DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
INSTALLATION RESTORATION PROGRAM
NIAGARA FALLS AIR RESERVE STATION

AFCEC/CZOE
2405 Franklin Drive
Niagara Falls, NY 14304-5063

April 26, 2022

MEMO TO: Distribution

Re: Transmittal of Final Remedial Injection Work Plan, Niagara Falls Air Reserve Station, New York

Seres-Arcadis SB JV, LLC is pleased to present our Final Remedial Injection Work Plan for Niagara Falls ARS, New York, Northeast Group ORC.

Sincerely,

MAIRS.LINDSAY.LEE.1589783227 Digitally signed by MAIRS.LINDSAY.LEE.1589783227 Date: 2022.04.26 11:38:53 -04'00'

LINDSAY MAIRS
Remedial Project Manager

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U.S. Army Corps of Engineers, Baltimore District

Final Remedial Injection Work Plan

Site 5 (DS004) and Site 10 (FT005)
Niagara Falls Air Reserve Station
Niagara Falls, New York

Northeast Group Optimized Remediation Contract
Contract W912DR-19-D-0009
Delivery Order W912DR-20-F-0483

April 2022

Final Remedial Injection Work Plan

Site 5 (DS004) and Site 10 (FT005)
Niagara Falls Air Reserve Station, Niagara Falls, New York

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April 2022

Prepared By:
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Prepared For:
U.S. Air Force Civil Engineer Center and
U.S. Army Corps of Engineers,
Baltimore District

Our Ref:
30036646

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Acronyms and Abbreviations

% v/v	percent by volume
AFCEC	U.S. Air Force Civil Engineer Center
bgs	below ground surface
cis-1,2-DCE	cis-1,2-dichloroethene
CM	corrective measure
COC	constituent of concern
CVOC	chlorinated volatile organic compound
DPT	direct-push technology
EA	EA Engineering P.C. and its affiliate EA Science and Technology, Inc.
ERD	enhanced reductive dechlorination
EZVI	emulsified vegetable oil and zero valent iron
GPS	Groundwater Protection Standards
IDW	investigation-derived waste
NYSDEC	New York State Department of Environmental Conservation
ORC	Optimized Remediation Contract
QAPP	Quality Assurance Project Plan
ROI	radius of influence
SERES-Arcadis JV	SERES-Arcadis 8(a) Joint Venture 2, LLC
trans-1,2-DCE	trans-1,2-dichloroethene
TCE	trichloroethene
USACE	United States Army Corps of Engineers
USEPA	United States Environmental Protection Agency
VC	vinyl chloride
Versar	Versar, Inc.
VOC	volatile organic compound

1 Introduction

On behalf of the Air Force Civil Engineer Center (AFCEC) and the United States Army Corps of Engineers, Baltimore District, SERES-Arcadis SB JV, LLC (JV) prepared this Remedial Injection Work Plan for the Niagara Falls Air Reserve Station located in Niagara Falls, New York (Figure 1-1). The AFCEC and USACE retained SERES-Arcadis JV to provide remedial action support under the Multiple Award Environmental Services Northeast Group Optimized Remediation Contract (ORC) No. W912DR-19-D-0009, Task Order No. W912DR-20-F-0483. As part of the ORC, enhanced reductive dechlorination (ERD) will be conducted to treat remaining chlorinated volatile organic compound (CVOC) impacts in overburden and shallow bedrock groundwater at Site 5 (DS004) and Site 10 (FT005) at NFARS. The work proposed in this Remedial Injection Work Plan will be managed under the U.S. Department of Defense Installation Restoration Program and in compliance with the requirements of an Order on Consent and Administrative Settlement (Site No. 932106, Index No. R9-20150902-65; New York State Department of Environmental Conservation [NYSDEC] 2016). The remainder of this section provides background information on Sites 5 and 10, including previous remedial injection events performed at the sites.

1.1 Site 5 (DS004)

Site 5 (Figure 1-2) was the primary launching site for Boeing Michigan Aeronautical Research Center surface-to-air missiles. The missiles were positioned at launcher pits equipped with adjacent launcher shelters. When the missiles were decommissioned, the walls, roof, and associated machinery of the launcher shelters were pushed into the launcher pits and buried with soil. Site 5 currently includes vehicle maintenance buildings and a petroleum, oil, and lubricant storage area for JP-8 jet fuel.

Investigations at Site 5 were initiated after discovery of CVOC contamination in soil near missile Shelters F-5 and continued when CVOC contamination was also observed in downgradient groundwater near missile Shelter F-6 (EA Engineering P.C. and its affiliate EA Science and Technology, Inc. [EA] 2018). In response to the various investigations performed at Site 5, in-situ bioremediation (injection of hydrogen into the subsurface) corrective measures (CMs) were performed in 2001, 2002, and 2006, followed by long-term groundwater monitoring. The injections were effective in reducing CVOC concentrations (particularly trichloroethene) in groundwater, but complete dechlorination of cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride (VC) did not occur.

Based on the results of the prior CMs, two additional injection events were completed at Site 5 in 2015 and 2018 using an emulsified vegetable oil and zero valent iron substrate (EZVI). Approximately 23,700 gallons of EZVI were injected into 69 overburden direct-push technology (DPT) injection points, targeting a depth interval of 12 to 16 feet below ground surface (bgs) in September 2015 (Versar Inc. [Versar] and EA 2016). That CM also included the injection of approximately 400 gallons of EZVI into four bedrock core holes (CH5-01 through CH5-04) to target CVOCs in the fractured shallow bedrock. A second CM was performed in June 2018 and included the injection of approximately 9,400 gallons of EZVI into 29 overburden DPT points, targeting a depth interval of 10 to 17 feet bgs. A total of 150 gallons of EZVI were also injected into bedrock core holes CH5-01, CH5-02, and CH5-03. Performance monitoring of the 2015 and 2018 injections indicated that the injections had a positive effect on groundwater quality; however, the concentrations of certain CVOCs remain greater than applicable Groundwater Protection Standards (GPS) in certain wells. Table 1-1 presents the groundwater data for the December 2020 sampling event. As indicated therein, CVOC concentrations greater than GPS were detected in overburden wells RW5-1 and RW5-2, and shallow bedrock wells MW5-1DA and MW5-5D (Table 1-1). Trend charts for the eight

most recent eight sampling events are provided in Appendix A. A review of the historical groundwater data indicates that the primary constituents of concern (COCs) at Site 5 are cis-1,2-DCE, trans-1,2-dichloroethene (trans-1,2-DCE), trichloroethene (TCE) and VC. Benzene and toluene were also detected in certain wells at concentrations above the GPS, although at a lower frequency. Additional information regarding the groundwater quality at Site 5 is provided in the 2020 Annual Comprehensive Sampling/Monitoring Report (SERES-Arcadis JV. 2021a).

1.2 Site 10 (FT005)

Operations at the Site 10 fire training area (Figure 1-3) included burning waste oil, solvents, and jet fuel as part of fire-training exercises from 1955 to 1963. The former burn pit was approximately 100 feet in diameter. Site 10 is currently unused and is covered with heavy grass and weed growth. Surface drainage flows to the south toward Cayuga Creek or to the west toward a drainage ditch that flows into Cayuga Creek.

Several CMs were completed in 1996 (six-phase soil heating), 1998 (groundwater extraction via collection trench), and 2002 (addition of a vertical groundwater extraction well). A groundwater treatment system (which treated volatile organic compounds [VOCs] using an air stripper system) operated from 2002 to 2015 to extract and treat groundwater from the former fire pit source area (EA 2018). That system was taken offline in 2015 in preparation for an injection event. Approximately 7,900 gallons of EZVI were injected into 24 overburden DPT injection points in September 2015, at depths of 8 to 9 feet bgs targeting the depth interval immediately above bedrock (Versar and EA 2016). A second injection event was performed in June 2018 to address remaining CVOCs in groundwater. Approximately 3,900 gallons of EZVI were injected into nine overburden DPT points at depths of 7 to 10 feet bgs (Versar and EA 2018). While those injections had a positive effect on groundwater quality, concentrations of certain COCs remain greater than the GPS in certain wells, as indicated in the December 2020 groundwater data for Site 10 (Table 1-2). Trend charts for the eight most recent eight sampling events are provided in Appendix A. A review of the historical groundwater data indicates that the primary constituents of concern (COCs) at Site 10 are cis-1,2-DCE, trans-1,2- DCE, TCE, VC and benzene. Other constituents were also detected in certain wells at concentrations above the GPS, although at a lower frequency. For example, toluene and 2-hexanone exceeded the GPS at one well (MW10-10D) in Fall 2020. Additional information regarding the groundwater quality at Site 10 is provided in the 2020 Annual Comprehensive Sampling/Monitoring Report (SERES-Arcadis JV. 2021a).

2 Proposed Remedial Injection Activities

This section provides information regarding the technical approach for the proposed remedial injections at Sites 5 and 10. ERD of CVOCs in groundwater will be augmented by in-situ application of an organic carbon substrate. Specifically, a dilute organic carbon solution will be injected via DPT injection points and (for Site 5 only) existing bedrock core holes to treat CVOCs in overburden and shallow bedrock groundwater.

2.1 Carbon Substrate Selection

ABC-Olé was selected as the organic carbon substrate for remedial injection. ABC-Olé is produced by Redox Tech, LLC and contains a mixture of fatty acids, glycerol, hydrolyzed vegetable oil, emulsifying agent, and dipotassium phosphate. The safety data sheet for ABC-Olé is provided in Appendix B. As the injected carbon substrate degrades in-situ, the soluble components (i.e., lactate and alcohols) are quickly fermented, rapidly driving aquifer geochemistry to reducing conditions. The vegetable oil and fatty acid esters then serve as long-term, slow-releasing sources of organic carbon that feed indigenous bacteria for months to years and sustain CVOC degradation. ABC-Olé also contains a phosphate buffer for pH control and provides essential micronutrients for successful bioremediation.

2.2 Injection and Carbon Loading

A two (2) to five (5) percent by volume (% v/v) solution of ABC-Olé will be used during the proposed injection event. The target radius of influence (ROI) for each DPT point is five (5) feet, with a target treatment thickness of four (4) feet. The volume of solution required to reach the target ROI at each DPT point is determined by the following equation:

$$V = \pi \times ROI^2 \times h \times \theta_m \times 7.48$$

Where:

V = volume of injection (gallons)

ROI = target ROI (five [5] feet)

h = target interval thickness (four [4] feet)

θ_m = mobile porosity (assumed to be 10 percent)

7.48 = conversion factor (gallons per cubic foot).

Based on the assumptions listed above, the target volume for each DPT injection point is 240 gallons of dilute organic carbon substrate.

While the above equation is appropriate for calculating injection volumes in porous media, it is not used to calculate injection volumes for fractured bedrock. As a result, up to 1,000 gallons of dilute organic carbon substrate will be injected into each of three bedrock core holes (CH5-01, CH5-02, and CH5-03) at Site 5 to provide excess organic carbon to expedite treatment of CVOCs in fractured bedrock groundwater.

2.3 Injection Procedure

Prior to injection activities, a private utility locating company will be contracted to survey for underground utilities near the proposed injection areas at each site. The proposed DPT injection areas will be surveyed with ground-penetrating radar and magnetic locating equipment to identify utilities that are not shown in existing documentation (if any). Although not anticipated based on prior injections at Sites 5 and 10, modifications to the number and/or location of injection points (and the resultant injection volumes) may be appropriate if underground utilities are identified near the proposed DPT injection points.

Upon completion of the utility clearing activities, individual DPT points will be hand cleared to 5 feet bgs. DPT injection points will then be advanced to terminal depth immediately above bedrock (approximately 10 to 15 feet bgs). Upon reaching the top of bedrock, the drill rod will then be retracted, exposing a 4-foot screen through which the organic substrate will be injected. Injection activities will initially be attempted under gravity-feed conditions. However, if reasonable flow rates cannot be achieved, an injection pump may be used to apply low pressure to increase flow rates. If required, injection pressures less than 20 pounds per square inch will be used to minimize the potential for daylighting and/or the formation of preferential flow paths. Arcadis will continually monitor the injection points and surrounding area for daylighting during the injection activities. If daylighting is observed, Arcadis will either: (1) reduce the exposed screen length; (2) abandon injection at the responsible point(s) and a new point(s) will be advanced; or (3) additional volume may be injected into previously planned points. Therefore, the total number and location of injection points and injection volumes may be adjusted based on observed field conditions to ensure sufficient distribution of the ABC-Olé solution over the specified treatment areas.

Arcadis will coordinate with the on base fire station to identify a source of potable mixing water to support the injection activities. The carbon solution will be delivered to the DPT points and core holes via a modular system that uses either batch-style or in-line mixing. . Each injection wellhead will be equipped with a flow-control valve, flow totalizer, and pressure gauge to monitor and control the injection flow rate and pressure. Wellhead pressure, flow rate, total volume, and substrate dosing will be monitored, recorded, and adjusted (if necessary) based on observed field conditions. Routine measurements of field parameters will also be recorded at monitoring wells adjacent to the injection points (i.e., MW5-5D, RW5-1, and RW5-2 at Site 5 and MW10-7 and MW10-10D at Site 10). Additional details regarding the specific injection locations and activities that will be performed at Sites 5 and 10 are provided in the following sections.

2.3.1 Site 5 (DS004)

The proposed injection locations at Site 5 are shown on Figure 2-1 and the proposed injection details are presented in Table 2-1. The injections will target CVOC concentrations greater than the GPS near wells MW5-5D, RW5-1, and RW5-2. Currently, no injections are planned directly adjacent to well MW5-1DA to address groundwater concentrations observed during the December 2020 sampling event. This data for the Spring and Fall 2021 sampling events will be evaluated to determine if the increase in CVOC concentrations during the December 2020 sampling event was an anomaly or a trend meriting future action.

As indicated on Figure 2-1, injections will be performed into a total of 10 DPT points, with five DPT points each hydraulically upgradient of wells RW5-1 and RW5-2. DPT points will be spaced approximately 10 feet apart (five-foot ROI), with an anticipated treatment interval of four (4) feet at a depth of 11 to 15 feet bgs. As previously noted, approximately 240 gallons of dilute carbon solution will be injected into each DPT point. In addition, approximately 1,000 gallons of dilute solution will be injected into shallow bedrock core holes CH5-01, CH5-02,

and CH5-03. Therefore, the total anticipated injection volume at Site 5 is 8,520 gallons; assuming a 3% v/v ABC-Olé solution, the total carbon loading at Site 5 is approximately 2,090 pounds of ABC-Olé.

2.3.2 Site 10 (FT005)

The proposed injection locations at Site 10 are shown on Figure 2-2 and the proposed injection details are presented in Table 2-1. CVOC concentrations greater than GPS were observed in overburden well MW10-7; shallow bedrock wells MW10-1DA, MW10-4D, MW10-9D, MW10-10D, and PW10-2, and deep bedrock well MW10-4E during the December 2020 sampling event (Table 1-2). The proposed injections will target CVOC concentrations in groundwater greater than GPS near monitoring wells MW10-7 and MW10-10D. The proposed injections will be performed into a total of 13 DPT injection points hydraulically upgradient of wells MW10-7 (five points) and MW10-10D (eight points). Consistent with Site 5, the DPT points will be spaced approximately 10 feet apart (five-foot ROI), with an anticipated treatment interval of four (4) feet at a depth of six (6) to 10 feet bgs. Approximately 240 gallons of dilute carbon solution will be injected into each DPT point, for a total anticipated injection volume at Site 10 of 3,120 gallons. Assuming a 3% v/v ABC-Olé solution, the total carbon loading at Site 10 will be approximately 765 pounds of ABC-Olé.

2.4 Performance Monitoring

Table 2-2 presents the proposed ERD performance monitoring program. When appropriate, the performance monitoring at Site 5 and Site 10 will be performed concurrently with the semi-annual or annual monitoring events currently performed at Sites 5 and 10 under the Installation Wide Groundwater Monitoring Program and in accordance with the requirements of the Quality Assurance Project Plan (QAPP; SERES-Arcadis JV 2021b). The proposed performance monitoring network at Site 5 will include bedrock well MW5-5D and overburden wells RW5-1 and RW5-2. The proposed performance monitoring network at Site 10 will include overburden wells MW10-7 and PW10-1 and shallow bedrock wells MW10-1DA, MW10-10D, and MW10-11D. Groundwater from each well will be collected using passive diffusion bags, submitted to ALS Environmental Laboratories (ALS), and analyzed for VOCs by United States Environmental Protection Agency (USEPA) Method 8260C, dissolved gases (methane, ethene, and ethane) by Method RSK-175, and total organic carbon by USEPA Method 9060A. ERD performance monitoring will occur quarterly for one (1) year, after which the monitoring at the above-listed wells will revert to the monitoring frequency specified in the 2020 Annual Comprehensive Groundwater Monitoring/Sampling Report (SERES-Arcadis JV 2021a).

2.5 Investigation-Derived Waste

All investigation-derived waste (IDW) generated during the injection and sampling activities (including hand auger soil cuttings, drilling fluids, purge water, decontamination water, and disposable waste materials) will be placed in 55-gallon drums. Disposable waste materials include used personal protective equipment (e.g., gloves), non-dedicated sampling materials (i.e., tubing), and other waste. All IDW drums will be appropriately labeled and temporarily stored onsite pending receipt of analytical results. IDW samples will be collected and submitted to ALS for analysis using toxicity characteristic leaching procedure for VOCs by USEPA Method 1311. Upon receipt of analytical results, the drums will be sent off-site for disposal in accordance with applicable state and federal regulations. Non-impacted, disposable materials will be properly disposed of as general refuse.

3 Schedule and Reporting

The remedial actions will be conducted in accordance with the QAPP (SERES-Arcadis JV 2021b) and the Accident Prevention Plan (SERES-Arcadis JV 2021c). While the Site Management Plan (EA 2021) typically requires community air monitoring for all intrusive activities, the proposed injection activities include advancing direct-push tooling and applying ABC-Olé via gravity flow and/or pressure injection (if needed) to the subsurface. The activities do not include excavation of soil, which mitigates dust generation and (if utilized) the positive pressure of the ABC-Olé injection mitigates the potential for vapor release. As a result, community air monitoring will not be required during the remedial injection event.

The proposed injection activities are anticipated to be performed in 2022, pending approval of this Remedial Injection Work Plan, and are anticipated to take approximately 1 to 2 weeks. The results of the injection event, including actual DPT locations, depth intervals, injection volumes, and injection monitoring results, will be included in a subsequent injection summary memorandum, anticipated to be submitted within 90 days of the conclusion of the event. Performance monitoring data will subsequently be summarized and evaluated in the Annual Report, as required by the Site Management Plan (EA 2021).

4 References

EA. 2018. Additional Remedial Injections at Site 5 (DS004), Site 8 (DS002), and Site 10 (FT005). Niagara Falls Air Reserve Station, Niagara, New York. March.

EA. 2021. Site Management Plan. Niagara Falls Air Reserve Station. Niagara Falls, New York. June.

NYSDEC. 2016. Order on Consent and Administrative Settlement. Site Name: 914 Tactical Airlift Group. Site No.: 932106. Index No.: R9-20150902-65. August 22.

SERES-Arcadis JV. 2021a. Draft Final 2020 Annual Comprehensive Sampling/Monitoring Report, Installation-Wide Groundwater Monitoring Program, Niagara Falls Air Reserve Station. Niagara Falls, New York. October.

SERES-Arcadis JV. 2021b. Draft Quality Assurance Project Plan, Niagara Falls Air Reserve Station. Niagara Falls, New York. May.

SERES-Arcadis JV. 2021c. Draft Internal Accident Prevention Plan, Northeast Group Optimized Remediation Contract, Niagara Falls Air Reserve Station, New York, Contract W912DR-19-D-0009, Delivery Order W912DR-20-F-0483. June.

Versar and EA. 2016. Remedial Action Injection Summary Memorandum Sites FT005, LF008, ST010, SS014, DS002, and DS004 Niagara Falls Air Reserve Station, New York. January.

Versar and EA. 2018. 2018 Remedial Action Injection Summary Memorandum Sites FT005–Site 10, ST010–Site 13, DS002–Site 8, and DS004–Site 5. Niagara Falls Air Reserve Station, Niagara, New York. August.

Tables

Table 1-1
Site 5 (DS004) December 2020 Groundwater Analytical Results
Remedial Injection Work Plan
Site 5 (DS004) and Site 10 (FT005), Niagara Falls Air Reserve Station
Niagara Falls, New York

Analyte	Screening Criteria[a]	Location ID Sample Name Sample Date Parent Sample	MW5-1DA MW5-1DA-121020 12/10/2020	MW5-5D MW5-5D-121020 12/10/2020	MW5-6 MW5-6-121020 12/10/2020	RW5-1 RW5-1-121020 12/10/2020	RW5-2 RW5-2-121020 12/10/2020	RW5-4 RW5-4-121020 12/10/2020
Volatile Organic Compounds Detected by Method 8260C[b]								
Acetone	50	µg/L	--	--	**5.3 BJ+**	--	--	--
Benzene	1	µg/L	--	--	--	--	--	**0.43 J**
Chloroethane	5	µg/L	--	--	--	**2.5**	--	--
Cis-1,2-Dichloroethene	5	µg/L	**53.3**	**8 J**	**2.3**	**1.5**	**0.91 J**	**1.2**
Toluene	5	µg/L	--	--	**1.7**	**18.9**	--	**1.6**
Trans-1,2-Dichloroethene	5	µg/L	--	**23.4**	**0.42 J**	**0.38 J**	--	--
Trichloroethene	5	µg/L	--	--	--	**0.95 J**	--	--
Vinyl chloride	2	µg/L	**5.4**	**132**	--	**4.1**	**2.9**	--

Notes:
[a] New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.
[b] Only compounds with at least one detect are presented.

1. Bold values denote detections.
2. Shaded cells exceed the screening value.

Acronyms and Abbreviations:
-- = not detected
µg/L = microgram per liter
MW = monitoring well
RW = recovery well

Qualifiers:
BJ+ = Result is estimated and may be biased high due to blank contamination.
J = Analyte detected, estimated concentration.

Table 1-2
Site 10 (FT005) December 2020 Groundwater Analytical Results
Remedial Injection Work Plan
Site 5 (DS004) and Site 10 (FT005), Niagara Falls Air Reserve Station
Niagara Falls, New York

Analyte	Screening Criteria[a]	Location ID Sample Name Sample Date Parent Sample	MW10-1DA MW10-1DA-120920 12/9/2020	MW10-3 MW10-3-120920 12/9/2020	MW10-3D MW10-3D-120920 12/9/2020	MW10-4D MW10-4D-120920 12/9/2020	MW10-4E MW10-4E-120920 12/9/2020	MW10-7 MW10-7-120920 12/9/2020
Volatile Organic Compounds Detected by Method 8260C (µg/L)[b]								
1,1-Dichloroethene	5	µg/L	--	--	--	--	--	**1.3**
2-Butanone	50	µg/L	--	--	--	--	--	--
2-Hexanone	50	µg/L	--	--	--	--	--	--
Acetone	50	µg/L	--	--	--	--	--	--
Benzene	1	µg/L	**3.8**	--	--	**1.3**	--	**1.3**
Carbon Disulfide	60	µg/L	--	--	--	--	--	**0.58 J**
Cis-1,2-Dichloroethene	5	µg/L	**0.9 J**	--	--	**0.83 J**	**6.7**	**174**
Cyclohexane	NS	µg/L	**0.33 J**	--	--	--	--	**0.61 J**
Ethylbenzene	5	µg/L	**0.4 J**	--	--	--	--	--
Methylcyclohexane	NS	µg/L	--	--	--	--	--	**1.2**
Toluene	5	µg/L	**0.44 J**	--	--	--	--	**1**
Trans-1,2-Dichloroethene	5	µg/L	**0.48 J**	--	--	--	--	**0.37 J**
Trichloroethene	5	µg/L	--	**0.61 J**	--	--	--	**1.5**
Vinyl chloride	2	µg/L	**4.1**	--	--	**3.5**	**1.2**	**41.2**
Xylenes, total	5	µg/L	**3.7**	--	--	--	--	--

Table 1-2
Site 10 (FT005) December 2020 Groundwater Analytical Results
Remedial Injection Work Plan
Site 5 (DS004) and Site 10 (FT005), Niagara Falls Air Reserve Station
Niagara Falls, New York

Analyte	Screening Criteria[a]	Location ID Sample Name Sample Date Parent Sample	MW10-9D MW10-9D-120920 12/9/2020	MW10-10D MW10-10D-120920 12/9/2020	PW10-1 PW10-1-120920 12/9/2020	PW10-2 PW10-2-120920 12/9/2020	PZ10-7 PZ10-7-120920 12/9/2020
Site-Related Volatile Organic Compounds Detected by Method 8260C (µg/L)[b]							
1,1-Dichloroethene	5	µg/L	--	--	--	--	--
2-Butanone	50	µg/L	--	**37.7 J**	--	--	--
2-Hexanone	50	µg/L	--	**381**	--	--	--
Acetone	50	µg/L	--	--	**7 BJ+**	**5.4 BJ+**	--
Benzene	1	µg/L	--	--	--	**1.5**	--
Carbon Disulfide	60	µg/L	--	--	**0.36 J**	--	--
Cis-1,2-Dichloroethene	5	µg/L	**7.2**	**1580 J+**	**0.72 J**	--	--
Cyclohexane	NS	µg/L	--	--	--	--	--
Ethylbenzene	5	µg/L	--	--	--	**0.38 J**	--
Methylcyclohexane	NS	µg/L	--	--	--	--	--
Toluene	5	µg/L	--	**14.5 J**	--	--	--
Trans-1,2-Dichloroethene	5	µg/L	--	**16 J**	--	--	--
Trichloroethene	5	µg/L	--	**47.6**	--	--	--
Vinyl chloride	2	µg/L	**10.9**	**296.0**	**0.85 J**	--	--
Xylenes, total	5	µg/L	--	--	--	--	--

Notes:

[a] New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.

[b] Only compounds with at least one detect are presented.

1. Bold values denote detections.
2. Shaded cells exceed the screening value.

Acronyms and Abbreviations:

-- = not detected
µg/L = microgram per liter
MW = monitoring well
NS = no Class GA Groundwater Standard exists for this constituent
PW = pumping well
PZ = piezometer

Qualifiers:

BJ+ = Result is estimated and may be biased high due to blank contamination.
J = Analyte detected, estimated concentration.
J+ = Analyte detected, estimated concentration that may be biased high.

Table 2-1
Site 5 and Site 10 Injection Details
Remedial Injection Work Plan
Site 5 (DS004) and Site 10 (FT005), Niagara Falls Air Reserve Station
Niagara Falls, New York

Injection Type	Injection Location IDs	Injection Interval[a] (feet bgs)	Per Point Injection Volume (gallons)
Site 5 (DS004)			
Temporary DPT Points	DPT5-1 to DPT5-10	11 to 15	240
Bedrock Core Holes	CH5-01	17.5 to 32.5	1,000
	CH5-02	18.3 to 33.3	
	CH5-03	18.5 to 33.5	
Site 10 (FT005)			
Temporary DPT Points	DPT10-1 to DPT10-13	6 to 10	240

Notes:

[a] Number and location of DPT points, injection volumes, and injection intervals may be adjusted based on field conditions.

1. Injected solution will be a 2 to 5% by volume solution of ABC-Olé.

Acronyms and Abbreviations:
bgs = below ground surface
DPT = direct-push technology

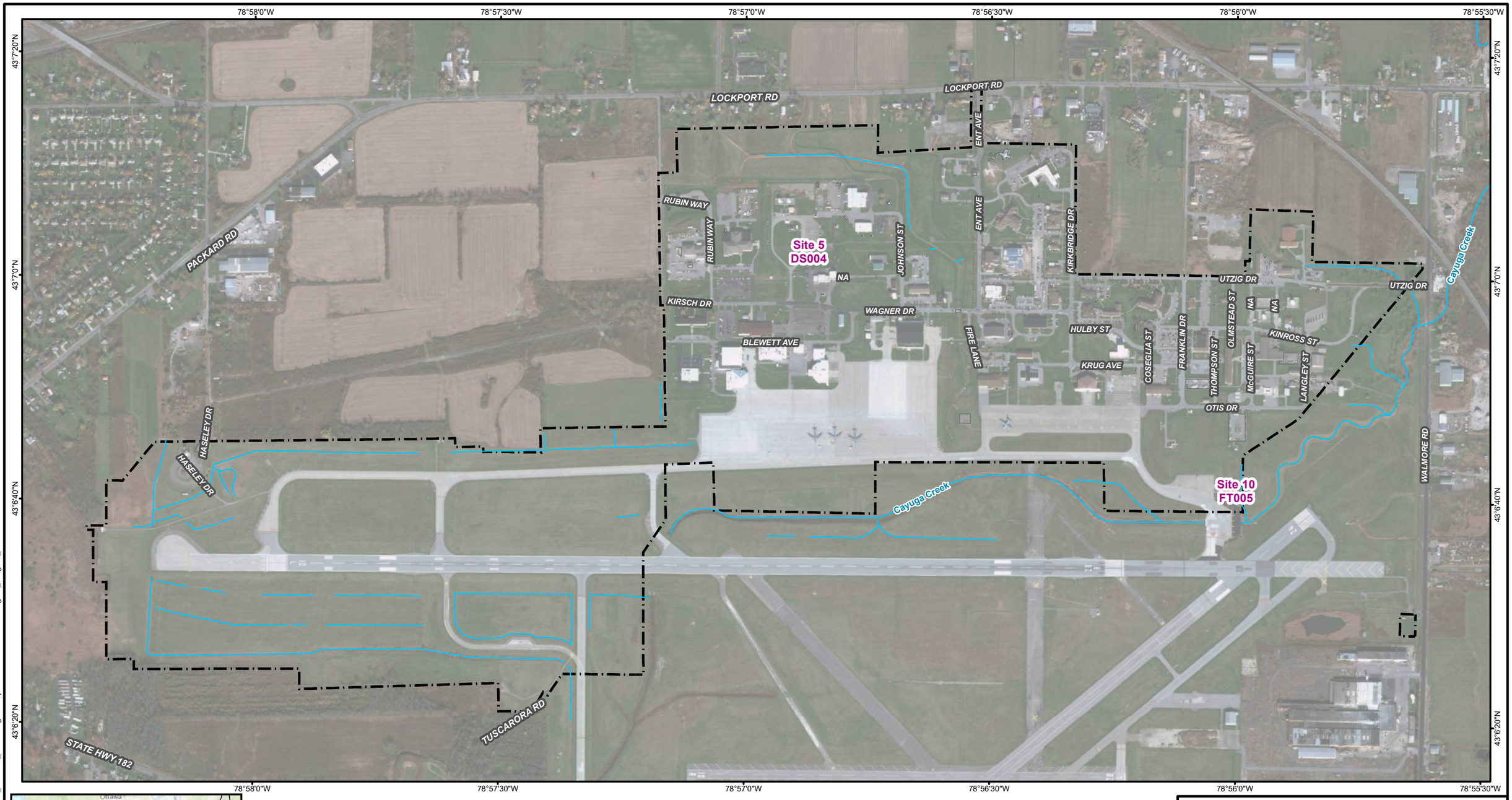
Table 2-2
Site 5 and Site 10 Performance Monitoring Program
Remedial Injection Work Plan
Site 5 (DS004) and Site 10 (FT005), Niagara Falls Air Reserve Station
Niagara Falls, New York

Well	Well Depth (feet bgs)	Screened Interval (feet bgs)	Monitoring Frequency[a]	Analysis/Parameter								
				COCs	Biogeochemical Parameters		Field Parameters					
				VOCs USEPA Method 8260B	Methane, Ethane, Ethene USEPA Method RSK-175	Total Organic Carbon USEPA Method 9060A	pH	Oxidation Reduction Potential	Dissolved Oxygen	Turbidity	Temperature	Specific Conductance
Site 5 (DS004)												
MW5-5D	27.3	NA	Quarterly	L	L	L	F	F	F	F	F	F
RW5-1	14.74	NA	Quarterly	L	L	L	F	F	F	F	F	F
RW5-2	11.24	NA	Quarterly	L	L	L	F	F	F	F	F	F
Site 10 (FT005)												
MW10-1DA	23.06	13 to 23	Quarterly	L	L	L	F	F	F	F	F	F
MW10-7	9.13	NA	Quarterly	L	L	L	F	F	F	F	F	F
MW10-10D	10.4	NA	Quarterly	L	L	L	F	F	F	F	F	F
MW10-11D	17.59	NA	Quarterly	L	L	L	F	F	F	F	F	F
PW10-1	14.05	NA	Quarterly	L	L	L	F	F	F	F	F	F

Note:
[a] The monitoring frequency may be adjusted based on field conditions.

Acronyms and Abbreviations:
bgs = below ground surface
COC = constituent of concern
F = field analysis using a water quality meter
L = laboratory analysis
NA = not available
USEPA = United States Environmental Protection Agency
VOC = volatile organic compound

Figures



Legend

Installation Boundary

0 850 1,700

SCALE IN FEET

NIAGARA FALLS AIR RESERVE STATION
NEW YORK

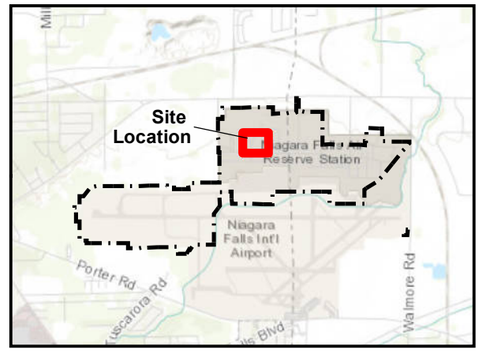
Remedial Injection Work Plan

SITE LOCATION

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
1-1

DIV/GROUP: ENV/IMDV DB: sbell LD: PIC: PM: TM:
PROJECT: JBMDL (30028498.00001) PATH: T:_ENVNE_ORC\Niagara\Reports\RIWP\2021\MXDs\Fig1-1_Niagara_SiteLocation.mxd DATE: 11/3/2021 2:41:20 PM



Legend

- Overburden Well
- Shallow Bedrock Well
- Deep Bedrock Well
- Fence
- 2015 Injection Area
- 2018 Injection Area
- Installation Boundary

Note:
1. Injection Areas digitized from the 2019 Remedial Action Injection Summary Report, Figure 5-1 (EA Engineering, P.C.).

0 75 150
SCALE IN FEET

NIAGARA FALLS AIR RESERVE STATION
NEW YORK

Remedial Injection Work Plan

SITE 5 (DS004) LAYOUT

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
1-2

DIV/GROUP: ENV/IMDV DB: sbell LD: PIC: PM: TM:
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78°56'0"W

43°6'42"N

722

726

SW10-5

MW10-5D

MW10-3

MW10-10D

PW10-2

MW10-1EA

MW10-1F

MW10-1DA

MW10-2

MW10-4

MW10-4D

MW10-4E

MW10-6

MW10-8

MW10-8D

MW10-7

PW10-1

MW10-2E

PZ10-7

SW10-6

MW10-9D

SW10-7

MW10-3E

MW10-3D

MW10-13

MW10-13D

SW10-8

Cayuga Creek

MW10-11

MW10-11D

MW10-12

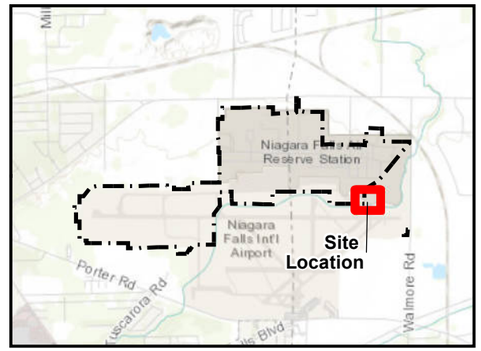
MW10-12D

MW10-6D

74

78°56'0"W

43°6'42"N



Legend

- Overburden Well/Piezometer
- Shallow Bedrock Well
- Deep Bedrock Well
- Surface Water Sample Location
- Groundwater Collection Trench
- 2015 Injection Area
- 2018 Injection Area
- Installation Boundary

Note:
1. Injection Areas digitized from the 2019 Remedial Action Injection Summary Report, Figure 5-1 (EA Engineering, P.C.).

N

0 75 150

SCALE IN FEET

NIAGARA FALLS AIR RESERVE STATION
NEW YORK

Remedial Injection Work Plan

SITE 10 (FT005) LAYOUT

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
1-3

DIV/GROUP: ENV/IMDV DB: sbell LD: PIC: PM: TM:
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78°56'52"W

43°7'2"N

43°7'1"N

43°7'0"N

MW5-1DA	
Dec 2020	
cis-1,2-Dichloroethene	**53.3**
Vinyl chloride	**5.4**

RW5-1	
Dec 2020	
cis-1,2-Dichloroethene	1.5
Toluene	**18.9**
trans-1,2-Dichloroethene	0.38 J
Trichloroethene	0.95 J
Vinyl chloride	**4.1**
Non-Site-Specific VOC	
Chloroethane	2.5

RW5-2	
Dec 2020	
cis-1,2-Dichloroethene	0.91 J
Vinyl chloride	**2.9**

MW5-6	
Dec 2020	
cis-1,2-Dichloroethene	2.3
trans-1,2-Dichloroethene	0.42 J
Toluene	1.7
Non-Site-Specific VOC	
Acetone	5.3 BJ+

MW5-5D	
Dec 2020	
cis-1,2-Dichloroethene	**8 J**
trans-1,2-Dichloroethene	**23.4**
Vinyl chloride	**132**

RW5-4	
Dec 2020	
Benzene	0.43 J
cis-1,2-Dichloroethene	1.2
Toluene	1.6

MW5-5A

MW5-1E

MW5-4D

CH5-1

CH5-2

CH5-3

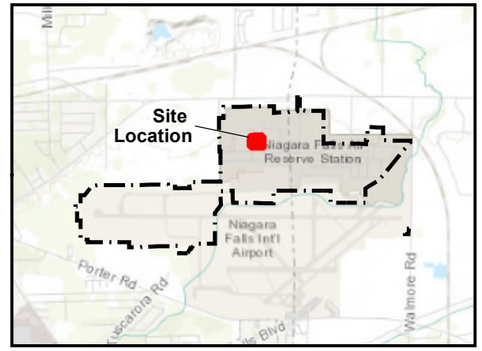
CH5-4

RW5-3

AVFUELS CIRCLE

920

78°56'52"W



Legend

- Bedrock Core Hole Injection Location
- Assumed Radius of Influence
- Overburden DPT Injection Point Location
- Assumed Radius of Influence
- Overburden Well
- Shallow Bedrock Well
- Deep Bedrock Well
- Fence
- Installation Boundary

Notes:
1. Constituent concentrations in micrograms per liter (µg/L).
2. Blue shading indicates result is greater than NYSDEC Class GA Standards.
3. Only detected results are presented.
4. Proposed performance monitoring wells are highlighted in yellow.

Abbreviations:
BJ+ = Result is an estimated quantity and may be biased high due to blank contamination
J = Constituent detected at an estimated concentration
DPT = Direct-Push Technology
NYSDEC = New York State Department of Environmental Conservation
VOC = volatile organic compound

N

0 30 60

SCALE IN FEET

NIAGARA FALLS AIR RESERVE STATION
NEW YORK

Remedial Injection Work Plan

SITE 5 (DS004) - PROPOSED REMEDIAL INJECTION LOCATIONS

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE 2-1

DIV/GROUP: ENV/MDV DB: sbell LD: PIC: PM: TM:
PROJECT: JBMDL (30028498.00001) PATH: T:_ENV\NE_ORC\Niagara\Reports\RIWP\2021\MXDs\Fig2-1_Niagara_Site5_Analytical.mxd DATE: 11/3/2021 2:48:34 PM

78°56'0"W

78°55'54"W

43°6'40"N

722

SW10-5

MW10-5D

SW10-8

MW10-13

MW10-13D

MW10-1EA

MW10-1F

MW10-2

MW10-4

MW10-6

MW10-11

MW10-11D

MW10-8

MW10-8D

MW10-12D

MW10-12

MW10-2E

SW10-6

MW10-6D

SW10-7

MW10-3E

Cayuga Creek

MW10-1DA	
Dec 2020	
Benzene	**3.8**
cis-1,2-Dichloroethene	0.9 J
Ethylbenzene	0.4 J
Toluene	0.44 J
trans-1,2-Dichloroethene	0.48 J
Vinyl chloride	**4.1**
Total Xylenes	3.7
Non-Site-Specific VOC	
Cyclohexane	0.33 J

PW10-2	
Dec 2020	
Benzene	**1.5**
Ethylbenzene	0.38 J
Non-Site-Specific VOC	
Acetone	5.4 BJ+

MW10-3	
Dec 2020	
Trichloroethene	0.61 J

MW10-10D	
Dec 2020	
cis-1,2-Dichloroethene	**1580 J+**
Toluene	**14.5 J**
trans-1,2-Dichloroethene	**16 J**
Trichloroethene	**47.6**
Vinyl chloride	**296**
Non-Site-Specific VOC	
2-Butanone (MEK)	37.7 J
2-Hexanone	381

MW10-4D	
Dec 2020	
Benzene	**1.3**
cis-1,2-Dichloroethene	0.83 J
Vinyl chloride	**3.5**

MW10-7	
Dec 2020	
1,1-dichloroethane	1.3
Benzene	**1.3**
cis-1,2-Dichloroethene	**174**
Toluene	1
trans-1,2-Dichloroethene	0.37 J
Trichloroethene	1.5
Vinyl chloride	**41.2**
Non-Site-Specific VOC	
Carbon Disulfide	0.58 J
Cyclohexane	0.61 J
Methylyclohexane	1.2

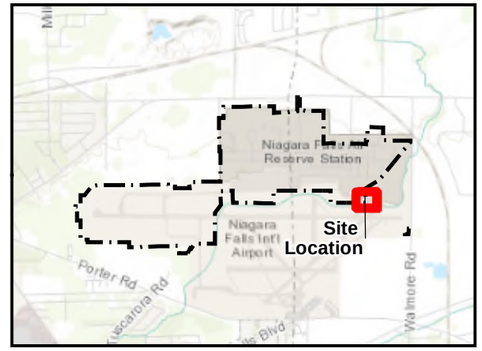
MW10-4E	
Dec 2020	
cis-1,2-Dichloroethene	**6.7**
Vinyl chloride	1.2

PW10-1	
Dec 2020	
cis-1,2-Dichloroethene	0.72 J
Vinyl chloride	0.85 J
Non-Site-Specific VOC	
Acetone	7 BJ+
Carbon Disulfide	0.36 J

PZ10-7	
Dec 2020	
All VOCs	ND

MW10-9D	
Dec 2020	
cis-1,2-Dichloroethene	**7.2**
Vinyl chloride	**10.9**

MW10-3D	
Dec 2020	
All VOCs	ND



Legend

- Overburden DPT Injection Point Location
- Assumed Radius of Influence
- Overburden Well/Piezometer
- Shallow Bedrock Well
- Deep Bedrock Well
- Surface Water Sample Location
- Groundwater Collection Trench
- Installation Boundary

Notes:
1. Constituent concentrations in micrograms per liter (µg/L).
2. Blue shading indicates result is greater than NYSDEC Class GA Standards.
3. Only detected results are presented.

Abbreviations:
BJ+ = Result is an estimated quantity and may be biased high due to blank contamination
J+ = Constituent detected at an estimated concentration
DPT = Direct-Push Technology
ND = not detected
NYSDEC = New York State Department of Environmental Conservation
VOC = volatile organic compound

0 60 120

SCALE IN FEET

NIAGARA FALLS AIR RESERVE STATION
NEW YORK

Remedial Injection Work Plan

SITE 10 (FT005) - PROPOSED REMEDIAL INJECTION LOCATIONS

SERES Engineering & Services, LLC
ARCADIS a joint venture

FIGURE
2-2

DIVGROUP: ENVMDV DB: sbell LD: PIC: PM: TM:
PROJECT: JBMDL (30028498.00001) PATH: T:_ENVNE_ORC\Niagara\Reports\RIWP\2021MXDs\Fig2-2_Niagara_Site10_Analytical.mxd DATE: 4/28/2022 3:07:41 PM

Appendix A

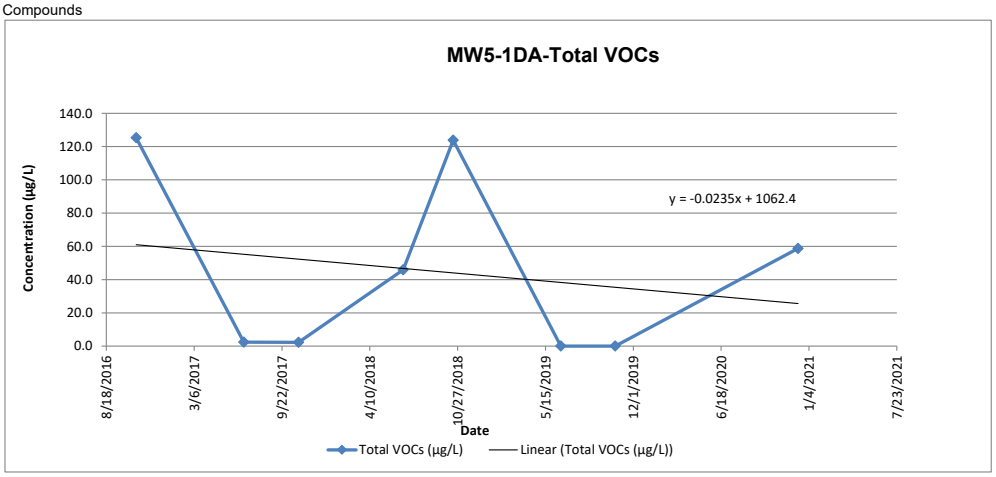
Well Trend Charts

Site 5

Appendix E
Analytical Data for Well Termination
Site 5
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW5-1DA							
Sample Date			10/25/2016	6/27/2017	10/30/2017	6/25/2018	10/17/2018	6/19/2019	10/21/2019	12/10/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	U	U	U	U	U	U	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	97	U	U	U
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	4.7 J	U	U	U	U	U	U	U
Chloroethane	µg/L	5	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	109	2.4	2.3	41.7	24.2	U	U	53.3
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	0.59 J	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	11	U	U	4.2	2.7	U	U	5.4
Total VOCs	µg/L		**125.29**	**2.4**	**2.3**	**45.9**	**123.9**	**0**	**0**	**58.7**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

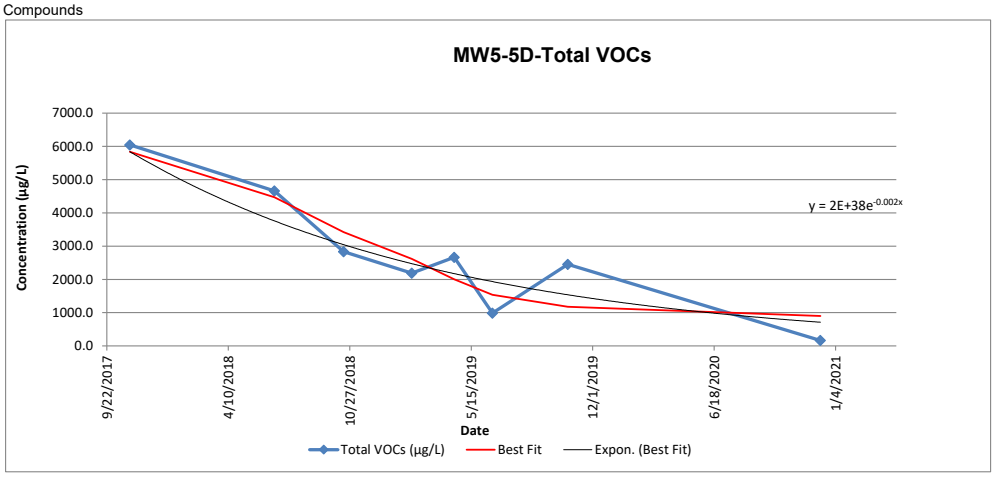
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 5
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW5-5D							
Sample Date			10/30/2017	6/25/2018	10/17/2018	2/6/2019	4/17/2019	6/19/2019	10/21/2019	12/10/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	3.2	U	U	U	U	0.665	U
1,4-Dioxane	µg/L	NS	U	104 J	U	U	U	U	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	3.9	U
2-Hexanone (Methyl N-Butyl Ketone	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	6.7 J	U	U
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroethane	µg/L	5	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	1350	1310	142.5	63	712	90.3	171.5	8 J
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	35.3	32.8	32.05	33.1	33.4	19.6	23.75	23.4
Trichloroethene	µg/L	5	U	38.7	U	U	U	0.62 J	0.655	U
Vinyl Chloride	µg/L	2	4660 J	3170	2660	2090	1920	869	2250	132
Total VOCs	µg/L		**6045.3**	**4658.7**	**2834.55**	**2186.1**	**2665.4**	**986.22**	**2450.47**	**163.4**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

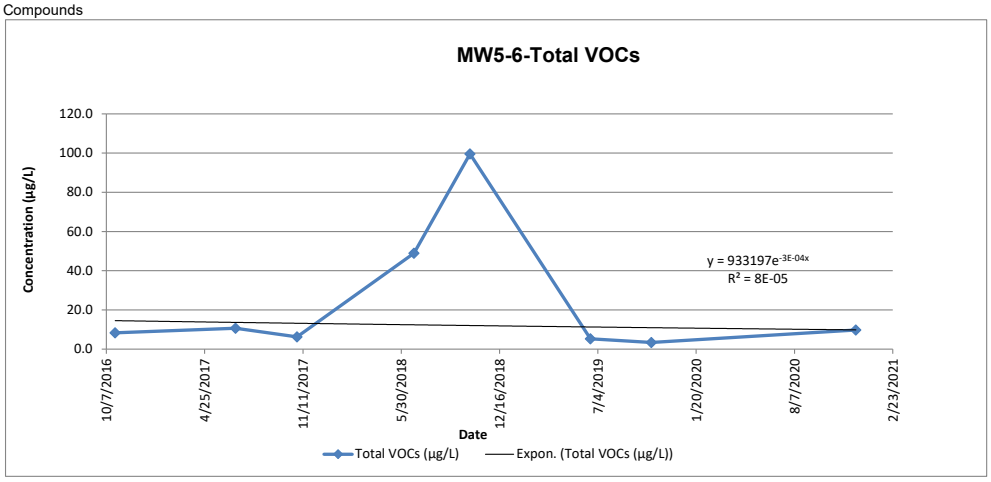
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 5
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW5-6							
Sample Date			10/25/2016	6/27/2017	10/30/2017	6/25/2018	10/17/2018	6/19/2019	10/21/2019	12/10/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	U	U	U	U	U	U	U	--
2-Butanone (MEK)	µg/L	50	U	U	U	8.8 J	73.3	U	U	U
2-Hexanone (Methyl N-Butyl Ketone	µg/L	50	U	U	U	U	16.8	U	U	U
Acetone	µg/L	50	U	5.8 J	U	36.2	U	U	U	5.3 BJ+
Benzene	µg/L	1	U	U	U	0.23 J	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroethane	µg/L	5	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	0.89 J	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	4	4	4.6	1.1	3.8	2.3	2.3	2.3
Dichloromethane	µg/L	5	U	U	U	1.7 J	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	0.59 J	U	U	U	U	1.7
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	0.42 J
Trichloroethene	µg/L	5	1.1	0.87 J	1.1	U	0.68 J	1.0	1.1	U
Vinyl Chloride	µg/L	2	3.2	U	U	U	5	2.0	U	U
Total VOCs	µg/L		**8.3**	**10.67**	**6.29**	**48.92**	**99.58**	**5.3**	**3.4**	**9.72**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

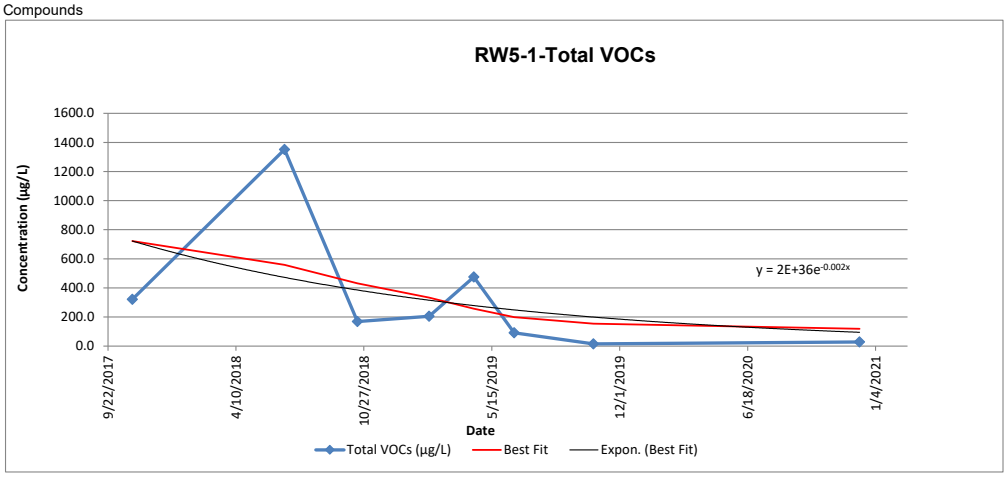
* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Appendix E
Analytical Data for Well Termination
Site 5
Niagara Falls Air Reserve Station, Niagara Falls, NY

ARCADIS

Location ID	Unit	GPS	RW5-1							
Sample Date			10/30/2017	6/25/2018	10/17/2018	2/6/2019	4/17/2019	6/19/2019	10/21/2019	12/10/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	2	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	U	129 J	U	U	U	U	U	--
2-Butanone (MEK)	µg/L	50	U	U	24.3	17.4	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	10.1	84.9	5.4	U	3.2 J	U
Acetone	µg/L	50	U	U	U	U	U	U	U	U
Benzene	µg/L	1	U	U	0.96 J	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	1.5 J	U	U	U	U	U	U
Chloroethane	µg/L	5	U	U	U	0.76 J	2.6	3	0.8 J	2.5
Chloroform	µg/L	7	U	1.3	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	138	854 J	75.8 J	43.4	228	32.3	3.8	1.5
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	1	1	1.1	3.8	18.9
trans-1,2-Dichloroethene	µg/L	5	2.7	3.9	1.6 J	3.4	11.6	9.5	0.74 J	0.38 J
Trichloroethene	µg/L	5	1.1 J	21.7	8.2 J	3.7	2.1	2.5	2.1	0.95 J
Vinyl Chloride	µg/L	2	180	338	48.1	50.3	224	42.4	0.81 J	4.1
Total VOCs	µg/L		**321.8**	**1351.4**	**169.06**	**204.86**	**474.7**	**90.8**	**15.25**	**28.33**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

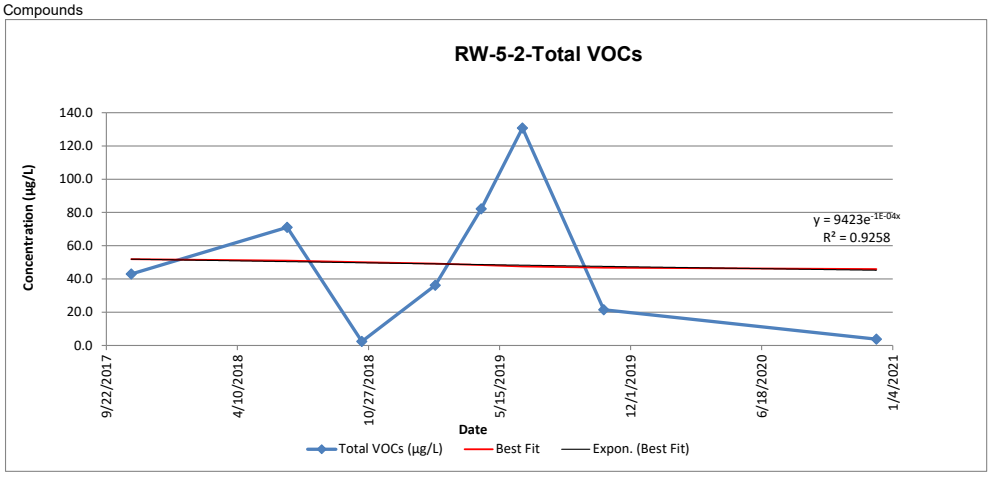
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 5
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	RW-5-2							
Sample Date			10/30/2017	6/25/2018	10/17/2018	2/6/2019	4/17/2019	6/19/2019	10/21/2019	12/10/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	U	U	U	U	U	U	U	--
2-Butanone (MEK)	µg/L	50	4.3 J	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	21.8 J	41	U	U	U	U	U	U
Benzene	µg/L	1	U	U	U	0.375	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroethane	µg/L	5	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	11.2	8.7	1.2	6.6 J	28.55	59.55	4	0.91 J
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Toluene	µg/L	5	0.35 J	U	U	1 J	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	0.41 J	0.47 J	U	U	U	U	U	U
Trichloroethene	µg/L	5	0.8 J	0.32 J	U	U	U	U	0.55 J	U
Vinyl Chloride	µg/L	2	4.1	20.6	1.2	28.2 J	53.6	71.25	16.9	2.9
Total VOCs	µg/L		**42.96**	**71.09**	**2.4**	**36.175**	**82.15**	**130.8**	**21.45**	**3.81**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

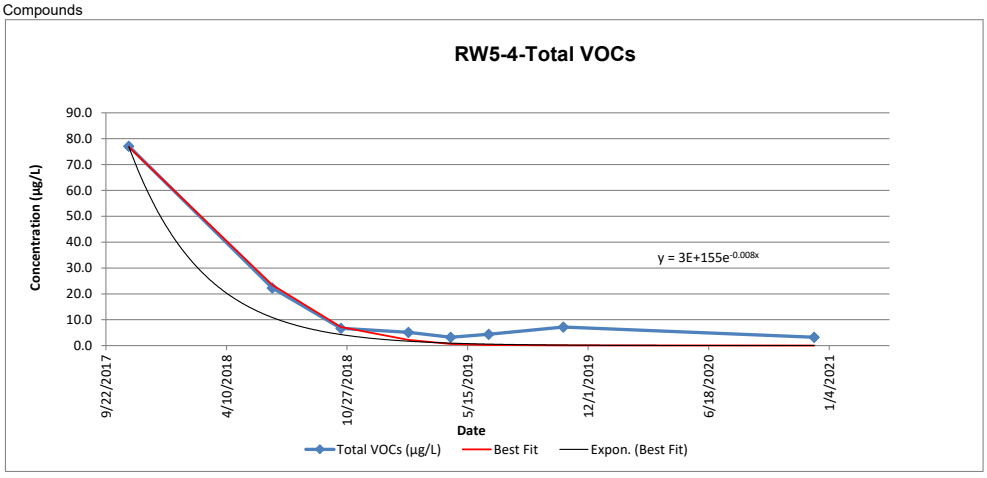
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 5

Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	RW5-4							
Sample Date			10/30/2017	6/25/2018	10/17/2018	2/6/2019	4/17/2019	6/19/2019	10/21/2019	12/10/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
1,4-Dioxane	µg/L	NS	U	U	U	U	U	U	U	--
2-Butanone (MEK)	µg/L	50	7.9	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Keton	µg/L	50	36.6	7.5	U	U	U	U	2.8 J	U
Acetone	µg/L	50	16.3 J	U	U	U	U	U	U	U
Benzene	µg/L	1	0.98 J	3.9	1.1	0.76	0.44 J	0.67	0.44 J	0.43 J
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroethane	µg/L	5	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	5.5	4.6 J	3.2	2.4	1.7	2.1	2.1	1.2
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Toluene	µg/L	5	9.8	6.3	2.4	2	1.1	1.6	1.8	1.6
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**77.08**	**22.3**	**6.7**	**5.16**	**3.24**	**4.37**	**7.14**	**3.23**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **Yes***

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

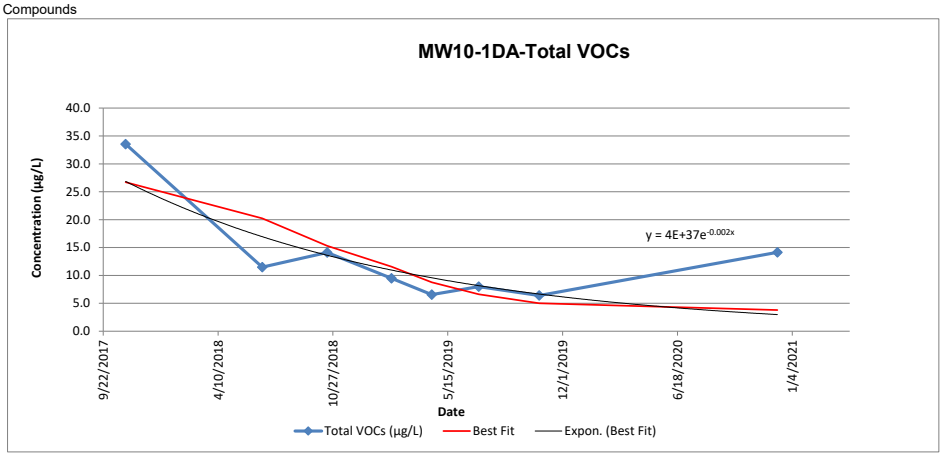
* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Site 10

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-1DA							
Sample Date			10/31/2017	6/26/2018	10/17/2018	2/6/2019	4/17/2019	7/8/2019	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	3.5 J	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	11.4 J	U	U	U	U	U	U	U
Benzene	µg/L	1	5.8	5	4.9	3.6	2.7	2.95	3.5	3.8
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	U	U	0.56 J	U	U	U	U	0.9 J
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	0.33 J
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	0.22 J	U	U	U	U	U	0.4 J
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	3.6	2.2	1.7	1.3	0.96 J	0.95 J	U	0.44 J
trans-1,2-Dichloroethene	µg/L	5	0.75 J	0.46 J	0.66 J	U	U	U	U	0.48 J
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	8.5	2.2	3.4	2.6	2.1	2.95	2.9	4.1
Xylenes (Total)	µg/L	5	U	1.4	2.9	2	0.79 J	1.15	U	3.7
Total VOCs	µg/L		**33.55**	**11.48**	**14.12**	**9.5**	**6.55**	**8**	**6.4**	**14.15**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **Yes***

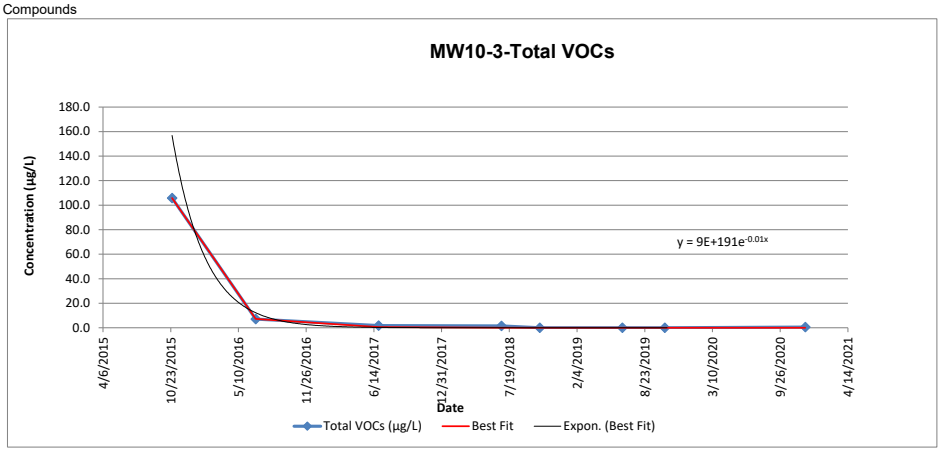
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-3							
Sample Date			10/27/2015	6/30/2016	6/28/2017	6/26/2018	10/17/2018	6/18/2019	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	0.89 J	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	U	U	U
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	2.9 B	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	0.95 J	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	U	2.9	0.68 J	1.5	U	U	U	U
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	102	3.2	1.1	U	U	U	U	0.61 J
Vinyl Chloride	µg/L	2	U	U	U	U	U	U	U	U
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**105.79**	**7.05**	**1.78**	**1.5**	**0**	**0**	**0**	**0.61**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

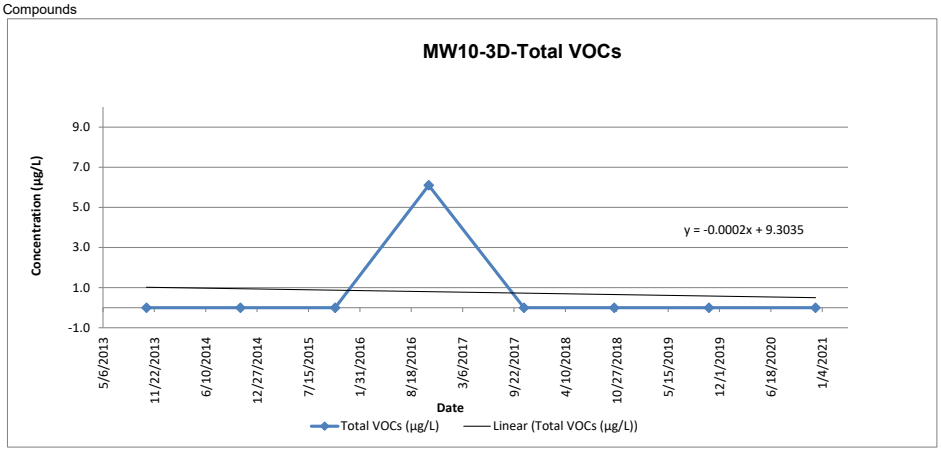
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-3D							
Sample Date			10/22/2013	10/23/2014	10/27/2015	10/25/2016	10/31/2017	10/17/2018	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone	µg/L	50	U	U	U	5 J	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	U	U	U
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	1.1 J	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	--	U	U	U	U	U	U	U
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	--	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	U	U	U	U	U	U	U	U
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**0**	**0**	**0**	**6.1**	**0**	**0**	**0**	**0**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **Yes***

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **Yes***

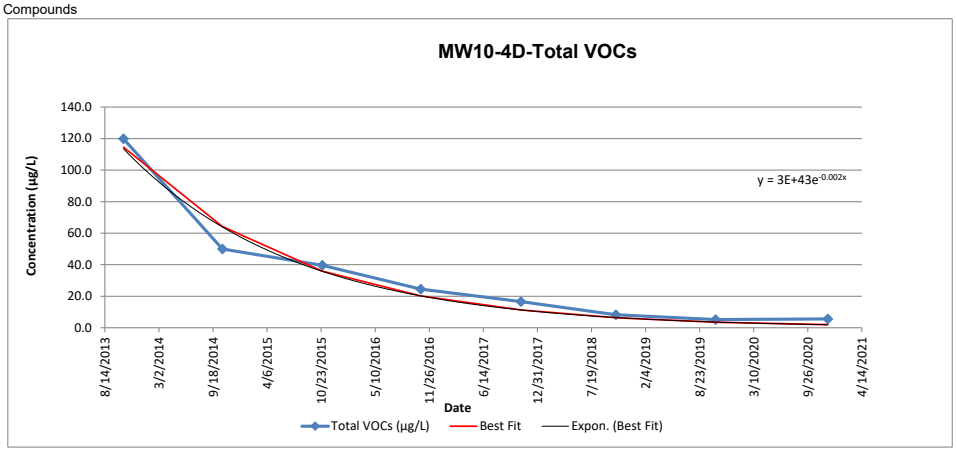
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-4D							
Sample Date			10/22/2013	10/23/2014	10/27/2015	10/25/2016	10/31/2017	10/17/2018	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	12.2 J	10.4	14.3 J	U	U	U
Benzene	µg/L	1	0.54	U	U	0.79	0.56 J	0.47 J	U	1.3
Carbon Disulfide	µg/L	60	U	U	0.5 JB	9.4	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	59.1	48.4	13.1	1.3	1.3	2.6	1.5	0.83 J
Cyclohexane	µg/L	NS	--	U	U	2.6 J	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	--	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	0.44 J	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	0.41 J	U	U	U	U	U
Vinyl Chloride	µg/L	2	60.2	1.6	13.4	U	U	5.2	3.7	3.5
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**119.84**	**50**	**39.61**	**24.49**	**16.6**	**8.27**	**5.2**	**5.63**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

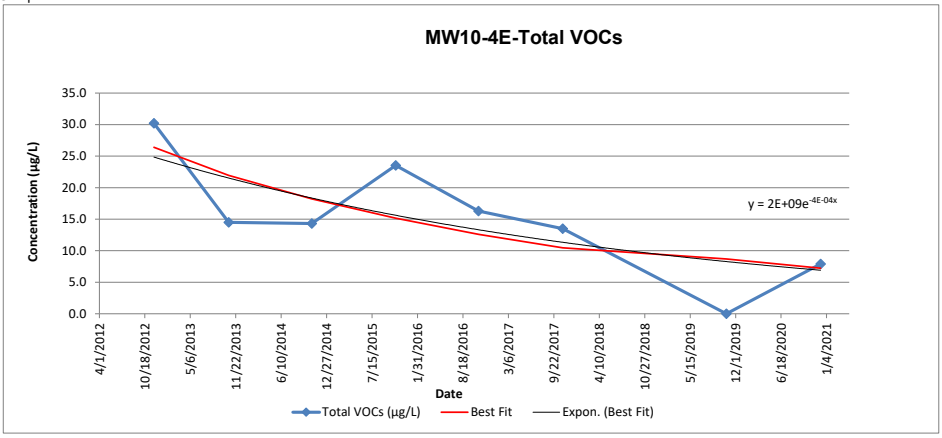
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-4E							
Sample Date			11/27/2012	10/22/2013	10/23/2014	10/27/2015	10/25/2016	10/31/2017	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	U	U	U
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	0.45 JB	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	25	10.3	9.5	17.8	13.2	10.6	U	6.7
Cyclohexane	µg/L	NS	U	--	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	--	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	--	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	0.27 J	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	5.2	4.2	4.8	5	3.1	2.9	U	1.2
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**30.2**	**14.5**	**14.3**	**23.52**	**16.3**	**13.5**	**0**	**7.9**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **Yes***

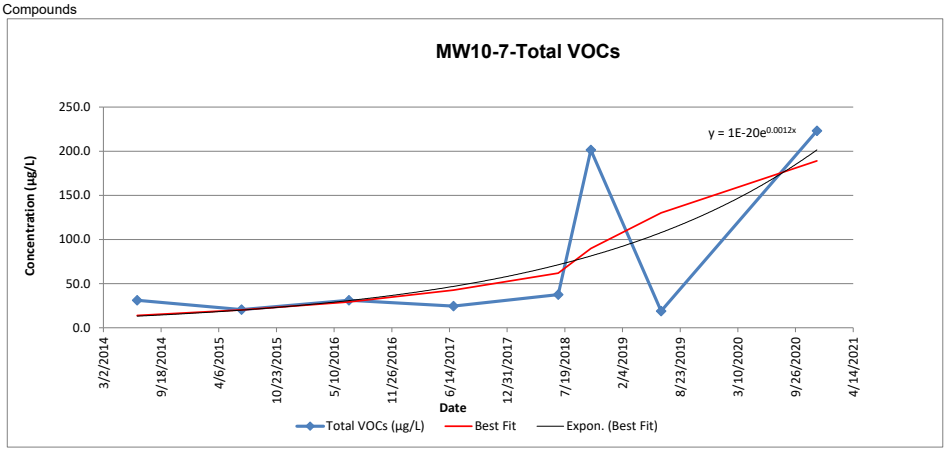
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-7							
Sample Date			6/27/2014	6/24/2015	6/30/2016	6/28/2017	6/26/2018	10/17/2018	6/18/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	6.1	U	1.3
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	6.4 J	U	U	U	U	U
Benzene	µg/L	1	U	U	U	U	U	0.66	U	1.3
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	0.58 J
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	23.1	9.9	10.6	16.8	23.4	139	18.9	174
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	0.61 J
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	1.2
Toluene	µg/L	5	U	U	U	U	U	U	U	1
trans-1,2-Dichloroethene	µg/L	5	0.82 J	U	U	0.68 J	0.81 J	0.86 J	U	0.37 J
Trichloroethene	µg/L	5	7.2	10.7	14.2	22.1	13.4	14.3	U	1.5
Vinyl Chloride	µg/L	2	U	U	U	U	U	40.6	U	41.2
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**31.12**	**20.6**	**31.2**	**24.58**	**37.61**	**201.52**	**18.9**	**223.06**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **No**

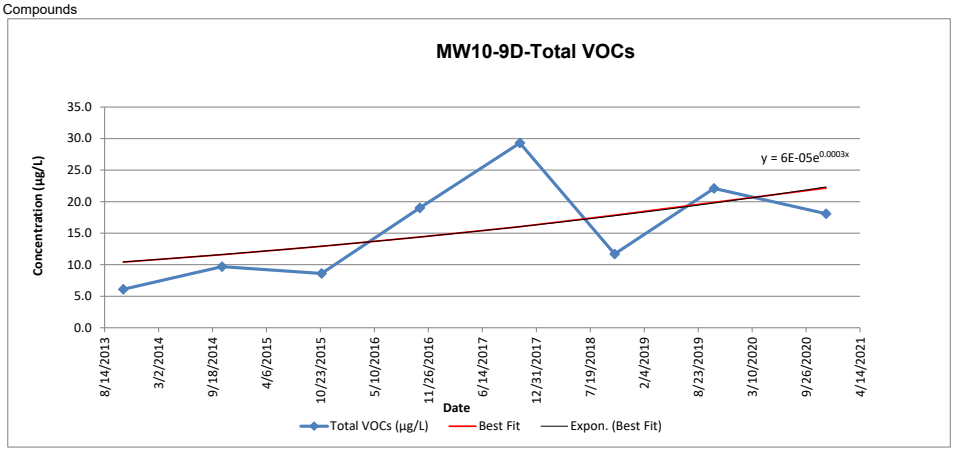
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-9D							
Sample Date			10/22/2013	10/23/2014	10/27/2015	10/25/2016	10/31/2017	10/17/2018	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	4.6 J	10.4 J	U	U	U
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	5.2	8	7.3	10.3	10.2	6.1	10.2	7.2
Cyclohexane	µg/L	NS	--	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	--	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	0.9 J	1.7	1.3	4.1	8.7	5.6	11.9	10.9
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**6.1**	**9.7**	**8.6**	**19**	**29.3**	**11.7**	**22.1**	**18.1**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **No**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **Yes***

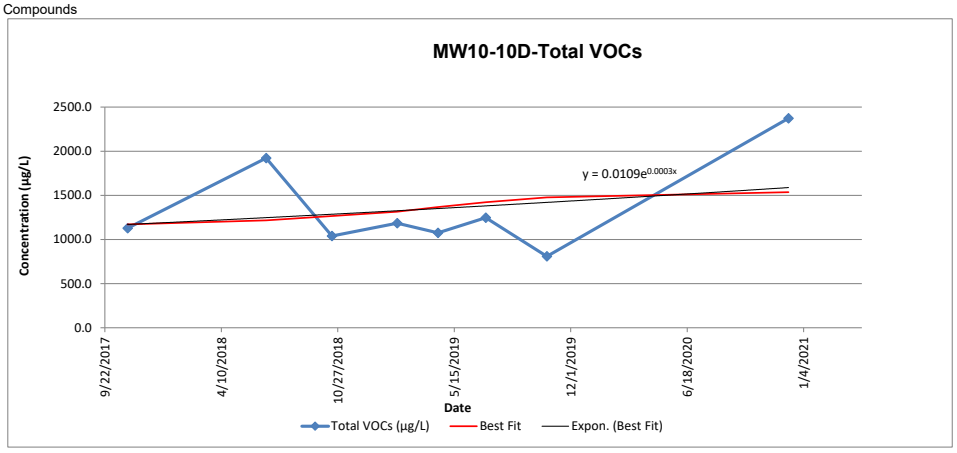
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	MW10-10D							
Sample Date			10/31/2017	6/26/2018	10/17/2018	2/6/2019	4/17/2019	7/8/2019	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	1.3	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	28.6	U	19	83.4 J	U	37.7 J
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	22	10.6 J	8.8	25.1	U	381
Acetone	µg/L	50	U	U	U	U	U	U	20.7 J	U
Benzene	µg/L	1	U	2.4 J	1.8	U	1.6	1.7	1.9	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	996	1660	856	954 J	826	921	638	1580 J+
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	1.4 J	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	7.6 J	10.4	9.1	7.9	6.6	5.7	3.6	14.5 J
trans-1,2-Dichloroethene	µg/L	5	4.4 J	9 J	4.6	5.8	6.2	5.8	3.2	16 J
Trichloroethene	µg/L	5	20.5	28.1	16.9	18.1	15.5	12.6	9.4	47.6
Vinyl Chloride	µg/L	2	99.8	212	101	188	189	191	132	296
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**1128.3**	**1921.9**	**1040**	**1184.4**	**1075.4**	**1246.3**	**808.8**	**2372.8**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **No**

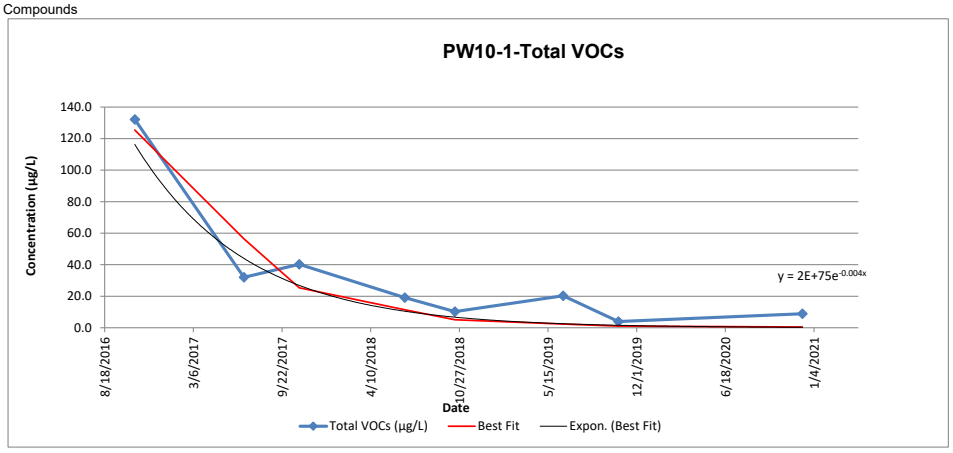
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	PW10-1							
Sample Date			10/25/2016	6/28/2017	10/31/2017	6/26/2018	10/17/2018	6/18/2019	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	0.46 J	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	U	U	7 BJ+
Benzene	µg/L	1	U	0.27 J	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	0.36 J
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	99.7	18.4	30.7	11.3	1	4.5	U	0.72 J
Cyclohexane	µg/L	NS	2.3 J	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	7	1.4	2.1	1.6	1.2	1.1	0.65 J	U
Trichloroethene	µg/L	5	8.7	3.3	2.6	1.3	U	0.94 J	U	U
Vinyl Chloride	µg/L	2	14.4	8.6	4.4	4.9	8.1	13.8	3.3	0.85 J
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**132.1**	**31.97**	**40.26**	**19.1**	**10.3**	**20.34**	**3.95**	**8.93**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

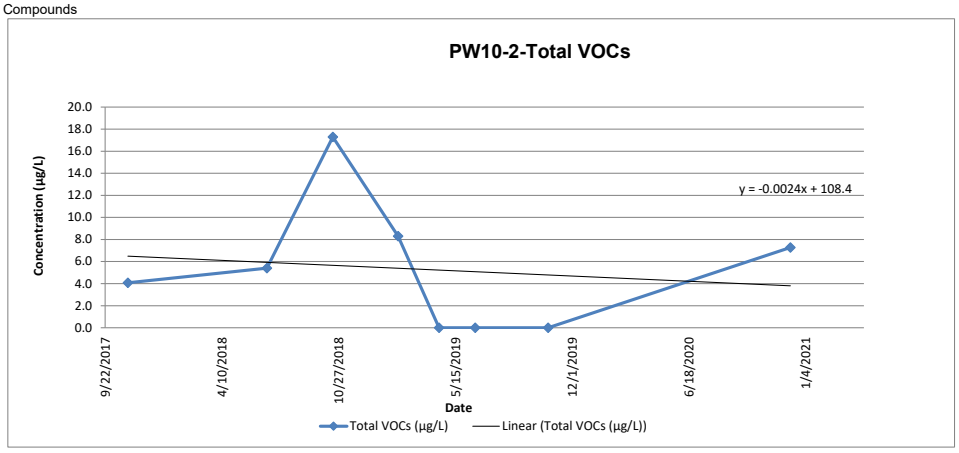
2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **No**
   2.b. Are single COCs less than 50 ug/L? — **No**

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	PW10-2							
Sample Date			10/31/2017	6/26/2018	10/17/2018	2/6/2019	4/17/2019	6/18/2019	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	8.8 J	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	2.6 J	U	U	U	U	U
Acetone	µg/L	50	U	U	U	8.3 J	U	U	U	5.4 BJ+
Benzene	µg/L	1	2.1	3.4	1.4	U	U	U	U	1.5
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	U	U	1.8	U	U	U	U	U
Cyclohexane	µg/L	NS	U	0.64 J	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	0.37 J	U	U	U	U	U	0.38 J
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	1.7	1	0.69 J	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	0.28 J	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	U	U	2	U	U	U	U	U
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**4.08**	**5.41**	**17.29**	**8.3**	**0**	**0**	**0**	**7.28**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **No**

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **Yes***

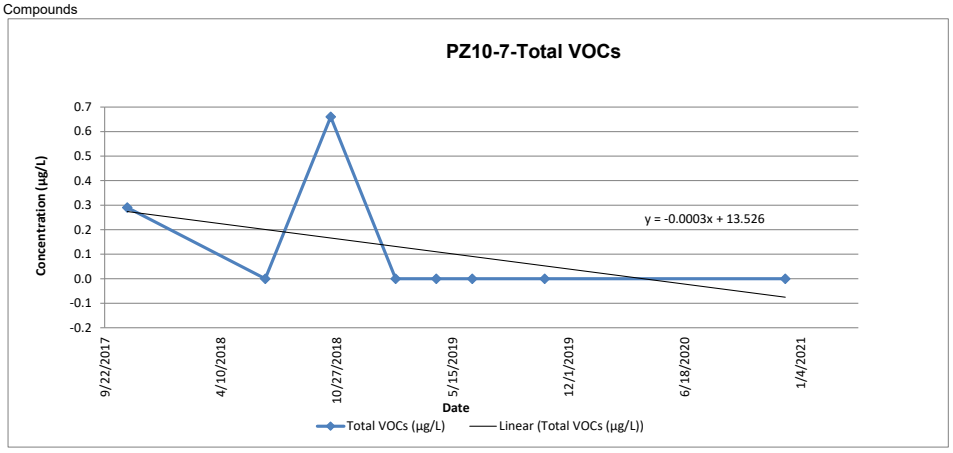
3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Appendix E
Analytical Data for Well Termination
Site 10
Niagara Falls Air Reserve Station, Niagara Falls, NY

Location ID	Unit	GPS	PZ10-7							
Sample Date			10/31/2017	6/26/2018	10/17/2018	2/6/2019	4/17/2019	6/18/2019	10/21/2019	12/9/2020
Parameter										
1,1-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
2-Butanone (MEK)	µg/L	50	U	U	U	U	U	U	U	U
2-Hexanone (Methyl N-Butyl Ketone)	µg/L	50	U	U	U	U	U	U	U	U
Acetone	µg/L	50	U	U	U	U	U	U	U	U
Benzene	µg/L	1	U	U	U	U	U	U	U	U
Carbon Disulfide	µg/L	60	U	U	U	U	U	U	U	U
Chloroform	µg/L	7	U	U	U	U	U	U	U	U
Chloromethane	µg/L	5	U	U	U	U	U	U	U	U
cis-1,2-Dichloroethene	µg/L	5	0.29 J	U	0.66 J	U	U	U	U	U
Cyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Dichloromethane	µg/L	5	U	U	U	U	U	U	U	U
Ethylbenzene	µg/L	5	U	U	U	U	U	U	U	U
Iodomethane	µg/L	5	U	U	U	U	U	U	U	U
Methylcyclohexane	µg/L	NS	U	U	U	U	U	U	U	U
Toluene	µg/L	5	U	U	U	U	U	U	U	U
trans-1,2-Dichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Trichloroethene	µg/L	5	U	U	U	U	U	U	U	U
Vinyl Chloride	µg/L	2	U	U	U	U	U	U	U	U
Xylenes (Total)	µg/L	5	U	U	U	U	U	U	U	U
Total VOCs	µg/L		**0.29**	**0**	**0.66**	**0**	**0**	**0**	**0**	**0**

Notes:
1. Shaded Cells indicate exceedence of NYSDEC GPS for contaminants of concern as defined in the Site Management Plan
2. GPS = Groundwater Protection Standard
3. µg/L = micrograms per liter
4. U = Non Detect
5. J = Estimated value
6. VOCs = Volatile Organic Compounds



Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well meet the termination criteria by achieving the GPSs for an equivalent of 8 quarters? **Yes***

Alternative Termination Criteria (Section 5.1.2 of the Site Management Plan):
1. Does this well achieve "Zero Slope Condition" as defined in the permit?
   1.a. Plot sum of concentration of hazardous waste constituents from an equivalent of 8 quarters — See above
   1.b. Fit a trendline (either linear or exponential) using least squares regression model. — See above
   1.c. The slope is less than or equal to zero. — **Yes**

2. Does this well achieve the analytical concentration criteria for a minimum of eight quarters?
   2.a. Is the total concentration of COCs less than 100 ug/L? — **Yes***
   2.b. Are single COCs less than 50 ug/L? — **Yes***

3. Will the residual groundwater contamination result in an unacceptable risk to human health and the environment? Provide analysis

* - While the well achieves this critieria for the last eight monitoring events, these events do not include monitoring over four consecutive quarterly sampling events per Section 5.1.2 of the SMP.

Appendix B

ABC-Olé Safety Data Sheet

SAFETY DATA SHEET
ABC-Olé

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: **ABC-Olé**
GENERAL USE: **Bioremediation of halogenated organics and metals**

MANUFACTURER:

Redox Tech, LLC
200 Quade Drive
Cary, NC 27513
919-678-0140

EMERGENCY TELEPHONE:

Within USA and Canada: 1-800-424-9300
+1 703-527-3887 (collect calls accepted)

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Product is generally recognized as safe. May cause irritation exposure to eyes. Long term contact to skin may cause some drying and minor irritation.

3. COMPOSITION INFORMATION ON INGREDIENTS

Proprietary mixture of fatty acids, glycerol, hydrolyzed vegetable oil, emulsifying agent and dipotassium phosphate.

4. FIRST AID MEASURES

EYES: Immediately flush with water for up to 15 minutes. If irritation persists, seek medical attention.

SKIN: Rinse with water. Irritation is unlikely, but if irritation occurs or persists, seek medical attention.

INGESTION: Generally safe to ingest but not recommended.

INHALATION: No first aid required.

5. FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA: Deluge with water

FIRE/EXPLOSION HAZARDS: Product is combustible only at temperatures above 600C

FIRE FIGHTING PROCEDURES: Use flooding with plenty of water, carbon dioxide or other inert gasses. Wear full protective clothing and self-contained breathing apparatus. Deluging with water is the best method to control combustion of the product.

FLAMMABILITY LIMITS: non-combustible

SENSITIVITY TO IMPACT: non-sensitive

SENSITIVITY TO STATIC DISCHARGE: non-senstive

6. ACCIDENTAL RELEASE MEASURES

Confine and collect spill. Transfer to an approved DOT container and properly dispose. Do not dispose of or rinse material into sewer, stormwater or surface water. Discharge of product to surface water could result in depressed dissolved oxygen levels and subsequent biological impacts.

7. HANDLING AND STORAGE

HANDLING: Protective gloves and safety glasses are recommended.

STORAGE: Keep dry. Use first in, first out storage system. Keep container tightly closed when not in use. Avoid contamination of opened product. Avoid contact with reducing agents.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

EXPOSURE LIMITS

Chemical Name	ACGIH	OSHA	Supplier
ABC	**NA**	**NA**	**NA**

ENGINEERING CONTROLS: None are required

PERSONAL PROTECTIVE EQUIPMENT

EYES and FACE: Safety glasses recommended
RESPIRATOR: none necessary
PROTECTIVE CLOTHING: None necessary
GLOVES: rubber, latex or neoprene recommended but not required

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	none to mild pleasant organic odor
Appearance:	milky
Auto-ignition Temperature	Non-combustible
Boiling Point	>600 C

Melting Point	NA
Density	0.98 gram/cc
Solubility	infinite (miscible)
pH	6-8

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID: Do not contact with strong oxidizers
STABILITY: product is stable
POLYMERIZATION: will not occur
INCOMPATIBLE MATERIALS: strong oxidizers
HAZARDOUS DECOMPOSITION PRODUCTS:

11. TOXICOLOGICAL INFORMATION

Acute Toxicity
A: General Product Information
Acute exposure may cause mild skin and eye irritation.
B: Component Analysis - LD50/LC50

No information available.

B: Component Analysis - TDLo/LDLo
TDLo (Oral-Man) none

Carcinogenicity
A: General Product Information
No information available.
B: Component Carcinogenicity
Product is not listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

Epidemiology
No information available.

Neurotoxicity
No information available.

12. ECOLOGICAL INFORMATION

Ecotoxicity
Discharge to water may cause depressed dissolved oxygen and subsequent ecological stresses
Environmental Fate
No potential for food chain concentration

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: Material is not considered hazardous, but consult with local, state and federal agencies prior to disposal to ensure all applicable laws are met.

14. TRANSPORT INFORMATION

NOTE: The shipping classification information in this section (Section 14) is meant as a guide to the overall classification of the product. However, transportation classifications may be subject to change with changes in package size. Consult shipper requirements under I.M.O., I.C.A.O. (I.A.T.A.) and 49 CFR to assure regulatory compliance.

US DOT Information
Shipping Name: Not Regulated
Hazard Class: Not Classified
UN/NA #: Not Classified
Packing Group:None
Required Label(s):None

50thEdition International Air Transport Association (IATA):
Not hazardous and not regulated

INTERNATIONAL MARITIME DANGEROUS GOODS (IMDG)

Material is not regulated under IMDG

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III
SECTION 311 No Hazard for Immediate health Hazard
SECTION 312 No Threshold Quanitity
SECTION 313 Not listed

CERCLA NOT REGULATED UNDER CERCLA

TSCA NOT REGULATED UNDER TSCA

CANADA (WHIMS): NOT REGULATED

16. OTHER INFORMATION

HMIS:

Health	0
Flammability	0
Physical Hazard	0
Personal Protection	E

E: Safety Glasses, gloves