



PHASE II - LIMITED SUBSURFACE INVESTIGATION

GREATER NEW BEDFORD INDUSTRIAL FOUNDATION
MAP 133, LOT 63, SAMUEL BARNET BOULEVARD
NEW BEDFORD, MASSACHUSETTS

Prepared for:

MR. THOMAS G. DAVIS
GREATER NEW BEDFORD INDUSTRIAL FOUNDATION
227 UNION STREET
NEW BEDFORD, MASSACHUSETTS 02740

Prepared by:

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CEC Project 131-407

June 28, 2013

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Case 25-15
Civil & Environmental Consultants, Inc.

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June 28, 2013

Mr. Thomas G. Davis, Executive Director
Greater New Bedford Industrial Foundation
227 Union Street
New Bedford, Massachusetts 02740

Subject: Phase II - Limited Subsurface Investigation
Map 133, Lot 63 – New Bedford, Massachusetts
CEC Project #131-407

Dear Mr. Davis,

Civil & Environmental Consultants, Inc. (CEC) is pleased to submit this limited Phase II - Limited Subsurface Investigation (Phase II) summary letter for the property depicted on the City of New Bedford Assessor's Map 133 as Lot 63 located on Samuel Barnet Boulevard in New Bedford, Massachusetts (the "Site"). A Site Locus and Site Plan are attached to the report as Figures 1 and 2, respectively.

We appreciate the opportunity to be of service to you. If you have any questions or require additional services, please feel free to contact us at 774-501-2176.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Meredith E. Houghton
Project Scientist

Glen A. Cote
Project Manager

Kevin J. Beaulieu, LSP
Senior Project Manager

Enclosures

P:\2013\131-407-Final Documents\131-407 Phase II Report - FINAL.docx

Civil & Environmental Consultants, Inc.

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		Chicago	877/963-6026	Export	800/899-3610	Pittsburgh	800/365/2324
		Cincinnati	800/759-5674	Indianapolis	877/746-0749	St. Louis	866/250-3679
		Cleveland	866/507-2324	Nashville	800/763-2326	Toledo	888/598-6808



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1.0 INTRODUCTION

This report documents the results of a Phase II - Limited Subsurface Investigation (Phase II) summary letter for the property depicted on the City of New Bedford Assessor's Map 133 as Lot 63 located on Samuel Barnet Boulevard in New Bedford, Massachusetts (the "Site"). A Site Locus and Site Plan are included as Figures 1 and 2, respectively. CEC conducted this Phase II on behalf of the Greater New Bedford Industrial Foundation in accordance with our proposal, dated May 24, 2013. The Phase II has been performed based on CEC's understanding of the Site at the time of the proposal's execution.



2.0 SITE DESCRIPTION

The Site consists of an undeveloped wooded lot located in an industrial park near the intersection of Samuel Barnet Boulevard and Duchaine Boulevard in New Bedford, Massachusetts. According to the City of New Bedford Assessor's records, the property is approximately 14.102 acres in size. An unpaved access road with overhead electric utility poles is present along the westernmost boundary of the Site, running north to south until it intersects Samuel Barnet Boulevard. The remainder of the Site is densely wooded or comprised of wetland areas and vegetation. Based on review of the Massachusetts Department of Environmental Protection's (DEP) BWSC Priority Resource Maps (Figure 3), the northeastern portion of the Site is comprised entirely of wetland areas, and lies within the geographic boundaries of a high yield potentially productive aquifer. A perennial stream is located immediately to the west and to the south of the Site, and Black Pond lies immediately northeast of the Site. Black Pond is also designated as a potential vernal pool habitat area.

The maps reviewed indicate that the Site is located in a low lying wetland area at approximately 80 feet above mean sea level with overall topography sloping toward the Site from the east and the west. The Site is located within a groundwater drainage basin that discharges to wetland areas located to the south. Based on the review of available reports, the groundwater flows to the south-southwest. It is noted that actual local groundwater flow direction can be influenced by factors such as surface topography, underground structures, tides, seasonal fluctuations, soil and bedrock geology and production wells, some of which may apply at this site. Site-specific groundwater flow can only be determined by properly surveying the groundwater contours.

Based on the Environmental Database and Massachusetts Department of Environmental Protection File Review Report (Database Report) dated May 3, 2013 for BayCoast Bank of Swansea, Massachusetts prepared by CEC, several potential environmental concerns were identified as recognized environmental conditions (RECs), and CEC recommended performing limited subsurface activities in an effort to evaluate the groundwater quality at the Site. Refer to Appendix A for a copy of the body of the letter report. CEC indicated that contamination could potentially impact the groundwater at the Site from the following three abutting properties:

1. ***RTN # 4-1018 & 4-13999 – EPEC Inc., 174 Duchaine Blvd – 800 feet northeast***

This property was listed with MADEP for the detection of chlorinated solvents in groundwater. Specific contaminants include tetrachloroethene (PCE) and trichloroethene (TCE). Groundwater was measured to flow in a southwesterly direction from the property (toward the Site). The release is documented to have impacted groundwater on two neighboring properties, including the parcel abutting the Site to the east. Assessment activities to define the full limits and extent of groundwater impact failed to adequately identify the western boundaries of the plume. Groundwater remediation activities conducted from 2001 until 2006 failed to achieve a permanent solution and a feasibility



analysis determined that a permanent solution was not feasible, prompting the filing of a Class C-1 RAO report in 2009 which indicates that a temporary solution has been achieved in accordance with DEP regulations. Groundwater data generated on the west side of Duchaine Blvd exceeds current GW-2 standards developed to protect against indoor air related exposure pathways.

2. ***RTN #4-0949 & 4-11234 – Schaefer Marine Inc., 158 Duchaine Blvd – 700 feet northeast***

This property is listed with the DEP for the detection of chlorinated solvents in groundwater, specifically including PCE and TCE. Groundwater was measured to flow in a southwesterly direction from the property (toward the Site). The release source was identified to be located on an abutting property to the north (174 Duchaine Blvd.) and therefore, a Downgradient Property Status (DPS) was filed for the property in March 1996. Although the property is located upgradient of the Site, it is noted that the source of this release was identified as the EPEC, Inc. facility as described above.

3. ***RTN #4-0780 – Isotronics, 105 Samuel Barnet Boulevard, 1,300 feet west-southwest***

This property is listed with DEP for the detection of chlorinated solvents to groundwater, specifically including PCE and TCE. Groundwater was measured to flow in a southwesterly direction from the property (in the opposite direction of the Site). The release was identified prior to promulgation of the Massachusetts Contingency Plan (MCP) and was closed by the DEP in March 1991. The associated “no further action” determination letter stated that based on low levels of contaminants released, elimination of the apparent source, site characterization and insignificant impact on the environment, further assessment and remediation is not warranted. The letter states that the release site would be moved to the “deleted” list. Although this property is located downgradient of the Site, it is noted that the low level detection present on the property may be indicative of a more widespread extensive condition resulting from the documented upgradient releases as detailed above.

This limited Phase II has been developed to evaluate these potential environmental concerns which included the advancement of soil borings, installation of groundwater monitoring wells, collection and laboratory analyses of groundwater samples. The contamination of concern is considered to be chlorinated solvents, specifically PCE and TCE.



3.0 REGULATORY REPORTABLE CRITERIA

The MCP, 310 CMR 40.0000 provides the rules for reporting, assessment and cleanup of oil and/or hazardous material release (s) into the environment. For the purpose of determining whether a notification obligation exists, the MCP establishes two (2) reporting categories and associated standards that, when exceeded, require notification to the DEP. The following utilizes the above information to establish the applicable Site specific reporting categories.

3.1 SOIL

Measured concentrations of any oil or hazardous material in soil shall be compared to the Reportable Concentration values in the reporting category that best characterizes the current use of the site under evaluation. These Reportable Concentration Categories are generally described as follows:

Reporting Category RCS-1 (S-1 Category soils) is applied to all soil samples collected:

- within 500 feet of a residential dwelling, residentially-zoned area, school, playground, recreational area; or
- within the geographic boundaries of a groundwater resource area.

Reporting Category RCS-2 (S-2 Category soils) is applied to all soil samples:

- that are not obtained from category RCS-1 areas.

Based on the existing knowledge of the Site and information obtained from the MassDEP 21e Priority Resource Map (Figure 3), the soils are located within the geographic boundaries of a groundwater resource area—a high yield aquifer—and therefore the soils are located within a potential future drinking water source area. Accordingly, the RCS-1 criteria apply to Site soils.

3.2 GROUNDWATER

Groundwater reporting categories (RCGW-1 and RCGW-2) are primarily established based on the location of the release site within the limits of known drinking water resource areas. Under the MCP, two notification thresholds have been developed that, when exceeded, require reporting to the DEP. These Reportable Concentration Categories are described as follows:

Reporting Category RCGW-1 is applied to groundwater:

- within a Current Drinking Water Source Area; or
- within a Potential Future Drinking Water Source Area.



Reporting Category RCGW-2 is applied to groundwater:

- not within Category RCGW-1 areas.

In general, exceedances of RCGW-1 standards indicate potential risks via consumption or use within human habitations. Exceedances of RCGW-2 standards indicate the potential for migration of contaminants off-gassing to the indoor air of nearby structures or for potential off-Site migration and impact to nearby water bodies and/or ecological receptors. Based on the presence of a potential future drinking water source area within the boundaries of the Site, RCGW-1 criterion appears to apply to Site groundwater.



4.0 SUBSURFACE EVALUATION

On June 11, 2013, New England Geotech of Jamestown, Rhode Island advanced three (3) soil borings utilizing a track mounted GeoProbe machine, and completed each as a monitoring well (MW-1 through MW-3). Refer to Figure 2 for the approximate monitoring well locations. It should be noted, due to the dense vegetative growth located at the Site, pathways were cut and cleaned out for the GeoProbe to access the sample point locations. The locations were specifically chosen to assess any potential impacts to the Site from upgradient sources while maintaining the 100 foot buffer surrounding the surface water and wetland areas on the eastern portions of the Site.

Continuous soil samples were collected over five foot intervals and CEC evaluated each sample for the presence of oil and/or hazardous materials (OHMs). Collected soil samples were screened for Total Organic Vapors (TOVs) using a photo-ionization detector (PID) calibrated to an isobutylene reference and using the DEP's Headspace Test Method. PID readings ranged between 0.0 and 0.2 parts per million volumetric (ppmv) and the soil underlying the Site mainly consisted of gravelly, fine to coarse or fine to medium sand. The groundwater table was encountered between approximately one (1) and four (4) feet below ground surface (bgs). These measurements appear to be indicative of a high water table in the area as heavy rain conditions preceded the groundwater well installation. CEC did not observe OHM odors in the soil samples screened from the three borings. No soil samples were submitted for laboratory analysis. Refer to the boring logs included as Appendix B for the soil descriptions and monitoring well construction details.

On June 17, 2013, CEC collected groundwater samples from the newly installed wells. An interface probe was used to detect free-floating product and to measure the depth to groundwater within the standpipe monitoring wells. The depth to groundwater was measured between 4.40 and 6.77 feet bgs and free-floating product was not detected in any of the wells. The monitoring wells were purged and sampled in accordance with DEP's Policy "Standard References for Monitoring Wells". Once purged, the samples were transferred into appropriate laboratory prepared containers and delivered to ESS Laboratory (ESS) of Cranston, Rhode Island on ice under a chain of custody. Each sample was analyzed for VOCs by EPA 8260 Method.

4.1 GROUNDWATER ANALYTICAL RESULTS

A summary of the groundwater analytical data collected on June 17, 2013 is presented in Table 1, and the laboratory report is included as Appendix C.

The analytical results indicate that none of the compounds were detected above the laboratory method reporting limits (MRLs), however the laboratory did identify that concentrations of 4-Isopropyltoluene and Carbon Disulfide were detected above the method detection limits (MDLs) in monitoring well MW-1 and recorded the compounds' estimated values, which are significantly less than the RCGW-1 standards. It should be noted that MRLs and MDLs for 1,2-



Dibromoethane (EDB) and 1,4-Dioxane (Screen) are above the RCGW-1 standards, which means that these compounds could potentially have concentrations above the RCGW-1 standards. EDB is a compound related to gasoline and 1,4-Dioxane is related to a variety of uses related to industrial processes. However, since these compounds are not contaminants of concern and to the best of our knowledge have not been detected in the groundwater samples collected off-Site on the abutting properties, CEC does not anticipate that these compounds are present in the groundwater at the Site. As mentioned above, the contamination of concern is chlorinated solvents, specifically PCE and TCE, and not EDB or 1,4-Dioxane.



5.0 SUMMARY AND CONCLUSION

The groundwater quality was evaluated to determine if the Site has been significantly impacted by potential off-site upgradient releases of OHMs, specifically PCE and TCE. The following summarizes and concludes each potential environmental concern addressed under this Phase II – limited subsurface investigation.

A recent due diligence assessment (Appendix A) identified multiple state listed release sites in hydraulically upgradient locations with respect to the Site. Specifically, EPEC Inc., located at 174 Duchaine Boulevard and situated 800 feet northeast of the Site was identified as a potential source of contamination to the Site due to the detection of chlorinated solvents in the groundwater and groundwater flow direction towards the Site. Schaefer Marine, Inc., located at 158 Duchaine Boulevard, experienced similar groundwater impacts which were determined to be originating from the EPEC Inc. property. Additionally, the property located at 105 Samuel Barnet Boulevard (Isotronics) was not identified as a REC within the Database Report due to the groundwater flow direction; however, the low levels of chlorinated solvents detected within the groundwater on the property may potentially indicate a widespread extensive condition resulting from the documented upgradient releases.

In order to address these concerns, CEC evaluated the soil and groundwater conditions at the Site. CEC did not observe any odors, nor PID readings greater than 0.2 ppmv in the soil samples collected during the installation of monitoring wells MW-1, MW-2, and MW-3, and no odors were detected within the groundwater upon purging and sampling the groundwater monitoring well network. The groundwater analytical data indicated that no detectable concentrations of VOCs are present in collected samples. Based on the field observations and the groundwater data collected, CEC did not observe indications that the Site has been impacted by off-Site sources of chlorinated solvents in the area tested.

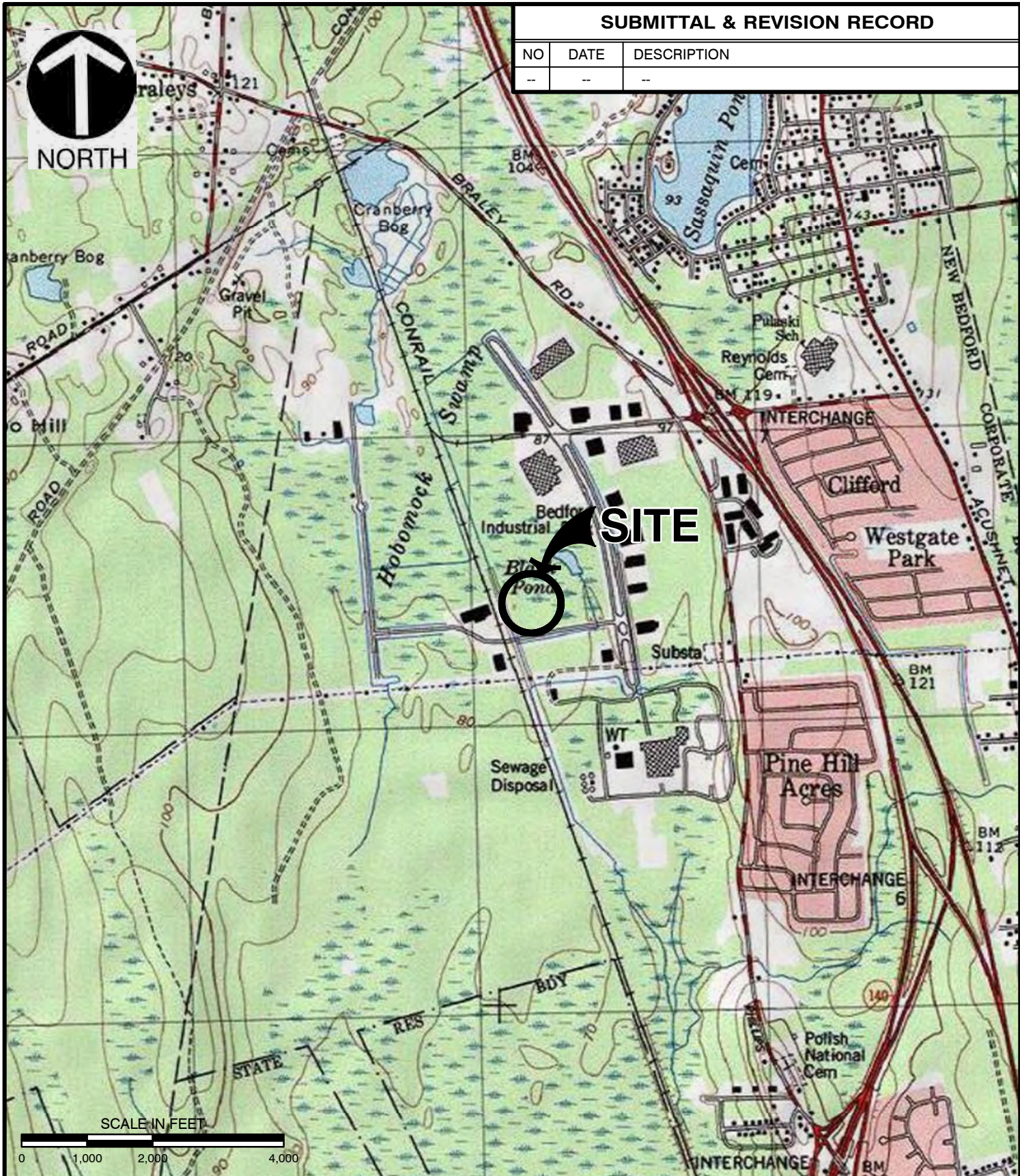
In summary, chlorinated solvents were not detected in the groundwater samples collected at the Site and it does not appear that the Site has been impacted by the off-Site releases in the general area evaluated. DEP notification is not warranted under the MCP (310 CMR 40.0000) and no further action is required at this time. Monitoring wells installed as part of this investigation can be properly abandoned if desired, but it suggested that keeping the wells intact and viable may facilitate future due diligence efforts for prospective purchasers interested in an independent verification of local groundwater conditions.



FIGURES

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
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**GREATER NEW BEDFORD
INDUSTRIAL FOUNDATION**

ASSESSORS MAP 133, LOT 63

SITE LOCATION MAP

DRAWN BY: RJF	CHECKED BY: MH	APPROVED BY: KJB	FIGURE NO: 1
DATE: June 2013	DWG SCALE: 1" = 2,000'	PROJECT NO: 131-407	



LEGEND

-  PROPERTY LINE
-  EXISTING WETLAND LINE
-  MW-1 MONITORING WELL

SCALE IN FEET



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GREATER NEW BEDFORD
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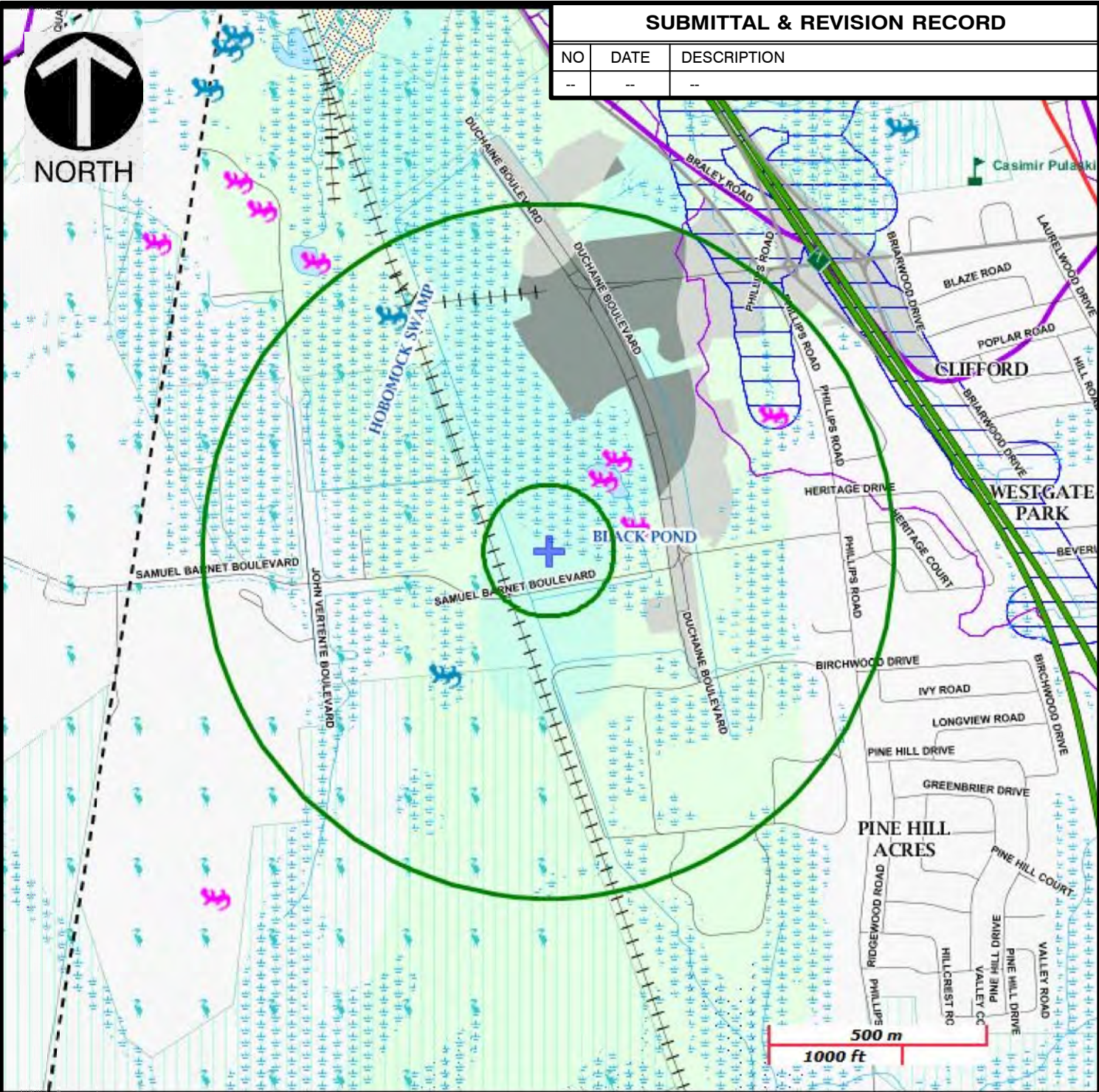
ASSESSORS MAP 133, LOT 63

SITE PLAN

DRAWN BY:	CSD	CHECKED BY:	APPROVED BY:	FIGURE NO.:
DATE:	JUNE 2013	DWG SCALE:	1" = 200'	PROJECT NO:
				131-407

SUBMITTAL & REVISION RECORD

NO	DATE	DESCRIPTION
-	-	-



Roads: Limited Access, Divided, Other Hwy, Major Road, Minor Road, Track, Trail	PWS Protection Areas: Zone II, WPA, Zone A	
Boundaries: Town, County, DEP Region; Train; Powerline, Pipeline; Aqueduct	Hydrography: Open Water, PWS Reservoir, Tidal Flat	
Basins: Major, PWS; Streams: Perennial, Intermittent, Man Made Shore, Dam	Wetlands: Freshwater, Saltwater, Cranberry Bog	
Aquifers: Medium Yield, High Yield, EPA Sole Source	FEMA 100yr Floodplain; Protected Open Space; ACEC	
Non Potential Drinking Water Source Area: Medium, High (Yield)	Est. Rare Wetland Wildlife Hab; Vernal Pool: Cert., Potential	
	Solid Waste Landfill; PWS: Com. GW, SW, Emerg., Non-Com.	

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ASSESSORS MAP 133, LOT 63

RESOURCE MAP

DRAWN BY: RJF	CHECKED BY: MH	APPROVED BY: KJB	FIGURE NO: 3
DATE: June 2013	DWG SCALE:	PROJECT NO: 131-407	



TABLES

TABLE 1
SUMMARY OF GROUNDWATER DATA - VOLATILE ORGANIC COMPOUNDS
GREATER NEW BEDFORD INDUSTRIAL FOUNDATION
SAMUEL BARNET BOULEVARD, MIDDLEBORO, MA

SAMPLE IDENTIFICATION								MW-1	MW-2	MW-3
SAMPLE DATE								6/17/2013	6/17/2013	6/17/2013
	RCGW-1	RCGW-2	GW1	GW2	GW3	MDL	Units			
8260B Volatile Organic Compounds										
1,1,1,2-TETRACHLOROETHANE	5	10	5	10	50000	0.2	UG/L	<1	<1	<1
1,1,1-TRICHLOROETHANE	200	4000	200	4000	20000	0.2	UG/L	<1	<1	<1
1,1,2,2-TETRACHLOROETHANE	2	9	2	9	50000	0.1	UG/L	<0.5	<0.5	<0.5
1,1,2-TRICHLOROETHANE	5	900	5	900	50000	0.2	UG/L	<1	<1	<1
1,1-DICHLOROETHANE	70	1000	70	1000	20000	0.2	UG/L	<1	<1	<1
1,1-DICHLOROETHENE	7	80	7	80	30000	0.3	UG/L	<1	<1	<1
1,1-DICHLOROPROPENE	NA	NA	NA	NA	NA	0.2	UG/L	<2	<2	<2
1,2,3-TRICHLOROPROPENE	NA	NA	NA	NA	NA	0.2	UG/L	<1	<1	<1
1,2,3-TRICHLOROPROPANE	1000	10000	NA	NA	NA	0.3	UG/L	<1	<1	<1
1,2,4-TRICHLOROBENZENE	70	2000	70	2000	50000	0.2	UG/L	<1	<1	<1
1,2,4-TRIMETHYLBENZENE	10000	100000	200	7000	50000	0.1	UG/L	<1	<1	<1
1,2-DIBROMO-3-CHLOROPROPANE	100	1000	NA	NA	NA	1.0	UG/L	<5	<5	<5
1,2-DIBROMOETHANE	0.02	2	0.02	2	50000	0.2	UG/L	<1	<1	<1
1,2-DICHLOROBENZENE	600	2000	600	2000	2000	0.1	UG/L	<1	<1	<1
1,2-DICHLOROETHANE	5	5	5	5	20000	0.2	UG/L	<1	<1	<1
1,2-DICHLOROPROPANE	3	3	5	3	50000	0.2	UG/L	<1	<1	<1
1,3,5-TRIMETHYLBENZENE	100	1000	200	7000	50000	0.1	UG/L	<1	<1	<1
1,3-DICHLOROBENZENE	40	2000	40	2000	50000	0.2	UG/L	<1	<1	<1
1,3-DICHLOROPROPANE	5000	50000	NA	NA	NA	0.1	UG/L	<1	<1	<1
1,4-DICHLOROBENZENE	5	200	5	200	8000	0.1	UG/L	<1	<1	<1
1,4-DIOXANE - SCREEN	3	6000	3	6000	50000	190	UG/L	<500	<500	<500
2,2-DICHLOROPROPANE	NA	NA	NA	NA	NA	0.3	UG/L	<1	<1	<1
2-BUTANONE	4000	50000	4000	50000	50000	3.4	UG/L	<10	<10	<10
2-CHLOROTOLUENE	1000	10000	NA	NA	NA	0.1	UG/L	<1	<1	<1
2-HEXANONE	1000	10000	NA	NA	NA	1.5	UG/L	<10	<10	<10
4-CHLOROTOLUENE	NA	NA	NA	NA	NA	0.1	UG/L	<1	<1	<1
4-ISOPROPYLTOLUENE	200	7000	200	7000	50000	0.1	UG/L	0.3*	<1	<1
4-METHYL-2-PENTANONE	350	50000	350	50000	50000	1.6	UG/L	<10	<10	<10
ACETONE	6300	50000	6300	50000	50000	2.7	UG/L	<10	<10	<10
BENZENE	5	2000	5	2000	10000	0.1	UG/L	<1	<1	<1
BROMOBENZENE	1000	10000	NA	NA	NA	0.2	UG/L	<2	<2	<2
BROMOCHLOROMETHANE	NA	NA	NA	NA	NA	0.3	UG/L	<1	<1	<1
BROMODICHLOROMETHANE	3	6	3	6	50000	0.1	UG/L	<0.6	<0.6	<0.6
BROMOFORM	4	700	4	700	50000	0.2	UG/L	<1	<1	<1
BROMOMETHANE	7	7	10	7	800	0.4	UG/L	<2	<2	<2
CARBON DISULFIDE	1000	10000	NA	NA	NA	0.1	UG/L	0.7*	<1	<1
CARBON TETRACHLORIDE	2	2	5	2	5000	0.1	UG/L	<1	<1	<1
CHLOROBENZENE	100	200	100	200	1000	0.1	UG/L	<1	<1	<1
CHLOROETHANE	1000	10000	NA	NA	NA	0.4	UG/L	<2	<2	<2
CHLOROFORM	50	50	70	50	20000	0.2	UG/L	<1	<1	<1
CHLOROMETHANE	1000	10000	NA	NA	NA	0.2	UG/L	<2	<2	<2
CIS-1,2-DICHLOROETHENE	70	100	70	100	50000	0.2	UG/L	<1	<1	<1
CIS-1,3-DICHLOROPROPENE	0.4	10	0.4	10	200	0.2	UG/L	<0.4	<0.4	<0.4
DIBROMOCHLOROMETHANE	2	20	2	20	50000	0.2	UG/L	<1	<1	<1
DIBROMOMETHANE	5000	50000	NA	NA	NA	0.3	UG/L	<1	<1	<1
DICHLORODIFLUOROMETHANE	10000	100000	NA	NA	NA	0.3	UG/L	<2	<2	<2
DIETHYL ETHER	1000	10000	NA	NA	NA	0.3	UG/L	<1	<1	<1
DI-ISOPROPYL ETHER	1000	10000	NA	NA	NA	0.2	UG/L	<1	<1	<1
ETHYL TERTIARY-BUTYL ETHER	NA	NA	NA	NA	NA	0.1	UG/L	<1	<1	<1
ETHYLBENZENE	700	5000	700	20000	5000	0.1	UG/L	<1	<1	<1
HEXACHLOROBUTADIENE	0.6	1	0.6	1	3000	0.2	UG/L	<0.6	<0.6	<0.6
HEXACHLOROETHANE	8	100	8	100	50000	0.2	UG/L	<1	<1	<1
ISOPROPYLBENZENE	10000	100000	200	7000	50000	0.1	UG/L	<1	<1	<1
METHYL TERT-BUTYL ETHER	70	5000	70	50000	50000	0.3	UG/L	<1	<1	<1
METHYLENE CHLORIDE	5	10000	5	10000	50000	0.2	UG/L	<2	<2	<2
NAPHTHALENE	140	1000	140	1000	20000	0.2	UG/L	<1	<1	<1
N-BUTYLBENZENE	200	7000	200	7000	50000	0.1	UG/L	<1	<1	<1
N-PROPYLBENZENE	1000	10000	200	7000	50000	0.2	UG/L	<1	<1	<1
SEC-BUTYLBENZENE	200	7000	200	7000	50000	0.1	UG/L	<1	<1	<1
STYRENE	100	100	100	100	6000	0.1	UG/L	<1	<1	<1
TERT-BUTYLBENZENE	1000	10000	200	7000	50000	0.1	UG/L	<1	<1	<1
TERTIARY-AMYL METHYL ETHER	NA	NA	NA	NA	NA	0.2	UG/L	<1	<1	<1
TETRACHLOROETHENE	5	50	5	50	30000	0.2	UG/L	<1	<1	<1
TETRAHYDROFURAN	5000	50000	NA	NA	NA	1.6	UG/L	<5	<5	<5
TOLUENE	1000	40000	1000	50000	40000	0.1	UG/L	<1	<1	<1
TRANS-1,2-DICHLOROETHENE	90	90	100	90	50000	0.3	UG/L	<1	<1	<1
TRANS-1,3-DICHLOROPROPENE	0.4	10	0.4	10	200	0.2	UG/L	<0.4	<0.4	<0.4
TRICHLOROETHENE	5	30	5	30	5000	0.2	UG/L	<1	<1	<1
TRICHLOROFLUOROMETHANE	10000	100000	NA	NA	NA	0.4	UG/L	<1	<1	<1
VINYL CHLORIDE	2	2	2	2	50000	0.2	UG/L	<1	<1	<1
XYLENE O	5000	5000	10000	9000	5000	0.1	UG/L	<1	<1	<1
XYLENE P,M	5000	5000	10000	9000	5000	0.2	UG/L	<2	<2	<2
XYLENES (TOTAL)	5000	5000	10000	9000	5000		UG/L	<2	<2	<2

ALL DATA REPORTED IN UG/L = MICROGRAMS PER LITER = PART PER BILLION

BOLD = RCGW1 STANDARD EXCEEDED

ND = NOT DETECTED ABOVE LABORATORY DETECTION LIMITS

NA = NOT APPLICABLE

MDL = LABORATORY METHOD DETECTION LIMIT

BLANK = NOT AVAILABLE / NOT ANALYZED

<"VALUE" = NOT DETECTED ABOVE LABORATORY METHOD REPORTABLE LIMIT (MRL). THE MRLS ARE SHOWN.

* = ESTIMATED VALUE (J FLAG)



APPENDIX A

ENVIRONMENTAL DATABASE REVIEW REPORT, MARCH 2013



May 3, 2013

Ms. Nancy S. Fernandes, Vice President
BayCoast Bank
One BayCoast Place
330 Swansea Mall Drive
Swansea, Massachusetts 02777

**Subject: Environmental Database and
Massachusetts Department of Environmental Protection File Review
Map 133, Lot 63 – New Bedford, Massachusetts
CEC Project 131-195**

Dear Nancy,

On April 30, 2013, Civil & Environmental Consultants, Inc., (CEC) initiated activities to conduct an Environmental Database Review for the property identified as Map 133, Lot 63, New Bedford, Massachusetts (the “Subject Property”). Per your request, this report was prepared for use and reliance by BayCoast Bank only and consists of the review of the EDR Environmental Data Research Report dated April 30, 2013 for the Subject Property and reviewing the Massachusetts Department of Environmental Protection’s (DEP’s) file. CEC did not perform site reconnaissance or other typical environmental due diligence activities as part of this screening.

The specific scope of work completed for this assessment consisted of a review of an environmental database of listed release sites and waste generators in the surrounding area and review the online DEP files for the sites that may pose a potential risk to the Subject Property. The purpose of conducting the requested database and file review is to determine the need for an ASTM Transaction Screen Assessment or Phase I Environmental Site Assessment for the Subject Property. This assessment will not satisfy the practices that constitute all appropriate inquiries into the previous ownership and uses of the property consistent with good commercial or customary practice as defined in 42 U.S.C. §9601(35)(B) to establish the CERCLA LLPs. The following summary of findings is consistent with the above and any variations from same are noted and discussed herein.

Civil & Environmental Consultants, Inc.

Boston	31 Bellows Road Raynham, Massachusetts 02767 Ph: 774/501-2176 / Fx: 774/501-2669 Toll Free: 866/312-2024 boston@cecinc.com www.cecinc.com	Austin	855/365-2324	Columbus	888/598-6808	North Central PA	877/321-2324
		Charlotte	855/859-9932	Detroit	866/380-2324	Phoenix	877/231-2324
		Chicago	877/963-6026	Export	800/899-3610	Pittsburgh	800/365/2324
		Cincinnati	800/759-5674	Indianapolis	877/746-0749	St. Louis	866/250-3679
		Cleveland	866/507-2324	Nashville	800/763-2326	Toledo	888/598-6808



1.0 ENVIRONMENTAL SETTING

The Subject Property consists of an undeveloped wooded lot located in an industrial park near the intersection of Samuel Barnet Boulevard and Duchaine Boulevard in New Bedford, Massachusetts. The maps reviewed indicate that the subject Property is located in a low lying wetland area with overall topography sloping toward the subject Property from the east and the west. The Subject Property is located within a groundwater drainage basin that discharges to wetland areas located to the south. Based on these observations, it is inferred that groundwater flow potentially toward the subject Property from both the east and the west. It is noted that actual local groundwater flow direction can be influenced by factors such as surface topography, underground structures, tides, seasonal fluctuations, soil and bedrock geology and production wells, some of which may apply at this site. Site-specific groundwater flow can only be determined through the installation of piezometers or groundwater wells.

2.0 RECORDS RESEARCH

CEC requested a radius search review of surrounding geocoded properties for potential environmental concern as outlined in ASTM E-1527-06 guidelines, utilizing software developed by Environmental Data Resources, Inc. (EDR). The searched databases specifically included the National Priorities List (NPL), the CERCLIS, RCRA TSD, RCRA COR, Emergency Response Notification Site (ERNS), Underground Storage Tank (UST), Leaking Underground Storage Tank (LUST), State Spills, RCRA generators and Solid Waste Landfills (SWL) lists. The EDR report also includes Federal Land Use and Brownfields locations as required by recently implemented AAI Standards. The database report is included as Attachment 1.

In review of the provided database report, it is noted that the Subject Property was not identified in any of the searched databases. However, the database search report identified nine (9) sites within 1/4 mile of the Subject Property on the various listed databases, some of which about the property. In review of information relative to the plotted site locations, it is apparent that several of the sites are listed as State hazardous waste release sites. Based on previously discussed groundwater flow directions, it appears that several of the plotted sites are situated in a potential upgradient location with respect to the Subject Property. Accordingly, it is the opinion of CEC that the listings may represent a potential environmental risk for the Subject Property.

2.1 State File Review

As a result of database records review, CEC completed a DEP state file review to gather additional specific information for release sites located proximal to the Subject Property. The following is a summary of pertinent information gleaned from our file review:



RTN # 4-1018 & 4-13999 – EPEC Inc., 174 Duchaine Blvd – 800 feet northeast

This property was listed with MADEP for the detection of chlorinated solvents in groundwater. Specific contaminants include tetrachloroethene (PCE) and trichloroethene (TCE). Groundwater was measured to flow in a southwesterly direction from the property (toward the Subject Property). The release is documented to have impacted groundwater on two neighboring properties, including the parcel abutting the Subject Property to the east. Assessment activities to define the full limits and extent of groundwater impact failed to adequately identify the western boundaries of the plume. Groundwater remediation activities conducted from 2001 until 2006 failed to achieve a permanent solution and a feasibility analysis determined that a permanent solution was not feasible, prompting the filing of a Class C-1 RAO report in 2009 which indicates that a temporary solution has been achieved in accordance with DEP regulations. Groundwater data generated on the west side of Duchaine Blvd exceeds current GW-2 standards developed to protect against indoor air related exposure pathways. Based on the information reviewed for this release site, it is possible that groundwater underlying the Subject Property may be impacted by this release. Accordingly, it is concluded that this release site represents a Recognized Environmental Condition (REC) for the subject Property. A copy of the Class C RAO report narrative is included as Attachment 2 of this letter report.

RTN #4-0949 & 4-11234 – Schaefer Marine Inc., 158 Duchaine Blvd – 700 feet northeast

This site is listed with the DEP for the detection of chlorinated solvents in groundwater, specifically including PCE and TCE. Groundwater was measured to flow in a southwesterly direction from the property (toward the Subject Property). The release source was identified to be located on an abutting property to the north (174 Duchaine Blvd.) and therefore, a Downgradient Property Status (DPS) was filed for the property in March 1996. Based on the apparent upgradient location of this release site, it appears that this release does represent a REC with respect to the subject Property. However, it is noted that the source of the release was identified as the EPEC, Inc. facility described above. A copy of the DPS report narrative is included as Attachment 3 of this letter report.

RTN# 4-416 & 4-13579 - Emhart PCI Group – 215 Duchaine Blvd – 1,000 feet north

This site is listed with DEP for the detections of chlorinated solvents in groundwater; specific contaminants include TCE and its associated breakdown compounds. The assessment program completed for this release included the installation and sampling of groundwater monitoring wells on the Subject Property. The results of the investigation concluded that the groundwater contamination did not extend beyond the boundaries of the Emhart PCI Group property and a Class A-2 RAO report was filed to achieve a permanent solution in September 1996. Low level chlorinated solvents detected on the Subject Property were attributed to the aforementioned EPEC, Inc. facility release as the Emhart PCI Group site is located in a cross-gradient location with respect the Subject Property. Based on the information contained in this file, the Emhart



PCI Group site does not appear to represent a REC for the Subject Property. A copy of the Class A-2 RAO report narrative is included as Attachment 4 of this letter report.

RTN #4-0780 – Isotronics, 105 Samuel Barnet Boulevard, 1,300 feet west-southwest

This site is listed with DEP for the detection of chlorinated solvents to groundwater, specifically including PCE and TCE. Groundwater was measured to flow in a southwesterly direction from the property (in the opposite direction of the Subject Property). The release was identified prior to promulgation of the Massachusetts Contingency Plan (MCP) and was closed by the DEP in March 1991. The associated “no further action” determination letter stated that based on low levels of contaminants released, elimination of the apparent source, site characterization and insignificant impact on the environment, further assessment and remediation is not warranted. The letter states that the release site would be moved to the “deleted” list. Based on the apparent downgradient location of this release site, it does not represent a REC with respect to the Subject Property. However, it is noted that the low level detection at this location may be indicative of a more widespread extensive condition resulting from the documented upgradient releases detailed above. A copy of the No Further Action letter is included as Attachment 5 of this letter report.

RTN #4-016848 – C.P Bourg, Inc. - 50 Samuel Barnet Blvd – 500 feet southwest

This site is listed for the sudden release of 1,000 gallons of methylene chloride. Based on the nature of the released product, which vaporizes in atmospheric conditions, no impacts to environmental media (soil or groundwater) occurred. As such, this release site does not represent a REC for the Subject Property. The narrative of the Class B-1 RAO achieved in January 2003 is included as Attachment 6 of this letter report.

RTN #4-19456 – AFC Cable Systems - 55 Samuel Barnet Blvd – 300 feet west (opposite tracks)

This site was listed for the release of #2 fuel oil from an underground storage tank (UST) located on the property. The UST was removed from the property along with approximately 130 tons of oil impacted soil in 1997 and 2005, respectively. Low level groundwater impacts remained at the time the site was closed in 2006, but not at levels that posed a significant risk of harm to human health or the environment. Groundwater was measured to flow in a westerly direction (away from the Subject Property). As such, the release site does not appear to represent a REC for the subject Property. The narrative of the Class A-2 RAO achieved in February 2006 is included as Attachment 7 of this letter report.



3.0 DISCLAIMER

The opinions and conclusion expressed herein have been developed as a result of limited research conducted by Civil & Environmental Consultants, Inc., personnel. Reliance on this report is also limited to the constraints set forth in the CIVIL & ENVIRONMENTAL CONSULTANTS, INC.'S SCHEDULE OF TERMS AND CONDITIONS FOR ENVIRONMENTAL SERVICES as agreed to at the time this assessment was ordered. Civil & Environmental Consultants, Inc. makes no claims or representations (implicit or explicit) as to the completeness or accuracy of information or data developed and provided by others. Opinions developed may include certain forward-looking statements or positions that may involve a number of calculated risks and/or uncertainties. For the purpose of the Opinions rendered herein, any statement that is not deemed to be historical fact or documented data, including without limitation any statement using the term believes, intends or similar expression, is a forward-looking statement. Among the important factors that could cause the Opinions to differ from those stated are, but not limited to, the passage of time, changes in technology, regulatory revisions, manifestations of latent conditions or future events. These factors et.al. may render, solely by virtue of becoming evident, the Opinions contained herein inaccurate or otherwise inapplicable within and based on the context and content of the original information. Civil & Environmental Consultants, Inc., shall be liable or responsible for the effect of any changes in circumstance, which may affect the usability of the Opinions rendered. No site reconnaissance were undertaken during this assessment and subsequent preparation of this document. Civil & Environmental Consultants, Inc. reserves the right to change its opinions, conclusions and/or recommendations should new data become available which would indicate that the information provided to and relied upon at the time of report preparation was incomplete, inaccurate, incorrect or otherwise deficient. In completing this assessment, Civil & Environmental Consultants, Inc. has not considered whether the Subject Property (ies) is (are) in compliance with any other statutes, laws, by-laws, regulations or policies unless said compliance has a direct impact or relation to the content of this assessment.



4.0 CONCLUSIONS

Based on the limited assessment performed, CEC has concluded that recognized environmental conditions (RECs) for the Subject Property exists as a result of multiple state listed release sites in hydraulically upgradient locations with respect to the Subject Property. In light of the available data and lack of Subject Property specific information or data to prove or disprove the assumption that the Subject Property has been compromised, a Phase II subsurface investigation is recommended to further evaluate this risk. It should be noted that although it is unlikely that owners of the Subject Property would be liable with respect to addressing any potential groundwater contamination, occupants of any future building constructed without vapor control systems may be exposed to contaminants if they are present in the Subject Property subsurface. Accordingly, upon development of the Subject Property additional cost may be incurred to include adequate vapor control systems. In addition, the fair market value of the Subject Property may be impaired if it is demonstrated to be contaminated, which would implicate and potentially limit the pool of prospective buyers in the event of a future listing of the Property.

Subject to the limitations described above and otherwise referenced herein, all the available information contained in this report is, to the best of CEC's knowledge, true, accurate and complete.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read 'Kevin Beaulieu', is written over the printed name.

Kevin J. Beaulieu, LSP
Senior Project Manager

A handwritten signature in black ink, appearing to read 'Glen A. Cote', is written over the printed name.

Glen A. Cote
Project Manager II

Enclosures



APPENDIX B
BORING LOGS



31 BELLOWS ROAD - RAYNHAM, MA 02767
 PHONE: (774) 501-2176
 FAX (774) 501-2669

**Civil & Environmental
 Consultants, Inc.**

BORING LOG

BORING NO.:

MW-1

SHEET

1

OF

1

LOCATION

NORTHERNMOST LOCATION ALONG ACCESS ROAD, PROXIMAL TO UTILIT
 POLE # 1131/5 (SEE SITE PLAN)

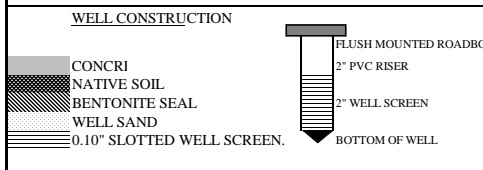
JOB NUMBER: 131-407
 PROJECT NAME: GREATER NEW BEDFORD INDUSTRIAL FOUNDATION
 PROJECT ADDRESS: LOT 11, SAMUEL BARNET BOULEVARD, NEW BEDFORD, MA 01903
 CLIENT NAME: TOM DAVIS

DRILLING COMPANY: NEW ENGLAND GEOTECH, INC.
 LOCATION: JAMESTOWN, RI
 BORE: STEVE
 FIELD TECHNICIAN: M. HOUGHTON

GROUNDWATER OBSERVATIONS			DRILL INFORMATION		RIG	CASING	CORE BARREL
DATE	DEPTH	TIME	TYPE				
06/17/13	4.40		INSIDE DIAMETER	2" MACRO CORE			
			HAMMER WEIGHT				
			HAMMER FALL				
			NOTES:	5' LINER (2" DIAMETER)			
							CASING ELEVATION (FT.)
							PVC ELEVATION (FT.)
							SURFACE ELEVATION (FT.)
							DATE STARTED
							DATE COMPLETED

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTHS (FEET)	PENETRATION/RECOVERY	BLOWS PER 6" PENETRATION	STRATA CHANGES	SOIL DESCRIPTIONS (BURMISTER SYSTEM)	WELL CONSTRUCTION	PID READINGS (PPMV)
0'		0-3	36"			LIGHT YELLOWISH BROWN, GRAVELLY FINE-COARSE SAND, TRACE COARSE SILT. WET.		0.0
5'		5-8	48"			LIGHT GRAYISH BROWN, GRAVELLY FINE TO MEDIUM SAND, LITTLE COARSE SAND, TRACE SILT. WET.		0.2
		8-9				RED/BROWN, GRAVELLY FINE TO MEDIUM SAND, LITTLE COARSE SAND, TRACE SILT. WET.		0.0
10'		10-12				UNABLE TO COLLECT SOIL SAMPLE FOR OBSERVATION DUE TO HIGH WATER TABLE AND POTENTIAL FOR CAVE IN OF BORING.		
						END OF BORING @ 12' BGS.		SET WELL @ 12' BGS. 10' SCREEN.
15'								
20'								
25'								
30'								

COMMENTS:
 DID NOT ENCOUNTER GROUNDWATER; WELL NOT SET.



- NOTES:
- 1.) PID = PHOTO-IONIZATION DETECTOR (10.6 EV LAMP)
 - 2.) PPMV = PARTS PER MILLION VOLUMETRIC
 - 3.) NA = NOT AVAILA

DEPTH TO GROUNDWATER



WELL NO.
MW-1



31 BELLOWS ROAD - RAYNHAM, MA 02767
 PHONE: (774) 501-2176
 FAX (774) 501-2669

**Civil & Environmental
 Consultants, Inc.**

BORING LOG

BORING NO.:

MW-2

SHEET

1

OF

1

LOCATION

SOUTH OF MW-1 ALONG ACCESS ROAD, PROXIMATE TO UTILITY POLE # 1131/4 (SEE SITE PLAN)

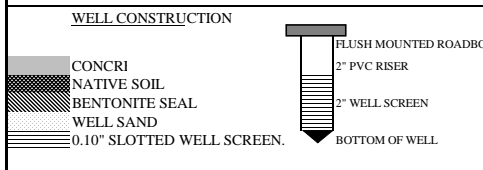
JOB NUMBER: 131-407
 PROJECT NAME: GREATER NEW BEDFORD INDUSTRIAL FOUNDATION
 PROJECT ADDRESS: LOT 11, SAMUEL BARNET BOULEVARD, NEW BEDFORD, MA 01945
 CLIENT NAME: TOM DAVIS

DRILLING COMPANY: NEW ENGLAND GEOTECH, INC.
 LOCATION: JAMESTOWN, RI
 DRILLER: STEVE
 FIELD TECHNICIAN: M. HOUGHTON

GROUNDWATER OBSERVATIONS			DRILL INFORMATION		RIG	CASING	CORE BARREL
DATE	DEPTH	TIME	TYPE				
06/17/13	6.77		INSIDE DIAMETER	2" MACRO CORE			
			HAMMER WEIGHT				
			HAMMER FALL				
			NOTES:	5' LINER (2" DIAMETER)			
							CASING ELEVATION (FT.)
							PVC ELEVATION (FT.)
							SURFACE ELEVATION (FT.)
							DATE STARTED
							DATE COMPLETED

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTHS (FEET)	PENETRATION/RECOVERY	BLOWS PER 6" PENETRATION	STRATA CHANGES	SOIL DESCRIPTIONS (BURMISTER SYSTEM)	WELL CONSTRUCTION	TDR READINGS (PPMV)
0'		0-0.5	24"			ORANGE-BROWN, SILTY FINE TO MEDIUM SAND, TRACE COARSE GRAVEL. DAMP.		0.0
		0.5-2				LIGHT BROWN, GRAVELLY FINE TO COARSE SAND, LITTLE COARSE GRAVEL. DAMP.		
5'		5-8.5	48"			GRAY-BROWN, GRAVELLY FINE TO COARSE SAND, LITTLE COARSE GRAVEL. WET.		0.0
		8.5-9				BROWN, FINE TO MEDIUM SAND, LITTLE SILT. WET.		
10'		10-12				UNABLE TO COLLECT SOIL SAMPLE FOR OBSERVATION DUE TO HIGH WATER TABLE AND POTENTIAL FOR CAVE IN OF BORING.		
						END OF BORING @ 12' BGS.		SET WELL @ 12' BGS. 10' SCREEN.
15'								
20'								
25'								
30'								

COMMENTS:
 DID NOT ENCOUNTER GROUNDWATER; WELL NOT SET.



- NOTES:
- 1.) PID = PHOTO-IONIZATION DETECTOR (10.6 EV LAMP)
 - 2.) PPMV = PARTS PER MILLION VOLUMETRIC
 - 3.) NA = NOT AVAILA

DEPTH TO GROUNDWATER



WELL NO.
MW-2



31 BELLOWS ROAD - RAYNHAM, MA 02767
 PHONE: (774) 501-2176
 FAX (774) 501-2669

**Civil & Environmental
 Consultants, Inc.**

BORING LOG

BORING NO.:

MW-3

SHEET

1

OF

1

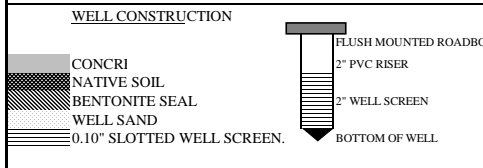
LOCATION

IMMEDIATELY NORTH OF SAMUEL BARNET BOULEVARD (SEE SITE PLAN)

JOB NUMBER:	131-407	DRILLING COMPANY:	NEW ENGLAND GEOTECH, INC.
PROJECT NAME:	GREATER NEW BEDFORD INDUSTRIAL FOUNDATION	LOCATION:	JAMESTOWN, RI
PROJECT ADDRESS:	LOT 11, SAMUEL BARNET BOULEVARD, NEW BEDFORD, MA	BORES:	STEVE
CLIENT NAME:	TOM DAVIS	FIELD TECHNICIAN:	M. HOUGHTON
GROUNDWATER OBSERVATIONS		DRILL INFORMATION	
DATE	DEPTH	TIME	RIG
06/17/13	6.05		GEOPROBE
			INSIDE DIAMETER
			2" MACRO CORE
			HAMMER WEIGHT
			HAMMER FALL
			NOTES:
			5" LINER (2" DIAMETER)
			CASING ELEVATION (FT.)
			PVC ELEVATION (FT.)
			SURFACE ELEVATION (FT.)
			DATE STARTED
			6/11/13
			DATE COMPLETED
			6/11/13

DEPTH (FEET)	SAMPLE NUMBER	SAMPLE DEPTHS (FEET)	PENETRATION/RECOVERY	BLOWS PER 6" PENETRATION	STRATA CHANGES	SOIL DESCRIPTIONS (BURMISTER SYSTEM)	WELL CONSTRUCTION	PID READINGS (PPMV)
0'		0-0.5	30"			RED/BROWN, FINE TO MEDIUM SAND, LITTLE SILT. DAMP.		0.0
		0.5-2.5				LIGHT BROWN, GRAVELLY FINE TO COARSE SAND, LITTLE COARSE GRAVEL. DAMP.		0.0
5'		5-6.5	48"			BROWN, FINE TO MEDIUM SAND, LITTLE SILT, TRACE COARSE GRAVEL. WET.		0.0
		6.5-8.7				LIGHT BROWN, GRAVELLY FINE TO COARSE SAND, TRACE COARSE GRAVEL. WET.		0.0
		8.7-9				DARKBROWN, GRAVELLY FINE TO COARSE SAND, TRACE COARSE GRAVEL. WET.		
10'		10-12				UNABLE TO COLLECT SOIL SAMPLE FOR OBSERVATION DUE TO HIGH WATER TABLE AND POTENTIAL FOR CAVE IN OF BORING.		
						END OF BORING @ 12' BGS.		SET WELL @ 12' BGS. 10' SCREEN.
15'								
20'								
25'								
30'								

COMMENTS:
 DID NOT ENCOUNTER GROUNDWATER; WELL NOT SET.



- NOTES:
- 1.) PID = PHOTO-IONIZATION DETECTOR (10.6 EV LAMP)
 - 2.) PPMV = PARTS PER MILLION VOLUMETRIC
 - 3.) NA = NOT AVAILA

DEPTH TO GROUNDWATER



WELL NO.
MW-3



APPENDIX C

LABORATORY REPORT



CERTIFICATE OF ANALYSIS

Glen Cote
Civil & Environmental Consultants, Inc.
31 Bellows Road
Raynham, MA 02767

RE: Samuel Barnet Blvd N Bedford (131-407)
ESS Laboratory Work Order Number: 1306298

This signed Certificate of Analysis is our approved release of your analytical results. These results are only representative of sample aliquots received at the laboratory. ESS Laboratory expects its clients to follow all regulatory sampling guidelines. Beginning with this page, the entire report has been paginated. This report should not be copied except in full without the approval of the laboratory. Samples will be disposed of thirty days after the final report has been delivered. If you have any questions or concerns, please feel free to call our Customer Service Department.

Laurel Stoddard
Laboratory Director

REVIEWED

By ESS Laboratory at 12:54 pm, Jun 26, 2013

Analytical Summary

The project as described above has been analyzed in accordance with the ESS Quality Assurance Plan. This plan utilizes the following methodologies: US EPA SW-846, US EPA Methods for Chemical Analysis of Water and Wastes per 40 CFR Part 136, APHA Standard Methods for the Examination of Water and Wastewater, American Society for Testing and Materials (ASTM), and other recognized methodologies. The analyses with these noted observations are in conformance to the Quality Assurance Plan. In chromatographic analysis, manual integration is frequently used instead of automated integration because it produces more accurate results.

The test results present in this report are in compliance with NELAC Standards, A2LA and/or client Quality Assurance Project Plans (QAPP). The laboratory has reviewed the following: Sample Preservations, Hold Times, Initial Calibrations, Continuing Calibrations, Method Blanks, Blank Spikes, Blank Spike Duplicates, Duplicates, Matrix Spikes, Matrix Spike Duplicates, Surrogates and Internal Standards. Any results which were found to be outside of the recommended ranges stated in our SOPs will be noted in the Project Narrative.



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

SAMPLE RECEIPT

The following samples were received on June 18, 2013 for the analyses specified on the enclosed Chain of Custody Record.

To achieve CAM compliance for MCP data, ESS Laboratory has performed and reviewed all QA/QC Requirements and Performance Standards listed in each method. Holding times and preservation have also been reviewed. All CAM requirements have been achieved unless noted in the project narrative.

Each method has been set-up in the laboratory to reach required MCP standards. The methods for aqueous VOA and Soil Methanol VOA have known limitations for certain analytes. The regulatory standards may not be achieved due to these limitations. In addition, for all methods, matrix interferences, dilutions, and %Solids may elevate method reporting limits above regulatory standards. ESS Laboratory can provide, upon request, a Data Checker (regulatory standard comparison spreadsheet) electronic deliverable which will highlight these exceedances.

For EPH soil samples, the aromatic range results have been corrected for identified cartridge contaminant in accordance with the CAM protocol.

Revision 1 June 26, 2013: This report has been revised to include J-flags.

<u>Lab Number</u>	<u>SampleName</u>	<u>Matrix</u>	<u>Analysis</u>
1306298-01	MW-1	Ground Water	8260B
1306298-02	MW-2	Ground Water	8260B
1306298-03	MW-3	Ground Water	8260B



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

PROJECT NARRATIVE

8260B Volatile Organic Compounds

CF31919-BSD1 Relative percent difference for duplicate is outside of criteria (D+).

Acetone (29%)

CWF0221-CCV1 Continuing Calibration recovery is above upper control limit (C+).

Acetone (149% @ 70-130%), Diethyl Ether (154% @ 70-130%)

No other observations noted.

End of Project Narrative.

DATA USABILITY LINKS

[Definitions of Quality Control Parameters](#)

[Semivolatile Organics Internal Standard Information](#)

[Semivolatile Organics Surrogate Information](#)

[Volatile Organics Internal Standard Information](#)

[Volatile Organics Surrogate Information](#)

[EPH and VPH Alkane Lists](#)



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

CURRENT SW-846 METHODOLOGY VERSIONS

Analytical Methods

- 1010A - Flashpoint
- 6010C - ICP
- 6020A - ICP MS
- 7010 - Graphite Furnace
- 7196A - Hexavalent Chromium
- 7470A - Aqueous Mercury
- 7471B - Solid Mercury
- 8011 - EDB/DBCP/TCP
- 8015C - GRO/DRO
- 8081B - Pesticides
- 8082A - PCB
- 8100M - TPH
- 8151A - Herbicides
- 8260B - VOA
- 8270D - SVOA
- 8270D SIM - SVOA Low Level
- 9014 - Cyanide
- 9038 - Sulfate
- 9040C - Aqueous pH
- 9045D - Solid pH (Corrosivity)
- 9050A - Specific Conductance
- 9056A - Anions (IC)
- 9060A - TOC
- 9095B - Paint Filter
- MADEP 04-1.1 - EPH / VPH

Prep Methods

- 3005A - Aqueous ICP Digestion
- 3020A - Aqueous Graphite Furnace / ICP MS Digestion
- 3050B - Solid ICP / Graphite Furnace / ICP MS Digestion
- 3060A - Solid Hexavalent Chromium Digestion
- 3510C - Separatory Funnel Extraction
- 3520C - Liquid / Liquid Extraction
- 3540C - Manual Soxhlet Extraction
- 3541 - Automated Soxhlet Extraction
- 3580A - Waste Dilution
- 5030B - Aqueous Purge and Trap
- 5035 - Solid Purge and Trap



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

MassDEP Analytical Protocol Certification Form

MADEP RTN: _____

This form provides certification for the following data set: **1306298-01 through 1306298-03**

Matrices: Ground Water/Surface Water Soil/Sediment Drinking Water Air Other: _____

CAM Protocol (check all that apply below):

- | | | | | | |
|--|--|--|---|---|--|
| <input checked="" type="checkbox"/> 8260 VOC
CAM II A | <input type="checkbox"/> 7470/7471 Hg
CAM III B | <input type="checkbox"/> MassDEP VPH
CAM IV A | <input type="checkbox"/> 8081 Pesticides
CAM V B | <input type="checkbox"/> 7196 Hex Cr
CAM VI B | <input type="checkbox"/> MassDEP APH
CAM IX A |
| <input type="checkbox"/> 8270 SVOC
CAM II B | <input type="checkbox"/> 7010 Metals
CAM III C | <input type="checkbox"/> MassDEP EPH
CAM IV B | <input type="checkbox"/> 8151 Herbicides
CAM V C | <input type="checkbox"/> 8330 Explosives
CAM VIII A | <input type="checkbox"/> TO-15 VOC
CAM IX B |
| <input type="checkbox"/> 6010 Metals
CAM III A | <input type="checkbox"/> 6020 Metals
CAM III D | <input type="checkbox"/> 8082 PCB
CAM V A | <input type="checkbox"/> 6860 Perchlorate
CAM VIII B | <input type="checkbox"/> 9014 Total Cyanide/PAC
CAM VI A | |

Affirmative responses to questions A through F are required for Presumptive Certainty'status

- | | | |
|---|---|---|
| A | Were all samples received in a condition consistent with those described on the Chain-of-Custody, properly preserved (including temperature) in the field or laboratory, and prepared/analyzed within method holding times? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| B | Were the analytical method(s) and all associated QC requirements specified in the selected CAM protocol(s) followed? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| C | Were all required corrective actions and analytical response actions specified in the selected CAM protocol(s) implemented for all identified performance standard non-conformances? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| D | Does the laboratory report comply with all the reporting requirements specified in the CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |
| E | a. VPH, EPH, APH and TO-15 only: Was each method conducted without significant modification(s)? (Refer to the individual method(s) for a list of significant modifications). | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| | b. APH and TO-15 Methods only: Was the complete analyte list reported for each method? | Yes <input type="checkbox"/> No <input type="checkbox"/> |
| F | Were all applicable CAM protocol QC and performance standard non-conformances identified and evaluated in a laboratory narrative (including all "No" responses to Questions A through E)? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> |

Responses to Questions G, H and I below are required for Presumptive Certainty'status

- | | | |
|---|--|---|
| G | Were the reporting limits at or below all CAM reporting limits specified in the selected CAM protocols(s)?
<i>Data User Note: Data that achieve Presumptive Certainty'status may not necessarily meet the data usability and representativeness requirements described in 310 CMR 40. 1056 (2)(k) and WSC-07-350.</i> | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> * |
| H | Were all QC performance standards specified in the CAM protocol(s) achieved? | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> * |
| I | Were results reported for the complete analyte list specified in the selected CAM protocol(s)? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> * |

*All negative responses must be addressed in an attached laboratory narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature: Laurel Stoddard
Printed Name: Laurel Stoddard

Date: June 25, 2013
Position: Laboratory Director



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford
Client Sample ID: MW-1
Date Sampled: 06/17/13 11:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
ESS Laboratory Sample ID: 1306298-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
1,1,1-Trichloroethane	ND (1.0)	0.2	8260B	200	1	06/19/13 12:19	CWF0221	CF31919
1,1,2,2-Tetrachloroethane	ND (0.5)	0.1	8260B	2	1	06/19/13 12:19	CWF0221	CF31919
1,1,2-Trichloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
1,1-Dichloroethane	ND (1.0)	0.2	8260B	70	1	06/19/13 12:19	CWF0221	CF31919
1,1-Dichloroethene	ND (1.0)	0.3	8260B	7	1	06/19/13 12:19	CWF0221	CF31919
1,1-Dichloropropene	ND (2.0)	0.2	8260B		1	06/19/13 12:19	CWF0221	CF31919
1,2,3-Trichlorobenzene	ND (1.0)	0.2	8260B		1	06/19/13 12:19	CWF0221	CF31919
1,2,3-Trichloropropane	ND (1.0)	0.3	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
1,2,4-Trichlorobenzene	ND (1.0)	0.2	8260B	70	1	06/19/13 12:19	CWF0221	CF31919
1,2,4-Trimethylbenzene	ND (1.0)	0.1	8260B	10000	1	06/19/13 12:19	CWF0221	CF31919
1,2-Dibromo-3-Chloropropane	ND (5.0)	1.0	8260B	100	1	06/19/13 12:19	CWF0221	CF31919
1,2-Dibromoethane	ND (1.0)	0.2	8260B	0.02	1	06/19/13 12:19	CWF0221	CF31919
1,2-Dichlorobenzene	ND (1.0)	0.1	8260B	600	1	06/19/13 12:19	CWF0221	CF31919
1,2-Dichloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
1,2-Dichloropropane	ND (1.0)	0.2	8260B	3	1	06/19/13 12:19	CWF0221	CF31919
1,3,5-Trimethylbenzene	ND (1.0)	0.1	8260B	100	1	06/19/13 12:19	CWF0221	CF31919
1,3-Dichlorobenzene	ND (1.0)	0.2	8260B	40	1	06/19/13 12:19	CWF0221	CF31919
1,3-Dichloropropane	ND (1.0)	0.1	8260B	5000	1	06/19/13 12:19	CWF0221	CF31919
1,4-Dichlorobenzene	ND (1.0)	0.1	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
1,4-Dioxane - Screen	ND (500)	190	8260B	3	1	06/19/13 12:19	CWF0221	CF31919
2,2-Dichloropropane	ND (1.0)	0.3	8260B		1	06/19/13 12:19	CWF0221	CF31919
2-Butanone	ND (10.0)	3.4	8260B	4000	1	06/19/13 12:19	CWF0221	CF31919
2-Chlorotoluene	ND (1.0)	0.1	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
2-Hexanone	ND (10.0)	1.5	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
4-Chlorotoluene	ND (1.0)	0.1	8260B		1	06/19/13 12:19	CWF0221	CF31919
4-Isopropyltoluene	J 0.3 (1.0)	0.1	8260B	200	1	06/19/13 12:19	CWF0221	CF31919
4-Methyl-2-Pentanone	ND (10.0)	1.6	8260B	350	1	06/19/13 12:19	CWF0221	CF31919
Acetone	ND (10.0)	2.7	8260B	6300	1	06/19/13 12:19	CWF0221	CF31919
Benzene	ND (1.0)	0.1	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
Bromobenzene	ND (2.0)	0.2	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford
Client Sample ID: MW-1
Date Sampled: 06/17/13 11:00
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
ESS Laboratory Sample ID: 1306298-01
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (1.0)	0.3	8260B		1	06/19/13 12:19	CWF0221	CF31919
Bromodichloromethane	ND (0.6)	0.1	8260B	3	1	06/19/13 12:19	CWF0221	CF31919
Bromoform	ND (1.0)	0.2	8260B	4	1	06/19/13 12:19	CWF0221	CF31919
Bromomethane	ND (2.0)	0.4	8260B	7	1	06/19/13 12:19	CWF0221	CF31919
Carbon Disulfide	J 0.7 (1.0)	0.1	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
Carbon Tetrachloride	ND (1.0)	0.1	8260B	2	1	06/19/13 12:19	CWF0221	CF31919
Chlorobenzene	ND (1.0)	0.1	8260B	100	1	06/19/13 12:19	CWF0221	CF31919
Chloroethane	ND (2.0)	0.4	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
Chloroform	ND (1.0)	0.2	8260B	50	1	06/19/13 12:19	CWF0221	CF31919
Chloromethane	ND (2.0)	0.2	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
cis-1,2-Dichloroethene	ND (1.0)	0.2	8260B	70	1	06/19/13 12:19	CWF0221	CF31919
cis-1,3-Dichloropropene	ND (0.4)	0.2	8260B	0.4	1	06/19/13 12:19	CWF0221	CF31919
Dibromochloromethane	ND (1.0)	0.2	8260B	2	1	06/19/13 12:19	CWF0221	CF31919
Dibromomethane	ND (1.0)	0.3	8260B	5000	1	06/19/13 12:19	CWF0221	CF31919
Dichlorodifluoromethane	ND (2.0)	0.3	8260B	10000	1	06/19/13 12:19	CWF0221	CF31919
Diethyl Ether	ND (1.0)	0.3	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
Di-isopropyl ether	ND (1.0)	0.2	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
Ethyl tertiary-butyl ether	ND (1.0)	0.1	8260B		1	06/19/13 12:19	CWF0221	CF31919
Ethylbenzene	ND (1.0)	0.1	8260B	700	1	06/19/13 12:19	CWF0221	CF31919
Hexachlorobutadiene	ND (0.6)	0.2	8260B	0.6	1	06/19/13 12:19	CWF0221	CF31919
Hexachloroethane	ND (1.0)	0.2	8260B	8	1	06/19/13 12:19	CWF0221	CF31919
Isopropylbenzene	ND (1.0)	0.1	8260B	10000	1	06/19/13 12:19	CWF0221	CF31919
Methyl tert-Butyl Ether	ND (1.0)	0.3	8260B	70	1	06/19/13 12:19	CWF0221	CF31919
Methylene Chloride	ND (2.0)	0.2	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
Naphthalene	ND (1.0)	0.2	8260B	140	1	06/19/13 12:19	CWF0221	CF31919
n-Butylbenzene	ND (1.0)	0.1	8260B	200	1	06/19/13 12:19	CWF0221	CF31919
n-Propylbenzene	ND (1.0)	0.2	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
sec-Butylbenzene	ND (1.0)	0.1	8260B	200	1	06/19/13 12:19	CWF0221	CF31919
Styrene	ND (1.0)	0.1	8260B	100	1	06/19/13 12:19	CWF0221	CF31919
tert-Butylbenzene	ND (1.0)	0.1	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
Tertiary-amyl methyl ether	ND (1.0)	0.2	8260B		1	06/19/13 12:19	CWF0221	CF31919



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
 Client Project ID: Samuel Barnet Blvd N Bedford
 Client Sample ID: MW-1
 Date Sampled: 06/17/13 11:00
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
 ESS Laboratory Sample ID: 1306298-01
 Sample Matrix: Ground Water
 Units: ug/L
 Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrachloroethene	ND (1.0)	0.2	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
Tetrahydrofuran	ND (5.0)	1.6	8260B	5000	1	06/19/13 12:19	CWF0221	CF31919
Toluene	ND (1.0)	0.1	8260B	1000	1	06/19/13 12:19	CWF0221	CF31919
trans-1,2-Dichloroethene	ND (1.0)	0.3	8260B	90	1	06/19/13 12:19	CWF0221	CF31919
trans-1,3-Dichloropropene	ND (0.4)	0.2	8260B	0.4	1	06/19/13 12:19	CWF0221	CF31919
Trichloroethene	ND (1.0)	0.2	8260B	5	1	06/19/13 12:19	CWF0221	CF31919
Trichlorofluoromethane	ND (1.0)	0.4	8260B	10000	1	06/19/13 12:19	CWF0221	CF31919
Vinyl Chloride	ND (1.0)	0.2	8260B	2	1	06/19/13 12:19	CWF0221	CF31919
Xylene O	ND (1.0)	0.1	8260B	5000	1	06/19/13 12:19	CWF0221	CF31919
Xylene P,M	ND (2.0)	0.2	8260B	5000	1	06/19/13 12:19	CWF0221	CF31919
Xylenes (Total)	ND (2.0)		8260B	5000	1	06/19/13 12:19		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	88 %		70-130
<i>Surrogate: 4-Bromofluorobenzene</i>	92 %		70-130
<i>Surrogate: Dibromofluoromethane</i>	92 %		70-130
<i>Surrogate: Toluene-d8</i>	90 %		70-130



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford
Client Sample ID: MW-2
Date Sampled: 06/17/13 11:28
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
ESS Laboratory Sample ID: 1306298-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
1,1,1-Trichloroethane	ND (1.0)	0.2	8260B	200	1	06/19/13 12:47	CWF0221	CF31919
1,1,2,2-Tetrachloroethane	ND (0.5)	0.1	8260B	2	1	06/19/13 12:47	CWF0221	CF31919
1,1,2-Trichloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
1,1-Dichloroethane	ND (1.0)	0.2	8260B	70	1	06/19/13 12:47	CWF0221	CF31919
1,1-Dichloroethene	ND (1.0)	0.3	8260B	7	1	06/19/13 12:47	CWF0221	CF31919
1,1-Dichloropropene	ND (2.0)	0.2	8260B		1	06/19/13 12:47	CWF0221	CF31919
1,2,3-Trichlorobenzene	ND (1.0)	0.2	8260B		1	06/19/13 12:47	CWF0221	CF31919
1,2,3-Trichloropropane	ND (1.0)	0.3	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
1,2,4-Trichlorobenzene	ND (1.0)	0.2	8260B	70	1	06/19/13 12:47	CWF0221	CF31919
1,2,4-Trimethylbenzene	ND (1.0)	0.1	8260B	10000	1	06/19/13 12:47	CWF0221	CF31919
1,2-Dibromo-3-Chloropropane	ND (5.0)	1.0	8260B	100	1	06/19/13 12:47	CWF0221	CF31919
1,2-Dibromoethane	ND (1.0)	0.2	8260B	0.02	1	06/19/13 12:47	CWF0221	CF31919
1,2-Dichlorobenzene	ND (1.0)	0.1	8260B	600	1	06/19/13 12:47	CWF0221	CF31919
1,2-Dichloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
1,2-Dichloropropane	ND (1.0)	0.2	8260B	3	1	06/19/13 12:47	CWF0221	CF31919
1,3,5-Trimethylbenzene	ND (1.0)	0.1	8260B	100	1	06/19/13 12:47	CWF0221	CF31919
1,3-Dichlorobenzene	ND (1.0)	0.2	8260B	40	1	06/19/13 12:47	CWF0221	CF31919
1,3-Dichloropropane	ND (1.0)	0.1	8260B	5000	1	06/19/13 12:47	CWF0221	CF31919
1,4-Dichlorobenzene	ND (1.0)	0.1	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
1,4-Dioxane - Screen	ND (500)	190	8260B	3	1	06/19/13 12:47	CWF0221	CF31919
2,2-Dichloropropane	ND (1.0)	0.3	8260B		1	06/19/13 12:47	CWF0221	CF31919
2-Butanone	ND (10.0)	3.4	8260B	4000	1	06/19/13 12:47	CWF0221	CF31919
2-Chlorotoluene	ND (1.0)	0.1	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
2-Hexanone	ND (10.0)	1.5	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
4-Chlorotoluene	ND (1.0)	0.1	8260B		1	06/19/13 12:47	CWF0221	CF31919
4-Isopropyltoluene	ND (1.0)	0.1	8260B	200	1	06/19/13 12:47	CWF0221	CF31919
4-Methyl-2-Pentanone	ND (10.0)	1.6	8260B	350	1	06/19/13 12:47	CWF0221	CF31919
Acetone	ND (10.0)	2.7	8260B	6300	1	06/19/13 12:47	CWF0221	CF31919
Benzene	ND (1.0)	0.1	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
Bromobenzene	ND (2.0)	0.2	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford
Client Sample ID: MW-2
Date Sampled: 06/17/13 11:28
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
ESS Laboratory Sample ID: 1306298-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (1.0)	0.3	8260B		1	06/19/13 12:47	CWF0221	CF31919
Bromodichloromethane	ND (0.6)	0.1	8260B	3	1	06/19/13 12:47	CWF0221	CF31919
Bromoform	ND (1.0)	0.2	8260B	4	1	06/19/13 12:47	CWF0221	CF31919
Bromomethane	ND (2.0)	0.4	8260B	7	1	06/19/13 12:47	CWF0221	CF31919
Carbon Disulfide	ND (1.0)	0.1	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
Carbon Tetrachloride	ND (1.0)	0.1	8260B	2	1	06/19/13 12:47	CWF0221	CF31919
Chlorobenzene	ND (1.0)	0.1	8260B	100	1	06/19/13 12:47	CWF0221	CF31919
Chloroethane	ND (2.0)	0.4	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
Chloroform	ND (1.0)	0.2	8260B	50	1	06/19/13 12:47	CWF0221	CF31919
Chloromethane	ND (2.0)	0.2	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
cis-1,2-Dichloroethene	ND (1.0)	0.2	8260B	70	1	06/19/13 12:47	CWF0221	CF31919
cis-1,3-Dichloropropene	ND (0.4)	0.2	8260B	0.4	1	06/19/13 12:47	CWF0221	CF31919
Dibromochloromethane	ND (1.0)	0.2	8260B	2	1	06/19/13 12:47	CWF0221	CF31919
Dibromomethane	ND (1.0)	0.3	8260B	5000	1	06/19/13 12:47	CWF0221	CF31919
Dichlorodifluoromethane	ND (2.0)	0.3	8260B	10000	1	06/19/13 12:47	CWF0221	CF31919
Diethyl Ether	ND (1.0)	0.3	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
Di-isopropyl ether	ND (1.0)	0.2	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
Ethyl tertiary-butyl ether	ND (1.0)	0.1	8260B		1	06/19/13 12:47	CWF0221	CF31919
Ethylbenzene	ND (1.0)	0.1	8260B	700	1	06/19/13 12:47	CWF0221	CF31919
Hexachlorobutadiene	ND (0.6)	0.2	8260B	0.6	1	06/19/13 12:47	CWF0221	CF31919
Hexachloroethane	ND (1.0)	0.2	8260B	8	1	06/19/13 12:47	CWF0221	CF31919
Isopropylbenzene	ND (1.0)	0.1	8260B	10000	1	06/19/13 12:47	CWF0221	CF31919
Methyl tert-Butyl Ether	ND (1.0)	0.3	8260B	70	1	06/19/13 12:47	CWF0221	CF31919
Methylene Chloride	ND (2.0)	0.2	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
Naphthalene	ND (1.0)	0.2	8260B	140	1	06/19/13 12:47	CWF0221	CF31919
n-Butylbenzene	ND (1.0)	0.1	8260B	200	1	06/19/13 12:47	CWF0221	CF31919
n-Propylbenzene	ND (1.0)	0.2	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
sec-Butylbenzene	ND (1.0)	0.1	8260B	200	1	06/19/13 12:47	CWF0221	CF31919
Styrene	ND (1.0)	0.1	8260B	100	1	06/19/13 12:47	CWF0221	CF31919
tert-Butylbenzene	ND (1.0)	0.1	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
Tertiary-amyl methyl ether	ND (1.0)	0.2	8260B		1	06/19/13 12:47	CWF0221	CF31919



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford
Client Sample ID: MW-2
Date Sampled: 06/17/13 11:28
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
ESS Laboratory Sample ID: 1306298-02
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrachloroethene	ND (1.0)	0.2	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
Tetrahydrofuran	ND (5.0)	1.6	8260B	5000	1	06/19/13 12:47	CWF0221	CF31919
Toluene	ND (1.0)	0.1	8260B	1000	1	06/19/13 12:47	CWF0221	CF31919
trans-1,2-Dichloroethene	ND (1.0)	0.3	8260B	90	1	06/19/13 12:47	CWF0221	CF31919
trans-1,3-Dichloropropene	ND (0.4)	0.2	8260B	0.4	1	06/19/13 12:47	CWF0221	CF31919
Trichloroethene	ND (1.0)	0.2	8260B	5	1	06/19/13 12:47	CWF0221	CF31919
Trichlorofluoromethane	ND (1.0)	0.4	8260B	10000	1	06/19/13 12:47	CWF0221	CF31919
Vinyl Chloride	ND (1.0)	0.2	8260B	2	1	06/19/13 12:47	CWF0221	CF31919
Xylene O	ND (1.0)	0.1	8260B	5000	1	06/19/13 12:47	CWF0221	CF31919
Xylene P,M	ND (2.0)	0.2	8260B	5000	1	06/19/13 12:47	CWF0221	CF31919
Xylenes (Total)	ND (2.0)		8260B	5000	1	06/19/13 12:47		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>90 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>91 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>91 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford
Client Sample ID: MW-3
Date Sampled: 06/17/13 12:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
ESS Laboratory Sample ID: 1306298-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
1,1,1,2-Tetrachloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
1,1,1-Trichloroethane	ND (1.0)	0.2	8260B	200	1	06/19/13 13:14	CWF0221	CF31919
1,1,2,2-Tetrachloroethane	ND (0.5)	0.1	8260B	2	1	06/19/13 13:14	CWF0221	CF31919
1,1,2-Trichloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
1,1-Dichloroethane	ND (1.0)	0.2	8260B	70	1	06/19/13 13:14	CWF0221	CF31919
1,1-Dichloroethene	ND (1.0)	0.3	8260B	7	1	06/19/13 13:14	CWF0221	CF31919
1,1-Dichloropropene	ND (2.0)	0.2	8260B		1	06/19/13 13:14	CWF0221	CF31919
1,2,3-Trichlorobenzene	ND (1.0)	0.2	8260B		1	06/19/13 13:14	CWF0221	CF31919
1,2,3-Trichloropropane	ND (1.0)	0.3	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
1,2,4-Trichlorobenzene	ND (1.0)	0.2	8260B	70	1	06/19/13 13:14	CWF0221	CF31919
1,2,4-Trimethylbenzene	ND (1.0)	0.1	8260B	10000	1	06/19/13 13:14	CWF0221	CF31919
1,2-Dibromo-3-Chloropropane	ND (5.0)	1.0	8260B	100	1	06/19/13 13:14	CWF0221	CF31919
1,2-Dibromoethane	ND (1.0)	0.2	8260B	0.02	1	06/19/13 13:14	CWF0221	CF31919
1,2-Dichlorobenzene	ND (1.0)	0.1	8260B	600	1	06/19/13 13:14	CWF0221	CF31919
1,2-Dichloroethane	ND (1.0)	0.2	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
1,2-Dichloropropane	ND (1.0)	0.2	8260B	3	1	06/19/13 13:14	CWF0221	CF31919
1,3,5-Trimethylbenzene	ND (1.0)	0.1	8260B	100	1	06/19/13 13:14	CWF0221	CF31919
1,3-Dichlorobenzene	ND (1.0)	0.2	8260B	40	1	06/19/13 13:14	CWF0221	CF31919
1,3-Dichloropropane	ND (1.0)	0.1	8260B	5000	1	06/19/13 13:14	CWF0221	CF31919
1,4-Dichlorobenzene	ND (1.0)	0.1	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
1,4-Dioxane - Screen	ND (500)	190	8260B	3	1	06/19/13 13:14	CWF0221	CF31919
2,2-Dichloropropane	ND (1.0)	0.3	8260B		1	06/19/13 13:14	CWF0221	CF31919
2-Butanone	ND (10.0)	3.4	8260B	4000	1	06/19/13 13:14	CWF0221	CF31919
2-Chlorotoluene	ND (1.0)	0.1	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
2-Hexanone	ND (10.0)	1.5	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
4-Chlorotoluene	ND (1.0)	0.1	8260B		1	06/19/13 13:14	CWF0221	CF31919
4-Isopropyltoluene	ND (1.0)	0.1	8260B	200	1	06/19/13 13:14	CWF0221	CF31919
4-Methyl-2-Pentanone	ND (10.0)	1.6	8260B	350	1	06/19/13 13:14	CWF0221	CF31919
Acetone	ND (10.0)	2.7	8260B	6300	1	06/19/13 13:14	CWF0221	CF31919
Benzene	ND (1.0)	0.1	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
Bromobenzene	ND (2.0)	0.2	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford
Client Sample ID: MW-3
Date Sampled: 06/17/13 12:05
Percent Solids: N/A
Initial Volume: 5
Final Volume: 5
Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
ESS Laboratory Sample ID: 1306298-03
Sample Matrix: Ground Water
Units: ug/L
Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Bromochloromethane	ND (1.0)	0.3	8260B		1	06/19/13 13:14	CWF0221	CF31919
Bromodichloromethane	ND (0.6)	0.1	8260B	3	1	06/19/13 13:14	CWF0221	CF31919
Bromoform	ND (1.0)	0.2	8260B	4	1	06/19/13 13:14	CWF0221	CF31919
Bromomethane	ND (2.0)	0.4	8260B	7	1	06/19/13 13:14	CWF0221	CF31919
Carbon Disulfide	ND (1.0)	0.1	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
Carbon Tetrachloride	ND (1.0)	0.1	8260B	2	1	06/19/13 13:14	CWF0221	CF31919
Chlorobenzene	ND (1.0)	0.1	8260B	100	1	06/19/13 13:14	CWF0221	CF31919
Chloroethane	ND (2.0)	0.4	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
Chloroform	ND (1.0)	0.2	8260B	50	1	06/19/13 13:14	CWF0221	CF31919
Chloromethane	ND (2.0)	0.2	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
cis-1,2-Dichloroethene	ND (1.0)	0.2	8260B	70	1	06/19/13 13:14	CWF0221	CF31919
cis-1,3-Dichloropropene	ND (0.4)	0.2	8260B	0.4	1	06/19/13 13:14	CWF0221	CF31919
Dibromochloromethane	ND (1.0)	0.2	8260B	2	1	06/19/13 13:14	CWF0221	CF31919
Dibromomethane	ND (1.0)	0.3	8260B	5000	1	06/19/13 13:14	CWF0221	CF31919
Dichlorodifluoromethane	ND (2.0)	0.3	8260B	10000	1	06/19/13 13:14	CWF0221	CF31919
Diethyl Ether	ND (1.0)	0.3	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
Di-isopropyl ether	ND (1.0)	0.2	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
Ethyl tertiary-butyl ether	ND (1.0)	0.1	8260B		1	06/19/13 13:14	CWF0221	CF31919
Ethylbenzene	ND (1.0)	0.1	8260B	700	1	06/19/13 13:14	CWF0221	CF31919
Hexachlorobutadiene	ND (0.6)	0.2	8260B	0.6	1	06/19/13 13:14	CWF0221	CF31919
Hexachloroethane	ND (1.0)	0.2	8260B	8	1	06/19/13 13:14	CWF0221	CF31919
Isopropylbenzene	ND (1.0)	0.1	8260B	10000	1	06/19/13 13:14	CWF0221	CF31919
Methyl tert-Butyl Ether	ND (1.0)	0.3	8260B	70	1	06/19/13 13:14	CWF0221	CF31919
Methylene Chloride	ND (2.0)	0.2	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
Naphthalene	ND (1.0)	0.2	8260B	140	1	06/19/13 13:14	CWF0221	CF31919
n-Butylbenzene	ND (1.0)	0.1	8260B	200	1	06/19/13 13:14	CWF0221	CF31919
n-Propylbenzene	ND (1.0)	0.2	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
sec-Butylbenzene	ND (1.0)	0.1	8260B	200	1	06/19/13 13:14	CWF0221	CF31919
Styrene	ND (1.0)	0.1	8260B	100	1	06/19/13 13:14	CWF0221	CF31919
tert-Butylbenzene	ND (1.0)	0.1	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
Tertiary-amyl methyl ether	ND (1.0)	0.2	8260B		1	06/19/13 13:14	CWF0221	CF31919



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
 Client Project ID: Samuel Barnet Blvd N Bedford
 Client Sample ID: MW-3
 Date Sampled: 06/17/13 12:05
 Percent Solids: N/A
 Initial Volume: 5
 Final Volume: 5
 Extraction Method: 5030B

ESS Laboratory Work Order: 1306298
 ESS Laboratory Sample ID: 1306298-03
 Sample Matrix: Ground Water
 Units: ug/L
 Analyst: MJM

8260B Volatile Organic Compounds

MA - RCGW1

<u>Analyte</u>	<u>Results (MRL)</u>	<u>MDL</u>	<u>Method</u>	<u>Limit</u>	<u>DF</u>	<u>Analyzed</u>	<u>Sequence</u>	<u>Batch</u>
Tetrachloroethene	ND (1.0)	0.2	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
Tetrahydrofuran	ND (5.0)	1.6	8260B	5000	1	06/19/13 13:14	CWF0221	CF31919
Toluene	ND (1.0)	0.1	8260B	1000	1	06/19/13 13:14	CWF0221	CF31919
trans-1,2-Dichloroethene	ND (1.0)	0.3	8260B	90	1	06/19/13 13:14	CWF0221	CF31919
trans-1,3-Dichloropropene	ND (0.4)	0.2	8260B	0.4	1	06/19/13 13:14	CWF0221	CF31919
Trichloroethene	ND (1.0)	0.2	8260B	5	1	06/19/13 13:14	CWF0221	CF31919
Trichlorofluoromethane	ND (1.0)	0.4	8260B	10000	1	06/19/13 13:14	CWF0221	CF31919
Vinyl Chloride	ND (1.0)	0.2	8260B	2	1	06/19/13 13:14	CWF0221	CF31919
Xylene O	ND (1.0)	0.1	8260B	5000	1	06/19/13 13:14	CWF0221	CF31919
Xylene P,M	ND (2.0)	0.2	8260B	5000	1	06/19/13 13:14	CWF0221	CF31919
Xylenes (Total)	ND (2.0)		8260B	5000	1	06/19/13 13:14		[CALC]

	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>89 %</i>		<i>70-130</i>
<i>Surrogate: Dibromofluoromethane</i>	<i>93 %</i>		<i>70-130</i>
<i>Surrogate: Toluene-d8</i>	<i>90 %</i>		<i>70-130</i>



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CF31919 - 5030B

Blank

1,1,1,2-Tetrachloroethane	ND	1.0	ug/L							
1,1,1-Trichloroethane	ND	1.0	ug/L							
1,1,2,2-Tetrachloroethane	ND	0.5	ug/L							
1,1,2-Trichloroethane	ND	1.0	ug/L							
1,1-Dichloroethane	ND	1.0	ug/L							
1,1-Dichloroethene	ND	1.0	ug/L							
1,1-Dichloropropene	ND	2.0	ug/L							
1,2,3-Trichlorobenzene	ND	1.0	ug/L							
1,2,3-Trichloropropane	ND	1.0	ug/L							
1,2,4-Trichlorobenzene	ND	1.0	ug/L							
1,2,4-Trimethylbenzene	ND	1.0	ug/L							
1,2-Dibromo-3-Chloropropane	ND	5.0	ug/L							
1,2-Dibromoethane	ND	1.0	ug/L							
1,2-Dichlorobenzene	ND	1.0	ug/L							
1,2-Dichloroethane	ND	1.0	ug/L							
1,2-Dichloropropane	ND	1.0	ug/L							
1,3,5-Trimethylbenzene	ND	1.0	ug/L							
1,3-Dichlorobenzene	ND	1.0	ug/L							
1,3-Dichloropropane	ND	1.0	ug/L							
1,4-Dichlorobenzene	ND	1.0	ug/L							
1,4-Dioxane - Screen	ND	500	ug/L							
2,2-Dichloropropane	ND	1.0	ug/L							
2-Butanone	ND	10.0	ug/L							
2-Chlorotoluene	ND	1.0	ug/L							
2-Hexanone	ND	10.0	ug/L							
4-Chlorotoluene	ND	1.0	ug/L							
4-Isopropyltoluene	ND	1.0	ug/L							
4-Methyl-2-Pentanone	ND	10.0	ug/L							
Acetone	ND	10.0	ug/L							
Benzene	ND	1.0	ug/L							
Bromobenzene	ND	2.0	ug/L							
Bromochloromethane	ND	1.0	ug/L							
Bromodichloromethane	ND	0.6	ug/L							
Bromoform	ND	1.0	ug/L							
Bromomethane	ND	2.0	ug/L							
Carbon Disulfide	ND	1.0	ug/L							
Carbon Tetrachloride	ND	1.0	ug/L							
Chlorobenzene	ND	1.0	ug/L							
Chloroethane	ND	2.0	ug/L							
Chloroform	ND	1.0	ug/L							
Chloromethane	ND	2.0	ug/L							
cis-1,2-Dichloroethene	ND	1.0	ug/L							
cis-1,3-Dichloropropene	ND	0.4	ug/L							
Dibromochloromethane	ND	1.0	ug/L							



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CF31919 - 5030B

Dibromomethane	ND	1.0	ug/L							
Dichlorodifluoromethane	ND	2.0	ug/L							
Diethyl Ether	ND	1.0	ug/L							
Di-isopropyl ether	ND	1.0	ug/L							
Ethyl tertiary-butyl ether	ND	1.0	ug/L							
Ethylbenzene	ND	1.0	ug/L							
Hexachlorobutadiene	ND	0.6	ug/L							
Hexachloroethane	ND	1.0	ug/L							
Isopropylbenzene	ND	1.0	ug/L							
Methyl tert-Butyl Ether	ND	1.0	ug/L							
Methylene Chloride	ND	2.0	ug/L							
Naphthalene	ND	1.0	ug/L							
n-Butylbenzene	ND	1.0	ug/L							
n-Propylbenzene	ND	1.0	ug/L							
sec-Butylbenzene	ND	1.0	ug/L							
Styrene	ND	1.0	ug/L							
tert-Butylbenzene	ND	1.0	ug/L							
Tertiary-amyl methyl ether	ND	1.0	ug/L							
Tetrachloroethene	ND	1.0	ug/L							
Tetrahydrofuran	ND	5.0	ug/L							
Toluene	ND	1.0	ug/L							
trans-1,2-Dichloroethene	ND	1.0	ug/L							
trans-1,3-Dichloropropene	ND	0.4	ug/L							
Trichloroethene	ND	1.0	ug/L							
Trichlorofluoromethane	ND	1.0	ug/L							
Vinyl Chloride	ND	1.0	ug/L							
Xylene O	ND	1.0	ug/L							
Xylene P,M	ND	2.0	ug/L							
Surrogate: 1,2-Dichloroethane-d4	22.2		ug/L	25.00		89	70-130			
Surrogate: 4-Bromofluorobenzene	23.0		ug/L	25.00		92	70-130			
Surrogate: Dibromofluoromethane	23.9		ug/L	25.00		96	70-130			
Surrogate: Toluene-d8	22.7		ug/L	25.00		91	70-130			

LCS

1,1,1,2-Tetrachloroethane	9.9		ug/L	10.00		99	70-130			
1,1,1-Trichloroethane	9.4		ug/L	10.00		94	70-130			
1,1,2,2-Tetrachloroethane	9.7		ug/L	10.00		97	70-130			
1,1,2-Trichloroethane	9.7		ug/L	10.00		97	70-130			
1,1-Dichloroethane	9.0		ug/L	10.00		90	70-130			
1,1-Dichloroethene	9.0		ug/L	10.00		90	70-130			
1,1-Dichloropropene	10.4		ug/L	10.00		104	70-130			
1,2,3-Trichlorobenzene	11.3		ug/L	10.00		113	70-130			
1,2,3-Trichloropropane	10.1		ug/L	10.00		101	70-130			
1,2,4-Trichlorobenzene	11.2		ug/L	10.00		112	70-130			
1,2,4-Trimethylbenzene	10.6		ug/L	10.00		106	70-130			
1,2-Dibromo-3-Chloropropane	9.8		ug/L	10.00		98	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
 Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CF31919 - 5030B

1,2-Dibromoethane	9.5		ug/L	10.00		95	70-130			
1,2-Dichlorobenzene	11.0		ug/L	10.00		110	70-130			
1,2-Dichloroethane	9.3		ug/L	10.00		93	70-130			
1,2-Dichloropropane	9.4		ug/L	10.00		94	70-130			
1,3,5-Trimethylbenzene	11.0		ug/L	10.00		110	70-130			
1,3-Dichlorobenzene	10.2		ug/L	10.00		102	70-130			
1,3-Dichloropropane	9.7		ug/L	10.00		97	70-130			
1,4-Dichlorobenzene	10.3		ug/L	10.00		103	70-130			
1,4-Dioxane - Screen	207		ug/L	200.0		103	0-332			
2,2-Dichloropropane	9.8		ug/L	10.00		98	70-130			
2-Butanone	43.5		ug/L	50.00		87	70-130			
2-Chlorotoluene	10.5		ug/L	10.00		105	70-130			
2-Hexanone	46.9		ug/L	50.00		94	70-130			
4-Chlorotoluene	10.2		ug/L	10.00		102	70-130			
4-Isopropyltoluene	10.8		ug/L	10.00		108	70-130			
4-Methyl-2-Pentanone	48.8		ug/L	50.00		98	70-130			
Acetone	48.7		ug/L	50.00		97	70-130			
Benzene	10.0		ug/L	10.00		100	70-130			
Bromobenzene	10.6		ug/L	10.00		106	70-130			
Bromochloromethane	9.8		ug/L	10.00		98	70-130			
Bromodichloromethane	9.3		ug/L	10.00		93	70-130			
Bromoform	10.0		ug/L	10.00		100	70-130			
Bromomethane	8.8		ug/L	10.00		88	70-130			
Carbon Disulfide	9.9		ug/L	10.00		99	70-130			
Carbon Tetrachloride	9.0		ug/L	10.00		90	70-130			
Chlorobenzene	10.1		ug/L	10.00		101	70-130			
Chloroethane	9.0		ug/L	10.00		90	70-130			
Chloroform	9.5		ug/L	10.00		95	70-130			
Chloromethane	8.7		ug/L	10.00		87	70-130			
cis-1,2-Dichloroethene	9.2		ug/L	10.00		92	70-130			
cis-1,3-Dichloropropene	10.7		ug/L	10.00		107	70-130			
Dibromochloromethane	9.4		ug/L	10.00		94	70-130			
Dibromomethane	9.0		ug/L	10.00		90	70-130			
Dichlorodifluoromethane	7.4		ug/L	10.00		74	70-130			
Diethyl Ether	8.0		ug/L	10.00		80	70-130			
Di-isopropyl ether	8.9		ug/L	10.00		89	70-130			
Ethyl tertiary-butyl ether	9.4		ug/L	10.00		94	70-130			
Ethylbenzene	10.2		ug/L	10.00		102	70-130			
Hexachlorobutadiene	11.3		ug/L	10.00		113	70-130			
Hexachloroethane	10.5		ug/L	10.00		105	70-130			
Isopropylbenzene	10.6		ug/L	10.00		106	70-130			
Methyl tert-Butyl Ether	9.5		ug/L	10.00		95	70-130			
Methylene Chloride	9.1		ug/L	10.00		91	70-130			
Naphthalene	11.5		ug/L	10.00		115	70-130			
n-Butylbenzene	10.6		ug/L	10.00		106	70-130			



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CF31919 - 5030B

n-Propylbenzene	10.4		ug/L	10.00		104	70-130			
sec-Butylbenzene	10.9		ug/L	10.00		109	70-130			
Styrene	10.4		ug/L	10.00		104	70-130			
tert-Butylbenzene	10.7		ug/L	10.00		107	70-130			
Tertiary-amyl methyl ether	9.2		ug/L	10.00		92	70-130			
Tetrachloroethene	9.6		ug/L	10.00		96	70-130			
Tetrahydrofuran	9.9		ug/L	10.00		99	70-130			
Toluene	10.3		ug/L	10.00		103	70-130			
trans-1,2-Dichloroethene	9.1		ug/L	10.00		91	70-130			
trans-1,3-Dichloropropene	9.0		ug/L	10.00		90	70-130			
Trichloroethene	9.3		ug/L	10.00		93	70-130			
Trichlorofluoromethane	8.0		ug/L	10.00		80	70-130			
Vinyl Chloride	9.3		ug/L	10.00		93	70-130			
Xylene O	10.4		ug/L	10.00		104	70-130			
Xylene P,M	20.7		ug/L	20.00		103	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>24.8</i>		<i>ug/L</i>	<i>25.00</i>		<i>99</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>25.1</i>		<i>ug/L</i>	<i>25.00</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>26.1</i>		<i>ug/L</i>	<i>25.00</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>26.0</i>		<i>ug/L</i>	<i>25.00</i>		<i>104</i>	<i>70-130</i>			

LCS Dup

1,1,1,2-Tetrachloroethane	10.4		ug/L	10.00		104	70-130	5	25	
1,1,1-Trichloroethane	10.3		ug/L	10.00		103	70-130	9	25	
1,1,2,2-Tetrachloroethane	10.6		ug/L	10.00		106	70-130	9	25	
1,1,2-Trichloroethane	9.8		ug/L	10.00		98	70-130	1	25	
1,1-Dichloroethane	9.6		ug/L	10.00		96	70-130	7	25	
1,1-Dichloroethene	10.1		ug/L	10.00		101	70-130	12	25	
1,1-Dichloropropene	10.9		ug/L	10.00		109	70-130	5	25	
1,2,3-Trichlorobenzene	11.4		ug/L	10.00		114	70-130	1	25	
1,2,3-Trichloropropane	10.2		ug/L	10.00		102	70-130	0.6	25	
1,2,4-Trichlorobenzene	11.1		ug/L	10.00		111	70-130	0.5	25	
1,2,4-Trimethylbenzene	10.8		ug/L	10.00		108	70-130	2	25	
1,2-Dibromo-3-Chloropropane	10.0		ug/L	10.00		100	70-130	2	25	
1,2-Dibromoethane	10.1		ug/L	10.00		101	70-130	6	25	
1,2-Dichlorobenzene	10.7		ug/L	10.00		107	70-130	3	25	
1,2-Dichloroethane	10.0		ug/L	10.00		100	70-130	7	25	
1,2-Dichloropropane	9.3		ug/L	10.00		93	70-130	1	25	
1,3,5-Trimethylbenzene	11.1		ug/L	10.00		111	70-130	1	25	
1,3-Dichlorobenzene	10.7		ug/L	10.00		107	70-130	4	25	
1,3-Dichloropropane	10.5		ug/L	10.00		105	70-130	8	25	
1,4-Dichlorobenzene	10.6		ug/L	10.00		106	70-130	3	25	
1,4-Dioxane - Screen	199		ug/L	200.0		100	0-332	4	200	
2,2-Dichloropropane	9.8		ug/L	10.00		98	70-130	0.5	25	
2-Butanone	52.1		ug/L	50.00		104	70-130	18	25	
2-Chlorotoluene	11.0		ug/L	10.00		110	70-130	5	25	
2-Hexanone	53.1		ug/L	50.00		106	70-130	12	25	



CERTIFICATE OF ANALYSIS

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ESS Laboratory Work Order: 1306298

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CF31919 - 5030B

4-Chlorotoluene	10.8		ug/L	10.00		108	70-130	6	25	
4-Isopropyltoluene	10.6		ug/L	10.00		106	70-130	2	25	
4-Methyl-2-Pentanone	49.5		ug/L	50.00		99	70-130	1	25	
Acetone	65.0		ug/L	50.00		130	70-130	29	25	D+
Benzene	10.4		ug/L	10.00		104	70-130	4	25	
Bromobenzene	11.0		ug/L	10.00		110	70-130	4	25	
Bromochloromethane	10.4		ug/L	10.00		104	70-130	6	25	
Bromodichloromethane	9.7		ug/L	10.00		97	70-130	4	25	
Bromoform	10.0		ug/L	10.00		100	70-130	0.1	25	
Bromomethane	8.9		ug/L	10.00		89	70-130	1	25	
Carbon Disulfide	10.5		ug/L	10.00		105	70-130	6	25	
Carbon Tetrachloride	9.5		ug/L	10.00		95	70-130	5	25	
Chlorobenzene	10.6		ug/L	10.00		106	70-130	5	25	
Chloroethane	8.9		ug/L	10.00		89	70-130	2	25	
Chloroform	10.2		ug/L	10.00		102	70-130	7	25	
Chloromethane	9.0		ug/L	10.00		90	70-130	4	25	
cis-1,2-Dichloroethene	10.2		ug/L	10.00		102	70-130	10	25	
cis-1,3-Dichloropropene	10.8		ug/L	10.00		108	70-130	1	25	
Dibromochloromethane	10.1		ug/L	10.00		101	70-130	7	25	
Dibromomethane	9.4		ug/L	10.00		94	70-130	3	25	
Dichlorodifluoromethane	7.0		ug/L	10.00		70	70-130	5	25	
Diethyl Ether	9.1		ug/L	10.00		91	70-130	13	25	
Di-isopropyl ether	9.6		ug/L	10.00		96	70-130	8	25	
Ethyl tertiary-butyl ether	9.7		ug/L	10.00		97	70-130	3	25	
Ethylbenzene	11.0		ug/L	10.00		110	70-130	7	25	
Hexachlorobutadiene	11.5		ug/L	10.00		115	70-130	2	25	
Hexachloroethane	10.8		ug/L	10.00		108	70-130	3	25	
Isopropylbenzene	10.8		ug/L	10.00		108	70-130	2	25	
Methyl tert-Butyl Ether	10.2		ug/L	10.00		102	70-130	7	25	
Methylene Chloride	9.1		ug/L	10.00		91	70-130	0.6	25	
Naphthalene	11.4		ug/L	10.00		114	70-130	1	25	
n-Butylbenzene	10.7		ug/L	10.00		107	70-130	0.3	25	
n-Propylbenzene	11.0		ug/L	10.00		110	70-130	5	25	
sec-Butylbenzene	11.1		ug/L	10.00		111	70-130	1	25	
Styrene	10.5		ug/L	10.00		105	70-130	1	25	
tert-Butylbenzene	11.1		ug/L	10.00		111	70-130	4	25	
Tertiary-amyl methyl ether	10.0		ug/L	10.00		100	70-130	8	25	
Tetrachloroethene	10.3		ug/L	10.00		103	70-130	7	25	
Tetrahydrofuran	8.4		ug/L	10.00		84	70-130	16	25	
Toluene	10.4		ug/L	10.00		104	70-130	1	25	
trans-1,2-Dichloroethene	10.0		ug/L	10.00		100	70-130	10	25	
trans-1,3-Dichloropropene	9.5		ug/L	10.00		95	70-130	5	25	
Trichloroethene	10.1		ug/L	10.00		101	70-130	8	25	
Trichlorofluoromethane	9.0		ug/L	10.00		90	70-130	12	25	
Vinyl Chloride	9.4		ug/L	10.00		94	70-130	0.9	25	



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
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ESS Laboratory Work Order: 1306298

Quality Control Data

Analyte	Result	MRL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qualifier
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8260B Volatile Organic Compounds

Batch CF31919 - 5030B

Xylene O	10.6		ug/L	10.00		106	70-130	3	25	
Xylene P,M	21.2		ug/L	20.00		106	70-130	3	25	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>26.1</i>		ug/L	<i>25.00</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>24.9</i>		ug/L	<i>25.00</i>		<i>100</i>	<i>70-130</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>26.0</i>		ug/L	<i>25.00</i>		<i>104</i>	<i>70-130</i>			
<i>Surrogate: Toluene-d8</i>	<i>26.3</i>		ug/L	<i>25.00</i>		<i>105</i>	<i>70-130</i>			



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
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Notes and Definitions

- U Analyte included in the analysis, but not detected
- J Reported between MDL and MRL; Estimated value.
- D+ Relative percent difference for duplicate is outside of criteria (D+).
- C+ Continuing Calibration recovery is above upper control limit (C+).
- ND Analyte NOT DETECTED at or above the MRL (LOQ), LOD for DoD Reports, MDL for J-Flagged Analytes
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- MDL Method Detection Limit
- MRL Method Reporting Limit
- LOD Limit of Detection
- LOQ Limit of Quantitation
- DL Detection Limit
- I/V Initial Volume
- F/V Final Volume
- § Subcontracted analysis; see attached report
- 1 Range result excludes concentrations of surrogates and/or internal standards eluting in that range.
- 2 Range result excludes concentrations of target analytes eluting in that range.
- 3 Range result excludes the concentration of the C9-C10 aromatic range.
- Avg Results reported as a mathematical average.
- NR No Recovery
- [CALC] Calculated Analyte
- SUB Subcontracted analysis; see attached report



CERTIFICATE OF ANALYSIS

Client Name: Civil & Environmental Consultants, Inc.
Client Project ID: Samuel Barnet Blvd N Bedford

ESS Laboratory Work Order: 1306298

ESS LABORATORY CERTIFICATIONS AND ACCREDITATIONS

ENVIRONMENTAL

Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)

A2LA Accredited: Testing Cert# 2864.01
<http://www.a2la.org/scopepdf/2864-01.pdf>

Rhode Island Potable and Non Potable Water: LAI00179
<http://www.health.ri.gov/labs/waterlabs-instate.php>

Connecticut Potable and Non Potable Water, Solid and Hazardous Waste: PH-0750
http://www.ct.gov/dph/lib/dph/environmental_health/environmental_laboratories/pdf/OutofStateCommercialLaboratories.pdf

Maine Potable and Non Potable Water, and Solid and Hazardous Waste: RI0002
http://www.maine.gov/dep/blwq/topic/vessel/lab_list.pdf

Massachusetts Potable and Non Potable Water: M-RI002
<http://public.dep.state.ma.us/labcert/labcert.aspx>

New Hampshire (NELAP accredited) Potable and Non Potable Water, Solid and Hazardous Waste: 2424
<http://www4.egov.nh.gov/des/nhelap/namesearch.asp>

New York (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: 11313
<http://www.wadsworth.org/labcert/elap/comm.html>

New Jersey (NELAP accredited) Non Potable Water, Solid and Hazardous Waste: RI006
http://datamine2.state.nj.us/dep/DEP_OPRA/

United States Department of Agriculture Soil Permit: S-54210

Maryland Potable Water: 301
http://www.mde.state.md.us/assets/document/WSP_labs-2009apr20.pdf

CHEMISTRY

A2LA Accredited: Testing Cert # 2864.01
Lead in Paint, Phthalates, Lead in Children's Metals Products (Including Jewelry)
<http://www.A2LA.org/dirsearchnew/newsearch.cfm>

CPSC ID# 1141
Lead Paint, Lead in Children's Metals Jewelry
<http://www.cpsc.gov/cgi-bin/labapplist.aspx>

Sample and Cooler Receipt Checklist

Client: CEC, INC.
Client Project ID: _____
Shipped/Delivered Via: ESS Courier

ESS Project ID: 13060298
Date Project Due: 6/25/13
Days For Project: 5 Day

Items to be checked upon receipt:

- | | | | |
|---|-------------------------------|---|---|
| 1. Air Bill Manifest Present? | <input type="checkbox"/> * No | 10. Are the samples properly preserved? | <input type="checkbox"/> Yes |
| Air No.: | | 11. Proper sample containers used? | <input type="checkbox"/> Yes |
| 2. Were Custody Seals Present? | <input type="checkbox"/> No | 12. Any air bubbles in the VOA vials? | <input type="checkbox"/> No |
| 3. Were Custody Seals Intact? | <input type="checkbox"/> N/A | 13. Holding times exceeded? | <input type="checkbox"/> No |
| 4. Is Radiation count < 100 CPM? | <input type="checkbox"/> Yes | 14. Sufficient sample volumes? | <input type="checkbox"/> Yes |
| 5. Is a cooler present? | <input type="checkbox"/> Yes | 15. Any Subcontracting needed? | <input type="checkbox"/> No |
| <input type="text" value="Cooler Temp: 0.3"/> | | 16. Are ESS labels on correct containers? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| <input type="text" value="Iced With: Ice"/> | | 17. Were samples received intact? | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 6. Was COC included with samples? | <input type="checkbox"/> Yes | ESS Sample IDs: _____ | |
| 7. Was COC signed and dated by client? | <input type="checkbox"/> Yes | Sub Lab: _____ | |
| 8. Does the COC match the sample | <input type="checkbox"/> Yes | Analysis: _____ | |
| 9. Is COC complete and correct? | <input type="checkbox"/> Yes | TAT: _____ | |

18. Was there need to call project manager to discuss status? If yes, please explain.

Who was called?: _____ By whom? _____

Sample Number	Properly Preserved	Container Type	# of Containers	Preservative
1	Yes	40 ml - VOA	3	HCL
2	Yes	40 ml - VOA	3	HCL
3	Yes	40 ml - VOA	3	HCL

Completed By: [Signature]

Date/Time: 6/18/13 1755

Reviewed By: [Signature]

Date/Time: 6/18/13 1805

