impacts identified during these investigations were addressed via interim remedial measures (IRMs) prior to the issuance in December 2015 of a final Decision Document and Certificate of Completion for the Site.

Based on the implementation of the IRMs, findings of the investigation of the Site indicate that the Site no longer poses a threat to human health or the environment; therefore, No Further Action is the selected remedy by NYSDEC. The No Further Action remedy includes quarterly groundwater monitoring and quarterly inspections of the boiler room repairs to the floor cracks and joints, and sealing of the annulus around each floor drain to mitigate the potential for subsurface vapors to enter the building.

Quarterly post-IRM groundwater monitoring shows a notable decrease in the concentrations of contaminants of concern (COC), and no off-Site migration of COCs in groundwater. Additionally, microbial analysis of shallow and deep overburden groundwater indicates that the necessary microflora, such as *Dehalococcoides* (DHC) bacterial species, producing the enzymes tceA reductase and vinyl chloride reductase, are present in the subsurface.

A continuation of quarterly groundwater monitoring for volatile organic compounds, quarterly inspections of the boiler room floor, and annual reporting per the NYSDEC-approved Site Management Plan is recommended for the next reporting period. No change is recommended to the existing Site Management Plan.

1.0 Introduction

On behalf of Scott Figgie LLC (successor to Scott Technologies, Inc.), and pursuant to the requirements of New York State Department of Environmental Conservation (NYSDEC), Decision Document (NYSDEC, December 2015) and Site Management Plan (AECOM, December 2015), AECOM Technical Services, Inc. (AECOM) has prepared this Periodic Review Report (PRR) to summarize the groundwater monitoring activities for the former Scott Aviation facility (the "Site", also known as Area 1), NYSDEC Site Code No. C915233, located within two parcels at 215 and 221 Erie Street, Village of Lancaster, County of Erie, State of New York (**Figure 1**). The reporting period discussed herein encompasses the period between April 12, 2018 through April 19, 2019. The Site is currently owned and operated by AVOX Systems, Inc. (AVOX).

1.1 Report Organization

The purposes of this PRR are to provide a summary of the controls implemented for the Site as required by Section 7.2 of the Site Management Plan (SMP) (AECOM, December 2015) and to provide recommendations for future controls at the Site.

This PRR was developed to adhere to NYSDEC site investigation and remediation requirements (NYSDEC DER-10, May 2010). More specifically, this report provides the following information:

- An Executive Summary including a brief summary of the Site, nature and extent of contamination, remedial history, the effectiveness of the remedial program, and recommendations for changes to the SMP;
- Brief summary of the Site and PRR organizational details (Section 1.0);
- A Site overview, describing the Site location, significant features, surrounding areas, and the extent of environmental impacts prior to the Site remediation. A description of the chronology of the main features of the remedial program for the Site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection (Section 2.0);
- A groundwater monitoring program summary including a description of the requirements of the monitoring, a summary of the groundwater monitoring activities completed during the PRR reporting period, a comparison of the most recent (April 2019) groundwater results to the Remedial Action Objectives (RAOs) of the Site, and conclusions regarding the monitoring completed and the resulting evaluations regarding remedial performance, effectiveness, and protectiveness (Section 3.0);
- A description of the operations and maintenance (O&M) tasks completed and recommendations for improvements (Section 4.0);
- A summary of overall conclusions and recommendations regarding compliance with the SMP, performance and effectiveness of the remedy, a description of upcoming Site-related activities, and a proposed monitoring and compliance sampling and reporting schedule (Section 5.0);

- A review of the Institutional Controls/Engineering Controls (IC/EC) for the Site (Section 6.0);
and
- References used in the preparation of this report (Section 7.0).

2.0 Site Overview

The following subsections present a description of the Site location, significant features, surrounding areas, and the extent of contamination prior to the Site remediation. A description of the chronology of the main features of the remedial program for the Site, the components of the selected remedy, cleanup goals, site closure criteria, and any significant changes to the selected remedy that have been made since remedy selection are also presented.

2.1 Site Location

The Site is located in Lancaster, Erie County, New York and is identified as Section 104 Block 5 and Lots 8 and 9 on the Erie County Tax Map; refer to **Figure 1** – Site Location Map. The Site is approximately 1.25 acres in area and is bounded by non-impacted AVOX land and then Erie Street to the north, railroad tracks to the south, AVOX Plant 1 (currently vacant) to the east, and residential zoned property (with a house) to the west; refer to **Figure 2** – Site Layout Map).

2.2 Physical Setting

2.2.1 Land Use

The Site consists of the following: outbuildings that support Plant 1 (which is not part of the Site), asphalt driveways and parking areas, and lawn and brush-covered areas. Site occupants include only occasional maintenance and shipping/receiving personal, as manufacturing activities have been moved to the two plants located on the north side of Erie Street.

The properties adjoining the Site and in the neighborhood surrounding the Site include both commercial and residential properties. The properties immediately south of the Site include railroad tracks; the properties immediately north of the Site include commercial properties; the properties immediately east of the Site include AVOX Plant 1 and its parking lot, and then residential properties (including vacant land); and the properties to the west of the Site include residential properties.

2.2.2 Site Geology/Hydrogeology

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 of weathered shale is located above the bedrock (deep overburden). Overburden thickness ranges from 20 feet (ft) in the southern portion of the Site to 26 ft in the northern portion of the Site.

The average depth to bedrock is approximately 21 ft. Bedrock was observed to consist of black shale of the Marcellus Formation (Hamilton Group).

A transect for a geologic cross section with monitoring well and piezometer locations is shown on **Figure 3**, and the geologic cross-section is shown on **Figure 4**.

Groundwater monitoring wells were installed at three intervals: shallow overburden, deep overburden, and bedrock; note the bedrock well was decommissioned in October 2017.

Overburden groundwater is first encountered at the Site in the shallow overburden, and then again just above the bedrock. An observation of the groundwater within the deep overburden, which is present on top of bedrock, indicates a semi-confined state.

Results of the in-situ hydraulic conductivity (K) tests performed in the monitoring wells at the Site during the BCP Remedial Investigation (RI) showed that K 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 natural flow of groundwater at the Site in both the shallow and deep overburden is to the northwest. The flow direction is most pronounced in the deep overburden, as the shallow overburden groundwater is influenced by seasonal standing water to the southwest, a storm sewer network cutting through the Site, large asphalt areas to the north and east, and Plant 1 to the east. Depth to groundwater across the Site in both the shallow and deep overburden was measured in April 2019 and is discussed in detail in Section 5.0 of this report.

2.2.3 Site Investigation and Remedial History

The following narrative provides a remedial history timeline and a brief summary of the available project records to document key investigative and remedial milestones for the Site. Full titles for each of the reports referenced below are provided in Section 7.0.

The general historical operations that existed in the Plant 1 building adjacent to the Site were primarily manufacturing, development, testing, and distribution for aircraft and military supplied-air systems. The oldest portion of Plant 1 dates to the early 1950s. That original building was expanded several times, with most of it in place by 1975 except for a small warehouse addition in 1996. Plant 1 historical activities included the chemical cleaning and repainting of oxygen cylinders, the chemical cleaning (with inorganic acid solutions) and chromium plating (in a non-electrolytic "soak bath") of metallic components of oxygen supply systems, and the fabrication of oxygen-regulating assemblies. Plant 1 also supported a Class 10,000 clean room and a Class 100,000 clean room. The office area contained management, administrative, engineering, training, and other support activities, and a cafeteria.

As of 2010, Plant 1 has no longer been used for production (i.e., painting and plating activities have terminated). The BCP boundary for the Site is located immediately west/southwest of Plant 1. In general, the pre-remediated areas as described below consisted of low-level metals in the top of the shallow overburden soil immediately south of Plant 1, volatile organic chemicals (VOCs) in shallow overburden soil at the fence gate southwest of Plant 2, and VOCs in shallow and deep overburden groundwater west/southwest of Plant 1. Note: the BCP boundary, or VOC-impacted groundwater plume, does not extend off the AVOX property.

2.2.3.1 Phase I

In 2004, a Phase I Environmental Site Assessment (ESA) was performed at the Site by Earth Tech, Inc. (now AECOM) on behalf of the then owner, Scott Technologies, Inc. The entire facility was sold to the current owner, AVOX, in September 2004. Historical aerial photographs included in the Phase I ESA Report indicated an area of potentially disturbed soil 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). The Phase I ESA also identified two former underground storage tanks (USTs) that had contained gasoline starting in the early 1970s which were removed from the southeastern portion of the Plant 1 Area in November of 1987; however, no records were found to indicate that any post-excavation sampling was done to demonstrate that the soil and groundwater in the vicinity had not been impacted.

Another former UST that had contained gasoline from an unknown date until the early 1970s was reportedly cleaned and closed in place at that time by filling it with sand. It is believed to be located beneath the current hazardous materials storage shed. No records were found to indicate exactly where that tank is located, when closure occurred, or that any post-closure sampling was done to demonstrate that soil and ground water in the vicinity had not been impacted. From the early 1950s to about 1973, used sand from a steel-casting foundry operation, located in the western portion of Plant 1, was disposed behind (south of) Plant 1.

2.2.3.2 Phase II

A Phase II Environmental Site Investigation was completed in 2004 for the entire Scott Aviation facility, to address environmental concerns described in the Phase I ESA Report, including the area of potentially disturbed soil on the west side of Plant I. During the Phase II ESI, seven test pits were excavated. Residual paint sludge of unknown origin was observed in two of the test pits. The paint sludge area was approximately 150 square (sq) ft in size and located just west and south of the vehicle gate located in the western perimeter fence, immediately north of the water tower. Elevated levels of VOCs and semi-volatile organic compounds (SVOCs) present in the soil immediately below the waste indicated that some leaching of the waste had occurred (Earth Tech, June 2004).

2.2.3.3 Interim Remedial Measure - Soil Excavation

On June 28, 2005, Earth Tech, in accordance with a NYSDEC-approved Interim Remedial Measures (IRM) / Supplemental Site Investigation Work Plan, performed an initial excavation of the buried paint sludge material located to the west of Plant 1. A total of 60 cubic yards of soil was excavated to the west of Plant 1, down to the level at which groundwater was encountered - about 6 ft below ground surface (bgs). Further excavation was not completed during the IRM, as the scope of work only addressed vadose zone soil.

2.2.3.4 Preliminary Groundwater Assessment

The above investigations identified the general areas of concern. As a result of the elevated VOC and SVOC soil concentrations detected in the excavation bottom at Area 1 during the 2005 IRM, a Preliminary Groundwater Assessment (PGA) was performed in 2006 and 2007. The purpose of the PGA was to assess the nature and extent of VOCs in groundwater in the vicinity of Area 1. A series of groundwater wells was installed, and samples were collected and analyzed as a part of the PGA (Earth Tech, January 2008). Eighteen temporary piezometers were installed during the PGA to monitor shallow overburden groundwater. Groundwater samples collected from these piezometers contained VOCs, with 18 of these compounds detected at concentrations that exceeded the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 (NYSDEC, June 1998, January 1999 errata sheet, April 2000 addendum, June 2004 addendum) protection for source of drinking water (groundwater) standards (i.e., water class GA); herein referred to as TOGS 1.1.1 groundwater standards. Samples of deep overburden groundwater also contained VOCs, but to a lesser degree than the shallow overburden groundwater.

2.2.3.5 Remedial Investigation

The BCP RI began in December 2010 with the completion of soil borings, the installation of monitoring wells, and the collection of soil, groundwater and vapor samples for chemical analysis. This initial work was completed during the summer of 2010. A Supplemental RI (SRI), completed in June 2011, included the installation of additional monitoring wells, groundwater sampling, and an evaluation of a storm sewer system that was located throughout the BCP Site. The RI and SRI were performed to gather the data necessary to complete the characterization of chemical presence in on-Site groundwater, soil, and soil vapor, in order to identify and evaluate necessary and appropriate remedial alternatives. The proposed remedial alternatives were presented in an Alternatives Analysis Report (AAR) (AECOM, September 2015). That AAR was completed in accordance with the NYSDEC DER Draft BCP Guide (NYSDEC, May 2004), 6 New York Codes, Rules and Regulations (NYCRR) Part 375 Environmental Remediation Programs (NYSDEC, December 14, 2006), and NYSDEC DER-10 (NYSDEC, May 3, 2010).

These studies investigated Area 1 for contamination in surface soil, subsurface soil, groundwater, and impacts to on-Site storm sewers. Constituents of potential concern (COPCs) were identified for soil by comparison of maximum detected concentrations for VOCs to 6 NYCRR Part 375 Unrestricted Use soil cleanup objectives (SCOs), and for SVOCs, metals, pesticides, and polychlorinated biphenyls (PCBs) by comparison to 6 NYCRR Part 375 Commercial Use SCOs. COPCs were identified for groundwater by comparison of maximum detected concentrations for VOCs, SVOCs, metals, pesticides, and PCBs to TOGS 1.1.1 groundwater standards. The results of this comparison to applicable standards are detailed below:

- Surface Soil - VOC concentrations for surface soil (i.e., 0 to 2 inches bgs) were below the NYSDEC Subpart 375-6 SCOs for Unrestricted Use at the borings sampled. SVOC, metal, PCB, and pesticide concentrations were below the SCOs for Commercial Use, with the exceptions of benzo(a)pyrene (potentially resulting from asphalt paving and/or the adjacent active rail line) and metals cadmium and nickel.
- Subsurface Soil - VOC concentrations from subsurface soil samples collected from borings during the RI and SRI were below the SCO for Unrestricted Use, with the exception of acetone and methylene chloride (common laboratory contaminants) at two borings: DPT8-2A and DPT8-2B, both located south of Plant 1. VOC concentrations from one confirmation sample collected from the bottom of the historic IRM (B-1A) exhibited seven compounds exceeding Unrestricted Use SCOs (all seven compounds were below Commercial Use SCOs). SVOC, pesticide and PCB concentrations from subsurface soil samples were all below Unrestricted Use SCOs. Regarding metals, only mercury, copper, and cadmium exceeded SCOs for Commercial Use. These exceedances occurred at two borings: DPT8-1A and DPT8-2A.
- Groundwater - Analytical data for groundwater samples collected from the shallow and deep overburden wells during the RI and SRI identified the presence of VOCs exceeding TOGS 1.1.1 groundwater standards. Refer to **Figure 5** and **Figure 6** for the RI/SRI total VOC (TVOC) contaminant concentration contours for shallow and deep overburden concentration contours, respectively. There were no exceedances of TOGS 1.1.1 groundwater standards in the bedrock groundwater. The most frequently detected VOCs were trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE). Refer to **Figure 7** and **Figure 8** for the RI/SRI TCE contaminant concentration contours for shallow and deep

overburden concentration contours respectively. 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 groundwater standards for TCE. See **Appendix A** for a summary of groundwater VOC data collected during the RI, SRI, and quarterly monitoring, and **Appendix B** for trend plots illustrating concentrations of contaminants of concerns (COCs) which include 1,1,1-trichloroethane (1,1,1-TCA), 1,1,2-trichloroethane (1,1,2-TCA), 1,1-dichloroethane (1,1-DCA), 1,1-dichloroethene (1,1-DCE), 1,2-dichloroethane (1,2-DCA), tetrachloroethene (PCE), TCE, cis-1,2-DCE, and vinyl chloride (VC) over time. SVOCs in groundwater were below TOGS 1.1.1 groundwater standards. Three naturally occurring metals (iron, magnesium, and sodium) were detected in groundwater above TOGS 1.1.1 groundwater standards. No PCBs were detected, and only one pesticide was tentatively detected in one groundwater sample at a concentration greater than TOGS 1.1.1 groundwater standards. Refer to the AAR (AECOM, April 2015) for groundwater VOC, SVOC, metal, and PCB/pesticide data.

- Storm Sewer Catch Basins - A storm sewer with several catch basins is present in Area 1; refer to **Figure 3** for the location of the storm sewer system. VOCs were detected within storm sewer catch basins located on the Site and from water within the storm sewer pipe bedding. Groundwater is present above the storm sewer piping; refer to **Appendix A** for a summary of storm sewer VOC data and for temporary piezometer water sample data that was collected from within the storm sewer pipe bedding gravel.
- Soil Vapor - Based on the evaluation of the data against the decision matrices, a vapor intrusion condition is not present at the Site, and indoor air quality has not been adversely impacted by the presence of the adjacent groundwater plume. However, per a June 1, 2012 letter from the NYSDEC to Scott Figgie LLC, the New York State Department of Health (NYSDOH) considered this Site to be a significant threat due to elevated concentrations of VOCs in sub-slab soil vapor, and the potential for this vapor to impact indoor air. Refer to the AAR (AECOM, September 2015) for air sampling data, for vapor data compared to 2006 NYSDOH guidance values, and for the United States Environmental Protection Agency (USEPA) 2001 Building Assessment and Survey Evaluation database indoor air values, respectively.

2.2.3.6 Soil Vapor Intrusion Evaluation

Based on NYSDEC comments on the draft AAR (AECOM, April 2013), AECOM completed a targeted soil vapor intrusion (SVI) investigation for the Site in July 2013. The purpose of that SVI investigation was to assess whether soil vapor on the Site in the vicinity of a nearby residence at 205 Erie Street contained chlorinated VOCs (CVOCs), and if so at concentrations sufficiently elevated to represent a potential indoor air quality issue for the nearby buildings (AECOM, August 2013). A second investigation and report were completed in September 2013 to follow up on one TCE detection in soil vapor above the method detection limit. Both groundwater and soil samples were collected hydraulically downgradient of Area 1, between the facility and the 205 Erie Street residence, and focused on seven CVOCs that, per NYSDOH guidance values, should be considered as part of an SVI analysis for the residence: 1,1,1-TCA; cis-1,2-DCE; VC; 1,1-DCE; carbon tetrachloride, PCE, and TCE.

No CVOC listed above was 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 at 4.1 micrograms per liter ($\mu\text{g/L}$). AECOM reviewed historical soil, groundwater, soil vapor, and stormwater data from the northern portion of the Area 1 Site to assess the potential relationship between the low level TCE concentration reported in SV-1 in July 2013 and the Area 1 contamination. The collective data does not identify a clear relationship between the two that would warrant further SVI sampling at the residential property. Multiple media have been evaluated. The property boundary between AVOX (which includes the Site) and 205 Erie Street appears to not be impacted by the BCP Site (AECOM, October 2013).

2.2.3.7 Interim Remedial Measures - 2014

During a conference call between NYSDEC, Scott Figgie LLC, 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 four IRMs to address soil and selected groundwater impacts at the Site. They included:

- Excavation and off-Site disposal of shallow soils impacted by metals (cadmium, copper and nickel);
- Excavation and off-Site disposal of subsurface soils impacted by VOCs in some locations;
- Grout sealing on-Site storm sewer joints to prevent groundwater infiltration, and installation of impermeable plugs across the pipe bedding to prevent migration of groundwater; and
- Mitigation of SVI concerns at the AVOX boiler room (the only structure within Area 1 that is occasionally occupied).

Those four IRMs were described in an IRM Remedial Action Work Plan (RAWP) dated June 4, 2014 (AECOM). On August 14, 2014, NYSDEC provided approval to begin the described work per the 2014 IRM RAWP.

Soil Excavation and Storm Sewer Interim Remedial Measures

The 2014 IRM activities were initiated on September 8, 2014. The soil excavation and storm sewer IRMs were completed during October 2014. Metals impacted soil was excavated to 1 ft bgs in the vicinity of MW-41B, with all confirmatory samples passing metal Commercial Use SCOs for the target parameters. Confirmation soil samples were collected from the excavation sidewalls and bottoms. Soil was excavated to 2 ft bgs in the vicinity of DPT8-1 and DPT8-2. Following the initial excavation, an additional 2 ft wide by 2 ft deep excavation occurred on the south side wall of DPT8-1 and on the north side wall of DPT8-2, until sample results were below Commercial Use SCOs. Following receipt of passing sample confirmation data, and with concurrence from the NYSDEC, the excavated areas were backfilled with imported soil that met NYSDEC Unrestricted Use SCOs and restored to pre-excavation conditions. Each excavation remained open until receipt of soil analytical results determined that confirmation soil samples were below respective SCOs, and the NYSDEC issued approval to discontinue excavation.

VOC concentrations from soil confirmation bottom samples collected in 2005 following an IRM soil excavation were found to be in exceedance of the Unrestricted Use SCO. These samples were collected at or below typical shallow overburden groundwater depths. The concentrations of

1,1-DCE, cis-1,2-DCE, ethylbenzene, toluene, 1,1,1-TCA, TCE, and total xylenes exceeded NYSDEC Subpart 375-6 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). The 2014 IRM scope was to remove the top 0 to 6 ft of previous clean fill and excavate material from 6 to 8 ft bgs. Elevated Photoionization Detector (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 depth of observed elevated PID readings and 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. Characterization samples from the side walls and bottom of the excavation were collected and resulted in VOC detections exceeding Unrestricted Use SCOs. Refer to the 2014 IRM Construction Completion Report (CCR) for characterization sample results and for the location of the VOC IRM. With approval from the NYSDEC, no further excavation of soil took place; impacts were left in place to be addressed as part of the groundwater IRM, since all impacted material was below the water table. 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.

Following the completion of the IRMs in October 2014, AECOM submitted a draft IRM CCR on February 15, 2015 describing those 2014 IRMs. The 2014 IRM CCR was written in compliance with DER-10 Section 5.8, Construction Completion Report and Final Engineering Report, and summarizes these IRM activities. The Final 2014 IRM CCR was approved by NYSDEC on March 27, 2015 (AECOM, March 2015).

Sub-slab Soil Vapor Interim Remedial Measure

On November 4, 2014, AECOM and NYSDEC inspected the concrete floor of the boiler room and AECOM sealed visible floor cracks with concrete caulking. In addition, the annulus between a drain line effluent and the associated floor penetration and foundation perforations was sealed with expanding foam. Two other foundation perforations (drains) were observed and temporarily plugged with modelling clay just prior to a sampling event. The floor drains appeared to discharge to the bedding gravel beneath the concrete floor slab. On December 24, 2014 one sub-slab vapor sample, one indoor vapor sample, one ambient (outdoor) air sample, and an associated quality assurance / quality control (QA/QC) sample were collected from the boiler room building at AVOX Plant 1, to determine if CVOCs were currently at indoor concentrations sufficiently elevated to trigger a need for mitigation activities. The December 2014 indoor air sample did not detect any CVOCs listed in the NYSDOH Guidance document. The 2014 sub-slab vapor sample detected 1,1,1-TCA, cis-1,2-DCE, 1,1-DCE, PCE, and TCE. According to the NYSDOH 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. The sealing of floor cracks and foundation perforations have decreased the concentrations in the indoor air samples and lowered the action level from 'mitigation' to 'monitoring' (AECOM, January 2015).

Groundwater Interim Remedial Measure

In 2014, an IRM pre-design investigation utilizing a combined membrane interface probe (MIP) and hydraulic profiling tool (HPT) was performed in Area 1; refer to **Figure 9** for MIP locations. That pre-design investigation was performed in accordance with the MIP/HPT and Baseline Sampling

Work Plan (AECOM, October 2014).

On November 24-25, 2014, 11 borings were completed throughout the groundwater plume in Area 1 to a depth of 20 ft bgs, with the objective of verifying the distribution of VOC COPCs within that area. The MIP/HPT was used to capture data at continuous depths at each boring.

The 3D Imaging Summary, MIP/HPT Boring Summary, and MIP Data Cross Section figures summarize the field activities and results of the MIP/HPT analysis. XSD data were used as the prime indicator of CVOC impacts, as they are highly sensitive to CVOCs compared to the other data collection methods. Within the investigated zones, target treatment depths were identified using K data provided by the HPT analysis. The MIP/HPT results were generally consistent with groundwater data collected from June 2010 through June 2011. The data indicated that there are lower VOC concentrations present in the northern portion of the Site and that, where present, they are limited to the upper 14 ft of the overburden. In the southern portion of the Site, VOC concentrations were greater and also present in significant concentrations throughout the entire depth of the soil borings, with the 5-15 ft bgs region exhibiting the highest XSD response. In addition to MIP-8 located in the center of the groundwater plume, the easternmost and westernmost boring locations, MIP-1 and MIP-11, showed the highest VOC concentrations.

Remedial activities for the groundwater IRM were described in the Final Remedial Action Work Plan - 2015 Interim Remedial Measures - Groundwater Treatment (2015 IRM RAWP) (AECOM, March 25, 2015). On April 10, 2015 the NYSDEC provided approval to begin the described work per the 2015 IRM RAWP; the groundwater injections commenced in April 2015 and were completed in May 2015. In accordance with the AAR and the 2015 IRM RAWP, the remedial approach to address VOCs in Site groundwater was in-situ enhanced reductive dechlorination (ERD) via direct-push injections of Anaerobic Biochem (ABC®) with zero valent iron (ZVI), i.e., ABC+®. Per the 2015 IRM RAWP, the treatment area was divided into two target depths zones: a 12,600 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.

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. Approximately 23,370 pounds of ABC+® were injected to treat the shallow (only) zone at approximately 570 pounds of ABC+® per point. 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.

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. Approximately 59,800 pounds of ABC+® was required to treat the shallow and deep zone at 757 pounds of ABC+® per point. 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.

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. Injection points were performed approximately five to six feet 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). One location received the planned 390 gallons of injectate; two other locations received only 50 gallons each to limit the volume of injectate breaking through to the ground surface.

The final 2015 IRM CCR describes work completed to remediate VOCs in Site groundwater (AECOM, August 12, 2015). Refer to **Figure 9** for the injection zone details.

2.3 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 must eliminate or mitigate all significant threats to the public health and the environment presented by CVOCs identified at the Site through the proper application of scientific and engineering principles.

The RAOs for the Site as listed in the Decision Document (NYSDEC, December 2015) are as follows:

2.3.1 Groundwater

- RAOs for Public Health Protection
 - Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
 - Prevent contact with, or inhalation of, VOCs from impacted groundwater.
- RAOs for Environmental Protection
 - Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
 - Prevent the discharge of COCs to surface water.
 - Remove the source of ground or surface water constituents of concern.

2.3.2 Soil

- RAOs for Public Health Protection
 - Prevent ingestion/direct contact with impacted soil.
 - Prevent inhalation of or exposure from contaminants volatilizing from soil.
- RAOs for Environmental Protection
 - Prevent migration of constituents that would result in groundwater or surface water contamination.

2.3.3 Soil Vapor

- RAOs for Public Health Protection
 - Mitigate impacts to public health resulting from existing, or the potential for, SVI into buildings at a site.

2.4 Contaminants of Concern

Eight COCs in groundwater have been determined through sampling associated with the RI and SRI. Per the Decision Document (NYSDEC, December 2015), Section 6.1.2 (NYSDEC, December 2015), a “contaminant of concern” is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all constituents identified on the Site are COCs. The groundwater COCs identified at the Site and their associated RAOs (Guidance or Standard Values) from TOGS 1.1.1 groundwater standards are listed below:

- 1,1,1-TCA – 5 µg/L
- 1,1,2-TCA – 5 µg/L
- 1,1-DCA – 5 µg/L
- 1,1-DCE – 5 µg/L
- 1,2-DCA – 0.6 µg/L
- *cis-1,2-DCE - 5 µg/L
- PCE – 5 µg/L
- TCE – 5 µg/L
- VC – 2 µg/L

*Per NYSDEC comment letter dated August 23, 2019, cis-1,2-DCE was added as a Site COC.

3.0 Groundwater Monitoring Program Summary

The following sections provide a summary of the groundwater monitoring program completed during the reporting period (April 12, 2018 through April 19, 2019); a comparison of the groundwater data collected from the most recent monitoring event (April 2019) to the COCs and historical groundwater analytical data; and conclusions regarding the monitoring completed and the resulting evaluations regarding remedial performance, effectiveness, and protectiveness.

3.1 Groundwater Monitoring Activities

In accordance with the SMP, the groundwater monitoring program during the reporting period consisted of four comprehensive quarterly monitoring events (July 2018, October 2018, January 2019, and April 2019). These sampling events, following the IRMs described in Section 2.2.3.7, were to determine the effectiveness of the groundwater remedy.

Quarterly sampling was performed at 20 wells, two temporary piezometers screened in the storm sewer pipe bedding, and one on-Site storm water catch basin. Refer to **Figure 3** for the location of sampling points.

Groundwater samples from the monitoring wells were analyzed for VOCs and total organic carbon (TOC). Six monitoring wells (three shallow overburden and three deep overburden) were also sampled for monitored natural attenuation (MNA) parameters. The two temporary piezometers screened in the storm sewer pipe bedding, and one on-Site storm water catch basin, were analyzed for VOCs only. Groundwater analysis for VOC, TOC, and MNA was performed by TestAmerica, Inc. located in Amherst, New York. Two monitoring wells (one shallow overburden and one deep overburden) were sampled annually for concentrations of dechlorinating bacteria (*Dehalococcoides* (DHC)). Microbial analysis was performed by Microbial Insights, Inc. located in Knoxville, Tennessee. The groundwater monitoring program is summarized in **Table 1**.

Monitoring of groundwater conditions at this Site includes both groundwater level measurements and groundwater sampling and analysis. All monitoring and laboratory data, including QA/QC samples, have been uploaded to the NYSDEC EQuls database. In addition, groundwater purge data, water levels, VOC, TOC, MNA, and microbial data from these four quarterly events, as well as groundwater data collected prior to the IRMs, are summarized in **Appendix A**.

Groundwater samples were divided into three different groups based on historical analytical concentrations from individual wells: plume wells, downgradient wells, and upgradient wells (refer to **Table 2** for monitoring well, piezometer, and catch basin specifications). To the extent practical, wells were sampled from lowest to highest historical VOC concentrations. QA/QC samples included field duplicates, rinse blanks, and trip blanks, and were collected at the recommended rates stated in the SMP.

In accordance with the SMP, standard low-flow sampling procedures were followed. Each well was purged using a peristaltic pump with dedicated/disposable polyethylene tubing. During purging, field parameters (pH, dissolved oxygen, oxidation reduction potential, specific conductance, turbidity, and

temperature) were measured and recorded. Refer to **Appendix A** for final readings prior to sample collection from each well. Purging continued until field parameters had stabilized, and between three and five well volumes had been purged. After purging was complete, groundwater samples were collected from the wells, with VOC samples being collected first.

Grab samples were collected from the catch basin and temporary piezometers screened in the storm sewer pipe bedding. In some instances, field parameters were collected during sampling of these features; data are included in **Appendix A**.

A discussion of the groundwater analytical results for the four quarterly sampling events as well as a detailed discussion of the most recent quarterly event (April 2019) is presented below.

3.2 April 2019 Groundwater Elevation and Flow Direction

In addition to groundwater elevation data recorded from the 20 wells sampled each quarter, a comprehensive round of groundwater levels was measured from all Site wells and piezometers during the April 2019 sampling event. **Table 3** provides a summary of groundwater elevations measured on April 11, 2019.

Two groundwater surface contour maps for April 2019 are provided. Shallow overburden groundwater surface contours are presented in **Figure 10**, and deep overburden groundwater surface contours are presented in **Figure 11**; note that the groundwater elevation from MW-30 was not included in the groundwater surface contour figures as the well is screened through both shallow and deep groundwater overburden units. Groundwater elevations measured on April 11, 2019 from the shallow overburden ranged from 688.01 ft above mean sea level (AMSL) at MW-35S to 686.16 ft AMSL at A1-GP06-S. Groundwater elevations measured on April 11, 2019 from the deep overburden ranged from 681.22 ft AMSL at MW-35D to 685.99 ft AMSL at MW-40D. Based on these water level measurements, the groundwater beneath the Site indicates a northwest flow direction. This flow direction is most pronounced in the deep overburden, as the shallow overburden groundwater is influenced by Site features such as the on-Site stormwater system as described in Section 2.2.2.

3.3 April 2019 Groundwater Analytical Data

The April 2019 groundwater sampling event was the fourteenth comprehensive sampling event conducted at the Site since completion of the groundwater injection IRM in May 2015. VOCs detected in groundwater during the April 2019 sampling event are presented in **Table 4** and are compared to the Site RAOs or groundwater criteria presented in TOGS 1.1.1 groundwater standards. The following table summarizes the VOCs detected, their respective concentration ranges, the number of detections, and the number of those detections that exceeded Site-specific groundwater RAOs or groundwater criteria presented in NYCRR.

**Groundwater Contaminants of Concern Summary of Results
April 2019**

VOCs Detected in Groundwater	Concentration Range (µg/L)	Number of Detections	RAO/NYCRR Exceedances
1,1-Dichloroethane*	0.41 – 1,600	7	4
Chloroethane	19 – 9,300	5	5
Vinyl chloride*	0.95 – 1,300	4	2
Toluene	0.58 – 370	3	2
cis-1,2-Dichloroethene*	1.5 - 450	3	1
Acetone	5.6 – 9.3	3	0
1,1,2-Trichloro-1,2,2-trifluoroethane	12 – 390	2	2
Methylene Chloride	9.9 - 210	2	2
1,1,1-Trichloroethane*	23	1	1
Xylenes, Total	4.8	1	0
Methylcyclohexane	0.65	1	0
Cyclohexane	0.52	1	0

Note: VOCs in the table above followed by an asterisk (*) are Site COCs.

A total of 12 VOCs were detected in groundwater from the monitoring wells (not including one on-Site stormwater catch basin and two temporary piezometers screened in the storm sewer pipe bedding) during the April 2019 sampling event. Eight of the 12 VOCs detected exceeded either the Site-specific RAOs or the NYCRR criteria for groundwater at one or more wells. Only three of the eight COCs were detected; all of which reflected a marked decrease in concentration of the parent VOCs (1,1,1-TCA, PCE, and TCE) following the IRMs. **Figures 12 through 15** illustrate April 2019 contours for individual COCs which were detected in shallow and/or deep overburden groundwater. **Figures 16 and 17** illustrate April 2019 contours for TVOCs in shallow and deep overburden groundwater respectively.

The highest concentrations of VOCs in shallow overburden groundwater were detected at A1-GP-10 and MW-42S. The highest concentrations of VOCs in deep overburden groundwater were detected at MW-40D. Chloroethane, 1,1-DCA, VC and cis-1,2-DCE exhibited the highest overall concentrations in groundwater, all of which are degradation products of 1,1,1-TCA, PCE, and/or TCE.

Historical trend plots for the wells sampled during this quarter for concentrations of 1,1,1-TCA, 1,1,2-TCA, 1,1-DCA, 1,1-DCE, 1,2-DCA, cis-1,2-DCE, PCE, TCE, and VC are provided in **Appendix B**. As stated above, the VOC concentrations in groundwater continue to show a degradation trend both as a result of naturally occurring reductive dechlorination processes, and as a result of the 2015 injection IRM. Because TCE has been considered the primary source of groundwater contamination at the Site, a summary of historical and current TCE concentrations in groundwater for 22 monitoring wells, piezometers, and catch basin sampled in April 2019 is included in **Table 5**.

Based on the April 2019 groundwater data, there were two detections of TCE in the monitoring wells piezometers and catch basin; TP-5 was below the site-specific RAOs for groundwater and the NYCRR criteria while CB-1 was above the site-specific RAOs for groundwater and the NYCRR

criteria. Overall, decreases in TCE concentrations observed since the 2015 injection IRM continues to show reductions of VOC concentrations in overburden groundwater. This is most clearly demonstrated on the TCE trend plots for monitoring wells and piezometers MW-39D, MW-42S, A1-GP02-S, A1-GP06-S and A1-GP10-S.

3.4 April 2019 Storm Sewer Catch Basin and Storm Sewer Pipe Bedding Analytical Data

VOC data collected from the on-Site catch basin CB-1 exhibited 12 compounds, with all parent VOCs (1,1,1-TCA, PCE, and TCE) showing a decrease in concentration following the IRMs. Five of the eight COCs were detected.

Two temporary piezometers screened in the storm sewer pipe bedding (TP-5 and TP-6) were sampled for VOCs. TP-5 is located adjacent to CB-1 and TP-6 is located approximately 110 feet north (down-gradient) of CB-1. Four COCs were detected in TP-5; three COC's detected exceeded either the Site-specific RAOs or the NYCRR criteria for groundwater. No detections were noted at TP-6. Refer to **Table 5 for TCE trend plots, Table 6** for a summary of the April 2019 analytical data and **Appendix A** for a summary of historical data for the two temporary piezometers and the on-Site catch basin (CB-1).

3.5 Comparison of April 2019 COCs in Groundwater with Pre-IRM Groundwater Analytical Data

Trend plots illustrating concentrations of COCs (1,1,1-TCA, 1,1,2-TCA, 1,1-DCA, 1,1-DCE, 1,2-DCA, PCE, TCE, and VC) in monitoring wells over time are provided in **Appendix B**. Because concentrations of TCE were historically the highest of the COCs detected at the Site, a discussion of historical and current TCE concentrations in groundwater at Site monitoring wells and piezometers is provided below.

In April 2019, TCE was not detected in the monitoring wells. TCE was detected at the on-Site catch basin (CB-1) at 13 µg/L and at temporary piezometer TP-5 at 4.7 µg/L. Based on the substantial decrease in concentration of TCE at locations with historical detections of TCE, the 2015 IRM injection of ABC+® appears to continually degrade TCE. This is most clearly demonstrated on the trend plots in **Appendix B** for monitoring wells A1-GP02-S (20,000 ug/L to below the detection limit), MW-42S (13,000 ug/L to below the detection limit), and MW-38D (11,000 ug/L to below the detection limit).

3.6 Groundwater MNA Data Summary

The use of the ERD amendment ABC+ was designed to provide needed nutrients, such as a soluble lactic acid carbon source, a phosphate buffer to control pH for optimum microbial growth, and zero valent iron which accelerates abiotic dechlorination of chlorinated ethenes and ethanes. The microbial analysis from "Bio-traps" placed on-Site indicated that the necessary concentrations microflora, such as DHC species producing the enzymes tceA reductase and vinyl chloride reductase, remain present in the subsurface. Stimulation of the bacteria by the presence of chlorinated solvents, combined with the extra nutrients supplied by injection, have dramatically reduced the concentrations of original parent CVOCs TCE and 1,1,1-TCA over time. The initial concentrations of known TCA degradation products (1,1-DCA and chloroethane), as well as of PCE/TCE degradation products (1,2-DCE isomers and VC), suggest that advanced decomposition of the chlorinated solvents has already enhanced microbial populations which would use CVOCs as substrates. Induction of

reducing conditions can accelerate the reductive dechlorination of parent solvents and increase the relative accumulation of degradation intermediates such as VC before complete mineralization. As more aerobic conditions return after treatment, then VC oxidizing bacteria should increase and complete the dechlorination to ethene and co-metabolic oxidation followed by complete mineralization. In the event that continued monitoring indicates this process has plateaued, then additional amendments or subsurface microbial characterization could be performed to attempt to further enhance degradation (refer to Section 5.2 - Recommendations).

3.7 Dechlorinating Bacteria Analysis

Following the injection of ABC+[®], AECOM deployed “Bio-traps” in both the shallow and deep overburden groundwater wells to monitor the concentration (i.e., cells/bead) of dechlorinating bacteria. The “Bio-traps” were submitted to Microbial Insights, Inc., in Knoxville, Tennessee for analysis. Per the April 2019 analysis, the shallow overburden groundwater concentration levels of DHC, tceA Reductase, BAV1 VC Reductase, and VC Reductase bacteria, continue to indicate that reductive dechlorination will yield a generally useful biodegradation rate (Lu et al., 2006). Concentration levels of BAV1 VC Reductase show a slight increase over time. Deep overburden groundwater shows a slight decrease of tceA Reductase and BAV1 VC Reductase bacteria, with concentration levels of DHC and VC reductase genes increasing indicating that reductive dechlorination may still occur (Lu et al., 2006). Refer to the tables below and **Appendix A** for microflora data.

Shallow Overburden Dechlorinating Bacteria Data

Sample ID	MW-42S	MW-43S	MW-42S	MW-42S	MW-42S
Sample Date	7/27/15	7/12/16	4/12/17	4/12/18	5/6/19
Dechlorinating Bacteria (Cells/bead)					
DHC	<2.50x10 ¹	1.77x10 ²	3.98x10 ⁴	4.04x10 ⁴	1.84x10 ⁵
tceA Reductase	<2.50x10 ¹	1.58x10 ¹	1.28x10 ⁴	4.92x10 ⁴	6.19x10 ³
BAV1 VC Reductase	<2.50x10 ¹	<2.50x10 ¹	<2.50x10 ¹	3.3x10 ¹	6.55x10 ¹
VC Reductase	<2.50x10 ¹	<2.50x10 ¹	1.04x10 ³	3.56x10 ³	4.59x10 ⁴

Deep Overburden Dechlorinating Bacteria Data

Sample ID	MW-38D	MW-38D	MW-38D	MW-38D	MW-38D
Sample Date	7/27/15	7/12/16	4/12/17	4/12/18	5/6/19
Dechlorinating Bacteria (Cells/bead)					
DHC	8.41x10 ²	4.00x10 ⁴	2.52x10 ⁴	1.81x10 ²	6.47x10 ²
tceA Reductase	<2.50x10 ¹	1.78x10 ²	7.24x10 ²	6.36x10 ¹	2.36x10 ¹
BAV1 VC Reductase	1.20x10 ²	2.22x10 ⁴	2.20x10 ²	1.25x10 ¹	6.70x10 ⁰
VC Reductase	1.47x10 ¹	6.96x10 ²	9.12x10 ²	5.16x10 ¹	1.12x10 ²

3.8 Dechlorinating Chemical Analysis

In addition to the dechlorinating bacteria results, the presence and distribution of TCE degradation products (cis-1,2-DCE and VC) and 1,1,1-TCA degradation products (1,1-DCA and chloroethane) provide supportive evidence that the attenuation of TCE and 1,1,1-TCA and their degradation products, via reductive dechlorination, continues to occur in-situ at the Site. The occurrence and concentrations of these degradation products are directly related to the historic distribution of TCE and 1,1,1-TCA in the subsurface. A limited number of other VOCs were sporadically detected in

groundwater at the Site, with most of these detections in groundwater located at wells A1-GP02-S, A1-GP06-S, A1-GP10-S, MW-42S, and MW-40D; refer to **Table 4**.

3.9 Total Organic Carbon

Samples were collected for TOC analysis to monitor the concentration of available carbon sources for the optimum microbial growth. Although TOC concentrations are decreasing over time in the areas targeted for injection, locations with the highest concentrations of COCs (A1-GP02-S, A1-GP06-S, A1-GP10-S, MW-42S, and MW-40D) still have TOC concentrations above pre-injection levels. Refer to **Appendix A** for a summary of TOC concentrations for April 2019.

4.0 Site Inspection

This section describes quarterly Site inspections, O&M tasks completed, and recommendations for improvements.

4.1 Boiler Room

On November 4, 2014, AECOM and NYSDEC inspected the concrete floor of the boiler room and AECOM sealed visible floor cracks with concrete caulking. In addition, the annulus between a drain line effluent and the associated floor penetration and foundation perforations was sealed with expanding foam. Two other foundation perforations (drains) were observed and temporarily plugged with modelling clay just prior to a sampling event, as the floor drains appeared to discharge to the bedding gravel beneath the concrete floor slab. The sealing of floor cracks and foundation perforations has decreased the concentrations in the indoor air samples and lowered the regulatory action level from 'mitigation' to 'monitoring' (AECOM, January 2015).

The improvements established in the boiler room (which is normally not occupied) as a result of the corrective actions completed to address soil vapor intrusion concerns consist of caulking in the boiler room floor and the seal around the annulus of a drain pipe in the boiler room. These improvements were inspected quarterly during groundwater sampling events. During the week of November 20, 2017, AECOM and subcontractor Matrix Environmental Technologies, Inc. (Matrix) performed preventive maintenance in the boiler room that consisted of removing and replacing all floor crack caulking and drain pipe annulus seals and resealing all visible floor cracks and foundation perforations.

Inspections of the boiler room floor were performed concurrently during the July 2018, October 2018, January 2019, and April 2019 quarterly groundwater sampling events. All previous repairs were intact, and no additional cracks or perforations were observed. Note, as stated in the SMP, if the boiler room becomes occupied or its usage changes, additional treatment and/or control measures will be evaluated.

4.2 Monitoring Wells

As per the SMP, monitoring wells were inspected quarterly; no issues were observed regarding the condition of the wells. During the week of August 20, 2018, AECOM replaced the locks on all Site monitoring wells.

5.0 Conclusions and Recommendations

Based on results of the groundwater analytical data collected during the reporting period, conclusions, upcoming Site-related activities, and a proposed monitoring and reporting schedule are presented below.

5.1 Conclusions

1. Groundwater elevations measured on April 11, 2019 from the shallow overburden ranged from 688.01 ft above mean sea level (AMSL) at MW-35S to 686.16 ft AMSL at A1-GP06-S. Groundwater elevations measured on April 11, 2019 from the deep overburden ranged from 681.22 ft AMSL at MW-35D to 685.99 ft AMSL at MW-40D. Based on these water level measurements, the groundwater beneath the Site exhibits a northwest flow direction. This flow direction is most pronounced in the deep overburden, as the shallow overburden groundwater is influenced by Site features (e.g., stormwater sewer and paved areas).
2. The groundwater analytical data indicate that the IRMs were, and continue to be, successful in the attenuation of CVOCs.
3. The groundwater microbial analyses indicate that the necessary microflora, such as DHC, tceA reductase, BAV1 VC Reductase, and VC Reductase bacteria, are present in the shallow overburden at sufficient concentrations, whereas the deep overburden groundwater shows a slight decrease of microflora.
4. VOC data collected from on-Site catch basin CB-1 in April 2019 exhibited detections of some COCs but continues to show a general decreasing trend in concentration of COCs following the IRMs, except for VC which increased slightly.
5. Concentrations of VOCs in samples collected in April 2019 from the temporary piezometers screened in the storm sewer bedding exhibited detections above the screening criteria of some COCs at TP-5 (located adjacent to CB-1) but were below the reporting limits of all VOCs at TP-6 (down-gradient of TP-5).
6. Periodic monitoring data demonstrate that TOC concentrations in the areas targeted for injections remain above pre-injection levels, maintaining conditions for microbial growth.
7. The boiler room floor crack caulking and drain pipe annulus seals (i.e., sub-slab mitigation controls) were inspected quarterly and did not need replacing. No additional floor cracks or perforations in the floor were noted during the reporting period.
8. AECOM replaced all Site well locks.

5.2 Recommendations

Based on information gathered during the current reporting period, the following recommendations are proposed for the Site:

1. Continue quarterly inspections of the boiler room sub-slab mitigation controls.
2. Continue quarterly inspections of the monitoring well network.

3. Perform four quarterly groundwater sampling events during the next reporting period (refer to Table 1 for a list of locations to be sampled and associated analyses).
4. Perform targeted supplemental injections (at approximately 30 locations), using the injectate ABC-Ole[®] and ZVI (a mixture of Anaerobic Biochem (ABC[®]), ZVI, and emulsified fatty acids) targeting localized areas adjacent to monitoring wells A1-GP02-S, A1-GP06-S, A1-GP10-S, MW-42S, and MW-40D.
5. Review and update the Site health and safety plan as needed.

5.3 Proposed Monitoring and Compliance Sampling Schedule

The proposed schedule for groundwater sampling at the Site during the next reporting period includes quarterly sampling of 20 wells, the on-Site catch basin, and two temporary piezometers screened in the storm sewer pipe bedding; refer to **Table 1** for a list of locations to be sampled and associated analyses.

It is anticipated that the next PRR will be prepared following receipt of laboratory analytical results for the April 2020 comprehensive groundwater sampling event and will include the results from groundwater sampling events scheduled for July 2019, October 2019, January 2020, and April 2020.

6.0 Evaluate Remedy Performance, Effectiveness, and Protectiveness

6.1 Institutional Controls and Engineering Controls Certification

As a component of the PRR requirement, included in **Appendix D** is the completed IC/EC certification form.

Institutional controls include:

1. Groundwater Use Restrictions
2. Land Use Restrictions
3. Site Management Plan
4. Soils Monitoring Plan
5. Groundwater Monitoring Plan
6. IC/EC Plan

Engineering controls include:

1. None listed.

7.0 References

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Figures

Figures



SOURCE:
 1982 U.S. 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.

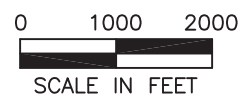
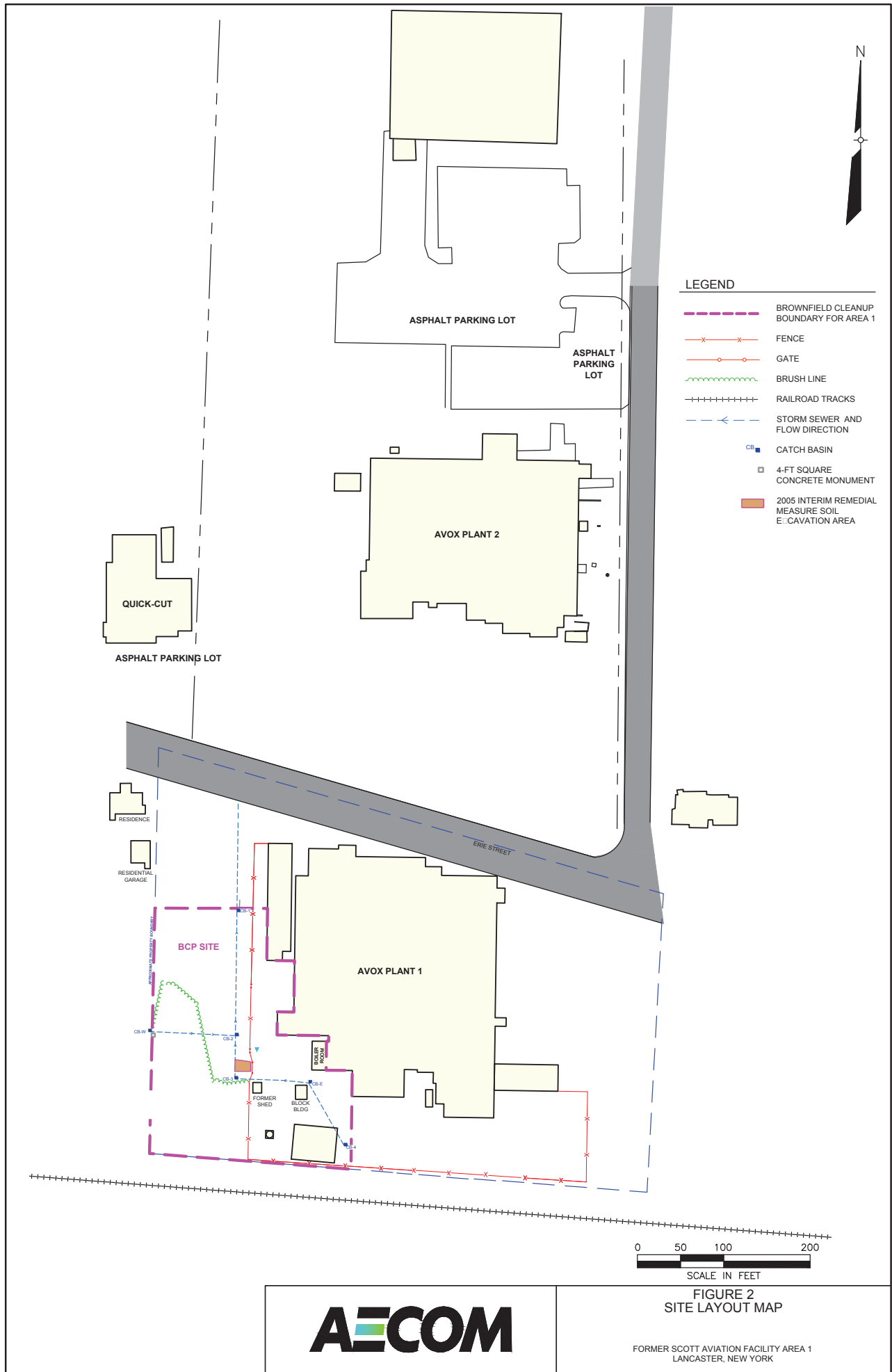
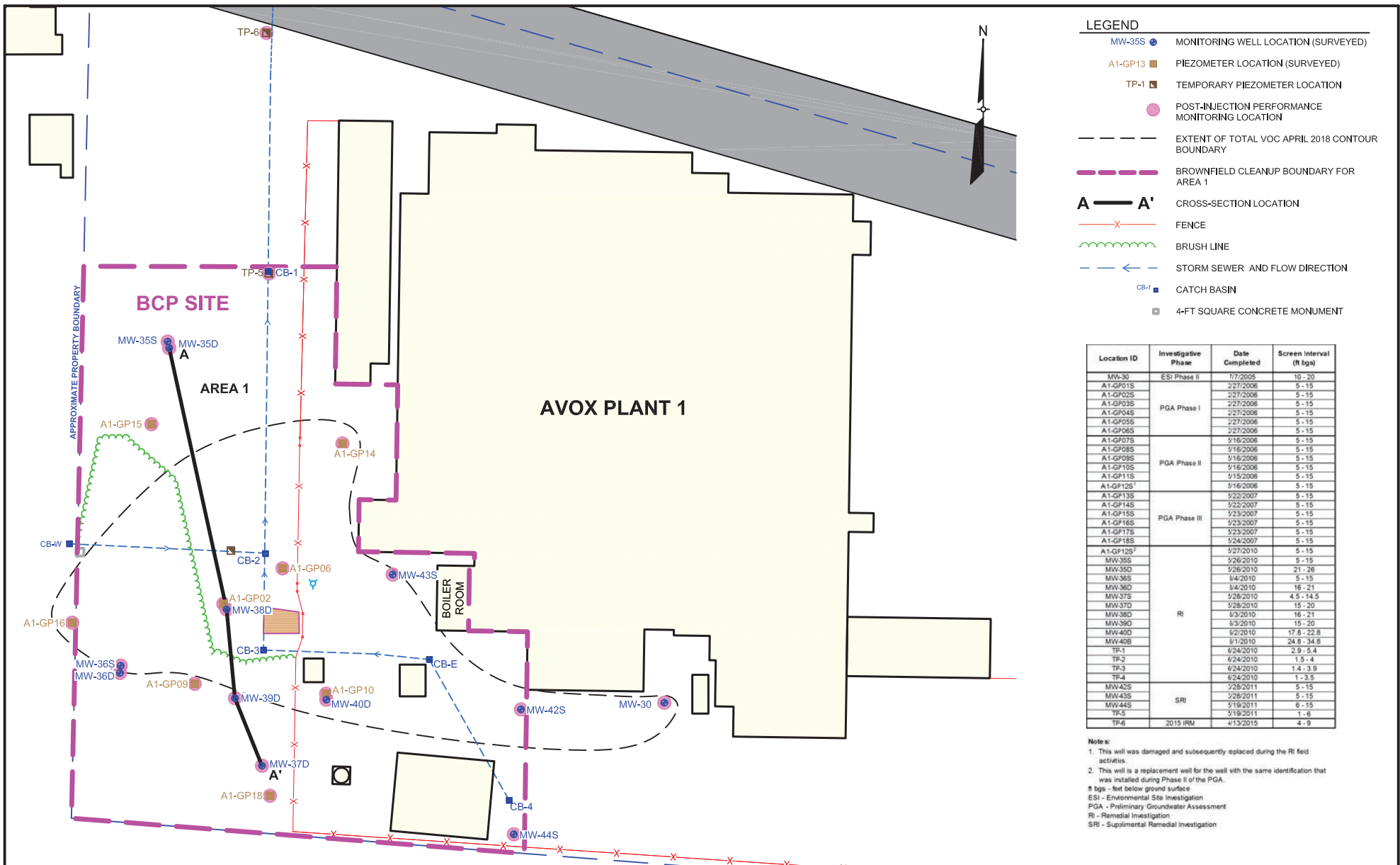


FIGURE 1
SITE LOCATION MAP

FORMER SCOTT AVIATION FACILITY
 LANCASTER, NEW YORK







- 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 APRIL 2018 CONTOUR BOUNDARY
 - BROWNFIELD CLEANUP BOUNDARY FOR AREA 1
 - A — A' CROSS-SECTION LOCATION
 - X — 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	PGA Phase III	5/16/2006	5 - 15
A1-GP13S		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	RI	5/23/2007	5 - 15
A1-GP18S		5/24/2007	5 - 15
A1-GP12S ²		5/27/2010	5 - 15
MW-35S		5/26/2010	5 - 15
MW-35D		5/26/2010	21 - 26
MW-36S	SRI	5/4/2010	5 - 15
MW-36D		5/4/2010	16 - 21
MW-37S		5/28/2010	4.5 - 14.5
MW-37D		5/28/2010	15 - 20
MW-38D		8/3/2010	16 - 21
MW-39D		8/3/2010	15 - 20
MW-40D		5/2/2010	17.8 - 22.8
MW-40B		5/1/2010	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	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

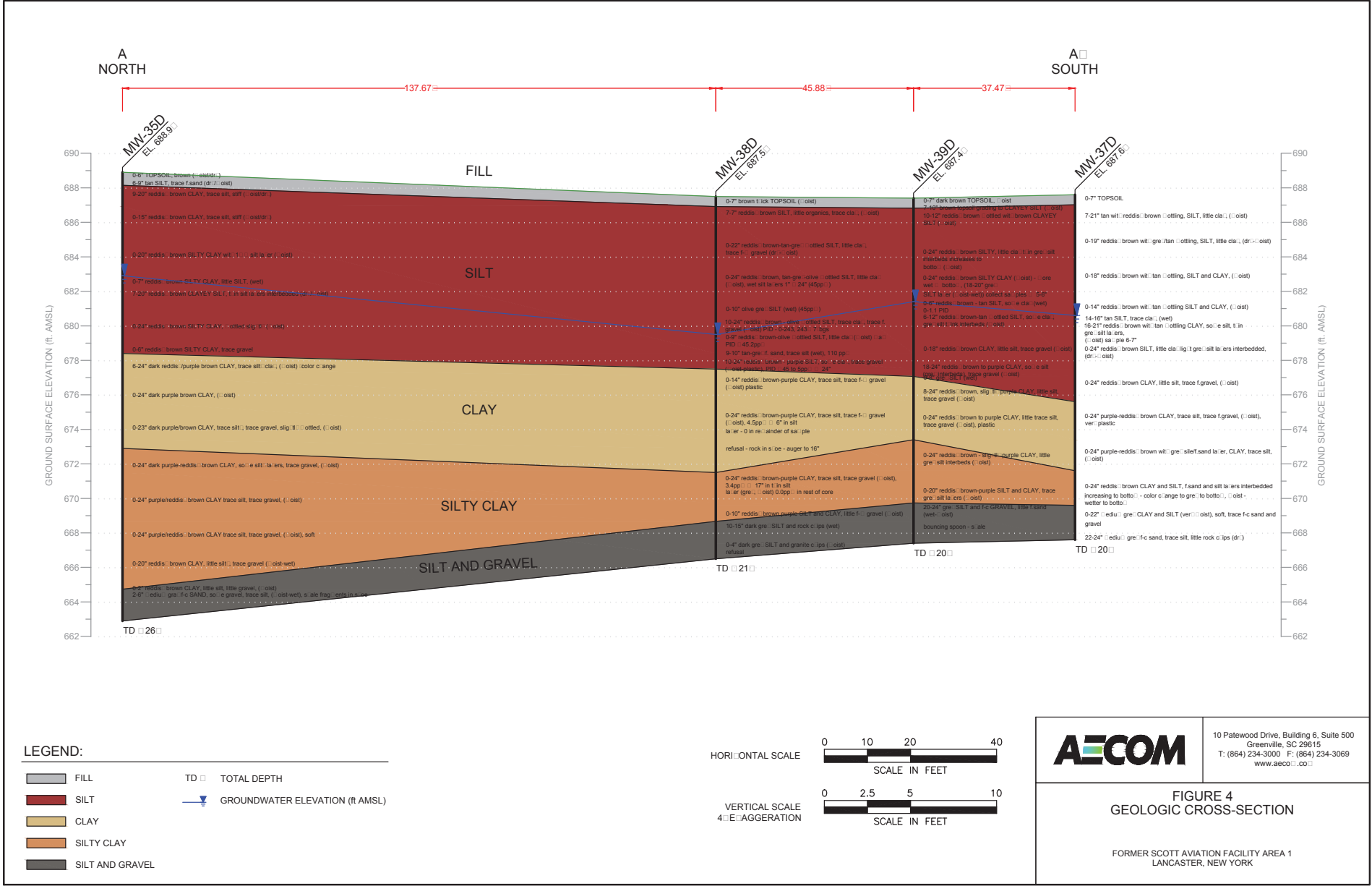
Note:

- This well was damaged and subsequently replaced during the RI field activities.
- 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 - Supplemental Remedial Investigation



FIGURE 3
MONITORING WELL, PIEZOMETER AND
CATCH BASIN LOCATIONS
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK



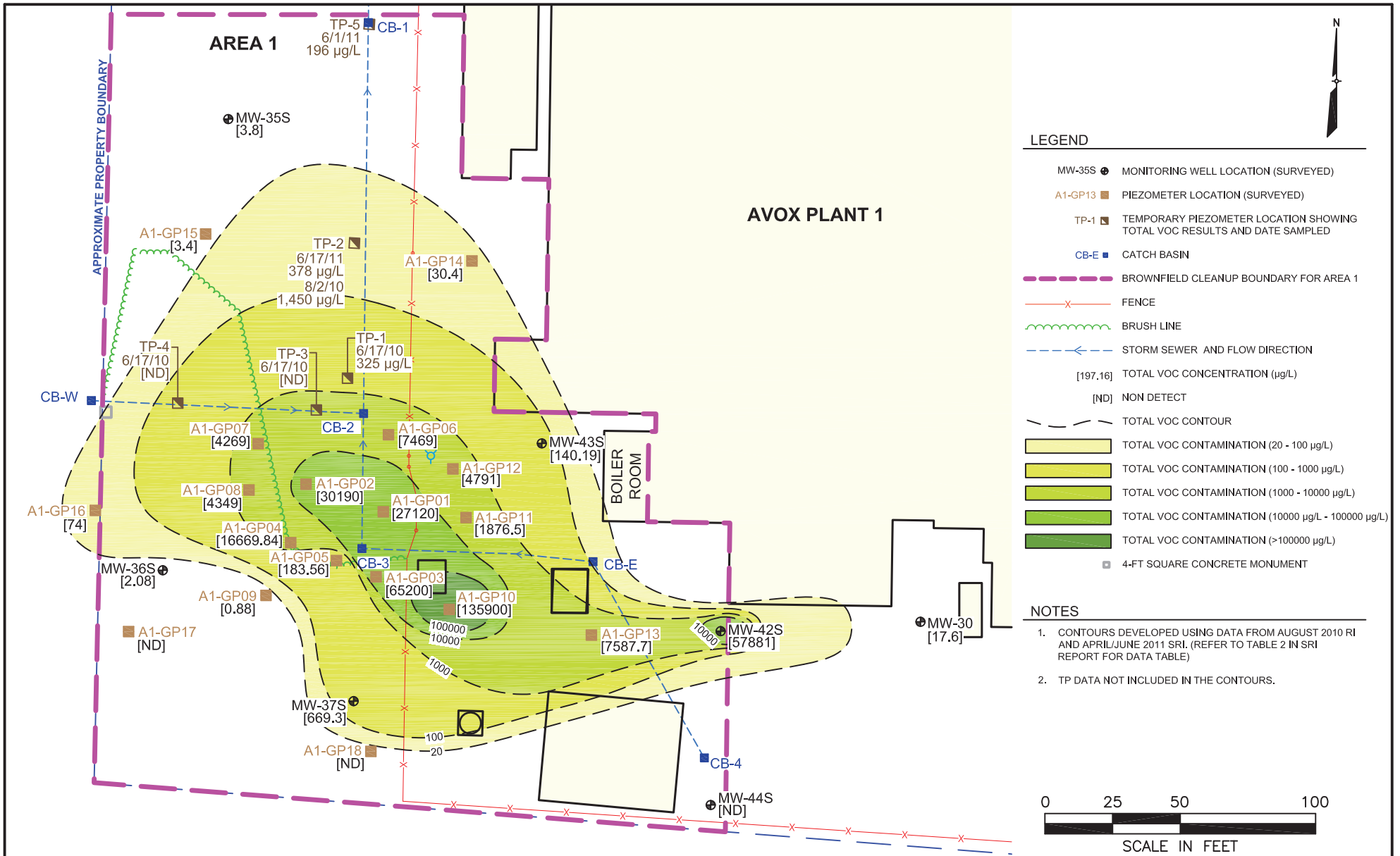


FIGURE 5
PRE-INJECTION SHALLOW OVERBURDEN
GROUNDWATER TOTAL VOC
CONTAMINANT PLUME
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

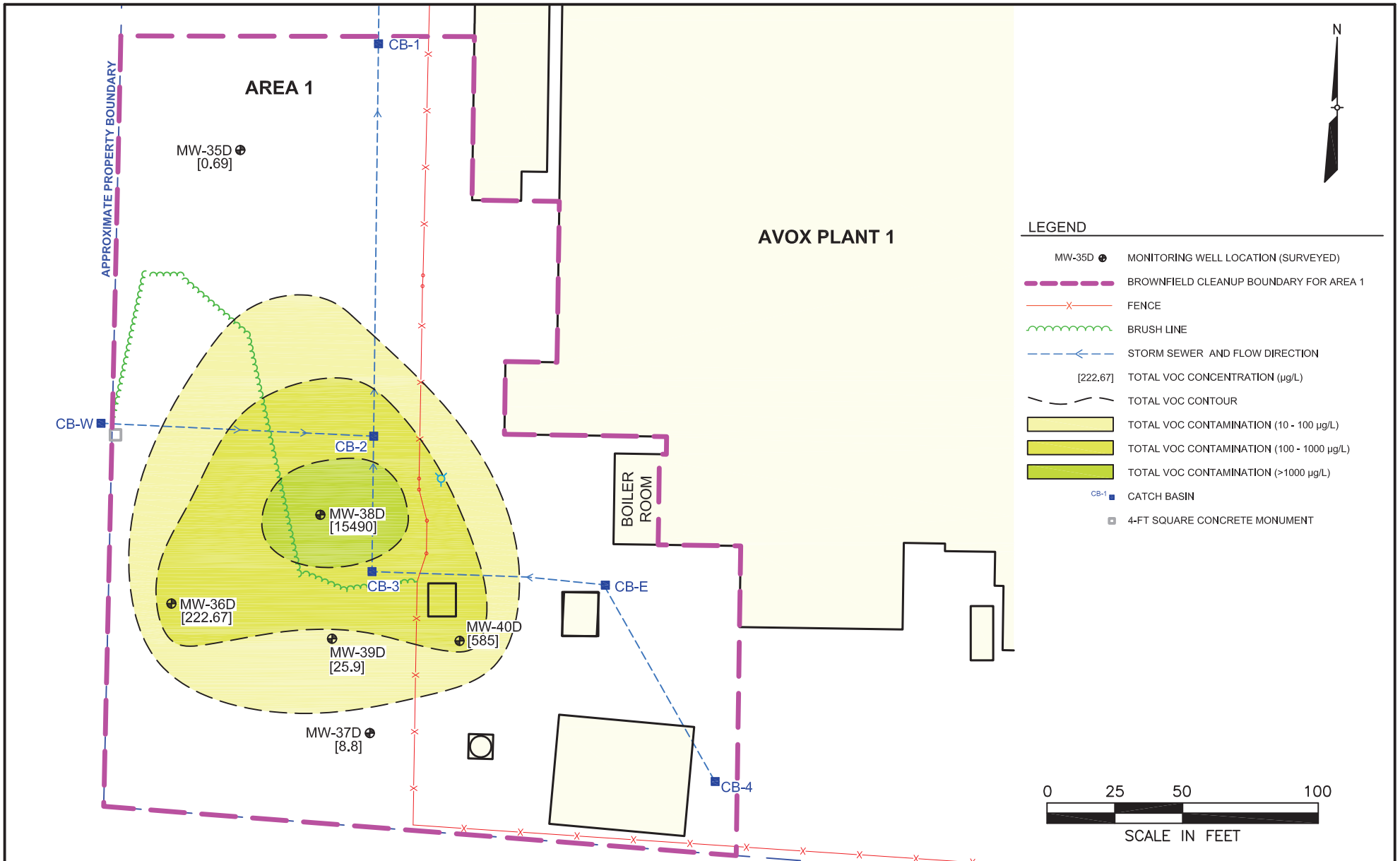


FIGURE 6
PRE-INJECTION DEEP OVERBURDEN
GROUNDWATER TOTAL VOC
CONTAMINANT PLUME
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

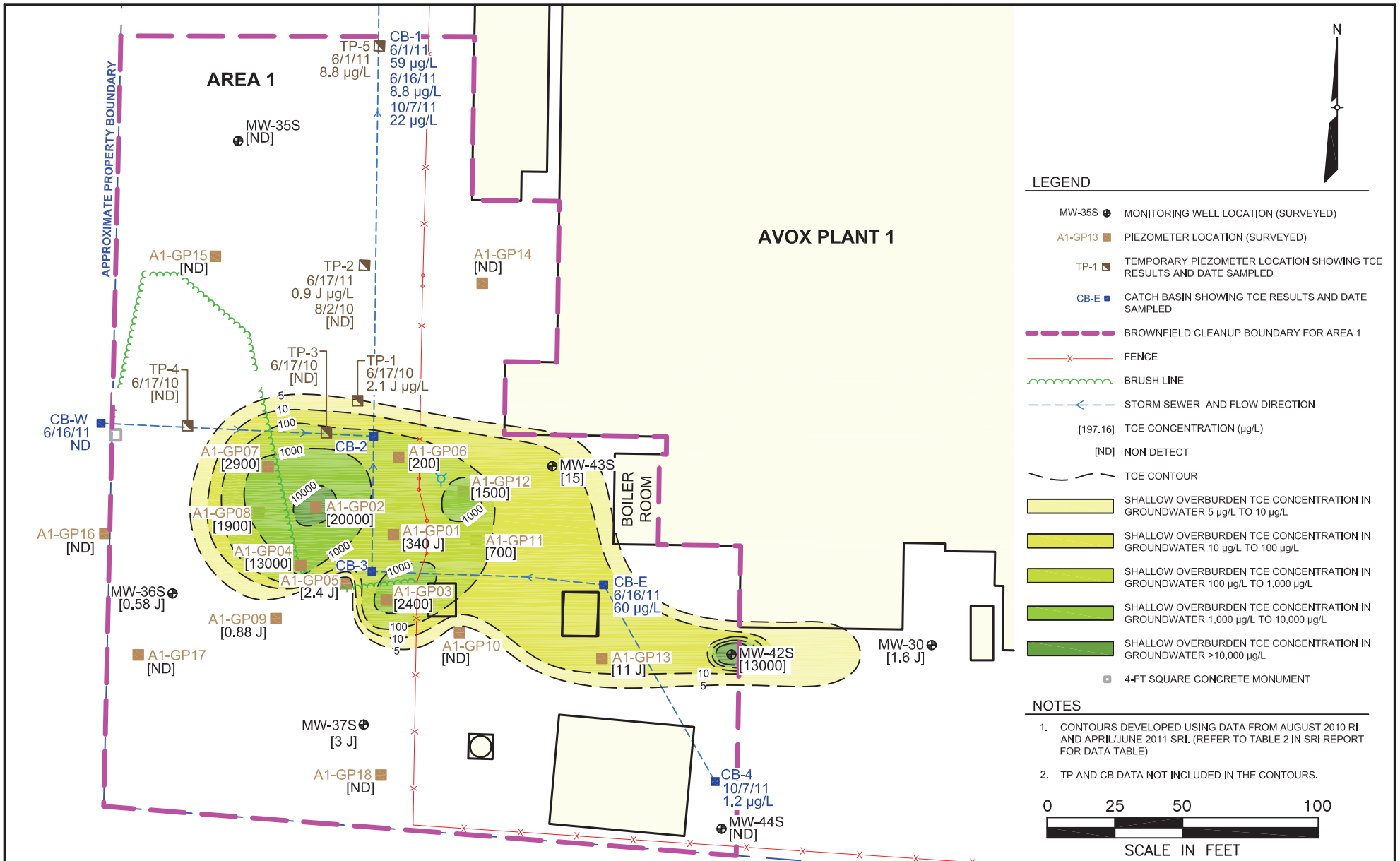


FIGURE 7
PRE-INJECTION SHALLOW OVERBURDEN
GROUNDWATER TCE
CONTAMINANT PLUME
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

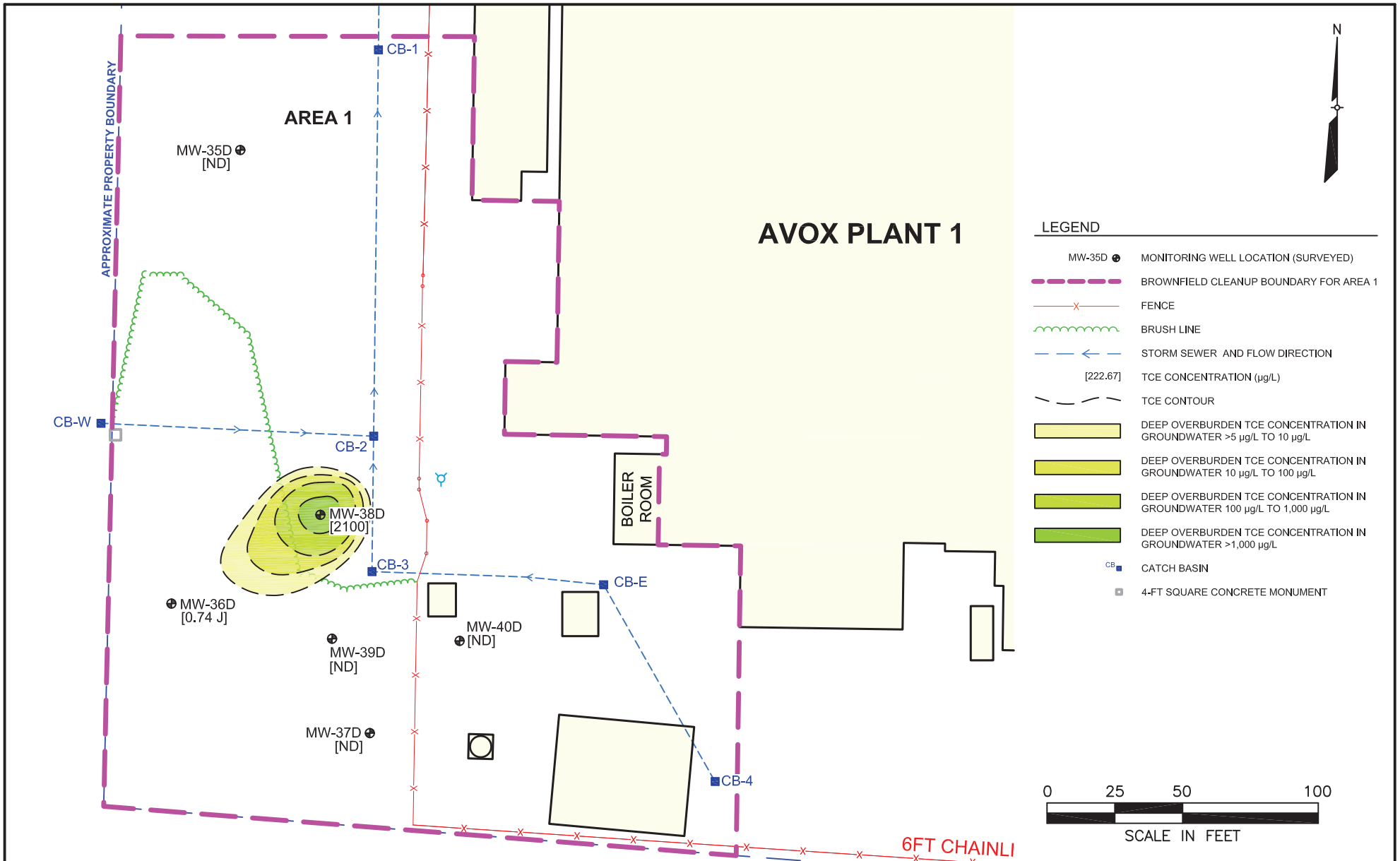


FIGURE 8
PRE-INJECTION DEEP OVERBURDEN
GROUNDWATER TCE
CONTAMINANT PLUME
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK



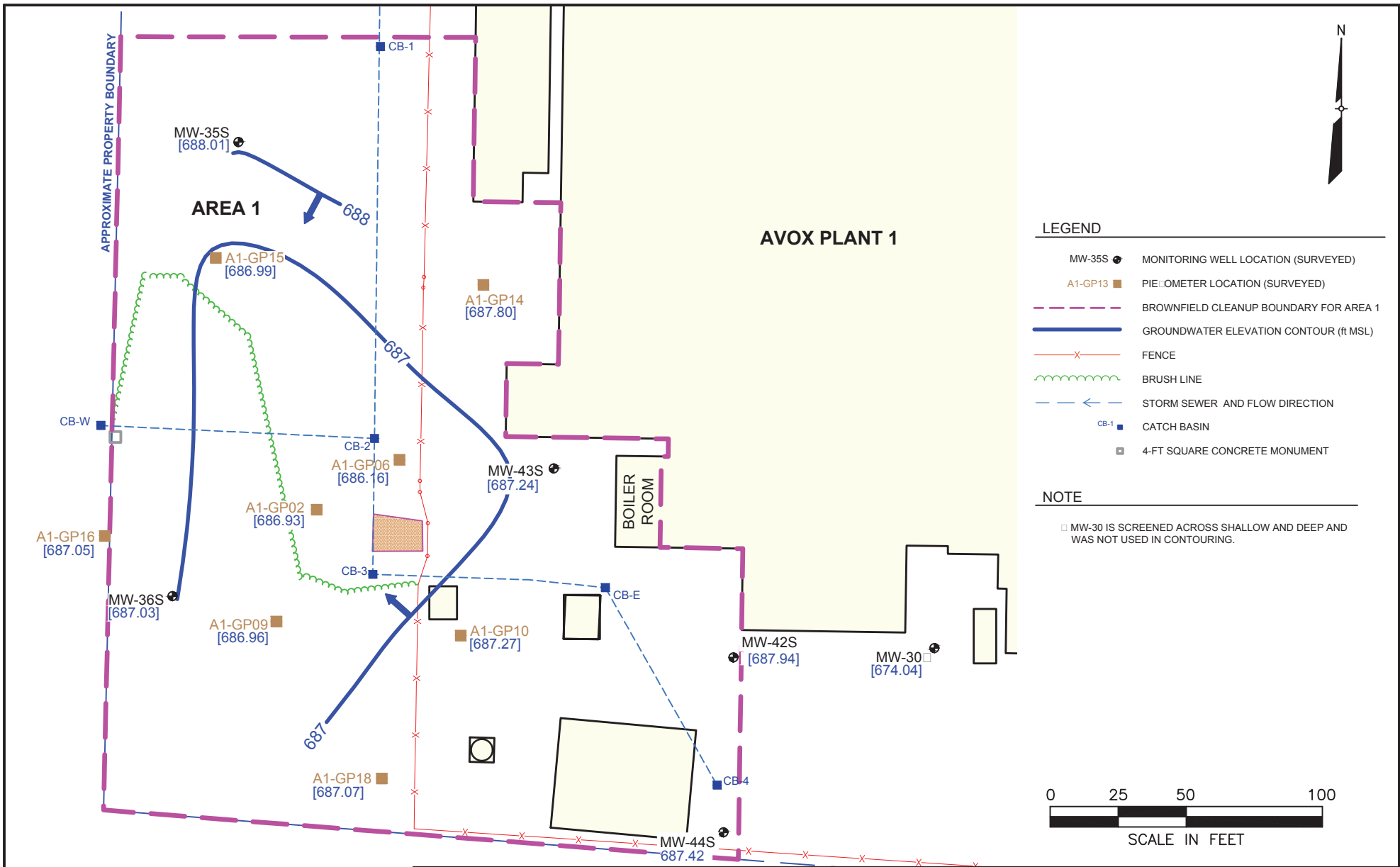


FIGURE 10
SHALLOW OVERBURDEN GROUNDWATER
SURFACE ELEVATION CONTOURS
APRIL 11, 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

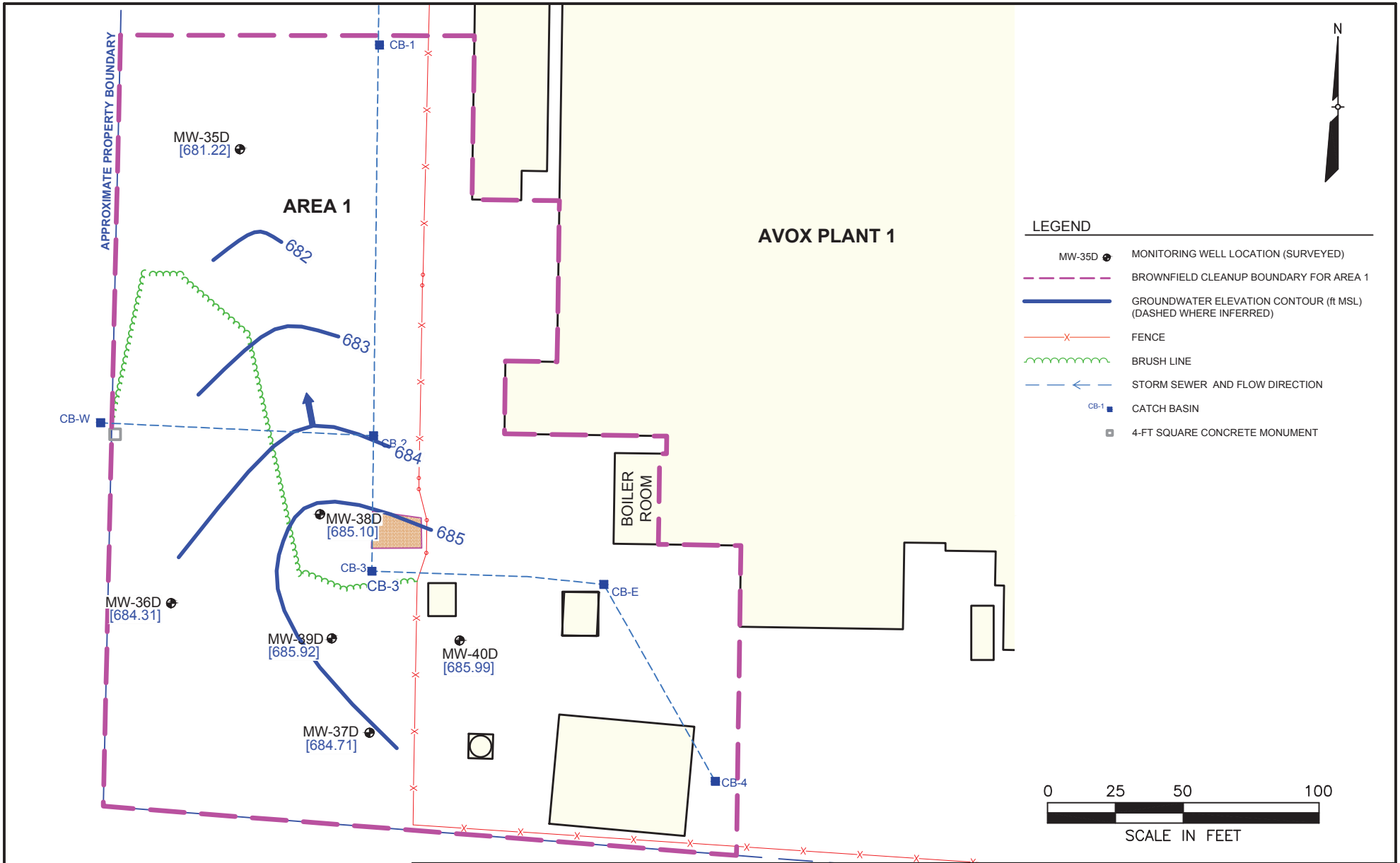


FIGURE 11
DEEP OVERBURDEN GROUNDWATER
SURFACE ELEVATION CONTOURS
APRIL 11, 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

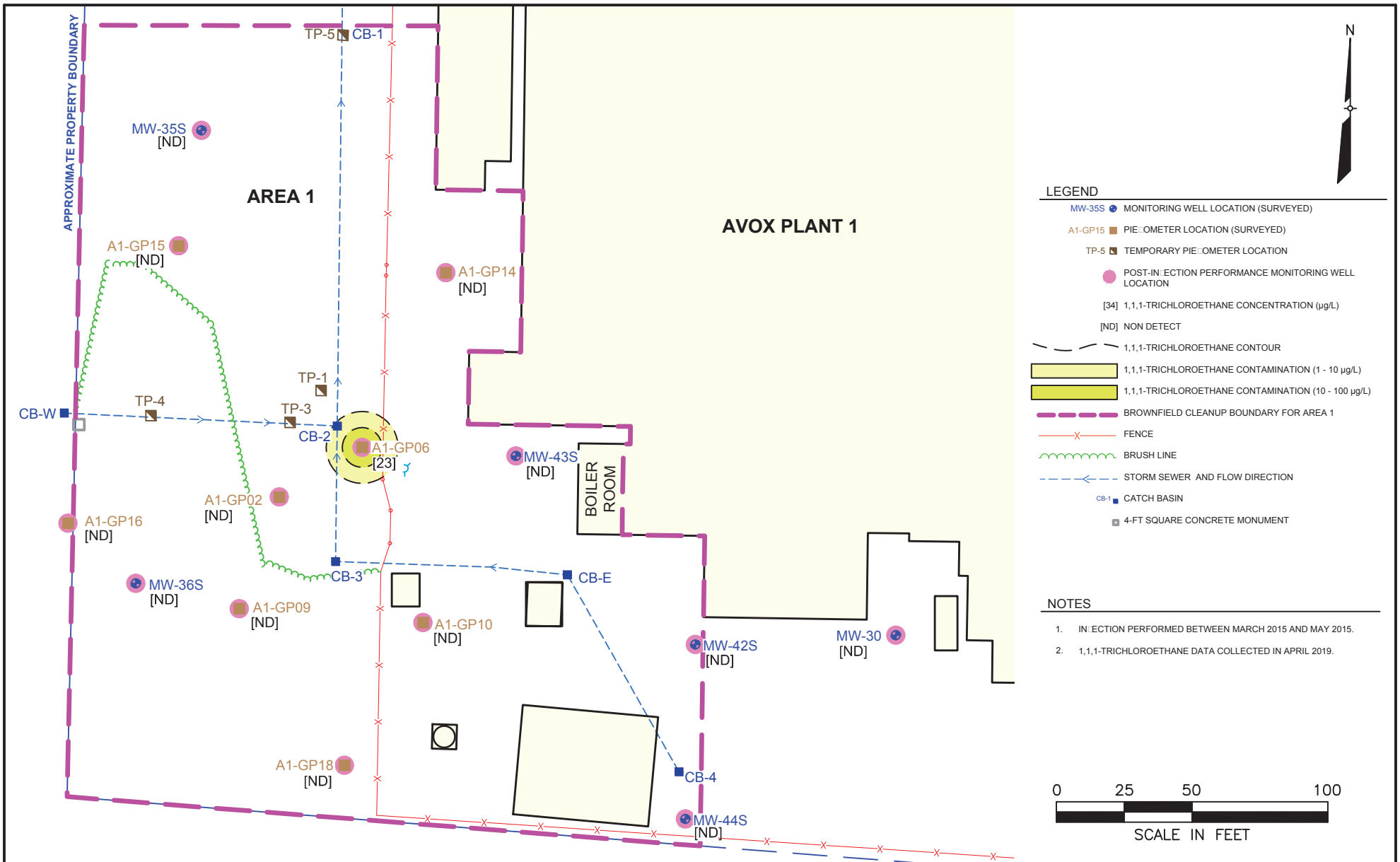


FIGURE 12
POST-INJECTION SHALLOW OVERBURDEN
MONITORING 1,1,1-TRICHLOROETHANE PLUME
APRIL 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

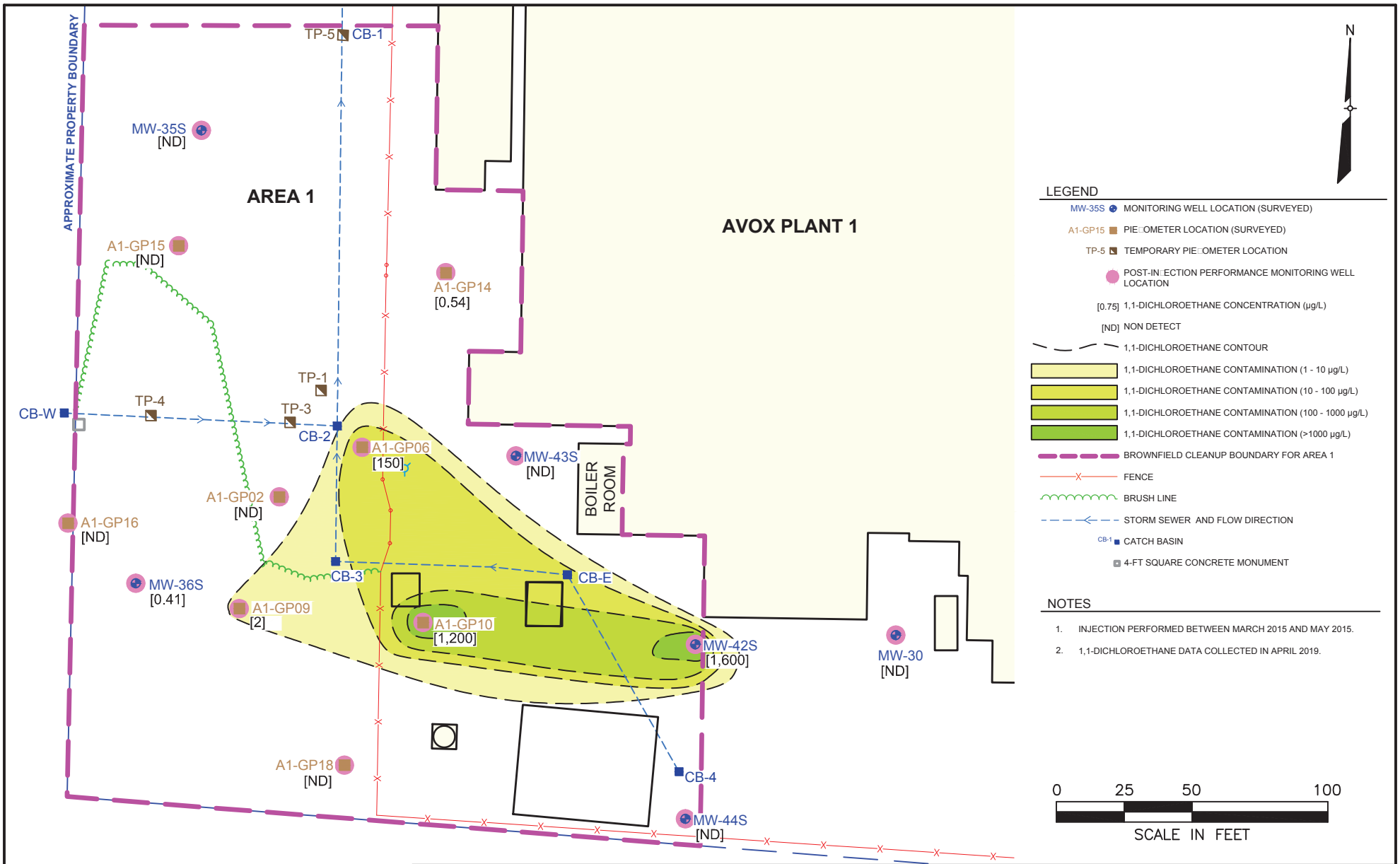


FIGURE 13
POST-INJECTION SHALLOW OVERBURDEN
MONITORING 1,1-DICHLOROETHANE PLUME
APRIL 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

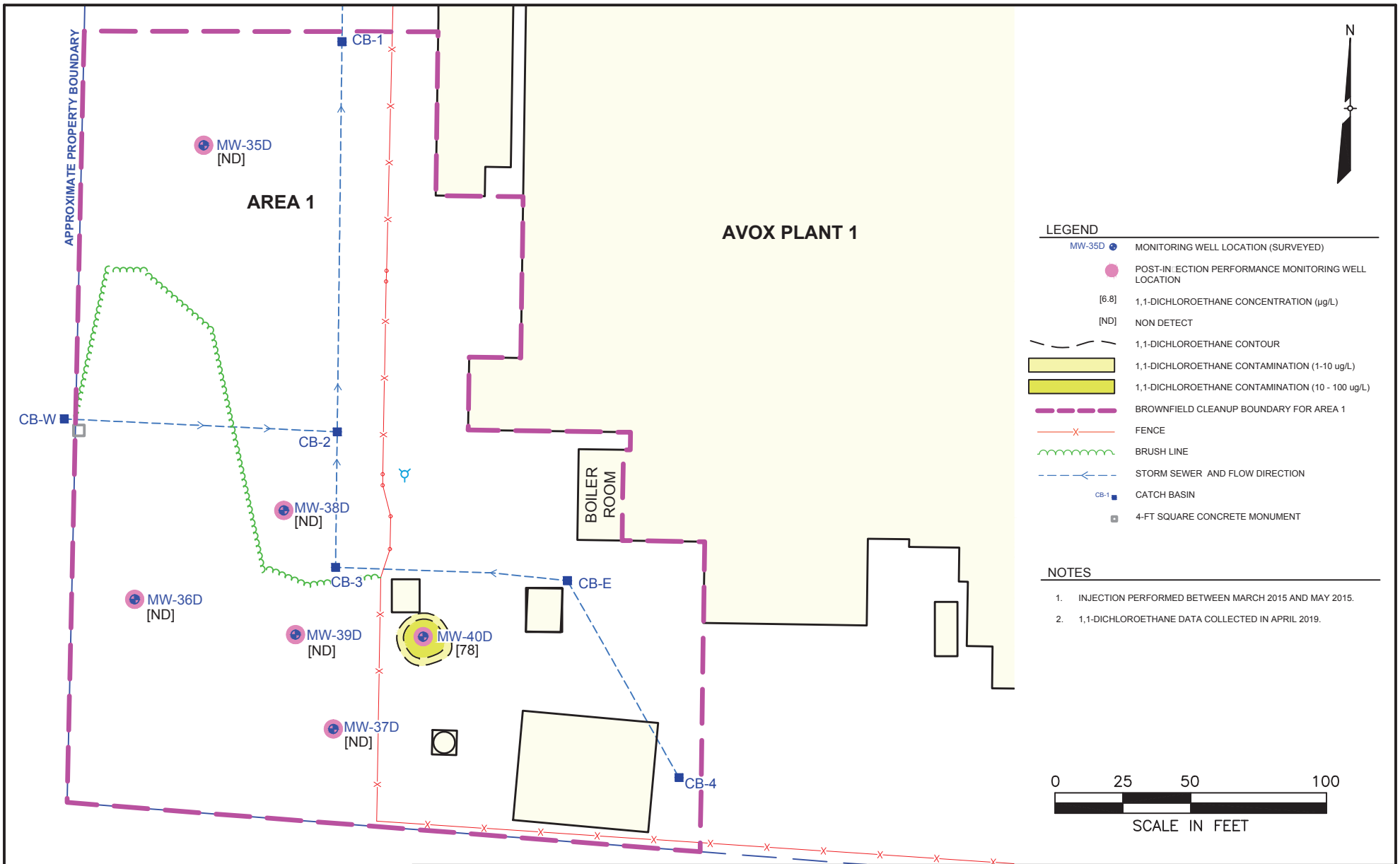


FIGURE 14
POST-INJECTION DEEP OVERBURDEN
MONITORING 1,1-DICHLOROETHANE PLUME
APRIL 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

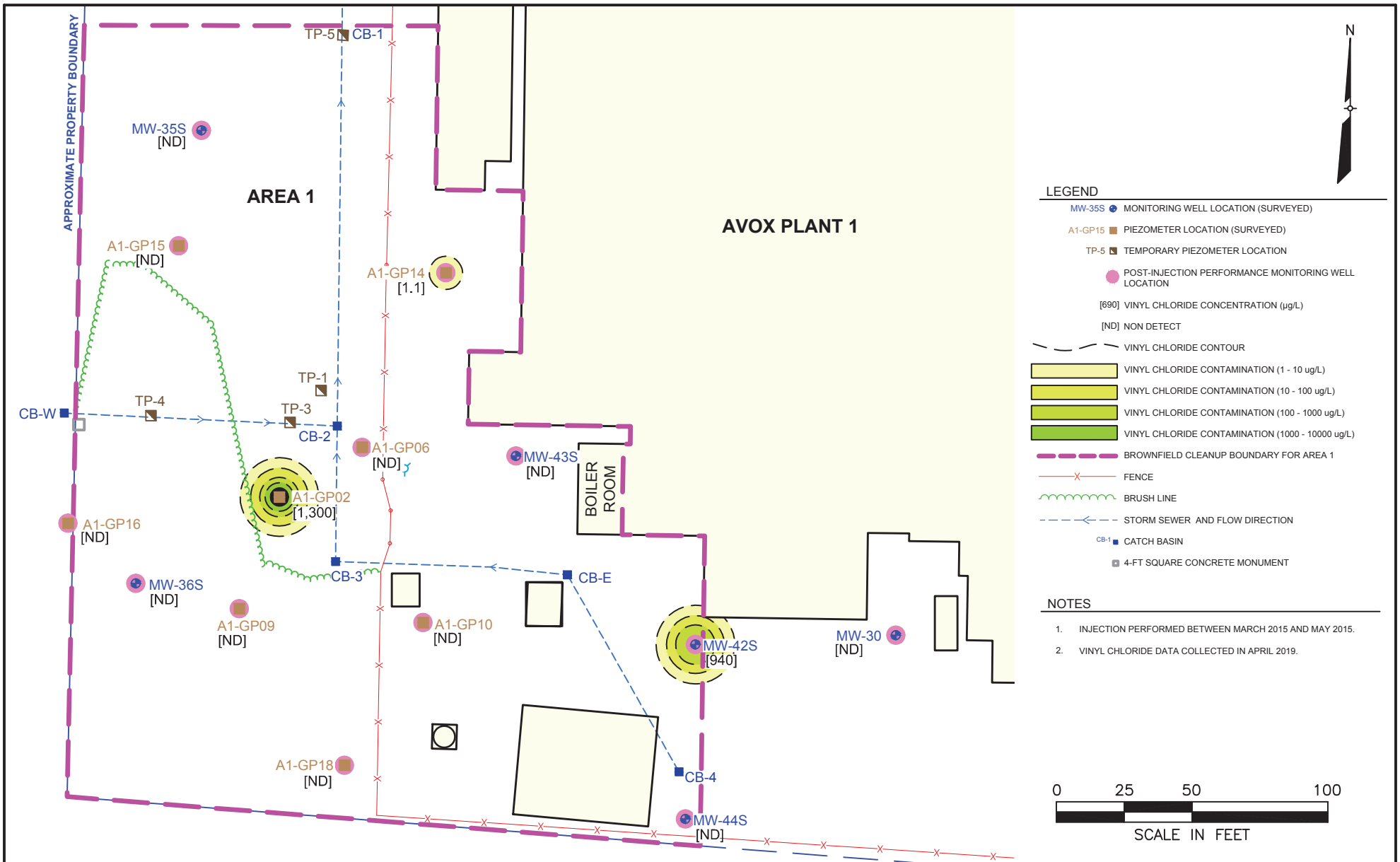


FIGURE 15
POST-INJECTION SHALLOW OVERBURDEN
MONITORING VINYL CHLORIDE PLUME
APRIL 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

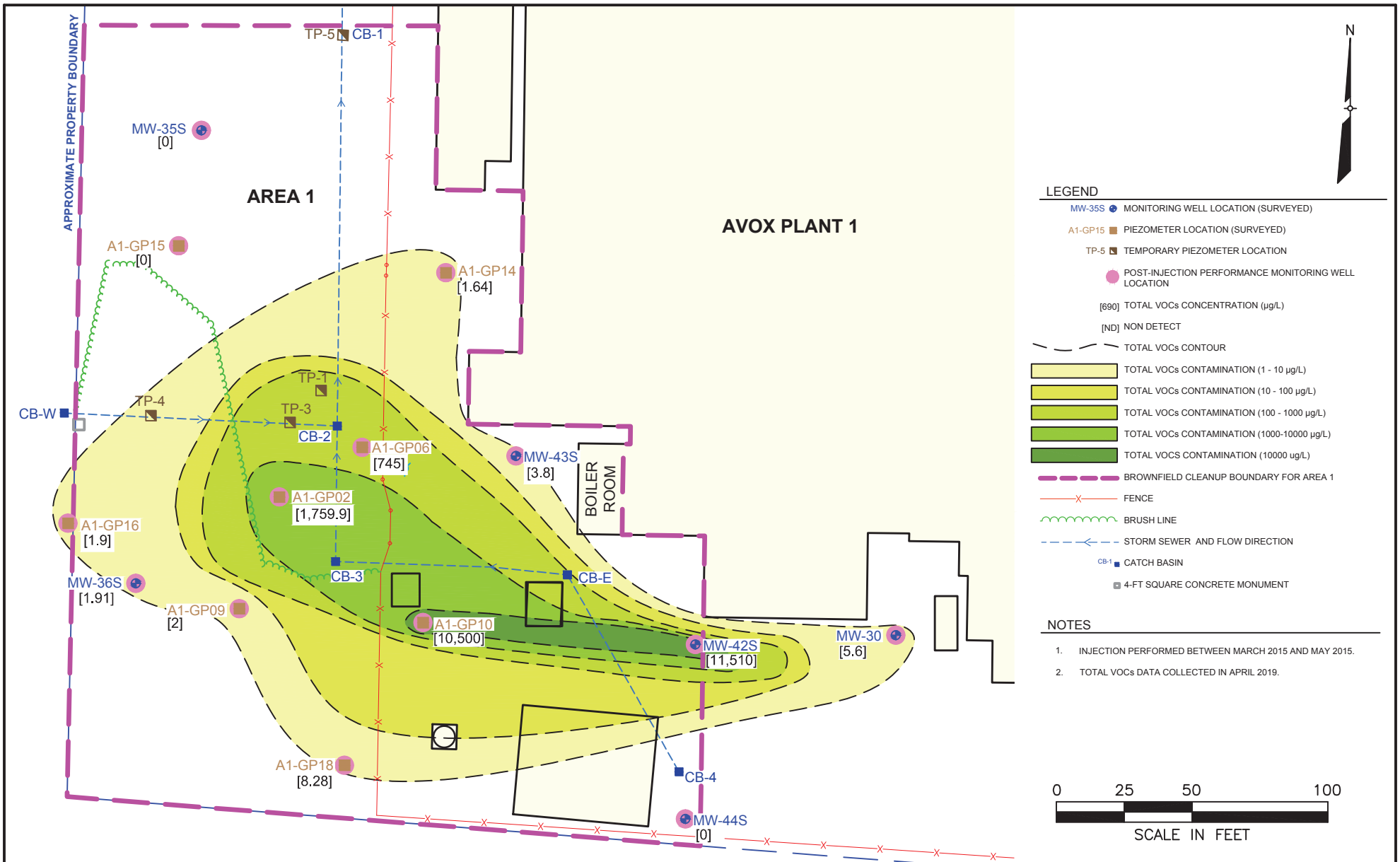


FIGURE 16
POST-INJECTION SHALLOW OVERBURDEN
MONITORING TOTAL VOCs PLUME
APRIL 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

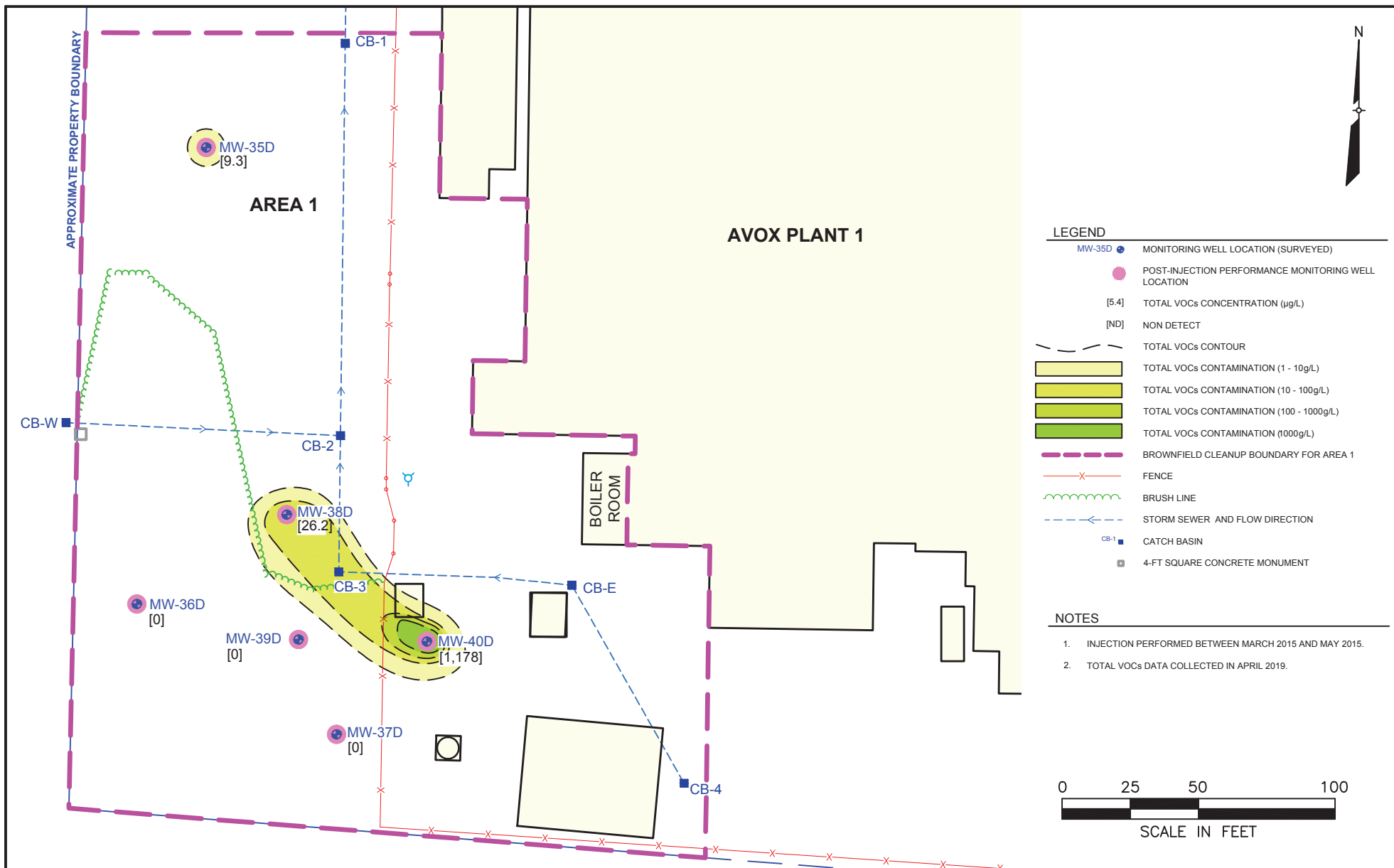


FIGURE 17
POST-INJECTION DEEP OVERBURDEN
MONITORING TOTAL VOCs PLUME
APRIL 2019
 FORMER SCOTT AVIATION FACILITY AREA 1
 LANCASTER, NEW YORK

Tables

**Table 1
Groundwater Monitoring Program
Former Scott Aviation Facility Area 1 (BCP Site #C915233)
Lancaster, New York**

Location	Field Parameters	VOCs (8260B)	TOC (9060)	Iron Ferrous and Ferric (SM 3500 FE D)	Iron Ferric (SM 3500)	Nitrogen Nitrate (MCAWW 353.2)	Nitrogen Nitrate-Nitrate (MCAWW 353.2)	Nitrate (EPA 353.2)	Sulfate Turbidimetric (9038)	Manganese (6010C)	Sulfate (300.0)	Sulfide Total (SM 4500 S2 D)	Alkalinity (MCAWW 310.2)	Iron (200.7 Rev 4.4)	Carbon Dioxide (RSK-175)	COD (MCAWW 410.4)	BOD (SM 5210B)	Phosphorus (SM 4500 P E)	Nitrogen Ammonia (MCAWW 350.1)	Methane Ethane, Ethene (RSK-175)
Monitoring Well and Temporary Piezometer Groundwater Sampling																				
MW-30	✓	✓	✓																	
MW-35S	✓	✓	✓																	
MW-35D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW-36S	✓	✓	✓																	
MW-36D	✓	✓	✓																	
MW-37D	✓	✓	✓																	
MW-38D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW-39D	✓	✓	✓																	
MW-40D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW-42S*	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MW-43S	✓	✓	✓																	
MW-44S	✓	✓	✓																	
A1-GP02-S	✓	✓	✓																	
A1-GP06-S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
A1-GP10-S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
A1-GP15-S	✓	✓	✓																	
A1-GP18-S	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Storm Sewer Water Sampling																				
CB-1		✓																		
TP-5		✓																		
TP-6		✓																		

Notes:

QA/QC samples will also be collected per QAPP.

Field Parameters include pH, temperature, turbidity, oxidation-reduction potential (ORP), dissolved oxygen (DO), and specific conductivity.

VOC - Volatile Organic Compound

TOC - Total Organic Carbon

COD - Chemical Oxygen Demand

BOD - Biochemical Oxygen Demand

* MW-42S will be added to the list of monitoring wells to be analyzed for MNA parameters beging April 2020 per NYSDEC comment letter dated August 29, 2019.

**Table 2
Monitoring Well, Piezometer, and Catch Basin Specifications
Former Scott Aviation Facility Area 1 (BCP Site #C915233)
Lancaster, New York**

Well ID	Well Location	Coordinates (longitude/latitude)	Well Diameter (inches)	Elevation (feet above mean sea level)			
				Casing	Surface	Screen Top	Screen Bottom
A1-GP02-S	Plume	42.9047° N, 78.6593° W	0.75	689.82	687.3	682.3	672.3
A1-GP03-S*	Plume	42.9046° N, 78.6592° W	0.75	690.70	688.8	683.8	673.8
A1-GP04-S*	Plume	42.9046° N, 78.6594° W	0.75	690.46	687.7	682.7	672.7
A1-GP05-S*	Plume	42.9046° N, 78.6593° W	0.75	690.38	687.6	682.6	672.6
A1-GP06-S	Plume	42.9047° N, 78.6592° W	0.75	687.71	687.8	682.8	672.8
A1-GP07-S*	Plume	42.9047° N, 78.6593° W	0.75	690.47	687.5	682.5	672.5
A1-GP08-S*	Plume	42.9047° N, 78.6594° W	0.75	689.68	686.5	681.5	671.5
A1-GP09-S	Downgradient	42.9045° N, 78.6594° W	0.75	689.36	686.8	681.8	671.8
A1-GP10-S	Plume	42.9045° N, 78.6591° W	0.75	689.10	689.2	684.2	674.2
A1-GP12-S*	Plume	42.9047° N, 78.6591° W	0.75	689.5	689.4	684.4	674.4
A1-GP13-S*	Plume	42.9045° N, 78.6589° W	0.75	689.69	689.8	684.8	674.8
A1-GP14-S	Downgradient	42.9049° N, 78.6591° W	0.75	689.43	689.7	684.7	674.7
A1-GP15-S	Downgradient	42.9049° N, 78.6595° W	0.75	687.69	688.0	683.0	673.0
A1-GP16-S	Downgradient	42.9046° N, 78.6596° W	0.75	689.86	686.6	681.6	671.6
A1-GP17-S*	Downgradient	42.9045° N, 78.6596° W	0.75	690.11	687.0	682.0	672.0
A1-GP18-S	Upgradient	42.9044° N, 78.6592° W	0.75	690.37	687.5	682.5	672.5
MW-30	Upgradient	42.9045° N, 78.6585° W	2.0	689.69	689.8	679.8	669.8
MW-35D	Downgradient	42.9050° N, 78.6594° W	2.0	688.40	688.9	667.9	662.9
MW-35S	Downgradient	42.9050° N, 78.6594° W	2.0	688.56	689.1	684.1	674.1
MW-36D	Plume	42.9046° N, 78.6595° W	2.0	689.66	687.1	671.1	666.1
MW-36S	Upgradient	42.9046° N, 78.6595° W	2.0	689.82	687.1	683.1	672.1
MW-37D	Upgradient	42.9044° N, 78.6593° W	2.0	690.05	687.6	672.6	667.6
MW-37S*	Plume	42.9044° N, 78.6593° W	2.0	690.10	687.4	682.9	672.9
MW-38D	Plume	42.9047° N, 78.6593° W	2.0	689.66	687.5	671.5	666.5
MW-39D	Plume	42.9045° N, 78.6593° W	2.0	689.72	687.4	672.4	667.4
MW-40D	Plume	42.9045° N, 78.6591° W	2.0	689.19	689.5	671.7	666.7
MW-41B*	Bedrock	42.9046° N, 78.6592° W	2.0	689.78	687.8	663.0	653.0
MW-42S	Plume	42.9045° N, 78.6588° W	2.0	689.08	689.7	684.7	674.7
MW-43S	Plume	42.9047° N, 78.6590° W	2.0	689.14	689.6	684.6	674.6
MW-44S	Upgradient	42.9043° N, 78.6588° W	2.0	688.98	689.4	684.4	674.4
CB-1	Catch Basin	42.9044° N, 78.6600° W	NA	NA	689.5	NA	683.2 ⁽¹⁾
TP-5	Stormsewer	42.9051° N, 78.6592° W	0.75	690.53	689.5	685.5	682.5
TP-6	Stormsewer	42.9051° N, 78.6592° W	0.75	690.25	690.5	686.5	681.5

(1) Bottom elevation of catch basin.

NA - Not available

* Well decommissioned in October 2017

Table 3
 Summary of Groundwater Elevation Data
 Former Scott Aviation Facility Area 1 (BCP Site #C915233)
 Lancaster, New York

Monitoring Point Identification	Top of Casing Elevation	April 11, 2019	
		Depth to Groundwater (feet from TOC)	Groundwater Elevation (feet AMSL)
Monitoring Wells			
MW-30 ¹	689.69	15.65	674.04
MW-35S	688.56	0.55	688.01
MW-35D	688.40	7.18	681.22
MW-36S	689.82	2.79	687.03
MW-36D	689.66	5.35	684.31
MW-37D	690.05	5.34	684.71
MW-38D	689.66	4.56	685.10
MW-39D	689.72	3.80	685.92
MW-40D	689.19	3.20	685.99
MW-42S	689.08	1.14	687.94
MW-43S	689.13	1.89	687.24
MW-44S	688.96	1.94	687.02
Piezometers			
A1-GP02-S	689.82	2.89	686.93
A1-GP06-S	687.71	1.55	686.16
A1-GP09-S	689.36	2.40	686.96
A1-GP10-S	689.10	1.83	687.27
A1-GP14-S	689.43	1.63	687.80
A1-GP15-S	687.69	0.70	686.99
A1-GP16-S	689.86	2.81	687.05
A1-GP18-S	690.37	3.30	687.07
Storm Sewer			
TP-5	690.53	7.64	682.89
TP-6	690.25	7.44	682.81
CB-1	690.70	NA	NA

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

Table 4

Summary of Groundwater Analytical Data - April 2019
Former Scott Aviation Facility
NYSDEC Site Code No. C915233
Lancaster, New York

Sample ID	Groundwater	A1-GP02-S	A1-GP06-S	A1-GP09-S	A1-GP10-S	A1-GP14-S	A1-GP15-S	A1-GP16-S
Date Collected	RAO/NYCRR	04/18/19	04/15/19	04/17/19	04/15/19	04/15/19	04/15/19	04/17/19
Lab Sample ID	Objective	480-152222-6	480-151919-5	480-152222-9	480-151919-4	480-151919-2	480-151919-1	480-152222-2
Volatile Organic Compounds by Method 8260 (µg/L)								
1,1-Dichloroethane*	5	< 20 U	150	2.0 J	1,200	0.54 J	< 1.0 U	< 2.0 U
1,1,1-Trichloroethane*	5	< 20 U	23 J	< 4.0 U	< 200 U	< 1.0 U	< 1.0 U	< 2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	< 20 U	< 12 J	< 4.0 U	< 200 U	< 1.0 U	< 1.0 U	< 2.0 U
Acetone	50	< 200 U	< 250 U	< 20 U	< 2,000 U	< 10 U	< 10 U	< 20 U
Chloroethane	5	< 20 U	560	< 4.0 U	9,300 F1	< 1.0 U	< 1.0 U	< 2.0 U
cis-1,2-Dichloroethene*	5	450	< 25 U	< 4.0 U	< 200 U	< 1.0 U	< 1.0 U	1.9 J
Cyclohexane	NL	< 20 U	< 25 U	< 4.0 U	< 200 U	< 1.0 U	< 1.0 U	< 2.0 U
Methylene Chloride	5	9.9	< 25 U	< 4.0 U	< 200 U	< 1.0 U	< 1.0 U	< 2.0 U
Methylcyclohexane	5	< 20 U	< 25 U	< 4.0 U	< 200 U	< 1.0 U	< 1.0 U	< 2.0 U
Toluene	5	< 20 U	< 25 U	< 4.0 U	< 200 U	< 1.0 U	< 1.0 U	< 2.0 U
Vinyl chloride*	2	1,300	< 25 U	< 4.0 U	< 200 U	1.1	< 1.0 U	< 2.0 U
Xylenes, Total	5	< 40 U	< 50 U	< 8.0 U	< 400 U	< 2.0 U	< 2.0 U	< 4.0 U
Total Volatile Organic Compounds	NL	1,760	745	2.0	10,500	1.6	0	1.9

Table 4

**Summary of Groundwater Analytical Data - April 2019
Former Scott Aviation Facility
NYSDEC Site Code No. C915233
Lancaster, New York**

Sample ID	Groundwater	A1-GP18-S	MW-30	MW-35S	MW-36S	MW-42S	MW-43S	MW-44S
Date Collected	RAO/NYCRR	04/15/19	04/18/19	04/17/19	04/16/19	04/18/19	04/17/19	04/11/18
Lab Sample ID	Objective	480-151919-3	480-152222-4	480-152222-10	480-152047-4	480-152222-5	480-152222-1	480-133949-10
Volatile Organic Compounds by Method 8260 (µg/L)								
1,1-Dichloroethane*	5	< 1.0 U	< 1.0 U	< 1.0 U	0.41 J	1,600	< 4.0 U	< 1.0 U
1,1,1-Trichloroethane*	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	< 400 U	< 4.0 U	< 1.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	390 J	< 4.0 U	< 1.0 U
Acetone	50	6.5 J	5.6 J	< 10 U	< 10 U	< 4,000 U	< 40 U	< 10 U
Chloroethane	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	8,000	< 4.0 U	< 1.0 U
cis-1,2-Dichloroethene*	5	< 1.0 U	< 1.0 U	< 1.0 U	1.5	< 400 U	< 4.0 U	< 1.0 U
Cyclohexane	NL	0.52 J	< 1.0 U	< 1.0 U	< 1.0 U	< 400 U	< 4.0 U	< 1.0 U
Methylene Chloride	5	< 1.0 U	< 1.0 U	< 1.0 U	< 1.0 U	210 J	3.8 J	< 1.0 U
Methylcyclohexane	5	0.65 J	< 1.0 U	< 1.0 U	< 1.0 U	< 400 U	< 4.0 U	< 1.0 U
Toluene	5	0.58 J	< 1.0 U	< 1.0 U	< 1.0 U	370 J	< 4.0 U	< 1.0 U
Vinyl chloride*	2	< 1.0 U	0.95 J	< 1.0 U	< 1.0 U	940	< 4.0 U	< 1.0 U
Xylenes, Total	5	< 2.0 U	< 2.0 U	< 2.0 U	< 2.0 U	< 800 U	< 8.0 U	< 2.0 U
Total Volatile Organic Compounds	NL	8.3	6.6	0	1.9	11,510	3.8	0

Table 4

**Summary of Groundwater Analytical Data - April 2019
Former Scott Aviation Facility
NYSDEC Site Code No. C915233
Lancaster, New York**

Sample ID	Groundwater	MW-35D	MW-36D	MW-37D	MW-38D	MW-39D	MW-40D
Date Collected	RAO/NYCRR	04/18/19	04/16/19	04/17/19	04/16/19	04/15/19	04/16/19
Lab Sample ID	Objective	480-152222-11	480-152047-3	480-152222-8	480-152047-2	480-151919-7	480-152047-1
Volatile Organic Compounds by Method 8260 (µg/L)							
1,1-Dichloroethane*	5	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	78
1,1,1-Trichloroethane*	5	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	< 20 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	< 20 U
Acetone	50	9.3 J	< 40 U	< 10 U	< 40 U	< 40 U	< 200 U
Chloroethane	5	< 1.0 U	< 4.0 U	< 1.0 U	19	< 4.0 U	1,100
cis-1,2-Dichloroethene*	5	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	< 20 U
Cyclohexane	NL	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	< 20 U
Methylene Chloride	5	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	< 20 U
Methylcyclohexane	5	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	< 20 U
Toluene	5	< 1.0 U	< 4.0 U	< 1.0 U	2.4 J	< 4.0 U	< 20 U
Vinyl chloride*	2	< 1.0 U	< 4.0 U	< 1.0 U	< 4.0 U	< 4.0 U	< 20 U
Xylenes, Total	5	< 2.0 U	< 8.0 U	< 2.0 U	4.8 J	< 8.0 U	< 40 U
Total Volatile Organic Compounds	NL	9.3	0	0	26.2	0	1,178

Notes:

Bold font indicates the analyte was detected.

Bold font and bold outline indicates the screening criteria was exceeded.

* Site-specific Contaminants of Concern per Decision Document (December 2015). Per NYSDEC comment letter dated August 23, 2019, cis-1,2-DCE was added as a Site-specific Contaminants of Concern.

J - Analyte detected at a level less than the reporting limit and greater than or equal to the method detection limit. Concentrations within this range are estimated.

U - Not detected at or above reporting limit.

F1 - MS and/or MSD recovery is outside acceptance limits

NL - Not listed

Table 5

Summary of Trichloroethene Concentrations
Former Scott Aviation Facility Area 1 (BCP Site #C915233)
Lancaster, New York

Well ID	June 2010	August 2010	April 2011	June 1, 2011	June 16, 2011	October 2011	March 2015	June 2015	July 2015	January 2016	April 2016	July 2016	October 2016	January 2017	April 2017	July 2017	October 2017	January 2018	April 2018	July 2018	October 2018	January 2019	April 2019	TCE Reduction - Previous Sampling	TCE Reduction - Baseline Sampling
MW-30	1.4 J	1.6 J	-	-	-	-	-	-	1.1	-	ND	2.4	0.56 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-35S	ND	ND	-	-	-	-	ND	-	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-35D	ND	ND	-	-	-	-	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-36S	7.2	0.58 J	-	-	-	-	ND	-	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-36D	2.1	0.74 J	-	-	-	-	ND	-	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-37D	ND	ND	-	-	-	-	ND	-	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-39D	11,000	2,100	-	-	-	-	1.9	18 J	6.8	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-40D	2.8 J	ND	-	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-42S	-	-	13,000	-	-	-	12,000	2,700	280	-	ND	100 J	ND	ND	ND	ND	54	ND	ND	ND	ND	ND	ND	ND	ND
MW-43S	-	-	15	-	-	-	ND	-	0.60 J	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MW-44S	-	-	-	ND	-	-	-	-	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
A1-GP02-S	11,000	20,000	-	-	-	-	5,400	-	8,000	330 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
A1-GP06-S	46 J	200	-	-	-	-	0.81 J	-	18	ND	5.4 J	ND	ND	ND	ND	ND	ND	ND	7.2 J	ND	ND	ND	ND	ND	ND
A1-GP09-S	ND	0.88 J	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-	ND	ND	ND	ND	ND	ND	ND
A1-GP10-S	92	ND	-	-	-	-	6.6	ND	36	ND	ND	ND	ND	ND	ND	ND	0.47	ND	ND	ND	ND	ND	ND	ND	ND
A1-GP14-S	ND	ND	-	-	-	-	-	-	-	-	-	-	ND	-	-	-	-	ND	ND	ND	ND	ND	ND	ND	ND
A1-GP15-S	ND	ND	-	-	-	-	-	-	4.0	-	ND	ND	ND	ND	ND	ND	ND	-	ND	ND	ND	ND	ND	ND	ND
A1-GP16-S	ND	ND	-	-	-	-	-	-	-	-	-	-	-	-	-	-	ND	-	ND	ND	ND	ND	ND	ND	ND
A1-GP18-S	ND	ND	-	-	-	-	ND	-	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4 J	ND	ND	ND	ND	ND	ND	ND
CB-1	-	-	-	59	18	22	-	1.5	-	12	2.9 J	ND	ND	3.2	0.97 J	ND	0.67	19	11	0.57 J	1.2	2.0	13	increase	78%
TP-5	-	-	-	8.8	-	-	-	-	1.9	0.54 J	ND	1.4	0.87	ND	ND	1.1	1.1	0.64 J	1.2	ND	1.3	5.2	4.7	11%	87%
TP-6*	-	-	-	-	-	-	-	0.49 J	0.83 J	ND	ND	ND	ND	ND	ND	0.67	0.46	ND	ND	ND	ND	ND	ND	ND	NA

Notes:

TCE concentrations listed in µg/L.

TCE concentrations with bold outline represent baseline established prior to May 2015 injection IRM (i.e., highest concentration of TCE prior to injection IRM).

Bold TCE concentrations indicate the screening criteria of 5 µg/L was exceeded.

The injection of ABC+[®] occurred in May 2015 and is represented by a bold vertical line.

ND - Not detected at or above reporting limit.

-- Not sampled.

NA - Not available.

J - Analyte detected at a level less than the reporting limit and greater than or equal to the method detection limit. Concentrations within this range are estimated.

* No baseline established as piezometer was installed following the May 2015 injection IRM.

Table 6

**Summary of Catch basin and Temporary Piezometers Analytical Data - April 2019
Former Scott Aviation Facility
NYSDEC Site Code No. C915233
Lancaster, New York**

Sample ID	Groundwater	CB-1	TP-5	TP-6
Date Collected	RAO/NYCRR	04/12/19	04/12/19	04/12/19
Lab Sample ID	Objective	480-151837-3	480-151837-1	480-151837-2
Volatile Organic Compounds by Method 8260 (µg/L)				
1,1-Dichloroethane*	5	49	< 39 U	< 2.0 U
1,1-Dichloroethene*	5	13	< 2.0 U	< 2.0 U
1,1,1-Trichloroethane*	5	110	60	< 2.0 U
1,1,2-Trichloroethane*	5	0.47 J	< 2.0 U	< 2.0 U
1,1,2-Trichloro-1,2,2-trifluoroethane	5	110	260	< 2.0 U
Acetone	50	< 10 U	< 20 U	< 20 U
Chloroethane	5	18	9.3	< 2.0 U
cis-1,2-Dichloroethene*	5	200	81	< 2.0 U
Toluene	5	3.2	< 2.0 U	< 2.0 U
trans-1,2-Dichloroethene	5	4.8	2.2	< 2.0 U
Trichloroethene*	5	13	4.7	< 2.0 U
Vinyl chloride*	2	27	8.3	< 2.0 U
Xylenes, Total	5	3.3	< 2.0 U	< 4.0 U
Total Volatile Organic Compounds	NL	552	465	0

Notes:

Bold font indicates the analyte was detected.

Bold font and bold outline indicates the screening criteria was exceeded.

* Site-specific Contaminants of Concern per Decision Document (December 2015) and Per NYSDEC comment letter dated August 23, 2019, cis-1,2-DCE was added as a Site-specific Contaminants of Concern.

Site-specific Contaminants of Concern 1,2-Dichloroethane and tetrachloroethane were not detected above their reporting limits.

J - Analyte detected at a level less than the reporting limit and greater than or equal to the method detection limit. Concentrations within this range are estimated.

U - Not detected at or above reporting limit.

NL - Not listed.

Appendix A

Former Scott Aviation Area 1 Pre-Injection and Post-Injection Groundwater Quality Data

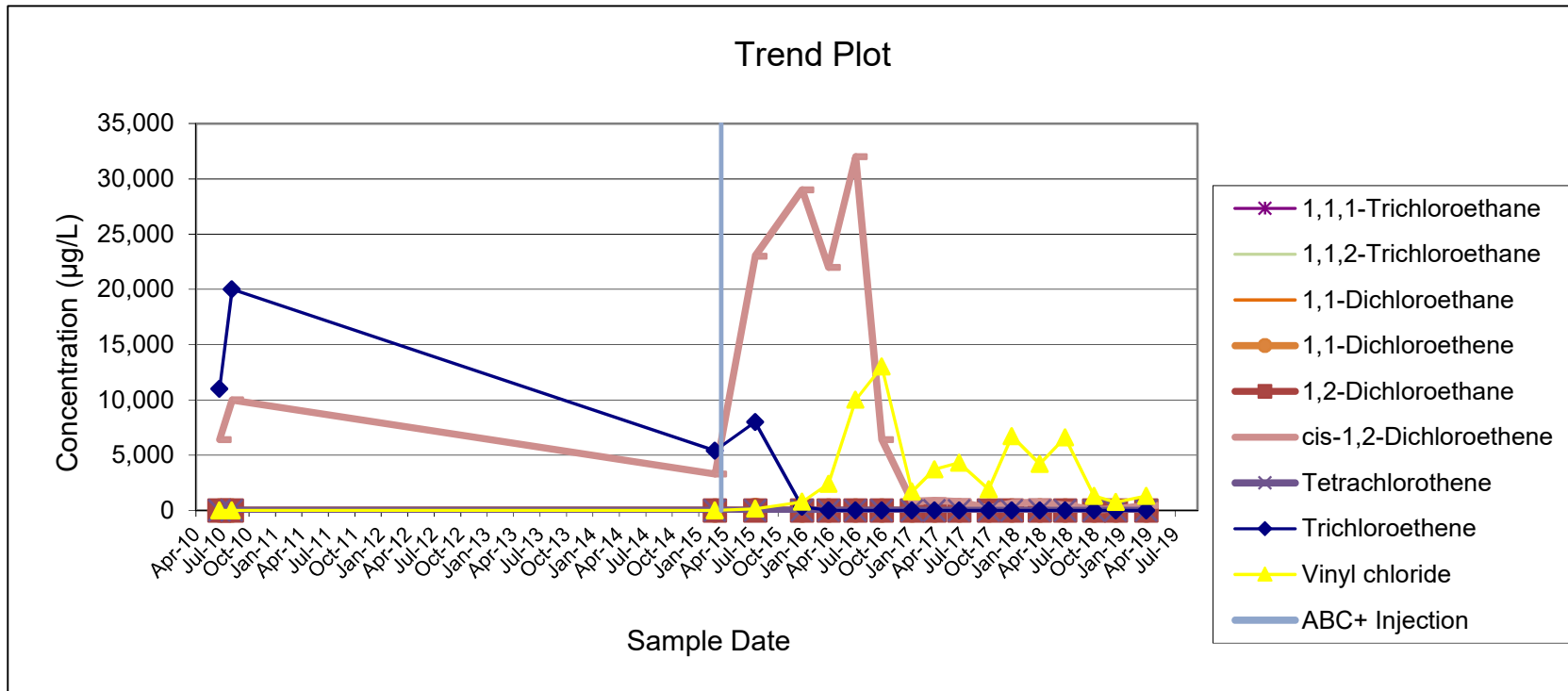
Appendix B

Former Scott Aviation Area 1 Summary of VOCs in Groundwater

MONITORING WELL A1-GP02S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/22/2010	ND	ND	ND	ND	ND	6,400	ND	11,000	ND
8/4/2010	ND	ND	ND	ND	ND	10,000	ND	20,000	ND
3/10/2015	ND	ND	ND	ND	ND	3,300	ND	5,400	ND
7/28/2015	ND	ND	ND	34	ND	23,000	ND	8,000	140
1/7/2016	ND	ND	ND	ND	ND	29,000	ND	330	770
4/8/2016	ND	ND	ND	ND	ND	22,000	ND	ND	2,400
7/11/2016	ND	ND	ND	ND	ND	32,000	ND	ND	10,000
10/10/2016	ND	ND	ND	ND	ND	6,400	ND	ND	13,000
1/23/2017	ND	ND	ND	ND	ND	810	ND	ND	1,700
4/11/2017	ND	ND	ND	ND	ND	900	ND	ND	3,700
7/6/2017	ND	ND	ND	ND	ND	790	ND	ND	4,300
10/17/2017	ND	ND	ND	ND	ND	230	ND	ND	1,900
1/5/2018	ND	ND	ND	ND	ND	680	ND	ND	6,700
4/12/2018	ND	ND	ND	ND	ND	730	ND	ND	4,200
7/9/2018	ND	ND	ND	ND	ND	460	ND	ND	6,600
10/18/2018	ND	ND	ND	ND	ND	74	ND	ND	1,300
1/2/2019	ND	ND	ND	ND	ND	150	ND	ND	750
4/18/2019	ND	ND	ND	ND	ND	450	ND	ND	1,300

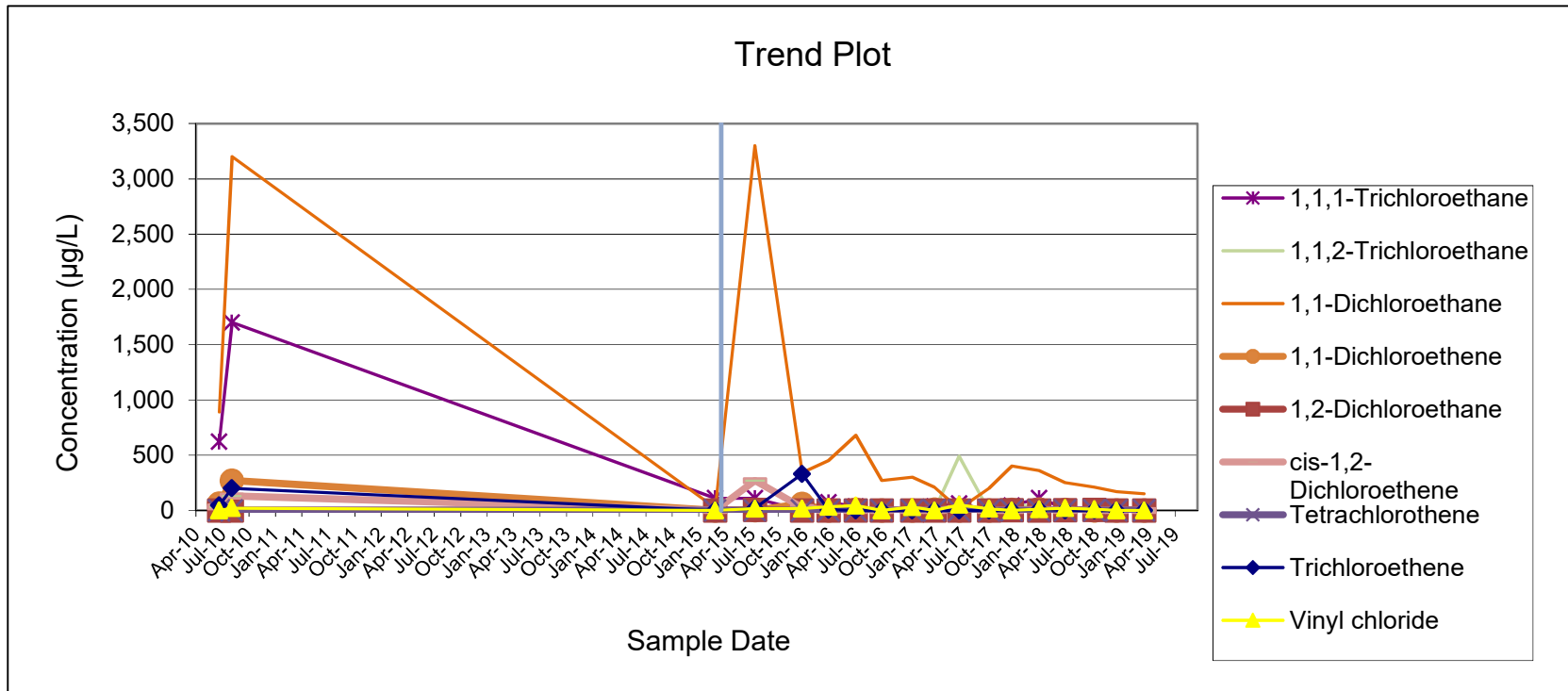
MONITORING WELL A1-GP02S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



**MONITORING WELL A1-GP06S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York**

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/21/2010	620	ND	890	63	ND	32	ND	46	ND
8/4/2010	1,700	16	3,200	270	ND	130	ND	200	20
3/11/2015	110	ND	21	ND	ND	ND	ND	0.81	ND
7/27/2015	110	4.1	3,300	0.89	3.1	270	ND	18	16
1/7/2016	ND	ND	340	60	ND	25	ND	330	16
4/8/2016	73	ND	450	ND	ND	ND	ND	5.4	33
7/12/2016	35	ND	680	7.8	ND	ND	ND	ND	44
10/10/2016	ND	ND	270	ND	ND	ND	ND	ND	ND
1/24/2017	24	ND	300	ND	ND	ND	ND	ND	29
4/11/2017	34	ND	210	6.2	ND	ND	ND	ND	ND
7/6/2017	63	490	13	ND	ND	16	ND	ND	50
10/18/2017	ND	ND	200	ND	ND	ND	ND	ND	14
1/5/2018	44	84	400	3.7	2.1	ND	ND	ND	ND
4/10/2018	110	ND	360	6.8	ND	8.2	ND	7.2	11
7/9/2018	18	ND	250	4.1	2.6	ND	ND	ND	20
10/19/2018	15	ND	210	ND	3.3	ND	ND	ND	9.9
1/4/2019	21	ND	170	ND	ND	ND	ND	ND	ND
4/10/2019	23	ND	150	ND	ND	ND	ND	ND	ND

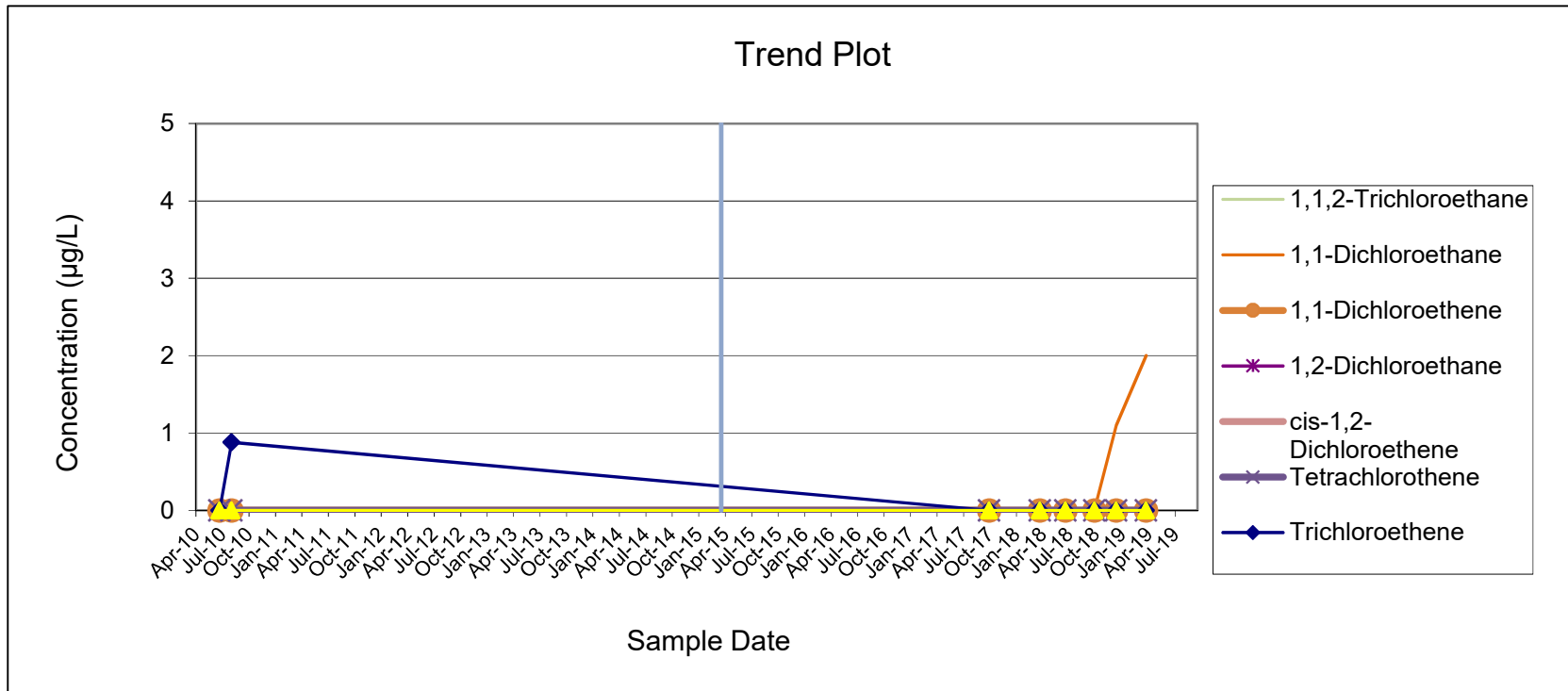
MONITORING WELL A1-GP06S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



MONITORING WELL A1-GP09S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/22/2010	ND	ND	ND	ND	ND	ND	ND	ND	ND
8/3/2010	ND	ND	ND	ND	ND	ND	ND	0.88	ND
10/18/2017	ND	ND	ND	ND	ND	ND	ND	ND	ND
4/12/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/11/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND
10/19/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/3/2019	ND	ND	1.1	ND	ND	ND	ND	ND	ND
4/17/2019	ND	ND	2.0	ND	ND	ND	ND	ND	ND

MONITORING WELL A1-GP09S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



**MONITORING WELL A1-GP10S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York**

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/21/2010	55,000	84	43,000	1,300	77	ND	1.2	92	41
8/3/2010	84,000	ND	48,000	2,000	ND	ND	ND	ND	ND
3/11/2015	1,500	1.2	440	65	1.6	7	ND	6.6	ND
6/12/2015	28,000	ND	15,000	1,000	40	190	ND	ND	ND
7/27/2015	12,000	ND	2,900	1,600	9.6	45	ND	36	ND
1/7/2016	4,900	ND	4,300	470	ND	51	ND	ND	ND
4/8/2016	1,700	ND	4,800	220	ND	ND	ND	ND	ND
7/11/2016	6,600	ND	29,000	500	72	270	ND	ND	ND
10/7/2016	360	ND	7,200	190	47	ND	ND	ND	ND
1/23/2017	ND	ND	580	ND	ND	ND	ND	ND	ND
4/10/2017	240	ND	4,100	45	ND	ND	ND	ND	690
7/6/2017	2,400	ND	9,600	380	ND	ND	ND	ND	ND
10/17/2017	23	ND	240	4	1.4	1	ND	0.47	45
1/4/2018	44	ND	600	ND	11	ND	ND	ND	85
4/10/2018	140	ND	3,900	19	18	ND	ND	ND	260
7/9/2018	530	ND	8,100	51	77	ND	ND	ND	320
10/19/2018	640	ND	1,200	ND	ND	ND	ND	ND	ND
1/4/2019	200	ND	4,400	91	ND	ND	ND	ND	260
4/15/2019	ND	ND	1,200	ND	ND	ND	ND	ND	ND

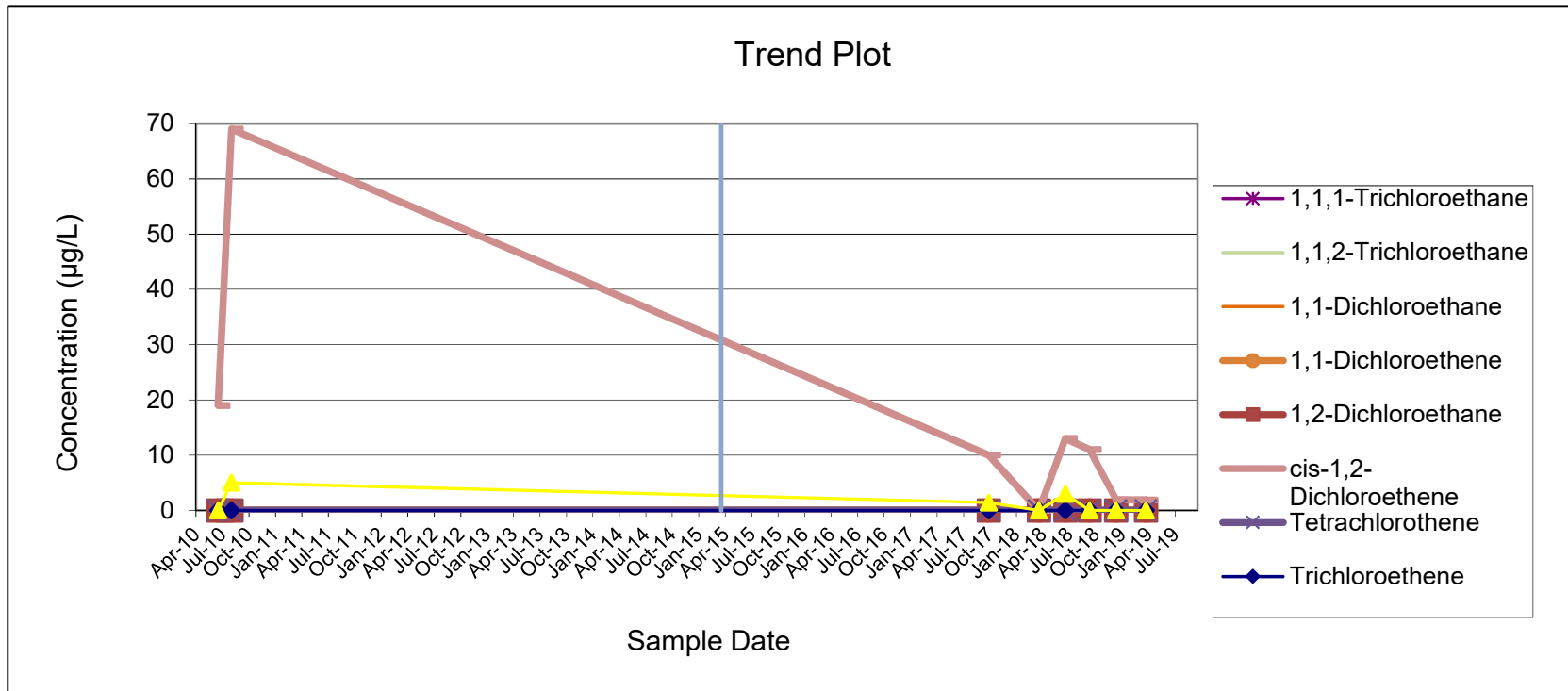
**MONITORING WELL A1-GP14S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York**

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/21/2010	ND	ND	ND	ND	ND	ND	ND	ND	4.0
8/3/2010	ND	1.0	ND	ND	ND	1	ND	ND	11.0
10/17/2017	ND	1.9	ND	ND	ND	1	ND	ND	7.9
1/4/2018	ND	ND	ND	ND	ND	ND	ND	ND	4.9
4/10/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/9/2018	ND	0.46	ND	ND	ND	ND	ND	ND	1.3
10/23/2018	ND	0.44	ND	ND	ND	ND	ND	ND	0.9
1/2/2019	ND	0.47	ND	ND	ND	ND	ND	ND	ND
4/15/2019	ND	0.54	ND	ND	ND	ND	ND	ND	1.1

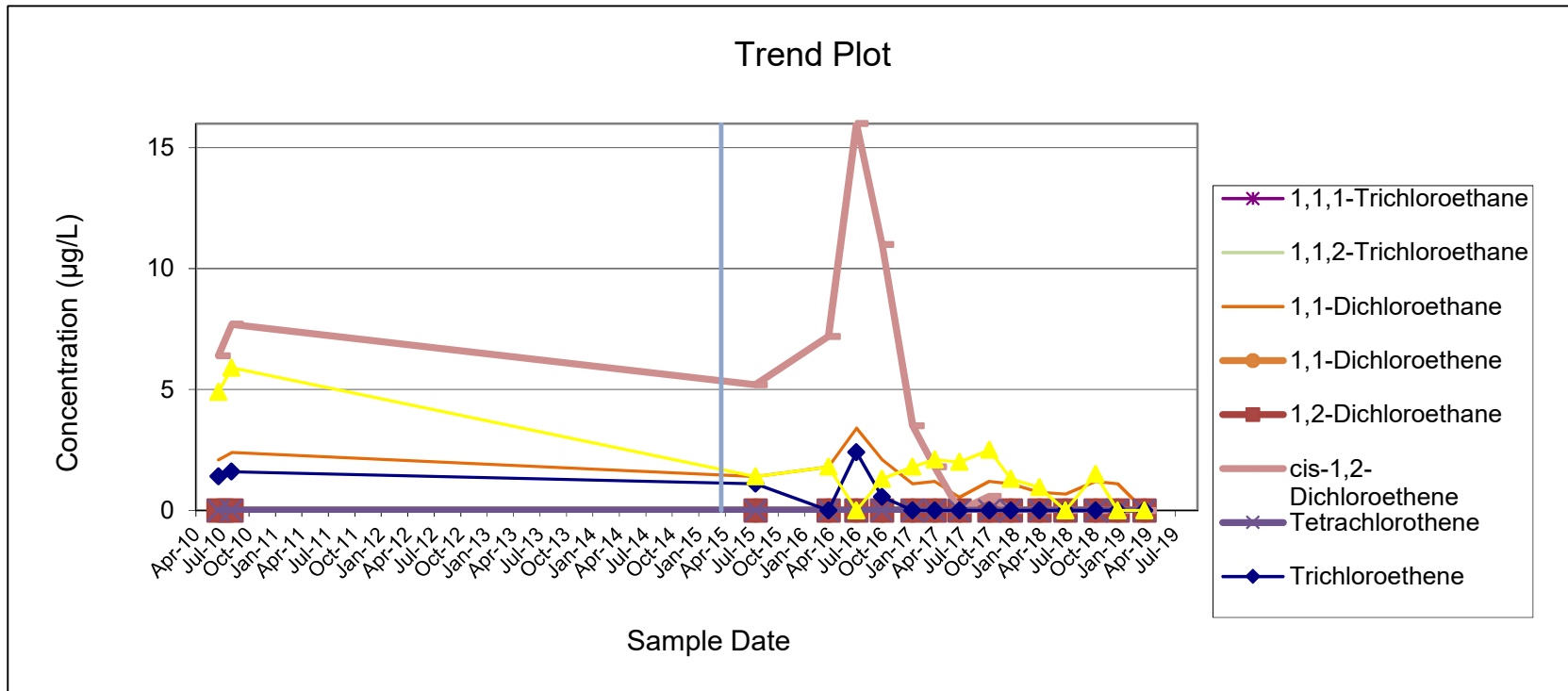
**MONITORING WELL A1-GP16S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York**

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/17/2010	ND	ND	ND	ND	ND	19	ND	ND	ND
8/2/2010	ND	ND	ND	ND	ND	69	ND	ND	5.0
10/17/2017	ND	ND	0.27	ND	ND	10	ND	ND	1.4
4/9/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/10/2018	ND	ND	0.38	ND	ND	13	ND	ND	3.0
10/2/2018	ND	ND	ND	ND	ND	11	ND	ND	ND
1/3/2019	ND	ND	ND	ND	ND	1.9	ND	ND	ND
4/17/2019	ND	ND	ND	ND	ND	1.9	ND	ND	ND

MONITORING WELL A1-GP16S
SUMMARY OF VOCs IN GROUNDWATER
 Former Scott Aviation Site
 Lancaster, New York



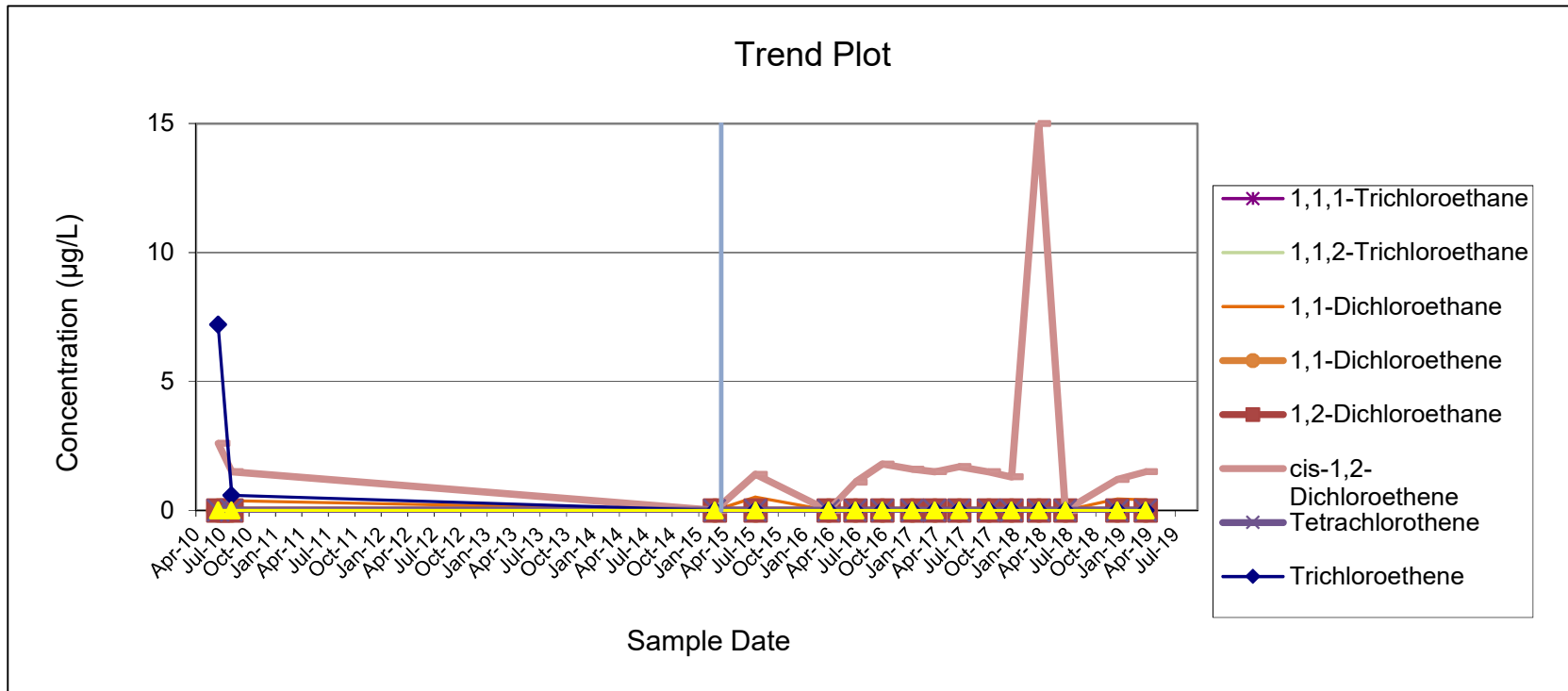
MONITORING WELL MW-30
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



MONITORING WELL MW-36S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/17/2010	ND	ND	ND	ND	ND	2.6	ND	7.2	ND
8/3/2010	ND	ND	0.38	ND	ND	1.5	ND	0.58	ND
3/10/2015	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/29/2015	ND	ND	0.52	ND	ND	1.4	ND	ND	ND
4/8/2016	ND	ND	ND	ND	ND	ND	ND	ND	ND
7/11/2016	ND	ND	ND	ND	ND	1.1	ND	ND	ND
10/12/2016	ND	ND	ND	ND	ND	1.8	ND	ND	ND
1/24/2017	ND	ND	ND	ND	ND	1.6	ND	ND	ND
4/12/2017	ND	ND	ND	ND	ND	1.5	ND	ND	ND
7/6/2017	ND	ND	ND	ND	ND	1.7	ND	ND	ND
10/17/2017	ND	ND	ND	ND	ND	1.5	ND	ND	ND
1/4/2018	ND	ND	ND	ND	ND	1.3	ND	ND	ND
4/9/2018	ND	ND	ND	ND	ND	15	ND	ND	ND
7/10/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/7/2019	ND	ND	0.44	ND	ND	1.2	ND	ND	ND
4/16/2019	ND	ND	0.41	ND	ND	1.5	ND	ND	ND

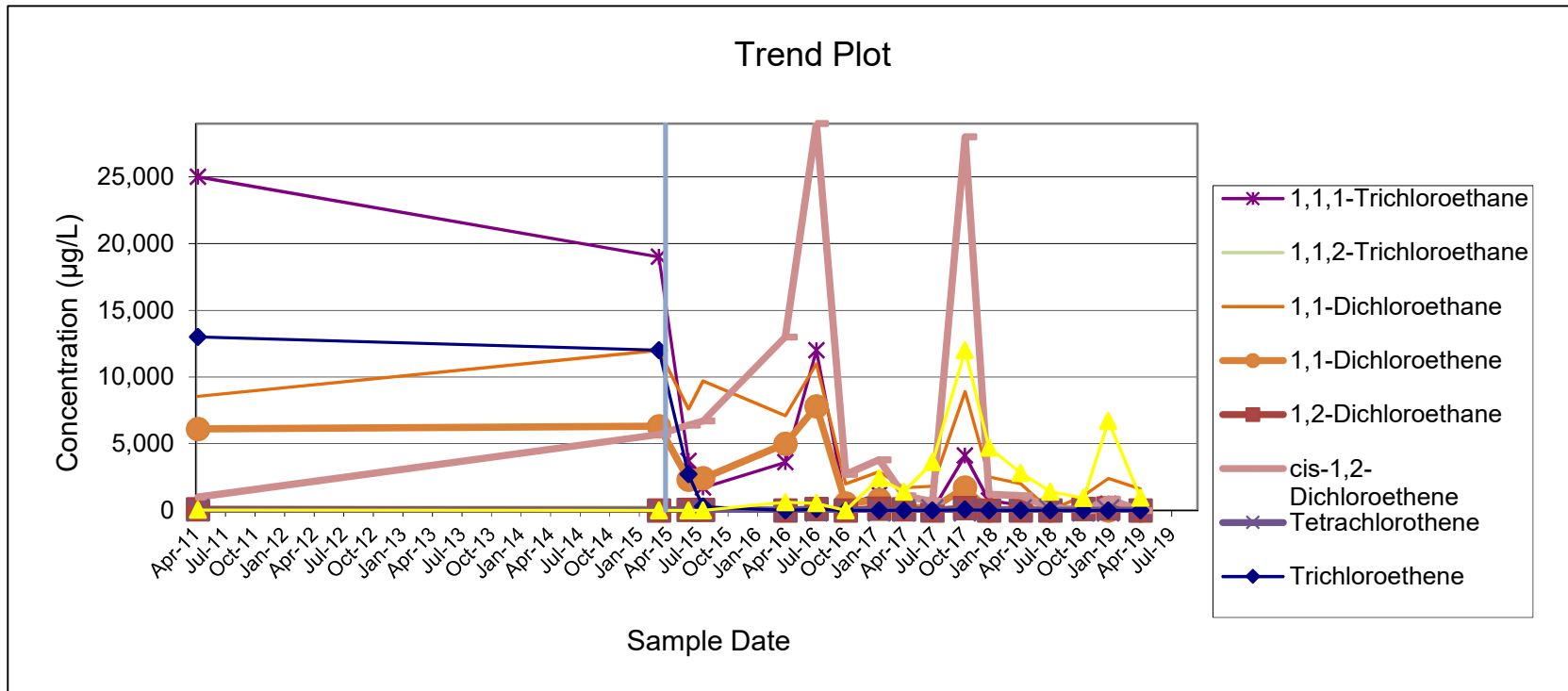
MONITORING WELL MW-36S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



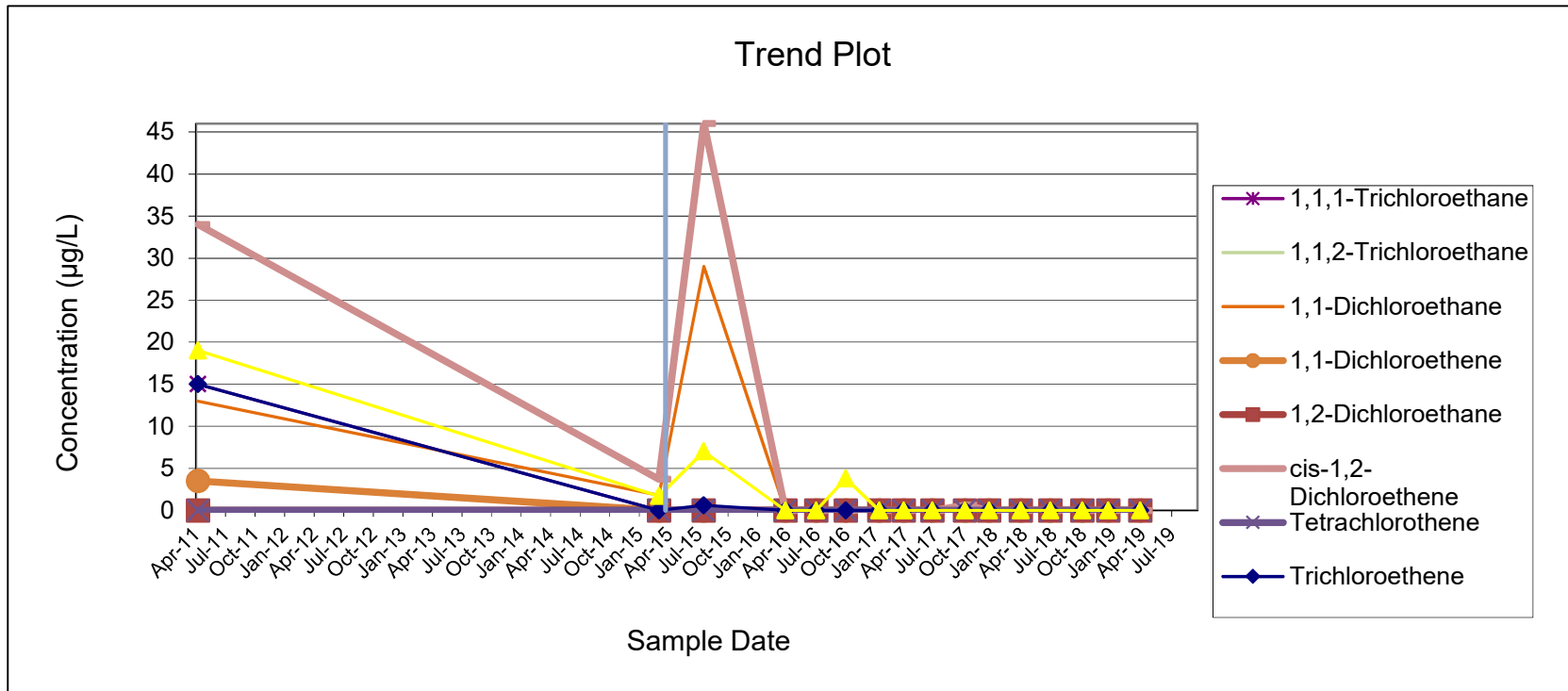
**MONITORING WELL MW-42S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York**

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
4/7/2011	25,000	240	8,550	6,100	76	1,000	6	13,000	27
3/12/2015	19,000	240	12,000	6,300	ND	5,700	ND	12,000	ND
6/12/2015	3,700	100	7,600	2,300	44	6,400	ND	2,700	ND
7/27/2015	1,700	71	9,700	2,400	44	6,700	ND	280	ND
4/8/2016	3,600	ND	7,100	5,000	ND	13,000	ND	ND	610
7/14/2016	12,000	120	11,000	7,800	110	29,000	ND	100	530
10/13/2016	440	ND	2,000	520	ND	2,700	ND	ND	ND
1/25/2017	1,200	ND	2,900	790	130	3,800	ND	ND	2,400
4/12/2017	230	ND	1,700	220	74	1,100	ND	ND	1,400
7/10/2017	ND	ND	1,800	150	ND	690	ND	ND	3,600
10/19/2017	4,100	48	8,900	1,700	170	28,000	ND	54	12,000
1/2/2018	740	ND	2,500	ND	ND	1,200	ND	ND	4,700
4/11/2018	390	ND	2,000	120	ND	1,100	ND	ND	2,800
7/12/2018	ND	ND	ND	ND	ND	210	ND	ND	1,400
10/23/2018	ND	ND	1,100	130	110	ND	ND	ND	910
1/8/2019	490	ND	2,400	ND	160	850	ND	ND	6,700
4/18/2019	ND	ND	1,600	ND	ND	ND	ND	ND	940

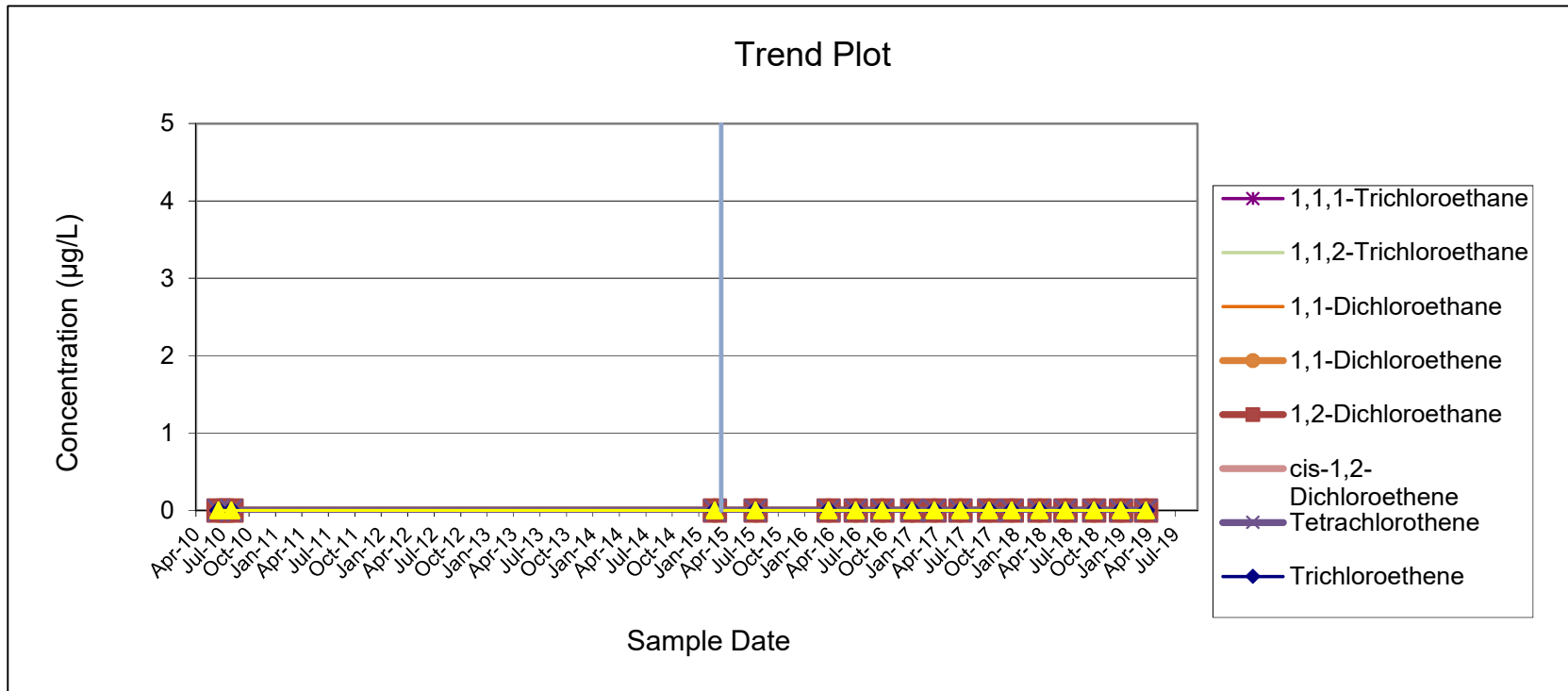
**MONITORING WELL MW-42S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York**



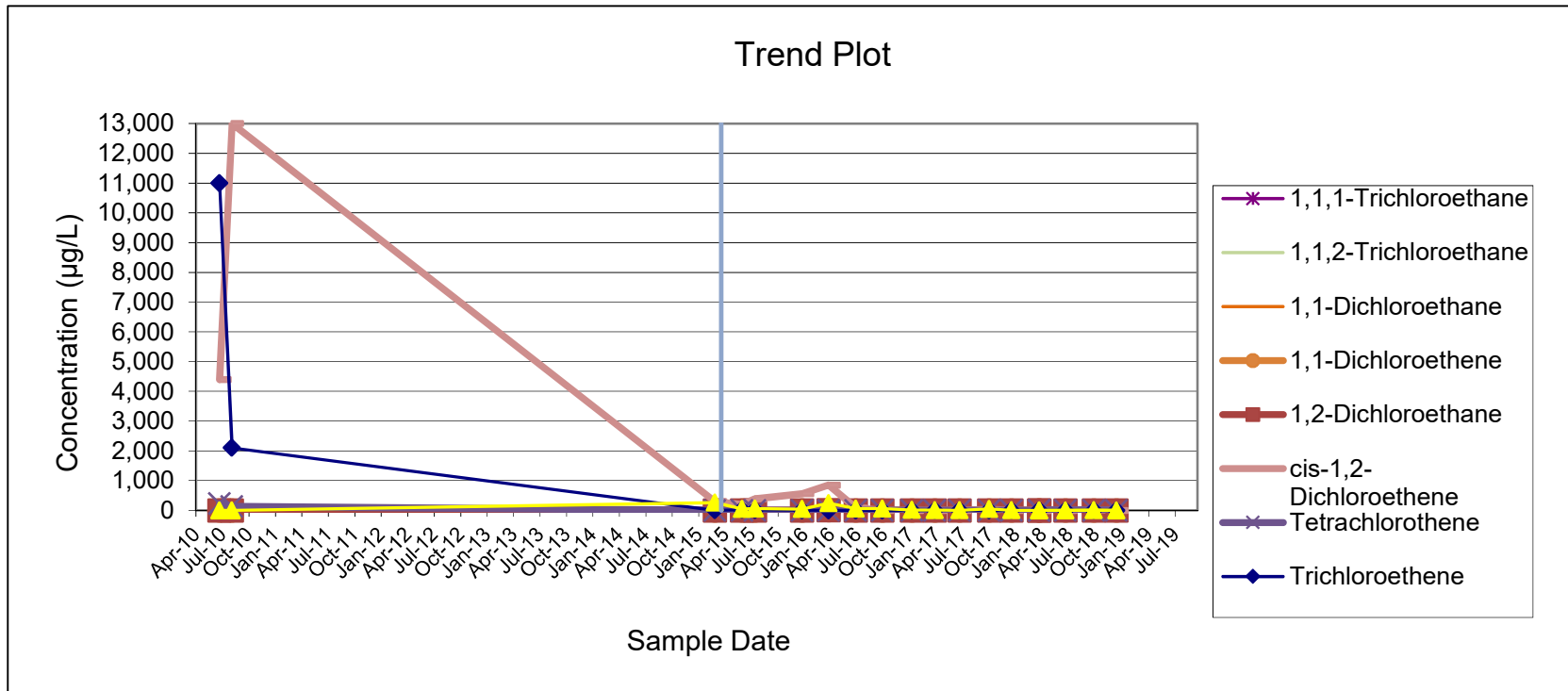
MONITORING WELL MW-43S
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



MONITORING WELL MW-37D
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



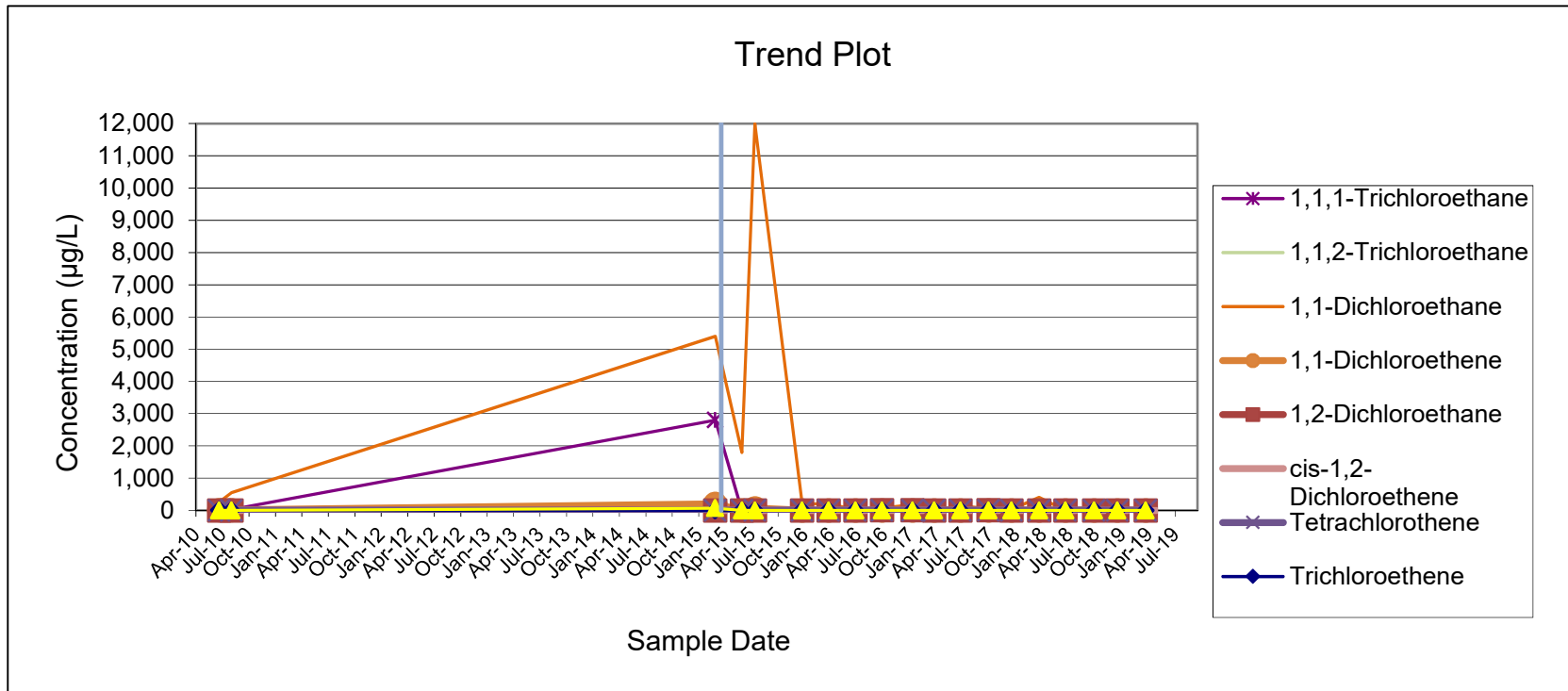
MONITORING WELL MW-38D
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



**MONITORING WELL MW-40D
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York**

Sample Date	Analytical Results (µg/L)								
	1,1,1-Trichloroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,2-Dichloroethane	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	Vinyl chloride
6/21/2010	23	ND	260	1.8	ND	1.2	ND	2.8	ND
8/3/2010	25	ND	550	6	ND	ND	ND	ND	ND
3/11/2015	2,800	ND	5,400	200	ND	ND	ND	ND	67
6/12/2015	ND	ND	1,800	ND	ND	ND	ND	ND	ND
7/27/2015	ND	ND	12,000	64	ND	ND	ND	ND	ND
1/7/2016	ND	ND	190	ND	ND	ND	ND	ND	ND
4/8/2016	ND	ND	220	ND	ND	ND	ND	ND	ND
7/11/2016	ND	ND	12	ND	ND	ND	ND	ND	ND
10/11/2016	ND	ND	71	ND	5.2	ND	ND	ND	ND
1/25/2017	ND	ND	180	ND	4.8	ND	ND	ND	ND
4/10/2017	43	ND	ND	ND	ND	ND	ND	ND	ND
7/10/2017	ND	ND	150	ND	ND	ND	ND	ND	ND
10/16/2017	ND	ND	51	ND	1.3	ND	ND	ND	0.9
1/4/2018	ND	ND	32	ND	ND	ND	ND	ND	ND
4/10/2018	20	ND	400	ND	ND	ND	ND	ND	ND
7/10/2018	ND	ND	4.6	ND	ND	ND	ND	ND	ND
10/18/2018	ND	ND	ND	ND	ND	ND	ND	ND	ND
1/7/2019	ND	ND	ND	ND	ND	ND	ND	ND	ND
4/16/2019	20	ND	78	ND	ND	ND	ND	ND	ND

MONITORING WELL MW-40D
SUMMARY OF VOCs IN GROUNDWATER
Former Scott Aviation Site
Lancaster, New York



Appendix C
Institutional Controls and Engineering Controls Certification
Form



Enclosure 2
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Site Management Periodic Review Report Notice
Institutional and Engineering Controls Certification Form



	Site Details	Box 1
Site No. C915233		
Site Name Former Scott Aviation Facility (Area 1)		
Site Address: 215 and 221 Erie Street	Zip Code: 14086	
City/Town: Lancaster		
County: Erie		
Site Acreage: <i>4.3 1/25 Acres</i>		
Reporting Period: July 01, 2017 to July 01, 2018 <i>April 12, 2018 to April 19, 2019</i>		
		YES NO
1. Is the information above correct?	<input type="checkbox"/>	X
If NO, include handwritten above or on a separate sheet.		
2. Has some or all of the site property been sold, subdivided, merged, or undergone a tax map amendment during this Reporting Period?	<input type="checkbox"/>	X
3. Has there been any change of use at the site during this Reporting Period (see 6NYCRR 375-1.11(d))?	<input type="checkbox"/>	X
4. Have any federal, state, and/or local permits (e.g., building, discharge) been issued for or at the property during this Reporting Period?	<input type="checkbox"/>	X
If you answered YES to questions 2 thru 4, include documentation or evidence that documentation has been previously submitted with this certification form.		
5. Is the site currently undergoing development?	<input type="checkbox"/>	X
		Box 2
		YES NO
6. Is the current site use consistent with the use(s) listed below? Commercial and Industrial	X	<input type="checkbox"/>
7. Are all ICs/ECs in place and functioning as designed?	X	<input type="checkbox"/>
IF THE ANSWER TO EITHER QUESTION 6 OR 7 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.		
A Corrective Measures Work Plan must be submitted along with this form to address these issues.		
_____ Signature of Owner, Remedial Party or Designated Representative		_____ Date

- | | | |
|---|--------------------------|----|
| | YES | NO |
| 8. Has any new information revealed that assumptions made in the Qualitative Exposure Assessment regarding offsite contamination are no longer valid? | <input type="checkbox"/> | X |

If you answered YES to question 8, include documentation or evidence that documentation has been previously submitted with this certification form.

- | | | |
|--|---|--------------------------|
| | X | <input type="checkbox"/> |
| 9. Are the assumptions in the Qualitative Exposure Assessment still valid?
(The Qualitative Exposure Assessment must be certified every five years) | | |

If you answered NO to question 9, the Periodic Review Report must include an updated Qualitative Exposure Assessment based on the new assumptions.

SITE NO. C915233

Description of Institutional Controls

<u>Parcel</u>	<u>Owner</u>	<u>Institutional Control</u>
104.16-5-8	AVOX Systems, Inc.	Ground Water Use Restriction Landuse Restriction Site Management Plan Soil Management Plan Monitoring Plan IC/EC Plan

An Environmental Easement was filed with the Erie County Clerk's Office on November 19, 2015. The Controlled Property may be used for commercial and industrial use as long as the following long-term institutional controls are employed: (1) restrict the use of site groundwater as a source of potable or process water without necessary water quality treatment as determined by the NYSDOH or Erie County Department of Health; (2) all future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the Site Management Plan; and (3) monitoring to assess the performance and effectiveness of the remedy must be conducted as defined in the Site management Plan.

104.16-5-9	AVOX Systems, Inc.	Soil Management Plan Monitoring Plan IC/EC Plan Ground Water Use Restriction Landuse Restriction Site Management Plan
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An Environmental Easement was filed with the Erie County Clerk's Office on November 19, 2015. The Controlled Property may be used for commercial and industrial use as long as the following long-term institutional controls are employed: (1) restrict the use of site groundwater as a source of potable or process water without necessary water quality treatment as determined by the NYSDOH or Erie County Department of Health; (2) all future activities on the property that will disturb remaining contaminated material must be conducted in accordance with the Site Management Plan; and (3) monitoring to assess the performance and effectiveness of the remedy must be conducted as defined in the Site management Plan.

Description of Engineering Controls

None Required

Not Applicable/No EC's

Periodic Review Report (PRR) Certification Statements

1. I certify by checking "YES" below that:

a) the Periodic Review report and all attachments were prepared under the direction of, and reviewed by, the party making the certification;

b) to the best of my 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

YES NO

X

2. If this site has an IC/EC Plan (or equivalent as required in the Decision Document), for each Institutional or Engineering control listed in Boxes 3 and/or 4, I certify by checking "YES" below that all of the following statements are true:

(a) the Institutional Control and/or Engineering Control(s) employed at this site is unchanged since the date that the Control was put in-place, or was last approved by the Department;

(b) nothing has occurred that would impair the ability of such Control, to protect public health and the environment;

(c) access to the site will continue to be provided to the Department, to evaluate the remedy, including access to evaluate the continued maintenance of this Control;

(d) nothing has occurred that would constitute a violation or failure to comply with the Site Management Plan for this Control; and

(e) if a financial assurance mechanism is required by the oversight document for the site, the mechanism remains valid and sufficient for its intended purpose established in the document.

YES NO

X

IF THE ANSWER TO QUESTION 2 IS NO, sign and date below and DO NOT COMPLETE THE REST OF THIS FORM. Otherwise continue.

A Corrective Measures Work Plan must be submitted along with this form to address these issues.

Signature of Owner, Remedial Party or Designated Representative

Date

IC CERTIFICATIONS
SITE NO. C915233

Box 6

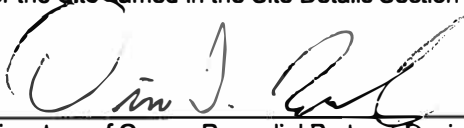
SITE OWNER OR DESIGNATED REPRESENTATIVE SIGNATURE

I certify that all information and statements in Boxes 1, 2, and 3 are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

I Dino Zack, P.G. at AECOM, 257 West Genesee St., Buffalo, NY 14202.
print name print business address

am certifying on behalf of Scott Figgie LLC (Owner or Remedial Party)

for the Site named in the Site Details Section of this form.



Signature of Owner, Remedial Party, or Designated Representative
Rendering Certification

January 29, 2020
Date