APTIM

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Via: FedEx

Date: **August 14, 2017**

To: **Mr. Stanley Radon**

Subject: **Bell Aerospace – Textron Wheatfield; #932052**

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- ☐ Per your request
- ☐ For your files
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Enclosed please find the *Bioremediation Work Plan* for the former Bell Aerospace facility located in Wheatfield, New York. An electronic copy of the report has been emailed to you on August 14, 2017. We appreciate your time to review of this work plan and await your approval to move forward with this work. If you have any comments or questions regarding this report please contact the undersigned below.

Sincerely,

Cecelia Byers

APTIM

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Mr. Greg Simpson, Textron
File, APTIM

Bioremediation Program Work Plan

Former Bell Aerospace Textron Facility
Wheatfield, New York

Prepared for:
Textron Inc.
Providence, Rhode Island

Prepared by:
Aptim Engineering New York, P.C.
Latham, New York

Project No. 156045
August 2017

BIOREMEDIATION PROGRAM WORK PLAN

Former Bell Aerospace Textron Facility
Wheatfield, New York

Prepared for:
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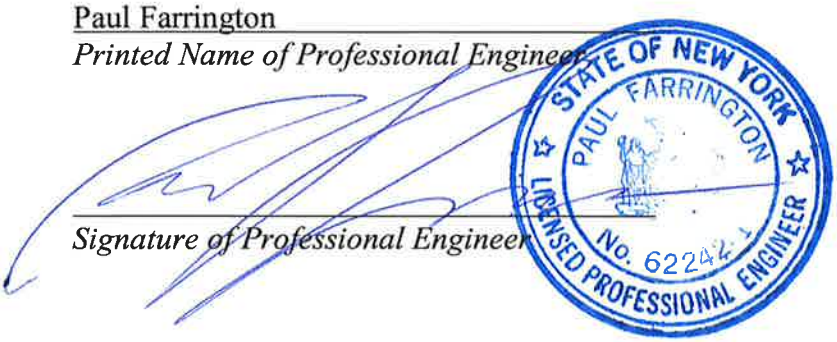
Project No. 156045
August 2017

Certification

I certify that I am a New York State-registered Professional Engineer and that this Work Plan prepared for Textron Inc. at the Former Bell Aerospace Facility, in Niagara County, Wheatfield, New York, is in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

Paul Farrington
Printed Name of Professional Engineer



Signature of Professional Engineer

Registration Number: 062242-I
State: New York

Date: 8/11/12

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List of Acronyms and Abbreviations

3DMe®	3-D Microemulsion®
APTIM	Aptim Engineering New York, P.C.
BAT	Bell Aerospace Textron
bgs	below ground surface
CMIP	Corrective Measures Implementation Plan
CMS	Corrective Measures Study
CRS®	Chemical Reducing Solution®
CVOC	chlorinated volatile organic compound
DNAPL	dense non-aqueous phase liquid
NYSDEC	New York State Department of Environmental Conservation
PVC	polyvinyl chloride
SWMU	Solid Waste Management Unit
TCE	trichloroethene
Textron	Textron Inc.

Executive Summary

This Bioremediation Program Work Plan provides details for the implementation of in situ bioremediation processes intended to supplement the naturally occurring ongoing degradation of chlorinated volatile organic compounds (CVOCs) in groundwater. The objectives of the program are to reduce the concentrations of dissolved-phase CVOCs to facilitate discontinuing operation of the on-site groundwater extraction system. The targeted area for this treatment program is the Zone 1 fractured-rock water-bearing unit within the capture area of the existing On-Site Groundwater Treatment System (north of Niagara Falls Boulevard and west of Walmore Road). Attainment of these objectives will be measured via the reduction of the CVOC concentrations in groundwater as measured in the current monitoring well network utilized for routine compliance monitoring.

A total of 11 injection points will be utilized for the delivery of the bioaugmentation materials to the Zone 1 bedrock including 6 existing monitoring wells and 5 additional proposed injection points. This program is anticipated to be implemented over an area encompassing approximately 300,000 square feet that is located adjacent to the former Neutralization Pond and the on-site area extending hydraulically downgradient to the south. The proposed bioremediation program includes the augmentation of the naturally occurring subsurface environment with a commercially available electron donor source to support and promote anaerobic biodegradation of CVOCs within the treatment area. Additionally, an iron-based amendment (Chemical Reducing Solution®) will be added to stimulate the abiotic degradation of CVOCs and maximize the potential benefits from the combined biological and biogeochemical processes. Finally, a microbial culture (SDC-9™) developed by Aptim Environmental & Infrastructure, Inc. and proven to biodegrade chlorinated CVOCs will be used to supplement the naturally occurring bacterial population within the treatment area.

The effectiveness of the bioremediation technology will be monitored through the measurement of the CVOCs and select geochemical parameters for approximately 12 to 24 months. Upon completion of the initial 12-month prescribed program monitoring period, data associated with the bioremediation program will be analyzed to evaluate the effectiveness of the bioremediation program. Dependent upon the results of the initial 12-month monitoring period, recommendations may be made for adjustments in monitoring frequency or locations, enhancing the effectiveness of the bioremediation program, and/or decommissioning the On-Site Groundwater Treatment System.

A summary of activities associated with the implementation and subsequent monitoring of the bioremediation program will be included in the project status reports to be generated semiannually and submitted to New York State Department of Environmental Conservation.

1.0 Introduction

Aptim Engineering New York, P.C. (APTIM) has prepared this Bioremediation Work Plan for the former Bell Aerospace Facility in Wheatfield, New York (the site), on behalf of Textron Inc. (Textron). The site and surrounding area are shown on Figure 1. This work plan is submitted in accordance with Textron's New York State Department of Environmental Conservation (NYSDEC) Order on Consent, Index No. 932052-01-04, effective December 16, 2013.

The objectives of the proposed bioremediation program include the following:

1. To accelerate the naturally occurring anaerobic dechlorination of dissolved-phase chlorinated volatile organic compounds (CVOCs) through the addition of commercially available carbon substrate and iron-based products and microbial culture
2. To facilitate permanent discontinuation of the need for groundwater extraction to control the migration of dissolved-phase CVOCs hydraulically downgradient within the Zone 1 water-bearing unit

The targeted area for this treatment program is the Zone 1 fractured-rock water-bearing unit within the capture area of the existing On-Site Groundwater Treatment System (north of Niagara Falls Boulevard and west of Walmore Road). Attainment of these objectives will be measured via the reduction of the CVOC concentrations in groundwater as measured in Zone 1 monitoring wells.

1.1 Remedial Program Status

The On-Site Groundwater Treatment System (six extraction wells and the groundwater treatment system) has been operating for over 23 years. Based on the graphs presented in Appendix A, the decreasing trends presented show that the influent concentration of CVOCs is declining and may be reaching asymptotic levels in its current configuration. During the 2015 and 2016 calendar years, approximately 300 pounds of CVOCs were removed from the aquifer while the treatment system processed over 16 million gallons of groundwater. This is the equivalent removal rate of approximately 53,000 gallons of water for every pound of CVOCs removed. Based on the objectives of NYSDEC's Division of Environmental Remediation–31 Green Remediation, the On-Site Groundwater Treatment System is no longer the most efficient method of groundwater treatment as the energy consumed and the wastes generated outweigh the amount of CVOCs removed. Textron would like to enhance the rate of contaminant removal while at the same time minimize the long-term environmental footprint of this project by exploring the use of in situ bioremediation technology in favor of the continued operation of the pump and treat technology.

1.2 Work Plan Organization

The following text describes the findings of the preliminary assessment regarding the feasibility of employing bioremediation technologies to treat dissolved phase CVOCs and the primary tasks associated with implementation of the bioremediation program. Section 2.0 provides a brief overview of the history of investigations and characterization of the site. Section 3.0 summarizes the assessment of the bioremediation evaluation that was conducted at the facility. Section 4.0 presents the details of the design and implementation of program activities. Section 5.0 describes the anticipated monitoring plan to assess the effectiveness of the bioremediation program. Sections 6.0 and 7.0 provide information regarding the proposed reporting and schedule for implementation, respectively, that are associated with the program.

2.0 Background

The facility is located on U.S. Highway 62/Niagara Falls Boulevard near the western boundary of the town of Wheatfield, adjacent to the Niagara Falls International Airport.

Bell Aircraft Corporation began operations at the Wheatfield plant in 1940. In 1960, Textron purchased the defense business assets from Bell Aircraft Corporation and leased the Wheatfield plant. Textron established Bell Aerospace Textron (BAT) to operate the plant and related facilities. BAT, an aerospace-defense company, conducted research, development, and testing as well as manufacturing of defense-oriented hardware and systems including propulsion, lasers, vehicles, and electronics at this facility. BAT purchased the plant property in the early 1970s.

Activities at the facility gradually decreased during the 1980s and 1990s. BAT conveyed the plant property to Textron Realty Operations, which is responsible for the management of environmental activities subject to 6 NYCRR Part 373 governing hazardous waste management.

Both Bell Aircraft Corporation and BAT utilized a surface impoundment system (Neutralization Pond) located in the northeast corner of the plant for the treatment of waste fluids. This Neutralization Pond was a rectangular basin with an area of approximately 60 feet by 100 feet and an average depth of 10 feet that had been excavated into the existing overburden soils. The Neutralization Pond, also identified as Solid Waste Management Unit (SWMU) 1, was utilized from 1948 until 1984 for the collection of pad wash water generated from rocket engine test firings. From 1966 through 1970, this surface impoundment was used for the treatment of solvent wash drippings generated from the process line for helicopter rotor blade bonding operations. Additionally, it received storm water runoff and cooling water for over 30 years and, for a brief period of its operation, it was noted to receive coal gasification wastes. Once neutralized, fluid from the pond was discharged into the plant's sanitary sewer. The Neutralization Pond was physically closed in 1987. Closure of this unit included the re-routing of the piping system discharging into the pond, demolition of the former pump house/control building, and the removal of all impacted soils to bedrock according to documents provided to APTIM.

2.1 Historical Site Investigations

The investigation at the facility was divided into two parts based on media of concern: soil and groundwater. The results of these investigations are outlined below.

2.1.1 Soil Investigation

In March 1990, BAT sampled soils at the site, confirming the presence of CVOC impact to overburden soils. This sampling resulted in the submittal of a *RCRA Facility Assessment/RCRA Facility Investigation Report* on March 14, 1991. CVOC impact was identified at certain SWMUs;

these locations were excavated, soils were removed for off-site disposal, and confirmatory sampling was conducted. Soil impacts within all of the SWMUs have been addressed to the satisfaction of the NYSDEC, and no further action is required concerning soil-based issues.

2.1.2 Groundwater Investigation

Sampling of the groundwater confirmed the presence of CVOC impact as both aqueous (or dissolved) phase and dense non-aqueous phase liquid (DNAPL). The contaminants of concern were primarily CVOCs, including trichloroethene (TCE), methylene chloride, 1,1,1-trichloroethane, 1,2-dichloroethene (total), and vinyl chloride. As required by NYSDEC Consent Order No. 85-010-9, the nature and extent of the groundwater impact was defined through a series of investigations completed over several years. The results of these investigations were summarized in the *RCRA Facility Investigation, Neutralization Pond, Bell Aerospace Textron Wheatfield Plant, Final Report* submitted in June 1991.

The source of the chlorinated CVOC impact to groundwater was assumed to be the former Neutralization Pond (SWMU 1), the Helicopter Blade Bonding Building (SWMU 9), and the Rocket Test Building (SWMU 13). SWMUs 9 and 13 were addressed under the corrective measures program developed for SWMU 1 due to their proximity and hydraulic connection to the groundwater area of CVOC impact emanating from the former Neutralization Pond.

Historical detections of DNAPL have been limited to the uppermost bedrock strata (Zone 1) and are reported to have extended to a maximum of 750 feet to the southeast of the former Neutralization Pond. The DNAPL did not appear to have migrated off the facility property based upon review of historical documentation. Aqueous phase impacts have been detected in the unconsolidated sediments (overburden soil) and bedrock at the facility. The extent of the aqueous phase CVOC impact in groundwater in the bedrock was considerably larger than in the overburden soil. CVOC impact to groundwater within the upper bedrock zone (Zone 1) extended from the former Neutralization Pond approximately 5,000 feet to the southeast. CVOC impact to groundwater within the lower bedrock zone (Zone 3) was less extensive. Although Zone 3 CVOC-impacted groundwater was detected in off-site monitoring wells, it does not extend south of Niagara Falls Boulevard.

2.2 Hydrogeologic Setting Summary

2.2.1 Overburden

The facility is situated on top of approximately 15.5 to 17.5 feet of overburden deposits above the bedrock. The overburden deposits are classified into four layers (surficial fill, lacustrine clay, lacustrine till, and basal till). Additionally, some discontinuous layers of wet sand have been identified. The surficial fill is comprised of crushed gravel, slag, silty sand, sandy silt, and clay ranging from 1 foot to 6.5 feet in thickness. The lacustrine clay varies in thickness from 2.5 feet

to 11.5 feet with the thickest sections encountered in the southeastern portion of the facility. The lacustrine till underlies the clay and varies in thickness from 1.25 feet to 4.75 feet. The till is comprised of sandy silt to silty sand with trace amounts of clay and gravel and transitions into the basal till overlying the bedrock.

2.2.2 Bedrock

The bedrock surface beneath the facility is comparatively level without major variations, gently dipping southward toward the Niagara River. The bedrock is comprised of the Lockport Group dolostone of the Niagara Series (Middle Silurian). The strata have been subdivided into four zones (Zones 1 through 4) with distinct lithological and geotechnical properties. The contaminants from the facility have entered the upper part of the Lockport Group (Zone 1).

Zone 1

The Zone 1 bedrock, or Guelph Dolomite, is the uppermost formation in the Lockport Group. Zone 1 is a light gray, fine-grained, laminated dolomite ranging from 10 to 20 feet thick. This zone has previously demonstrated high permeability. Most of the bedrock wells at the site are finished in fractures within the Guelph Dolomite Unit A (referred to as Guelph A herein), which contains open/weathered bedding partings formed through gypsum dissolution and is commonly associated with water loss during drilling (Yager, 2002 and Golder, 1987). The groundwater hydraulic gradient in Zone 1 is generally oriented to the south toward the Niagara River as shown on Figure 2.

Zone 2

The Zone 2 bedrock, or Eramosa Dolomite Unit F, is an unweathered, relatively unfractured, medium to thickly bedded massive formation with a consistent thickness of 10 feet. The rock is a light to medium brownish-gray with fine to medium grains and is generally non-porous. Due to the massive nature of the rock, Zone 2 contains very few discontinuities and tends to core in continuous pieces. Zone 2 is considered to be an aquitard based on the massive nature of the rock and its low permeability (Yager, 2002 and Golder, 1987).

Zone 3

The Zone 3 bedrock is comprised of the underlying Eramosa Dolomite Units C, D, and E. This lower portion of the Eramosa Dolomite is notably porous and contains vugs and bedding plane fractures. The thickness of the Zone 3 strata varies from 18 to 29 feet due to the transitional contact with the underlying Zone 4. A majority of the discontinuities within Zone 3 are related to void spaces generated through dissolution of features and small veins. Zone 3 is moderately permeable due to the vuggy, porous nature of the dolostone (Yager, 2002 and Golder, 1987).

Zone 4

The Zone 4 bedrock is light to medium brownish-gray, fine to medium grained dolomite, 6 to 65 feet thick, equivalent to the Eramosa Dolomite Units A and B. The massive, non-porous strata of Zone 4 were found to have low permeabilities (Yager, 2002 and Golder, 1987).

2.3 Corrective Measures Study

Following the completion of the RCRA Facility Investigation, BAT performed a Corrective Measures Study (CMS) to identify and evaluate technologies which could be applied to remediate the groundwater in the study area. The CMS was submitted to the NYSDEC in June 1991; the agency subsequently reviewed and approved the plan. The objective of the CMS was to evaluate the feasibility of select technologies to remediate any significant threat to public health and the environment associated with CVOC-impacted groundwater.

A baseline risk assessment, completed by Environ Corporation in 1991, was included in the CMS. According to the risk assessment, the greatest threat of exposure would be from Zone 1 groundwater being extracted by domestic wells located hydraulically downgradient of the site. The community surrounding the site is serviced by municipal water; therefore, the risk would only be associated with the use of Zone 1 groundwater for irrigation purposes. For this reason, the primary intent of the corrective measures was to reduce the dissolved phase CVOC concentrations in groundwater in Zone 1. The CMS required that the DNAPL source (former Neutralization Pond) be addressed to effectively contain and reduce the extent of the source of the dissolved phase CVOC impact to groundwater.

The CMS concluded that the most technically feasible and effective remedial alternative at the time of the evaluation was to control the dissolution of the DNAPL plume through hydraulic or physical methods. The selected corrective measure alternative involved the operation of two separate groundwater recovery and treatment systems. One system (the On-Site System) was designed to hydraulically contain the DNAPL plume and recover the dissolved phase CVOC-impacted groundwater beneath the site. The other system (Off-Site System) was designed to contain and capture the dissolved phase CVOC-impacted groundwater in the Zone 1 water-bearing unit south of the site.

2.4 Corrective Measures Implementation Plans

Following NYSDEC's approval of the CMS, BAT prepared a Corrective Measures Implementation Plan (CMIP) for each proposed groundwater and recovery system. The CMIP detailing the Off-Site System was submitted in March 1992 and approved by NYSDEC the following month. Construction of the Off-Site System began in October 1992 and concluded with the system being brought on line in March 1993.

The CMIP detailing the On-Site System was submitted and approved by NYSDEC in March 1993. Construction of the On-Site System was initiated on September 20, 1993 and completed by late 1994. The On-Site System was brought on line in April 1995 and continues to be operational.

2.4.1 Off-Site Groundwater Extraction System

The Off-Site System, located south of the site between Niagara Falls Boulevard and Jagow Road, consists of six Zone 1 bedrock groundwater extraction wells (designated EW-1 through EW-6) connected by a subsurface double-containment pipeline that discharges the extracted groundwater to the Niagara County Sewer District Publicly Owned Treatment Works. The Off-Site System has been operating since March 1993. Extraction Well EW-1 was taken out of service during system startup in March 1993, based on the hydraulic response observed during system startup. Extraction Well EW-6 was taken off line on April 11, 1996 in an attempt to reduce the constituent concentration at the southern boundary of the dissolved phase plume in the area of EW-6. The cessation of groundwater extraction at EW-6 allowed Extraction Well EW-5 to "draw" the dissolved phase plume boundary (to the south of EW-6) to the north. As part of an extended pilot study requested by the NYSDEC, Extraction Well EW-5 was taken off line on September 5, 2013 while Extraction Wells EW-2, EW-3, and EW-4 remained operational. The purpose of this pilot study was to evaluate the ability to configure the system to induce the edge of the "plume" in a northerly direction by turning off the southernmost extraction well while demonstrating that three extraction wells can continue to control the migration of the dissolved phase CVOC-impacted groundwater. The Off-Site System continues to operate in this configuration with the permission of the NYSDEC.

2.4.2 On-Site Groundwater Treatment System

The On-Site System consists of seven Zone 1 bedrock groundwater extraction wells (designated EW-7, EW-8, EW-13, and DW-9 through DW-12) connected by a subsurface double-containment pipeline that delivers the extracted groundwater to the On-Site Treatment Plant. At the treatment plant, dissolved-phase CVOCs are removed from the groundwater using an air stripper to aerate the water prior to the water being processed through granular activated carbon units. The recovered groundwater is ultimately discharged to the Walmore Road storm sewer under a National Pollution Discharge Elimination System permit.

Construction of the system was initiated on September 20, 1993 and was substantially completed in late 1994. Startup of the system began in April 1995. Extraction Well DW-9 was taken off line on May 26, 1998 to focus remedial efforts on the southern property line of the facility near Wells EW-7 and EW-8. Extraction Well EW-13 was added to the system approximately midway between these wells and was activated on September 25, 1998 in order to enhance the hydraulic barrier between Wells EW-7 and EW-8.

3.0 Data Assessment Summary

APTIM personnel collected additional information on the Zone 1 water-bearing unit and extent of CVOC-impacted groundwater prior to the development of this work plan. The data obtained between May 22 and June 1, 2017 were used to support the design of the bioremediation scope of work. A summary of the data collection activities and site-specific information generated for use in the design of the proposed bioremediation program is provided in the following sections.

3.1 Historical Data Review

APTIM personnel reviewed available relevant documents pertaining to the site as well as reports provided by the NYSDEC regarding remedial activities completed at neighboring sites. The documents included the following:

- Results of Phase I and II Investigations, Golder Associates, May 1987
- Summary of Closure Activities for Neutralization Pond, Textron, July 1988
- Corrective Measures Implementation Plan, On-Site System, Golder Associates, March 1993
- Simulated Transport and Biodegradation of Chlorinated Ethenes in a Fractured Dolomite Aquifer near Niagara Falls, New York, U.S. Geological Survey, 2002
- Construction Completion and Initial Performance Assessment Report for In-Situ Treatment using Enhanced Bioremediation, Parsons, August 2012
- Remedial Action Injection Summary Memorandum, Versar, Inc. and EA Engineering, P.C., January 2016
- Remedial Action Injection Summary Report, Versar, Inc. and EA Engineering, P.C., June 2017
- 2016 Annual Summary and Site Maintenance and Monitoring Report, CB&I Engineering of New York, P.C., March 2017

Review of these documents provided information pertaining to the site-specific geological, hydrogeological, and chemical characteristics relevant to the design of an application of in situ bioremediation technology. In addition, information regarding the methodologies utilized to address CVOC-impacted groundwater via in situ bioremediation in the local subsurface environment at adjacent facilities provided additional lines of evidence to aid in the development and evaluation regarding the potential application in similar environmental settings near the site.

3.2 Groundwater Sample Results

Groundwater from select Zone 1 monitoring wells was sampled for CVOC analysis using U.S. Environmental Protection Agency Method 8260 to develop a data set of current CVOC concentrations within the area of impacted groundwater to be targeted with the proposed in situ bioremediation program. The monitoring wells selected for sampling were either part of the groundwater monitoring network but not sampled during the routine semiannual monitoring events or monitoring wells that are not currently used in the monitoring well network. Fourteen monitoring wells were sampled between May 22 and 24, 2017 including the following:

- 87-01(1)
- 87-10(1)
- 87-15(1)
- B-10a
- 87-04(1)
- 87-12(1)
- 87-18(1)
- C
- 87-05(1)
- 87-13(1)
- 89-12(1)
- 87-09(1)
- 87-14(1)
- 96-01(1)

Groundwater samples were collected via methods described in the 2012 Groundwater Monitoring Plan. The results of this sampling event, summarized in Table 1, will be considered to be representative of baseline conditions for the treatment area. Generally speaking, the observed groundwater quality data are consistent with historical groundwater concentration trends developed at the site. Higher concentrations of CVOCs were found at locations in close proximity to the former Neutralization Pond with decreasing concentrations of CVOCs detected in monitoring wells progressing hydraulically downgradient from the former Neutralization Pond.

3.3 Monitoring Well Construction Detail Survey

A survey of existing monitoring wells reported to be completed within Zone 1 was conducted to confirm information regarding their construction details. The objective of this exercise was to establish the available network of monitoring wells completed within Zone 1 in the targeted area of the site that could be used for monitoring or injection as part of the proposed bioremediation program. A waterproof down-hole camera with LED light was used to view the condition of these monitoring wells and record the depth and length of the screened interval. The monitoring well construction data collected during the camera inspection of the select set of monitoring wells are provided in Appendix B.

3.4 Potable Water Injection Tests

On May 30 and 31, 2017, short-term potable water injection tests were completed at four monitoring well locations (87-02(1), 87-04(1), 87-13(1) and 87-14(1)) to evaluate the feasibility of fluid injection into the Zone 1 water-bearing unit and the approximate radius of influence for the design of the bioremediation injection program. The injection tests used approximately 500 gallons of potable water at each of these locations. Three of the four locations showed the ability to accept the injected water at a minimum rate of 10 gallons per minute. During the

injection, surrounding monitoring wells were observed for changes in water levels resulting from the injection of potable water. A summary of injection test observations is included in Table 2.

In general, groundwater levels increased in monitoring wells located up to approximately 175 feet from the injection location upon initiation of the injection. Water level increases relative to static water levels were typically most significant in wells located within 100 to 125 feet extending radially from the injection location.

Monitoring Well 87-13(1) did not display the same ability to accept the injected water relative to the other injection test locations. A pumping rate of 3.5 gallons per minute was the maximum that could be sustained at this location. However, a radius of influence, as measured by increase in groundwater elevations in surrounding monitoring wells, was still observed at a distance greater than 175 feet as was observed with other inject test locations.

The information obtained from these potable water injection tests supports the historical information regarding the Zone 1 water-bearing unit. As noted in the literature review, the Zone 1 water-bearing unit consists of numerous well-connected fractures. Given the near-instantaneous hydraulic response to injection observed radially from each injection location, it is apparent that the fracture porosity of the targeted formation will facilitate the effective distribution of the bioremediation materials. The data obtained from this testing are considered in the designed spacing of injection points and determination of injection volumes as described in Section 4.0.

4.0 Bioremediation Program Design

Additional groundwater samples were collected from selected monitoring wells (Monitoring Wells 87-02(1), 87-02(3), 87-05(1) 87-13(1) and 87-13(3)) in April 2016 to evaluate the implementation of alternative remedial technologies to address dissolved CVOCs. The samples were analyzed for geochemical parameters associated with Monitored Natural Attenuation of CVOCs including the presence of dehalococcoides (dechlorinating bacteria). The results of these analyses are presented in Table 3. These analyses provide additional lines of evidence regarding the presence of naturally occurring complete anaerobic dechlorination as the source of the reduction of TCE to ethane in the groundwater.

The results of the April 2016 sampling show that complete degradation of TCE to the final end product (ethane) is occurring naturally at the site. Therefore, it can be expected that enhancing this process with proven in situ bioremediation technologies will likely aid in decreasing the time to reach groundwater protection standards while being a more effective approach to reducing contaminant concentrations than the existing groundwater extraction system.

4.1 Bioremediation Program Overview

Implementation of in situ bioremediation processes to enhance the degradation of dissolved-phase CVOCs will be conducted adjacent to the former Neutralization Pond and the on-site area extending hydraulically downgradient to the south. This program is anticipated to be implemented over an area encompassing approximately 300,000 square feet and to include the augmentation of the naturally occurring subsurface environment with a commercially available electron donor source to support and promote anaerobic biodegradation of chlorinated CVOCs and an iron-based amendment to stimulate the abiotic degradation of CVOCs within the treatment area. Additionally, a microbial culture (SDC-9™) developed by APTIM and proven to biodegrade chlorinated CVOCs will be used to supplement the naturally occurring bacterial population within the treatment area. These materials will be delivered to the subsurface via injection through monitoring wells.

4.2 Site Preparation

Prior to implementation of subsurface activities associated with the bioremediation program, measures will be taken to provide access to the proposed work locations and ensure that subsurface utilities will not be impacted or create a safety hazard during installation of subsurface borings. Additionally, all locations and the proposed work schedule will be reviewed with Wheatfield Business Park and Moog, Inc. (current owners and occupants of the site) to ensure that field activities do not interrupt daily site operations.

The utility clearance activities associated with this task are intended to minimize the risks associated with conducting intrusive work in the area of subsurface utilities as well as to minimize the potential for short-circuiting the injection of bioremediation materials to the areas of subsurface utility bedding.

A 25-foot radius around each of the five proposed injection locations will be scanned by a private utility clearance contractor using various remote sensing techniques for the presence of underground utilities or other subsurface structures. Additionally, the location of the storm sewer line installed parallel to Walmore Road will be identified in the vicinity of Monitoring Wells 87-04(1) and 87-10(1) in terms of location and depth. The locations of all identified underground utilities and structures will be marked on the ground surface. Additionally, each proposed injection location that is not an existing monitoring well will be manually cleared to a minimum depth of approximately 5 feet below ground surface (bgs) utilizing vacuum excavation equipment or equivalent manual excavation techniques. Should a specific proposed injection or monitoring point need to be relocated due to a confirmed or suspected subsurface obstruction, the point will be relocated such that it safely avoids the obstruction and best meets the objectives of the specific designated location.

4.3 Injection Point Installation

A total of 11 injection points will be utilized for the delivery of the bioaugmentation materials to the subsurface (Figure 3). Five new injection points will be installed to provide for effective distribution of bioremediation materials within the proposed remediation area (Injection Wells 17-01(1), 17-02(1), 17-03(1), 17-04(1), and 17-05(1)). One existing location designated as Monitoring Well 87-11(1) has a bent/pinched casing and requires repairs prior to being utilized as an injection point. The remaining five injection locations will utilize existing monitoring wells that are completed within the targeted Zone 1 depth interval (Injection Wells 87-04(1), 87-05(1), 87-10(1), 87-14(1), and 87-15(1)).

The new injection points will be installed using hollow-stem augers and HQ core drilling techniques under the supervision of an APTIM geologist. The boreholes for each of the proposed new injection points will be advanced into the bedrock surface using hollow-stem augers; the anticipated depth to bedrock is 15.5 to 17.5 feet bgs. Once bedrock is encountered, HQ coring drilling methods will be utilized to retrieve and examine the bedrock core for fractures. Coring will be advanced to approximately 33 to 35 feet bgs and the injection points will be constructed with a 10-foot screened zone extending from approximately 23 to 33 feet bgs. The injection points will use 2-inch inside diameter, Schedule 40 polyvinyl chloride (PVC) flush joint, threaded, factory slotted, 0.020-inch screen. A sand pack filter will be installed in the annular space between the borehole wall and the PVC well screen from the terminal depth to approximately 2 feet above the screened zone. A 2-foot-thick bentonite seal will be installed using bentonite pellets above the

sand filter pack and hydrated with potable water. Each of the injection points will be developed following installation to remove any residual solids from the filter pack and screen.

Each injection point will be completed with either a protective outer steel casing with a lockable lid that will be installed as stick-ups or a flush-mounted protective cover. A concrete mix will be placed above the bentonite seal to the ground surface, and the steel protective casing will be installed over the PVC riser pipe to a depth of approximately 2 feet bgs leaving a 3-foot stick-up above grade. For any new injection point to be installed in an area that is susceptible to being struck by vehicular traffic, those points will be constructed in the same manner as previously discussed, except they will be completed with flush-mounted covers and a thermos-type locking cap.

All soil waste generated during drilling will be placed in U.S. Department of Transportation-approved drums pending characterization and disposal by Textron's selected waste contractor. All liquids generated will be staged by the treatment plant allowing any solids to separate out before introducing the liquid to the system for treatment and discharge.

Approximately 2 weeks following the installation of the injection wells, groundwater samples from each of the new points will be collected following protocols as detailed in the 2010 Groundwater Monitoring Plan and submitted to the analytical laboratory for analysis of CVOCs using Method 8260B. The analytical results from the new injection points will be used to establish background conditions prior to the addition of bioremediation materials to the subsurface.

4.4 Remediation Area Layout

The application of in situ anaerobic bioremediation will be conducted in the area north of the On-Site Treatment System building. This area was chosen for implementation of this technology based on the elevated CVOC concentrations observed and proximity to the former Neutralization Pond. Historical groundwater monitoring results in this area provide multiple lines of evidence of the reduction of CVOCs via reductive dechlorination as a result of ongoing naturally occurring complete anaerobic dechlorination of dissolved-phase CVOCs.

The injection design will focus on delivering the bioremediation materials to the subsurface zone of impacted groundwater (Zone 1) in order to maximize contact between the injection solution and the dissolved-phase chlorinated CVOCs. The preliminary layout of injection points within the targeted treatment area is based upon observations made during the collection of additional field data in May and June 2017. The actual layout may need to be revised in the field based on the presence of underground utilities and drainage tiles. As discussed previously, appropriate efforts will be made to locate the proposed injection points to maximize the potential to meet the bioremediation program objectives.

4.5 *Bioremediation Materials*

Amendment materials to be used for the bioremediation include 3-D Microemulsion® (3DMe®), a commercially available electron donor source manufactured by Regenesis that will support anaerobic biodegradation of the chlorinated CVOCs within the treatment area. Additionally, SDC-9™, a microbial culture developed by APTIM and proven to biodegrade chlorinated CVOCs, will be used to inoculate the site with a sufficient bacterial population. Material Safety Data Sheets for both 3DMe® and SDC-9™ are included in Appendix D. These amendments were selected given the available literature pertaining to the ability to distribute the products within similar fractured rock environments, the longevity of the product once injected, and application experience of APTIM with the products in both fractured rock and overburden soil environments.

Dosing of 3DMe® amendments for the remediation area was determined by Regenesis based on their proprietary calculations of the stoichiometry of the degradation reactions relevant to the properties of the 3DMe® and site-specific conditions, including the volume of subsurface material being treated, the mass of contaminant to be degraded, known geochemical parameters of the groundwater, and a safety factor to account for the non-specific electron demand. For the 3DMe® electron donor, it was determined based on these calculations and the data obtained from historical groundwater monitoring that a total of approximately 4,316 gallons (36,000 pounds), or approximately 392 gallons per injection point, will be injected in the remediation area.

The 3DMe® is anticipated to be mixed to a 10 percent solution to aid in the distribution of the material to fully saturate the bedrock fracture system within the remediation area. However, dilution rates will be adjusted during implementation based on ability to effectively inject fluids into the targeted subsurface area with the goal of delivering the designated volume of 3DMe® to the remediation area.

The volume of SDC-9™ to be added to the subsurface to facilitate successful biodegradation of CVOCs was estimated based on the volume of groundwater being treated. A target bacterial population of 1.0E+07 microbes per liter is considered sufficient for successful bioremediation. Given this target concentration and the anticipated volume of groundwater to be treated, the resulting total volume of the SDC-9™ to be added is approximately 45 liters, or approximately 4 liters per injection point.

Additionally, each injection location will include Chemical Reducing Solution® (CRS®), manufactured by Regenesis. CRS® is an iron-based amendment for in situ chemical reduction of CVOCs including chlorinated ethenes and ethanes. CRS® provides a soluble source of ferrous iron which, in combination with the enhanced anaerobic conditions created by the addition of 3DMe® to the subsurface, can precipitate reduced iron sulfides, oxides, and hydroxides that are capable of destroying chlorinated contaminants via abiotic chemical reduction pathways.

Approximately 2,055 gallons (18,000 pounds), or approximately 187 gallons per injection point, will be injected in the remediation area.

All injection volumes developed during the design of the bioremediation program are based on activities conducted and observations made during implementation of the injection test activities. It is assumed that equivalent conditions will be encountered and bioremediation materials will be delivered to the subsurface at the targeted depth intervals with minimal migration of the liquids to the ground surface or "daylighting." Injection volumes and/or injection point spacing may be altered based on actual field conditions observed during the field activities. However, efforts will be focused on delivery of a sufficient volume of bioremediation materials to the targeted subsurface zones in order to achieve effective dechlorination of CVOCs.

4.6 Amendment Injection

The bioremediation materials will be delivered to the targeted zone of impacted groundwater via the 11 injection locations. These 11 injection locations consist of 6 existing monitoring wells and 5 proposed injection points to be installed. The proposed injection points are shown on Figure 2. It is anticipated that pressurized injection will be necessary to overcome the natural hydraulic head of the targeted water-bearing zone and to aid in achieving optimal influence and distribution. This will be completed by utilizing a mobile system of mixing and pumping equipment. This system will provide the ability to prepare the bioremediation materials prior to injection and to control delivery of materials to the injection point in order to maximize the efficiency of subsurface distribution.

Mixing of bioremediation materials with deoxygenated potable water to the prescribed concentrations will be conducted prior to injection. It is anticipated that injection will include the simultaneous addition of the prescribed amount of each amendment to one injection point at a time. Injection of the amendments will be followed by the addition of a slug of chase water to aid in distribution of the materials within the subsurface and to flush the materials from the injection point and into the treatment zone. The actual volume of chase water to be used will be determined in the field upon observation of data regarding the delivery and distribution that result from each injection.

Pump pressures and material flow rates will be monitored during the injection process to evaluate the delivery characteristics associated with each injection point. Additionally, each of the monitoring points and injection points will be monitored during injection activities to evaluate the lateral influence resulting from the addition of the bioremediation materials as further described in Section 5.2. Based on these observations of actual field conditions at the time of injection, the volume of bioremediation materials delivered at each location may be adjusted in order to maximize the potential to meet the bioremediation program objectives.

4.7 On-Site Extraction System Operations

With the initiation of this injection program, Textron will shut down all of the operating extraction wells (DW-10, DW-11, DW-12, EW-7, EW-8, and EW-13). With the treatment system offline, Textron will assess the effectiveness of this remedial program through the collection of groundwater samples within the designated monitoring well network during the following 12 months. Should the bioremediation program prove an effective and more efficient method to treat and remove CVOCs from the groundwater than the existing groundwater extraction and treatment method, Textron will petition the NYSDEC for the decommissioning of the On-Site Groundwater Treatment System.

5.0 Bioremediation Program Monitoring

5.1 Background Monitoring

Selected monitoring points (Figure 3) distributed throughout the proposed remediation area will be used to track the degradation process of CVOCs in groundwater. Monitoring of the bioremediation program will begin with the collection of groundwater samples from the newly installed injection points in the proposed treatment area prior to the injection of bioremediation materials. Groundwater samples will be collected from six injection points following the completion of development activities and submitted for laboratory analysis of the program monitoring parameters as described in Section 5.3. These locations will include the proposed locations 17-01(1) through 17-05(1) and repaired 87-11(1), as no sample could be collected from this location in June 2017 due to damage. The field measurements and laboratory analytical results from these samples as well as existing historical data from surrounding monitoring wells will serve as background conditions for evaluation of the program. The wells proposed for monitoring are all completed in the Zone 1 bedrock. No wells completed in either the overburden or deeper Zone 3 bedrock are proposed to be included in the monitoring or remedial program.

All samples will be appropriately labeled and handled following standard industry practices of icing the samples in coolers upon their collection to a temperature of approximately 4 degrees Celsius and shipping the samples to the receiving laboratory via overnight courier using standard chain-of-custody procedures.

Laboratory analysis of groundwater samples will be conducted by ALS, Inc. of Rochester, New York.

5.2 Injection Monitoring

Monitoring of amendment injection operations will be conducted in real time to maximize the delivery of materials to the subsurface. Injection equipment will be equipped with the ability to display instantaneous flow rates and pressures during the injection process. These parameters will be utilized by the injection equipment operators and the site engineer to manage the delivery of the bioremediation materials and maximize the potential for effective distribution within the targeted subsurface zone.

Various groundwater parameters will also be monitored in real time during injection operations to evaluate the subsurface distribution of the amendments. Dissolved oxygen, oxidation-reduction potential, pH, conductivity, and temperature may be monitored in test monitoring points and existing monitoring wells using a YSI, Inc. Model 556 hand-held screening instrument or equivalent. Water level changes will be measured and visual observations will be made in the monitoring wells proximate to the injection locations as shown in Table 4. These parameters will

be monitored by the site engineer for fluctuation potentially indicative of the migration of injected amendments through the subsurface.

5.3 Program Effectiveness Monitoring

The wells within the post-injection monitoring network that are anticipated to be sampled are listed in Table 5 and shown on Figure 3. The effectiveness of the bioremediation technology will be monitored through the measurement of the parameters listed in Table 6.

Groundwater samples will be collected from each of the selected monitoring wells according to the procedures detailed in the 2010 Groundwater Monitoring Plan, as described in Section 5.1. Former Extraction Wells DW-10, DW-11, and DW-12 will no longer contain pumps (as they will be inactive as approved by the NYSDEC) and will be sampled using a dedicated bailer in the same manner as the monitoring wells. Similar to Extraction Well DW-9, these former extraction wells will not be purged prior to sampling, per NYSDEC approval, due to the large purge volume that would be required to be manually removed. All samples will be appropriately labeled and handled following standard industry practices of icing the samples in coolers upon their collection to a temperature of approximately 4 degrees Celsius and shipping the samples to the receiving laboratory via overnight courier using standard chain-of-custody procedures. Laboratory analysis of groundwater samples will be conducted by ALS, Inc. of Rochester, New York.

Prior to the injection event, baseline measurements will be established within the monitoring network through the collection of samples for analysis of the parameters listed in Table 6. The initial 12-month post-injection monitoring program is detailed below.

Groundwater samples will be collected monthly from the monitoring well network for the specified analyses for three months following the injection event. After the initial three months of sampling, the bioremediation monitoring will be extended on a quarterly basis for three quarters.

Upon completion of the prescribed 12-month post-injection monitoring program, the data will be evaluated and a recommendation for continued sample collection frequency will be proposed. If conditions warrant, sampling may be continued on an annual basis or changes to the monitoring network may be proposed. Any proposed changes to the sampling plan or frequency will be discussed with and approved by NYSDEC in advance.

6.0 Reporting

A summary report describing the installation of the injection points, application of the bioremediation amendments, and baseline conditions will be prepared by APTIM and submitted to NYSDEC within 90 days of the completion of field activities. This report is anticipated to include, at a minimum, construction details of all injection wells installed as part of the remedial program; a review of background data collected prior to commencement of injection activities; and a detailed account of all bioremediation material injection activities, including location, amendment dosage, and field observations of subsurface influence.

Data associated with the periodic monitoring and performance of the bioremediation program and a brief project status will be submitted to NYSDEC on a semiannual basis throughout the initial 12-month program monitoring period. When the submittal of the proposed semiannual bioremediation update report coincides with the timing of the submittal of the routine annual project update report, the bioremediation program information will be included in the annual report.

The reports will summarize field measurements and laboratory analytical data collected to date in tabular format and will include a summary of field activities conducted as well as proposed activities for the upcoming monitoring period. Additionally, associated laboratory analytical reports will be included along with other graphical and spatial representations of the data necessary to effectively support evaluation of the bioremediation program. Upon completion of the initial 12-month prescribed program monitoring period, data associated with the bioremediation program and recommendations regarding whether the sampling program should be adjusted or other issues (e.g., the need for added amendments, the possibility of the cessation of sampling at a point in the future, and the decommissioning of the On-Site Groundwater Treatment System) will be submitted to NYSDEC as part of the routine project monitoring update reports that are currently submitted for the semiannual groundwater sampling program.

7.0 Schedule

Implementation of bioremediation program activities is anticipated to begin upon receipt NYSDEC approval of this proposed Bioremediation Program Work Plan. Pending coordination of subcontractor schedules, mobilization of equipment and materials to the site is expected within 30 to 90 days following receipt of plan approval. However, implementation of injection activities may be scheduled to avoid winter conditions not conducive to handling bioremediation amendments and water above ground.

NYSDEC will be notified at least one week prior to initial site mobilization and injection point installation and one week prior to initiating injection activities.

Site activities, including site preparation, injection point installation, and background monitoring are expected to be completed in approximately two weeks. Injection of bioremediation amendments is expected to be completed in approximately two weeks. Periodic monitoring to assess the remedial effectiveness will be completed as discussed in Section 5.3.

8.0 References

Bell Aerospace Textron, June 1988, Certification of Closure for the Former Neutralization Pond.

CB&I Environmental & Infrastructure, Inc., March 2017. "2016 Annual Summary and Site Maintenance and Monitoring Report," Former Bell Aerospace Inc., Wheatfield, New York.

Golder Associates, Inc., May 1987, Results of Phase I and II Investigations Plume Definition Plan.

Golder Associates, Inc., March 1993, Final Report on Corrective Measures Implementation Plan On-Site System.

Shaw Environmental, Inc., April 2012. "Groundwater Monitoring Plan, Former Textron, Inc., Wheatfield, New York Facility."

Shaw Environmental, Inc., April 2012. "Quality Assurance Project Plan, Former Textron Inc., Wheatfield, New York Facility."

Yager, R.M., 2002, Simulated Transport and Biodegradation of Chlorinated Ethenes in a Fractures Dolomite Aquifer near Niagara Falls, New York: U.S. Geological Survey Water Resources Investigations Report 2000-4275, 55 p.

Tables

Table 1
Summary of Groundwater Analytical Data
Former Bell AerospaceTextron Inc.
Wheatfield, New York
May 2017

Sample Location	87-01(1)	87-04(1)	87-05(1)	87-09(1)
Sample Date	5/23/2017	5/22/2017	5/23/2017	5/22/2017
VOCs by USEPA Method 8260				
Chloromethane	2.0 U	2.0 U	50 U	2.0 U
Vinyl chloride	84	210	460	190
Chloroethane	2.0 U	2.0 U	50 U	2.0 U
Bromomethane	2.0 U	2.0 U	50 U	2.0 U
1,1-Dichloroethene	2.6	2.9	50 U	1.5 J
Acetone	10 U	10.0 U	250 U	4.1 J
Carbon disulfide	2.0 U	2.0 U	50 U	2.0 U
Methylene chloride	2.0 U	31	2,100	2.0 U
trans-1,2-Dichloroethene	6.8	3.6	50 U	1.4 J
1,1-Dichloroethane	5.6	2.9	42 J	16
cis-1,2-Dichloroethene	690 D	290	6,900	150
2-Butanone	10 U	10.0 U	250 U	10 U
Chloroform	1.1 J	0.80 J	50 U	2.0 U
1,1,1-Trichloroethane	15	2.0 U	140	85
Carbon tetrachloride	2.0 U	2.0 U	50 U	2.0 U
Benzene	2.0 U	2.0 U	50 U	2.0 U
1,2-Dichloroethane	2.0 U	2.0 U	50 U	2.0 U
Trichloroethene	110	36	1,300	1.7 J
1,2-Dichloropropane	2.0 U	2.0 U	50 U	2.0 U
Bromodichloromethane	2.0 U	2.0 U	50 U	1.0 U
cis-1,3-Dichloropropene	2.0 U	2.0 U	50 U	2.0 U
4-Methyl-2-pentanone	10 U	10 U	250 U	10 U
Toluene	2.0 U	2.0 U	12 J	2.0 U
trans-1,3-Dichloropropene	2.0 U	2.0 U	50 U	2.0 U
1,1,2-Trichloroethane	2.0 U	2.0 U	50 U	2.0 U
Tetrachloroethene	2.0 U	2.0 U	50 U	2.0 U
2-Hexanone	10 U	10 U	250 U	10 U
Dibromochloromethane	2.0 U	2.0 U	50 U	2.0 U
Chlorobenzene	2.0 U	2.0 U	50 U	2.0 U
Ethylbenzene	2.0 U	2.0 U	50 U	2.0 U
m/p-Xylenes	4 U	4.0 U	100 U	4.0 U
o-Xylene	2.0 U	2.0 U	50 U	2.0 U
Styrene	2.0 U	2.0 U	50 U	2.0 U
Bromoform	2.0 U	2.0 U	50 U	2.0 U
1,1,2,2-Tetrachloroethane	2.0 U	2.0 U	50 U	2.0 U

See notes at end of table.

Table 1
Summary of Groundwater Analytical Data
Former Bell AerospaceTextron Inc.
Wheatfield, New York
May 2017

Sample Location	87-10(1)	87-12(1)	87-13(1)	87-14(1)
Sample Date	5/23/2017	5/23/2017	5/22/2017	5/22/2017
VOCs by USEPA Method 8260				
Chloromethane	5.0 U	10 U	500 U	250 U
Vinyl chloride	12	1,700	3,000	2,900
Chloroethane	5.0 U	10 U	500 U	250 U
Bromomethane	5.0 U	10 U	500 U	250 U
1,1-Dichloroethene	5.0 U	7.2 J	500 U	250 U
Acetone	6.5 J	50 U	2,500 U	320 J
Carbon disulfide	5.0 U	10 U	500 U	250 U
Methylene chloride	5.0 U	10 U	94,000	22,000
trans-1,2-Dichloroethene	5.0 U	8.7 J	500 U	250 U
1,1-Dichloroethane	2.3 J	19	320 J	170 J
cis-1,2-Dichloroethene	130	2,200 D	80,000	16,000
2-Butanone	25 U	50 U	2,500 U	1,300 U
Chloroform	1.4 J	10 U	1,200	450
1,1,1-Trichloroethane	3.6 J	30	1,100	390
Carbon tetrachloride	5.0 U	10 U	500 U	250 U
Benzene	5.0 U	10 U	500 U	250 U
1,2-Dichloroethane	5.0 U	10 U	500 U	250 U
Trichloroethene	890	14	40,000	32,000
1,2-Dichloropropane	5.0 U	10 U	500 U	250 U
Bromodichloromethane	5.0 U	10 U	230 J	250 U
cis-1,3-Dichloropropene	5.0 U	10 U	500 U	250 U
4-Methyl-2-pentanone	25 U	50 U	2,500 U	1,300 U
Toluene	5.0 U	10 U	500 U	250 U
trans-1,3-Dichloropropene	5.0 U	10 U	500 U	250 U
1,1,2-Trichloroethane	5.0 U	10 U	500 U	250 U
Tetrachloroethene	5.0 U	10 U	500 U	250 U
2-Hexanone	25 U	50 U	2,500 U	1,300 U
Dibromochloromethane	5.0 U	10 U	500 U	250 U
Chlorobenzene	5.0 U	10 U	500 U	250 U
Ethylbenzene	5.0 U	10 U	500 U	250 U
m/p-Xylenes	10.0 U	20 U	1,000 U	500 U
o-Xylene	5.0 U	10 U	500 U	250 U
Styrene	5.0 U	10 U	500 U	250 U
Bromoform	5.0 U	10 U	500 U	250 U
1,1,2,2-Tetrachloroethane	5.0 U	10 U	500 U	250 U

See notes at end of table.

Table 1
Summary of Groundwater Analytical Data
Former Bell AerospaceTextron Inc.
Wheatfield, New York
May 2017

Sample Location	87-15(1)	87-18(1)	89-12(1)	96-01(1)
Sample Date	5/22/2017	5/22/2017	5/23/2017	5/23/2017
VOCs by USEPA Method 8260				
Chloromethane	5.0 U	5.0 U	25 U	5.0 U
Vinyl chloride	180	510	270	700
Chloroethane	5.0 U	5.0 U	25 U	5.0 U
Bromomethane	5.0 U	5.0 U	25 U	5.0 U
1,1-Dichloroethene	5.0 U	5.0 U	25 U	5.0 U
Acetone	25 U	6.7 J	36 J	25 U
Carbon disulfide	6.5	5.0 U	25 U	5.0 U
Methylene chloride	4,300 D	5.0 U	25 U	21
trans-1,2-Dichloroethene	2.0 J	2.6 J	19 J	4.4 J
1,1-Dichloroethane	3.9 J	17	9.0 J	29
cis-1,2-Dichloroethene	390	620	4,300 D	710
2-Butanone	25 U	25 U	130 U	25 U
Chloroform	5.0 U	5.0 U	25 U	5.0 U
1,1,1-Trichloroethane	5.0 U	27	22 J	48
Carbon tetrachloride	5.0 U	5.0 U	25 U	5.0 U
Benzene	5.0 U	5.0 U	25 U	5.0 U
1,2-Dichloroethane	5.0 U	5.0 U	25 U	5.0 U
Trichloroethene	10	3.9 J	490	17
1,2-Dichloropropane	5.0 U	5.0 U	25 U	5.0 U
Bromodichloromethane	5.0 U	5.0 U	25 U	5.0 U
cis-1,3-Dichloropropene	5.0 U	5.0 U	25 U	5.0 U
4-Methyl-2-pentanone	25 U	25 U	130 U	25 U
Toluene	5.0 U	5.0 U	25 U	5.0 U
trans-1,3-Dichloropropene	5.0 U	5.0 U	25 U	5.0 U
1,1,2-Trichloroethane	5.0 U	5.0 U	25 U	5.0 U
Tetrachloroethene	5.0 U	5.0 U	25 U	5.0 U
2-Hexanone	25 U	25 U	130 U	25 U
Dibromochloromethane	5.0 U	5.0 U	25 U	5.0 U
Chlorobenzene	5.0 U	5.0 U	25 U	5.0 U
Ethylbenzene	5.0 U	5.0 U	25 U	5.0 U
m/p-Xylenes	10 U	10 U	50 U	10 U
o-Xylene	5.0 U	5.0 U	25 U	5.0 U
Styrene	5.0 U	5.0 U	25 U	5.0 U
Bromoform	5.0 U	5.0 U	25 U	5.0 U
1,1,2,2-Tetrachloroethane	5.0 U	5.0 U	25 U	5.0 U

See notes at end of table.

Table 1
Summary of Groundwater Analytical Data
Former Bell AerospaceTextron Inc.
Wheatfield, New York
May 2017

Sample Location	B-10a	Moog C	Trip Blank
Sample Date	5/23/2017	5/23/2017	10/19/2016
VOCs by USEPA Method 8260			
Chloromethane	500 U	1.0 U	1.0 U
Vinyl chloride	430 J	1.0 U	1.0 U
Chloroethane	500 U	1.0 U	1.0 U
Bromomethane	500 U	1.0 U	1.0 U
1,1-Dichloroethene	310 J	1.0 U	1.0 U
Acetone	2,500 U	5.0 U	5.0 U
Carbon disulfide	500 U	1.0 U	1.0 U
Methylene chloride	3,300	1.0 U	1.0 U
trans-1,2-Dichloroethene	500 U	1.0 U	1.0 U
1,1-Dichloroethane	350 J	1.7	1.0 U
cis-1,2-Dichloroethene	20,000	17	1.0 U
2-Butanone	2,500 U	5.0 U	5.0 U
Chloroform	980	0.98 J	1.0 U
1,1,1-Trichloroethane	780	2.0	1.0 U
Carbon tetrachloride	500 U	1.0 U	1.0 U
Benzene	500 U	1.0 U	1.0 U
1,2-Dichloroethane	500 U	1.0 U	1.0 U
Trichloroethene	58,000	21	1.0 U
1,2-Dichloropropane	500 U	1.0 U	1.0 U
Bromodichloromethane	210 J	1.0 U	1.0 U
cis-1,3-Dichloropropene	500 U	1.0 U	1.0 U
4-Methyl-2-pentanone	2,500 U	5.0 U	5.0 U
Toluene	500 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	500 U	1.0 U	1.0 U
1,1,2-Trichloroethane	500 U	1.0 U	1.0 U
Tetrachloroethene	500 U	1.0 U	1.0 U
2-Hexanone	2,500 U	5.0 U	5.0 U
Dibromochloromethane	500 U	1.0 U	1.0 U
Chlorobenzene	500 U	1.0 U	1.0 U
Ethylbenzene	500 U	1.0 U	1.0 U
m/p-Xylenes	1,000 U	2.0 U	2.0 U
o-Xylene	500 U	1.0 U	1.0 U
Styrene	500 U	1.0 U	1.0 U
Bromoform	500 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	500 U	1.0 U	1.0 U

See notes at end of table.

Table 1
Summary of Groundwater Analytical Data
Former Bell AerospaceTextron Inc.
Wheatfield, New York
May 2017

Notes:

U = Compound not detected at detection limit.

Bold = Compound detected at concentration.

J = Indicates an estimated value below detection limit.

D = Compound analyzed at secondary dilution.

Table 2
Summary of Potable Water Injection Test Observations
Former Bell Aerospace Textron, Inc.
Wheatfield, NY
May 2017

Injection Location	Monitoring Point	Approximate Distance From Injection (ft)	Maximum Observed Groundwater Response (ft)
87-05(1)	DW-11	25	3.13
	B-14	175	0.45
	87-09(1)	162	0.34
	87-10(1)	350	0.17
87-14(1)	DW-9	100	1.97
	87-13(1)	125	0.43
	87-08(1)	125	2.57
	DW-10	175	0.17
	87-04(1)	250	0.12
87-13(1)	87-14(1)	125	0.47
	87-05(1)	175	0.24
	89-15(1)	175	0.2
	87-09(1)	200	0.1
87-02(1)	MP-D	125	0.29
	87-01(1)	150	0.19
	MP-A	150	0.33
	DW-12	150	0.35
	87-10(1)	175	0.26

Table 3
Summary of Monitored Natural Attenutaion Parameters and Dechlorinating Bacteria
Former Bell AerospaceTextron Inc.
Wheatfield, New York
April 2016

Sample	Zone 1			Zone 3	
	87-02(1)	87-05(1)	87-13(1)	87-02(3)	87-13(3)
Date	4/28/2016	4/28/2016	4/28/2016	4/28/2016	4/28/2016
General Chemistry (mg/L)					
Alkalinity - Total as CaCO3	311	306	334	165	302
Biochemical Oxygen Demand	3.6	2.2	2.5	69.0	11.9
Total Organic Carbon	4.6	3.4	4.6	1.4	3.6
Chemical Oxygen Demand	9.7	8.1	52.7	96.5	47.6
Chloride	236	162	313	730	229
Nitrate as Nitrogen	< 1.0	< 1.0	< 1.0	< 1.0	< 1.0
Sulfate	996	1,150	1,030	1,740	1,320
Inorganic Parameters (µg/L)					
Iron - Total	190	120	8,200	1,420	< 100
Manganese - Total	176	101	51	25	34
Dissolved Gases (µg/L)					
Ethane	1.1	1.7	5.1	140	30
Ethene	13	16	120 D	< 10	25
Methane	45	67	140 D	1,000	140 D
Dechlorinating Bacteria (cells/mL)					
Dehalococcoides	1.10	55,800	30,800	2,860	79,400

Notes:
Bold = Compound detected at concentration.
U = Compound not detected at detection limit.
D = Compound was analyzed at secondary dilution.

Table 4
Bioremediaiton Injection and Monitoring Locations
Former Bell Aerospace Facility
Wheatfield, NY

Injection Location	Monitoring Point
87-04 (1)	DW-10
	87-13 (1)
	89-15 (1)
	87-11 (1)
87-05 (1)	DW-11
	B-14 (1)
	87-09 (1)
	17-01(1)
87-10 (1)	DW-12
	87-12 (1)
	89-10 (1)
87-11 (1)	DW-10
	87-14 (1)
	87-13 (1)
87-14 (1)	DW-9
	B-10A
	87-13 (1)
	87-11 (1)
87-15 (1)	DW-9
	B-10A
	87-17 (1)
17-01 (1)	DW-11
	89-15 (1)
	89-10 (1)
17-02 (1)	DW-11
	87-02 (1)
	89-10 (1)
17-03 (1)	DW-12
	87-02 (1)
	89-12 (1)
17-04 (1)	DW-10
	DW-11
	87-13 (1)
	89-15 (1)
17-05 (1)	87-13 (1)
	87-14 (1)
	87-17 (1)

Table 5
Groundwater Monitoring Points
Bioremediation Effectiveness Monitoring Programs
Former Bell AerospaceTextron Inc.
Wheatfield, New York

Well Number	Groundwater Sample
Zone 1 Monitoring Wells	
87-01(1)	X*
87-02(1)	X*
87-08(1)	X*
87-09(1)	X
87-13(1)	X
87-17(1)	X
89-10(1)	X
89-12(1)	X
89-15(1)	X
B-10A	X
B-14(1)	X
Total Zone 1 Samples Per Event	11
On-Site Extraction Wells	
DW-9	X
DW-10	X
DW-11	X
DW-12	X
Total On-Site Extraction Well Samples Per Event	4
Grand Total Samples Per Event	15

Red indicates location already part of existing annual groundwater monitoring program.

* Indicates location is scheduled for sampling on even numbered years per the groundwater sampling program.

Table 6
Analytical and Field Parameters
Former Bell Aerospace Textron, Inc.
Wheatfield, New York

Laboratory Analysis Parameter	Analysis Method
Total Volatile Organic Compounds	USEPA SW-846 Method 8260B
Total Organic Carbon	USEPA Method 5310C
Volatile Fatty Acids	USEPA Method 8015 (modified)
Ethene	USEPA Method RSK 175
Ethane	USEPA Method RSK 175
Carbon Dioxide	USEPA Method SM 4500
Methane	USEPA Method RSK 175
Ferrous Iron	USEPA Method 3500 FE D
Sulfate	USEPA SW-846 Method 9056A
Chloride	USEPA SW-846 Method 9056A
Nitrate	USEPA SW-846 Method 9056A
Field Analysis Parameter	**Analysis Method**
Oxidation-Reduction Potential	Field measurement via YSI Model 556 handheld screening instrument or equivalent
Dissolved Oxygen	
Conductivity	
Temperature	
pH	

Figures

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	7/17/17	--	E. Schlegel	C. Byers	--	156045-A4

LEGEND:

AREA OF FOCUSED IN-SITU BIOREMEDIATION ACTIVITIES

N

APPROXIMATE SCALE

0 600 1,200 FEET

REFERENCE:

GOOGLE MAPS AERIAL PHOTOGRAPH, DATED 10/14/2016.

APTIM

TEXTRON
NIAGARA FALLS, NEW YORK

FIGURE 1

SITE LOCATION MAP

2221 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NEW YORK

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Plot Date/Time: Jul 31, 2017 - 2:43pm Image
Plotted By: Evan.Schlegel

File: O:\Shaw Offices – CAD Files\Latham, NY\156045\156045-B11.dwg
Plot Date/Time: Aug 01, 2017 – 4:43pm
Plotted By: Evan.Schlegel

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	8/1/17	--	E. Schlegel	C. Byers	--	156045-B11

FIGURE 2
ON-SITE GROUNDWATER ELEVATION CONTOUR MAP, ZONE 1 BEDROCK APRIL 2017

2221 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NEW YORK

APTIM

TEXTRON
NIAGARA FALLS, NEW YORK

REFERENCE:

DERIVED FROM FONTANESE, FOLTS, AUBRECHT, AND ERNST ARCHITECTS, "MOOG INC.–PROJECT BELL–SITE PLAN", DATED JUNE 12, 2017.

SCALE
0 100 200 FEET

LEGEND:

- PROPOSED INJECTION LOCATION
- EXTRACTION WELL OR DNAPL WELL (ZONE 1)
- ZONE 1 MONITORING WELL
- MONITORING WELL SCREENED IN OTHER ZONES
- MANHOLE
- CATCH BASIN
- APPROXIMATE NIAGARA COUNTY SEWER DISTRICT LINE
- (570.28) WATER LEVEL ELEVATIONS AT MONITORING OR EXTRACTION WELL IN FEET MEAN SEA LEVEL
- 570 POTENTIOMETRIC ELEVATION CONTOUR IN FEET MEAN SEA LEVEL (DASHED WHERE INFERRED)
- DIRECTION OF GROUND WATER FLOW IN ZONE 1

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Plot Date/Time: Aug 04, 2017 – 11:16am Image
Plotted By: Evan.Schlegel

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	5/15/17	--	E. Schlegel	C. Byers	--	156045-B8

METAL SHELTER
BERM
87-15(3)
87-15(0)
87-15(1)
POLE
L.P.
DW-9
87-08(1)
METAL BLDG.
B-10A
B-10S
B-6
HYD.
CONCRETE PAD
METAL BLDG.
FORMER NEUTRALIZATION POND
GRASS
87-14(1)
87-14(3)
87-14(0)
B-11
BERM
GATE
87-11(1)
STONE DRIVE
STANDPIPE
12" WALL
WALK
UTILITY EASEMENT TO NIAGARA MOHAWK POWER CORP. BY L.2614/P.107
POST
CONC.
SCRUBBER BUILDING
C.B.
METAL SHED
GRATE
CONCRETE
GRATE
D.I.
PIPE RACK
87-16(3b)
87-17(1)
87-17(0)
STONE
M.H.
W.V.
TRANSFORMER
TANKS
TANKS
CONCRETE BLOCK BUILDING
CONC. PAD
METAL BUILDING NO. 51
METAL BLDG.
CONCRETE
BLACKTOP
W.V.
M.H.
OVERHEAD PIPES
CONCRETE
M.H.
1 STORY CONCRETE BLOCK BUILDING NO. 61
2 STORY METAL CLAD BUILDING NO. 56
ENCL. ENTRANCE
BLDG. 16.62'N
CONC. PAD
OVERHEAD PIPES
1 1/2 STORY BLOCK & STONE BUILDING NO. 72
87-13(0)
87-13(3)
87-13(1)
WELLS
CHAMBER
CONCRETE
DW-10
87-04(0)
87-04(3)
87-04(1)
M.H.
17-05(1)
17-04(1)
BLOCK BUILDING
CABLE BOX
VAULT
89-15(1)
B-17
WALMORE ROAD
PLANTER
BLACKTOP DRIVE
POST
PAD
BLACKTOP DRIVE
87-05(1)
GUARD HOUSE
GATE
87-05(3)
DW-11
17-01(1)
87-09(1)
POST
CONCRETE PAD
M.H.
B-14(1)
BLACKTOP PARKING LOT
89-10(1)
C
B
A
17-02(1)
BLACKTOP
B-18
20' WIDE SEWER EASEMENT TO NIAGARA COUNTY SEWER DISTRICT NO. 1 BY L.1575, P.330
87-10(1)
87-10(0)
D
R.O.W.
87-02(1)
87-02(3)
87-02(0)
FENCE 1.0'W
DW-12
17-03(1)
89-12(1)
APPROXIMATE FORMER TEXTRON INC. (WHEATFIELD PLANT)
WOODEN STORAGE SHED
87-01(0)
87-01(1)
ON-SITE TREATMENT SYSTEM BUILDING
BLACKTOP PARKING LOT
GRASS
BLACKTOP PARKING LOT
EW-13
96-01(1)
87-18(1)
EW-7
EW-8
87-12(1)
GRASS
GRASS
NIAGARA FALLS BLVD.

LEGEND:

- PROPOSED INJECTION LOCATION
- EXTRACTION WELL OR DNAPL WELL (ZONE 1)
- ZONE 1 MONITORING WELL
- MONITORING WELL SCREENED IN OTHER ZONES
- MANHOLE
- CATCH BASIN
- APPROXIMATE NIAGARA COUNTY SEWER DISTRICT LINE

REFERENCE:

DERIVED FROM FONTANESE, FOLTS, AUBRECHT, AND ERNST ARCHITECTS, "MOOG INC.–PROJECT BELL–SITE PLAN", DATED JUNE 12, 2017.

SCALE
0 100 200 FEET

APTIM

TEXTRON
NIAGARA FALLS, NEW YORK

FIGURE 3

PROPOSED INJECTION LOCATIONS

2221 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NEW YORK

File: O:\Shaw Offices – CAD Files\Latham, NY\156045\156045-B10.dwg
Plot Date/Time: Aug 04, 2017 – 11:19am
Plotted By: Evan.Schlegel

Image

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
Pittsburgh, PA	5/15/17	--	E. Schlegel	C. Byers	--	156045-B10

METAL SHELTER
BERM
87-15(3)
87-15(0)
87-15(1)
POLE
L.P.
87-08(1)
DW-9
METAL BLDG.
B-10A
B-10S
HYD.
CONCRETE PAD
B-6
87-14(1)
87-14(3)
87-14(0)
B-11
87-11(1)
BERM
GATE
FORMER NEUTRALIZATION POND
GRASS
STONE DRIVE
STANDPIPE
12" WALL
WALK
UTILITY EASEMENT TO NIAGARA MOHAWK POWER CORP. BY L.2614/P.107
METAL BLDG.
METAL SHED
POST
CONC.
SCRUBBER BUILDING
GRATE
CONCRETE
D.I.
PIPE RACK
87-16(3b)
C.B.
87-17(1)
87-17(0)
STONE
M.H.
W.V.
TRANSFORMER
TANKS
CONCRETE BLOCK BUILDING
CONC. PAD
METAL BUILDING NO. 51
METAL BLDG.
CONCRETE
BLACKTOP
M.H.
OVERHEAD PIPES
1 STORY CONCRETE BLOCK BUILDING NO. 61
87-13(0)
87-13(3)
87-13(1)
WELLS
CHAMBER
17-05(1)
CONCRETE
DW-10
87-04(0)
87-04(3)
87-04(1)
M.H.
17-04(1)
BLOCK BUILDING
VAULT
CABLE BOX
WALMORE ROAD
2 STORY METAL CLAD BUILDING NO. 56
1 1/2 STORY BLOCK & STONE BUILDING NO. 72
89-15(1)
B-17
ENCL. ENTRANCE
BLDG. 16.62'N
CONC. PAD
PLANTER
BLACKTOP DRIVE
POST
PAD
GUARD HOUSE
87-05(1)
87-05(3)
DW-11
17-01(1)
87-09(1)
CONCRETE PAD
B-14(1)
BLACKTOP PARKING LOT
89-10(1)
C
B
A
17-02(1)
BLACKTOP
B-18
20' WIDE SEWER EASEMENT TO NIAGARA COUNTY SEWER DISTRICT NO. 1 BY L.1575, P.330
87-10(1)
87-10(0)
D
R.O.W.
87-02(1)
87-02(3)
87-02(0)
FENCE 1.0'W
DW-12
17-03(1)
89-12(1)
APPROXIMATE FORMER TEXTRON INC. (WHEATFIELD PLANT)
WOODEN STORAGE SHED
87-01(0)
87-01(1)
ON-SITE TREATMENT SYSTEM BUILDING
BLACKTOP PARKING LOT
GRASS
EW-13
96-01(1)
EW-8
87-18(1)
EW-7
87-12(1)
GRASS
NIAGARA FALLS BLVD.
GRASS

LEGEND:

- PROPOSED INJECTION LOCATION
- EXTRACTION WELL OR DNAPL WELL (ZONE 1)
- ZONE 1 MONITORING WELL
- MONITORING WELL NOT USED IN MONITORING PROGRAM
- MANHOLE
- CATCH BASIN
- S — APPROXIMATE NIAGARA COUNTY SEWER DISTRICT LINE

REFERENCE:

DERIVED FROM FONTANESE, FOLTS, AUBRECHT, AND ERNST ARCHITECTS, "MOOG INC.–PROJECT BELL–SITE PLAN", DATED JUNE 12, 2017.

SCALE
0 100 200 FEET

APTIM

TEXTRON
NIAGARA FALLS, NEW YORK

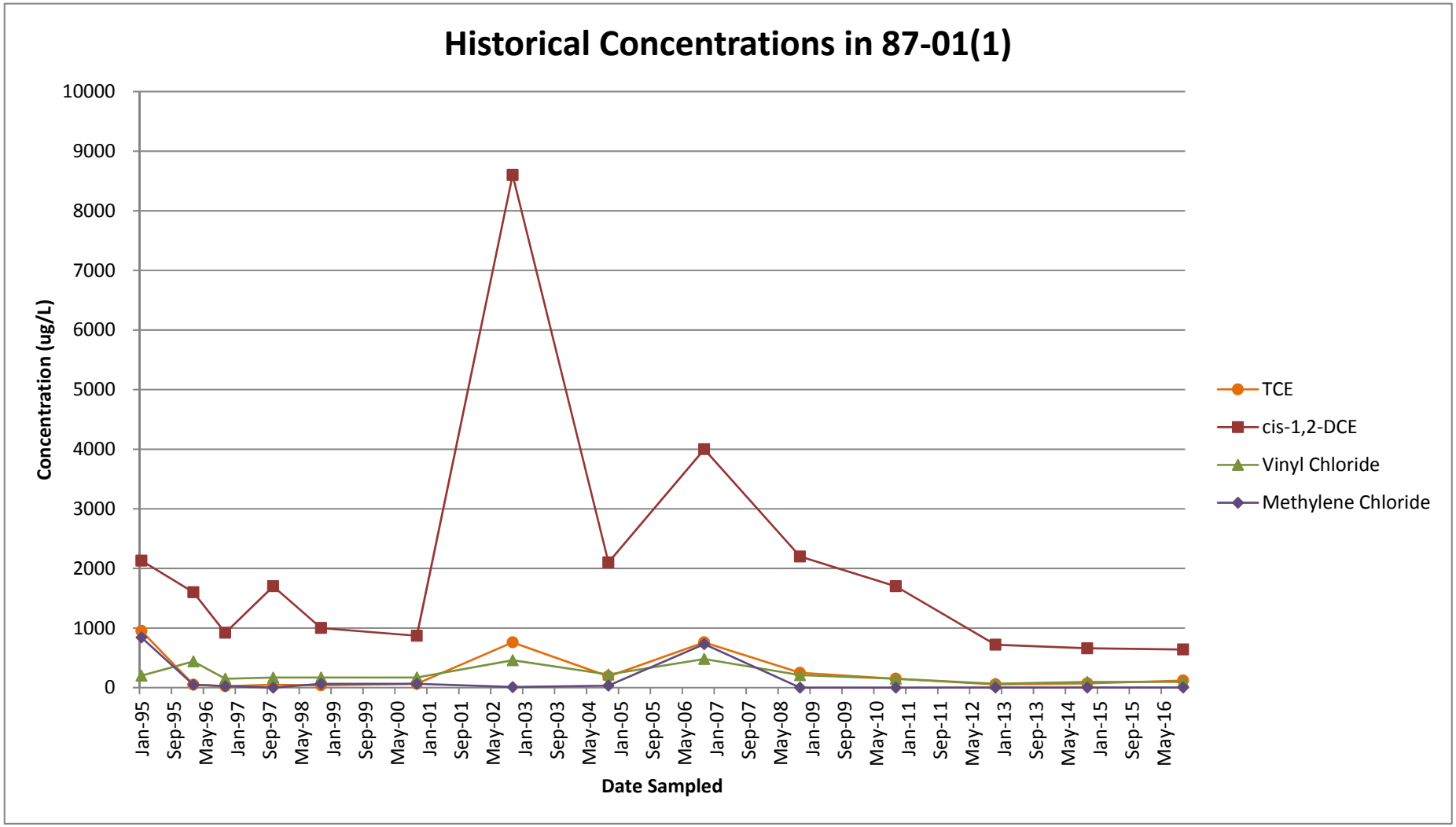
FIGURE 4

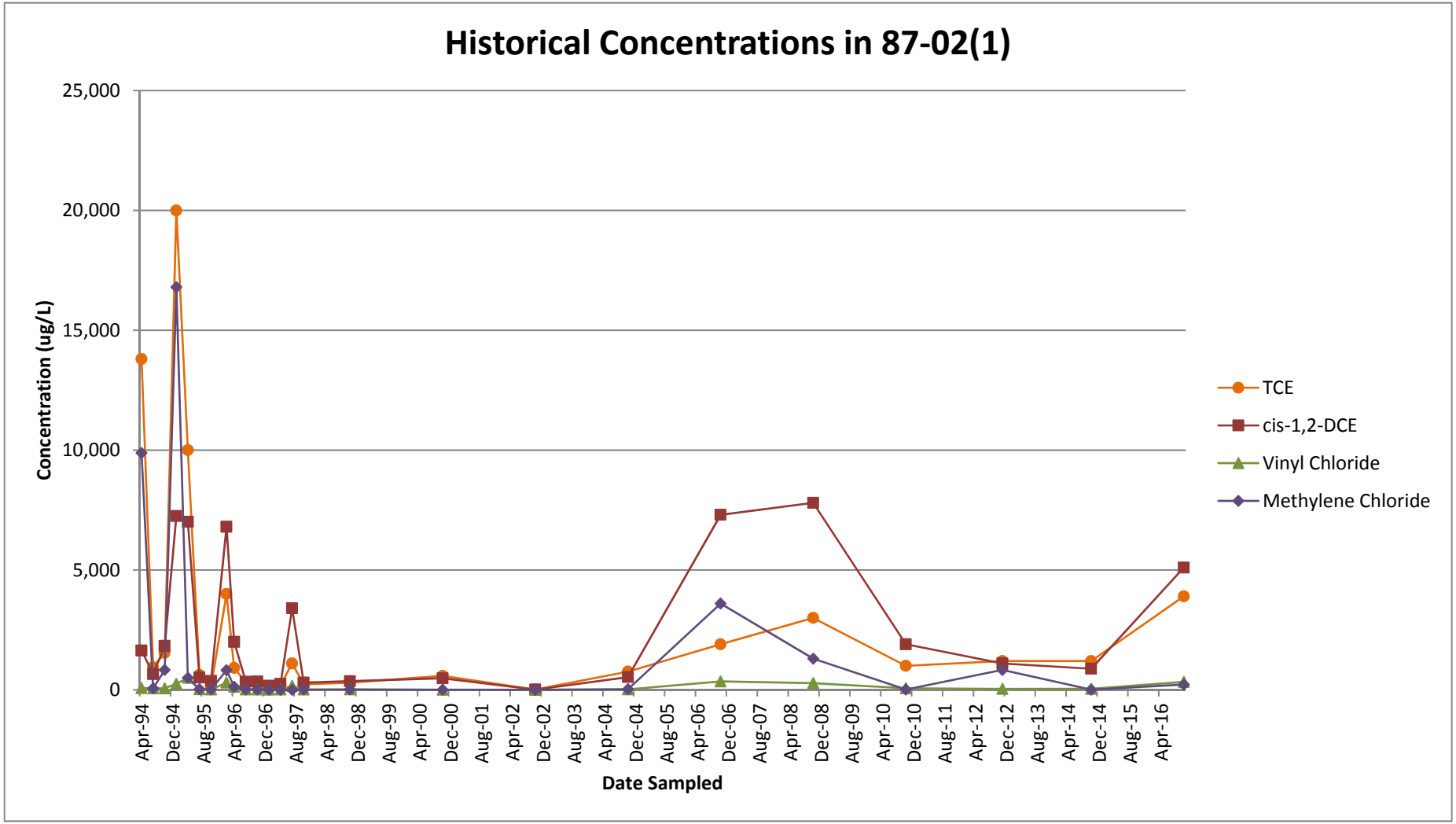
PROPOSED GROUNDWATER MONITORING NETWORK

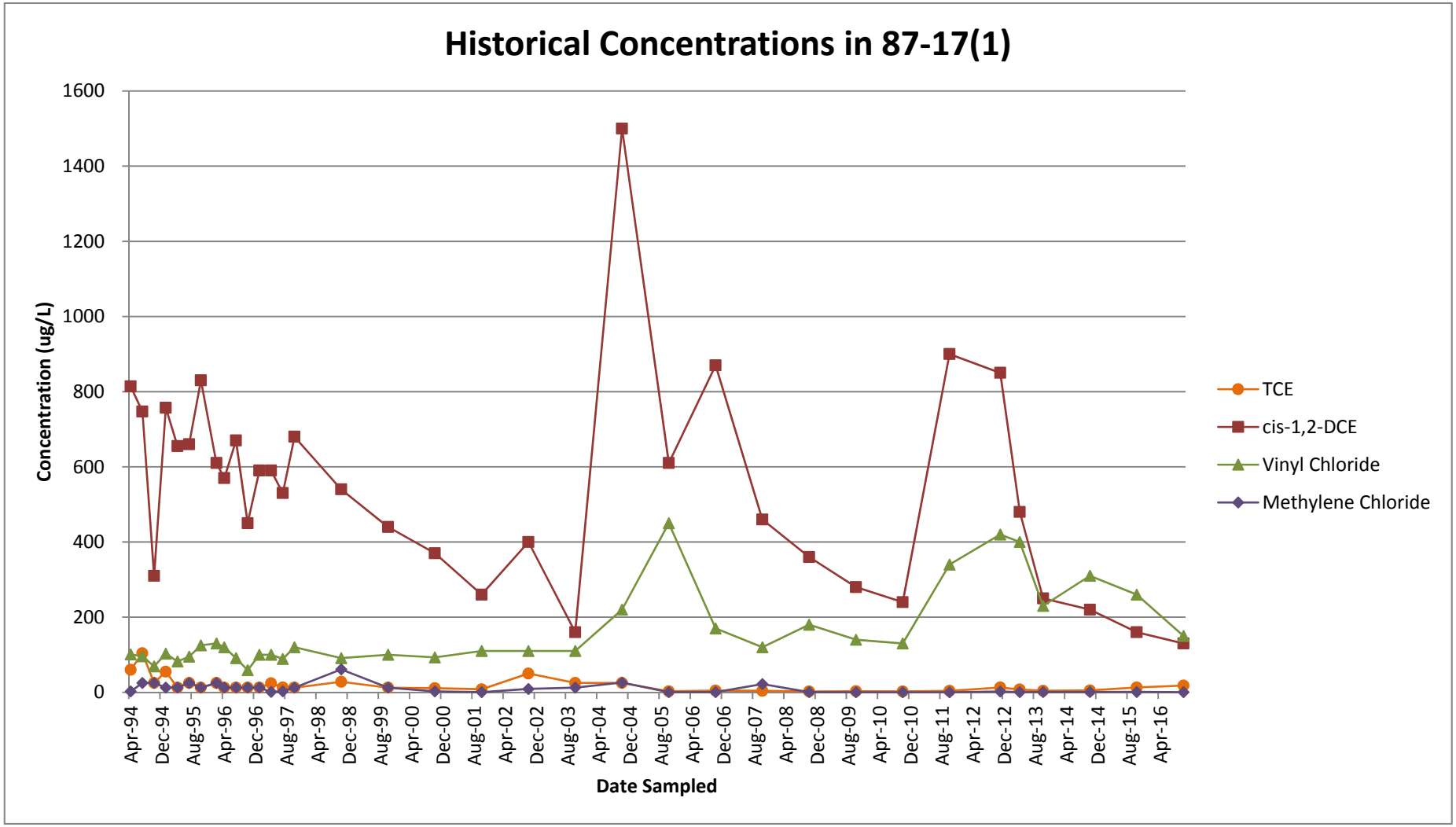
2221 NIAGARA FALLS BOULEVARD
NIAGARA FALLS, NEW YORK

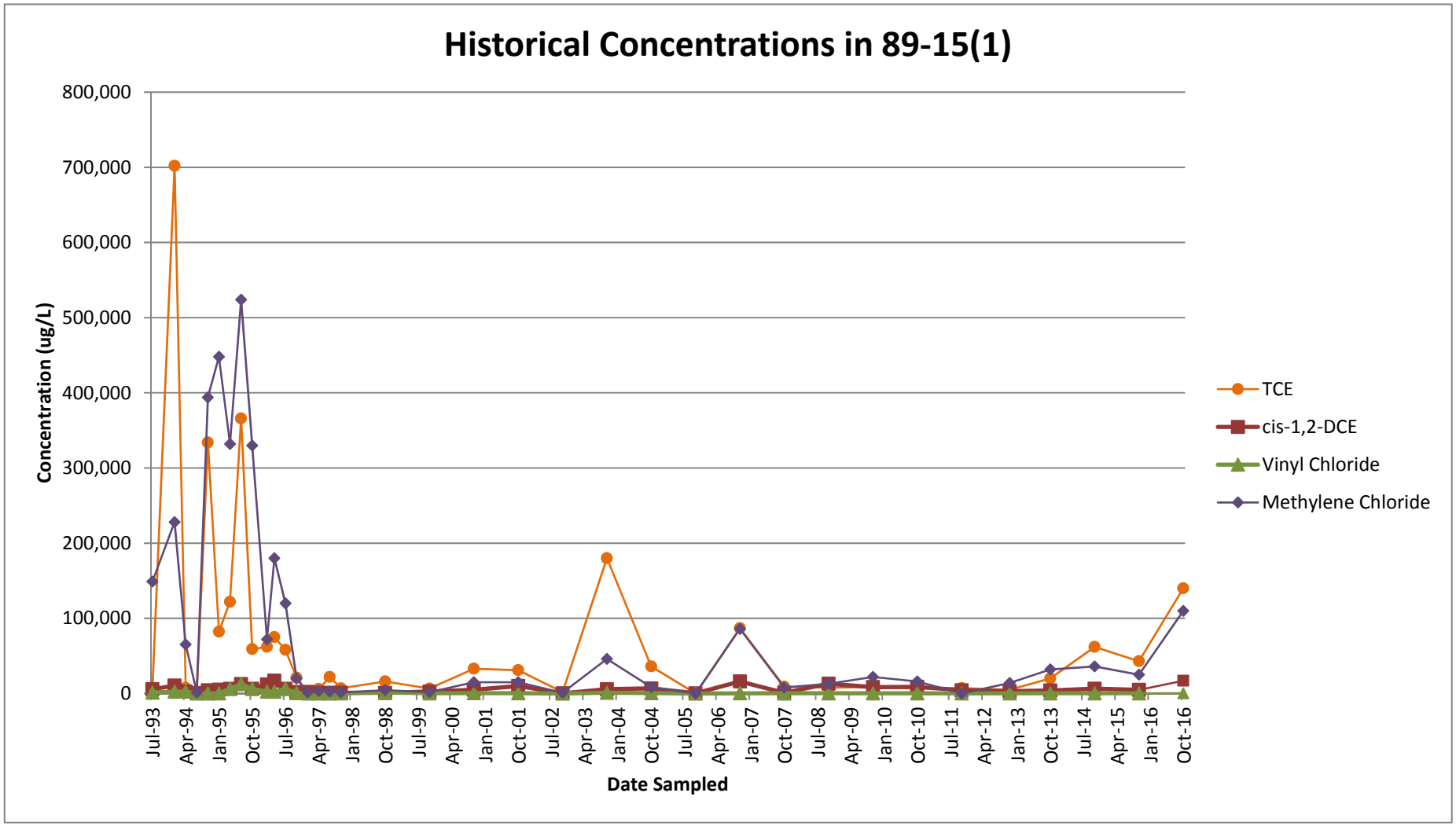
Appendix A

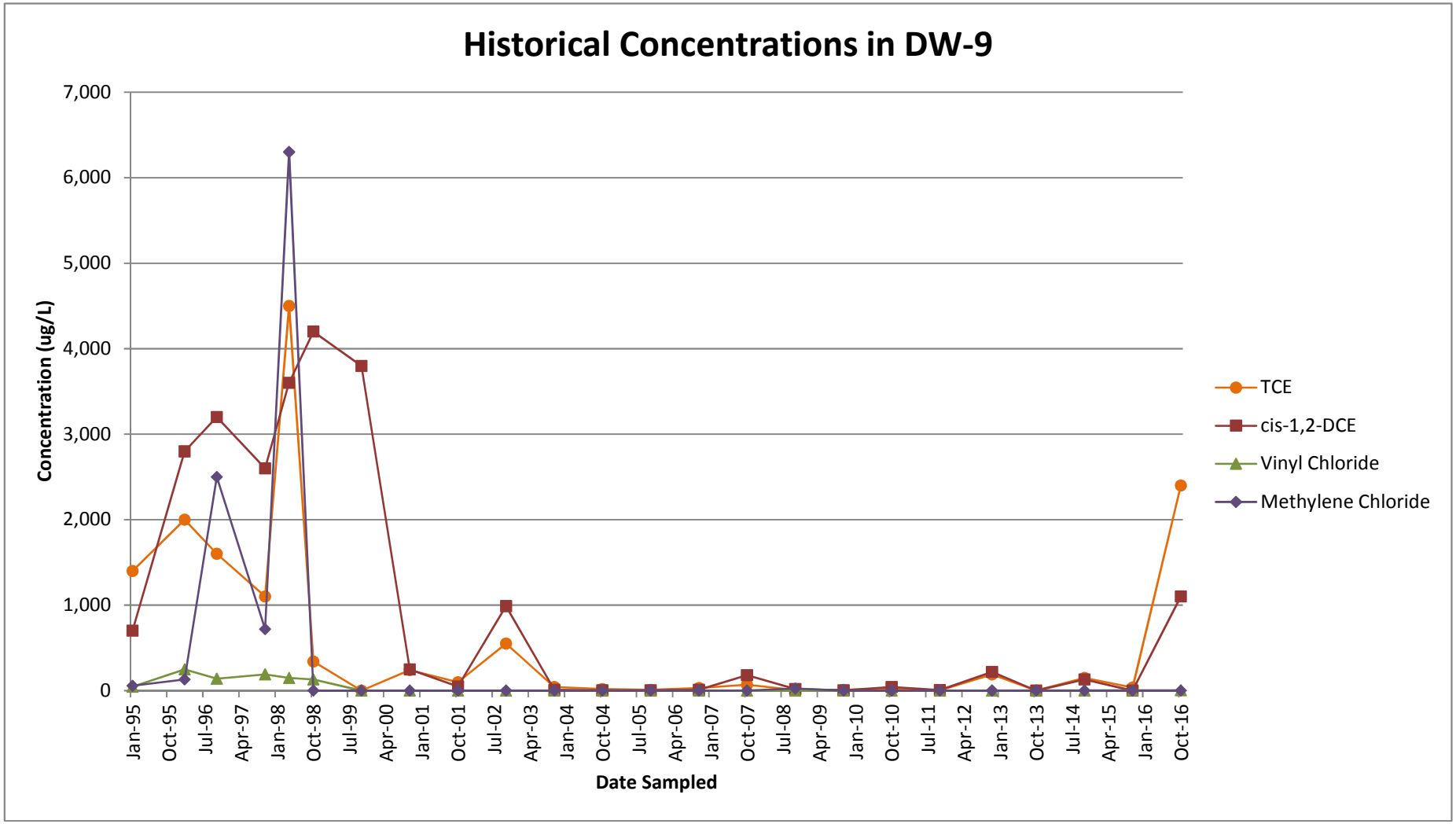
Zone 1 CVOC Concentration Graphs


Historical Concentrations in 87-01(1)
Concentration (ug/L)
10000
9000
8000
7000
6000
5000
4000
3000
2000
1000
0
Jan-95
Sep-95
May-96
Jan-97
Sep-97
May-98
Jan-99
Sep-99
May-00
Jan-01
Sep-01
May-02
Jan-03
Sep-03
May-04
Jan-05
Sep-05
May-06
Jan-07
Sep-07
May-08
Jan-09
Sep-09
May-10
Jan-11
Sep-11
May-12
Jan-13
Sep-13
May-14
Jan-15
Sep-15
May-16
Date Sampled
TCE
cis-1,2-DCE
Vinyl Chloride
Methylene Chloride


Historical Concentrations in 87-02(1)
Concentration (ug/L)
25,000
20,000
15,000
10,000
5,000
0
Apr-94
Dec-94
Aug-95
Apr-96
Dec-96
Aug-97
Apr-98
Dec-98
Aug-99
Apr-00
Dec-00
Aug-01
Apr-02
Dec-02
Aug-03
Apr-04
Dec-04
Aug-05
Apr-06
Dec-06
Aug-07
Apr-08
Dec-08
Aug-09
Apr-10
Dec-10
Aug-11
Apr-12
Dec-12
Aug-13
Apr-14
Dec-14
Aug-15
Apr-16
Date Sampled
TCE
cis-1,2-DCE
Vinyl Chloride
Methylene Chloride


Historical Concentrations in 87-17(1)
Concentration (ug/L)
1600
1400
1200
1000
800
600
400
200
0
Apr-94
Dec-94
Aug-95
Apr-96
Dec-96
Aug-97
Apr-98
Dec-98
Aug-99
Apr-00
Dec-00
Aug-01
Apr-02
Dec-02
Aug-03
Apr-04
Dec-04
Aug-05
Apr-06
Dec-06
Aug-07
Apr-08
Dec-08
Aug-09
Apr-10
Dec-10
Aug-11
Apr-12
Dec-12
Aug-13
Apr-14
Dec-14
Aug-15
Apr-16
Date Sampled
TCE
cis-1,2-DCE
Vinyl Chloride
Methylene Chloride


Historical Concentrations in 89-15(1)
Concentration (ug/L)
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
Jul-93
Apr-94
Jan-95
Oct-95
Jul-96
Apr-97
Jan-98
Oct-98
Jul-99
Apr-00
Jan-01
Oct-01
Jul-02
Apr-03
Jan-04
Oct-04
Jul-05
Apr-06
Jan-07
Oct-07
Jul-08
Apr-09
Jan-10
Oct-10
Jul-11
Apr-12
Jan-13
Oct-13
Jul-14
Apr-15
Jan-16
Oct-16
Date Sampled
TCE
cis-1,2-DCE
Vinyl Chloride
Methylene Chloride


Historical Concentrations in DW-9
Concentration (ug/L)
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0
Jan-95
Oct-95
Jul-96
Apr-97
Jan-98
Oct-98
Jul-99
Apr-00
Jan-01
Oct-01
Jul-02
Apr-03
Jan-04
Oct-04
Jul-05
Apr-06
Jan-07
Oct-07
Jul-08
Apr-09
Jan-10
Oct-10
Jul-11
Apr-12
Jan-13
Oct-13
Jul-14
Apr-15
Jan-16
Oct-16
Date Sampled
TCE
cis-1,2-DCE
Vinyl Chloride
Methylene Chloride

Appendix B

Laboratory Analytical Package – May 2017

June 06, 2017 Service Request No:R1704784

Ms. Cecelia Byers
CB&I Environmental & Infrastructure
2790 Mosside Boulevard
Monroeville, PA 15146

Laboratory Results for: Textron Wheatfield

Dear Ms.Byers,

Enclosed are the results of the sample(s) submitted to our laboratory May 25, 2017
For your reference, these analyses have been assigned our service request number **R1704784.**

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and ALS Environmental is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7472. You may also contact me via email at Janice.Jaeger@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janice Jaeger
Project Manager

ADDRESS 1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
PHONE +1 585 288 5380 | FAX +1 585 288 8475
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

1565 Jefferson Rd, Building 300, Rochester, NY 14623 | 585-288-5380 | www.alsglobal.com

Client: CB&I
Project: Textron Wheatfield/156045
Sample Matrix: Water

Service Request:R1704784
Date Received:5/25/17

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables, including results of QC samples analyzed from this delivery group. Analytical procedures performed by the lab are validated in accordance with NELAC standards. Any parameters that are not included in the lab's NELAC accreditation are identified on a "Non-Certified Analytes" report in the Miscellaneous Forms Section of this report. Individual analytical results requiring further explanation are flagged with qualifiers and/or discussed below. The flags are explained in the Report Qualifiers and Definitions page in the Miscellaneous Forms section of this report.

Sample Receipt

Fifteen Water samples were received for analysis at ALS Environmental on 05/25/2017. Any discrepancies noted upon initial sample inspection are noted on the cooler receipt and preservation form included in this data package. The samples were received in good condition and consistent with the accompanying chain of custody form. Samples are refrigerated at ≤6°C upon receipt at the lab except for aqueous samples designated for metals analyses, which are stored at room temperature.

Volatile Organic Analyses:

Method 8260, 5/31/17, 6/2/17: The lower control limit was exceeded for one or more analytes in the Continuing Calibration Verification (CCV). Since there were no detections of the analyte(s) in the associated field samples, the quantitation is not affected. The data quality was not significantly affected and no further corrective action was taken.

Method 8260, 5/31/17: The upper control criterion was exceeded for one or more analytes in the Laboratory Control Sample (LCS). There were no detections of the analyte(s) in the associated field samples. The error associated with elevated recovery equates to a high bias. The sample data is not significantly affected. No further corrective action was appropriate.

Approved by _____ Date 6/6/2017

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-87-18 (1)	Lab ID: R1704784-001					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	510		1.6	5.0	ug/L	8260C
Acetone	6.7	J	6.2	25	ug/L	8260C
trans-1,2-Dichloroethene	2.6	J	1.7	5.0	ug/L	8260C
1,1-Dichloroethane	17		1.0	5.0	ug/L	8260C
cis-1,2-Dichloroethene	620		1.5	5.0	ug/L	8260C
1,1,1-Trichloroethane	27		1.8	5.0	ug/L	8260C
Trichloroethene	3.9	J	1.1	5.0	ug/L	8260C

CLIENT ID: MW-87-04 (1)	Lab ID: R1704784-002					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	210		0.64	2.0	ug/L	8260C
1,1-Dichloroethene	3.5		1.2	2.0	ug/L	8260C
Methylene Chloride	31		1.2	2.0	ug/L	8260C
trans-1,2-Dichloroethene	3.6		0.66	2.0	ug/L	8260C
1,1-Dichloroethane	2.9		0.40	2.0	ug/L	8260C
cis-1,2-Dichloroethene	290		0.60	2.0	ug/L	8260C
Chloroform	0.80	J	0.50	2.0	ug/L	8260C
Trichloroethene	36		0.44	2.0	ug/L	8260C

CLIENT ID: MW-87-14 (1)	Lab ID: R1704784-003					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	2900		80	250	ug/L	8260C
Acetone	320	J	310	1300	ug/L	8260C
Methylene Chloride	22000		150	250	ug/L	8260C
1,1-Dichloroethane	170	J	50	250	ug/L	8260C
cis-1,2-Dichloroethene	16000		75	250	ug/L	8260C
Chloroform	450		63	250	ug/L	8260C
1,1,1-Trichloroethane	390		90	250	ug/L	8260C
Trichloroethene	32000		55	250	ug/L	8260C

CLIENT ID: MW-87-15 (1)	Lab ID: R1704784-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	180		1.6	5.0	ug/L	8260C
Carbon Disulfide	6.5		1.1	5.0	ug/L	8260C
Methylene Chloride	4000	E	3.0	5.0	ug/L	8260C
trans-1,2-Dichloroethene	2.0	J	1.7	5.0	ug/L	8260C
1,1-Dichloroethane	3.9	J	1.0	5.0	ug/L	8260C
cis-1,2-Dichloroethene	390		1.5	5.0	ug/L	8260C
Trichloroethene	10		1.1	5.0	ug/L	8260C
Vinyl Chloride	170	D	8.0	25	ug/L	8260C
Acetone	34	DJ	31	130	ug/L	8260C
Carbon Disulfide	8.8	DJ	5.5	25	ug/L	8260C
Methylene Chloride	4300	D	15	25	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-87-15 (1)	Lab ID: R1704784-004					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
cis-1,2-Dichloroethene	370	D	7.5	25	ug/L	8260C
Trichloroethene	11	DJ	5.5	25	ug/L	8260C

CLIENT ID: MW-87-13 (1)	Lab ID: R1704784-005					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	3000		160	500	ug/L	8260C
Methylene Chloride	100000	E	300	500	ug/L	8260C
1,1-Dichloroethane	320	J	100	500	ug/L	8260C
cis-1,2-Dichloroethene	80000		150	500	ug/L	8260C
Chloroform	1200		130	500	ug/L	8260C
1,1,1-Trichloroethane	1100		180	500	ug/L	8260C
Trichloroethene	40000		110	500	ug/L	8260C
Bromodichloromethane	230	J	160	500	ug/L	8260C
Vinyl Chloride	2700	D	320	1000	ug/L	8260C
Methylene Chloride	94000	D	600	1000	ug/L	8260C
1,1-Dichloroethane	270	DJ	200	1000	ug/L	8260C
cis-1,2-Dichloroethene	72000	D	300	1000	ug/L	8260C
Chloroform	1100	D	250	1000	ug/L	8260C
1,1,1-Trichloroethane	1000	D	360	1000	ug/L	8260C
Trichloroethene	35000	D	220	1000	ug/L	8260C

CLIENT ID: MW-87-09 (1)	Lab ID: R1704784-006					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	190		0.64	2.0	ug/L	8260C
1,1-Dichloroethene	1.5	J	1.2	2.0	ug/L	8260C
Acetone	4.1	J	2.5	10	ug/L	8260C
trans-1,2-Dichloroethene	1.4	J	0.66	2.0	ug/L	8260C
1,1-Dichloroethane	16		0.40	2.0	ug/L	8260C
cis-1,2-Dichloroethene	150		0.60	2.0	ug/L	8260C
1,1,1-Trichloroethane	85		0.72	2.0	ug/L	8260C
Trichloroethene	1.7	J	0.44	2.0	ug/L	8260C

CLIENT ID: MW-96-01 (1)	Lab ID: R1704784-008					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	700		1.6	5.0	ug/L	8260C
Methylene Chloride	21		3.0	5.0	ug/L	8260C
trans-1,2-Dichloroethene	4.4	J	1.7	5.0	ug/L	8260C
1,1-Dichloroethane	29		1.0	5.0	ug/L	8260C
cis-1,2-Dichloroethene	710		1.5	5.0	ug/L	8260C
1,1,1-Trichloroethane	48		1.8	5.0	ug/L	8260C
Trichloroethene	17		1.1	5.0	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-87-12 (1)	Lab ID: R1704784-009					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	1700		3.2	10	ug/L	8260C
1,1-Dichloroethene	7.2	J	5.7	10	ug/L	8260C
trans-1,2-Dichloroethene	8.7	J	3.3	10	ug/L	8260C
1,1-Dichloroethane	19		2.0	10	ug/L	8260C
cis-1,2-Dichloroethene	2200	E	3.0	10	ug/L	8260C
1,1,1-Trichloroethane	30		3.6	10	ug/L	8260C
Trichloroethene	14		2.2	10	ug/L	8260C
Vinyl Chloride	1800	D	6.4	20	ug/L	8260C
Acetone	35	DJ	25	100	ug/L	8260C
trans-1,2-Dichloroethene	9.6	DJ	6.6	20	ug/L	8260C
1,1-Dichloroethane	20	DJ	4.0	20	ug/L	8260C
cis-1,2-Dichloroethene	2200	D	6.0	20	ug/L	8260C
1,1,1-Trichloroethane	29	D	7.2	20	ug/L	8260C
Trichloroethene	20	DJ	4.4	20	ug/L	8260C

CLIENT ID: MW-87-01 (1)	Lab ID: R1704784-010					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	84		0.64	2.0	ug/L	8260C
1,1-Dichloroethene	2.6		1.2	2.0	ug/L	8260C
trans-1,2-Dichloroethene	6.8		0.66	2.0	ug/L	8260C
1,1-Dichloroethane	5.6		0.40	2.0	ug/L	8260C
cis-1,2-Dichloroethene	660	E	0.60	2.0	ug/L	8260C
Chloroform	1.1	J	0.50	2.0	ug/L	8260C
1,1,1-Trichloroethane	15		0.72	2.0	ug/L	8260C
Trichloroethene	110		0.44	2.0	ug/L	8260C
Vinyl Chloride	89	D	1.6	5.0	ug/L	8260C
Acetone	8.0	DJ	6.2	25	ug/L	8260C
trans-1,2-Dichloroethene	6.6	D	1.7	5.0	ug/L	8260C
1,1-Dichloroethane	5.8	D	1.0	5.0	ug/L	8260C
cis-1,2-Dichloroethene	690	D	1.5	5.0	ug/L	8260C
Chloroform	2.0	DJ	1.3	5.0	ug/L	8260C
1,1,1-Trichloroethane	16	D	1.8	5.0	ug/L	8260C
Trichloroethene	110	D	1.1	5.0	ug/L	8260C

CLIENT ID: MW-89-12 (1)	Lab ID: R1704784-011					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	270		8.0	25	ug/L	8260C
Acetone	36	J	31	130	ug/L	8260C
trans-1,2-Dichloroethene	19	J	8.3	25	ug/L	8260C
1,1-Dichloroethane	9.0	J	5.0	25	ug/L	8260C
cis-1,2-Dichloroethene	4300		7.5	25	ug/L	8260C
1,1,1-Trichloroethane	22	J	9.0	25	ug/L	8260C

SAMPLE DETECTION SUMMARY

CLIENT ID: MW-89-12 (1)	Lab ID: R1704784-011					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Trichloroethene	490		5.5	25	ug/L	8260C

CLIENT ID: MW-87-10 (1)	Lab ID: R1704784-012					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	12		1.6	5.0	ug/L	8260C
Acetone	6.5	J	6.2	25	ug/L	8260C
1,1-Dichloroethane	2.3	J	1.0	5.0	ug/L	8260C
cis-1,2-Dichloroethene	130		1.5	5.0	ug/L	8260C
Chloroform	1.4	J	1.3	5.0	ug/L	8260C
1,1,1-Trichloroethane	3.6	J	1.8	5.0	ug/L	8260C
Trichloroethene	890		1.1	5.0	ug/L	8260C

CLIENT ID: MW-87-05 (1)	Lab ID: R1704784-013					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	460		16	50	ug/L	8260C
Methylene Chloride	2100		30	50	ug/L	8260C
1,1-Dichloroethane	42	J	10	50	ug/L	8260C
cis-1,2-Dichloroethene	6900		15	50	ug/L	8260C
1,1,1-Trichloroethane	140		18	50	ug/L	8260C
Trichloroethene	1300		11	50	ug/L	8260C
Toluene	12	J	10	50	ug/L	8260C

CLIENT ID: MW MOOG-C	Lab ID: R1704784-014					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
1,1-Dichloroethane	1.7		0.20	1.0	ug/L	8260C
cis-1,2-Dichloroethene	17		0.30	1.0	ug/L	8260C
Chloroform	0.98	J	0.25	1.0	ug/L	8260C
1,1,1-Trichloroethane	2.0		0.36	1.0	ug/L	8260C
Trichloroethene	21		0.22	1.0	ug/L	8260C

CLIENT ID: MW B-10 (a)	Lab ID: R1704784-015					
Analyte	**Results**	**Flag**	**MDL**	**PQL**	**Units**	**Method**
Vinyl Chloride	430	J	160	500	ug/L	8260C
1,1-Dichloroethene	310	J	290	500	ug/L	8260C
Methylene Chloride	3300		300	500	ug/L	8260C
1,1-Dichloroethane	350	J	100	500	ug/L	8260C
cis-1,2-Dichloroethene	20000		150	500	ug/L	8260C
Chloroform	980		130	500	ug/L	8260C
1,1,1-Trichloroethane	780		180	500	ug/L	8260C
Trichloroethene	58000		110	500	ug/L	8260C
Bromodichloromethane	210	J	160	500	ug/L	8260C

Sample Receipt Information

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: CB&I **Service Request:**R1704784

Project: Textron Wheatfield/156045

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
R1704784-001	MW-87-18 (1)	5/22/2017	1325
R1704784-002	MW-87-04 (1)	5/22/2017	1405
R1704784-003	MW-87-14 (1)	5/22/2017	1500
R1704784-004	MW-87-15 (1)	5/22/2017	1550
R1704784-005	MW-87-13 (1)	5/22/2017	1650
R1704784-006	MW-87-09 (1)	5/22/2017	1735
R1704784-007	Trip Blank	5/22/2017	0920
R1704784-008	MW-96-01 (1)	5/23/2017	0920
R1704784-009	MW-87-12 (1)	5/23/2017	1000
R1704784-010	MW-87-01 (1)	5/23/2017	1030
R1704784-011	MW-89-12 (1)	5/23/2017	1100
R1704784-012	MW-87-10 (1)	5/23/2017	1140
R1704784-013	MW-87-05 (1)	5/23/2017	1205
R1704784-014	MW MOOG-C	5/23/2017	1315
R1704784-015	MW B-10 (a)	5/23/2017	1435

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

44958

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 | +1 585 288 5380 +1 585 288 8475 (fax) PAGE 1 OF 2

Project Name: TEXTRON	Project Number: 156045
Project Manager: CECELIA BYERS	Report CC:
Company/Address: CB&I	
500 PENN CENTER BLVD SUITE 1000	
PITTSBURGH, PA 15235	
Phone #: 518-281-2034	Email: CECELIA.BYERS@CBI.COM
Sampler's Signature:	Sampler's Printed Name: KEVIN CROWIN

ANALYSIS REQUESTED *(Include Method Number and Container Preservative)*

PRESERVATIVE: 1

NUMBER OF CONTAINERS

GC/MS VOAs ○ 8260 ○ 624 ○ CLP | GC/MS SVOAs ○ 8270 ○ 625 | GC VOAs ○ 8021 ○ 601/602 | PESTICIDES ○ 8081 ○ 608 | PCBs ○ 8082 ○ 608 | METALS, TOTAL (List in comments below) | METALS, DISSOLVED (List in comments below) | REMARKS/ ALTERNATE DESCRIPTION

Preservative Key
0. NONE
1. HCL
2. HNO_3
3. H_2SO_4
4. NaOH
5. Zn. Acetate
6. MeOH
7. $NaHSO_4$
8. Other _____

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX	NUMBER OF CONTAINERS	GC/MS VOAs	METALS, TOTAL	METALS, DISSOLVED
MW 87-16(i)		5/22/17	1325	GW	3	X		
MW-87-04(i)			1405	GW	3	X		
MW 87-14(i)			1500	GW	3	X		
MW 87-15(i)			1550	GW	3	X		
MW 87-13(i)			1650	GW	3	X		
MW 87-09(i)			1735	GW	3	X		
TRIP BLANK		5/17/17	0920	-	3	X		
MW 96-01(i)		5/23/17	0920	GW	3	X		
MW 87-12(i)			1002	GW	3	X		
MW 87-01(i)			1030	GW	3	X		
MW 89-12(i)			1100	GW	3	X		

SPECIAL INSTRUCTIONS/COMMENTS
Metals

See QAPP ☐

STATE WHERE SAMPLES WERE COLLECTED

TURNAROUND REQUIREMENTS
_____ RUSH (SURCHARGES APPLY)
_____ 1 day _____ 2 day _____ 3 day
_____ 4 day _____ 5 day
STANDARD
REQUESTED REPORT DATE
_____

REPORT REQUIREMENTS
✓ I. Results Only
____ II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
____ III. Results + QC and Calibration Summaries
____ IV. Data Validation Report with Raw Data
Edata ____Yes ____No

INVOICE INFORMATION
PO #
BILL TO:

RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY	RELINQUISHED BY	RECEIVED BY
Signature:	Signature:	Signature:	Signature:	Signature	Signature
Printed Name: KEVIN CROWIN	Printed Name: E.VERBRUGEN	Printed Name: E.VERBRUGEN	Printed Name: Gregory D. Eggerding	Printed Name	
Firm: CB&I	Firm: ALS	Firm: ALS	Firm: ALS	Firm	
Date/Time: 5/25/17 1115	Date/Time: 5/25/17 1115	Date/Time: 5/25/17 1500	Date/Time: 5/25/17 15:00	Date/Time	

R1704784 5
CB&I Environmental & Infrastructure
Textron Wheatfield

Distribution: White - Lab Copy; Yellow - Return to Originator

Chain of Custody Record

Temperature on Receipt _____

Drinking Water? Yes ☐ No ☒

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124 (1007)

Client	Project Manager	Date	Chain of Custody Number
CB & I	Cecilia Byers	5/23/17	
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page** 2 **of** _____
500 Penn Center Blvd Suite 1000	518 - 281 - 2034		
City / **State** / **Zip Code**	**Site Contact**	**Lab Contact**	
Pittsburgh / PA / 15235	Kevin Cronin		
Project Name and Location (State)	**Carrier/Waybill Number**		
Textron Wheatfield, NY			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description (Containers for each sample may be combined on one line)	Date	Time	Matrix: Air	Aqueous	Sed	Soil	Containers & Preservatives: Unpres	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	Analysis: 8260	Special Instructions/ Conditions of Receipt
MW 87-10(i)	5/23/17	1140		X						X			X	
MW 87-05(i)														
		1315												
MW B-10(a)				X						X			X	

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required
☐ 24 Hours ☐ 48 Hours ☐ 7 Days ☐ 14 Days ☐ 21 Days ☒ Other Standard

QC Requirements (Specify)

1. Relinquished By: Kevin Cronin CB&I	Date: 5/25/17	Time:	1. Received By: Jennifer O'Brien ALS	Date: 5/25/17	Time: 1115
2. Relinquished By: Jennifer O'Brien 5/25/17 ALS 1500	Date:	Time:	2. Received By: ALS	Date: 5/25-17	Time: 19.00
3. Relinquished By:	Date:	Time:	3. Received By:	Date:	Time:

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy

R1704784 5
CB&I Environmental & Infrastructure
Textron Wheatfield

R1704784 5
CB&I Environmental & Infrastructure
Textron Wheatfield

Cooler Receipt and Preservation Check Form

Project/Client CB+I Folder Number R1704784

Cooler received on 5-25-17 by: KE

COURIER: (ALS) UPS FEDEX VELOCITY CLIENT

1	Were **Custody seals** on outside of cooler?	Y (N)	
2	**Custody papers** properly completed (ink, signed)?	(Y) N	
3	Did all bottles arrive in good **condition** (unbroken)?	(Y) N	
4	Circle: (**Wet Ice**) **Dry Ice** **Gel packs** present?	(Y) N	
5a	**Perchlorate** samples have required headspace?	Y N (NA)	
5b	Did VOA vials, Alk,or Sulfide have sig* **bubbles**?	(Y) N NA	*
6	Where did the bottles originate?	(ALS/ROC)	(CLIENT)
7	Soil VOA received as: Bulk Encore 5035set		(NA)

8. Temperature Readings Date: 5-25-17 Time: 15:10 ID: IR#7 (IR#8) From: Temp Blank (Sample Bottle)

Observed Temp (°C)	1.5						
Correction Factor (°C)	+0.9						
Corrected Temp (°C)	2.4						
Temp from:Type of bottle	cent tube						
Within 0-6°C?	(Y) N	Y N	Y N	Y N	Y N	Y N	Y N
If <0°C, were samples frozen?	Y N	Y N	Y N	Y N	Y N	Y N	Y N

If out of Temperature, note packing/ice condition: _____ Ice melted Poorly Packed Same Day Rule

&Client Approval to Run Samples: _____ Standing Approval Client aware at drop-off Client notified by: _____

All samples held in storage location: R-002 by KE on 5-25-17 at 15:13
5035 samples placed in storage location: _____ by _____ on _____ at _____

Cooler Breakdown: Date: 5-26-17 Time: 11:00 by: KE

9.	Were all bottle labels complete (*i.e.* analysis, preservation, etc.)?	(YES)	NO
10.	Did all bottle labels and tags agree with custody papers?	(YES)	NO
11.	Were correct containers used for the tests indicated?	(YES)	NO
12.	Were 5035 vials acceptable (no extra labels, not leaking)?	YES	NO
13.	Air Samples: Cassettes / Tubes Intact	Canisters Pressurized	Tedlar® Bags Inflated

pH	Lot of test paper	Reagent	Preserved? Yes	Preserved? No	Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
≥12		NaOH								
≤2		HNO_3								
≤2		H_2SO_4								
<4		$NaHSO_4$								
Residual Chlorine (-)		For CN Phenol and 522			If +, contact PM to add $Na_2S_2O_3$ (CN), ascorbic (phenol).					
		$Na_2S_2O_3$	-	-						
		ZnAcetate	-	-						
		HCl	**	**	4115032	05/18				

**Not to be tested before analysis – pH tested and recorded by VOAs on a separate worksheet

Bottle lot numbers: G195-001

Explain all Discrepancies/ Other Comments:

* MW B-10(a): 1 of 2 vials
* MW 87-15(1): 1 of 3 vials

CLRES	BULK
DO	FLDT
HPROD	HGFB
HTR	LL3541
PH	SUB
SO3	MARRS
ALS	REV

Labels secondary reviewed by: KE
PC Secondary Review: [signature] 5/26/17

*significant air bubbles: VOA > 5-6 mm : WC >1 in. diameter

Miscellaneous Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the ñNotesò column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an ñimmediateò hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (Ó100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Certifications[1]

Connecticut ID # PH0556	Maine ID #NY0032	New Hampshire ID # 294100 A/B
Delaware Accredited	Nebraska Accredited	
DoD ELAP #65817	New Jersey ID # NY004	Pennsylvania ID# 68-786
Florida ID # E87674	New York ID # 10145	Rhode Island ID # 158
Illinois ID #200047	North Carolina #676	Virginia #460167

[1] Analyses were performed according to our laboratoryôs NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory or go to http://www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads/North-America-Downloads

ALS Laboratory Group

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045		

Sample Name:	MW-87-18 (1)	**Date Collected:**	05/22/17
Lab Code:	R1704784-001	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-04 (1)	**Date Collected:**	05/22/17
Lab Code:	R1704784-002	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-14 (1)	**Date Collected:**	05/22/17
Lab Code:	R1704784-003	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-15 (1)	**Date Collected:**	05/22/17
Lab Code:	R1704784-004	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-13 (1)	**Date Collected:**	05/22/17
Lab Code:	R1704784-005	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045		

Sample Name:	MW-87-09 (1)	**Date Collected:**	05/22/17
Lab Code:	R1704784-006	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	Trip Blank	**Date Collected:**	05/22/17
Lab Code:	R1704784-007	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-96-01 (1)	**Date Collected:**	05/23/17
Lab Code:	R1704784-008	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-12 (1)	**Date Collected:**	05/23/17
Lab Code:	R1704784-009	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-01 (1)	**Date Collected:**	05/23/17
Lab Code:	R1704784-010	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045		

Sample Name:	MW-89-12 (1)	**Date Collected:**	05/23/17
Lab Code:	R1704784-011	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-10 (1)	**Date Collected:**	05/23/17
Lab Code:	R1704784-012	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW-87-05 (1)	**Date Collected:**	05/23/17
Lab Code:	R1704784-013	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW MOOG-C	**Date Collected:**	05/23/17
Lab Code:	R1704784-014	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

Sample Name:	MW B-10 (a)	**Date Collected:**	05/23/17
Lab Code:	R1704784-015	**Date Received:**	05/25/17
Sample Matrix:	Water		

Analysis Method	Extracted/Digested By	Analyzed By
8260C		KRUEST

The preparation methods associated with this report are found in these tables unless discussed in the case narrative.

Water/Liquid Matrix

Analytical Method	Preparation Method
200.7	200.2
200.8	200.2
6010C	3005A/3010A
6020A	ILM05.3
9014 Cyanide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Reactivity	SW846 Ch7, 7.3.4.2
9034 Sulfide Acid Soluble	9030B
9056A Bomb (Halogens)	5050A
9066 Manual Distillation	9065
SM 4500-CN-E Residual Cyanide	SM 4500-CN-G
SM 4500-CN-E WAD Cyanide	SM 4500-CN-I

Solid/Soil/Non-Aqueous Matrix

Analytical Method	Preparation Method
6010C	3050B
6020A	3050B
6010C TCLP (1311) extract	3005A/3010A
6010 SPLP (1312) extract	3005A/3010A
7196A	3060A
7199	3060A
9056A Halogens/Halides	5050
300.0 Anions/ 350.1/ 353.2/ SM 2320B/ SM 5210B/ 9056A Anions	DI extraction

For analytical methods not listed, the preparation method is the same as the analytical method reference.

Sample Results

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
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www.alsglobal.com

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 13:25
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-18 (1)	**Units:**	ug/L
Lab Code:	R1704784-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	5.0 U	5.0	1.1	5	05/30/17 19:31	
Vinyl Chloride	**510**	5.0	1.6	5	05/30/17 19:31	
Chloroethane	5.0 U	5.0	1.2	5	05/30/17 19:31	
Bromomethane	5.0 U	5.0	1.5	5	05/30/17 19:31	
1,1-Dichloroethene	5.0 U	5.0	2.9	5	05/30/17 19:31	
Acetone	**6.7 J**	25	6.2	5	05/30/17 19:31	
Carbon Disulfide	5.0 U	5.0	1.1	5	05/30/17 19:31	
Methylene Chloride	5.0 U	5.0	3.0	5	05/30/17 19:31	
trans-1,2-Dichloroethene	**2.6 J**	5.0	1.7	5	05/30/17 19:31	
1,1-Dichloroethane	**17**	5.0	1.0	5	05/30/17 19:31	
cis-1,2-Dichloroethene	**620**	5.0	1.5	5	05/30/17 19:31	
2-Butanone (MEK)	25 U	25	4.1	5	05/30/17 19:31	
Chloroform	5.0 U	5.0	1.3	5	05/30/17 19:31	
1,1,1-Trichloroethane	**27**	5.0	1.8	5	05/30/17 19:31	
Carbon Tetrachloride	5.0 U	5.0	2.3	5	05/30/17 19:31	
Benzene	5.0 U	5.0	1.0	5	05/30/17 19:31	
1,2-Dichloroethane	5.0 U	5.0	1.8	5	05/30/17 19:31	
Trichloroethene	**3.9 J**	5.0	1.1	5	05/30/17 19:31	
1,2-Dichloropropane	5.0 U	5.0	1.0	5	05/30/17 19:31	
Bromodichloromethane	5.0 U	5.0	1.6	5	05/30/17 19:31	
cis-1,3-Dichloropropene	5.0 U	5.0	1.2	5	05/30/17 19:31	
4-Methyl-2-pentanone (MIBK)	25 U	25	3.4	5	05/30/17 19:31	
Toluene	5.0 U	5.0	1.0	5	05/30/17 19:31	
trans-1,3-Dichloropropene	5.0 U	5.0	1.0	5	05/30/17 19:31	
1,1,2-Trichloroethane	5.0 U	5.0	1.7	5	05/30/17 19:31	
Tetrachloroethene	5.0 U	5.0	1.5	5	05/30/17 19:31	
2-Hexanone	25 U	25	8.3	5	05/30/17 19:31	
Dibromochloromethane	5.0 U	5.0	1.6	5	05/30/17 19:31	
Chlorobenzene	5.0 U	5.0	1.5	5	05/30/17 19:31	
Ethylbenzene	5.0 U	5.0	1.0	5	05/30/17 19:31	
m,p-Xylenes	10 U	10	1.7	5	05/30/17 19:31	
o-Xylene	5.0 U	5.0	1.0	5	05/30/17 19:31	
Styrene	5.0 U	5.0	1.0	5	05/30/17 19:31	
Bromoform	5.0 U	5.0	2.1	5	05/30/17 19:31	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	1.3	5	05/30/17 19:31	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 13:25
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-18 (1)	**Units:**	ug/L
Lab Code:	R1704784-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	05/30/17 19:31	
Toluene-d8	115	87 - 121	05/30/17 19:31	
Dibromofluoromethane	109	89 - 119	05/30/17 19:31	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 14:05
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-04 (1)	**Units:**	ug/L
Lab Code:	R1704784-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	2.0 U	2.0	0.42	2	05/30/17 15:01	
Vinyl Chloride	**210**	2.0	0.64	2	05/30/17 15:01	
Chloroethane	2.0 U	2.0	0.48	2	05/30/17 15:01	
Bromomethane	2.0 U	2.0	0.58	2	05/30/17 15:01	
1,1-Dichloroethene	**3.5**	2.0	1.2	2	05/30/17 15:01	
Acetone	10 U	10	2.5	2	05/30/17 15:01	
Carbon Disulfide	2.0 U	2.0	0.44	2	05/30/17 15:01	
Methylene Chloride	**31**	2.0	1.2	2	05/30/17 15:01	
trans-1,2-Dichloroethene	**3.6**	2.0	0.66	2	05/30/17 15:01	
1,1-Dichloroethane	**2.9**	2.0	0.40	2	05/30/17 15:01	
cis-1,2-Dichloroethene	**290**	2.0	0.60	2	05/30/17 15:01	
2-Butanone (MEK)	10 U	10	1.7	2	05/30/17 15:01	
Chloroform	**0.80 J**	2.0	0.50	2	05/30/17 15:01	
1,1,1-Trichloroethane	2.0 U	2.0	0.72	2	05/30/17 15:01	
Carbon Tetrachloride	2.0 U	2.0	0.90	2	05/30/17 15:01	
Benzene	2.0 U	2.0	0.40	2	05/30/17 15:01	
1,2-Dichloroethane	2.0 U	2.0	0.72	2	05/30/17 15:01	
Trichloroethene	**36**	2.0	0.44	2	05/30/17 15:01	
1,2-Dichloropropane	2.0 U	2.0	0.40	2	05/30/17 15:01	
Bromodichloromethane	2.0 U	2.0	0.64	2	05/30/17 15:01	
cis-1,3-Dichloropropene	2.0 U	2.0	0.48	2	05/30/17 15:01	
4-Methyl-2-pentanone (MIBK)	10 U	10	1.4	2	05/30/17 15:01	
Toluene	2.0 U	2.0	0.40	2	05/30/17 15:01	
trans-1,3-Dichloropropene	2.0 U	2.0	0.40	2	05/30/17 15:01	
1,1,2-Trichloroethane	2.0 U	2.0	0.68	2	05/30/17 15:01	
Tetrachloroethene	2.0 U	2.0	0.60	2	05/30/17 15:01	
2-Hexanone	10 U	10	3.4	2	05/30/17 15:01	
Dibromochloromethane	2.0 U	2.0	0.62	2	05/30/17 15:01	
Chlorobenzene	2.0 U	2.0	0.58	2	05/30/17 15:01	
Ethylbenzene	2.0 U	2.0	0.40	2	05/30/17 15:01	
m,p-Xylenes	4.0 U	4.0	0.66	2	05/30/17 15:01	
o-Xylene	2.0 U	2.0	0.40	2	05/30/17 15:01	
Styrene	2.0 U	2.0	0.40	2	05/30/17 15:01	
Bromoform	2.0 U	2.0	0.84	2	05/30/17 15:01	
1,1,2,2-Tetrachloroethane	2.0 U	2.0	0.50	2	05/30/17 15:01	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 14:05
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-04 (1)	**Units:**	ug/L
Lab Code:	R1704784-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	05/30/17 15:01	
Toluene-d8	113	87 - 121	05/30/17 15:01	
Dibromofluoromethane	107	89 - 119	05/30/17 15:01	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 15:00
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-14 (1)	**Units:**	ug/L
Lab Code:	R1704784-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	250	U	250	53	250	06/01/17 17:08	
Vinyl Chloride	**2900**		250	80	250	06/01/17 17:08	
Chloroethane	250	U	250	60	250	06/01/17 17:08	
Bromomethane	250	U	250	73	250	06/01/17 17:08	
1,1-Dichloroethene	250	U	250	150	250	06/01/17 17:08	
Acetone	**320**	**J**	1300	310	250	06/01/17 17:08	
Carbon Disulfide	250	U	250	55	250	06/01/17 17:08	
Methylene Chloride	**22000**		250	150	250	06/01/17 17:08	
trans-1,2-Dichloroethene	250	U	250	83	250	06/01/17 17:08	
1,1-Dichloroethane	**170**	**J**	250	50	250	06/01/17 17:08	
cis-1,2-Dichloroethene	**16000**		250	75	250	06/01/17 17:08	
2-Butanone (MEK)	1300	U	1300	210	250	06/01/17 17:08	
Chloroform	**450**		250	63	250	06/01/17 17:08	
1,1,1-Trichloroethane	**390**		250	90	250	06/01/17 17:08	
Carbon Tetrachloride	250	U	250	120	250	06/01/17 17:08	
Benzene	250	U	250	50	250	06/01/17 17:08	
1,2-Dichloroethane	250	U	250	90	250	06/01/17 17:08	
Trichloroethene	**32000**		250	55	250	06/01/17 17:08	
1,2-Dichloropropane	250	U	250	50	250	06/01/17 17:08	
Bromodichloromethane	250	U	250	80	250	06/01/17 17:08	
cis-1,3-Dichloropropene	250	U	250	60	250	06/01/17 17:08	
4-Methyl-2-pentanone (MIBK)	1300	U	1300	170	250	06/01/17 17:08	
Toluene	250	U	250	50	250	06/01/17 17:08	
trans-1,3-Dichloropropene	250	U	250	50	250	06/01/17 17:08	
1,1,2-Trichloroethane	250	U	250	85	250	06/01/17 17:08	
Tetrachloroethene	250	U	250	75	250	06/01/17 17:08	
2-Hexanone	1300	U	1300	420	250	06/01/17 17:08	
Dibromochloromethane	250	U	250	78	250	06/01/17 17:08	
Chlorobenzene	250	U	250	73	250	06/01/17 17:08	
Ethylbenzene	250	U	250	50	250	06/01/17 17:08	
m,p-Xylenes	500	U	500	83	250	06/01/17 17:08	
o-Xylene	250	U	250	50	250	06/01/17 17:08	
Styrene	250	U	250	50	250	06/01/17 17:08	
Bromoform	250	U	250	110	250	06/01/17 17:08	
1,1,2,2-Tetrachloroethane	250	U	250	63	250	06/01/17 17:08	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 15:00
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-14 (1)	**Units:**	ug/L
Lab Code:	R1704784-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	06/01/17 17:08	
Toluene-d8	114	87 - 121	06/01/17 17:08	
Dibromofluoromethane	109	89 - 119	06/01/17 17:08	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 15:50
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-15 (1)	**Units:**	ug/L
Lab Code:	R1704784-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	5.0	U	5.0	1.1	5	05/30/17 16:01	
Vinyl Chloride	**180**		5.0	1.6	5	05/30/17 16:01	
Chloroethane	5.0	U	5.0	1.2	5	05/30/17 16:01	
Bromomethane	5.0	U	5.0	1.5	5	05/30/17 16:01	
1,1-Dichloroethene	5.0	U	5.0	2.9	5	05/30/17 16:01	
Acetone	25	U	25	6.2	5	05/30/17 16:01	
Carbon Disulfide	**6.5**		5.0	1.1	5	05/30/17 16:01	
Methylene Chloride	**4000**	**E**	5.0	3.0	5	05/30/17 16:01	
trans-1,2-Dichloroethene	**2.0**	**J**	5.0	1.7	5	05/30/17 16:01	
1,1-Dichloroethane	**3.9**	**J**	5.0	1.0	5	05/30/17 16:01	
cis-1,2-Dichloroethene	**390**		5.0	1.5	5	05/30/17 16:01	
2-Butanone (MEK)	25	U	25	4.1	5	05/30/17 16:01	
Chloroform	5.0	U	5.0	1.3	5	05/30/17 16:01	
1,1,1-Trichloroethane	5.0	U	5.0	1.8	5	05/30/17 16:01	
Carbon Tetrachloride	5.0	U	5.0	2.3	5	05/30/17 16:01	
Benzene	5.0	U	5.0	1.0	5	05/30/17 16:01	
1,2-Dichloroethane	5.0	U	5.0	1.8	5	05/30/17 16:01	
Trichloroethene	**10**		5.0	1.1	5	05/30/17 16:01	
1,2-Dichloropropane	5.0	U	5.0	1.0	5	05/30/17 16:01	
Bromodichloromethane	5.0	U	5.0	1.6	5	05/30/17 16:01	
cis-1,3-Dichloropropene	5.0	U	5.0	1.2	5	05/30/17 16:01	
4-Methyl-2-pentanone (MIBK)	25	U	25	3.4	5	05/30/17 16:01	
Toluene	5.0	U	5.0	1.0	5	05/30/17 16:01	
trans-1,3-Dichloropropene	5.0	U	5.0	1.0	5	05/30/17 16:01	
1,1,2-Trichloroethane	5.0	U	5.0	1.7	5	05/30/17 16:01	
Tetrachloroethene	5.0	U	5.0	1.5	5	05/30/17 16:01	
2-Hexanone	25	U	25	8.3	5	05/30/17 16:01	
Dibromochloromethane	5.0	U	5.0	1.6	5	05/30/17 16:01	
Chlorobenzene	5.0	U	5.0	1.5	5	05/30/17 16:01	
Ethylbenzene	5.0	U	5.0	1.0	5	05/30/17 16:01	
m,p-Xylenes	10	U	10	1.7	5	05/30/17 16:01	
o-Xylene	5.0	U	5.0	1.0	5	05/30/17 16:01	
Styrene	5.0	U	5.0	1.0	5	05/30/17 16:01	
Bromoform	5.0	U	5.0	2.1	5	05/30/17 16:01	
1,1,2,2-Tetrachloroethane	5.0	U	5.0	1.3	5	05/30/17 16:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	05/30/17 16:01	
Toluene-d8	113	87 - 121	05/30/17 16:01	
Dibromofluoromethane	108	89 - 119	05/30/17 16:01	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 15:50
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-15 (1)	**Units:**	ug/L
Lab Code:	R1704784-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	25 U	25	5.3	25	06/01/17 16:08	
Vinyl Chloride	**170 D**	25	8.0	25	06/01/17 16:08	
Chloroethane	25 U	25	6.0	25	06/01/17 16:08	
Bromomethane	25 U	25	7.3	25	06/01/17 16:08	
1,1-Dichloroethene	25 U	25	15	25	06/01/17 16:08	
Acetone	**34 DJ**	130	31	25	06/01/17 16:08	
Carbon Disulfide	**8.8 DJ**	25	5.5	25	06/01/17 16:08	
Methylene Chloride	**4300 D**	25	15	25	06/01/17 16:08	
trans-1,2-Dichloroethene	25 U	25	8.3	25	06/01/17 16:08	
1,1-Dichloroethane	25 U	25	5.0	25	06/01/17 16:08	
cis-1,2-Dichloroethene	**370 D**	25	7.5	25	06/01/17 16:08	
2-Butanone (MEK)	130 U	130	21	25	06/01/17 16:08	
Chloroform	25 U	25	6.3	25	06/01/17 16:08	
1,1,1-Trichloroethane	25 U	25	9.0	25	06/01/17 16:08	
Carbon Tetrachloride	25 U	25	12	25	06/01/17 16:08	
Benzene	25 U	25	5.0	25	06/01/17 16:08	
1,2-Dichloroethane	25 U	25	9.0	25	06/01/17 16:08	
Trichloroethene	**11 DJ**	25	5.5	25	06/01/17 16:08	
1,2-Dichloropropane	25 U	25	5.0	25	06/01/17 16:08	
Bromodichloromethane	25 U	25	8.0	25	06/01/17 16:08	
cis-1,3-Dichloropropene	25 U	25	6.0	25	06/01/17 16:08	
4-Methyl-2-pentanone (MIBK)	130 U	130	17	25	06/01/17 16:08	
Toluene	25 U	25	5.0	25	06/01/17 16:08	
trans-1,3-Dichloropropene	25 U	25	5.0	25	06/01/17 16:08	
1,1,2-Trichloroethane	25 U	25	8.5	25	06/01/17 16:08	
Tetrachloroethene	25 U	25	7.5	25	06/01/17 16:08	
2-Hexanone	130 U	130	42	25	06/01/17 16:08	
Dibromochloromethane	25 U	25	7.8	25	06/01/17 16:08	
Chlorobenzene	25 U	25	7.3	25	06/01/17 16:08	
Ethylbenzene	25 U	25	5.0	25	06/01/17 16:08	
m,p-Xylenes	50 U	50	8.3	25	06/01/17 16:08	
o-Xylene	25 U	25	5.0	25	06/01/17 16:08	
Styrene	25 U	25	5.0	25	06/01/17 16:08	
Bromoform	25 U	25	11	25	06/01/17 16:08	
1,1,2,2-Tetrachloroethane	25 U	25	6.3	25	06/01/17 16:08	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	06/01/17 16:08	
Toluene-d8	112	87 - 121	06/01/17 16:08	
Dibromofluoromethane	107	89 - 119	06/01/17 16:08	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 16:50
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-13 (1)	**Units:**	ug/L
Lab Code:	R1704784-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	500	U	500	110	500	05/30/17 16:31	
Vinyl Chloride	**3000**		500	160	500	05/30/17 16:31	
Chloroethane	500	U	500	120	500	05/30/17 16:31	
Bromomethane	500	U	500	150	500	05/30/17 16:31	
1,1-Dichloroethene	500	U	500	290	500	05/30/17 16:31	
Acetone	2500	U	2500	620	500	05/30/17 16:31	
Carbon Disulfide	500	U	500	110	500	05/30/17 16:31	
Methylene Chloride	**100000**	**E**	500	300	500	05/30/17 16:31	
trans-1,2-Dichloroethene	500	U	500	170	500	05/30/17 16:31	
1,1-Dichloroethane	**320**	**J**	500	100	500	05/30/17 16:31	
cis-1,2-Dichloroethene	**80000**		500	150	500	05/30/17 16:31	
2-Butanone (MEK)	2500	U	2500	410	500	05/30/17 16:31	
Chloroform	**1200**		500	130	500	05/30/17 16:31	
1,1,1-Trichloroethane	**1100**		500	180	500	05/30/17 16:31	
Carbon Tetrachloride	500	U	500	230	500	05/30/17 16:31	
Benzene	500	U	500	100	500	05/30/17 16:31	
1,2-Dichloroethane	500	U	500	180	500	05/30/17 16:31	
Trichloroethene	**40000**		500	110	500	05/30/17 16:31	
1,2-Dichloropropane	500	U	500	100	500	05/30/17 16:31	
Bromodichloromethane	**230**	**J**	500	160	500	05/30/17 16:31	
cis-1,3-Dichloropropene	500	U	500	120	500	05/30/17 16:31	
4-Methyl-2-pentanone (MIBK)	2500	U	2500	340	500	05/30/17 16:31	
Toluene	500	U	500	100	500	05/30/17 16:31	
trans-1,3-Dichloropropene	500	U	500	100	500	05/30/17 16:31	
1,1,2-Trichloroethane	500	U	500	170	500	05/30/17 16:31	
Tetrachloroethene	500	U	500	150	500	05/30/17 16:31	
2-Hexanone	2500	U	2500	830	500	05/30/17 16:31	
Dibromochloromethane	500	U	500	160	500	05/30/17 16:31	
Chlorobenzene	500	U	500	150	500	05/30/17 16:31	
Ethylbenzene	500	U	500	100	500	05/30/17 16:31	
m,p-Xylenes	1000	U	1000	170	500	05/30/17 16:31	
o-Xylene	500	U	500	100	500	05/30/17 16:31	
Styrene	500	U	500	100	500	05/30/17 16:31	
Bromoform	500	U	500	210	500	05/30/17 16:31	
1,1,2,2-Tetrachloroethane	500	U	500	130	500	05/30/17 16:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	05/30/17 16:31	
Toluene-d8	115	87 - 121	05/30/17 16:31	
Dibromofluoromethane	109	89 - 119	05/30/17 16:31	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 16:50
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-13 (1)	**Units:**	ug/L
Lab Code:	R1704784-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	1000 U	1000	210	1000	05/30/17 18:01	
Vinyl Chloride	**2700 D**	1000	320	1000	05/30/17 18:01	
Chloroethane	1000 U	1000	240	1000	05/30/17 18:01	
Bromomethane	1000 U	1000	290	1000	05/30/17 18:01	
1,1-Dichloroethene	1000 U	1000	570	1000	05/30/17 18:01	
Acetone	5000 U	5000	1300	1000	05/30/17 18:01	
Carbon Disulfide	1000 U	1000	220	1000	05/30/17 18:01	
Methylene Chloride	**94000 D**	1000	600	1000	05/30/17 18:01	
trans-1,2-Dichloroethene	1000 U	1000	330	1000	05/30/17 18:01	
1,1-Dichloroethane	**270 DJ**	1000	200	1000	05/30/17 18:01	
cis-1,2-Dichloroethene	**72000 D**	1000	300	1000	05/30/17 18:01	
2-Butanone (MEK)	5000 U	5000	810	1000	05/30/17 18:01	
Chloroform	**1100 D**	1000	250	1000	05/30/17 18:01	
1,1,1-Trichloroethane	**1000 D**	1000	360	1000	05/30/17 18:01	
Carbon Tetrachloride	1000 U	1000	450	1000	05/30/17 18:01	
Benzene	1000 U	1000	200	1000	05/30/17 18:01	
1,2-Dichloroethane	1000 U	1000	360	1000	05/30/17 18:01	
Trichloroethene	**35000 D**	1000	220	1000	05/30/17 18:01	
1,2-Dichloropropane	1000 U	1000	200	1000	05/30/17 18:01	
Bromodichloromethane	1000 U	1000	320	1000	05/30/17 18:01	
cis-1,3-Dichloropropene	1000 U	1000	240	1000	05/30/17 18:01	
4-Methyl-2-pentanone (MIBK)	5000 U	5000	670	1000	05/30/17 18:01	
Toluene	1000 U	1000	200	1000	05/30/17 18:01	
trans-1,3-Dichloropropene	1000 U	1000	200	1000	05/30/17 18:01	
1,1,2-Trichloroethane	1000 U	1000	340	1000	05/30/17 18:01	
Tetrachloroethene	1000 U	1000	300	1000	05/30/17 18:01	
2-Hexanone	5000 U	5000	1700	1000	05/30/17 18:01	
Dibromochloromethane	1000 U	1000	310	1000	05/30/17 18:01	
Chlorobenzene	1000 U	1000	290	1000	05/30/17 18:01	
Ethylbenzene	1000 U	1000	200	1000	05/30/17 18:01	
m,p-Xylenes	2000 U	2000	330	1000	05/30/17 18:01	
o-Xylene	1000 U	1000	200	1000	05/30/17 18:01	
Styrene	1000 U	1000	200	1000	05/30/17 18:01	
Bromoform	1000 U	1000	420	1000	05/30/17 18:01	
1,1,2,2-Tetrachloroethane	1000 U	1000	250	1000	05/30/17 18:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	05/30/17 18:01	
Toluene-d8	113	87 - 121	05/30/17 18:01	
Dibromofluoromethane	109	89 - 119	05/30/17 18:01	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 17:35
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-09 (1)	**Units:**	ug/L
Lab Code:	R1704784-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	2.0 U	2.0	0.42	2	06/01/17 13:07	
Vinyl Chloride	**190**	2.0	0.64	2	06/01/17 13:07	
Chloroethane	2.0 U	2.0	0.48	2	06/01/17 13:07	
Bromomethane	2.0 U	2.0	0.58	2	06/01/17 13:07	
1,1-Dichloroethene	**1.5 J**	2.0	1.2	2	06/01/17 13:07	
Acetone	**4.1 J**	10	2.5	2	06/01/17 13:07	
Carbon Disulfide	2.0 U	2.0	0.44	2	06/01/17 13:07	
Methylene Chloride	2.0 U	2.0	1.2	2	06/01/17 13:07	
trans-1,2-Dichloroethene	**1.4 J**	2.0	0.66	2	06/01/17 13:07	
1,1-Dichloroethane	**16**	2.0	0.40	2	06/01/17 13:07	
cis-1,2-Dichloroethene	**150**	2.0	0.60	2	06/01/17 13:07	
2-Butanone (MEK)	10 U	10	1.7	2	06/01/17 13:07	
Chloroform	2.0 U	2.0	0.50	2	06/01/17 13:07	
1,1,1-Trichloroethane	**85**	2.0	0.72	2	06/01/17 13:07	
Carbon Tetrachloride	2.0 U	2.0	0.90	2	06/01/17 13:07	
Benzene	2.0 U	2.0	0.40	2	06/01/17 13:07	
1,2-Dichloroethane	2.0 U	2.0	0.72	2	06/01/17 13:07	
Trichloroethene	**1.7 J**	2.0	0.44	2	06/01/17 13:07	
1,2-Dichloropropane	2.0 U	2.0	0.40	2	06/01/17 13:07	
Bromodichloromethane	2.0 U	2.0	0.64	2	06/01/17 13:07	
cis-1,3-Dichloropropene	2.0 U	2.0	0.48	2	06/01/17 13:07	
4-Methyl-2-pentanone (MIBK)	10 U	10	1.4	2	06/01/17 13:07	
Toluene	2.0 U	2.0	0.40	2	06/01/17 13:07	
trans-1,3-Dichloropropene	2.0 U	2.0	0.40	2	06/01/17 13:07	
1,1,2-Trichloroethane	2.0 U	2.0	0.68	2	06/01/17 13:07	
Tetrachloroethene	2.0 U	2.0	0.60	2	06/01/17 13:07	
2-Hexanone	10 U	10	3.4	2	06/01/17 13:07	
Dibromochloromethane	2.0 U	2.0	0.62	2	06/01/17 13:07	
Chlorobenzene	2.0 U	2.0	0.58	2	06/01/17 13:07	
Ethylbenzene	2.0 U	2.0	0.40	2	06/01/17 13:07	
m,p-Xylenes	4.0 U	4.0	0.66	2	06/01/17 13:07	
o-Xylene	2.0 U	2.0	0.40	2	06/01/17 13:07	
Styrene	2.0 U	2.0	0.40	2	06/01/17 13:07	
Bromoform	2.0 U	2.0	0.84	2	06/01/17 13:07	
1,1,2,2-Tetrachloroethane	2.0 U	2.0	0.50	2	06/01/17 13:07	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 17:35
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-09 (1)	**Units:**	ug/L
Lab Code:	R1704784-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	06/01/17 13:07	
Toluene-d8	113	87 - 121	06/01/17 13:07	
Dibromofluoromethane	109	89 - 119	06/01/17 13:07	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 09:20
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	R1704784-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	1.0 U	1.0	0.21	1	05/30/17 14:01	
Vinyl Chloride	1.0 U	1.0	0.32	1	05/30/17 14:01	
Chloroethane	1.0 U	1.0	0.24	1	05/30/17 14:01	
Bromomethane	1.0 U	1.0	0.29	1	05/30/17 14:01	
1,1-Dichloroethene	1.0 U	1.0	0.57	1	05/30/17 14:01	
Acetone	5.0 U	5.0	1.3	1	05/30/17 14:01	
Carbon Disulfide	1.0 U	1.0	0.22	1	05/30/17 14:01	
Methylene Chloride	1.0 U	1.0	0.60	1	05/30/17 14:01	
trans-1,2-Dichloroethene	1.0 U	1.0	0.33	1	05/30/17 14:01	
1,1-Dichloroethane	1.0 U	1.0	0.20	1	05/30/17 14:01	
cis-1,2-Dichloroethene	1.0 U	1.0	0.30	1	05/30/17 14:01	
2-Butanone (MEK)	5.0 U	5.0	0.81	1	05/30/17 14:01	
Chloroform	1.0 U	1.0	0.25	1	05/30/17 14:01	
1,1,1-Trichloroethane	1.0 U	1.0	0.36	1	05/30/17 14:01	
Carbon Tetrachloride	1.0 U	1.0	0.45	1	05/30/17 14:01	
Benzene	1.0 U	1.0	0.20	1	05/30/17 14:01	
1,2-Dichloroethane	1.0 U	1.0	0.36	1	05/30/17 14:01	
Trichloroethene	1.0 U	1.0	0.22	1	05/30/17 14:01	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	05/30/17 14:01	
Bromodichloromethane	1.0 U	1.0	0.32	1	05/30/17 14:01	
cis-1,3-Dichloropropene	1.0 U	1.0	0.24	1	05/30/17 14:01	
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0	0.67	1	05/30/17 14:01	
Toluene	1.0 U	1.0	0.20	1	05/30/17 14:01	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	05/30/17 14:01	
1,1,2-Trichloroethane	1.0 U	1.0	0.34	1	05/30/17 14:01	
Tetrachloroethene	1.0 U	1.0	0.30	1	05/30/17 14:01	
2-Hexanone	5.0 U	5.0	1.7	1	05/30/17 14:01	
Dibromochloromethane	1.0 U	1.0	0.31	1	05/30/17 14:01	
Chlorobenzene	1.0 U	1.0	0.29	1	05/30/17 14:01	
Ethylbenzene	1.0 U	1.0	0.20	1	05/30/17 14:01	
m,p-Xylenes	2.0 U	2.0	0.33	1	05/30/17 14:01	
o-Xylene	1.0 U	1.0	0.20	1	05/30/17 14:01	
Styrene	1.0 U	1.0	0.20	1	05/30/17 14:01	
Bromoform	1.0 U	1.0	0.42	1	05/30/17 14:01	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.25	1	05/30/17 14:01	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17 09:20
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	R1704784-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	05/30/17 14:01	
Toluene-d8	112	87 - 121	05/30/17 14:01	
Dibromofluoromethane	106	89 - 119	05/30/17 14:01	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 09:20
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-96-01 (1)	**Units:**	ug/L
Lab Code:	R1704784-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	5.0 U	5.0	1.1	5	05/30/17 17:31	
Vinyl Chloride	**700**	5.0	1.6	5	05/30/17 17:31	
Chloroethane	5.0 U	5.0	1.2	5	05/30/17 17:31	
Bromomethane	5.0 U	5.0	1.5	5	05/30/17 17:31	
1,1-Dichloroethene	5.0 U	5.0	2.9	5	05/30/17 17:31	
Acetone	25 U	25	6.2	5	05/30/17 17:31	
Carbon Disulfide	5.0 U	5.0	1.1	5	05/30/17 17:31	
Methylene Chloride	**21**	5.0	3.0	5	05/30/17 17:31	
trans-1,2-Dichloroethene	**4.4 J**	5.0	1.7	5	05/30/17 17:31	
1,1-Dichloroethane	**29**	5.0	1.0	5	05/30/17 17:31	
cis-1,2-Dichloroethene	**710**	5.0	1.5	5	05/30/17 17:31	
2-Butanone (MEK)	25 U	25	4.1	5	05/30/17 17:31	
Chloroform	5.0 U	5.0	1.3	5	05/30/17 17:31	
1,1,1-Trichloroethane	**48**	5.0	1.8	5	05/30/17 17:31	
Carbon Tetrachloride	5.0 U	5.0	2.3	5	05/30/17 17:31	
Benzene	5.0 U	5.0	1.0	5	05/30/17 17:31	
1,2-Dichloroethane	5.0 U	5.0	1.8	5	05/30/17 17:31	
Trichloroethene	**17**	5.0	1.1	5	05/30/17 17:31	
1,2-Dichloropropane	5.0 U	5.0	1.0	5	05/30/17 17:31	
Bromodichloromethane	5.0 U	5.0	1.6	5	05/30/17 17:31	
cis-1,3-Dichloropropene	5.0 U	5.0	1.2	5	05/30/17 17:31	
4-Methyl-2-pentanone (MIBK)	25 U	25	3.4	5	05/30/17 17:31	
Toluene	5.0 U	5.0	1.0	5	05/30/17 17:31	
trans-1,3-Dichloropropene	5.0 U	5.0	1.0	5	05/30/17 17:31	
1,1,2-Trichloroethane	5.0 U	5.0	1.7	5	05/30/17 17:31	
Tetrachloroethene	5.0 U	5.0	1.5	5	05/30/17 17:31	
2-Hexanone	25 U	25	8.3	5	05/30/17 17:31	
Dibromochloromethane	5.0 U	5.0	1.6	5	05/30/17 17:31	
Chlorobenzene	5.0 U	5.0	1.5	5	05/30/17 17:31	
Ethylbenzene	5.0 U	5.0	1.0	5	05/30/17 17:31	
m,p-Xylenes	10 U	10	1.7	5	05/30/17 17:31	
o-Xylene	5.0 U	5.0	1.0	5	05/30/17 17:31	
Styrene	5.0 U	5.0	1.0	5	05/30/17 17:31	
Bromoform	5.0 U	5.0	2.1	5	05/30/17 17:31	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	1.3	5	05/30/17 17:31	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 09:20
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-96-01 (1)	**Units:**	ug/L
Lab Code:	R1704784-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	05/30/17 17:31	
Toluene-d8	113	87 - 121	05/30/17 17:31	
Dibromofluoromethane	109	89 - 119	05/30/17 17:31	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 10:00
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-12 (1)	**Units:**	ug/L
Lab Code:	R1704784-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	10	U	10	2.1	10	05/30/17 18:31	
Vinyl Chloride	**1700**		10	3.2	10	05/30/17 18:31	
Chloroethane	10	U	10	2.4	10	05/30/17 18:31	
Bromomethane	10	U	10	2.9	10	05/30/17 18:31	
1,1-Dichloroethene	**7.2**	**J**	10	5.7	10	05/30/17 18:31	
Acetone	50	U	50	13	10	05/30/17 18:31	
Carbon Disulfide	10	U	10	2.2	10	05/30/17 18:31	
Methylene Chloride	10	U	10	6.0	10	05/30/17 18:31	
trans-1,2-Dichloroethene	**8.7**	**J**	10	3.3	10	05/30/17 18:31	
1,1-Dichloroethane	**19**		10	2.0	10	05/30/17 18:31	
cis-1,2-Dichloroethene	**2200**	**E**	10	3.0	10	05/30/17 18:31	
2-Butanone (MEK)	50	U	50	8.1	10	05/30/17 18:31	
Chloroform	10	U	10	2.5	10	05/30/17 18:31	
1,1,1-Trichloroethane	**30**		10	3.6	10	05/30/17 18:31	
Carbon Tetrachloride	10	U	10	4.5	10	05/30/17 18:31	
Benzene	10	U	10	2.0	10	05/30/17 18:31	
1,2-Dichloroethane	10	U	10	3.6	10	05/30/17 18:31	
Trichloroethene	**14**		10	2.2	10	05/30/17 18:31	
1,2-Dichloropropane	10	U	10	2.0	10	05/30/17 18:31	
Bromodichloromethane	10	U	10	3.2	10	05/30/17 18:31	
cis-1,3-Dichloropropene	10	U	10	2.4	10	05/30/17 18:31	
4-Methyl-2-pentanone (MIBK)	50	U	50	6.7	10	05/30/17 18:31	
Toluene	10	U	10	2.0	10	05/30/17 18:31	
trans-1,3-Dichloropropene	10	U	10	2.0	10	05/30/17 18:31	
1,1,2-Trichloroethane	10	U	10	3.4	10	05/30/17 18:31	
Tetrachloroethene	10	U	10	3.0	10	05/30/17 18:31	
2-Hexanone	50	U	50	17	10	05/30/17 18:31	
Dibromochloromethane	10	U	10	3.1	10	05/30/17 18:31	
Chlorobenzene	10	U	10	2.9	10	05/30/17 18:31	
Ethylbenzene	10	U	10	2.0	10	05/30/17 18:31	
m,p-Xylenes	20	U	20	3.3	10	05/30/17 18:31	
o-Xylene	10	U	10	2.0	10	05/30/17 18:31	
Styrene	10	U	10	2.0	10	05/30/17 18:31	
Bromoform	10	U	10	4.2	10	05/30/17 18:31	
1,1,2,2-Tetrachloroethane	10	U	10	2.5	10	05/30/17 18:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	05/30/17 18:31	
Toluene-d8	114	87 - 121	05/30/17 18:31	
Dibromofluoromethane	108	89 - 119	05/30/17 18:31	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 10:00
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-12 (1)	**Units:**	ug/L
Lab Code:	R1704784-009	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	20 U	20	4.2	20	06/01/17 14:37	
Vinyl Chloride	**1800 D**	20	6.4	20	06/01/17 14:37	
Chloroethane	20 U	20	4.8	20	06/01/17 14:37	
Bromomethane	20 U	20	5.8	20	06/01/17 14:37	
1,1-Dichloroethene	20 U	20	12	20	06/01/17 14:37	
Acetone	**35 DJ**	100	25	20	06/01/17 14:37	
Carbon Disulfide	20 U	20	4.4	20	06/01/17 14:37	
Methylene Chloride	20 U	20	12	20	06/01/17 14:37	
trans-1,2-Dichloroethene	**9.6 DJ**	20	6.6	20	06/01/17 14:37	
1,1-Dichloroethane	**20 DJ**	20	4.0	20	06/01/17 14:37	
cis-1,2-Dichloroethene	**2200 D**	20	6.0	20	06/01/17 14:37	
2-Butanone (MEK)	100 U	100	17	20	06/01/17 14:37	
Chloroform	20 U	20	5.0	20	06/01/17 14:37	
1,1,1-Trichloroethane	**29 D**	20	7.2	20	06/01/17 14:37	
Carbon Tetrachloride	20 U	20	9.0	20	06/01/17 14:37	
Benzene	20 U	20	4.0	20	06/01/17 14:37	
1,2-Dichloroethane	20 U	20	7.2	20	06/01/17 14:37	
Trichloroethene	**20 DJ**	20	4.4	20	06/01/17 14:37	
1,2-Dichloropropane	20 U	20	4.0	20	06/01/17 14:37	
Bromodichloromethane	20 U	20	6.4	20	06/01/17 14:37	
cis-1,3-Dichloropropene	20 U	20	4.8	20	06/01/17 14:37	
4-Methyl-2-pentanone (MIBK)	100 U	100	14	20	06/01/17 14:37	
Toluene	20 U	20	4.0	20	06/01/17 14:37	
trans-1,3-Dichloropropene	20 U	20	4.0	20	06/01/17 14:37	
1,1,2-Trichloroethane	20 U	20	6.8	20	06/01/17 14:37	
Tetrachloroethene	20 U	20	6.0	20	06/01/17 14:37	
2-Hexanone	100 U	100	34	20	06/01/17 14:37	
Dibromochloromethane	20 U	20	6.2	20	06/01/17 14:37	
Chlorobenzene	20 U	20	5.8	20	06/01/17 14:37	
Ethylbenzene	20 U	20	4.0	20	06/01/17 14:37	
m,p-Xylenes	40 U	40	6.6	20	06/01/17 14:37	
o-Xylene	20 U	20	4.0	20	06/01/17 14:37	
Styrene	20 U	20	4.0	20	06/01/17 14:37	
Bromoform	20 U	20	8.4	20	06/01/17 14:37	
1,1,2,2-Tetrachloroethane	20 U	20	5.0	20	06/01/17 14:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	06/01/17 14:37	
Toluene-d8	113	87 - 121	06/01/17 14:37	
Dibromofluoromethane	107	89 - 119	06/01/17 14:37	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 10:30
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-01 (1)	**Units:**	ug/L
Lab Code:	R1704784-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	2.0 U	2.0	0.42	2	05/30/17 19:01	
Vinyl Chloride	**84**	2.0	0.64	2	05/30/17 19:01	
Chloroethane	2.0 U	2.0	0.48	2	05/30/17 19:01	
Bromomethane	2.0 U	2.0	0.58	2	05/30/17 19:01	
1,1-Dichloroethene	**2.6**	2.0	1.2	2	05/30/17 19:01	
Acetone	10 U	10	2.5	2	05/30/17 19:01	
Carbon Disulfide	2.0 U	2.0	0.44	2	05/30/17 19:01	
Methylene Chloride	2.0 U	2.0	1.2	2	05/30/17 19:01	
trans-1,2-Dichloroethene	**6.8**	2.0	0.66	2	05/30/17 19:01	
1,1-Dichloroethane	**5.6**	2.0	0.40	2	05/30/17 19:01	
cis-1,2-Dichloroethene	**660 E**	2.0	0.60	2	05/30/17 19:01	
2-Butanone (MEK)	10 U	10	1.7	2	05/30/17 19:01	
Chloroform	**1.1 J**	2.0	0.50	2	05/30/17 19:01	
1,1,1-Trichloroethane	**15**	2.0	0.72	2	05/30/17 19:01	
Carbon Tetrachloride	2.0 U	2.0	0.90	2	05/30/17 19:01	
Benzene	2.0 U	2.0	0.40	2	05/30/17 19:01	
1,2-Dichloroethane	2.0 U	2.0	0.72	2	05/30/17 19:01	
Trichloroethene	**110**	2.0	0.44	2	05/30/17 19:01	
1,2-Dichloropropane	2.0 U	2.0	0.40	2	05/30/17 19:01	
Bromodichloromethane	2.0 U	2.0	0.64	2	05/30/17 19:01	
cis-1,3-Dichloropropene	2.0 U	2.0	0.48	2	05/30/17 19:01	
4-Methyl-2-pentanone (MIBK)	10 U	10	1.4	2	05/30/17 19:01	
Toluene	2.0 U	2.0	0.40	2	05/30/17 19:01	
trans-1,3-Dichloropropene	2.0 U	2.0	0.40	2	05/30/17 19:01	
1,1,2-Trichloroethane	2.0 U	2.0	0.68	2	05/30/17 19:01	
Tetrachloroethene	2.0 U	2.0	0.60	2	05/30/17 19:01	
2-Hexanone	10 U	10	3.4	2	05/30/17 19:01	
Dibromochloromethane	2.0 U	2.0	0.62	2	05/30/17 19:01	
Chlorobenzene	2.0 U	2.0	0.58	2	05/30/17 19:01	
Ethylbenzene	2.0 U	2.0	0.40	2	05/30/17 19:01	
m,p-Xylenes	4.0 U	4.0	0.66	2	05/30/17 19:01	
o-Xylene	2.0 U	2.0	0.40	2	05/30/17 19:01	
Styrene	2.0 U	2.0	0.40	2	05/30/17 19:01	
Bromoform	2.0 U	2.0	0.84	2	05/30/17 19:01	
1,1,2,2-Tetrachloroethane	2.0 U	2.0	0.50	2	05/30/17 19:01	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	05/30/17 19:01	
Toluene-d8	112	87 - 121	05/30/17 19:01	
Dibromofluoromethane	107	89 - 119	05/30/17 19:01	

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 10:30
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-01 (1)	**Units:**	ug/L
Lab Code:	R1704784-010	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	5.0 U	5.0	1.1	5	06/01/17 13:37	
Vinyl Chloride	**89 D**	5.0	1.6	5	06/01/17 13:37	
Chloroethane	5.0 U	5.0	1.2	5	06/01/17 13:37	
Bromomethane	5.0 U	5.0	1.5	5	06/01/17 13:37	
1,1-Dichloroethene	5.0 U	5.0	2.9	5	06/01/17 13:37	
Acetone	**8.0 DJ**	25	6.2	5	06/01/17 13:37	
Carbon Disulfide	5.0 U	5.0	1.1	5	06/01/17 13:37	
Methylene Chloride	5.0 U	5.0	3.0	5	06/01/17 13:37	
trans-1,2-Dichloroethene	**6.6 D**	5.0	1.7	5	06/01/17 13:37	
1,1-Dichloroethane	**5.8 D**	5.0	1.0	5	06/01/17 13:37	
cis-1,2-Dichloroethene	**690 D**	5.0	1.5	5	06/01/17 13:37	
2-Butanone (MEK)	25 U	25	4.1	5	06/01/17 13:37	
Chloroform	**2.0 DJ**	5.0	1.3	5	06/01/17 13:37	
1,1,1-Trichloroethane	**16 D**	5.0	1.8	5	06/01/17 13:37	
Carbon Tetrachloride	5.0 U	5.0	2.3	5	06/01/17 13:37	
Benzene	5.0 U	5.0	1.0	5	06/01/17 13:37	
1,2-Dichloroethane	5.0 U	5.0	1.8	5	06/01/17 13:37	
Trichloroethene	**110 D**	5.0	1.1	5	06/01/17 13:37	
1,2-Dichloropropane	5.0 U	5.0	1.0	5	06/01/17 13:37	
Bromodichloromethane	5.0 U	5.0	1.6	5	06/01/17 13:37	
cis-1,3-Dichloropropene	5.0 U	5.0	1.2	5	06/01/17 13:37	
4-Methyl-2-pentanone (MIBK)	25 U	25	3.4	5	06/01/17 13:37	
Toluene	5.0 U	5.0	1.0	5	06/01/17 13:37	
trans-1,3-Dichloropropene	5.0 U	5.0	1.0	5	06/01/17 13:37	
1,1,2-Trichloroethane	5.0 U	5.0	1.7	5	06/01/17 13:37	
Tetrachloroethene	5.0 U	5.0	1.5	5	06/01/17 13:37	
2-Hexanone	25 U	25	8.3	5	06/01/17 13:37	
Dibromochloromethane	5.0 U	5.0	1.6	5	06/01/17 13:37	
Chlorobenzene	5.0 U	5.0	1.5	5	06/01/17 13:37	
Ethylbenzene	5.0 U	5.0	1.0	5	06/01/17 13:37	
m,p-Xylenes	10 U	10	1.7	5	06/01/17 13:37	
o-Xylene	5.0 U	5.0	1.0	5	06/01/17 13:37	
Styrene	5.0 U	5.0	1.0	5	06/01/17 13:37	
Bromoform	5.0 U	5.0	2.1	5	06/01/17 13:37	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	1.3	5	06/01/17 13:37	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	106	85 - 122	06/01/17 13:37	
Toluene-d8	114	87 - 121	06/01/17 13:37	
Dibromofluoromethane	109	89 - 119	06/01/17 13:37	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 11:00
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-89-12 (1)	**Units:**	ug/L
Lab Code:	R1704784-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	25 U	25	5.3	25	06/01/17 16:38	
Vinyl Chloride	**270**	25	8.0	25	06/01/17 16:38	
Chloroethane	25 U	25	6.0	25	06/01/17 16:38	
Bromomethane	25 U	25	7.3	25	06/01/17 16:38	
1,1-Dichloroethene	25 U	25	15	25	06/01/17 16:38	
Acetone	**36 J**	130	31	25	06/01/17 16:38	
Carbon Disulfide	25 U	25	5.5	25	06/01/17 16:38	
Methylene Chloride	25 U	25	15	25	06/01/17 16:38	
trans-1,2-Dichloroethene	**19 J**	25	8.3	25	06/01/17 16:38	
1,1-Dichloroethane	**9.0 J**	25	5.0	25	06/01/17 16:38	
cis-1,2-Dichloroethene	**4300**	25	7.5	25	06/01/17 16:38	
2-Butanone (MEK)	130 U	130	21	25	06/01/17 16:38	
Chloroform	25 U	25	6.3	25	06/01/17 16:38	
1,1,1-Trichloroethane	**22 J**	25	9.0	25	06/01/17 16:38	
Carbon Tetrachloride	25 U	25	12	25	06/01/17 16:38	
Benzene	25 U	25	5.0	25	06/01/17 16:38	
1,2-Dichloroethane	25 U	25	9.0	25	06/01/17 16:38	
Trichloroethene	**490**	25	5.5	25	06/01/17 16:38	
1,2-Dichloropropane	25 U	25	5.0	25	06/01/17 16:38	
Bromodichloromethane	25 U	25	8.0	25	06/01/17 16:38	
cis-1,3-Dichloropropene	25 U	25	6.0	25	06/01/17 16:38	
4-Methyl-2-pentanone (MIBK)	130 U	130	17	25	06/01/17 16:38	
Toluene	25 U	25	5.0	25	06/01/17 16:38	
trans-1,3-Dichloropropene	25 U	25	5.0	25	06/01/17 16:38	
1,1,2-Trichloroethane	25 U	25	8.5	25	06/01/17 16:38	
Tetrachloroethene	25 U	25	7.5	25	06/01/17 16:38	
2-Hexanone	130 U	130	42	25	06/01/17 16:38	
Dibromochloromethane	25 U	25	7.8	25	06/01/17 16:38	
Chlorobenzene	25 U	25	7.3	25	06/01/17 16:38	
Ethylbenzene	25 U	25	5.0	25	06/01/17 16:38	
m,p-Xylenes	50 U	50	8.3	25	06/01/17 16:38	
o-Xylene	25 U	25	5.0	25	06/01/17 16:38	
Styrene	25 U	25	5.0	25	06/01/17 16:38	
Bromoform	25 U	25	11	25	06/01/17 16:38	
1,1,2,2-Tetrachloroethane	25 U	25	6.3	25	06/01/17 16:38	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 11:00
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-89-12 (1)	**Units:**	ug/L
Lab Code:	R1704784-011	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	103	85 - 122	06/01/17 16:38	
Toluene-d8	112	87 - 121	06/01/17 16:38	
Dibromofluoromethane	107	89 - 119	06/01/17 16:38	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 11:40
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-10 (1)	**Units:**	ug/L
Lab Code:	R1704784-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	5.0 U	5.0	1.1	5	06/01/17 14:07	
Vinyl Chloride	**12**	5.0	1.6	5	06/01/17 14:07	
Chloroethane	5.0 U	5.0	1.2	5	06/01/17 14:07	
Bromomethane	5.0 U	5.0	1.5	5	06/01/17 14:07	
1,1-Dichloroethene	5.0 U	5.0	2.9	5	06/01/17 14:07	
Acetone	**6.5 J**	25	6.2	5	06/01/17 14:07	
Carbon Disulfide	5.0 U	5.0	1.1	5	06/01/17 14:07	
Methylene Chloride	5.0 U	5.0	3.0	5	06/01/17 14:07	
trans-1,2-Dichloroethene	5.0 U	5.0	1.7	5	06/01/17 14:07	
1,1-Dichloroethane	**2.3 J**	5.0	1.0	5	06/01/17 14:07	
cis-1,2-Dichloroethene	**130**	5.0	1.5	5	06/01/17 14:07	
2-Butanone (MEK)	25 U	25	4.1	5	06/01/17 14:07	
Chloroform	**1.4 J**	5.0	1.3	5	06/01/17 14:07	
1,1,1-Trichloroethane	**3.6 J**	5.0	1.8	5	06/01/17 14:07	
Carbon Tetrachloride	5.0 U	5.0	2.3	5	06/01/17 14:07	
Benzene	5.0 U	5.0	1.0	5	06/01/17 14:07	
1,2-Dichloroethane	5.0 U	5.0	1.8	5	06/01/17 14:07	
Trichloroethene	**890**	5.0	1.1	5	06/01/17 14:07	
1,2-Dichloropropane	5.0 U	5.0	1.0	5	06/01/17 14:07	
Bromodichloromethane	5.0 U	5.0	1.6	5	06/01/17 14:07	
cis-1,3-Dichloropropene	5.0 U	5.0	1.2	5	06/01/17 14:07	
4-Methyl-2-pentanone (MIBK)	25 U	25	3.4	5	06/01/17 14:07	
Toluene	5.0 U	5.0	1.0	5	06/01/17 14:07	
trans-1,3-Dichloropropene	5.0 U	5.0	1.0	5	06/01/17 14:07	
1,1,2-Trichloroethane	5.0 U	5.0	1.7	5	06/01/17 14:07	
Tetrachloroethene	5.0 U	5.0	1.5	5	06/01/17 14:07	
2-Hexanone	25 U	25	8.3	5	06/01/17 14:07	
Dibromochloromethane	5.0 U	5.0	1.6	5	06/01/17 14:07	
Chlorobenzene	5.0 U	5.0	1.5	5	06/01/17 14:07	
Ethylbenzene	5.0 U	5.0	1.0	5	06/01/17 14:07	
m,p-Xylenes	10 U	10	1.7	5	06/01/17 14:07	
o-Xylene	5.0 U	5.0	1.0	5	06/01/17 14:07	
Styrene	5.0 U	5.0	1.0	5	06/01/17 14:07	
Bromoform	5.0 U	5.0	2.1	5	06/01/17 14:07	
1,1,2,2-Tetrachloroethane	5.0 U	5.0	1.3	5	06/01/17 14:07	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 11:40
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-10 (1)	**Units:**	ug/L
Lab Code:	R1704784-012	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	06/01/17 14:07	
Toluene-d8	113	87 - 121	06/01/17 14:07	
Dibromofluoromethane	108	89 - 119	06/01/17 14:07	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 12:05
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-05 (1)	**Units:**	ug/L
Lab Code:	R1704784-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	50	U	50	11	50	06/01/17 15:38	
Vinyl Chloride	**460**		50	16	50	06/01/17 15:38	
Chloroethane	50	U	50	12	50	06/01/17 15:38	
Bromomethane	50	U	50	15	50	06/01/17 15:38	
1,1-Dichloroethene	50	U	50	29	50	06/01/17 15:38	
Acetone	250	U	250	62	50	06/01/17 15:38	
Carbon Disulfide	50	U	50	11	50	06/01/17 15:38	
Methylene Chloride	**2100**		50	30	50	06/01/17 15:38	
trans-1,2-Dichloroethene	50	U	50	17	50	06/01/17 15:38	
1,1-Dichloroethane	**42**	**J**	50	10	50	06/01/17 15:38	
cis-1,2-Dichloroethene	**6900**		50	15	50	06/01/17 15:38	
2-Butanone (MEK)	250	U	250	41	50	06/01/17 15:38	
Chloroform	50	U	50	13	50	06/01/17 15:38	
1,1,1-Trichloroethane	**140**		50	18	50	06/01/17 15:38	
Carbon Tetrachloride	50	U	50	23	50	06/01/17 15:38	
Benzene	50	U	50	10	50	06/01/17 15:38	
1,2-Dichloroethane	50	U	50	18	50	06/01/17 15:38	
Trichloroethene	**1300**		50	11	50	06/01/17 15:38	
1,2-Dichloropropane	50	U	50	10	50	06/01/17 15:38	
Bromodichloromethane	50	U	50	16	50	06/01/17 15:38	
cis-1,3-Dichloropropene	50	U	50	12	50	06/01/17 15:38	
4-Methyl-2-pentanone (MIBK)	250	U	250	34	50	06/01/17 15:38	
Toluene	**12**	**J**	50	10	50	06/01/17 15:38	
trans-1,3-Dichloropropene	50	U	50	10	50	06/01/17 15:38	
1,1,2-Trichloroethane	50	U	50	17	50	06/01/17 15:38	
Tetrachloroethene	50	U	50	15	50	06/01/17 15:38	
2-Hexanone	250	U	250	83	50	06/01/17 15:38	
Dibromochloromethane	50	U	50	16	50	06/01/17 15:38	
Chlorobenzene	50	U	50	15	50	06/01/17 15:38	
Ethylbenzene	50	U	50	10	50	06/01/17 15:38	
m,p-Xylenes	100	U	100	17	50	06/01/17 15:38	
o-Xylene	50	U	50	10	50	06/01/17 15:38	
Styrene	50	U	50	10	50	06/01/17 15:38	
Bromoform	50	U	50	21	50	06/01/17 15:38	
1,1,2,2-Tetrachloroethane	50	U	50	13	50	06/01/17 15:38	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 12:05
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW-87-05 (1)	**Units:**	ug/L
Lab Code:	R1704784-013	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	06/01/17 15:38	
Toluene-d8	113	87 - 121	06/01/17 15:38	
Dibromofluoromethane	108	89 - 119	06/01/17 15:38	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 13:15
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW MOOG-C	**Units:**	ug/L
Lab Code:	R1704784-014	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	1.0 U	1.0	0.21	1	05/31/17 17:56	
Vinyl Chloride	1.0 U	1.0	0.32	1	05/31/17 17:56	
Chloroethane	1.0 U	1.0	0.24	1	05/31/17 17:56	
Bromomethane	1.0 U	1.0	0.29	1	05/31/17 17:56	
1,1-Dichloroethene	1.0 U	1.0	0.57	1	05/31/17 17:56	
Acetone	5.0 U	5.0	1.3	1	05/31/17 17:56	
Carbon Disulfide	1.0 U	1.0	0.22	1	05/31/17 17:56	
Methylene Chloride	1.0 U	1.0	0.60	1	05/31/17 17:56	
trans-1,2-Dichloroethene	1.0 U	1.0	0.33	1	05/31/17 17:56	
1,1-Dichloroethane	**1.7**	1.0	0.20	1	05/31/17 17:56	
cis-1,2-Dichloroethene	**17**	1.0	0.30	1	05/31/17 17:56	
2-Butanone (MEK)	5.0 U	5.0	0.81	1	05/31/17 17:56	
Chloroform	**0.98 J**	1.0	0.25	1	05/31/17 17:56	
1,1,1-Trichloroethane	**2.0**	1.0	0.36	1	05/31/17 17:56	
Carbon Tetrachloride	1.0 U	1.0	0.45	1	05/31/17 17:56	
Benzene	1.0 U	1.0	0.20	1	05/31/17 17:56	
1,2-Dichloroethane	1.0 U	1.0	0.36	1	05/31/17 17:56	
Trichloroethene	**21**	1.0	0.22	1	05/31/17 17:56	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	05/31/17 17:56	
Bromodichloromethane	1.0 U	1.0	0.32	1	05/31/17 17:56	
cis-1,3-Dichloropropene	1.0 U	1.0	0.24	1	05/31/17 17:56	
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0	0.67	1	05/31/17 17:56	
Toluene	1.0 U	1.0	0.20	1	05/31/17 17:56	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	05/31/17 17:56	
1,1,2-Trichloroethane	1.0 U	1.0	0.34	1	05/31/17 17:56	
Tetrachloroethene	1.0 U	1.0	0.30	1	05/31/17 17:56	
2-Hexanone	5.0 U	5.0	1.7	1	05/31/17 17:56	
Dibromochloromethane	1.0 U	1.0	0.31	1	05/31/17 17:56	
Chlorobenzene	1.0 U	1.0	0.29	1	05/31/17 17:56	
Ethylbenzene	1.0 U	1.0	0.20	1	05/31/17 17:56	
m,p-Xylenes	2.0 U	2.0	0.33	1	05/31/17 17:56	
o-Xylene	1.0 U	1.0	0.20	1	05/31/17 17:56	
Styrene	1.0 U	1.0	0.20	1	05/31/17 17:56	
Bromoform	1.0 U	1.0	0.42	1	05/31/17 17:56	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.25	1	05/31/17 17:56	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 13:15
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW MOOG-C	**Units:**	ug/L
Lab Code:	R1704784-014	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	107	85 - 122	05/31/17 17:56	
Toluene-d8	113	87 - 121	05/31/17 17:56	
Dibromofluoromethane	109	89 - 119	05/31/17 17:56	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 14:35
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW B-10 (a)	**Units:**	ug/L
Lab Code:	R1704784-015	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	500	U	500	110	500	06/01/17 17:38	
Vinyl Chloride	**430**	**J**	500	160	500	06/01/17 17:38	
Chloroethane	500	U	500	120	500	06/01/17 17:38	
Bromomethane	500	U	500	150	500	06/01/17 17:38	
1,1-Dichloroethene	**310**	**J**	500	290	500	06/01/17 17:38	
Acetone	2500	U	2500	620	500	06/01/17 17:38	
Carbon Disulfide	500	U	500	110	500	06/01/17 17:38	
Methylene Chloride	**3300**		500	300	500	06/01/17 17:38	
trans-1,2-Dichloroethene	500	U	500	170	500	06/01/17 17:38	
1,1-Dichloroethane	**350**	**J**	500	100	500	06/01/17 17:38	
cis-1,2-Dichloroethene	**20000**		500	150	500	06/01/17 17:38	
2-Butanone (MEK)	2500	U	2500	410	500	06/01/17 17:38	
Chloroform	**980**		500	130	500	06/01/17 17:38	
1,1,1-Trichloroethane	**780**		500	180	500	06/01/17 17:38	
Carbon Tetrachloride	500	U	500	230	500	06/01/17 17:38	
Benzene	500	U	500	100	500	06/01/17 17:38	
1,2-Dichloroethane	500	U	500	180	500	06/01/17 17:38	
Trichloroethene	**58000**		500	110	500	06/01/17 17:38	
1,2-Dichloropropane	500	U	500	100	500	06/01/17 17:38	
Bromodichloromethane	**210**	**J**	500	160	500	06/01/17 17:38	
cis-1,3-Dichloropropene	500	U	500	120	500	06/01/17 17:38	
4-Methyl-2-pentanone (MIBK)	2500	U	2500	340	500	06/01/17 17:38	
Toluene	500	U	500	100	500	06/01/17 17:38	
trans-1,3-Dichloropropene	500	U	500	100	500	06/01/17 17:38	
1,1,2-Trichloroethane	500	U	500	170	500	06/01/17 17:38	
Tetrachloroethene	500	U	500	150	500	06/01/17 17:38	
2-Hexanone	2500	U	2500	830	500	06/01/17 17:38	
Dibromochloromethane	500	U	500	160	500	06/01/17 17:38	
Chlorobenzene	500	U	500	150	500	06/01/17 17:38	
Ethylbenzene	500	U	500	100	500	06/01/17 17:38	
m,p-Xylenes	1000	U	1000	170	500	06/01/17 17:38	
o-Xylene	500	U	500	100	500	06/01/17 17:38	
Styrene	500	U	500	100	500	06/01/17 17:38	
Bromoform	500	U	500	210	500	06/01/17 17:38	
1,1,2,2-Tetrachloroethane	500	U	500	130	500	06/01/17 17:38	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17 14:35
Sample Matrix:	Water	**Date Received:**	05/25/17 15:00
Sample Name:	MW B-10 (a)	**Units:**	ug/L
Lab Code:	R1704784-015	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	06/01/17 17:38	
Toluene-d8	114	87 - 121	06/01/17 17:38	
Dibromofluoromethane	109	89 - 119	06/01/17 17:38	

QC Summary Forms

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Rochester Laboratory
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Phone (585) 288-5380 Fax (585) 288-8475
www.alsglobal.com

Client: CB&I **Service Request:** R1704784
Project: Textron Wheatfield/156045
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: EPA 5030C

Sample Name	Lab Code	4-Bromofluorobenzene 85 - 122	Dibromofluoromethane 89 - 119	Toluene-d8 87 - 121
MW-87-18 (1)	R1704784-001	105	109	115
MW-87-04 (1)	R1704784-002	103	107	113
MW-87-14 (1)	R1704784-003	105	109	114
MW-87-15 (1)	R1704784-004	104	108	113
MW-87-15 (1) DL	R1704784-004	104	107	112
MW-87-13 (1)	R1704784-005	106	109	115
MW-87-13 (1) DL	R1704784-005	106	109	113
MW-87-09 (1)	R1704784-006	106	109	113
Trip Blank	R1704784-007	103	106	112
MW-96-01 (1)	R1704784-008	104	109	113
MW-87-12 (1)	R1704784-009	102	108	114
MW-87-12 (1) DL	R1704784-009	104	107	113
MW-87-01 (1)	R1704784-010	104	107	112
MW-87-01 (1) DL	R1704784-010	106	109	114
MW-89-12 (1)	R1704784-011	103	107	112
MW-87-10 (1)	R1704784-012	104	108	113
MW-87-05 (1)	R1704784-013	105	108	113
MW MOOG-C	R1704784-014	107	109	113
MW B-10 (a)	R1704784-015	105	109	114
Lab Control Sample	RQ1704886-03	105	108	113
Method Blank	RQ1704886-04	102	105	113
MW-87-18 (1) MS	RQ1704886-05	106	108	114
MW-87-18 (1) DMS	RQ1704886-06	106	108	114
Lab Control Sample	RQ1704974-03	106	108	114
Method Blank	RQ1704974-04	104	107	114
Lab Control Sample	RQ1705009-03	105	107	113
Method Blank	RQ1705009-04	105	108	114
MW B-10 (a) MS	RQ1705009-05	107	110	114
MW B-10 (a) DMS	RQ1705009-06	106	107	112

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/22/17
Sample Matrix:	Water	**Date Received:**	05/25/17
		Date Analyzed:	05/30/17
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	MW-87-18 (1)	**Units:**	ug/L
Lab Code:	R1704784-001	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ1704886-05			Duplicate Matrix Spike RQ1704886-06					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloromethane	5.0 U	264	250	106	268	250	107	55-160	1	30
Vinyl Chloride	510	876	250	146	899	250	155	60-157	3	30
Chloroethane	5.0 U	282	250	113	292	250	117	70-140	4	30
Bromomethane	5.0 U	92.1	250	37	139	250	56	10-162	41*	30
1,1-Dichloroethene	5.0 U	233	250	93	243	250	97	74-139	4	30
Acetone	6.7 J	197	250	76	214	250	83	29-151	8	30
Carbon Disulfide	5.0 U	239	250	96	248	250	99	34-162	4	30
Methylene Chloride	5.0 U	243	250	97	249	250	100	75-121	2	30
trans-1,2-Dichloroethene	2.6 J	231	250	92	244	250	97	77-125	5	30
1,1-Dichloroethane	17	275	250	103	287	250	108	74-132	5	30
cis-1,2-Dichloroethene	620	896	250	111	904	250	115	72-133	<1	30
2-Butanone (MEK)	25 U	197	250	79	213	250	85	46-141	7	30
Chloroform	5.0 U	243	250	97	252	250	101	75-130	4	30
1,1,1-Trichloroethane	27	283	250	103	297	250	108	74-127	5	30
Carbon Tetrachloride	5.0 U	256	250	102	258	250	103	65-135	<1	30
Benzene	5.0 U	248	250	99	257	250	103	76-129	3	30
1,2-Dichloroethane	5.0 U	257	250	103	260	250	104	68-130	1	30
Trichloroethene	3.9 J	246	250	97	252	250	99	62-142	3	30
1,2-Dichloropropane	5.0 U	251	250	100	254	250	102	79-124	1	30
Bromodichloromethane	5.0 U	242	250	97	248	250	99	76-127	3	30
cis-1,3-Dichloropropene	5.0 U	226	250	90	229	250	92	52-134	1	30
4-Methyl-2-pentanone (MIBK)	25 U	218	250	87	224	250	90	60-141	3	30
Toluene	5.0 U	259	250	104	263	250	105	79-125	2	30
trans-1,3-Dichloropropene	5.0 U	225	250	90	229	250	92	50-142	2	30
1,1,2-Trichloroethane	5.0 U	238	250	95	246	250	98	79-119	3	30
Tetrachloroethene	5.0 U	250	250	100	265	250	106	67-137	6	30
2-Hexanone	25 U	215	250	86	223	250	89	56-132	4	30
Dibromochloromethane	5.0 U	219	250	88	230	250	92	72-128	5	30
Chlorobenzene	5.0 U	254	250	101	262	250	105	76-125	3	30
Ethylbenzene	5.0 U	264	250	105	273	250	109	72-134	3	30
m,p-Xylenes	10 U	531	500	106	550	500	110	68-138	3	30
o-Xylene	5.0 U	268	250	107	276	250	110	68-134	3	30
Styrene	5.0 U	260	250	104	270	250	108	34-156	4	30
Bromoform	5.0 U	209	250	84	221	250	89	58-133	6	30
1,1,2,2-Tetrachloroethane	5.0 U	237	250	95	245	250	98	72-122	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	05/23/17
Sample Matrix:	Water	**Date Received:**	05/25/17
		Date Analyzed:	06/1/17
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	MW B-10 (a)	**Units:**	ug/L
Lab Code:	R1704784-015	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030C		

		Matrix Spike RQ1705009-05			Duplicate Matrix Spike RQ1705009-06				
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloromethane	500 U	26600	25000	106	25500	25000	102	55-160	4	30
Vinyl Chloride	430 J	35100	25000	139	35700	25000	141	60-157	2	30
Chloroethane	500 U	28400	25000	113	29000	25000	116	70-140	2	30
Bromomethane	500 U	10100	25000	41	15100	25000	60	10-162	40*	30
1,1-Dichloroethene	310 J	24500	25000	97	24300	25000	96	74-139	1	30
Acetone	2500 U	22100	25000	88	21900	25000	88	29-151	<1	30
Carbon Disulfide	500 U	24400	25000	98	24600	25000	98	34-162	<1	30
Methylene Chloride	3300	27600	25000	97	27800	25000	98	75-121	<1	30
trans-1,2-Dichloroethene	500 U	23800	25000	95	23700	25000	95	77-125	<1	30
1,1-Dichloroethane	350 J	26400	25000	104	26300	25000	104	74-132	<1	30
cis-1,2-Dichloroethene	20000	44500	25000	97	44600	25000	97	72-133	<1	30
2-Butanone (MEK)	2500 U	22100	25000	88	21000	25000	84	46-141	5	30
Chloroform	980	25800	25000	99	25700	25000	99	75-130	<1	30
1,1,1-Trichloroethane	780	27300	25000	106	26900	25000	105	74-127	1	30
Carbon Tetrachloride	500 U	25000	25000	100	24700	25000	99	65-135	1	30
Benzene	500 U	24900	25000	100	24700	25000	99	76-129	1	30
1,2-Dichloroethane	500 U	26500	25000	106	25500	25000	102	68-130	4	30
Trichloroethene	58000	79300	25000	83	77500	25000	76	62-142	2	30
1,2-Dichloropropane	500 U	25000	25000	100	24700	25000	99	79-124	1	30
Bromodichloromethane	210 J	24900	25000	99	24300	25000	96	76-127	3	30
cis-1,3-Dichloropropene	500 U	22200	25000	89	22100	25000	88	52-134	<1	30
4-Methyl-2-pentanone (MIBK)	2500 U	22100	25000	88	22800	25000	91	60-141	3	30
Toluene	500 U	25700	25000	103	25400	25000	101	79-125	1	30
trans-1,3-Dichloropropene	500 U	22400	25000	90	22100	25000	89	50-142	1	30
1,1,2-Trichloroethane	500 U	24200	25000	97	24100	25000	97	79-119	<1	30
Tetrachloroethene	500 U	25700	25000	103	25300	25000	101	67-137	2	30
2-Hexanone	2500 U	21900	25000	88	22100	25000	88	56-132	1	30
Dibromochloromethane	500 U	22400	25000	90	22100	25000	88	72-128	1	30
Chlorobenzene	500 U	25500	25000	102	25300	25000	101	76-125	<1	30
Ethylbenzene	500 U	26300	25000	105	25900	25000	103	72-134	2	30
m,p-Xylenes	1000 U	53200	50000	106	53000	50000	106	68-138	<1	30
o-Xylene	500 U	26400	25000	106	26200	25000	105	68-134	<1	30
Styrene	500 U	26200	25000	105	26000	25000	104	34-156	<1	30
Bromoform	500 U	21000	25000	84	21400	25000	86	58-133	2	30
1,1,2,2-Tetrachloroethane	500 U	23600	25000	94	24000	25000	96	72-122	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1704886-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	1.0 U	1.0	0.21	1	05/30/17 11:55	
Vinyl Chloride	1.0 U	1.0	0.32	1	05/30/17 11:55	
Chloroethane	1.0 U	1.0	0.24	1	05/30/17 11:55	
Bromomethane	1.0 U	1.0	0.29	1	05/30/17 11:55	
1,1-Dichloroethene	1.0 U	1.0	0.57	1	05/30/17 11:55	
Acetone	5.0 U	5.0	1.3	1	05/30/17 11:55	
Carbon Disulfide	1.0 U	1.0	0.22	1	05/30/17 11:55	
Methylene Chloride	1.0 U	1.0	0.60	1	05/30/17 11:55	
trans-1,2-Dichloroethene	1.0 U	1.0	0.33	1	05/30/17 11:55	
1,1-Dichloroethane	1.0 U	1.0	0.20	1	05/30/17 11:55	
cis-1,2-Dichloroethene	1.0 U	1.0	0.30	1	05/30/17 11:55	
2-Butanone (MEK)	5.0 U	5.0	0.81	1	05/30/17 11:55	
Chloroform	1.0 U	1.0	0.25	1	05/30/17 11:55	
1,1,1-Trichloroethane	1.0 U	1.0	0.36	1	05/30/17 11:55	
Carbon Tetrachloride	1.0 U	1.0	0.45	1	05/30/17 11:55	
Benzene	1.0 U	1.0	0.20	1	05/30/17 11:55	
1,2-Dichloroethane	1.0 U	1.0	0.36	1	05/30/17 11:55	
Trichloroethene	1.0 U	1.0	0.22	1	05/30/17 11:55	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	05/30/17 11:55	
Bromodichloromethane	1.0 U	1.0	0.32	1	05/30/17 11:55	
cis-1,3-Dichloropropene	1.0 U	1.0	0.24	1	05/30/17 11:55	
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0	0.67	1	05/30/17 11:55	
Toluene	1.0 U	1.0	0.20	1	05/30/17 11:55	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	05/30/17 11:55	
1,1,2-Trichloroethane	1.0 U	1.0	0.34	1	05/30/17 11:55	
Tetrachloroethene	1.0 U	1.0	0.30	1	05/30/17 11:55	
2-Hexanone	5.0 U	5.0	1.7	1	05/30/17 11:55	
Dibromochloromethane	1.0 U	1.0	0.31	1	05/30/17 11:55	
Chlorobenzene	1.0 U	1.0	0.29	1	05/30/17 11:55	
Ethylbenzene	1.0 U	1.0	0.20	1	05/30/17 11:55	
m,p-Xylenes	2.0 U	2.0	0.33	1	05/30/17 11:55	
o-Xylene	1.0 U	1.0	0.20	1	05/30/17 11:55	
Styrene	1.0 U	1.0	0.20	1	05/30/17 11:55	
Bromoform	1.0 U	1.0	0.42	1	05/30/17 11:55	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.25	1	05/30/17 11:55	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1704886-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	102	85 - 122	05/30/17 11:55	
Toluene-d8	113	87 - 121	05/30/17 11:55	
Dibromofluoromethane	105	89 - 119	05/30/17 11:55	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1704974-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	1.0 U	1.0	0.21	1	05/31/17 11:55	
Vinyl Chloride	1.0 U	1.0	0.32	1	05/31/17 11:55	
Chloroethane	1.0 U	1.0	0.24	1	05/31/17 11:55	
Bromomethane	**0.44 J**	1.0	0.29	1	05/31/17 11:55	
1,1-Dichloroethene	1.0 U	1.0	0.57	1	05/31/17 11:55	
Acetone	5.0 U	5.0	1.3	1	05/31/17 11:55	
Carbon Disulfide	1.0 U	1.0	0.22	1	05/31/17 11:55	
Methylene Chloride	1.0 U	1.0	0.60	1	05/31/17 11:55	
trans-1,2-Dichloroethene	1.0 U	1.0	0.33	1	05/31/17 11:55	
1,1-Dichloroethane	1.0 U	1.0	0.20	1	05/31/17 11:55	
cis-1,2-Dichloroethene	1.0 U	1.0	0.30	1	05/31/17 11:55	
2-Butanone (MEK)	5.0 U	5.0	0.81	1	05/31/17 11:55	
Chloroform	1.0 U	1.0	0.25	1	05/31/17 11:55	
1,1,1-Trichloroethane	1.0 U	1.0	0.36	1	05/31/17 11:55	
Carbon Tetrachloride	1.0 U	1.0	0.45	1	05/31/17 11:55	
Benzene	1.0 U	1.0	0.20	1	05/31/17 11:55	
1,2-Dichloroethane	1.0 U	1.0	0.36	1	05/31/17 11:55	
Trichloroethene	1.0 U	1.0	0.22	1	05/31/17 11:55	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	05/31/17 11:55	
Bromodichloromethane	1.0 U	1.0	0.32	1	05/31/17 11:55	
cis-1,3-Dichloropropene	1.0 U	1.0	0.24	1	05/31/17 11:55	
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0	0.67	1	05/31/17 11:55	
Toluene	1.0 U	1.0	0.20	1	05/31/17 11:55	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	05/31/17 11:55	
1,1,2-Trichloroethane	1.0 U	1.0	0.34	1	05/31/17 11:55	
Tetrachloroethene	1.0 U	1.0	0.30	1	05/31/17 11:55	
2-Hexanone	5.0 U	5.0	1.7	1	05/31/17 11:55	
Dibromochloromethane	1.0 U	1.0	0.31	1	05/31/17 11:55	
Chlorobenzene	1.0 U	1.0	0.29	1	05/31/17 11:55	
Ethylbenzene	1.0 U	1.0	0.20	1	05/31/17 11:55	
m,p-Xylenes	2.0 U	2.0	0.33	1	05/31/17 11:55	
o-Xylene	1.0 U	1.0	0.20	1	05/31/17 11:55	
Styrene	1.0 U	1.0	0.20	1	05/31/17 11:55	
Bromoform	1.0 U	1.0	0.42	1	05/31/17 11:55	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.25	1	05/31/17 11:55	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1704974-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	104	85 - 122	05/31/17 11:55	
Toluene-d8	114	87 - 121	05/31/17 11:55	
Dibromofluoromethane	107	89 - 119	05/31/17 11:55	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1705009-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloromethane	1.0 U	1.0	0.21	1	06/01/17 12:07	
Vinyl Chloride	1.0 U	1.0	0.32	1	06/01/17 12:07	
Chloroethane	1.0 U	1.0	0.24	1	06/01/17 12:07	
Bromomethane	1.0 U	1.0	0.29	1	06/01/17 12:07	
1,1-Dichloroethene	1.0 U	1.0	0.57	1	06/01/17 12:07	
Acetone	5.0 U	5.0	1.3	1	06/01/17 12:07	
Carbon Disulfide	1.0 U	1.0	0.22	1	06/01/17 12:07	
Methylene Chloride	1.0 U	1.0	0.60	1	06/01/17 12:07	
trans-1,2-Dichloroethene	1.0 U	1.0	0.33	1	06/01/17 12:07	
1,1-Dichloroethane	1.0 U	1.0	0.20	1	06/01/17 12:07	
cis-1,2-Dichloroethene	1.0 U	1.0	0.30	1	06/01/17 12:07	
2-Butanone (MEK)	5.0 U	5.0	0.81	1	06/01/17 12:07	
Chloroform	1.0 U	1.0	0.25	1	06/01/17 12:07	
1,1,1-Trichloroethane	1.0 U	1.0	0.36	1	06/01/17 12:07	
Carbon Tetrachloride	1.0 U	1.0	0.45	1	06/01/17 12:07	
Benzene	1.0 U	1.0	0.20	1	06/01/17 12:07	
1,2-Dichloroethane	1.0 U	1.0	0.36	1	06/01/17 12:07	
Trichloroethene	1.0 U	1.0	0.22	1	06/01/17 12:07	
1,2-Dichloropropane	1.0 U	1.0	0.20	1	06/01/17 12:07	
Bromodichloromethane	1.0 U	1.0	0.32	1	06/01/17 12:07	
cis-1,3-Dichloropropene	1.0 U	1.0	0.24	1	06/01/17 12:07	
4-Methyl-2-pentanone (MIBK)	5.0 U	5.0	0.67	1	06/01/17 12:07	
Toluene	1.0 U	1.0	0.20	1	06/01/17 12:07	
trans-1,3-Dichloropropene	1.0 U	1.0	0.20	1	06/01/17 12:07	
1,1,2-Trichloroethane	1.0 U	1.0	0.34	1	06/01/17 12:07	
Tetrachloroethene	1.0 U	1.0	0.30	1	06/01/17 12:07	
2-Hexanone	5.0 U	5.0	1.7	1	06/01/17 12:07	
Dibromochloromethane	1.0 U	1.0	0.31	1	06/01/17 12:07	
Chlorobenzene	1.0 U	1.0	0.29	1	06/01/17 12:07	
Ethylbenzene	1.0 U	1.0	0.20	1	06/01/17 12:07	
m,p-Xylenes	2.0 U	2.0	0.33	1	06/01/17 12:07	
o-Xylene	1.0 U	1.0	0.20	1	06/01/17 12:07	
Styrene	1.0 U	1.0	0.20	1	06/01/17 12:07	
Bromoform	1.0 U	1.0	0.42	1	06/01/17 12:07	
1,1,2,2-Tetrachloroethane	1.0 U	1.0	0.25	1	06/01/17 12:07	

Analytical Report

Client:	CB&I	**Service Request:**	R1704784
Project:	Textron Wheatfield/156045	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	RQ1705009-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: EPA 5030C

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	105	85 - 122	06/01/17 12:07	
Toluene-d8	114	87 - 121	06/01/17 12:07	
Dibromofluoromethane	108	89 - 119	06/01/17 12:07	

Client: CB&I
Project: Textron Wheatfield/156045
Sample Matrix: Water

Service Request: R1704784
Date Analyzed: 05/30/17

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1704886-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloromethane	8260C	20.6	20.0	103	69-145
Vinyl Chloride	8260C	26.4	20.0	132	69-133
Chloroethane	8260C	21.0	20.0	105	70-127
Bromomethane	8260C	22.2	20.0	111	42-166
1,1-Dichloroethene	8260C	17.5	20.0	88	74-135
Acetone	8260C	22.6	20.0	113	40-161
Carbon Disulfide	8260C	20.6	20.0	103	65-127
Methylene Chloride	8260C	20.1	20.0	101	73-122
trans-1,2-Dichloroethene	8260C	18.4	20.0	92	80-120
1,1-Dichloroethane	8260C	20.7	20.0	104	78-117
cis-1,2-Dichloroethene	8260C	19.7	20.0	98	80-121
2-Butanone (MEK)	8260C	20.0	20.0	100	61-137
Chloroform	8260C	19.8	20.0	99	76-120
1,1,1-Trichloroethane	8260C	19.5	20.0	98	74-120
Carbon Tetrachloride	8260C	19.5	20.0	97	68-125
Benzene	8260C	20.2	20.0	101	76-118
1,2-Dichloroethane	8260C	21.4	20.0	107	71-127
Trichloroethene	8260C	18.8	20.0	94	78-123
1,2-Dichloropropane	8260C	20.2	20.0	101	80-119
Bromodichloromethane	8260C	20.0	20.0	100	78-126
cis-1,3-Dichloropropene	8260C	19.3	20.0	96	74-126
4-Methyl-2-pentanone (MIBK)	8260C	19.6	20.0	98	66-124
Toluene	8260C	20.5	20.0	102	77-120
trans-1,3-Dichloropropene	8260C	19.5	20.0	97	67-135
1,1,2-Trichloroethane	8260C	20.7	20.0	103	82-118
Tetrachloroethene	8260C	20.0	20.0	100	78-124
2-Hexanone	8260C	20.1	20.0	101	63-124
Dibromochloromethane	8260C	19.3	20.0	97	77-128
Chlorobenzene	8260C	20.9	20.0	104	80-121
Ethylbenzene	8260C	20.9	20.0	105	76-120
m,p-Xylenes	8260C	42.5	40.0	106	78-123
o-Xylene	8260C	21.3	20.0	106	80-120
Styrene	8260C	21.3	20.0	106	80-124

Client: CB&I
Project: Textron Wheatfield/156045
Sample Matrix: Water

Service Request: R1704784
Date Analyzed: 05/30/17

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1704886-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Bromoform	8260C	18.7	20.0	93	71-136
1,1,2,2-Tetrachloroethane	8260C	20.6	20.0	103	78-122

Client: CB&I
Project: Textron Wheatfield/156045
Sample Matrix: Water

Service Request: R1704784
Date Analyzed: 05/31/17

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1704974-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloromethane	8260C	21.0	20.0	105	69-145
Vinyl Chloride	8260C	28.7	20.0	144 *	69-133
Chloroethane	8260C	23.6	20.0	118	70-127
Bromomethane	8260C	19.0	20.0	95	42-166
1,1-Dichloroethene	8260C	19.3	20.0	97	74-135
Acetone	8260C	23.0	20.0	115	40-161
Carbon Disulfide	8260C	20.4	20.0	102	65-127
Methylene Chloride	8260C	20.4	20.0	102	73-122
trans-1,2-Dichloroethene	8260C	19.5	20.0	98	80-120
1,1-Dichloroethane	8260C	20.9	20.0	104	78-117
cis-1,2-Dichloroethene	8260C	20.6	20.0	103	80-121
2-Butanone (MEK)	8260C	19.1	20.0	96	61-137
Chloroform	8260C	20.2	20.0	101	76-120
1,1,1-Trichloroethane	8260C	20.9	20.0	105	74-120
Carbon Tetrachloride	8260C	20.4	20.0	102	68-125
Benzene	8260C	20.8	20.0	104	76-118
1,2-Dichloroethane	8260C	21.8	20.0	109	71-127
Trichloroethene	8260C	19.8	20.0	99	78-123
1,2-Dichloropropane	8260C	21.1	20.0	106	80-119
Bromodichloromethane	8260C	20.2	20.0	101	78-126
cis-1,3-Dichloropropene	8260C	19.1	20.0	95	74-126
4-Methyl-2-pentanone (MIBK)	8260C	19.4	20.0	97	66-124
Toluene	8260C	21.4	20.0	107	77-120
trans-1,3-Dichloropropene	8260C	19.2	20.0	96	67-135
1,1,2-Trichloroethane	8260C	20.1	20.0	100	82-118
Tetrachloroethene	8260C	21.2	20.0	106	78-124
2-Hexanone	8260C	19.2	20.0	96	63-124
Dibromochloromethane	8260C	18.5	20.0	93	77-128
Chlorobenzene	8260C	21.2	20.0	106	80-121
Ethylbenzene	8260C	21.7	20.0	109	76-120
m,p-Xylenes	8260C	44.1	40.0	110	78-123
o-Xylene	8260C	22.3	20.0	111	80-120
Styrene	8260C	21.9	20.0	110	80-124

Client: CB&I
Project: Textron Wheatfield/156045
Sample Matrix: Water

Service Request: R1704784
Date Analyzed: 05/31/17

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1704974-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Bromoform	8260C	17.3	20.0	86	71-136
1,1,2,2-Tetrachloroethane	8260C	20.2	20.0	101	78-122

Client: CB&I
Project: Textron Wheatfield/156045
Sample Matrix: Water

Service Request: R1704784
Date Analyzed: 06/01/17

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1705009-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Chloromethane	8260C	19.9	20.0	100	69-145
Vinyl Chloride	8260C	25.4	20.0	127	69-133
Chloroethane	8260C	20.8	20.0	104	70-127
Bromomethane	8260C	17.6	20.0	88	42-166
1,1-Dichloroethene	8260C	17.5	20.0	88	74-135
Acetone	8260C	23.7	20.0	118	40-161
Carbon Disulfide	8260C	19.4	20.0	97	65-127
Methylene Chloride	8260C	19.4	20.0	97	73-122
trans-1,2-Dichloroethene	8260C	17.3	20.0	87	80-120
1,1-Dichloroethane	8260C	19.9	20.0	100	78-117
cis-1,2-Dichloroethene	8260C	18.8	20.0	94	80-121
2-Butanone (MEK)	8260C	18.5	20.0	93	61-137
Chloroform	8260C	19.4	20.0	97	76-120
1,1,1-Trichloroethane	8260C	19.4	20.0	97	74-120
Carbon Tetrachloride	8260C	19.3	20.0	97	68-125
Benzene	8260C	19.4	20.0	97	76-118
1,2-Dichloroethane	8260C	20.7	20.0	103	71-127
Trichloroethene	8260C	18.3	20.0	92	78-123
1,2-Dichloropropane	8260C	19.6	20.0	98	80-119
Bromodichloromethane	8260C	19.6	20.0	98	78-126
cis-1,3-Dichloropropene	8260C	18.7	20.0	93	74-126
4-Methyl-2-pentanone (MIBK)	8260C	18.3	20.0	91	66-124
Toluene	8260C	19.9	20.0	99	77-120
trans-1,3-Dichloropropene	8260C	18.7	20.0	94	67-135
1,1,2-Trichloroethane	8260C	19.5	20.0	98	82-118
Tetrachloroethene	8260C	19.4	20.0	97	78-124
2-Hexanone	8260C	19.7	20.0	98	63-124
Dibromochloromethane	8260C	17.8	20.0	89	77-128
Chlorobenzene	8260C	20.2	20.0	101	80-121
Ethylbenzene	8260C	20.6	20.0	103	76-120
m,p-Xylenes	8260C	41.9	40.0	105	78-123
o-Xylene	8260C	20.4	20.0	102	80-120
Styrene	8260C	20.6	20.0	103	80-124

Client: CB&I
Project: Textron Wheatfield/156045
Sample Matrix: Water

Service Request: R1704784
Date Analyzed: 06/01/17

Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Units:ug/L
Basis:NA

Lab Control Sample
RQ1705009-03

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Bromoform	8260C	18.4	20.0	92	71-136
1,1,2,2-Tetrachloroethane	8260C	20.6	20.0	103	78-122

Appendix C

Monitoring Well Construction Logs

WELL NUMBER 87-01(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 18.32 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0				PID = 0.9	Casing Top Elev: 587.99 (ft) Casing Type: 2" SS
5					
10					
15					
20					
25					
30					

WELL NUMBER 87-02(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 18.05 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				Casing Top Elev: 589.21 (ft) Casing Type: 2" SS
5				
10				
15				
20				
25				
30				

WELL NUMBER 87-04(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 14.18 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 0.2	Casing Type: 2" SS
5						
10						
15						
20						
25		Screen fairly clear, some mineralization, some sediment @ bottom of well				
30						

WELL NUMBER 87-05(1)

APTIM

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 16.52 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 0.4	Casing Top Elev: 589.37 (ft) Casing Type: 2" SS
5						
10						
15						
20						
25		Screen is fairly clear; little sediment @ bottom				
30						

WELL NUMBER 87-08(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 14.01 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 589.48 (ft) Casing Type: 2" SS
5					
10					
15					
20					
25		Screen fairly clear; som elight debris/mineralization; some sediment @ bottom of well			
30					

WELL NUMBER 87-09(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 12.51 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0				PID = 0.5	Casing Type: 2" SS
5					
10					
15					
20					
25					
30					

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 6/2/17 11:13 - N:\GINT\DRILL LOGS\GINT FILES\TEXTRON WELL CONSTRUCTION.GPJ

WELL NUMBER 87-10(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 16.98 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0				PID = 0	Casing Top Elev: 587.52 (ft) Casing Type: 2" SS
5					
10					
15					
20					
25					
30					

WELL NUMBER 87-12(1)

APTIM

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 16.81 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 3.2	Casing Top Elev: 583.84 (ft) Casing Type: 2" SS
5						
10						
15		Screen fairly clear, some mineralization, little sediment @ bottom of well. Obstruction @ 2 ft BTOC prevents use of bailer, used wattera foot valve and tubing for sample collection				
20						
25						
30						

WELL NUMBER 87-13(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 15.42 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0				PID = 0.2	Casing Top Elev: 590.06 (ft) Casing Type: 2" SS
5					
10					
15			▼		
20					
25					
30					

WELL NUMBER 87-13(3)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 12.84 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 589.91 (ft) Casing Type: 2" SS
10					
20					
30					
40					
50		Screen mostly clear, visability lost @ bottom			

WELL NUMBER 87-14(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/14 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 14.44 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 13.7	Casing Top Elev: 589.06 (ft) Casing Type: 2" SS
5						
10						
15				▼		
20						
25		Screen slightly encrusted more-so @ bottom of well; some sediment @ bottom of well				
30						

GENERAL BH / TP / WELL - GINT STD US LAB.GDT - 6/2/17 11:13 - N:\GINT\DRILL LOGS\GINT FILES\TEXTRON WELL CONSTRUCTION.GPJ

WELL NUMBER 87-15(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 0.1	Casing Top Elev: 590.27 (ft) Casing Type: 2" SS
5						
10						
15						
20						
25		Screen encrusted with sediment @ bottom of well				
30						

WELL NUMBER 87-17(1)

APTIM

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 12.59 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 589.62 (ft) Casing Type: 2" SS
5					
10					
15					
20					
25		Screen very clear/clean; little to no sediment @ bottom of well			
30					

WELL NUMBER 87-18(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 19.62 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 0	Casing Type: 2" SS
5						
10						
15						
20						
25		Screen moderately mineralizerd; sediment @ bottom of well				
30						

WELL NUMBER 89-12(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 16.86 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 0	Casing Top Elev: 586.62 (ft) Casing Type: 2" SS
5						
10						
15						
20						
25		Screen mostly clear, whte floaters in water. sediment @ bottom of well				
30						

WELL NUMBER 89-15(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 16.63 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 588.76 (ft) Casing Type: 2" SS
25		Sump free of debris; very clean			

WELL NUMBER 96-01(1)

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 18.21 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 0	Casing Top Elev: 585.18 (ft) Casing Type: 2" SS
5						
10						
15						
20						
25						
30						
35		Screen mostly clear; little sediment @ bottom of well				

WELL NUMBER A

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 9.00 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Type: 4" HDPE
5		Appears to be solid casing from top to bottom, no bottom cap, open bottom. very soft full of debris/sediment.		▼	
10					
15					

WELL NUMBER B

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 10.37 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Type: 4" HDPE
5					
10					
15					
20					
25		4" HDPE Casing to 16.55 ft BTOC then open bedrock to 30.11. Fractures observed @ 26 ft and 27 ft BTOC.			
30					

WELL NUMBER C

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 10.81 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	ENVIRONMENTAL DATA	WELL DIAGRAM
0					PID = 0	Casing Type: 4" HDPE
5						
10						
15		Obstruction @ 16.75 ft BTOC, cannot advance camera.				
20						
25						
30						

WELL NUMBER D

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 10.75 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Type: 4" HDPE
5		No visable screen, solid HDPE casing to bottom, no end cap, open hole. Debris/sediment at bottom of well			
10					
15					

WELL NUMBER DW-9

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 5/22/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 5.85 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 581.3 (ft) Casing Type: 4" SS
5					
10					
15					
20		Screen heavily encrusted with mineralization deposits			

WELL NUMBER DW-10

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 6/1/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 8.68 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 583.95 (ft) Casing Type: 6"- 8" borehole
5					
10					
15					
20					
25		Casing to 14.8 ft BTOC then open borehole in bedrock			

WELL NUMBER DW-11

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 6/1/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 8.61 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 583.05 (ft) Casing Type: 6"- 8" borehole
5					
10					
15					
20		Casing to 14 ft BTOC then open borehole in bedrock			
25					

WELL NUMBER DW-12

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 6/1/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 7.68 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 580.48 (ft) Casing Type: 6"- 8" borehole
5					
10					
15					
20		Casing to 15 ft BTOC then open borehole in bedrock			
25					

WELL NUMBER EW-7

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 6/1/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 12.71 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 580.96 (ft) Casing Type: 6"- 8" borehole
5					
10					
15					
20					
25		Casing to 13 ft BTOC then open borehole in bedrock			

WELL NUMBER EW-8

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 6/1/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 9.65 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	REMARKS	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0					Casing Top Elev: 578.44 (ft) Casing Type: 6"- 8" borehole
5					
10					
15					
20		Casing to 15 ft BTOC then open borehole in bedrock			
25					

WELL NUMBER EW-13

CLIENT Textron
PROJECT NAME Former Textron Wheatfield
PROJECT NUMBER 156045
PROJECT LOCATION Niagara Falls, BY
DATE STARTED 6/1/17 **COMPLETED**
GROUND ELEVATION **HOLE SIZE** inches
DRILLING CONTRACTOR
GROUND WATER LEVELS:
DRILLING METHOD
AT TIME OF DRILLING ---
LOGGED BY K.Cronin **CHECKED BY**
AT END OF DRILLING ---
NOTES Downhole Camera used to determine well construction details
AFTER DRILLING 14.94 ft

DEPTH (ft)	SAMPLE TYPE NUMBER	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0				Casing Top Elev: 579.84 (ft) Casing Type: 6"- 8" borehole
5				
10				
15			▼	
20				
25				
30				

Appendix D

Material Safety Data Sheets
SDC-9™, 3-D Microemulsion®, Chemical Reducing Solution®

RNAS
REMEDIATION PRODUCTS

SAFETY DATA SHEET

SDC-9

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, Australian WorkSafe, Japanese Industrial Standard JIS Z 7250:2000, and European Directives

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED):	***SDC-9***
SYNONYMS:	None known
CAS#:	Mixture
PRODUCT USE:	This product is used for soil and ground water remediation.
CHEMICAL SHIPPING NAME/CLASS:	Non-Regulated Material
U.N. NUMBER:	None
MANUFACTURER'S NAME:	**CB&I**
ADDRESS:	17 Princess Road, Lawrencevill, NJ 08648
BUSINESS PHONE:	1-609-895-5340
SUPPLIER'S NAME:	**RNAS Remediation Products**
ADDRESS:	6712 West River Road, Brooklyn Center, MN 55430
BUSINESS PHONE:	1-763-585-6191
EMERGENCY PHONE:	1-800-424-9300 (Chemtrec 24 Hr Service – Emergency Only)
DATE OF CURRENT REVISION:	April 22, 2016
DATE OF LAST REVISION:	New

2. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This product is a light greenish murky liquid with a musty odor.
Health Hazards: Not expected to cause adverse health effects when used as intended. Prolonged or repeated exposure may cause irritation to skin. May cause irritation to eyes upon contact. Inhalation of vapors/sprays or mist may cause respiratory irritation. Ingestion of large amounts of this product may cause gastrointestinal irritation.
Flammability Hazards: This product is a Non-Flammable liquid.
Reactivity Hazards: None known
Environmental Hazards: The Environmental effects of this product have not been investigated. Release of this product is not anticipated to have significant adverse effects in the aquatic environment.

US DOT SYMBOLS	CANADA (WHMIS) SYMBOLS	EUROPEAN and (GHS) Hazard Symbols
		None
Non-Regulated Material	Complies with WHMIS 2015	Signal Word: **None**

GHS LABELING AND CLASSIFICATION:
This product does not meet the definition of a hazardous substance or preparation as defined by 29CFR 1910.1200 or the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.
EU HAZARD CLASSIFICATION OF INGREDIENTS PER DIRECTIVE 1272/2008/EC:
None of the ingredients are listed in Annex VI
Substances not listed either individually or in group entries must be self classified.

Component(s) Contributing to Classification(s)
All Ingredients
GHS Hazard Classification(s):
None known

Hazard Statement(s):
None known

Precautionary Statement(s):
None known

HEALTH HAZARDS OR RISKS FROM EXPOSURE:
SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of overexposure for this product are by contact with skin or eyes, inhalation of vapors and ingestion. The symptoms of overexposure are described below.
ACUTE:
INHALATION: Not expected to cause adverse health effects when used as intended. Inhalation of vapors/mist/spray may cause respiratory irritation.
CONTACT WITH SKIN: Not expected to cause adverse health effects when used as intended. Prolonged and repeated contact may cause irritation to skin.
EYE CONTACT: Direct eye contact can cause irritation with redness, tearing and blurred vision.

INGESTION: Under normal conditions of intended use, this material is not expected to be an ingestion hazard. Ingestion of large quantities may cause gastrointestinal irritation, nausea and vomiting.
CHRONIC: None known
TARGET ORGANS: Acute: Skin, Respiratory System and Eyes **Chronic:** None known

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Hazardous Ingredients:	WT%	CAS#	EINECS #	GHS Hazard Classification(s)
Non-toxic, naturally occurring, non-pathogenic, non-genitically altered anaerobic microbes in a water-based medium	100%	Not available	Not available	None
Balance of other ingredients is less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).				

NOTE: This product has been classified in accordance with the hazard criteria of 29CFR1910.1200 and the SDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard *JIS Z 7250: 2000*.

4. FIRST-AID MEASURES

EYE CONTACT: If product enters the eyes, open eyes while under gentle running water for at least 15 minutes. Seek medical attention if irritation persists.
SKIN CONTACT: Wash skin thoroughly with soap and water after handling. Seek medical attention if irritation develops and persists.
INHALATION: If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.
INGESTION: If product is swallowed, call physician or poison control center for most current information. If professional advice is not available, do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: None known
RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate overexposure.

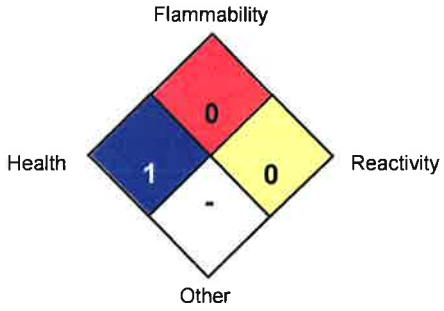
5. FIRE-FIGHTING MEASURES

FLASH POINT: Non-Flammable
AUTOIGNITION TEMPERATURE: Not Available
FLAMMABLE LIMITS (in air by volume, %): Lower NA Upper NA
FIRE EXTINGUISHING MATERIALS: Use fire extinguishing methods below:

Water Spray: Yes	Carbon Dioxide: Yes
Foam: Yes	Dry Chemical: Yes
Halon: Yes	Other: Any "C" Class

UNUSUAL FIRE AND EXPLOSION HAZARDS: Not considered a fire or explosion hazard.
Explosion Sensitivity to Mechanical Impact: No
Explosion Sensitivity to Static Discharge: No
SPECIAL FIRE-FIGHTING PROCEDURES: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment. Isolate materials not yet involved in the fire and protect personnel. Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray. If possible, prevent runoff water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM



HMIS RATING SYSTEM

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD (BLUE)	1
FLAMMABILITY HAZARD (RED)	0
PHYSICAL HAZARD (YELLOW)	0

PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe * = Chronic hazard

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: Stop the flow of material, if this can be done safety. Contain discharged material. Absorb spill using an absorbent, non-combustible material such as earth, sand, or vermiculite. Place in a proper container for disposal. Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Use good hygiene practices.

STORAGE AND HANDLING PRACTICES: Store in original container. Keep container closed when not in use. Store in a cool, dry location. Avoid freezing or extended storage in high temperatures and away from incompatible materials. Do not exceed pressure of 15 psi during transfer of SDC-9 from kegs. Don't open keg when contents are under pressure.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

Chemical Name	CAS#	ACGIH TLV	OSHA TWA
Non-toxic, naturally occurring, non-pathogenic, non-genitically altered anaerobic microbes in a water-based medium	Not available	Not Listed	Not Listed

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132) or equivalent standard of Canada, or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: Not required when using this product. Maintain airborne contaminant concentrations below guidelines listed above, if applicable. If necessary, use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

EYE PROTECTION: Safety glasses or goggles are recommended to avoid eye contact. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.

SKIN PROTECTION: Wear impervious gloves for prolonged or repeated exposure as appropriate to task when using this product. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.

BODY PROTECTION: Use body protection appropriate to task being performed. If necessary, refer to appropriate Standards of Canada, or appropriate Standards of the EU, Australian Standards, or relevant Japanese Standards.

9. PHYSICAL and CHEMICAL PROPERTIES

APPEARANCE (Physical State) and COLOR: This product is a light greenish murky liquid with a musty odor.
ODOR: Musty odor
ODOR THRESHOLD: Not Applicable
pH: 6.0 – 8.0
MELTING/FREEZING POINT: 0°C (water)
BOILING POINT: 100°C (water)
FLASH POINT: Not Available
EVAPORATION RATE (n-BuAc=1): 0.9-1.1
FLAMMABILITY (SOLID, GAS): Not Applicable
UPPER/LOWER FLAMMABILITY OR EXPLOSION LIMITS: Not Available
VAPOR PRESSURE (mm Hg @ 20°C (68°F): 24mm Hg (water)
VAPOR DENSITY: Not Available
SPECIFIC GRAVITY: 0.9-1.1
SOLUBILITY IN WATER: Soluble in water
WEIGHT PER GALLON: 7.5 – 9.2 lbs/gal
PARTITION COEFFICENT (n-octanol/water): Not Available
AUTO-IGNITION TEMPERATURE: Not Available
DECOMPOSITION TEMPERATURE: Not Available
VISCOSITY: Not Available

10. STABILITY and REACTIVITY

STABILITY: Stable under conditions of normal storage and use.
HAZARDOUS DECOMPOSITION PRODUCTS: None
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Water-reactive materials.
POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur.
CONDITIONS TO AVOID: None

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA:
No LD50 Data available for this product.
*Note: This product has tested negative for pathogenic microorganisms such as bacillius cereus, listeria monocytogens, salmonella sp., fecal coliform, total coliform, yeast and mold and pseudomonas sp.
SUSPECTED CANCER AGENT: Ingredients within this product are not found on the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer-causing agents by these agencies.
IRRITANCY OF PRODUCT: No specific data available
SENSITIZATION TO THE PRODUCT: This product is not a skin and respiratory sensitizer
REPRODUCTIVE TOXICITY INFORMATION: No information concerning the effects of this product and its components on the human reproductive system.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.
TOXICITY DATA:
No data available for this product.
ENVIRONMENTAL STABILITY: This material will degrade in the environment.
CHEMICAL EFFECT ON PLANTS, ANIMALS AND AQUATIC LIFE: This product is not expected to cause significant harm to plants, animals or aquatic life.
WATER ENDANGERMENT CLASS: Water endangering in accordance with EU Guideline 91/155-EWG – Not Determined.
SPECIFIC AVAILABLE COMPONENT INFORMATION: No additional data available at this time.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Canada, Australia, EU Member States and Japan. To permanently inactivate microorganisms and reduce odors, mix 100 parts SDC-9 with 1 part bleach.
EU Waste Code: Not determined

14. TRANSPORTATION INFORMATION

US DOT, IATA, IMO, ADR:

U.S. DEPARTMENT OF TRANSPORTATION (DOT) SHIPPING REGULATIONS: This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

PROPER SHIPPING NAME:	Non-Regulated Material
HAZARD CLASS NUMBER and DESCRIPTION:	None
UN IDENTIFICATION NUMBER:	None
PACKING GROUP:	NA
DOT LABEL(S) REQUIRED:	None
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER:	None
RQ QUANTITY:	None

MARINE POLLUTANT: The components of this product are not designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).

INTERNATIONAL AIR TRANSPORT ASSOCIATION SHIPPING INFORMATION (IATA): This product is not considered as dangerous goods.

INTERNATIONAL MARITIME ORGANIZATION SHIPPING INFORMATION (IMO): This product is not considered as dangerous goods.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This product is not considered by the United Nations Economic Commission for Europe to be dangerous goods.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act as follows: None
U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for the components of this product. The default Federal SDS submission and inventory requirement filing threshold of 10,000 lbs (4,540 kg) therefore applies, per 40 CFR 370.20.
U.S. CERCLA REPORTABLE QUANTITY (RQ): None
U.S. TSCA INVENTORY STATUS: The components of this product are listed on the TSCA Inventory or are exempted from listing.
OTHER U.S. FEDERAL REGULATIONS: None
CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): Ingredients within this product are not on the Proposition 65 Lists.

CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this product are on the DSL Inventory, or are exempted from listing.
OTHER CANADIAN REGULATIONS: Not applicable.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS:
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all of the information required by those regulations.
CANADIAN WHMIS CLASSIFICATION and SYMBOLS: Complies with WHMIS 2015

EUROPEAN ECONOMIC COMMUNITY INFORMATION:

This product does not meet the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.
See Section 2 for Details

AUSTRALIAN INFORMATION FOR PRODUCT: The components of this product are listed on the International Chemical Inventory list.

JAPANESE INFORMATION FOR PRODUCT:

JAPANESE MINISTER OF INTERNATIONAL TRADE AND INDUSTRY (MITI) STATUS: The components of this product are not listed as Class I Specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

JAPANESE ENCS INVENTORY: The components of this product are on the ENCS Inventory as indicated in the section on International Chemical Inventories, below.

POISONOUS AND DELETERIOUS SUBSTANCES CONTROL LAW: No component of this product is a listed Specified Poisonous Substance under the Poisonous and Deleterious Substances Control Law.

INTERNATIONAL CHEMICAL INVENTORIES:

Listing of the components on individual country Chemical Inventories is as follows:
Asia-Pac: Listed or Exempt from listing
Australian Inventory of Chemical Substances (AICS): Listed or Exempt from listing
Korean Existing Chemicals List (ECL): Listed or Exempt from listing
Japanese Existing National Inventory of Chemical Substances (ENCS): Listed or Exempt from listing
Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed or Exempt from listing
Swiss Giftliste List of Toxic Substances: Listed or Exempt from listing
U.S. TSCA: Listed

16. OTHER INFORMATION

ABBREVIATIONS AND ACRONYMS:

EPA: United States Environmental Protection Agency
ARD: European Agreement concerning the International Carriage of Dangerous Goods by Road
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)

PREPARED BY: Chris Eigbrett – (**MSDS to GHS Compliance)**
DATE OF PRINTING: April 22, 2016

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. Remediation and Natural Attenuation Services Inc. assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, Remediation and Natural Attenuation Services Inc. assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed.

END OF SDS SHEET

REGENESIS
Technology-Based Solutions for the Environment

SAFETY DATA SHEET

1. Identification

Product identifier 3-D Microemulsion®

Other means of identification None.

Recommended use Remediation of soils and groundwater.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Regenesis

Address 1011 Calle Sombra
San Clemente, CA 92673

Telephone 949-366-8000

E-mail CustomerService@regenesis.com

Emergency phone number CHEMTREC® at 1-800-424-9300 (International)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1

OSHA defined hazards Not classified.

Label elements

Signal word Danger

Hazard statement Causes skin irritation. Causes serious eye damage.

Precautionary statement

Prevention Wash thoroughly after handling. Wear protective gloves. Wear eye/face protection.

Response If on skin: Wash with plenty of water. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
HRC-PED	823190-10-9	48-53
Fatty Acids (neutralized)	61790-12-3 or 112-80-1	30-35
Glycerol Tripolylactate	201167-72-8	<10

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
Eye contact	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
Ingestion	Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. Get medical attention if symptoms occur.
Most important symptoms/effects, acute and delayed	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water spray. Carbon dioxide (CO2). Dry chemical powder. Foam.
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: carbon oxides, phosphorus compounds and metal oxides.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk. Water spray should be used to cool containers.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Surfaces may become slippery after spillage. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Spilled product may create a slipping hazard. The product is immiscible with water and will spread on the water surface. Large Spills: Stop the flow of material, if this is without risk. Use water spray to reduce vapors or divert vapor cloud drift. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Flush area clean with lots of water. Be aware of potential for surfaces to become slippery. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Do not get this material in contact with eyes. Avoid contact with eyes, skin, and clothing. Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store in a cool, dry, well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Recommended storage containers: plastic lined steel, plastic, glass, aluminum, stainless steel, or reinforced fiberglass.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear approved, tight fitting indirect vented or non-vented safety goggles where splashing is probable. Face shield is recommended.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves. Rubber or vinyl-coated gloves are recommended.
Other	Wear appropriate chemical resistant clothing.
Respiratory protection	If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Semi-solid.
Color	Amber.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	> 200.0 °F (> 93.3 °C) Closed Cup
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	0.9 - 1.1
Solubility(ies)	
Solubility (water)	Insoluble.
Solubility (other)	Slightly soluble in acetone.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Undergoes hydrolysis in water to form lactic acid, glycerol and fatty acids.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the flash point. Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Bases. Acids.
Hazardous decomposition products	Thermal decomposition or combustion may produce: carbon oxides, phosphorus compounds, metal oxides.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause irritation to the respiratory system.
Skin contact	Causes skin irritation.
Eye contact	Causes serious eye damage.
Ingestion	Ingestion may cause irritation and malaise.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

Information on toxicological effects

Acute toxicity	Not available.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.

Respiratory or skin sensitization

Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	Material is readily degradable and undergoes hydrolysis in several hours.
Bioaccumulative potential	No data available.
Mobility in soil	The product is immiscible in water.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not established.

15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
One or more components are not listed on TSCA.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical	Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)	Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Fatty Acids (neutralized) (CAS 61790-12-3 or 112-80-1)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 22-April-2015

Revision date -

Version # 01

Further information HMIS® is a registered trade and service mark of the American Coatings Association (ACA).

HMIS® ratings

Health: 3
Flammability: 1
Physical hazard: 0

NFPA ratings

Disclaimer

Regenesis cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

REGENESIS
Technology-Based Solutions for the Environment

SAFETY DATA SHEET

1. Identification

Product identifier **Chemical Reducing Solution (CRS®)**

Other means of identification None.

Recommended use Soil and Groundwater Remediation.

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Company Name Regenesis
Address 1011 Calle Sombra
San Clemente, CA 92673
Telephone 949-366-8000
E-mail CustomerService@regenesis.com
Emergency phone number CHEMTREC® at 1-800-424-9300 (International)

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

OSHA defined hazards Not classified.

Label elements

Hazard symbol None.

Signal word None.

Hazard statement The mixture does not meet the criteria for classification.

Precautionary statement

Prevention Observe good industrial hygiene practices.

Response Wash hands after handling.

Storage Store away from incompatible materials.

Disposal Dispose of waste and residues in accordance with local authority requirements.

Hazard(s) not otherwise classified (HNOC) None known.

3. Composition/information on ingredients

Mixtures

The manufacturer lists no ingredients as hazardous according to OSHA 29 CFR 1910.1200.

Chemical name	CAS number	%
Water	7732-18-5	85-92
Ferrous Gluconate	299-29-6	8-15

Composition comments All concentrations are in percent by weight unless otherwise indicated.

4. First-aid measures

Inhalation Move to fresh air. Call a physician if symptoms develop or persist.

Skin contact Remove contaminated clothing and shoes. Wash off with soap and water. Get medical attention if irritation develops and persists.

Eye contact Rinse with water. Get medical attention if irritation develops and persists.

Ingestion Rinse mouth. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media	Small fires: Dry chemical powder. Larger fires: Water spray, fog or foam.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed. Combustion products may include: carbon monoxide, carbon dixoide, iron oxides.
Special protective equipment and precautions for firefighters	Use protective equipment appropriate for surrounding materials.
Fire fighting equipment/instructions	Move containers from fire area if you can do so without risk.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials. Use water spray to keep fire-exposed containers cool.
General fire hazards	No unusual fire or explosion hazards noted. The product itself does not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. Avoid contact with spilled material. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	This product is miscible in water. Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination. Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS.
Environmental precautions	Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. Avoid breathing spray mist. Use with adequate ventilation. Observe good industrial hygiene practices. Wear appropriate personal protective equipment (See Section 8).
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store in a cool, dry, well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Keep away from extreme heat and strong oxidizing agents.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Provide eyewash station and safety shower.

Individual protection measures, such as personal protective equipment

Eye/face protection	Use safety glasses. Where contact with eyes is likely, use chemical goggles. Use a face shield as needed.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear suitable protective clothing. Wear appropriate chemical resistant gloves.

Respiratory protection	In case of insufficient ventilation, wear suitable respiratory equipment. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. Wear respiratory protection during operations where spraying or misting occurs. If respirators are used, a program should be instituted to assure compliance with OSHA 29 CFR 1910.134.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	
Physical state	Liquid.
Form	Liquid.
Color	Dark green to black.
Odor	Odorless.
Odor threshold	Not available.
pH	6 - 8
Melting point/freezing point	Not available.
Initial boiling point and boiling range	Not available.
Flash point	Not flammable.
Evaporation rate	Not available.
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1 - 1.2
Solubility(ies)	
Solubility (water)	Miscible
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	A component of this product can oxidize in air: iron (II) to iron (III).
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Contact with incompatible materials. Keep from freezing.
Incompatible materials	Oxidizing agents.
Hazardous decomposition products	Thermal decomposition can produce oxides of carbon and iron.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful.
Skin contact	Prolonged or repeated skin contact may result in minor irritation.
Eye contact	Direct contact with eyes may cause temporary irritation.
Ingestion	Expected to be a low ingestion hazard.
Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.

Information on toxicological effects

Acute toxicity	Not expected to be acutely toxic.
Skin corrosion/irritation	Prolonged skin contact may cause temporary irritation.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	This product is not expected to cause skin sensitization.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful.
Further information	Ferrous Gluconate Dihydrate (6047-12-7) is Generally Recognized as Safe (GRAS) (21 CFR §184.1308).

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	Expected to be highly mobile in soil.
Other adverse effects	None known.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

Not Listed.

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Issue date 26-February-2015

Revision date -

Version # 01

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Physical hazard: 0

NFPA ratings

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