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September 10, 2014
File: 190500751

Todd Caffoe, P.E
New York State Department of Environmental Conservation
Division of Environmental Remediation
6274 East Avon-Lima Road
Avon, NY 14414

Reference: Brownfield Cleanup Program
Monthly Progress Report #18
Site #C828184
Former Carriage Factory
33 Litchfield Street
Rochester, Monroe County, New York

Dear Todd,

On behalf of Carriage Factory Special Needs Apartments, LP (CFSNA), Stantec Consulting Services Inc. (Stantec) has prepared this Monthly Progress Report #18 for the Brownfield Cleanup Program (BCP) at the Former Carriage Factory located at 33 Litchfield Street in the City of Rochester, Monroe County, New York (Site). This report covers activities that took place during the month of August 2014.

1. Actions During The Previous Month

- On August 4, two 55-gallon drums of oil-soaked sorbent pads were removed from the site by NYETECH and disposed at Cycle Chem, Inc. in Lewisberry, PA. The pads were used to soak up floating oil in the elevator shaft during construction activities.
- During the period August 4 through August 8, the contractor made eleven small excavations for the placement of parking lot light pole bases. The excavations penetrated the demarcation layer that covers the urban fill material left in place by approximately 1 to 1.5 feet. The clean soil removed from above the demarcation layer was staged separately from the urban fill material removed from below the layer. No positive PID readings were observed in any materials removed. All urban fill was backfilled below the demarcation layer, and the demarcation layer was replaced where it was penetrated. The staged clean fill was largely placed on top of the demarcation layer; however, a small quantity of excess clean fill, which was displaced, was distributed to areas of the site where clean fill was needed to reach design grades.

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- On August 6 through August 8, twelve groundwater monitoring wells were sampled as outlined in the Enhanced Reductive Dechlorination IRM Work Plan. The attached Table 1 summarizes the recorded groundwater field parameters for this event, the previous post-injection events, and the pre-injection sampling event. The field data indicate the desired anaerobic, reducing conditions (low dissolved oxygen concentrations and negative oxidation-reduction potential [ORP] values) continue to be present in each of the wells that received injections of the sodium lactate solution. Most noteworthy is that the average ORP value continued its desired decrease from approximately -174 to -243 millivolts (mV) between the July and August sampling events. Samples for dehalococcoides microbacteria population analysis were taken from monitoring wells B102-MW and B108-MW.

- During the period August 11 through August 18, the contractor imported and placed approximately 170 tons of clean fill material and 374 cubic yards of topsoil material to meet design specifications. The fill material was imported from The Dolomite Group's Ogden, NY quarry and the topsoil material was imported from Stone Brook Apartments in Egypt, NY. The material was sampled during July; the results were submitted to the Department for review on August 1, and use of the material was approved by the Department on August 6. Stantec observed the placement of the materials and confirmed that the sources of the materials were those that were sampled. No positive PID readings, odors or other issues were observed during the placement of the imported fill or topsoil.

2. Data Received or Generated in the Previous Month

- Laboratory results were received as follows:
  - Results from the above referenced clean fill material and topsoil material samples were received on August 1 and submitted to the Department for review and approval.
  - Results from the third monthly post-injection ERD monitoring groundwater sampling event performed on August 6-8 were received on August 26 (Table 2). Results from this event, which was postponed by one week due to record rainfall the prior week, exhibited total chlorinated volatile organic compound (CVOC) concentrations which were observed to have increased in three of the 12 wells sampled: RW-2, RW-4, and RW-6. However, the concentrations of the parent compound PCE decreased in all wells and concentrations of the other parent compound, TCE, only increased slightly in three wells (RW-1, RW-4, and B-106). It is believed the record rainfall during the preceding week and the unusually rainy month (July 2014 was the fourth wettest on record) that preceded this sampling

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event may have contributed to some of the temporary increases in contaminant concentrations. Although certain monitoring wells exhibited increases in CVOC levels, in all cases this was due to increases in concentrations of the "daughter" products cis-1,2-DCE , trans-1,2-DCE and vinyl chloride, which are created during the process of reductive dechlorination. These results demonstrate a normal progression of dechlorination reactions, and the parent compound and breakdown product concentrations are expected to continue to reduce further with time.

- Analytical results for the samples for dehalococcoides microbacteria population were received on August 25 (Appendix A). The results exhibit moderate to high populations which were more than a three order of magnitude increase from the pre-injection non-detect levels. This indicates the sodium lactate injections have created the anticipated favorable reducing conditions necessary for the dehalococcoides microbacteria population to flourish.

3. Deliverables Completed and Submitted during the Previous Month

- The Draft Site Management Plan was submitted on August 1.
- The soil sampling results for the proposed clean fill and clean topsoil materials were submitted to the Department on August 1.
- Monthly Progress Report No. 17 was submitted on August 8.

4. Actions Scheduled for the Next Reporting Period

The following activities are anticipated to occur in September 2014:

- Submission of the IRM Construction Completion Report and Alternatives Analysis Report/Remedial Action Work Plan; and
- Monitoring of construction-related activities which is expected to include completion of the SSDS system installation activities and installation of the permanent sump pump and cover in the elevator pit.

5. Completion, Delays and Future Schedule

Construction delays have occurred in the elevator shaft pit with the construction of a permanent sump enclosure, and completion of the SSDS.

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33 Litchfield Street, Rochester, NY

Closing

If you have any questions or require further information, please call me at any time.

Regards,

STANTEC CONSULTING SERVICES INC.

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Attachments

- Table 1 – Summary of Groundwater Field Parameters
- Table 2 – Summary of Analytical Results in Groundwater
- Appendix A - Dehalococcoides microbacteria population report

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Table 1 Summary of Groundwater Field Parameters
Former Carriage Factory
33 Litchfield Street, Rochester, NY

Sample Location		B101-MW	B102-MW					B106-MW					B108-MW				
Purge Date		**21-May-13**	**22-May-13**	**27-Mar-14**	**28-May-14**	**2-Jul-14**	**6-Aug-14**	**23-May-13**	**26-Mar-14**	**28-May-14**	**2-Jul-14**	**7-Aug-14**	**23-May-13**	**26-Mar-14**	**28-May-14**	**2-Jul-14**	**8-Aug-14**
Purge Methodology		Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow
Purge Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Sample Date		**21-May-13**	**22-May-13**	**27-Mar-14**	**28-May-14**	**2-Jul-14**	**6-Aug-14**	**23-May-13**	**26-Mar-14**	**28-May-14**	**2-Jul-14**	**7-Aug-14**	**23-May-13**	**26-Mar-14**	**28-May-14**	**2-Jul-14**	**8-Aug-14**
Sampling Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Field Parameters	**Units**																
Conductivity	mS/cm	0.99	0.86	0.90	0.92	1.41	1.03	0.92	1.08	1.29	2.20	1.30	0.95	1.06	1.05	1.27	1.22
Dissolved Oxygen	mg/L	1.34	0.10	0.12	0.19	0.14	0.03	0.13	0.07	0.08	0.17	0.11	0.13	0.13	0.10	0.18	0.13
Oxidation Reduction Potential	mV	-25.0	13.3	73.6	-49.7	-271.6	-284.0	17.8	90.8	-96.3	-231.4	-274.4	29.1	137.1	-69.9	-216.0	-293.4
pH	S.U.	7.02	6.87	7.02	7.15	7.26	7.04	6.99	7.05	7.15	6.96	7.07	7.15	7.04	7.21	7.04	7.02
Temperature	deg C	13.4	20.5	3.7	18.4	16.2	20.4	16.1	3.0	18.3	15.7	16.5	13.6	10.6	19.5	16.1	15.4
Turbidity	NTU	0.68	4.07	11.71	1.87	1.79	1.45	4.77	1.84	1.48	1.46	2.1	0.62	0.28	3.54	0.86	3.78
Volume Purged	gal	0.8	1.2	0.5	2.6	2.0	2.0	1.1	0.7	1.8	1.5	1.7	0.5	0.7	1.8	1.1	1.55

Sample Location		RW-1					RW-2					RW-3				
Purge Date		**23-May-13**	**26-Mar-14**	**29-May-14**	**1-Jul-14**	**8-Aug-14**	**21-May-13**	**26-Mar-14**	**29-May-14**	**1-Jul-14**	**8-Aug-14**	**22-May-13**	**26-Mar-14**	**29-May-14**	**1-Jul-14**	**7-Aug-14**
Purge Methodology		Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow
Purge Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Sample Date		**23-May-13**	**26-Mar-14**	**29-May-14**	**1-Jul-14**	**8-Aug-14**	**21-May-13**	**26-Mar-14**	**29-May-14**	**1-Jul-14**	**8-Aug-14**	**22-May-13**	**26-Mar-14**	**29-May-14**	**1-Jul-14**	**7-Aug-14**
Sampling Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Field Parameters	**Units**															
Conductivity	mS/cm	0.74	1.07	1.22	2.12	1.15	0.85	1.08	2.34	1.70	1.68	0.87	1.09	1.79	1.31	1.00
Dissolved Oxygen	mg/L	0.13	0.01	0.11	0.08	0.14	0.28	0.03	0.20	0.11	0.16	0.15	0.06	0.08	0.06	0.23
Oxidation Reduction Potential	mV	-94.3	179.0	-147.8	-252.9	-313.0	-30.3	156.8	-171.5	-172.0	-292.5	87.3	157.6	-132.8	-213.0	-216.8
pH	S.U.	7.19	7.05	7.16	6.75	7.05	7.36	7.11	6.94	7.56	6.93	7.39	7.07	7.45	7.67	7.35
Temperature	deg C	12.5	8.6	18.8	16.5	15.0	12.7	7.2	16.8	16.8	14.9	12.4	9.3	17.7	15.3	15
Turbidity	NTU	10.55	12.37	1.66	6.31	3.19	5.23	3.81	7.53	2.34	1.71	0.88	1.29	1.24	1.72	1.62
Volume Purged	gal	0.7	0.7	1.5	1.4	1.8	1.2	0.8	1.4	0.3	1.15	0.5	0.7	1.5	1.8	0.5

Sample Location		RW-4					RW-5					RW-6				
Purge Date		**22-May-13**	**26-Mar-14**	**29-May-14**	**2-Jul-14**	**6-Aug-14**	**21-May-13**	**27-Mar-14**	**29-May-14**	**2-Jul-14**	**7-Aug-14**	**20-May-13**	**27-Mar-14**	**28-May-14**	**1-Jul-14**	**7-Aug-14**
Purge Methodology		Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow
Purge Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Sample Date		**22-May-13**	**26-Mar-14**	**29-May-14**	**2-Jul-14**	**6-Aug-14**	**21-May-13**	**27-Mar-14**	**29-May-14**	**2-Jul-14**	**7-Aug-14**	**20-May-13**	**27-Mar-14**	**28-May-14**	**1-Jul-14**	**7-Aug-14**
Sampling Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Field Parameters	**Units**															
Conductivity	mS/cm	0.91	0.88	0.89	1.94	1.67	0.89	1.08	1.40	1.86	1.20	0.93	1.07	1.72	1.34	1.30
Dissolved Oxygen	mg/L	0.11	0.17	0.06	0.15	0.04	0.28	0.00	0.06	0.19	0.08	0.08	0.01	0.07	0.10	0.14
Oxidation Reduction Potential	mV	38.6	132.4	29.3	-180.2	-347	-2.3	74.7	-95.6	-137.8	-170.0	-10.6	138.3	-69.0	-136.7	-306.1
pH	S.U.	6.91	7.08	7.10	6.90	7.05	7.07	7.29	7.27	7.03	7.07	7.13	7.33	7.03	6.91	7.00
Temperature	deg C	20.0	2.4	25.5	17.4	19.2	16.2	5.7	22.8	17.3	19.9	19.0	6.1	17.6	21.2	17.2
Turbidity	NTU	5.68	5.81	1.72	3.18	1.93	2.98	1.22	7.10	1.88	3.89	7.08[a]	5.46	7.48	4.83	4.79
Volume Purged	gal	0.8	1.8	0.9	1.9	1.1	1.1	3.2	0.5	1.2	1.5	1.3	1.1	1.2	0.7	1.0

Sample Location		RW-7					RW-8	RW-9					RW-11		RW-12			
Purge Date		**20-May-13**	**27-Mar-14**	**28-May-14**	**1-Jul-14**	**7-Aug-14**	**20-May-13**	**21-May-13**	**27-Mar-14**	**29-May-14**	**1-Jul-14**	**7-Aug-14**	**22-May-13**	**27-Mar-14**	**20-May-13**	**28-May-14**	**2-Jul-14**	**7-Aug-14**
Purge Methodology		Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow	Low flow
Purge Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Sample Date		**20-May-13**	**27-Mar-14**	**28-May-14**	**1-Jul-14**	**7-Aug-14**	**20-May-13**	**21-May-13**	**27-Mar-14**	**29-May-14**	**1-Jul-14**	**7-Aug-14**	**22-May-13**	**27-Mar-14**	**20-May-13**	**28-May-14**	**2-Jul-14**	**7-Aug-14**
Sampling Method		Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic	Peristaltic
Field Parameters	**Units**																	
Conductivity	mS/cm	1.02	1.21	1.30	1.17	1.07	1.04	0.94	1.05	0.68	0.74	0.85	0.79	0.82	1.02	1.76	2.09	2.00
Dissolved Oxygen	mg/L	0.08	0.38	0.31	0.13	0.11	1.06	2.48	2.45	5.52	2.37	2.43	2.36	1.62	0.06	0.06	0.24	0.45
Oxidation Reduction Potential	mV	29.4	92.6	-37.6	-104.6	-303.6	77.0	49.4	104.6	28.1	33.9	51.0	94.5	88.8	20.0	-149.5	-204.6	-159.7
pH	S.U.	7.06	7.27	7.08	6.99	7.07	7.05	7.13	7.29	7.44	7.12	7.06	7.15	7.33	7.10	7.25	7.11	7.17
Temperature	deg C	16.8	6.7	20.3	18.4	16.3	14.4	14.0	9.4	20.7	19.0	15.5	14.6	5.1	16.0	24.1	17.4	18.1
Turbidity	NTU	10.38	1.36	3.12	1.12	1.53	2.54	0.33	0.50	3.62	1.80	1.06	0.11[b]	1.31	—[c]	1.10	5.55	2.82
Volume Purged	gal	1.2	0.9	1.8	1.2	1.5	1.0	0.8	1.2	0.7	0.35	0.7	0.4	0.7	1.0	2.0	0.9	1.3

Sample Location		RW-13	
Purge Date		**20-May-13**	**27-Mar-14**
Purge Methodology		Low flow	Low flow
Purge Method		Peristaltic	Peristaltic
Sample Date		**20-May-13**	**27-Mar-14**
Sampling Method		Peristaltic	Peristaltic
Field Parameters	**Units**		
Conductivity	mS/cm	1.08	1.12
Dissolved Oxygen	mg/L	1.96	2.13
Oxidation Reduction Potential	mV	48.6	101.8
pH	S.U.	7.21	7.25
Temperature	deg C	17.2	6.0
Turbidity	NTU	5.10	1.86
Volume Purged	gal	2.3	2.0

Parameter Average for All Wells
Pre - Post Injection Comparison

Parameter	Mar-14	May-14	Jul-14	Aug-14
Conductivity	1.04	1.36	1.60	1.29
Dissolved Oxygen	0.55	0.57	0.33	0.34
ORP	117.55	-80.19	-173.91	-242.46
pH	7.17	7.19	7.11	7.07
Temperature	6.45	20.04	17.28	16.95
Turbidity	3.76	3.46	2.74	2.49
Volume Purged	1.15	1.48	1.20	1.32
	Baseline	Round 1 Post Injection	Round 2 Post Injection	Round 3 Post Injection

Notes:

deg c	degrees Celsius
gal	gallons
mg/l	milligrams per liter
mS/cm	milliSiemens per centimeter
mV	millivolts
NTU	nephelometric turbidity unit
AU	attenuation unit (equivalent to NTU)
S.U.	standard units
a	Sample turbidity measured approximately 10 minutes prior to sampling; subsequent measurements (-126 NTU) indicated that the turbidity meter was not functioning.
b	Sample turbidity measured approximately 5 minutes prior to sampling; subsequent measurement (-0.02 NTU) indicated that the turbidity meter was not functioning.
c	Turbidity meter was not functioning; groundwater was clear and did not have an odor.

Table 2
Summary of Analytical Results in Groundwater
Former Carriage Factory
33 Litchfield Street, Rochester, New York

Area of Investigation			On-Site Parking Lot																
Sample Location			B101MW		B102MW						RW-4						RW-11		
Sample Date			21-May-13	21-May-13	22-May-13	27-Mar-14	27-Mar-14	28-May-14	2-Jul-14	6-Aug-14	25-Apr-12	22-May-13	26-Mar-14	29-May-14	2-Jul-14	6-Aug-14	14-Jun-12	22-May-13	27-Mar-14
Sample ID			LI-B101MW-GW1	LI-B101MW-GW1DUP	LI-B102MW-GW1	LI-B102-MW	LI-DUP-MW	LI-B102-MW-PI1	LI-B102-MW-PI2	LI-B102-MW-PI3	RW-4	LI-RW-4-GW1	LI-RW-4	LI-RW-4-PI1	LI-RW-4-PI2	LI-RW-4-PI3	RW-11	LI-RW-11-GW1	LI-RW-11
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	DECI	STANTEC	STANTEC
Laboratory			CCGE	CCGE	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	CCGE	PARAROCH
Laboratory Work Order			E2314	E2314	E2342	141138	141138	142196	142794	143439	12:1770	E2342	141138	142196	142794	143439	12:2523	E2342	141138
Laboratory Sample ID			E2314-01	E2314-02	E2342-04	141138-11	141138-14	142196-07	142794-09	143439-10	12:1770-01	E2342-03	141138-04	142196-13	142794-10	143439-04	12:2523-03	E2342-02	141138-09
Sample Type	Units	TOGS		Field Duplicate			Field Duplicate												
General Chemistry																			
Total Organic Carbon	µg/L	n/v	-	-	-	6000	4600	15200	146000	24600	-	-	-	8200	339000	63000	-	-	-
Metals																			
Arsenic	µg/L	25^{B}	5.000 U	5.000 U	-	10 U	10 U	10 U	10 U	10 U	-	5.000 U	-	-	-	-	-	-	-
Iron	µg/L	300_{*}^{B}	25.0 U	25.0 U	-	100 U	100 U	**4330**^{B}	**9940**^{B}	**6480**^{B}	-	11.7 J	-	-	-	-	-	-	-
Lead	µg/L	25^{B}	12.6	12.5	-	-	-	-	-	-	-	17	-	-	-	-	-	-	-
Manganese	µg/L	300_{*}^{B}	5.42 J	5.53 J	-	**694**^{B}	**675**^{B}	**1070**^{B}	**2280**^{B}	**1200**^{B}	-	**667 J**^{B}	-	-	-	-	-	-	-
Sodium	µg/L	20000^{B}	**24700**^{B}	**27600**^{B}	-	18500	18100	**41100**^{B}	**169000**^{B}	**83100 M**^{B}	-	8750	-	**22300**^{B}	**298000**^{B}	**222000**^{B}	-	-	-
Volatile Organic Compounds																			
Acetone	µg/L	50^{A}	25 U	25 U	25 U	10.0 U	10.0 U	10.0 U	6.54 J	10.0 U	10.0 U J	25 U	10.0 U	6.72 J	10.0 U	12.7	-	25 U	10.0 U
Benzene	µg/L	1^{B}	***5 U***	***5 U***	***5 U***	0.700 U	0.700 U	0.700 U	0.700 U	0.700 U	0.700 U J	***5 U***	0.700 U	0.700 U	0.700 U	0.700 U	-	***5 U***	0.700 U
Bromodichloromethane	µg/L	50^{A}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Bromoform (Tribromomethane)	µg/L	50^{A}	5 U	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U
Bromomethane (Methyl bromide)	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U
Carbon Disulfide	µg/L	60^{A}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	3.04	3.64	-	5 U	2.00 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U
Chlorobenzene (Monochlorobenzene)	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Chlorobromomethane	µg/L	5_{**}^{B}	5 U	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U Q	5.00 U
Chloroethane (Ethyl Chloride)	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Chloroethyl Vinyl Ether, 2-	µg/L	n/v	-	-	-	-	-	-	-	-	R	-	-	-	-	-	R	-	-
Chloroform (Trichloromethane)	µg/L	7^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	1.91 J	2.00 U	2.00 U	5 U	2.00 U
Chloromethane	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Cyclohexane	µg/L	n/v	5 U	5 U	5 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U	-	5 U	10.0 U
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	0.04^{B}	***5 U***	***5 U***	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***	-	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***	-	***5 U***	***10.0 U***
Dibromochloromethane	µg/L	50^{A}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Dichlorobenzene, 1,2-	µg/L	3^{B}	***5 U***	***5 U***	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U
Dichlorobenzene, 1,3-	µg/L	3^{B}	***5 U***	***5 U***	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U
Dichlorobenzene, 1,4-	µg/L	3^{B}	***5 U***	***5 U***	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U
Dichlorodifluoromethane (Freon 12)	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Dichloroethane, 1,1-	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Dichloroethane, 1,2-	µg/L	0.6^{B}	***5 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U J***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U J***	***5 U***	***2.00 U***
Dichloroethene, 1,1-	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Dichloroethene, cis-1,2-	µg/L	5_{**}^{B}	5 U	5 U	**7.5**^{B}	4.45	4.44	4.61	**7.04**^{B}	**68.7**^{B}	**23.1 J**^{B}	**14.9**^{B}	**6.41**^{B}	**9.56**^{B}	**13.4**^{B}	**87.9**^{B}	2.00 U	5 U	2.00 U
Dichloroethene, trans-1,2-	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	1.11 J	2.00 U	5 U	2.00 U
Dichloropropane, 1,2-	µg/L	1^{B}	***5 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U J***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***
Dichloropropene, cis-1,3-	µg/L	0.4_{n}^{B}	***5 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U J***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***
Dichloropropene, trans-1,3-	µg/L	0.4_{n}^{B}	***5 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U J***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***
Dioxane, 1,4-	µg/L	n/v	100 U	100 U	R	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	-	R	20.0 U	20.0 U	20.0 U	20.0 U	-	R	20.0 U
Ethylbenzene	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.0006^{B}	***5 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	-	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	-	***5 U***	***2.00 U***
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	50^{A}	25 U	25 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	25 U	5.00 U	5.00 U	5.00 U	5.00 U	-	25 U	5.00 U
Isopropylbenzene	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Methyl Acetate	µg/L	n/v	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Methyl Ethyl Ketone (MEK)	µg/L	50^{A}	25 U	25 U	25 U	10.0 U	10.0 U	10.0 U	27.8	10.0 U	10.0 U J	25 U	10.0 U	10.0 U	20.8	15.8	-	25 U	10.0 U
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	25 U	25 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	25 U	5.00 U	5.00 U	5.00 U	5.00 U	-	25 U	5.00 U
Methyl tert-butyl ether (MTBE)	µg/L	10^{A}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Methylcyclohexane	µg/L	n/v	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Methylene Chloride (Dichloromethane)	µg/L	5_{**}^{B}	5 U	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	5 U	4.35 JB	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U
Styrene	µg/L	5_{**}^{B}	5 U	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U
Tetrachloroethane, 1,1,2,2-	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Tetrachloroethene (PCE)	µg/L	5_{**}^{B}	1.6 J	1.2 J	**20.9**^{B}	**24.4**^{B}	**25.4**^{B}	**20.6**^{B}	**26.4**^{B}	2.00 U	**62.6 J**^{B}	**55.8**^{B}	**62.7**^{B}	**76.0**^{B}	**73.0**^{B}	**54.5**^{B}	2.00 U	1.3 J	1.11 J
Toluene	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Trichlorobenzene, 1,2,3-	µg/L	5_{**}^{B}	5 U	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U
Trichlorobenzene, 1,2,4-	µg/L	5_{**}^{B}	5 U	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U
Trichloroethane, 1,1,1-	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U
Trichloroethane, 1,1,2-	µg/L	1^{B}	***5 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U J***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***
Trichloroethene (TCE)	µg/L	5_{**}^{B}	0.51 J	5 U	**14.9**^{B}	**9.78**^{B}	**10.2**^{B}	**7.72**^{B}	**15.3**^{B}	2.09	**21.4 J**^{B}	**19.8**^{B}	**10.3**^{B}	**18.0**^{B}	**20.4**^{B}	**34.3**^{B}	2.00 U	5 U	2.00 U
Trichlorofluoromethane (Freon 11)	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U
Trichlorotrifluoroethane (Freon 113)	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Vinyl Acetate	µg/L	n/v	-	-	-	-	-	-	-	-	5.00 U J	-	-	-	-	-	-	-	-
Vinyl chloride	µg/L	2^{B}	***5 U***	***5 U***	0.53 J	2.00 U	2.00 U	2.00 U	1.45 J	**4.49**^{B}	**3.86 J**^{B}	1.8 J	1.72 J	2.00 U	**3.07**^{B}	2.00 U	2.00 U	***5 U***	2.00 U
Xylene, m & p-	µg/L	5_{**}^{B}	***10 U***	***10 U***	***10 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	***10 U***	2.00 U	2.00 U	2.00 U	2.00 U	-	***10 U***	2.00 U
Xylene, o-	µg/L	5_{**}^{B}	5 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U
Total VOC	µg/L	n/v	2.11	1.2	43.83	38.63	40.04	32.93	84.53	75.28	110.96	92.3	85.48	110.28	135.62	209.95	ND	1.3	1.11

See notes on last page

Table 2
Summary of Analytical Results in Groundwater
Former Carriage Factory
33 Litchfield Street, Rochester, New York

Area of Investigation													
Sample Location			B106MW					B108MW					
Sample Date			23-May-13	26-Mar-14	28-May-14	2-Jul-14	7-Aug-14	23-May-13	26-Mar-14	28-May-14	28-May-14	2-Jul-14	8-Aug-14
Sample ID			LI-B106MW-GW1	LI-B106-MW	LI-B106-MW-PI1	LI-B106-MW-PI2	LI-B106-MW-PI3	LI-B108MW-GW1	LI-B108-MW	LI-B108-MW-PI1	LI-MW-DUP-PI1	LI-B108-MW-PI2	LI-B108-MW-PI3
Sampling Company			STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH
Laboratory Work Order			E2363	141138	142196	142794	143439	E2363	141138	142196	142196	142794	143439
Laboratory Sample ID			E2363-03	141138-12	142196-06	142794-11	143439-11	E2363-02	141138-13	142196-04	142196-05	142794-12	143439-12
Sample Type	Units	TOGS									Field Duplicate		
General Chemistry													
Total Organic Carbon	µg/L	n/v	-	-	188000	514000	77600	-	3300	60300	60200	86100	72200
Metals													
Arsenic	µg/L	25[B]	-	-	-	-	-	6.2	10 U	10 U	10 U	10 U	10 U
Iron	µg/L	300$_{*}$[B]	-	-	-	-	-	45.3	100 U	**1400[B]**	**978[B]**	**3520[B]**	**2480[B]**
Lead	µg/L	25[B]	-	-	-	-	-	4.9	-	-	-	-	-
Manganese	µg/L	300$_{*}$[B]	-	-	-	-	-	46.4 J	187	184	179	217	158
Sodium	µg/L	20000[B]	-	-	**162000[B]**	**375000[B]**	**185000[B]**	**26300[B]**	**33000[B]**	**103000[B]**	**101000[B]**	**100000 M[B]**	**115000[B]**
Volatile Organic Compounds													
Acetone	µg/L	50[A]	25 U	10.0 U	10.0 U	12.9	10.0 U	25 U	10.0 U	10.0 U	10.0 U	6.04 J	8.49 J
Benzene	µg/L	1[B]	***5 U***	0.700 U	0.700 U	0.842	0.391 J	***5 U***	0.700 U	0.700 U	0.700 U	0.700 U	0.700 U
Bromodichloromethane	µg/L	50[A]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Bromoform (Tribromomethane)	µg/L	50[A]	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bromomethane (Methyl bromide)	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Disulfide	µg/L	60[A]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobenzene (Monochlorobenzene)	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobromomethane	µg/L	5$_{**}$[B]	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane (Ethyl Chloride)	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloroethyl Vinyl Ether, 2-	µg/L	n/v	-	-	-	-	-	-	-	-	-	-	-
Chloroform (Trichloromethane)	µg/L	7[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloromethane	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Cyclohexane	µg/L	n/v	0.69 J	10.0 U	10.0 U	15.8	7.47 J	5 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	0.04[B]	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***
Dibromochloromethane	µg/L	50[A]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,2-	µg/L	3[B]	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,3-	µg/L	3[B]	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,4-	µg/L	3[B]	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorodifluoromethane (Freon 12)	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,1-	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,2-	µg/L	0.6[B]	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloroethene, 1,1-	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethene, cis-1,2-	µg/L	5$_{**}$[B]	**16.9[B]**	**6.89[B]**	**8.67[B]**	**28.4[B]**	**16.3[B]**	**5.7[B]**	2.00 U	**11.0[B]**	**10.9[B]**	**23.2[B]**	4.99
Dichloroethene, trans-1,2-	µg/L	5$_{**}$[B]	1.4 J	2.00 U	2.00 U	3.84	1.61 J	5 U	2.00 U	2.00 U	2.00 U	2.04	1.37 J
Dichloropropane, 1,2-	µg/L	1[B]	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloropropene, cis-1,3-	µg/L	0.4$_{n}$[B]	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloropropene, trans-1,3-	µg/L	0.4$_{n}$[B]	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dioxane, 1,4-	µg/L	n/v	R	20.0 U	20.0 U	20.0 U	20.0 U	R	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Ethylbenzene	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	1.79 J	1.20 J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.0006[B]	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	50[A]	25 U	5.00 U	5.00 U	5.00 U	5.00 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Isopropylbenzene	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Acetate	µg/L	n/v	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Ethyl Ketone (MEK)	µg/L	50[A]	25 U	10.0 U	10.7	**151[A]**	31.6	25 U	10.0 U	13.9	12.8	41.5	**63.8[A]**
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	25 U	5.00 U	5.00 U	5.00 U	5.00 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether (MTBE)	µg/L	10[A]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methylcyclohexane	µg/L	n/v	0.77 J	2.00 U	2.03	11.7	6.30	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methylene Chloride (Dichloromethane)	µg/L	5$_{**}$[B]	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	4.93 JB	5.00 U	5.00 U	5.00 U	5.00 U
Styrene	µg/L	5$_{**}$[B]	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Tetrachloroethane, 1,1,2,2-	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Tetrachloroethene (PCE)	µg/L	5$_{**}$[B]	**14.8[B]**	**21.7[B]**	**9.51[B]**	**11.7[B]**	**7.73[B]**	**15.9[B]**	**6.45[B]**	**10.1[B]**	**9.75[B]**	**10.7[B]**	**9.63[B]**
Toluene	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorobenzene, 1,2,3-	µg/L	5$_{**}$[B]	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichlorobenzene, 1,2,4-	µg/L	5$_{**}$[B]	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichloroethane, 1,1,1-	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichloroethane, 1,1,2-	µg/L	1[B]	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Trichloroethene (TCE)	µg/L	5$_{**}$[B]	**12[B]**	**8.27[B]**	**5.11[B]**	**9.44[B]**	**16.6[B]**	**8.5[B]**	1.05 J	4.17	4.15	4.21	1.65 J
Trichlorofluoromethane (Freon 11)	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorotrifluoroethane (Freon 113)	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Vinyl Acetate	µg/L	n/v	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	µg/L	2[B]	**2.1 J[B]**	2.00 U	**2.84[B]**	**15.2[B]**	**7.60[B]**	***5 U***	2.00 U	**2.75[B]**	**2.61[B]**	**10.2[B]**	**14.6[B]**
Xylene, m & p-	µg/L	5$_{**}$[B]	***10 U***	2.00 U	2.00 U	2.00 U	2.00 U	***10 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Xylene, o-	µg/L	5$_{**}$[B]	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Total VOC	µg/L	n/v	48.66	36.86	38.86	262.612	96.801	30.1	12.43	41.92	40.21	97.89	104.53

Area of Investigation			On-Site Building											
Sample Location			RW-1						RW-2					
Sample Date			23-Mar-12	23-May-13	26-Mar-14	29-May-14	1-Jul-14	8-Aug-14	23-Mar-12	21-May-13	26-Mar-14	29-May-14	1-Jul-14	8-Aug-14
Sample ID			RW-1	LI-RW-1-GW1	LI-RW-1	LI-RW-1-PI1	LI-RW-1-PI2	LI-RW-1-PI3	RW-2	LI-RW-2-GW1	LI-RW-2	LI-RW-2-PI1	LI-RW-2-PI2	LI-RW-2-PI3
Sampling Company			DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH
Laboratory Work Order			12:1239	E2363	141138	142196	142794	143439	12:1239	E2314	141138	142196	142794	143439
Laboratory Sample ID			12:1239-01	E2363-01	141138-01	142196-09	142794-08	143439-01	12:1239-02	E2314-03	141138-02	142196-10	142794-07	143439-02
Sample Type	Units	TOGS												
General Chemistry														
Total Organic Carbon	µg/L	n/v	-	-	-	1060000	415000	43500	-	-	3200	553000	150000	259000
Metals														
Arsenic	µg/L	25[B]	-	-	-	-	-	-	-	5.000 U	10 U	10 U	10 U	10 U
Iron	µg/L	300$_{*}$[B]	-	-	-	-	-	-	-	169	300	**2220[B]**	**1210[B]**	**937[B]**
Lead	µg/L	25[B]	-	-	-	-	-	-	-	9.61	-	-	-	-
Manganese	µg/L	300$_{*}$[B]	-	-	-	-	-	-	-	**305 J[B]**	120	233	60.8	108
Sodium	µg/L	20000[B]	-	-	-	**146000[B]**	**331000[B]**	**137000[B]**	-	**35600[B]**	**39100[B]**	**370000[B]**	**290000[B]**	**197000[B]**
Volatile Organic Compounds														
Acetone	µg/L	50[A]	10.0 U	25 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	**160[A]**	10.0 U	32.4	19.4	9.47 J
Benzene	µg/L	1[B]	0.700 U	0.49 NJ	0.700 U	0.700 U	0.700 U	0.700 U	0.700 U	***5 U***	0.700 U	0.700 U	0.700 U	0.700 U
Bromodichloromethane	µg/L	50[A]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Bromoform (Tribromomethane)	µg/L	50[A]	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Bromomethane (Methyl bromide)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Disulfide	µg/L	60[A]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobenzene (Monochlorobenzene)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobromomethane	µg/L	5$_{**}$[B]	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane (Ethyl Chloride)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloroethyl Vinyl Ether, 2-	µg/L	n/v	R	-	-	-	-	-	R	-	-	-	-	-
Chloroform (Trichloromethane)	µg/L	7[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	0.67 J	2.00 U	2.00 U	2.00 U	2.00 U
Chloromethane	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Cyclohexane	µg/L	n/v	-	4.5 NJ	10.0 U	10.0 U	10.0 U	10.0 U	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	0.04[B]	-	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***	-	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***
Dibromochloromethane	µg/L	50[A]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,2-	µg/L	3[B]	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,3-	µg/L	3[B]	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,4-	µg/L	3[B]	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorodifluoromethane (Freon 12)	µg/L	5$_{**}$[B]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,1-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,2-	µg/L	0.6[B]	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloroethene, 1,1-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	1 J	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethene, cis-1,2-	µg/L	5$_{**}$[B]	**6.88[B]**	**14.5[B]**	**5.57[B]**	4.53	4.71	**8.12[B]**	**26.6[B]**	**360 D[B]**	**38.8[B]**	**55.7[B]**	**51.3[B]**	**23.6[B]**
Dichloroethene, trans-1,2-	µg/L	5$_{**}$[B]	2.00 U	4.2 J	2.00 U	2.00 U	1.03 J	2.00 U	2.43	**11.4[B]**	2.39	3.06	2.50	3.57
Dichloropropane, 1,2-	µg/L	1[B]	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloropropene, cis-1,3-	µg/L	0.4$_{n}$[B]	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloropropene, trans-1,3-	µg/L	0.4$_{n}$[B]	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dioxane, 1,4-	µg/L	n/v	-	R	20.0 U	20.0 U	20.0 U	20.0 U	-	100 U	20.0 U	20.0 U	20.0 U	20.0 U
Ethylbenzene	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.0006[B]	-	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	-	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	50[A]	5.00 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U
Isopropylbenzene	µg/L	5$_{**}$[B]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Acetate	µg/L	n/v	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Ethyl Ketone (MEK)	µg/L	50[A]	10.0 U	25 U	10.0 U	6.42 J	**87.3[A]**	9.42 J	10.0 U	**110[A]**	10.0 U	**175[A]**	29.3	38.1
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	5.00 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether (MTBE)	µg/L	10[A]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	2.4 J	1.08 J	1.61 J	2.00 U	1.92 J
Methylcyclohexane	µg/L	n/v	-	3.1 J	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Methylene Chloride (Dichloromethane)	µg/L	5$_{**}$[B]	5.00 U	5 U	2.84 JB	5.00 U	5.00 U	5.00 U	5.00 U	5 U	3.76 JB	5.00 U	5.00 U	5.00 U
Styrene	µg/L	5$_{**}$[B]	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Tetrachloroethane, 1,1,2,2-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Tetrachloroethene (PCE)	µg/L	5$_{**}$[B]	**6.72[B]**	3.6 J	**5.35[B]**	**10.1[B]**	**6.14[B]**	2.65	2.00 U	**110[B]**	4.44	3.08	1.42 J	2.00 U
Toluene	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorobenzene, 1,2,3-	µg/L	5$_{**}$[B]	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichlorobenzene, 1,2,4-	µg/L	5$_{**}$[B]	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichloroethane, 1,1,1-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichloroethane, 1,1,2-	µg/L	1[B]	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Trichloroethene (TCE)	µg/L	5$_{**}$[B]	**7.15[B]**	**8.1[B]**	4.02	**6.09[B]**	4.52	**5.49[B]**	**9.19[B]**	**76.4[B]**	**27.6[B]**	**21.5[B]**	**6.31[B]**	2.39
Trichlorofluoromethane (Freon 11)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorotrifluoroethane (Freon 113)	µg/L	5$_{**}$[B]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Vinyl Acetate	µg/L	n/v	5.00 U	-	-	-	-	-	5.00 U	-	-	-	-	-
Vinyl chloride	µg/L	2[B]	**3.99[B]**	**7.7[B]**	2.00 U	1.45 J	**4.61[B]**	**5.29[B]**	2.00 U	**5.9[B]**	1.24 J	1.64 J	**7.48[B]**	**56.4[B]**
Xylene, m & p-	µg/L	5$_{**}$[B]	2.00 U	***10 U***	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	***10 U***	2.00 U	2.00 U	2.00 U	2.00 U
Xylene, o-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Total VOC	µg/L	n/v	24.74	46.19	17.78	28.59	108.31	30.97	38.22	837.77	79.31	293.99	117.71	135.45

Area of Investigation			On-Site Building					
Sample Location			RW-3					
Sample Date			23-Mar-12	22-May-13	26-Mar-14	29-May-14	1-Jul-14	7-Aug-14
Sample ID			RW-3	LI-RW-3-GW1	LI-RW-3	LI-RW-3-PI1	LI-RW-3-PI2	LI-RW-3-PI3
Sampling Company			DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH
Laboratory Work Order			12:1239	E2342	141138	142196	142794	143439
Laboratory Sample ID			12:1239-03	E2342-01	141138-03	142196-11	142794-06	143439-03
Sample Type	Units	TOGS						
General Chemistry								
Total Organic Carbon	µg/L	n/v	-	-	-	229000	87900	12700
Metals								
Arsenic	µg/L	25[B]	-	-	-	-	-	-
Iron	µg/L	300$_{*}$[B]	-	-	-	-	-	-
Lead	µg/L	25[B]	-	-	-	-	-	-
Manganese	µg/L	300$_{*}$[B]	-	-	-	-	-	-
Sodium	µg/L	20000[B]	-	-	-	**252000[B]**	**199000[B]**	**103000[B]**
Volatile Organic Compounds								
Acetone	µg/L	50[A]	10.0 U	25 U	10.0 U	**132[A]**	43.2 J	47.6
Benzene	µg/L	1[B]	0.700 U	***5 U***	0.700 U	***3.50 U***	***3.50 U***	0.700 U
Bromodichloromethane	µg/L	50[A]	2.00 U	5 U	2.00 U	10.0 U	10.0 U	2.00 U
Bromoform (Tribromomethane)	µg/L	50[A]	5.00 U	5 U	5.00 U	25.0 U	25.0 U	5.00 U
Bromomethane (Methyl bromide)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Carbon Disulfide	µg/L	60[A]	2.00 U	5 U	2.00 U	10.0 U	10.0 U	2.00 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Chlorobenzene (Monochlorobenzene)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Chlorobromomethane	µg/L	5$_{**}$[B]	-	5 U	5.00 U	***25.0 U***	***25.0 U***	5.00 U
Chloroethane (Ethyl Chloride)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Chloroethyl Vinyl Ether, 2-	µg/L	n/v	R	-	-	-	-	-
Chloroform (Trichloromethane)	µg/L	7[B]	3.78	3.9 J	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Chloromethane	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Cyclohexane	µg/L	n/v	-	5 U	10.0 U	50.0 U	50.0 U	10.0 U
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	0.04[B]	-	***5 U***	***10.0 U***	***50.0 U***	***50.0 U***	***10.0 U***
Dibromochloromethane	µg/L	50[A]	2.00 U	5 U	2.00 U	10.0 U	10.0 U	2.00 U
Dichlorobenzene, 1,2-	µg/L	3[B]	2.00 U	***5 U***	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Dichlorobenzene, 1,3-	µg/L	3[B]	2.00 U	***5 U***	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Dichlorobenzene, 1,4-	µg/L	3[B]	2.00 U	***5 U***	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Dichlorodifluoromethane (Freon 12)	µg/L	5$_{**}$[B]	-	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Dichloroethane, 1,1-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Dichloroethane, 1,2-	µg/L	0.6[B]	***2.00 U***	***5 U***	***2.00 U***	***10.0 U***	***10.0 U***	***2.00 U***
Dichloroethene, 1,1-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Dichloroethene, cis-1,2-	µg/L	5$_{**}$[B]	**81.8[B]**	**130[B]**	3.77	**30.1[B]**	**90.5[B]**	**143[B]**
Dichloroethene, trans-1,2-	µg/L	5$_{**}$[B]	**10.2[B]**	**18.8[B]**	2.00 U	***10.0 U***	**7.12 J[B]**	3.16
Dichloropropane, 1,2-	µg/L	1[B]	***2.00 U***	***5 U***	***2.00 U***	***10.0 U***	***10.0 U***	***2.00 U***
Dichloropropene, cis-1,3-	µg/L	0.4$_{n}$[B]	***2.00 U***	***5 U***	***2.00 U***	***10.0 U***	***10.0 U***	***2.00 U***
Dichloropropene, trans-1,3-	µg/L	0.4$_{n}$[B]	***2.00 U***	***5 U***	***2.00 U***	***10.0 U***	***10.0 U***	***2.00 U***
Dioxane, 1,4-	µg/L	n/v	-	R	20.0 U	100 U	100 U	20.0 U
Ethylbenzene	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.0006[B]	-	***5 U***	***2.00 U***	***10.0 U***	***10.0 U***	***2.00 U***
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	50[A]	5.00 U	25 U	5.00 U	25.0 U	25.0 U	5.00 U
Isopropylbenzene	µg/L	5$_{**}$[B]	-	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Methyl Acetate	µg/L	n/v	-	5 U	2.00 U	10.0 U	10.0 U	2.00 U
Methyl Ethyl Ketone (MEK)	µg/L	50[A]	10.0 U	25 U	10.0 U	**404[A]**	**139[A]**	**60.0[A]**
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	5.00 U	25 U	5.00 U	25.0 U	25.0 U	5.00 U
Methyl tert-butyl ether (MTBE)	µg/L	10[A]	-	7.1	2.00 U	10.0 U	10.0 U	2.00 U
Methylcyclohexane	µg/L	n/v	-	5 U	2.00 U	10.0 U	10.0 U	2.00 U
Methylene Chloride (Dichloromethane)	µg/L	5$_{**}$[B]	5.00 U	5 U	4.04 JB	***25.0 U***	***25.0 U***	5.00 U
Styrene	µg/L	5$_{**}$[B]	5.00 U	5 U	5.00 U	***25.0 U***	***25.0 U***	5.00 U
Tetrachloroethane, 1,1,2,2-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Tetrachloroethene (PCE)	µg/L	5$_{**}$[B]	2.81	**7.8[B]**	2.36	***10.0 U***	***10.0 U***	2.00 U
Toluene	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Trichlorobenzene, 1,2,3-	µg/L	5$_{**}$[B]	-	5 U	5.00 U	***25.0 U***	***25.0 U***	5.00 U
Trichlorobenzene, 1,2,4-	µg/L	5$_{**}$[B]	-	5 U	5.00 U	***25.0 U***	***25.0 U***	5.00 U
Trichloroethane, 1,1,1-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Trichloroethane, 1,1,2-	µg/L	1[B]	***2.00 U***	***5 U***	***2.00 U***	***10.0 U***	***10.0 U***	***2.00 U***
Trichloroethene (TCE)	µg/L	5$_{**}$[B]	**125[B]**	**320 D[B]**	**10.5[B]**	**83.9[B]**	**36.6[B]**	2.00 U
Trichlorofluoromethane (Freon 11)	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Trichlorotrifluoroethane (Freon 113)	µg/L	5$_{**}$[B]	-	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Vinyl Acetate	µg/L	n/v	5.00 U	-	-	-	-	-
Vinyl chloride	µg/L	2[B]	2.00 U	**3 J[B]**	2.00 U	***10.0 U***	**18.1[B]**	**10.1[B]**
Xylene, m & p-	µg/L	5$_{**}$[B]	2.00 U	***10 U***	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Xylene, o-	µg/L	5$_{**}$[B]	2.00 U	5 U	2.00 U	***10.0 U***	***10.0 U***	2.00 U
Total VOC	µg/L	n/v	223.59	490.6	20.67	650	334.52	263.86

See notes on last page

Table 2
Summary of Analytical Results in Groundwater
Former Carriage Factory
33 Litchfield Street, Rochester, New York

Area of Investigation																
Sample Location			RW-5						RW-6							
Sample Date			25-Apr-12	21-May-13	27-Mar-14	29-May-14	2-Jul-14	7-Aug-14	25-Apr-12	4-May-12	20-May-13	27-Mar-14	28-May-14	1-Jul-14	7-Aug-14	7-Aug-14
Sample ID			RW-5	LI-RW-5-GW1	LI-RW-5	LI-RW-5-PI1	LI-RW-5-PI2	LI-RW-5-PI3	RW-6	RW-6	LI-RW-6-GW1	LI-RW-6	LI-RW-6-PI1	LI-RW-6-PI2	LI-RW-6-PI3	LI-FD-PI3
Sampling Company			DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	DECI	DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH
Laboratory Work Order			12:1770	E2314	141138	142196	142794	143439	12:1770	12:1927	E2301	141138	142196	142794	143439	143439
Laboratory Sample ID			12:1770-02	E2314-06	141138-05	142196-14	142794-13	143439-05	12:1770-03	12:1927-01	E2301-01	141138-06	142196-02	142794-03	143439-06	143439-13
Sample Type	Units	TOGS														Field Duplicate
General Chemistry																
Total Organic Carbon	µg/L	n/v	-	-	3300	141000	299000	86700	-	-	-	3400	360000	96600	99700	102000
Metals																
Arsenic	µg/L	25[B]	-	-	10 U	10 U	10 U	10 U	-	-	-	10 U	10 U	10 U	10 U	-
Iron	µg/L	300.[B]	-	-	100 U	2500[B]	6250[B]	6000[B]	-	-	-	318[B]	1140[B]	1740[B]	850[B]	-
Lead	µg/L	25[B]	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	300.[B]	-	-	69.2	69.1	102	60.4 B	-	-	-	25.9	66.9	53.5	35.9	-
Sodium	µg/L	20000[B]	-	-	39500[B]	242000[B]	312000[B]	164000[B]	-	-	-	37800[B]	266000[B]	167000[B]	163000[B]	178000[B]
Volatile Organic Compounds																
Acetone	µg/L	50[A]	10.0 U J	2.6 J	10.0 U	10.0 U	7.44 J	10.0 U	10.0 U J	100 U J	4.2 J	200 U	200 U	10.0 U	500 U	500 U
Benzene	µg/L	1[B]	1.13 J[B]	5 U	0.700 U	0.737	0.358 J	0.700 U	0.700 U J	7.00 U	5 U	14.0 U	14.0 U	0.700 U	35.0 U	35.0 U
Bromodichloromethane	µg/L	50[A]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Bromoform (Tribromomethane)	µg/L	50[A]	5.00 U J	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	50.0 U	5 U	100 U	100 U	5.00 U	250 U	250 U
Bromomethane (Methyl bromide)	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Carbon Disulfide	µg/L	60[A]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Chlorobenzene (Monochlorobenzene)	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Chlorobromomethane	µg/L	5**[B]	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	-	5 U	100 U	100 U	5.00 U	250 U	250 U
Chloroethane (Ethyl Chloride)	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Chloroethyl Vinyl Ether, 2-	µg/L	n/v	R	-	-	-	-	-	R	R	-	-	-	-	-	-
Chloroform (Trichloromethane)	µg/L	7[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Chloromethane	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Cyclohexane	µg/L	n/v	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U	-	-	5 U J	200 U	200 U	10.0 U	500 U	500 U
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	0.04[B]	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U	-	-	5 U	200 U	200 U	10.0 U	500 U	500 U
Dibromochloromethane	µg/L	50[A]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichlorobenzene, 1,2-	µg/L	3[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichlorobenzene, 1,3-	µg/L	3[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichlorobenzene, 1,4-	µg/L	3[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichlorodifluoromethane (Freon 12)	µg/L	5**[B]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	-	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichloroethane, 1,1-	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichloroethane, 1,2-	µg/L	0.6[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichloroethene, 1,1-	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichloroethene, cis-1,2-	µg/L	5**[B]	49.5 J[B]	18.2[B]	7.64[B]	32.7[B]	45.7[B]	46.0[B]	59.8 J[B]	63.1[B]	47.3[B]	81.9[B]	670[B]	86.7[B]	3980[B]	4070[B]
Dichloroethene, trans-1,2-	µg/L	5**[B]	5.63 J[B]	2.2 J	1.10 J	2.92	1.89 J	1.32 J	2.00 U J	20.0 U	1.1 J	40.0 U	76.1[B]	3.31	76.6 J[B]	77.6 J[B]
Dichloropropane, 1,2-	µg/L	1[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichloropropene, cis-1,3-	µg/L	0.4n[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dichloropropene, trans-1,3-	µg/L	0.4n[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Dioxane, 1,4-	µg/L	n/v	-	100 U	20.0 U	20.0 U	20.0 U	20.0 U	-	-	R	400 U	400 U	20.0 U	1000 U	1000 U
Ethylbenzene	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.0006[B]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	-	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	50[A]	5.00 U J	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	50.0 U	25 U	100 U	100 U	5.00 U	250 U	250 U
Isopropylbenzene	µg/L	5**[B]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	-	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Methyl Acetate	µg/L	n/v	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	-	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Methyl Ethyl Ketone (MEK)	µg/L	50[A]	10.0 U J	25 U	10.0 U	10.0 U	43.1	10.8	10.0 U J	100 U	25 U	200 U	200 U	13.3	500 U	500 U
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	5.00 U J	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	50.0 U	25 U	100 U	100 U	5.00 U	250 U	250 U
Methyl tert-butyl ether (MTBE)	µg/L	10[A]	-	1.3 J	2.00 U	2.00 U	2.00 U	2.00 U	-	-	2.1 J	40.0 U	40.0 U	1.03 J	100 U	100 U
Methylcyclohexane	µg/L	n/v	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	-	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Methylene Chloride (Dichloromethane)	µg/L	5**[B]	5.00 U J	5 U	4.53 JB	5.00 U	5.00 U	5.00 U	5.00 U J	50.0 U J	5 U	100 U	56.8 J[B]	5.00 U	250 U	250 U
Styrene	µg/L	5**[B]	5.00 U J	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U J	50.0 U	5 U	100 U	100 U	5.00 U	250 U	250 U
Tetrachloroethane, 1,1,2,2-	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Tetrachloroethene (PCE)	µg/L	5**[B]	12.2 J[B]	5.6[B]	2.75	11.2[B]	2.44	2.00 U	881 J[B]	732[B]	880 D[B]	3380[B]	84.6[B]	3.26	100 U	100 U
Toluene	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Trichlorobenzene, 1,2,3-	µg/L	5**[B]	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	-	5 U	100 U	100 U	5.00 U	250 U	250 U
Trichlorobenzene, 1,2,4-	µg/L	5**[B]	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	-	5 U	100 U	100 U	5.00 U	250 U	250 U
Trichloroethane, 1,1,1-	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Trichloroethane, 1,1,2-	µg/L	1[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Trichloroethene (TCE)	µg/L	5**[B]	48.5 J[B]	25.2[B]	6.65[B]	40.0[B]	14.2[B]	1.10 J	112 J[B]	93.2[B]	140[B]	283[B]	752[B]	35.8[B]	100 U	100 U
Trichlorofluoromethane (Freon 11)	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Trichlorotrifluoroethane (Freon 113)	µg/L	5**[B]	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	-	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Vinyl Acetate	µg/L	n/v	5.00 U J	-	-	-	-	-	5.00 U J	50.0 U	-	-	-	-	-	-
Vinyl chloride	µg/L	2[B]	2.93 J[B]	0.6 J	2.00 U	2.00 U	1.28 J	3.76[B]	2.00 U J	20.0 U	0.52 NJ	40.0 U	40.0 U	2.00 U	115[B]	116[B]
Xylene, m & p-	µg/L	5**[B]	2.00 U J	10 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U	10 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Xylene, o-	µg/L	5**[B]	2.00 U J	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	20.0 U J	5 U	40.0 U	40.0 U	2.00 U	100 U	100 U
Total VOC	µg/L	n/v	119.89	55.7	22.67	87.557	116.408	62.98	1052.8	888.3	1075.22	3744.9	1639.5	143.4	4171.6	4263.6

Area of Investigation	Off-Site Locations														
Sample Location	RW-7						RW-8		RW-9						
Sample Date	12-Jun-12	20-May-13	27-Mar-14	28-May-14	1-Jul-14	7-Aug-14	14-Jun-12	20-May-13	8-Jun-12	21-May-13	27-Mar-14	29-May-14	1-Jul-14	1-Jul-14	7-Aug-14
Sample ID	RW-7	LI-RW-7-GW1	LI-RW-7	LI-RW-7-PI1	LI-RW-7-PI2	LI-RW-7-PI3	RW-8	LI-RW-8-GW1	RW-9	LI-RW-9-GW1	LI-RW-9	LI-RW-9-PI1	LI-RW-9-PI2	LI-RW-DUP-PI2	LI-RW-9-PI3
Sampling Company	DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	DECI	STANTEC	DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory	PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH	CCGE	PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	PARAROCH
Laboratory Work Order	12:2486	E2301	141138	142196	142794	143439	12:2523	E2301	12:2431	E2314	141138	142196	142794	142794	143439
Laboratory Sample ID	12:2486-02	E2301-02	141138-07	142196-01	142794-02	143439-07	12:2523-01	E2301-03	12:2431-01	E2314-07	141138-08	142196-12	142794-04	142794-05	143439-08
Sample Type														Field Duplicate	
General Chemistry															
Total Organic Carbon	-	-	-	86900	7500	11500	-	-	-	-	2000	2000	2500	2100	2100
Metals															
Arsenic	-	-	-	-	-	-	-	-	-	-	10 U	10 U	10 U	10 U	10 U
Iron	-	-	-	-	-	-	-	-	-	-	100 U	91.9 J	129	91.0 J	86.4 J
Lead	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	-	-	-	-	-	-	-	-	-	-	15 U	19.8	98.1	94.4	220
Sodium	-	-	-	126000[B]	85200[B]	85600[B]	-	-	-	-	38100[B]	25200[B]	29000[B]	28800[B]	27700[B]
Volatile Organic Compounds															
Acetone	-	25 U	10.0 U	10.0 U	10.0 U	10.0 U	-	25 U	-	25 U	10.0 U	6.70 J	10.0 U	10.0 U	10.0 U
Benzene	-	5 U	0.700 U	0.700 U	0.700 U	0.700 U	-	5 U	-	5 U	0.700 U	0.700 U	0.700 U	0.700 U	0.700 U
Bromodichloromethane	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Bromoform (Tribromomethane)	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Bromomethane (Methyl bromide)	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Disulfide	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Tetrachloride (Tetrachloromethane)	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobenzene (Monochlorobenzene)	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobromomethane	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane (Ethyl Chloride)	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloroethyl Vinyl Ether, 2-	R	-	-	-	-	-	R	-	R	-	-	-	-	-	-
Chloroform (Trichloromethane)	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloromethane	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Cyclohexane	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U	-	5 U J	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dibromo-3-Chloropropane, 1,2- (DBCP)	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U	-	5 U	-	5 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Dibromochloromethane	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,2-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,3-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,4-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorodifluoromethane (Freon 12)	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,1-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,2-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethene, 1,1-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethene, cis-1,2-	4.28	8.2[B]	2.35	2.65	2.43	2.96	6.50[B]	17.8[B]	2.00 U	1.2 J	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethene, trans-1,2-	2.00 U	0.92 J	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	2.1 J	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloropropane, 1,2-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloropropene, cis-1,3-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloropropene, trans-1,3-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Dioxane, 1,4-	-	R	20.0 U	20.0 U	20.0 U	20.0 U	-	R	-	100 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U
Ethylbenzene	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Ethylene Dibromide (Dibromoethane, 1,2-)	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Hexanone, 2- (Methyl Butyl Ketone)	-	25 U	5.00 U	5.00 U	5.00 U	5.00 U	-	25 U	-	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Isopropylbenzene	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Acetate	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Ethyl Ketone (MEK)	-	25 U	10.0 U	10.0 U	10.0 U	10.0 U	-	25 U	-	25 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U
Methyl Isobutyl Ketone (MIBK)	-	25 U	5.00 U	5.00 U	5.00 U	5.00 U	-	25 U	-	25 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether (MTBE)	-	1.8 J	2.00 U	2.00 U	2.00 U	2.00 U	-	3.3 J	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methylcyclohexane	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Methylene Chloride (Dichloromethane)	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Styrene	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Tetrachloroethane, 1,1,2,2-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Tetrachloroethene (PCE)	2.00 U	0.76 J	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	4.3 J	11.3[B]	8.5[B]	3.04	3.58	4.10	4.11	3.20
Toluene	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorobenzene, 1,2,3-	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichlorobenzene, 1,2,4-	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	-	5 U	-	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichloroethane, 1,1,1-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichloroethane, 1,1,2-	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichloroethene (TCE)	2.00 U	5.8[B]	2.85	2.99	3.05	3.12	7.59[B]	20.7[B]	2.00 U	1.5 J	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorofluoromethane (Freon 11)	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U J	5 U	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorotrifluoroethane (Freon 113)	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Vinyl Acetate	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U	0.63 NJ	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Xylene, m & p-	-	10 U	2.00 U	2.00 U	2.00 U	2.00 U	-	10 U	-	10 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Xylene, o-	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	-	5 U	-	5 U	2.00 U	2.00 U	2.00 U	2.00 U	2.00 U
Total VOC	4.28	17.48	5.2	5.64	5.48	6.08	14.09	48.83	11.3	11.2	3.04	10.28	4.1	4.11	3.2

See notes on last page

Table 2
Summary of Analytical Results in Groundwater
Former Carriage Factory
33 Litchfield Street, Rochester, New York

Area of Investigation			Off-Site Locations								QA/QC						
Sample Location			RW-12					RW-13			Trip Blank						
Sample Date			8-Jun-12	20-May-13	28-May-14	2-Jul-14	7-Aug-14	12-Jun-12	20-May-13	27-Mar-14	12-Jun-12	20-May-13	21-May-13	27-Mar-14	29-May-14	1-Jul-14	8-Aug-14
Sample ID			RW-12	LI-RW-12-GW1	LI-RW-12-PI1	LI-RW-12-PI2	LI-RW-12-PI3	RW-13	LI-RW-13-GW1	LI-RW-13	Trip Blank 7346	Trip Blank	Trip Blank	Trip Blank	LI-Trip Blank-PI1	LI-TRIPBLANK-PI2	Trip Blank (T-532)
Sampling Company			DECI	STANTEC	STANTEC	STANTEC	STANTEC	DECI	STANTEC	STANTEC	DECI	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC	STANTEC
Laboratory			PARAROCH	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH	CCGE	PARAROCH	PARAROCH	CCGE	CCGE	PARAROCH	PARAROCH	PARAROCH	PARAROCH
Laboratory Work Order			12:2431	E2301	142196	142794	143439	12:2486	E2301	141138	12:2486	E2301	E2314	141138	142196	142794	143439
Laboratory Sample ID			12:2431-02	E2301-04	142196-03	142794-14	143439-09	12:2486-01	E2301-05	141138-10	12:2486-03	E2301-07	E2314-08	141138-15	142196-08	142794-01	143439-14
Sample Type	Units	TOGS									Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
General Chemistry																	
Total Organic Carbon	µg/L	n/v	-	-	103000	186000	44800	-	-	-	-	-	-	-	-	-	-
Metals																	
Arsenic	µg/L	25^{B}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Iron	µg/L	300_{*}^{B}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	µg/L	25^{B}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Manganese	µg/L	300_{*}^{B}	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sodium	µg/L	20000^{B}	-	-	**200000^{B}**	**255000^{B}**	**282000^{B}**	-	-	-	-	-	-	-	-	-	-
Volatile Organic Compounds																	
Acetone	µg/L	50^{A}	-	25 U	10.0 U	10.0 U	10.0 U	-	25 U	10.0 U	-	25 U	25 U	10.0 U	10.0 U	10.0 U	10.0 U
Benzene	µg/L	1^{B}	-	***5 U***	0.700 U	0.700 U	0.700 U	-	***5 U***	0.700 U	-	***5 U***	***5 U***	0.700 U	0.700 U	0.700 U	0.700 U
Bromodichloromethane	µg/L	50^{A}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Bromoform (Tribromomethane)	µg/L	50^{A}	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Bromomethane (Methyl bromide)	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Disulfide	µg/L	60^{A}	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Carbon Tetrachloride (Tetrachloromethane)	µg/L	5^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobenzene (Monochlorobenzene)	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Chlorobromomethane	µg/L	5_{**}^{B}	-	5 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	-	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Chloroethane (Ethyl Chloride)	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloroethyl Vinyl Ether, 2-	µg/L	n/v	R	-	-	-	-	R	-	-	R	-	-	-	-	-	-
Chloroform (Trichloromethane)	µg/L	7^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Chloromethane	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Cyclohexane	µg/L	n/v	-	5 U J	10.0 U	10.0 U	10.0 U	-	5 U J	10.0 U	-	5 U J	5 U	10.0 U	10.0 U	10.0 U	10.0 U
Dibromo-3-Chloropropane, 1,2- (DBCP)	µg/L	0.04^{B}	-	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	-	***5 U***	***10.0 U***	-	***5 U***	***5 U***	***10.0 U***	***10.0 U***	***10.0 U***	***10.0 U***
Dibromochloromethane	µg/L	50^{A}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,2-	µg/L	3^{B}	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	***5 U***	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,3-	µg/L	3^{B}	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	***5 U***	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorobenzene, 1,4-	µg/L	3^{B}	2.00 U	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U	***5 U***	2.00 U	2.00 U	***5 U***	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U
Dichlorodifluoromethane (Freon 12)	µg/L	5_{**}^{B}	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,1-	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethane, 1,2-	µg/L	0.6^{B}	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloroethene, 1,1-	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethene, cis-1,2-	µg/L	5_{**}^{B}	**24.5^{B}**	**26.5^{B}**	**79.5^{B}**	**118^{B}**	**36.2^{B}**	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloroethene, trans-1,2-	µg/L	5_{**}^{B}	2.00 U	1.2 J	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Dichloropropane, 1,2-	µg/L	1^{B}	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloropropene, cis-1,3-	µg/L	0.4_{n}^{B}	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dichloropropene, trans-1,3-	µg/L	0.4_{n}^{B}	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Dioxane, 1,4-	µg/L	n/v	-	R	20.0 U	20.0 U	20.0 U	-	R	20.0 U	-	R	100 U	20.0 U	20.0 U	20.0 U	20.0 U
Ethylbenzene	µg/L	5_{**}^{B}	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Ethylene Dibromide (Dibromoethane, 1,2-)	µg/L	0.0006^{B}	-	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	-	***5 U***	***2.00 U***	-	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Hexanone, 2- (Methyl Butyl Ketone)	µg/L	50^{A}	-	25 U	5.00 U	5.00 U	5.00 U	-	25 U	5.00 U	-	25 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U
Isopropylbenzene	µg/L	5_{**}^{B}	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Acetate	µg/L	n/v	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Methyl Ethyl Ketone (MEK)	µg/L	50^{A}	-	25 U	10.0 U	10.0 U	10.0 U	-	25 U	10.0 U	-	25 U	25 U	10.0 U	10.0 U	10.0 U	10.0 U
Methyl Isobutyl Ketone (MIBK)	µg/L	n/v	-	25 U	5.00 U	5.00 U	5.00 U	-	25 U	5.00 U	-	25 U	25 U	5.00 U	5.00 U	5.00 U	5.00 U
Methyl tert-butyl ether (MTBE)	µg/L	10^{A}	-	0.85 J	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Methylcyclohexane	µg/L	n/v	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Methylene Chloride (Dichloromethane)	µg/L	5_{**}^{B}	5.00 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U	5 U	5.00 U	5.00 U	5 U	3.4 J	5.00 U	5.00 U	5.00 U	5.00 U
Styrene	µg/L	5_{**}^{B}	-	5 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	-	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Tetrachloroethane, 1,1,2,2-	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Tetrachloroethene (PCE)	µg/L	5_{**}^{B}	2.71	4.9 J	**5.52^{B}**	4.37	2.78	2.00 U	2.8 J	2.00	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Toluene	µg/L	5_{**}^{B}	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorobenzene, 1,2,3-	µg/L	5_{**}^{B}	-	5 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	-	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichlorobenzene, 1,2,4-	µg/L	5_{**}^{B}	-	5 U	5.00 U	5.00 U	5.00 U	-	5 U	5.00 U	-	5 U	5 U	5.00 U	5.00 U	5.00 U	5.00 U
Trichloroethane, 1,1,1-	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichloroethane, 1,1,2-	µg/L	1^{B}	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***	***5 U***	***2.00 U***	***2.00 U***	***5 U***	***5 U***	***2.00 U***	***2.00 U***	***2.00 U***	***2.00 U***
Trichloroethene (TCE)	µg/L	5_{**}^{B}	**6.80^{B}**	**15^{B}**	**25.1^{B}**	**29.8^{B}**	4.38	2.00 U	0.99 J	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorofluoromethane (Freon 11)	µg/L	5_{**}^{B}	2.00 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U	5 U	2.00 U	2.00 U	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Trichlorotrifluoroethane (Freon 113)	µg/L	5_{**}^{B}	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Vinyl Acetate	µg/L	n/v	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	µg/L	2^{B}	2.00 U	0.55 J	2.00 U	1.17 J	**2.27^{B}**	2.00 U	***5 U***	2.00 U	2.00 U	***5 U***	***5 U***	2.00 U	2.00 U	2.00 U	2.00 U
Xylene, m & p-	µg/L	5_{**}^{B}	-	***10 U***	2.00 U	2.00 U	2.00 U	-	***10 U***	2.00 U	-	***10 U***	***10 U***	2.00 U	2.00 U	2.00 U	2.00 U
Xylene, o-	µg/L	5_{**}^{B}	-	5 U	2.00 U	2.00 U	2.00 U	-	5 U	2.00 U	-	5 U	5 U	2.00 U	2.00 U	2.00 U	2.00 U
Total VOC	µg/L	n/v	34.01	49	110.12	153.34	45.63	ND	3.79	2	ND	ND	3.4	ND	ND	ND	ND

See notes on last page

Table 2
Summary of Analytical Results in Groundwater
Former Carriage Factory
33 Litchfield Street, Rochester, New York

Notes:

TOGS	NYSDEC TOGS 1.1.1 (Reissued June 1998 with errata in January 1999 and addenda in April 2000 and June 2004)
A	TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Guidance
B	TOGS 1.1.1 - Table 1 - Ambient Water Quality Standards and Guidance Values, Division of Water, Technical and Operational Guidance Series (TOGS 1.1.1); Standards
6.5[A]	Concentration exceeds the indicated standard.
15.2	Concentration was detected but did not exceed applicable standards.
0.50 U	Laboratory reportable detection limit exceeded standard.
0.03 U	The analyte was not detected above the laboratory reportable detection limit.
n/v	No standard/guideline value.
-	Parameter not analyzed / not available.
*	The standard for Iron and Manganese is 500 ug/L, which applies to the sum of these substances. As individual standards, the standard is 300 ug/L.
**	The principal organic contaminant standard for groundwater of 5 ug/L (described elsewhere in the TOGS table) applies to this substance.
p	Applies to the sum of cis- and trans-1,3-dichloropropene.
B	Indicates analyte was found in associated blank, as well as in the sample.
D	Indicates reanalysis of sample with additional dilution to address exceedance of instrument calibration range.
J	The reported result is an estimated value.
M	Denotes matrix spike recoveries outside QC limits. Matrix bias indicated.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.
Q	Indicates LCS control criteria did not meet requirements
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control critera. The presence or absence of the analyte cannot be verified.
U	Indicates that the analyte was analyzed but not detected.
UJ	Indicates estimated non-detect.
CCGE	Chemtech Consulting Group, Mountainside, NJ
PARAROCH	Paradigm Environmental Services, Rochester, NY

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Guelph ON N1G 5G3
(519) 822-2265

Certificate of Analysis: Gene-Trac® *Dehalococcoides* Assay

Customer: Mike Storonsky, Stantec
Project: Carriage Factory
Customer Reference: 190500751

SiREM Reference: S-3293
Report Date: 25-Aug-14
Data Files: MyiQ-DHC-QPCR-1140
MyiQ-DB-DHC-QPCR-0495

Table 1a: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent Dhc *	*Dehalococcoides* Enumeration/Liter **
LI-B102-MW-PI3	DHC-10686	6-Aug-14	Groundwater	0.04 - 0.1 %	1×10^6
LI-B108-MW-PI3	DHC-10687	8-Aug-14	Groundwater	0.2 - 0.6 %	5×10^6

Notes:

* Percent *Dehalococcoides* (Dhc) in microbial population. This value is calculated by dividing the number of Dhc 16S ribosomal ribonucleic acid (rRNA) gene copies by the total number of bacteria as estimated by the mass of DNA extracted from the sample. Range represents normal variation in Dhc enumeration.

** Based on quantification of Dhc 16S rRNA gene copies. Dhc are generally reported to contain one 16S rRNA gene copy per cell; therefore, this number is often interpreted to represent the number of Dhc cells present in the sample.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample
NA Not applicable as *Dehalococcoides* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
E Extracted genomic DNA was not detected in sample.

Analyst: [signature]
Ben Reside
Laboratory Technician

Approved: [signature]
Ximena Druar, B.Sc.
Genetic Testing Coordinator

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Certificate of Analysis: Gene-Trac® VC, Vinyl Chloride Reductase (*vcrA*) Assay

Customer: Mike Storonsky, Stantec

Project: Carriage Factory

Customer Reference: 190500751

SiREM Reference: S-3293

Report Date: 25-Aug-14

Data Files: MyiQ-VC-QPCR-0679
VC-QPCR-check-gel-0680
MyiQ-DB-VC-QPCR-0397

Table 1b: Test Results

Customer Sample ID	SiREM Sample ID	Sample Collection Date	Sample Matrix	Percent *vcrA* *	Vinyl Chloride Reductase (*vcrA*) Gene Copies/Liter
LI-B102-MW-PI3	VCR-4963	6-Aug-14	Groundwater	0.01 - 0.03 %	3×10^5
LI-B108-MW-PI3	VCR-4964	8-Aug-14	Groundwater	0.008 - 0.02 %	2×10^6

Notes:

* Percent *vcrA* in microbial population. This value is calculated by dividing the number of vinyl chloride reductase A (*vcrA)* gene copies quantified by the total number of bacteria estimated to be in the sample based on the mass of DNA extracted from the sample. Range represents normal variation in enumeration of *vcrA*.

J The associated value is an estimated quantity between the method detection limit and quantitation limit.
U Not detected, associated value is the quantification limit.
B Analyte was detected in the method blank within an order of magnitude of the test sample.
NA Not applicable as *vcrA* not detected and/or quantifiable DNA not extracted from the sample.
I Sample inhibited the test reaction based on inability to PCR amplify extracted DNA with universal primers.
C Correction factor applied to correct for non-specific PCR amplification products, value is an estimated quantity.

Analyst: [signature]
Ben Reside
Laboratory Technician

Approved: [signature]
Ximena Druar, B.Sc.
Genetic Testing Coordinator

Table 2: Detailed Test Parameters, Gene-Trac Test Reference S-3293

Customer Sample ID	LI-B102-MW-PI3	LI-B108-MW-PI3
SiREM Dhc Sample ID	DHC-10686	DHC-10687
SiREM *vcrA* Sample ID	VCR-4963	VCR-4964
Date Received	12-Aug-14	12-Aug-14
Sample Temperature	8 ºC	8 ºC
Filtration Date	13-Aug-14	13-Aug-14
Volume Used for DNA Extraction	500 mL	500 mL
DNA Extraction Date	14-Aug-14	14-Aug-14
DNA Concentration in Sample (extractable)	5307 ng/L	4424 ng/L
PCR Amplifiable DNA	Detected	Detected
Dhc qPCR Date Analyzed	15-Aug-14	15-Aug-14
***vcrA* qPCR Date Analyzed**	19-Aug-14	19-Aug-14
Laboratory Controls (see Tables 3 & 4)	Passed	Passed
Comments	--	--

Notes:

Refer to Tables 3 & 4 for detailed results of controls.
°C = degrees Celsius
Dhc = *Dehalococcoides*

DNA = Deoxyribonucleic acid
ng/L = nanograms per liter
mL = milliliters

PCR = polymerase chain reaction
qPCR = quantitative PCR
vcrA = vinyl chloride reductase

Table 3: Gene-Trac Dhc Control Results, Test Reference S-3293

Laboratory Control	Analysis Date	Control Description	Spiked Dhc 16S rRNA Gene Copies per Liter	Recovered Dhc 16S rRNA Gene Copies per Liter	Comments
Positive Control Low Concentration	15-Aug-14	qPCR with KB1 genomic DNA (CSLD-0778)	8.1×10^{6}	4.7×10^{6}	--
Positive Control High Concentration	15-Aug-14	qPCR with KB1 genomic DNA (CSHD-0778)	9.2×10^{8}	8.6×10^{8}	--
DNA Extraction Blank	15-Aug-14	DNA extraction sterile water (FB-2235)	0	2.6×10^{3} U	--
Negative Control	15-Aug-14	Tris Reagent Blank (TBD-0737)	0	2.6×10^{3} U	--

Notes:
Dhc = *Dehalococcoides*
DNA = Deoxyribonucleic acid
qPCR = quantitative PCR
16S rRNA = 16S ribosomal ribonucleic acid
U Not detected, associated value is the quantification limit.

Table 4: Gene-Trac VC Control Results, Test Reference S-3293

Laboratory Control	Analysis Date	Control Description	Spiked *vcrA* reductase Gene Copies per Liter	Recovered *vcrA* reductase Gene Copies per Liter	Comments
Positive Control Low Concentration	19-Aug-14	qPCR with KB1 genomic DNA (CSLV-0547)	8.1×10^{6}	8.6×10^{6}	--
Positive Control High Concentration	19-Aug-14	qPCR with KB1 genomic DNA (CSHV-0547)	9.2×10^{8}	1.4×10^{9}	--
DNA Extraction Blank	19-Aug-14	DNA extraction sterile water (FB-2235)	0	2.6×10^{3} U	--
Negative Control	19-Aug-14	Tris Reagent Blank (TBV-0518)	0	2.6×10^{3} U	--

Notes:

DNA = Deoxyribonucleic acid

qPCR = quantitative PCR

16S rRNA = 16S ribosomal ribonucleic acid

U Not detected, associated value is the quantification limit.

vcrA = vinyl chloride reductase

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www.siremlab.com

Page 1 of 1

Lab # S-3293

Project Name	Carriage Factory
Project #	190500751
Project Manager	Mike Storonsky
Email Address	Mike.Storonsky@Stantec.com
Company	Stantec
Address	61 Commercial Street, Rochester, NY 14614
Phone #	585 413 5266
Fax #	
Sampler's Signature	[signature]
Sampler's Printed Name	Ben Haravitch

Analysis

Preservative: Gene-Trac Dhc: 0; Gene-Trac VC: 0; Gene-Trac Dhb: (blank)

Preservative Key
0. None
1. HCl
2. Other ______
3. Other ______

Customer Sample ID	Sampling Date	Sampling Time	Matrix	# of Containers	Gene-Trac Dhc	Gene-Trac VC	Gene-Trac Dhb										Other Information
LI-B102-MW-PI3	8/6/14	14:40	GW	1	X	X											
LI-B108-MW-PI3	8/8/14	09:50	GW	1	X	X											

Sample Receipt

Cooler Condition: Good
Cooler Temperature: 8°C
Custody Seals: Yes ☐ No ☒

Billing Information

P.O. # 190500751
Bill To: Stantec
ATTN: Ben Haravitch

Turnaround Time Requested

Normal ☒
Rush ☐

For Lab Use Only

B-01063 + B-01064

Proposal #: ______

	Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	[signature]	[signature]				
Printed Name	Benjamin Haravitch	Julia Ierapoli				
Firm	Stantec	SiREM				
Date/Time	~~8/8/14~~ 8/11/14	08/12/14 13:30				

Distribution: White - Return to Originator: Yellow - Lab Copy: Pink - Retained by Client

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SiREM Technical Note 1.5:

Guidelines for Interpretation of Gene-Trac® Test Results

This document provides technical background information and guidelines for interpreting the results for the following Gene-Trac® assays:

(1) Gene-Trac® Dhc
(2) Gene-Trac® VC
(3) Gene-Trac® Dhb

SiREM Technical Note 1.4 - *Quantitative Gene-Trac® Assay Test Procedure and Reporting Overview* provides detailed information on Gene-Trac® test procedures and reporting. Explanation of data qualifiers and commonly used notes is provided as Appendix A. Table 1 provides a brief interpretation for some common scenarios, more detailed interpretation information is provided in the following sections.

Table 1: Common Gene-Trac® Test Result Scenarios and Interpretation

Gene-Trac® Dhc (*Dehalococcoides*)	**Gene-Trac® VC (*vcrA*)**	**Gene-Trac® Dhb (*Dehalobacter*)**	**Interpretation**
>1 x10^7/L	**>1 x10^7/L**	Not Analyzed	Complete dechlorination to ethene likely as Dhc high and *vcrA* high
1 x10^7/L	**Not Detected**	Not Analyzed	VC accumulation possible as *vcrA* negative
Not Detected	**Not Detected**	Not Analyzed	Dhc negative/ lack of dechlorination or *cis*-DCE accumulation likely
Not Analyzed	Not Analyzed	**1 x10^6/L**	Dhb positive,potential for biodegradation of 1,1,1-TCA, 1,2-DCA, carbon tetrachloride and chloroform, PCE and TCE to *cis*-DCE
Not Analyzed	Not Analyzed	**Not Detected**	Biodegradation of 1,1,1-TCA, carbon tetrachloride and chloroform not expected as Dhb negative

Gene-Trac® Dhc -Total *Dehalococcoides* Test

Background:

Gene-Trac® Dhc is a quantitative PCR (qPCR) test for total *Dehalococcoides* (Dhc) microbes that targets Dhc specific sequences of the 16S ribosomal ribonucleic acid (rRNA) gene, a gene commonly used to indentify microbes. Dhc are the only known microorganisms capable of complete dechlorination of chloroethenes (i.e., tetrachloroethene, trichloroethene, cis-1,2-dichloroethene [cis-DCE] and vinyl chloride) to non-toxic ethene. Gene-Trac® Dhc may also be used to assess the in situ growth of Dhc containing bioaugmentation cultures such as KB-1®.

Negative Gene-Trac® Dhc Test Results (U qualified)

A non-detect in the Gene-Trac® Dhc assay (e.g., 4,000U) indicates that Dhc were not detected in the sample. The absence of Dhc is frequently associated with a lack of complete dechlorination or incomplete dechlorination of chlorinated ethenes. Where Dhc are absent the accumulation of cis-DCE is commonly observed, particularly after addition of electron donors. Bioaugmentation with Dhc containing cultures, such as KB-1®, is commonly used to improve bioremediation performance at sites that lack an indigenous Dhc population.

Positive Gene-Trac® Dhc Test Results

The detection of Dhc has been correlated with the complete biological dechlorination of chlorinated ethenes to ethene at contaminated sites (Hendrickson et al., 2002). A positive Gene-Trac® Dhc test indicates that Dhc DNA was detected in the sample and is encouraging for dechlorination of chlorinated ethenes to ethene. Note not all Dhc are capable of conversion of vinyl chloride to ethene; this capability can be determined by the Gene-Trac® VC test (see Section 2) which is commonly performed as a follow-on analysis after positive Gene-Trac® Dhc tests. In most cases Dhc must be present at sufficient concentrations in order for significant dechlorination to be observed, guidelines for expected impacts at various Dhc concentrations are indicated below.

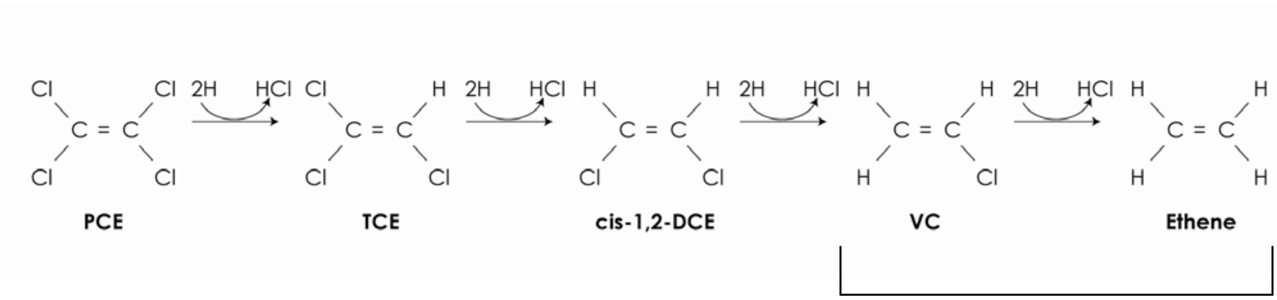
> **Values of 10^4 Dhc gene copies per liter (or lower):** indicates that the sample contains low concentrations of Dhc which may indicate that site conditions are suboptimal for high rates of dechlorination. Increases in Dhc concentrations at the site may be possible if conditions are optimized (e.g., electron donor addition).
>
> **Values of 10^5-10^6 Dhc gene copies per liter:** indicates the sample contains moderate concentrations of Dhc which may, or may not, be associated with observable dechlorination activity (i.e., detectable ethene).
>
> **Values at or above 10^7 Dhc gene copies per liter:** indicates that the sample contains high concentrations of Dhc that are often associated with high rates of dechlorination (Lu et al., 2006) and the production of ethene.
>
> **Values of 10^9 Dhc gene copies per liter** are generally the highest observed for groundwater samples with rare exceptions.

Gene-Trac® VC- Vinyl Chloride Reductase (*vcrA*) Test

Background

Gene-Trac® VC is a qPCR test for the vinyl chloride reductase (*vcrA*) gene that codes for a Dhc enzyme that converts (VC) to ethene, a critical step in reductive dechlorination of chlorinated ethenes. Gene-Trac® VC is commonly used where Gene-Trac® Dhc test results are positive to confirm that the Dhc detected are capable of complete dechlorination to ethene.#

The vinyl chloride reductase gene (*vcrA)* (Müller et al., 2004) produces an enzyme that is found in many (but not all) Dhc and is reported to be the most common identified VC reductase in the environment (van der Zaan et al., 2010).



Key activity of vinyl chloride reductase vcrA gene/enzyme

Interpretation of Gene-Trac® VC Results

Detect in Gene-Trac® VC Test

A detect in the Gene-Trac® VC test indicates that a Dhc population has the *vcrA* gene and the prospects for complete dechlorination to ethene are good. As a minimal requirement, *vcrA* copies exceeding 10^5/L combined with observed increases over time (i.e., cell growth) are required for robust VC dechlorination (van der Zaan et al., 2010). Also the guidelines for detection of ethene provided under Gene-Trac® Dhc are conservative for interpretation of Gene-Trac® VC (i.e., > 1 x10^7 gene copies/L indicate a high likelihood of detection of ethene). In one study, more than 90% of samples where *vcrA* enumeration exceeded 1 x10^7 gene copies/L had detectable ethene (Dennis, 2009). In cases where *vcrA* gene copies are lower the likelihood of detectable ethene decreases.

Non-Detect in Gene-Trac® VC Test (U qualified)

A non-detect in the Gene-Trac® VC test indicates that *vcrA* gene sequences in the sample are below the detection limit of the assay (typically 4 x 10^3 *vcrA* gene copies/L). This indicates VC accumulation (VC stall) is possible. Note negative Gene-Trac® VC test results do not indicate with 100% certainty that a VC-stall will occur as there are other vinyl chloride reductase genes, such as *bvcA* (van der Zaan et al., 2010) that also convert VC to ethene.

Comparing Gene-Trac® VC and Gene-Trac® Dhc Test Results

Sites may contain different types of Dhc populations. At some sites the Dhc population is homogenous while other sites have Dhc populations that are mixtures of different types of Dhc. This can lead to differing results for Gene-Trac® Dhc and Gene-Trac® VC.

In many cases, the numerical results of Gene-Trac® VC test are identical to those obtained in the Gene-Trac® Dhc test, indicating that the entire Dhc population contains the *vcrA* gene. In other cases, Gene-Trac® VC results may differ significantly (i.e., more than an order or magnitude) from the total Dhc for a number of reasons.

Table 3 provides some common scenarios for Gene-Trac® VC and Gene-Trac® Dhc test results. In general, where Gene-Trac® VC results are non-detect, or significantly lower than Gene-Trac® Dhc, accumulation of VC is more likely.

Table 2: Interpretation of Gene-Trac® VC in Relation to Gene-Trac® Dhc

Gene-Trac® Dhc (16S rRNA gene copies/ L)	Gene-Trac® VC (*vcr*A gene copies/L)	Results Summary	Interpretation	Potential Site Implications
2×10^8 /L	3×10^8/L	Total Dhc and *vcrA* are ~the same (within 3-fold)	Entire Dhc population has *vcrA* gene	Potential for complete dechlorination high. VC stall unlikely-sites with *vcr*A above $1x10^7$/L typically have detectable ethene
1×10^8/L	Non-detect	Total Dhc high; *vcrA* non-detect	High concentration of Dhc and entire population lacks the *vcrA* gene	Likelihood for VC accumulation high as *vcrA* non-detect
1×10^8/L	1×10^6 /L	Total Dhc is significantly higher (100 fold) than *vcrA*	*Dhc* population consists of different types, some with the *vcrA* gene (~1%) and some without (~99%)	VC-accumulation possible; Dhc/*vcrA* proportions may change over course of remediation
1×10^6/L	1×10^8/L	*vcrA* orders of magnitude higher than Dhc	Significantly higher *vcrA* may indicate the presence of populations of non-Dhc microorganisms with *vcrA* like genes	Potential for VC-stall likely low

Gene-Trac® Dhb-Total *Dehalobacter* Test

Gene-Trac® Dhb is a qPCR test targeting the 16S rRNA gene sequences unique to *Dehalobacter* (Dhb). Dhb are implicated in the biodegradation of 1,1,1-trichloroethane (to chloroethane), 1,1,2-trichloroethane and 1,2-dichloroethane to ethene (Grostern and Edwards, 2006) and chloroform (to dichloromethane) (Grostern et al., 2010) as well as incomplete dechlorination of PCE and TCE to cis-DCE (Holliger et al.,1998). Gene-Trac® Dhb may also be used as a tool to assess the impact of bioaugmentation with the KB-1® Plus cultures which contain high concentrations of Dhb.

Positive Gene-Trac® Dhb Test Results (Detects)

A positive Gene-Trac® Dhb indicates that a member of the *Dehalobacter* (Dhb) genus was detected in the sample. The detection of Dhb indicates that some or all of the dechlorination activities attributed to Dhb may be present at the subject site. Increasing concentrations of Dhb are indicative of increased potential to degrade some or all of these compounds.

Note: the Gene-Trac® Dhb test will not differentiate the type of Dhb*;* therefore, observations of the specific biodegradation pathways and end products based on chemical analytical methods in conjunction with Gene-Trac® Dhb will increase the interpretability of Gene-Trac® Dhb results.

Note: Dhb have been reported to contain multiple copies (up to 4 per cell) of the 16S rRNA gene (Grostern and Edwards, 2008). This means that, unlike Dhc, there is not a 1:1 ratio between the 16S rRNA gene copy and the number of Dhb cells in a sample. Calculating the number of Dhb cells requires dividing the Gene-Trac® Dhb test result by the 16S rRNA gene copy number (often 3-4 copies/cell).

Non-detect Gene-Trac® Dhb Results (U qualified)

In cases where Gene-Trac® Dhb is not detected (e.g., 4,000U) this indicates that *Dehalobacter* species were not identified in the sample and that anaerobic reductive dechlorination of 1,1,1-TCA, 1,1,2-TCA, 1,2-DCA or chloroform, which are dechlorinated by *Dehalobacter*, may not be observed. This activity can be introduced at sites through the addition of bioaugmentation cultures containing *Dehalobacter* such as KB-1® Plus.

Key Elements of Gene-Trac® Data

Gene-Trac® test results include two key values (a) Target Gene Enumeration, an enumeration of target gene sequence by quantitative PCR (e.g. “Dhc Enumeration” “Dhb 16S Gene Copies” or “*vcrA* gene copies”) and (b) Target gene percent (e.g. “Percent Dhc”), an estimated percentage of the microbial population comprised by microbes harboring the target gene and other microbes present in sample. Further explanation of these values is provided below.

a) Target Gene Enumeration

This value is the concentration of Dhc or Dhb 16S rRNA or *vcrA* gene copies detected in the sample. Results may be reported as either gene copies per liter (for groundwater) or per gram (for soil). In general, the greater the number of gene copies in a sample the greater the likelihood of related dechlorination activity. Dhc 16S gene copies are typically equivalent to the number of Dhc as they have 1 gene copy per cell this is not necessarily true for Dhb or *vcrA* which have the potential be present in multiple gene copies per cell. Guidelines for relating target gene presence and concentration to observable dechlorination activity for groundwater samples are provided below in previous sections.

b) Target Gene Percent (%Dhc, %Dhb, %*vcrA*)

This value estimates the percentage of the target gene (e.g., %Dhc) relative to other microorganisms in the sample based on the formulas/assumptions presented below. For example, %Dhc is a measure of the predominance of Dhc and, in general, the higher this percentage the better.

$$\%Dhc = \frac{\text{Number Dhc}}{\text{Number Dhc} + \text{Number other Bacteria}}$$

Where:

$$\text{Number other Bacteria} = \frac{\text{Total DNA in sample (ng)} - \text{DNA attributed to Dhc (ng)}}{{}^{*}4.0 \times 10^{-6} \text{ ng DNA per bacterial cell}}$$

*Paul and Clark, (1996).

Percent Dhc (and % *vcrA*) values can range from very low fractions of percentages, in samples with low numbers of Dhc and a high number of other bacteria (incompletely colonized by Dhc), to greater than 50% in Dhc enriched locations (highly colonized by Dhc).

In addition to determining the predominance of the target gene target gene percent is also useful for interpretation of Dhc counts from different sampling locations, or the same location over time. For example, the %Dhc value can be used to correct Dhc counts where samples are biased due to non-representative sampling. Example 1 illustrates a hypothetical scenario where the %Dhc value improved data interpretation.

Example 1, use of %Dhc to interpret enumeration data

Table 2 presents results from MW-1 sampled in April, May and June. Based on the Dhc enumeration alone one would conclude that the concentration of Dhc held steady between April and May; however, the %Dhc indicates the proportion of Dhc actually increased from April to May and the unchanged count in May could be a case of low biomass recovery during sampling or other losses such as sample degradation in transit. The higher raw count and the higher percentage of Dhc in June confirm the trend of increasing Dhc concentrations over time.

Table 3: Use of % Dhc* Value to Diagnose Sampling Bias

Sample	Dhc Enumeration	%Dhc	Interpretation Based on %Dhc
MW-1, April	1.0 x 10^5/Liter	0.1%	Dhc is a low proportion of total microbial population
MW-1, May	1.0 x 10^5/Liter	1%	Dhc proportion increased 10-fold from April. Dhc enumeration was unchanged possibly due to low biomass recovery from monitoring well, non-biased sample would be [(1.0/0.1) x 1.0 x10^5] = 1.0 x 10^6/Liter
MW-1, June	1.0 x 10^7/Liter	10%	Dhc has increased 100-fold from April and confirms May sample was likely low biased

**Note: the above approach is also applicable to the "%vcrA" and "%Dhb" values provided on their respective test certificates*

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Appendix A: Data Qualifiers

Data Qualification

Data qualifiers and notes are used to clarify Gene-Trac® test results. Additional explanation beyond that provided on the test certificate is provided below.

"**U" Not detected, associated value is the quantitation limit.** Indicates that the target gene (microbe) was not detected in the sample above the quantitation limit of the assay. Note the quantitation limit value can change between samples as the volume filtered can vary; thus, a sample in which 100 ml was tested would have a 5–fold higher quantification limit compared with a sample in which 500 ml was tested.

"J" The associated value is an estimated quantity between the method detection limit and quantitation limit. Indicates that the target gene was conclusively detected but the concentration is below the quantitation limit where it cannot be accurately quantified.

"I" Sample inhibited the test reaction. This means universal primers were incapable of amplifying DNA from this sample. The inability to amplify with universal primers suggests that the sample may be imparting matrix interference. Matrix interference is commonly attributed to humic compounds, polyphenols and metals. Non-detects with an "I" qualifier are more likely to be false negative.

"B" Analyte was also detected in the method blank. Indicates that DNA was detected in a method blank or negative control; detectable contamination of the blanks with microbes or DNA containing the gene of interest is not uncommon as the test reaction is extremely sensitive. In most cases, blank contamination is at a very low level relative to test results (often orders of magnitude lower). In these cases, blank contamination is not relevant to interpretation of test results. The potential of test samples being contaminated (i.e. false positives) should be considered in cases where blank results are within 1 order of magnitude of test results.