



**CONESTOGA-ROVERS
& ASSOCIATES**

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September 20, 2013

Reference No. 017322
Submitted via email (.pdf)

Mr. Peter Ramanauskas
U.S. Environmental Protection Agency, Region 5
Land and Chemicals Division
77 West Jackson Blvd., LU-9J
Chicago, Illinois 60604-3590

Dear Mr. Ramanauskas:

RE: Environmental Indicator (EI) RCRIS Code (CA750) Report
PCC-Validation, Pontiac, Michigan
USEPA ID#: MID980568836

In March 2013, a Draft Environmental Indicator (EI) Report – Migration of Contaminated Groundwater Under Control (CA750) was submitted for review to the U.S. Environmental Protection Agency (EPA). Upon review, the U.S. EPA requested an additional field investigation to delineate groundwater in the southwestern portion of the Pontiac Centerpoint Campus Validation Center (PCC-Validation) (Site) and off Site to the northwest. The EI CA750 Form has been updated with the data from the additional field investigation.

The investigation and results are summarized in the attached memorandum titled "Addendum to the RCRA Corrective Action Environmental Indicator (EI) RCRIS Code (CA750)". The memorandum is considered an addendum to the March 2013 EI CA750 Report and supersedes the report, where appropriate. Footnotes have been added to the EI CA750 Report to indicate updated data. The EI CA750 Report is considered "updated" and final as of September 2013. Please contact me if you would like to discuss this matter further. Thank you.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Thomas M. Kinney, C.P.G.

TMK/MJC/ds/5/Det.

Encl: EI CA750 Form
Addendum to the EI CA750 Report
Updated EI CA750 Report

cc: David Favero, RACER
Grant Trigger, RACER

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DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: PCC-Validation
Facility Address: 200 South Boulevard West, Pontiac, Michigan
Facility EPA ID #: MID 980568836

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?
☒ If yes - check here and continue with #2 below.
☐ If no - re-evaluate existing data.
☐ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility {i.e., site-wide}).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

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2. Is **groundwater** known or reasonably suspected to be "**contaminated**"¹ above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

- X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.
- _____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."
- _____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The occurrence of groundwater at the Site and the screening criteria for identifying "contaminated" groundwater are discussed in Section 3.0 of the CA750 Report (CRA, 2013c) and the Addendum to the CA750 Report (CRA, 2013b). Comparison of the groundwater data with the screening criteria is summarized in Tables 2-5 of the CA 750 Report and Table 1 of the Addendum. As discussed in Section 3.1 of the CA 750 Report, the screening criteria include the most applicable and restrictive MDEQ Part 201 Cleanup Criteria except Groundwater to Surface Water Interface (GSI) Criteria.

Volatile organic compounds (VOCs) meet the definition of "contaminated" at MW74-08 and MW91-12. 1,1,1-Trichloroethane, 1,1-Dichloroethene and Trichloroethene (TCE) were detected at MW74-08 above Part 201 Drinking Water Criteria (DWC). TCE was detected at MW91-12 above DWC.

VOCs meet the definition of "contaminated" off-Site in the northern portion of the Site at TMW2I-12 and MW92I-13. TCE was detected above DWC at TMW2I-12 and vinyl chloride (VC) was detected at MW92I-13 above DWC.

Metals meet the definition of "contaminated" in multiple wells throughout the Site as identified below:

- *Aluminum exceeded Residential Health-Based DWC at MW10-07, MW11-07, MW19-07, MW32-07, MW33-07, MW34-07, MW35-07, MW68-08, MW74-08, MW82-12, MW83-12, MW85-12, MW87-12 and MW92S/I-13.*
- *Arsenic exceeded DWC at MW35-07, MW63-08, MW64-08 and MW88-12.*
- *Iron exceeded Residential and Non-Residential Health-Based DWC at MW10-07, MW33-07, MW48-07, MW64-08, MW81-12, MW82-12, MW88-12, and MW92S/I-13.*
- *Lead exceeded DWC at MW10-07.*
- *Manganese exceeded Residential and Non-Residential Health-Based DWC at MW2-07, MW92S -13.*
- *Sodium exceeded DWC at MW2-07, MW4-07, MW7-07, MW11-07, MW15-07, MW19-07, MW33-07, MW34-07, MW35-07, MW37-07, MW40-07, MW48-07, MW63-08, MW64-08, MW68-08 and MW74-08.*
- *Vanadium exceeded DWC at MW10-07, MW33-07, MW35-07 and MW82-12.*

Light nonaqueous-phase liquids (LNAPLs) are present in monitoring wells MW69-08, MW84-12 and MW86-12.

¹ "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

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3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"² as defined by the monitoring locations designated at the time of this determination)?

- X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"².
- _____ If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"²) - skip to #8 and enter "NO" status code, after providing an explanation.
- _____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s)

A detailed discussion of the migration of contaminated groundwater and rationale why contaminated groundwater is expected to remain within the dimensions of the "existing area of groundwater contamination" is presented in Section 4.0 of the CA750 Report (CRA, 2013c) and the Addendum to the CA750 Report (CRA, 2013b).

The vertical extent of impacted groundwater is limited to the upper-most water bearing unit that is generally thin, discontinuous, and relatively low permeability (silty sands). Downward vertical mobility of impacted groundwater is prohibited by a regionally extensive impermeable clay unit (e.g., aquitard).

The lateral extent of VOC contaminated groundwater is defined on-Site and off-Site, including VC to the northwest of the Site. To delineate the off-Site VC impacts, MW93I-13 was installed down-gradient of MW92I-13 along the ROW located on the north side of Franklin Street. Results from monitoring well MW93I-13 indicated no VOCs were detected above laboratory reporting limits except cis-1,2-dichloroethene (cis-1,2 DCE); however, it did not exceed MDEQ Part 201 Drinking Water Criteria. Therefore, the extent of VOC impacts are delineated, limited in nature and migration appears to be under control.

The on-Site extent of LNAPL was defined through the usage of an LIF investigation and verified by monitoring wells with no LNAPL. Based on the LNAPL assessment completed as part of the EI CA725 Report, the NAPL is not considered to be migrating NAPL. Therefore, the extent of LNAPL is clearly defined and migration is under control.

In general, the metal impacts were site wide; however, they are generally defined to Non-Residential DWC at the property boundary. Only iron, manganese and sodium were detected above Non-Residential DWC at the property boundary. While these slightly elevated concentrations of metals may extend beyond on-Site monitoring wells, they are generally immobile in an aerobic aquifer and are associated with a low risk to human health and the environment. Based on the groundwater flow direction, immobility of metals, and the likelihood of the metals as background earth metals, the potential migration of metals offsite does not present a significant risk to human health and the environment. Therefore, since the likelihood of off-Site migration is limited, only off-Site monitoring wells were used to define off-Site impacts to groundwater and no assumptions of migration from other portions of the Site were assessed. Therefore, the following metals were assessed off-Site based on "contamination" from off-site monitoring wells MW80-12, MW81-12 and MW92S/I-12:

- *Off-Site aluminum "contamination" is identified at MW92S/I-13. The aluminum impacts are delineated to the north, south and east. Aluminum concentrations in off-Site groundwater exceeded only the Residential Health-Based DWC. There is no clear pathway between detections of aluminum in off-site monitoring wells and areas of aluminum impacted groundwater on-site. Figure 10 of the CA750 Report (CRA, 2013c) provides a Site map with aluminum contours delineating groundwater to the extent possible*

² "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

- *Off-Site iron "contamination" is identified at MW81-12 and MW92S/I-12. Iron is delineated to the south and east. Iron concentrations in off-Site groundwater exceeded only the Residential Health-Based DWC. There is no clear pathway between detections of iron in off-site monitoring wells and areas of iron impacted groundwater on-site. Figure 12 of the CA750 Report (CRA, 2013c) provides a Site map with iron contours delineating iron in groundwater to the extent possible.*
- *Off-Site manganese "contamination" is identified at MW81-12 and MW92S/I-12. Manganese is delineated to the south and east. Manganese concentrations in off-Site groundwater exceeded only the Residential and Non-Residential Health-Based DWC. Figure 14 of the CA750 Report (CRA, 2013c) provides a Site map with manganese contours delineating groundwater off-Site to the extent possible.*

In general, based on the nature of the metal impacts, the relatively low concentrations, turbidity of the samples and the Site hydrogeology, the extent of metal impacts are limited in nature and migration appears to be under control.

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4. Does "contaminated" groundwater discharge into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

 X If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

No surface water bodies exist at the Site. The Site is located within the Clinton River and Rouge River drainage basins. The Clinton River is located approximately 0.75 miles north of the Site while the Rouge River is located approximately 3.5 miles southeast of the Site. Several surface water bodies and intermittent drains are also located within a mile of the Site, including Crystal Lake, which is approximately a half mile to the west of the Site. These water bodies are part of the Clinton River watershed which ultimately migrates east over a minimum distance of 26 miles towards the St. Clair River, and becomes part of the Great Lakes water system.

Investigation was completed as part of the Phase III ESA to identify potential pathways for off-Site migration of contamination to a surface water body. During a conference call on September 28, 2011, the EPA requested additional investigation of storm sewers as potential conduits for off-Site migration and potential Site exit points. During the 2012 Phase III ESA, storm sewer depths were measured and two monitoring wells (MW82-12 and MW83-12) were installed in or immediately adjacent to the bedding of the utility corridor. The two monitoring wells were installed along the western boundary of the Site and represent potential Site exit points. Groundwater samples were collected for analysis of PCBs, SVOCs and VOCs and no contaminants exceeded Part 201 criteria (except limited metals) at MW82-12 and MW83-12.

Based on the surface water bodies located over 1,000 feet from the downgradient extent of contaminated groundwater to the north and northwest of the Site, the point source sewer investigation and groundwater levels located below preferential pathways, discharge of contaminated on-site or off-site groundwater to surface water bodies is not occurring. Based on the absence of groundwater discharges to surface water, Questions 5 and 6 are not applicable.

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5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

_____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

_____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Not applicable.

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

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6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes - continue after either:

1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR

2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater cannot be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

Not Applicable.

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

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7. Will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

 X If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

 If no -enter "NO" status code in #8.

 If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

A limited round of groundwater monitoring is planned for 2013. In general, groundwater at the site is turbid (greater than 10 NTU); therefore, dissolved metals will be included for any additional sampling of metals.

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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

 YE YE -Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the PCC-Validation facility, EPA ID #MID 980568836 located at 200 South Boulevard West, Pontiac, Michigan. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

 NO -Unacceptable migration of contaminated groundwater is observed or expected.

 IN -More information is needed to make a determination.

Completed by (signature)_____ Date _____

(print)_____

(title)_____

Supervisor (signature)_____ Date _____

(print)_____

(title)_____

(EPA Region or State)_____

Locations where References may be found:

USEPA Region 5 has the following documents, which support the determination. Section 8 of the EI CA750 Report (CRA, 2013c) provides the full citation for each of these documents:

- 2006 and 2009 Phase I ESAs (CRA, 2006a, CRA, 2006b, and CRA, 2009a)
- Phase II Environmental Site Assessment Work Plan (CRA, 2007)
- Memorandum – Quantitative Risk Assessment Results (ENVIRON, 2008)
- Phase II Environmental Site Assessment (North Parcel) (CRA 2009b)
- Phase II Environmental Site Assessment (South Parcel), (CRA 2009c)
- Memorandum – LNAPL Recovery Memo (CRA 2010)
- Draft Current Conditions Report (CRA 2011)
- Supplemental Current Conditions Report, (CRA 2012a)
- Sampling and Analysis Plan and Fundamental Quality Assurance Project Plan, (CRA 2012b)
- RCRA EI CA725 Report (CRA 2013a)
- Addendum to the RCRA EI CA750 Report (CRA, 2013b)
- RCRA EI CA750 Report (CRA 2013c)

Contact telephone and e-mail numbers

(name)_____ (phone #)_____

(e-mail)_____



**CONESTOGA-ROVERS
& ASSOCIATES**

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MEMORANDUM

TO: Peter Ramanauskas/EPA
CC: Grant Trigger, RACER
Dave Favero/RACER
FROM: Thomas Kinney/MS/ds/20 *TK*
DATE: September 20, 2013
RE: **Addendum to the March 2013 RCRA Corrective Action
Environmental Indicator (EI) RCRIS Code (CA750)
RACER PCC-Validation
Pontiac, Michigan**

In March 2013, a Draft Environmental Indicator (EI) Report – Migration of Contaminated Groundwater Under Control (CA750) was submitted for review to the US Environmental Protection Agency (EPA). Upon review, EPA requested an additional field investigation to delineate groundwater in the southwestern portion of the Pontiac Centerpoint Campus Validation Center (PCC-Validation) (Site) and off-Site to the northwest. The request for additional field investigation in the southwestern portion of the Site was based on a one-time exceedance of semi-volatile organic compounds (SVOCs) in a groundwater sample from MW38-07. The additional field investigation off-Site to the northwest was based on an exceedance of vinyl chloride (VC) in groundwater samples from MW92I-13. In July 2013, CRA completed the requested additional field investigation to confirm SVOCs in groundwater at MW38-07 and delineate off-Site groundwater VC impacts. The investigation and results are summarized in this memorandum. The Site Location is presented as Figure 1. A Site Plan with sampling locations is presented as Figure 2.

INVESTIGATION

An additional field investigation was completed from July 10 through July 30, 2013. The investigation included: (1) sampling of monitoring well MW38-07 for analysis of semi-volatile organic compounds (SVOCs); and (2) installation, development and sampling of monitoring well MW93I-13 for analysis volatile organic compounds (VOCs). The purpose of re-sampling monitoring well MW38-07 was to confirm a one-time exceedance of SVOC in a groundwater sample. The purpose of installation and sampling of monitoring well MW93I-13 was to delineate the off-Site VOC impacts in groundwater.

All work followed methods and procedures (including drilling techniques, sample handling, field documentation requirements, field and laboratory analytical methods and QA/QC procedures) outlined in the EPA approved Sampling and Analysis Plan and Fundamental Quality Assurance Project Plan dated August 20, 2012 (SAP/QAPP).

On July 10, 2013, monitoring well MW38-07 was sampled and the sample was analyzed for SVOCs. The groundwater sample was collected in laboratory supplied containers, labeled, packed on ice and shipped under CRA chain-of-custody protocol to ALS Laboratory in Holland, Michigan.

On July 26, 2013 CRA conducted oversight of the installation of monitoring well MW93I-13 located in the right-of-way (ROW) on the north side of Franklin Road (Figure 2). The well was installed following protocol identified in Section 2.2 of the SAP/QAPP. The monitoring well installation log is presented in Attachment A.

On July 29, 2013, CRA developed MW93I-13 following protocol identified in Section 2.2 of the SAP/QAPP.

On July 30, 2013, monitoring well MW93I-13 was sampled and the sample was analyzed for VOCs. The groundwater sample was collected in laboratory supplied containers, labeled, packed on ice and shipped under CRA chain-of-custody protocol to ALS Laboratory in Holland, Michigan.

RESULTS

No SVOCs were detected above laboratory reporting limits in the sample collected from monitoring well MW38-07. No VOCs were detected above laboratory reporting limits from monitoring well MW93I-13 except for cis-1,2-dichloroethene (cis-1,2 DCE) at 1.7 ug/L; however, this concentration does not exceed MDEQ Part 201 Drinking Water Criteria. A summary of groundwater sampling results are presented in Tables 1 and 2. Figure 2 presents a Site map with groundwater sampling locations and Figure 3 presents a Site map with updated VOC delineation to the northwest of the Site. Figure 4 presents a Site map with SVOC exceedances in groundwater. Attachment B presents the laboratory analytical report.

CONCLUSION

Groundwater from MW38-07 was re-sampled and SVOC results were below laboratory reporting limits. Therefore, groundwater at MW38-07 is not considered "contaminated" at MW38-07.

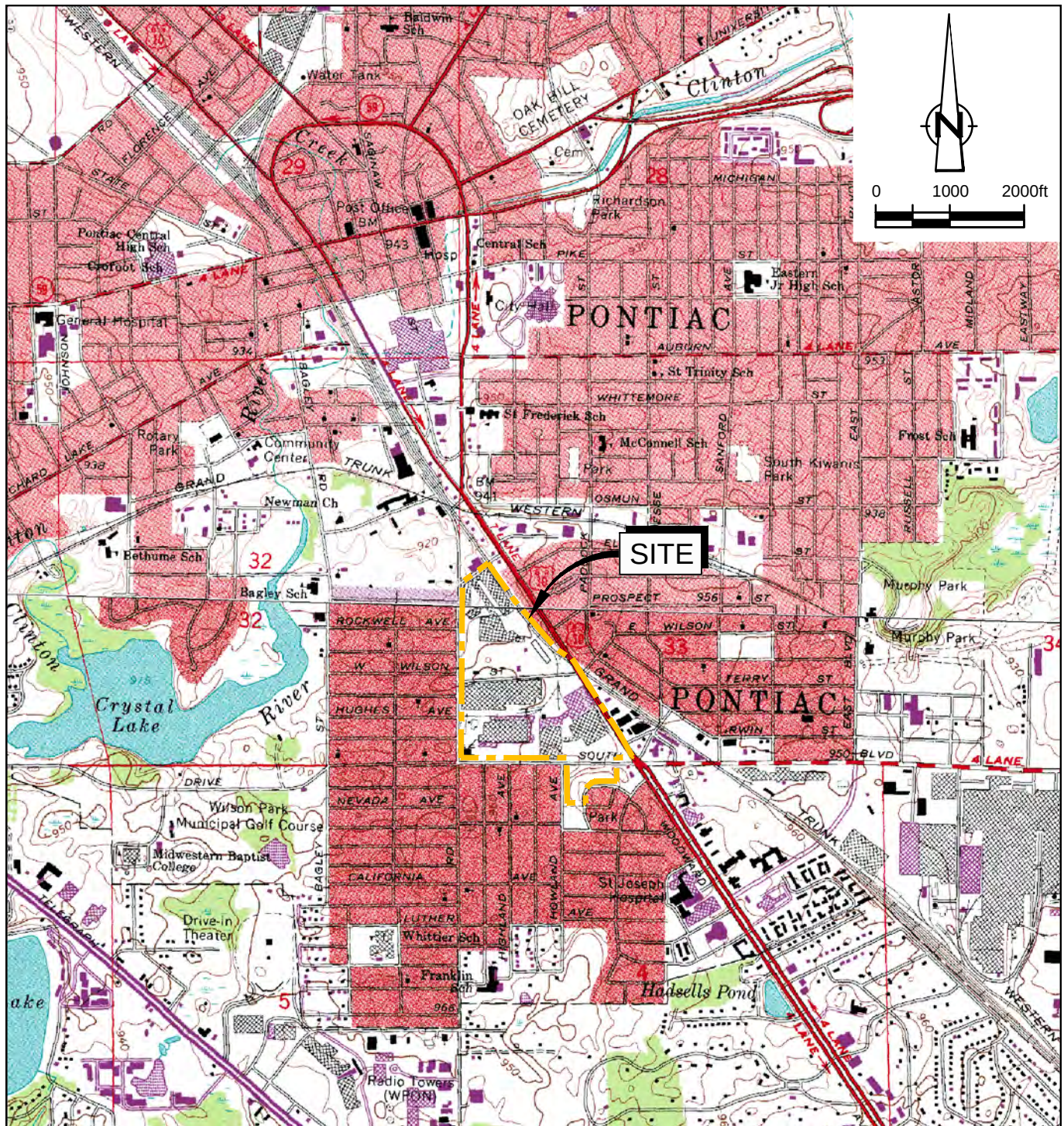
The extent of VOC impacts above criteria off-Site to the northwest was delineated based on the analytical results from MW92I-13. Figure 3 presents a Site map with updated VOC data that illustrates delineation to the northwest of the Site.

ATTACHMENTS: Figure 1 – Site Location Map
Figure 2 – Site Plan with Sampling Locations
Figure 3 – On-Site and Off-Site VOC Contours
Figure 4 – SVOC Exceedances in Groundwater

Table 1 – Groundwater Analytical Results – TCL VOCs
Table 2 – Groundwater Analytical Results – TCL SVOCs

Attachment A – Stratigraphic Logs and Well Detail Completion
Attachment B – Analytical Laboratory Reports

FIGURES



SOURCE: USGS QUADRANGLE MAPS;
PONTIAC NORTH AND SOUTH, MICHIGAN; 1968

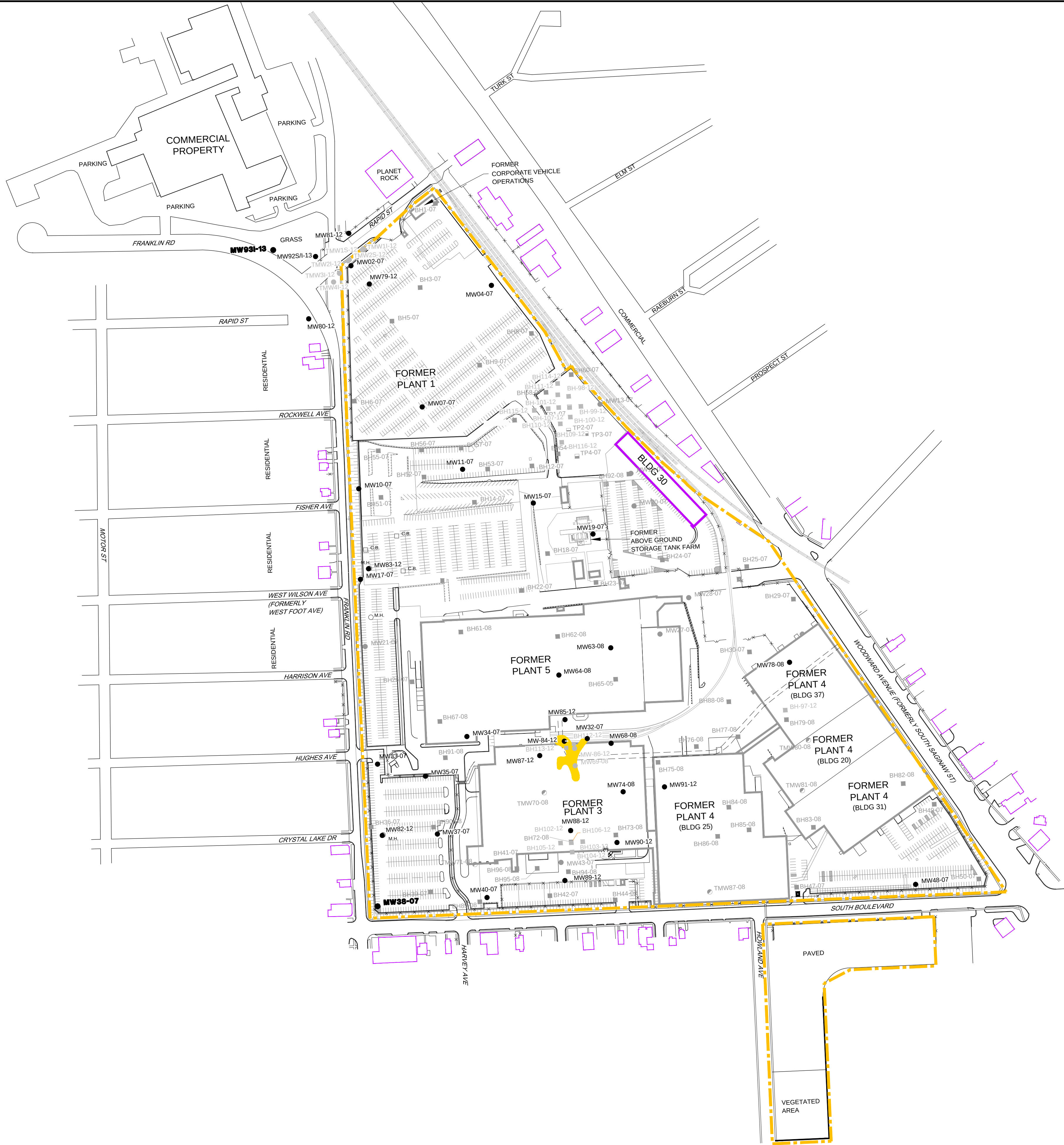
LEGEND

— — — — — APPROXIMATE SITE BOUNDARY

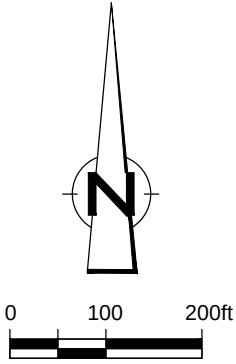
figure 1

SITE LOCATION
PCC - VALIDATION
PONTIAC VALIDATION CENTER
200 South Boulevard West, Pontiac, Michigan





No	Revision	Date	Initial



LEGEND

- MW93-13 MONITORING WELL SAMPLED JULY, 2013
- TP1-07 COMPLETED TEST PIT LOCATION
- MW28-07 COMPLETED MONITORING WELL LOCATION
- TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
- BH8-07 COMPLETED SOIL BORING LOCATION
- - - APPROXIMATE SITE BOUNDARY
- - - EXISTING STRUCTURE
- - - FORMER SITE STRUCTURE
- M.H. MANHOLE
- C.B. CATCH BASIN

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.



Approved

DRAWING STATUS

Status	Date	Initial

SITE PLAN
WITH SAMPLING LOCATIONS

PCC-VALIDATION

PONTIAC, MICHIGAN



CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager: T.K.	Reviewed By: M.C.	Date: AUGUST 2013
Scale: 1:200	Project N°: 017322-T02	Report N°: MEMO020
		Drawing N°: 2

TABLES

TABLE 1
GROUNDWATER ANALYTICAL RESULTS
TCL-VOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

<u>Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)</u>				MW93i-13 GW-17322-073013-EM-001 07/30/2013	Trip Blank TB-17322-073013-EM 07/30/2013
Sample Location:		Residential Drinking Water a	NonResidential Drinking Water b		
Sample ID:					
Sample Date:					
VOCs	Units				
1,1,1-Trichloroethane	ug/L	200 A	200 A	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	ug/L	8.5	35	1.0 U	1.0 U
1,1,2-Trichloroethane	ug/L	5 A	5 A	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	880	2500	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7 A	7 A	1.0 U	1.0 U
1,2,4-Trichlorobenzene	ug/L	70 A	70 A	5.0 U	5.0 U
1,2-Dibromo-3-chloropropane (DBCP)	ug/L	0.2 A	0.2 A	1.0 U	1.0 U
1,2-Dibromoethane (Ethylene dibromide)	ug/L	0.05 A	0.05 A	1.0 U	1.0 U
1,2-Dichlorobenzene	ug/L	600 A	600 A	1.0 U	1.0 U
1,2-Dichloroethane	ug/L	5 A	5 A	1.0 U	1.0 U
1,2-Dichloropropane	ug/L	5 A	5 A	1.0 U	1.0 U
1,3-Dichlorobenzene	ug/L	6.6	19	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75 A	75 A	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	25 U	25 U
2-Hexanone	ug/L	1000	2900	50 U	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	50 U	50 U
Acetone	ug/L	730	2100	50 U	15 J
Benzene	ug/L	5 A	5 A	1.0 U	1.0 U
Bromodichloromethane	ug/L	80 A,W	80 A,W	1.0 U	1.0 U
Bromoform	ug/L	80 A,W	80 A,W	1.0 U	1.0 U
Bromomethane (Methyl bromide)	ug/L	10	29	5.0 U	5.0 U
Carbon disulfide	ug/L	800	2300	5.0 U	5.0 U
Carbon tetrachloride	ug/L	5 A	5 A	1.0 U	1.0 U
Chlorobenzene	ug/L	100 A	100 A	1.0 U	1.0 U
Chloroethane	ug/L	430	1700	5.0 U	5.0 U
Chloroform (Trichloromethane)	ug/L	80 A,W	80 A,W	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	260	1100	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	70 A	70 A	1.7	1.0 U
cis-1,3-Dichloropropene	ug/L	NA	NA	1.0 U	1.0 U
Cyclohexane	ug/L	NA	NA	1.0 U	1.0 U
Dibromochloromethane	ug/L	80 A,W	80 A,W	5.0 U	5.0 U
Dichlorodifluoromethane (CFC-12)	ug/L	1700	4800	5.0 U	5.0 U
Ethylbenzene	ug/L	74 E	74 E	1.0 U	1.0 U
Isopropyl benzene	ug/L	800	2300	5.0 U	5.0 U
Methyl acetate	ug/L	NA	NA	10 U	10 U
Methyl cyclohexane	ug/L	NA	NA	1.0 U	1.0 U
Methyl tert butyl ether (MTBE)	ug/L	40 E	40 E	5.0 U	5.0 U
Methylene chloride	ug/L	5 A	5 A	5.0 U	5.0 U
Styrene	ug/L	100 A	100 A	1.0 U	1.0 U
Tetrachloroethene	ug/L	5 A	5 A	1.0 U	1.0 U
Toluene	ug/L	790 E	790 E	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100 A	100 A	1.0 U	1.0 U
trans-1,3-Dichloropropene	ug/L	NA	NA	1.0 U	1.0 U
Trichloroethene	ug/L	5 A	5 A	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300	1.0 U	1.0 U
Trifluorotrichloroethane (Freon 113)	ug/L	170000 S	170000 S	1.0 U	1.0 U
Vinyl chloride	ug/L	2 A	2 A	1.0 U	1.0 U
Xylenes (total)	ug/L	280 E	280 E	3.0 U	3.0 U

Notes:

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The associated value is qualified as an estimated quantity.

UJ The analyte was reported or qualified as not detected however,

the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

NA - Criteria not available or not applicable

TABLE 2

GROUNDWATER ANALYTICAL RESULTS
TCL-SVOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Sample Location:		Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)				MW38-07
Sample ID:		Residential	NonResidential			GW-17322-071013-SK-001
Sample Date:		Drinking Water	Drinking Water	Groundwater Contact	Water Solubility	07/10/2013
SVOCs	Units	a	b	f	g	
2,2'-Oxybis(1-chloropropane) (bis(2-Chloroisopropyl) et	ug/L					5.0 UJ
2,4,5-Trichlorophenol	ug/L	730	2100	170000	1200000	5.0 UJ
2,4,6-Trichlorophenol	ug/L	120	470	10000	800000	4.0 UJ
2,4-Dichlorophenol	ug/L	73	210	48000	4500000	10 UJ
2,4-Dimethylphenol	ug/L	370	1000	520000	7870000	5.0 UJ
2,4-Dinitrophenol	ug/L	NA	NA	NA	NA	5.0 UJ
2,4-Dinitrotoluene	ug/L	7.7	32	8600	270000	5.0 UJ
2,6-Dinitrotoluene	ug/L	NA	NA	NA	NA	5.0 UJ
2-Chloronaphthalene	ug/L	1800	5200	6700 S	6740	5.0 UJ
2-Chlorophenol	ug/L	45	130	94000	22000000	5.0 UJ
2-Methylnaphthalene	ug/L	260	750	25000 S	24600	5.0 UJ
2-Methylphenol	ug/L	370	1000	810000	28000000	5.0 UJ
2-Nitroaniline	ug/L	NA	NA	NA	NA	20 UJ
2-Nitrophenol	ug/L	20	58	79000	2500000	5.0 UJ
3,3'-Dichlorobenzidine	ug/L	1.1	4.3	180	3110	1.0 UJ
3-Nitroaniline	ug/L	NA	NA	NA	NA	20 UJ
4,6-Dinitro-2-methylphenol	ug/L	20 M	20 M	9500	200000	20 UJ
4-Bromophenyl phenyl ether	ug/L	NA	NA	NA	NA	5.0 UJ
4-Chloro-3-methylphenol	ug/L	150	420	79000	3900000	5.0 UJ
4-Chloroaniline	ug/L	NA	NA	NA	NA	10 UJ
4-Chlorophenyl phenyl ether	ug/L	NA	NA	NA	NA	5.0 UJ
4-Methylphenol	ug/L	370	1000	810000	28000000	5.0 UJ
4-Nitroaniline	ug/L	NA	NA	NA	NA	20 UJ
4-Nitrophenol	ug/L	NA	NA	NA	NA	20 UJ
Acenaphthene	ug/L	1300	3800	4200 S	4240	5.0 UJ
Acenaphthylene	ug/L	52	150	3900 S	3930	5.0 UJ
Acetophenone	ug/L	1500	4400	6100000 S	6100000	1.0 UJ
Anthracene	ug/L	43 S	43 S	43 S	43.4	5.0 UJ
Atrazine	ug/L	3 A	3 A	5400	70000	3.0 UJ
Benzaldehyde	ug/L	NA	NA	NA	NA	1.0 UJ
Benzo(a)anthracene	ug/L	2.1	8.5	9.4 S,AA	9.4	1.0 UJ
Benzo(a)pyrene	ug/L	5 A	5 A	1 M,AA	1.62	1.0 UJ
Benzo(b)fluoranthene	ug/L	1.5 S,AA	1.5 S,AA	1.5 S,AA	1.5	1.0 UJ
Benzo(g,h,i)perylene	ug/L	1 M	1 M	1 M	0.26	1.0 UJ
Benzo(k)fluoranthene	ug/L	1 M	1 M	1 M,AA	0.8	1.0 UJ
Biphenyl (1,1-Biphenyl)	ug/L	NA	NA	NA	NA	5.0 UJ
bis(2-Chloroethoxy)methane	ug/L	NA	NA	NA	NA	5.0 UJ
bis(2-Chloroethyl)ether	ug/L	2	8.3	5700	17200000	1.0 UJ
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6 A	6 A	320 AA	340	5.0 UJ
Butyl benzylphthalate (BBP)	ug/L	1200	2700 S	2700 S	2690	5.0 UJ
Caprolactam	ug/L	5800	17000	390000000	525000000	10 UJ
Carbazole	ug/L	85	350	7400	7480	10 UJ
Chrysene	ug/L	1.6 S	1.6 S	1.6 S,AA	1.6	1.0 UJ
Dibenz(a,h)anthracene	ug/L	2 M	2 M	2 M,AA	2.49	2.0 UJ
Dibenzofuran	ug/L	ID	ID	ID	10000	4.0 UJ
Diethyl phthalate	ug/L	5500	16000	1100000 S	1080000	5.0 UJ
Dimethyl phthalate	ug/L	73000	210000	4200000 S	4190000	5.0 UJ
Di-n-butylphthalate (DBP)	ug/L	880	2500	11000 S	11200	5.0 UJ
Di-n-octyl phthalate (DnOP)	ug/L	130	380	400	3000	5.0 UJ
Fluoranthene	ug/L	210 S	210 S	210 S	206	1.0 UJ
Fluorene	ug/L	880	2000 S	2000 S	1980	5.0 UJ
Hexachlorobenzene	ug/L	1 A	1 A	4.6	6200	1.0 UJ
Hexachlorobutadiene	ug/L	15	42	400	3230	1.0 UJ
Hexachlorocyclopentadiene	ug/L	50 A	50 A	1600	1800	5.0 UJ
Hexachloroethane	ug/L	7.3	21	1900	50000	5.0 UJ
Indeno(1,2,3-cd)pyrene	ug/L	2 M	2 M	2 M,AA	0.022	2.0 UJ
Isophorone	ug/L	770	3100	990000	12000000	5.0 UJ
Naphthalene	ug/L	520	1500	31000 S	31000	5.0 UJ
Nitrobenzene	ug/L	3.4	9.6	11000	2090000	3.0 UJ
N-Nitrosodi-n-propylamine	ug/L	5 M	5 M	360	9890000	5.0 UJ
N-Nitrosodiphenylamine	ug/L	270	1100	35000 S	35100	5.0 UJ
Pentachlorophenol	ug/L	1 A	1 A	200	1850000	1.0 UJ
Phenanthrene	ug/L	52	150	1000 S	1000	2.0 UJ
Phenol	ug/L	4400	13000	29000000	82800000	5.0 UJ
Pyrene	ug/L	140 S	140 S	140 S	135	5.0 UJ

Notes:

UJ The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

NA - Criteria not available or not applicable.

ATTACHMENT A

STRATIGRAPHIC LOGS AND WELL DETAIL COMPLETION



STRATIGRAPHIC AND INSTRUMENTATION LOG (OVERBURDEN)

Page 1 of 1

PROJECT NAME: PCC VALIDATION

PROJECT NUMBER: 17322

CLIENT: RACER

LOCATION: PONTIAC, MICHIGAN

HOLE DESIGNATION: MW93I-13

DATE COMPLETED: July 26, 2013

DRILLING METHOD: GEOPROBE

FIELD PERSONNEL: S. KIPPEN

DEPTH ft BGS	STRATIGRAPHIC DESCRIPTION & REMARKS	DEPTH ft BGS	MONITORING WELL	SAMPLE				
				NUMBER	INTERVAL	REC (%)	'N' VALUE	PID (ppm)
2	FILL, gravelly sand		CONCRETE	1GP		95		1.3
4	SP-SAND (FILL), few gravel, trace clay, compact, fine grained, poorly graded, brown, moist	4.00	BENTONITE CHIPS					2.2
6	- porcelain pieces at 6.8ft BGS		2" PVC WELL CASING					
8	BRICK, cobble, reddish brown, black staining on bottom	7.40 7.70	8" BOREHOLE	2GP		80		2.4
10	CL-SANDY CLAY, few gravel, stiff, low plasticity, brown, moist							2.8
12	SM-SILTY SAND, compact, fine grained, poorly graded, light brown, moist	10.00 10.60		3GP		80		3.6
14	SP-GRAVELLY SAND, trace silt, compact, fine grained, poorly graded, brown, wet							4.0
16			2" PVC WELL SCREEN					
18	ML-SANDY SILT, compact, fine grained, poorly graded, brown, wet	17.20	SAND PACK	4GP		75		4.6
20	- 1" sand lens, trace fine gravel at 19.0ft BGS							
22	SP-SAND, with fine gravel, compact, fine grained, poorly graded, brown, wet	20.00 20.30 21.00		5GP		20		
24	CL-SILTY CLAY, trace gravel, stiff, low plasticity, brown, moist							
26	- REFUSAL at 21.0ft BGS							
28	END OF BOREHOLE @ 21.0ft BGS							
30								
32								
34								

WELL DETAILS

Screened interval:

12.00 to 17.00ft BGS

Length: 5ft

Diameter: 2in

Slot Size: 0.010

Material: PVC

Seal:

1.50 to 10.00ft BGS

Material: BENTONITE CHIPS

Sand Pack:

10.00 to 17.30ft BGS

Material: SAND

NOTES: MEASURING POINT ELEVATIONS MAY CHANGE; REFER TO CURRENT ELEVATION TABLE
WATER FOUND ∇

OVERBURDEN LOG 17322WIN-RACER.GPJ CRA_CORP.GDT 9/4/13

ATTACHMENT B

ANALYTICAL LABORATORY REPORTS



15-Jul-2013

Paul Wiseman
Conestoga-Rovers & Associates
14496 Sheldon Road
Suite 200
Plymouth, MI 48170

Re: **PCC-Validation (017322-T03Y13)**

Work Order: **1307340**

Dear Paul,

ALS Environmental received 1 sample on 11-Jul-2013 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 17.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Beamish".

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Work Order: 1307340

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1307340-01	GW-17322-071013-SK-001	Groundwater		07/10/13 10:30	07/11/13 09:15	☐

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
WorkOrder: 1307340

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Work Order: 1307340

Case Narrative**Analytical Comments:**

Batch R123199A, Method VOC_8260_W, Sample 1307148-04D: One or more VOC surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

QC Comments:

Batch 49662, Method SVO_8270_W, Sample SLCSW1-49662: The LCS recovery was below the lower control limit. The sample results may be biased low for 2,4,5-Trichlorophenol, 2,4-Dichlorophenol, and Dibenzofuran.

Batch 49662, Method SVO_8270_W, Sample SLCSW1-49662: The LCS recovery was above the upper control limit. The sample results may be biased high for 4-Chloroaniline.

Batch 49662, Method SVO_8270_W, Sample 1307340-01A MSD: The MS and/or MSD recoveries were below the control limit. The corresponding results in the parent sample may be biased low for 2,4,5-Trichlorophenol, 2,4-Dichlorophenol, 2-Chloronaphthalene, and Dibenzofuran.

Batch 49662, Method SVO_8270_W, Sample 1307340-01A MSD: The MS and MSD recoveries were above the upper control limit. The corresponding result in the parent sample may be biased high 4-Chloroaniline.

ALS Group USA, Corp

Date: 15-Jul-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-071013-SK-001
Collection Date: 07/10/13 10:30 AM

Work Order: 1307340
Lab ID: 1307340-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270	Prep: SW3510 / 7/12/13			Analyst: HL
<u>BatchID: 49662</u>							
1,1`-Biphenyl	U		0.095	5.0	µg/L	1	07/15/13 11:05
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	07/15/13 11:05
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	07/15/13 11:05
2,4-Dichlorophenol	U		0.22	10	µg/L	1	07/15/13 11:05
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	07/15/13 11:05
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	07/15/13 11:05
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	07/15/13 11:05
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	07/15/13 11:05
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	07/15/13 11:05
2-Chlorophenol	U		0.73	5.0	µg/L	1	07/15/13 11:05
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	07/15/13 11:05
2-Methylphenol	U		0.60	5.0	µg/L	1	07/15/13 11:05
2-Nitroaniline	U		0.11	20	µg/L	1	07/15/13 11:05
2-Nitrophenol	U		0.19	5.0	µg/L	1	07/15/13 11:05
3,3`-Dichlorobenzidine	U		0.54	1.0	µg/L	1	07/15/13 11:05
3-Nitroaniline	U		2.5	20	µg/L	1	07/15/13 11:05
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	07/15/13 11:05
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	07/15/13 11:05
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	07/15/13 11:05
4-Chloroaniline	U		1.1	10	µg/L	1	07/15/13 11:05
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	07/15/13 11:05
4-Methylphenol	U		0.55	5.0	µg/L	1	07/15/13 11:05
4-Nitroaniline	U		1.5	20	µg/L	1	07/15/13 11:05
4-Nitrophenol	U		1.6	20	µg/L	1	07/15/13 11:05
Acenaphthene	U		0.11	5.0	µg/L	1	07/15/13 11:05
Acenaphthylene	U		0.12	5.0	µg/L	1	07/15/13 11:05
Acetophenone	U		0.090	1.0	µg/L	1	07/15/13 11:05
Anthracene	U		0.72	5.0	µg/L	1	07/15/13 11:05
Atrazine	U		0.13	3.0	µg/L	1	07/15/13 11:05
Benzaldehyde	U		0.46	1.0	µg/L	1	07/15/13 11:05
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	07/15/13 11:05
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	07/15/13 11:05
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	07/15/13 11:05
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	07/15/13 11:05
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	07/15/13 11:05
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	07/15/13 11:05
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	07/15/13 11:05

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Jul-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-071013-SK-001
Collection Date: 07/10/13 10:30 AM

Work Order: 1307340
Lab ID: 1307340-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	07/15/13 11:05
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	07/15/13 11:05
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	07/15/13 11:05
Caprolactam	U		4.7	10	µg/L	1	07/15/13 11:05
Carbazole	U		0.84	10	µg/L	1	07/15/13 11:05
Chrysene	U		0.71	1.0	µg/L	1	07/15/13 11:05
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	07/15/13 11:05
Dibenzofuran	U		0.11	4.0	µg/L	1	07/15/13 11:05
Diethyl phthalate	U		0.69	5.0	µg/L	1	07/15/13 11:05
Dimethyl phthalate	U		0.14	5.0	µg/L	1	07/15/13 11:05
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	07/15/13 11:05
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	07/15/13 11:05
Fluoranthene	U		0.77	1.0	µg/L	1	07/15/13 11:05
Fluorene	U		0.10	5.0	µg/L	1	07/15/13 11:05
Hexachlorobenzene	U		0.10	1.0	µg/L	1	07/15/13 11:05
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	07/15/13 11:05
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	07/15/13 11:05
Hexachloroethane	U		0.13	5.0	µg/L	1	07/15/13 11:05
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	07/15/13 11:05
Isophorone	U		0.12	5.0	µg/L	1	07/15/13 11:05
Naphthalene	U		0.12	5.0	µg/L	1	07/15/13 11:05
Nitrobenzene	U		0.10	3.0	µg/L	1	07/15/13 11:05
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	07/15/13 11:05
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	07/15/13 11:05
Pentachlorophenol	U		0.11	1.0	µg/L	1	07/15/13 11:05
Phenanthrene	U		0.86	2.0	µg/L	1	07/15/13 11:05
Phenol	U		0.094	5.0	µg/L	1	07/15/13 11:05
Pyrene	U		0.65	5.0	µg/L	1	07/15/13 11:05
Surr: 2,4,6-Tribromophenol	46.1			32-115	%REC	1	07/15/13 11:05
Surr: 2-Fluorobiphenyl	36.1			32-100	%REC	1	07/15/13 11:05
Surr: 2-Fluorophenol	23.9			22-59	%REC	1	07/15/13 11:05
Surr: 4-Terphenyl-d14	72.3			23-112	%REC	1	07/15/13 11:05
Surr: Nitrobenzene-d5	38.1			31-93	%REC	1	07/15/13 11:05
Surr: Phenol-d6	13.1			13-36	%REC	1	07/15/13 11:05

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Conestoga-Rovers & Associates

QC BATCH REPORT

Work Order: 1307340

Project: PCC-Validation (017322-T03Y13)

Batch ID: 49662

Instrument ID SVMS4

Method: SW8270

MBLK		Sample ID: SBLKW1-49662-49662				Units: µg/L		Analysis Date: 07/15/13 09:32 AM		
Client ID:		Run ID: SVMS4_130715A				SeqNo: 2378006		Prep Date: 07/12/13		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1'-Biphenyl	U	5.0								
2,4,5-Trichlorophenol	U	5.0								
2,4,6-Trichlorophenol	U	5.0								
2,4-Dichlorophenol	U	10								
2,4-Dimethylphenol	U	5.0								
2,4-Dinitrophenol	U	5.0								
2,4-Dinitrotoluene	U	5.0								
2,6-Dinitrotoluene	U	5.0								
2-Chloronaphthalene	U	5.0								
2-Chlorophenol	U	5.0								
2-Methylnaphthalene	U	5.0								
2-Methylphenol	U	5.0								
2-Nitroaniline	U	20								
2-Nitrophenol	U	5.0								
3,3'-Dichlorobenzidine	U	5.0								
3-Nitroaniline	U	20								
4,6-Dinitro-2-methylphenol	U	20								
4-Bromophenyl phenyl ether	U	5.0								
4-Chloro-3-methylphenol	U	5.0								
4-Chloroaniline	U	20								
4-Chlorophenyl phenyl ether	U	5.0								
4-Methylphenol	U	5.0								
4-Nitroaniline	U	20								
4-Nitrophenol	U	20								
Acenaphthene	U	5.0								
Acenaphthylene	U	5.0								
Acetophenone	U	1.0								
Anthracene	U	5.0								
Atrazine	U	1.0								
Benzaldehyde	U	1.0								
Benzo(a)anthracene	U	5.0								
Benzo(a)pyrene	U	5.0								
Benzo(b)fluoranthene	U	5.0								
Benzo(g,h,i)perylene	U	5.0								
Benzo(k)fluoranthene	U	5.0								
Bis(2-chloroethoxy)methane	U	5.0								
Bis(2-chloroethyl)ether	U	5.0								
Bis(2-chloroisopropyl)ether	U	5.0								
Bis(2-ethylhexyl)phthalate	U	5.0								
Butyl benzyl phthalate	U	5.0								
Caprolactam	U	10								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1307340
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 49662	Instrument ID SVMS4	Method: SW8270						
Carbazole	U	10						
Chrysene	U	5.0						
Dibenzo(a,h)anthracene	U	5.0						
Dibenzofuran	U	5.0						
Diethyl phthalate	U	20						
Dimethyl phthalate	U	20						
Di-n-butyl phthalate	U	5.0						
Di-n-octyl phthalate	U	5.0						
Fluoranthene	U	5.0						
Fluorene	U	5.0						
Hexachlorobenzene	U	5.0						
Hexachlorobutadiene	U	5.0						
Hexachlorocyclopentadiene	U	20						
Hexachloroethane	U	5.0						
Indeno(1,2,3-cd)pyrene	U	5.0						
Isophorone	U	5.0						
Naphthalene	U	5.0						
Nitrobenzene	U	5.0						
N-Nitrosodi-n-propylamine	U	5.0						
N-Nitrosodiphenylamine	U	5.0						
Pentachlorophenol	U	20						
Phenanthrene	U	5.0						
Phenol	U	5.0						
Pyrene	U	5.0						
<i>Surr: 2,4,6-Tribromophenol</i>	<i>22.81</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>45.6</i>	<i>38-115</i>	<i>0</i>	
<i>Surr: 2-Fluorobiphenyl</i>	<i>20.87</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>41.7</i>	<i>32-100</i>	<i>0</i>	
<i>Surr: 2-Fluorophenol</i>	<i>14.59</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>29.2</i>	<i>22-59</i>	<i>0</i>	
<i>Surr: 4-Terphenyl-d14</i>	<i>41.88</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>83.8</i>	<i>23-112</i>	<i>0</i>	
<i>Surr: Nitrobenzene-d5</i>	<i>22.24</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>44.5</i>	<i>31-93</i>	<i>0</i>	
<i>Surr: Phenol-d6</i>	<i>8.61</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>17.2</i>	<i>13-36</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1307340
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **49662** Instrument ID **SVMS4** Method: **SW8270**

LCS Sample ID: SLCSW1-49662-49662				Units: µg/L			Analysis Date: 07/15/13 09:01 AM			
Client ID:		Run ID: SVMS4_130715A		SeqNo: 2378005		Prep Date: 07/12/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	9.76	5.0	20	0	48.8	50-110	0			S
2,4,6-Trichlorophenol	10.05	5.0	20	0	50.2	50-115	0			
2,4-Dichlorophenol	9.62	10	20	0	48.1	50-105	0			JS
2,4-Dimethylphenol	9.33	5.0	20	0	46.6	30-110	0			
2,4-Dinitrophenol	9.66	5.0	20	0	48.3	15-140	0			
2,4-Dinitrotoluene	11.41	5.0	20	0	57	50-120	0			
2,6-Dinitrotoluene	11.91	5.0	20	0	59.6	50-115	0			
2-Chloronaphthalene	10.07	5.0	20	0	50.4	50-105	0			
2-Chlorophenol	10.43	5.0	20	0	52.2	35-105	0			
2-Methylnaphthalene	10.23	5.0	20	0	51.2	45-105	0			
2-Methylphenol	9.84	5.0	20	0	49.2	40-110	0			
2-Nitroaniline	12.18	20	20	0	60.9	50-115	0			J
2-Nitrophenol	9.82	5.0	20	0	49.1	40-115	0			
3-Nitroaniline	9.46	20	20	0	47.3	20-125	0			J
4,6-Dinitro-2-methylphenol	11.53	20	20	0	57.6	40-130	0			J
4-Bromophenyl phenyl ether	10.91	5.0	20	0	54.6	50-115	0			
4-Chloro-3-methylphenol	11.05	5.0	20	0	55.2	45-110	0			
4-Chloroaniline	24.33	20	20	0	122	15-110	0			S
4-Chlorophenyl phenyl ether	10.84	5.0	20	0	54.2	50-110	0			
4-Methylphenol	9.15	5.0	20	0	45.8	30-110	0			
4-Nitroaniline	9.42	20	20	0	47.1	35-150	0			J
4-Nitrophenol	6.09	20	20	0	30.4	1-58	0			J
Acenaphthene	11.07	5.0	20	0	55.4	45-110	0			
Acenaphthylene	10.88	5.0	20	0	54.4	50-105	0			
Anthracene	11.65	5.0	20	0	58.2	55-110	0			
Benzo(a)anthracene	11.64	5.0	20	0	58.2	55-110	0			
Benzo(a)pyrene	13	5.0	20	0	65	55-110	0			
Benzo(b)fluoranthene	12.42	5.0	20	0	62.1	45-120	0			
Benzo(g,h,i)perylene	14.53	5.0	20	0	72.6	40-125	0			
Benzo(k)fluoranthene	13.8	5.0	20	0	69	45-125	0			
Bis(2-chloroethoxy)methane	10.34	5.0	20	0	51.7	45-105	0			
Bis(2-chloroethyl)ether	10.13	5.0	20	0	50.6	35-110	0			
Bis(2-chloroisopropyl)ether	9.45	5.0	20	0	47.2	25-130	0			
Bis(2-ethylhexyl)phthalate	12.31	5.0	20	0	61.6	40-125	0			
Butyl benzyl phthalate	12.33	5.0	20	0	61.6	45-115	0			
Carbazole	16.65	10	20	0	83.2	50-150	0			
Chrysene	12.81	5.0	20	0	64	55-110	0			
Dibenzo(a,h)anthracene	12.28	5.0	20	0	61.4	40-125	0			
Dibenzofuran	10.38	5.0	20	0	51.9	55-105	0			S
Diethyl phthalate	11.38	20	20	0	56.9	40-120	0			J
Dimethyl phthalate	11.38	20	20	0	56.9	25-125	0			J
Di-n-butyl phthalate	13.27	5.0	20	0	66.4	55-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1307340
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 49662		Instrument ID SVMS4		Method: SW8270				
Di-n-octyl phthalate	12.42	5.0	20	0	62.1	35-135	0	
Fluoranthene	12.72	5.0	20	0	63.6	55-115	0	
Fluorene	10.77	5.0	20	0	53.8	50-110	0	
Hexachlorobenzene	11.89	5.0	20	0	59.4	50-110	0	
Hexachlorobutadiene	10.55	5.0	20	0	52.8	25-105	0	
Hexachlorocyclopentadiene	7.64	20	20	0	38.2	25-105	0	J
Hexachloroethane	10.57	5.0	20	0	52.8	30-95	0	
Indeno(1,2,3-cd)pyrene	12.51	5.0	20	0	62.6	45-125	0	
Isophorone	10.94	5.0	20	0	54.7	50-110	0	
Naphthalene	9.56	5.0	20	0	47.8	40-100	0	
Nitrobenzene	10.02	5.0	20	0	50.1	45-110	0	
N-Nitrosodi-n-propylamine	11.38	5.0	20	0	56.9	35-130	0	
N-Nitrosodiphenylamine	12.61	5.0	20	0	63	50-110	0	
Pentachlorophenol	10.18	20	20	0	50.9	40-115	0	J
Phenanthrene	11.03	5.0	20	0	55.2	50-115	0	
Phenol	4.89	5.0	20	0	24.4	12-43	0	J
Pyrene	12.92	5.0	20	0	64.6	50-130	0	
<i>Surr: 2,4,6-Tribromophenol</i>	26.69	0	50	0	53.4	38-115	0	
<i>Surr: 2-Fluorobiphenyl</i>	24.36	0	50	0	48.7	32-100	0	
<i>Surr: 2-Fluorophenol</i>	17.93	0	50	0	35.9	22-59	0	
<i>Surr: 4-Terphenyl-d14</i>	36.54	0	50	0	73.1	23-112	0	
<i>Surr: Nitrobenzene-d5</i>	24.74	0	50	0	49.5	31-93	0	
<i>Surr: Phenol-d6</i>	11.02	0	50	0	22	13-36	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1307340
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **49662** Instrument ID **SVMS4** Method: **SW8270**

MS Sample ID: 1307340-01A MS				Units: µg/L			Analysis Date: 07/15/13 10:03 AM			
Client ID: GW-17322-071013-SK-001			Run ID: SVMS4_130715A		SeqNo: 2378007		Prep Date: 07/12/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	103.7	50	200	0	51.8	50-110	0			
2,4,6-Trichlorophenol	106	50	200	0	53	50-115	0			
2,4-Dichlorophenol	103.5	100	200	0	51.8	50-105	0			
2,4-Dimethylphenol	101.7	50	200	0	50.8	30-110	0			
2,4-Dinitrophenol	108	50	200	0	54	15-140	0			
2,4-Dinitrotoluene	118	50	200	0	59	50-120	0			
2,6-Dinitrotoluene	120	50	200	0	60	50-115	0			
2-Chloronaphthalene	105.3	50	200	0	52.6	50-105	0			
2-Chlorophenol	110.7	50	200	0	55.4	35-105	0			
2-Methylnaphthalene	112.3	50	200	0	56.2	45-105	0			
2-Methylphenol	106	50	200	0	53	40-110	0			
2-Nitroaniline	125.8	200	200	0	62.9	50-115	0			J
2-Nitrophenol	102.1	50	200	0	51	40-115	0			
3-Nitroaniline	123.5	200	200	0	61.8	20-125	0			J
4,6-Dinitro-2-methylphenol	123.2	200	200	0	61.6	40-130	0			J
4-Bromophenyl phenyl ether	115.8	50	200	0	57.9	50-115	0			
4-Chloro-3-methylphenol	119.4	50	200	0	59.7	45-110	0			
4-Chloroaniline	262.8	200	200	0	131	15-110	0			S
4-Chlorophenyl phenyl ether	114.8	50	200	0	57.4	50-110	0			
4-Methylphenol	96.3	50	200	0	48.2	30-110	0			
4-Nitroaniline	123.4	200	200	0	61.7	35-150	0			J
4-Nitrophenol	65.9	200	200	0	33	1-58	0			J
Acenaphthene	117.5	50	200	0	58.8	45-110	0			
Acenaphthylene	113	50	200	0	56.5	50-105	0			
Anthracene	121.5	50	200	0	60.8	55-110	0			
Benzo(a)anthracene	116.3	50	200	0	58.2	55-110	0			
Benzo(a)pyrene	129.4	50	200	0	64.7	55-110	0			
Benzo(b)fluoranthene	126	50	200	0	63	45-120	0			
Benzo(g,h,i)perylene	148.4	50	200	0	74.2	40-125	0			
Benzo(k)fluoranthene	138.5	50	200	0	69.2	45-125	0			
Bis(2-chloroethoxy)methane	109	50	200	0	54.5	45-105	0			
Bis(2-chloroethyl)ether	106.1	50	200	0	53	35-110	0			
Bis(2-chloroisopropyl)ether	102.2	50	200	0	51.1	25-130	0			
Bis(2-ethylhexyl)phthalate	124	50	200	0	62	40-125	0			
Butyl benzyl phthalate	124.4	50	200	0	62.2	45-115	0			
Carbazole	170	100	200	0	85	50-150	0			
Chrysene	127.1	50	200	0	63.6	55-110	0			
Dibenzo(a,h)anthracene	122.8	50	200	0	61.4	40-125	0			
Dibenzofuran	108.4	50	200	0	54.2	55-105	0			S
Diethyl phthalate	116.4	200	200	0	58.2	40-120	0			J
Dimethyl phthalate	115.9	200	200	0	58	25-125	0			J
Di-n-butyl phthalate	135.4	50	200	0	67.7	55-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1307340
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 49662		Instrument ID SVMS4		Method: SW8270			
Di-n-octyl phthalate	125.3	50	200	0	62.6	35-135	0
Fluoranthene	131.9	50	200	0	66	55-115	0
Fluorene	112	50	200	0	56	50-110	0
Hexachlorobenzene	123.2	50	200	0	61.6	50-110	0
Hexachlorobutadiene	118.1	50	200	0	59	25-105	0
Hexachlorocyclopentadiene	87.7	200	200	0	43.8	25-105	0 J
Hexachloroethane	113.5	50	200	0	56.8	30-95	0
Indeno(1,2,3-cd)pyrene	126.9	50	200	0	63.4	45-125	0
Isophorone	114.3	50	200	0	57.2	50-110	0
Naphthalene	105.6	50	200	0	52.8	40-100	0
Nitrobenzene	108.4	50	200	0	54.2	45-110	0
N-Nitrosodi-n-propylamine	120.3	50	200	0	60.2	35-130	0
N-Nitrosodiphenylamine	132	50	200	0	66	50-110	0
Pentachlorophenol	108.4	200	200	0	54.2	40-115	0 J
Phenanthrene	114.2	50	200	0	57.1	50-115	0
Phenol	52.2	50	200	0	26.1	12-43	0
Pyrene	130.5	50	200	0	65.2	50-130	0
<i>Surr: 2,4,6-Tribromophenol</i>	<i>279.7</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>55.9</i>	<i>38-115</i>	<i>0</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>255.2</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>51</i>	<i>32-100</i>	<i>0</i>
<i>Surr: 2-Fluorophenol</i>	<i>193.5</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>38.7</i>	<i>22-59</i>	<i>0</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>368.7</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>73.7</i>	<i>23-112</i>	<i>0</i>
<i>Surr: Nitrobenzene-d5</i>	<i>268</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>53.6</i>	<i>31-93</i>	<i>0</i>
<i>Surr: Phenol-d6</i>	<i>118.4</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>23.7</i>	<i>13-36</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1307340
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **49662** Instrument ID **SVMS4** Method: **SW8270**

MSD Sample ID: 1307340-01A MSD				Units: µg/L			Analysis Date: 07/15/13 10:34 AM			
Client ID: GW-17322-071013-SK-001			Run ID: SVMS4_130715A		SeqNo: 2378008		Prep Date: 07/12/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	98.7	50	200	0	49.4	50-110	103.7	4.94	30	S
2,4,6-Trichlorophenol	100	50	200	0	50	50-115	106	5.83	30	
2,4-Dichlorophenol	98.5	100	200	0	49.2	50-105	103.5	0	30	JS
2,4-Dimethylphenol	90.6	50	200	0	45.3	30-110	101.7	11.5	30	
2,4-Dinitrophenol	114.2	50	200	0	57.1	15-140	108	5.58	30	
2,4-Dinitrotoluene	119.6	50	200	0	59.8	50-120	118	1.35	30	
2,6-Dinitrotoluene	117.8	50	200	0	58.9	50-115	120	1.85	30	
2-Chloronaphthalene	99.8	50	200	0	49.9	50-105	105.3	5.36	30	S
2-Chlorophenol	104.2	50	200	0	52.1	35-105	110.7	6.05	30	
2-Methylnaphthalene	105.3	50	200	0	52.6	45-105	112.3	6.43	30	
2-Methylphenol	95.2	50	200	0	47.6	40-110	106	10.7	30	
2-Nitroaniline	122.8	200	200	0	61.4	50-115	125.8	0	30	J
2-Nitrophenol	97.5	50	200	0	48.8	40-115	102.1	4.61	30	
3-Nitroaniline	116.1	200	200	0	58	20-125	123.5	0	30	J
4,6-Dinitro-2-methylphenol	126.4	200	200	0	63.2	40-130	123.2	0	30	J
4-Bromophenyl phenyl ether	117.6	50	200	0	58.8	50-115	115.8	1.54	30	
4-Chloro-3-methylphenol	110.1	50	200	0	55	45-110	119.4	8.1	30	
4-Chloroaniline	233.6	200	200	0	117	15-110	262.8	11.8	30	S
4-Chlorophenyl phenyl ether	111.5	50	200	0	55.8	50-110	114.8	2.92	30	
4-Methylphenol	88.6	50	200	0	44.3	30-110	96.3	8.33	30	
4-Nitroaniline	115.6	200	200	0	57.8	35-150	123.4	0	30	J
4-Nitrophenol	68.2	200	200	0	34.1	1-58	65.9	0	0	J
Acenaphthene	112.9	50	200	0	56.4	45-110	117.5	3.99	30	
Acenaphthylene	106.4	50	200	0	53.2	50-105	113	6.02	30	
Anthracene	125.6	50	200	0	62.8	55-110	121.5	3.32	30	
Benzo(a)anthracene	120.9	50	200	0	60.4	55-110	116.3	3.88	30	
Benzo(a)pyrene	133.4	50	200	0	66.7	55-110	129.4	3.04	30	
Benzo(b)fluoranthene	126.2	50	200	0	63.1	45-120	126	0.159	30	
Benzo(g,h,i)perylene	151.6	50	200	0	75.8	40-125	148.4	2.13	30	
Benzo(k)fluoranthene	142.8	50	200	0	71.4	45-125	138.5	3.06	30	
Bis(2-chloroethoxy)methane	102.6	50	200	0	51.3	45-105	109	6.05	30	
Bis(2-chloroethyl)ether	102.1	50	200	0	51	35-110	106.1	3.84	30	
Bis(2-chloroisopropyl)ether	98.3	50	200	0	49.2	25-130	102.2	3.89	30	
Bis(2-ethylhexyl)phthalate	125.3	50	200	0	62.6	40-125	124	1.04	30	
Butyl benzyl phthalate	125.9	50	200	0	63	45-115	124.4	1.2	30	
Carbazole	174.9	100	200	0	87.4	50-150	170	2.84	30	
Chrysene	133.1	50	200	0	66.6	55-110	127.1	4.61	30	
Dibenzo(a,h)anthracene	125.5	50	200	0	62.8	40-125	122.8	2.17	30	
Dibenzofuran	103.9	50	200	0	52	55-105	108.4	4.24	30	S
Diethyl phthalate	119.7	200	200	0	59.8	40-120	116.4	0	30	J
Dimethyl phthalate	116	200	200	0	58	25-125	115.9	0	30	J
Di-n-butyl phthalate	139	50	200	0	69.5	55-115	135.4	2.62	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1307340
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 49662		Instrument ID SVMS4		Method: SW8270						
Di-n-octyl phthalate	126.8	50	200	0	63.4	35-135	125.3	1.19	30	
Fluoranthene	135.9	50	200	0	68	55-115	131.9	2.99	30	
Fluorene	110.6	50	200	0	55.3	50-110	112	1.26	30	
Hexachlorobenzene	122.5	50	200	0	61.2	50-110	123.2	0.57	30	
Hexachlorobutadiene	112.7	50	200	0	56.4	25-105	118.1	4.68	30	
Hexachlorocyclopentadiene	81.3	200	200	0	40.6	25-105	87.7	0	30	J
Hexachloroethane	112	50	200	0	56	30-95	113.5	1.33	30	
Indeno(1,2,3-cd)pyrene	129.2	50	200	0	64.6	45-125	126.9	1.8	30	
Isophorone	107.5	50	200	0	53.8	50-110	114.3	6.13	30	
Naphthalene	101.3	50	200	0	50.6	40-100	105.6	4.16	30	
Nitrobenzene	105.2	50	200	0	52.6	45-110	108.4	3	30	
N-Nitrosodi-n-propylamine	112.3	50	200	0	56.2	35-130	120.3	6.88	30	
N-Nitrosodiphenylamine	134.7	50	200	0	67.4	50-110	132	2.02	30	
Pentachlorophenol	110.7	200	200	0	55.4	40-115	108.4	0	30	J
Phenanthrene	117.2	50	200	0	58.6	50-115	114.2	2.59	30	
Phenol	47.9	50	200	0	24	12-43	52.2	0	30	J
Pyrene	135.1	50	200	0	67.6	50-130	130.5	3.46	30	
<i>Surr: 2,4,6-Tribromophenol</i>	286	0	500	0	57.2	38-115	279.7	2.23	40	
<i>Surr: 2-Fluorobiphenyl</i>	240.6	0	500	0	48.1	32-100	255.2	5.89	40	
<i>Surr: 2-Fluorophenol</i>	174.2	0	500	0	34.8	22-59	193.5	10.5	40	
<i>Surr: 4-Terphenyl-d14</i>	356.9	0	500	0	71.4	23-112	368.7	3.25	40	
<i>Surr: Nitrobenzene-d5</i>	253.8	0	500	0	50.8	31-93	268	5.44	40	
<i>Surr: Phenol-d6</i>	108.2	0	500	0	21.6	13-36	118.4	9	40	

The following samples were analyzed in this batch:

1307340-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**CONESTOGA-ROVERS
& ASSOCIATES**

CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

COC NO.: **PL-10501**

PAGE 1 OF 1

(See Reverse Side for Instructions)

1307340

Project No/ Phase/Task Code: 017322-TO3Y13				Laboratory Name: ALS Labs				Lab Location: Holland, MI				SSOW ID: 17322-TO3Y13-003																							
Project Name: Validation				Lab Contact: _____				Lab Quote No: _____				Cooler No: _____																							
Project Location: Pontiac, M.I.				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)																							
Chemistry Contact: P. Wiseman				<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Matrix Code (see back of COC)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Grab (G) or Comp (C)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Unpreserved</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Hydrochloric Acid (HCl)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Nitric Acid (HNO₃)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Sulfuric Acid (H₂SO₄)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Sodium Hydroxide (NaOH)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Methanol/Water (Soil VOC)</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">EnCores 3x5-g, 1x25-g</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Other:</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">Total Containers/Sample</td> <td rowspan="2" style="writing-mode: vertical-rl; transform: rotate(180deg);">MS/MSD Request</td> <td colspan="12" rowspan="2"></td> </tr> <tr></tr> </table>				Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request													Carrier: FedEx			
Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)																													Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)
Sampler(s): S. Kippen												Airbill No: 844358880563																							
												Date Shipped: 7-10-13																							
												COMMENTS/ SPECIAL INSTRUCTIONS:																							

Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code (see back of COC)	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request	COMMENTS/ SPECIAL INSTRUCTIONS:
1	AW-17322-071013-SK-601	7-10-13	10:30	W6	G	2										
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

TAT Required in business days (use separate COCs for different TATs): ☐ 1 Day ☒ 2 Days ☐ 3 Days ☐ 1 Week ☐ 2 Week ☐ Other:				Total Number of Containers: 2		Notes/ Special Requirements: 5.0°C	
All Samples in Cooler must be on COC							

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1. <i>R. Lathkin</i>	CRA	7-10-13	18:30	1. <i>ALB</i>	7/11/13 ALS	7/11/13	0915
2.				2.			
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE - Fully Executed Copy (CRA) YELLOW - Receiving Laboratory Copy PINK - Shipper GOLDENROD - Sampling Crew

CRA Form: COC-10A (20110604)

FedEx USA Airbill
Express

844358880563

0200

Form
I.D. No.

FedEx Retrieval Copy

1 From

Date 7-10-13 Sender's FedEx Account Number 1482-5701-9

Sender's Name Scott Kippen Phone 734 453-5123

Company Conestoga Rovers and Associates

Address 14496 N. Sheldon Rd, STE 300

City Plymouth State M.I. ZIP 48170-3699

2 Your Internal Billing Reference

3 To

Recipient's Name Samples Phone

Company ALS Labs

Address 3352 128 Ave

Address

City Holland State M.I. ZIP 49424



4a Express Package Service

☒ FedEx Priority Overnight Next business morning ☐ FedEx Standard Overnight Next business afternoon ☐ FedEx First Overnight Earliest next business morning delivery to select locations

☐ FedEx 2day Second business day ☐ FedEx Express Saver Third business day

4b Express Freight Service

☐ FedEx 1day Freight Next business day ☐ FedEx 2day Freight Second business day ☐ FedEx 3day Freight Third business day

5 Packaging

☐ FedEx Envelope ☐ FedEx Pak Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sling Pak ☐ Other

6 Special Handling

☐ SATURDAY Delivery Available only for FedEx Priority Overnight and FedEx 2day to select ZIP codes ☐ HOLD Weekday at FedEx Location Hold overnight for FedEx First Overnight and FedEx 2day, select locations ☐ HOLD Saturday at FedEx Location Available only for FedEx Priority Overnight and FedEx 2day, select locations

Does this shipment contain dangerous goods? One box must be checked.

☒ No ☐ Yes As per attached Shipper's Declaration ☐ Yes Shipper's Declaration not required

Dangerous Goods (including Dry Ice) cannot be shipped in FedEx packaging

7 Payment Bill to:

☒ Sender Acct. No. in Section 1 will be billed ☐ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check

FedEx Acct. No.
Credit Card No.

Total Packages

1

Total Weight

34

Exp.
Date

Total Charges

8 Release Signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

Rev. Date 10/01 • Part #157612 • ©2013 FedEx • WCL03

446

Sample Receipt Checklist

Client Name: **CRA - PLYMOUTH**

Date/Time Received: **11-Jul-13 09:15**

Work Order: **1307340**

Received by: **AB**

Checklist completed by Ashley Beard
eSignature

11-Jul-13

Date

Reviewed by: Bill Carey
eSignature

11-Jul-13

Date

Matrices: **groundwater**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>5.0c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>7/11/2013 10:48:44 AM</u>		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:			
Login Notes:			

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



07-Aug-2013

Paul Wiseman
Conestoga-Rovers & Associates
14496 Sheldon Road
Suite 200
Plymouth, MI 48170

Re: **PCC-Validation (017322-T03Y13)**

Work Order: **1308008**

Dear Paul,

ALS Environmental received 2 samples on 01-Aug-2013 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 18.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Beamish".

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Work Order: 1308008

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1308008-01	GW-17322-073013-EM-001	Groundwater		07/30/13 13:50	08/01/13 08:00	☐
1308008-02	TB-17322-073013-EM	Water		07/30/13	08/01/13 08:00	☐

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
WorkOrder: 1308008

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter

ALS Group USA, Corp

Date: 07-Aug-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-073013-EM-001
Collection Date: 07/30/13 01:50 PM

Work Order: 1308008
Lab ID: 1308008-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260				Analyst: BG
<u>BatchID: R124602</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	08/03/13 03:04
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	08/03/13 03:04
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	08/03/13 03:04
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	08/03/13 03:04
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	08/03/13 03:04
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	08/03/13 03:04
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	08/03/13 03:04
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	08/03/13 03:04
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	08/03/13 03:04
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	08/03/13 03:04
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	08/03/13 03:04
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	08/03/13 03:04
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	08/03/13 03:04
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	08/03/13 03:04
2-Butanone	U		0.22	25	µg/L	1	08/03/13 03:04
2-Hexanone	U		0.12	50	µg/L	1	08/03/13 03:04
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	08/03/13 03:04
Acetone	U		0.33	50	µg/L	1	08/03/13 03:04
Benzene	U		0.18	1.0	µg/L	1	08/03/13 03:04
Bromodichloromethane	U		0.12	1.0	µg/L	1	08/03/13 03:04
Bromoform	U		0.15	1.0	µg/L	1	08/03/13 03:04
Bromomethane	U		0.21	5.0	µg/L	1	08/03/13 03:04
Carbon disulfide	U		0.17	5.0	µg/L	1	08/03/13 03:04
Carbon tetrachloride	U		0.12	1.0	µg/L	1	08/03/13 03:04
Chlorobenzene	U		0.13	1.0	µg/L	1	08/03/13 03:04
Chloroethane	U		0.46	5.0	µg/L	1	08/03/13 03:04
Chloroform	U		0.15	1.0	µg/L	1	08/03/13 03:04
Chloromethane	U		0.16	5.0	µg/L	1	08/03/13 03:04
cis-1,2-Dichloroethene	1.7		0.11	1.0	µg/L	1	08/03/13 03:04
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	08/03/13 03:04
Cyclohexane	U		0.22	1.0	µg/L	1	08/03/13 03:04
Dibromochloromethane	U		0.13	5.0	µg/L	1	08/03/13 03:04
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	08/03/13 03:04
Ethylbenzene	U		0.13	1.0	µg/L	1	08/03/13 03:04
Isopropylbenzene	U		0.14	5.0	µg/L	1	08/03/13 03:04
Methyl acetate	U		0.19	10	µg/L	1	08/03/13 03:04
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	08/03/13 03:04

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 07-Aug-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-073013-EM-001
Collection Date: 07/30/13 01:50 PM

Work Order: 1308008
Lab ID: 1308008-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.99	1.0	µg/L	1	08/03/13 03:04
Methylene chloride	U		0.19	5.0	µg/L	1	08/03/13 03:04
Styrene	U		0.11	1.0	µg/L	1	08/03/13 03:04
Tetrachloroethene	U		0.15	1.0	µg/L	1	08/03/13 03:04
Toluene	U		0.12	1.0	µg/L	1	08/03/13 03:04
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	08/03/13 03:04
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	08/03/13 03:04
Trichloroethene	U		0.14	1.0	µg/L	1	08/03/13 03:04
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	08/03/13 03:04
Vinyl chloride	U		0.17	1.0	µg/L	1	08/03/13 03:04
Xylenes, Total	U		0.29	3.0	µg/L	1	08/03/13 03:04
Surr: 1,2-Dichloroethane-d4	100			70-120	%REC	1	08/03/13 03:04
Surr: 4-Bromofluorobenzene	97.4			75-120	%REC	1	08/03/13 03:04
Surr: Dibromofluoromethane	99.6			85-115	%REC	1	08/03/13 03:04
Surr: Toluene-d8	98.0			85-120	%REC	1	08/03/13 03:04

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 07-Aug-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: TB-17322-073013-EM
Collection Date: 07/30/13

Work Order: 1308008
Lab ID: 1308008-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260				Analyst: BG
<u>BatchID: R124602</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	08/02/13 22:00
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	08/02/13 22:00
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	08/02/13 22:00
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	08/02/13 22:00
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	08/02/13 22:00
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	08/02/13 22:00
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	08/02/13 22:00
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	08/02/13 22:00
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	08/02/13 22:00
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	08/02/13 22:00
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	08/02/13 22:00
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	08/02/13 22:00
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	08/02/13 22:00
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	08/02/13 22:00
2-Butanone	U		0.22	25	µg/L	1	08/02/13 22:00
2-Hexanone	U		0.12	50	µg/L	1	08/02/13 22:00
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	08/02/13 22:00
Acetone	15	J	0.33	50	µg/L	1	08/02/13 22:00
Benzene	U		0.18	1.0	µg/L	1	08/02/13 22:00
Bromodichloromethane	U		0.12	1.0	µg/L	1	08/02/13 22:00
Bromoform	U		0.15	1.0	µg/L	1	08/02/13 22:00
Bromomethane	U		0.21	5.0	µg/L	1	08/02/13 22:00
Carbon disulfide	U		0.17	5.0	µg/L	1	08/02/13 22:00
Carbon tetrachloride	U		0.12	1.0	µg/L	1	08/02/13 22:00
Chlorobenzene	U		0.13	1.0	µg/L	1	08/02/13 22:00
Chloroethane	U		0.46	5.0	µg/L	1	08/02/13 22:00
Chloroform	U		0.15	1.0	µg/L	1	08/02/13 22:00
Chloromethane	U		0.16	5.0	µg/L	1	08/02/13 22:00
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	08/02/13 22:00
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	08/02/13 22:00
Cyclohexane	U		0.22	1.0	µg/L	1	08/02/13 22:00
Dibromochloromethane	U		0.13	5.0	µg/L	1	08/02/13 22:00
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	08/02/13 22:00
Ethylbenzene	U		0.13	1.0	µg/L	1	08/02/13 22:00
Isopropylbenzene	U		0.14	5.0	µg/L	1	08/02/13 22:00
Methyl acetate	U		0.19	10	µg/L	1	08/02/13 22:00
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	08/02/13 22:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 07-Aug-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: TB-17322-073013-EM
Collection Date: 07/30/13

Work Order: 1308008
Lab ID: 1308008-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.99	1.0	µg/L	1	08/02/13 22:00
Methylene chloride	U		0.19	5.0	µg/L	1	08/02/13 22:00
Styrene	U		0.11	1.0	µg/L	1	08/02/13 22:00
Tetrachloroethene	U		0.15	1.0	µg/L	1	08/02/13 22:00
Toluene	U		0.12	1.0	µg/L	1	08/02/13 22:00
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	08/02/13 22:00
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	08/02/13 22:00
Trichloroethene	U		0.14	1.0	µg/L	1	08/02/13 22:00
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	08/02/13 22:00
Vinyl chloride	U		0.17	1.0	µg/L	1	08/02/13 22:00
Xylenes, Total	U		0.29	3.0	µg/L	1	08/02/13 22:00
Surr: 1,2-Dichloroethane-d4	98.9			70-120	%REC	1	08/02/13 22:00
Surr: 4-Bromofluorobenzene	101			75-120	%REC	1	08/02/13 22:00
Surr: Dibromofluoromethane	101			85-115	%REC	1	08/02/13 22:00
Surr: Toluene-d8	97.3			85-120	%REC	1	08/02/13 22:00

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Conestoga-Rovers & Associates

QC BATCH REPORT

Work Order: 1308008

Project: PCC-Validation (017322-T03Y13)

Batch ID: R124602

Instrument ID VMS5

Method: SW8260

MBLK		Sample ID: VBLKW2-130802-R124602				Units: µg/L		Analysis Date: 08/02/13 09:13 PM		
Client ID:		Run ID: VMS5_130802B				SeqNo: 2402226		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1,2-Trichlorotrifluoroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2,4-Trichlorobenzene	U	1.0								
1,2-Dibromo-3-chloropropane	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichlorobenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,2-Dichloropropane	U	2.0								
1,3-Dichlorobenzene	U	2.0								
1,4-Dichlorobenzene	U	2.0								
2-Butanone	U	5.0								
2-Hexanone	U	5.0								
4-Methyl-2-pentanone	U	5.0								
Acetone	U	20								
Benzene	U	1.0								
Bromodichloromethane	U	1.0								
Bromoform	U	1.0								
Bromomethane	U	1.0								
Carbon disulfide	U	2.5								
Carbon tetrachloride	U	1.0								
Chlorobenzene	U	1.0								
Chloroethane	U	1.0								
Chloroform	U	1.0								
Chloromethane	U	1.0								
cis-1,2-Dichloroethene	U	1.0								
cis-1,3-Dichloropropene	U	1.0								
Cyclohexane	U	5.0								
Dibromochloromethane	U	1.0								
Dichlorodifluoromethane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
Methyl acetate	U	2.0								
Methyl tert-butyl ether	U	5.0								
Methylcyclohexane	U	5.0								
Methylene chloride	U	5.0								
Styrene	U	1.0								
Tetrachloroethene	U	2.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1308008
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R124602	Instrument ID VMS5	Method: SW8260						
Toluene	U	1.0						
trans-1,2-Dichloroethene	U	1.0						
trans-1,3-Dichloropropene	U	1.0						
Trichloroethene	U	1.0						
Trichlorofluoromethane	U	1.0						
Vinyl chloride	U	1.0						
Xylenes, Total	U	3.0						
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>19.34</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96.7</i>	<i>70-120</i>	<i>0</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.21</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>75-120</i>	<i>0</i>	
<i>Surr: Dibromofluoromethane</i>	<i>19.83</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>99.2</i>	<i>85-115</i>	<i>0</i>	
<i>Surr: Toluene-d8</i>	<i>20.05</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>100</i>	<i>85-120</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1308008
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R124602** Instrument ID **VMS5** Method: **SW8260**

LCS		Sample ID: VLCSW2-130802-R124602				Units: µg/L		Analysis Date: 08/02/13 08:26 PM		
Client ID:		Run ID: VMS5_130802B				SeqNo: 2402225		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	19.81	1.0	20	0	99	65-130	0			
1,1,2,2-Tetrachloroethane	18.62	1.0	20	0	93.1	65-130	0			
1,1,2-Trichloroethane	18	1.0	20	0	90	75-125	0			
1,1-Dichloroethane	19.44	1.0	20	0	97.2	70-135	0			
1,1-Dichloroethene	20.94	1.0	20	0	105	70-130	0			
1,2,4-Trichlorobenzene	19.59	1.0	20	0	98	65-135	0			
1,2-Dibromo-3-chloropropane	18.53	1.0	20	0	92.6	50-130	0			
1,2-Dibromoethane	18.54	1.0	20	0	92.7	80-120	0			
1,2-Dichlorobenzene	19.38	1.0	20	0	96.9	70-120	0			
1,2-Dichloroethane	19.37	1.0	20	0	96.8	70-130	0			
1,2-Dichloropropane	18.99	2.0	20	0	95	75-125	0			
1,3-Dichlorobenzene	19.53	2.0	20	0	97.6	75-125	0			
1,4-Dichlorobenzene	20.16	2.0	20	0	101	75-125	0			
2-Butanone	21.55	5.0	20	0	108	30-150	0			
2-Hexanone	19.15	5.0	20	0	95.8	55-130	0			
4-Methyl-2-pentanone	26.59	5.0	20	0	133	60-135	0			
Acetone	18.19	20	20	0	91	40-140	0			J
Benzene	19.45	1.0	20	0	97.2	80-120	0			
Bromodichloromethane	19.92	1.0	20	0	99.6	75-120	0			
Bromoform	18.46	1.0	20	0	92.3	70-130	0			
Bromomethane	26.63	1.0	20	0	133	30-145	0			
Carbon disulfide	22.54	2.5	20	0	113	35-165	0			
Carbon tetrachloride	20.2	1.0	20	0	101	65-140	0			
Chlorobenzene	19.67	1.0	20	0	98.4	80-120	0			
Chloroethane	17.49	1.0	20	0	87.4	60-135	0			
Chloroform	18.74	1.0	20	0	93.7	65-135	0			
Chloromethane	22.15	1.0	20	0	111	70-125	0			
cis-1,2-Dichloroethene	19.23	1.0	20	0	96.2	70-125	0			
cis-1,3-Dichloropropene	19.19	1.0	20	0	96	70-130	0			
Dibromochloromethane	18.67	1.0	20	0	93.4	60-135	0			
Dichlorodifluoromethane	22.89	1.0	20	0	114	30-155	0			
Ethylbenzene	19.68	1.0	20	0	98.4	75-125	0			
Isopropylbenzene	20.74	1.0	20	0	104	75-125	0			
Methyl tert-butyl ether	20.87	5.0	20	0	104	65-125	0			
Methylene chloride	20.59	5.0	20	0	103	55-140	0			
Styrene	20.1	1.0	20	0	100	65-135	0			
Tetrachloroethene	20.14	2.0	20	0	101	45-150	0			
Toluene	19.49	1.0	20	0	97.4	75-120	0			
trans-1,2-Dichloroethene	20.67	1.0	20	0	103	60-140	0			
trans-1,3-Dichloropropene	19.47	1.0	20	0	97.4	55-140	0			
Trichloroethene	20.28	1.0	20	0	101	70-125	0			
Trichlorofluoromethane	21.49	1.0	20	0	107	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1308008
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R124602	Instrument ID VMS5		Method: SW8260				
Vinyl chloride	21.12	1.0	20	0	106	50-145	0
Xylenes, Total	59.67	3.0	60	0	99.4	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>19.77</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>98.8</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.19</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>20.24</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>19.92</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>99.6</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1308008
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R124602** Instrument ID **VMS5** Method: **SW8260**

MS Sample ID: 1308029-02A MS				Units: µg/L			Analysis Date: 08/03/13 06:11 AM			
Client ID:		Run ID: VMS5_130802B		SeqNo: 2402235		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	21.13	1.0	20	0	106	65-130	0			
1,1,2,2-Tetrachloroethane	17.89	1.0	20	0	89.4	65-130	0			
1,1,2-Trichloroethane	17.94	1.0	20	0	89.7	75-125	0			
1,1-Dichloroethane	20.7	1.0	20	0	104	70-135	0			
1,1-Dichloroethene	23.61	1.0	20	0	118	70-130	0			
1,2,4-Trichlorobenzene	18.83	1.0	20	0	94.2	65-135	0			
1,2-Dibromo-3-chloropropane	16.57	1.0	20	0	82.8	50-130	0			
1,2-Dibromoethane	18.7	1.0	20	0	93.5	80-120	0			
1,2-Dichlorobenzene	19.26	1.0	20	0	96.3	70-120	0			
1,2-Dichloroethane	18.89	1.0	20	0	94.4	70-130	0			
1,2-Dichloropropane	19.01	2.0	20	0	95	75-125	0			
1,3-Dichlorobenzene	19.47	2.0	20	0	97.4	75-125	0			
1,4-Dichlorobenzene	19.76	2.0	20	0	98.8	75-125	0			
2-Butanone	21.79	5.0	20	0	109	30-150	0			
2-Hexanone	18.31	5.0	20	0	91.6	55-130	0			
4-Methyl-2-pentanone	25.86	5.0	20	0	129	60-135	0			
Acetone	19.06	20	20	0	95.3	40-140	0			J
Benzene	20.36	1.0	20	0	102	80-120	0			
Bromodichloromethane	18.82	1.0	20	0	94.1	75-120	0			
Bromoform	16.19	1.0	20	0	81	70-130	0			
Bromomethane	18.15	1.0	20	0	90.8	30-145	0			
Carbon disulfide	25.42	2.5	20	0	127	35-165	0			
Carbon tetrachloride	21.23	1.0	20	0	106	65-140	0			
Chlorobenzene	19.52	1.0	20	0	97.6	80-120	0			
Chloroethane	19.12	1.0	20	0	95.6	60-135	0			
Chloroform	19.29	1.0	20	0	96.4	65-135	0			
Chloromethane	23.89	1.0	20	0	119	70-125	0			
cis-1,2-Dichloroethene	20.4	1.0	20	0	102	70-125	0			
cis-1,3-Dichloropropene	18.7	1.0	20	0	93.5	70-130	0			
Dibromochloromethane	17.07	1.0	20	0	85.4	60-135	0			
Dichlorodifluoromethane	25.89	1.0	20	0	129	30-155	0			
Ethylbenzene	20.1	1.0	20	0	100	75-125	0			
Isopropylbenzene	21.22	1.0	20	0	106	75-125	0			
Methyl tert-butyl ether	20.62	5.0	20	0	103	65-125	0			
Methylene chloride	22.11	5.0	20	0	111	55-140	0			
Styrene	19.59	1.0	20	0	98	65-135	0			
Tetrachloroethene	20.77	2.0	20	0	104	45-150	0			
Toluene	19.8	1.0	20	0	99	75-120	0			
trans-1,2-Dichloroethene	22.33	1.0	20	0	112	60-140	0			
trans-1,3-Dichloropropene	18.6	1.0	20	0	93	55-140	0			
Trichloroethene	21.03	1.0	20	0	105	70-125	0			
Trichlorofluoromethane	24.43	1.0	20	0	122	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1308008
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R124602	Instrument ID VMS5	Method: SW8260					
Vinyl chloride	23.94	1.0	20	0	120	50-145	0
Xylenes, Total	60.72	3.0	60	0	101	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	19.95	0	20	0	99.8	70-120	0
<i>Surr: 4-Bromofluorobenzene</i>	20.19	0	20	0	101	75-120	0
<i>Surr: Dibromofluoromethane</i>	19.37	0	20	0	96.8	85-115	0
<i>Surr: Toluene-d8</i>	19.5	0	20	0	97.5	85-120	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1308008
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R124602** Instrument ID **VMS5** Method: **SW8260**

MSD Sample ID: 1308029-02A MSD				Units: µg/L			Analysis Date: 08/03/13 06:34 AM			
Client ID:		Run ID: VMS5_130802B			SeqNo: 2402236		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	20.71	1.0	20	0	104	65-130	21.13	2.01	30	
1,1,2,2-Tetrachloroethane	18.04	1.0	20	0	90.2	65-130	17.89	0.835	30	
1,1,2-Trichloroethane	17.78	1.0	20	0	88.9	75-125	17.94	0.896	30	
1,1-Dichloroethane	20.23	1.0	20	0	101	70-135	20.7	2.3	30	
1,1-Dichloroethene	22.37	1.0	20	0	112	70-130	23.61	5.39	30	
1,2,4-Trichlorobenzene	19.48	1.0	20	0	97.4	65-135	18.83	3.39	30	
1,2-Dibromo-3-chloropropane	16.62	1.0	20	0	83.1	50-130	16.57	0.301	30	
1,2-Dibromoethane	18.34	1.0	20	0	91.7	80-120	18.7	1.94	30	
1,2-Dichlorobenzene	19.32	1.0	20	0	96.6	70-120	19.26	0.311	30	
1,2-Dichloroethane	18.94	1.0	20	0	94.7	70-130	18.89	0.264	30	
1,2-Dichloropropane	18.45	2.0	20	0	92.2	75-125	19.01	2.99	30	
1,3-Dichlorobenzene	19.42	2.0	20	0	97.1	75-125	19.47	0.257	30	
1,4-Dichlorobenzene	19.74	2.0	20	0	98.7	75-125	19.76	0.101	30	
2-Butanone	20.86	5.0	20	0	104	30-150	21.79	4.36	30	
2-Hexanone	18.34	5.0	20	0	91.7	55-130	18.31	0.164	30	
4-Methyl-2-pentanone	24.86	5.0	20	0	124	60-135	25.86	3.94	30	
Acetone	19.27	20	20	0	96.4	40-140	19.06	0	30	J
Benzene	19.84	1.0	20	0	99.2	80-120	20.36	2.59	30	
Bromodichloromethane	18.52	1.0	20	0	92.6	75-120	18.82	1.61	30	
Bromoform	16.22	1.0	20	0	81.1	70-130	16.19	0.185	30	
Bromomethane	19.92	1.0	20	0	99.6	30-145	18.15	9.3	30	
Carbon disulfide	23.63	2.5	20	0	118	35-165	25.42	7.3	30	
Carbon tetrachloride	22.22	1.0	20	0	111	65-140	21.23	4.56	30	
Chlorobenzene	18.98	1.0	20	0	94.9	80-120	19.52	2.81	30	
Chloroethane	19.42	1.0	20	0	97.1	60-135	19.12	1.56	30	
Chloroform	19	1.0	20	0	95	65-135	19.29	1.51	30	
Chloromethane	23.02	1.0	20	0	115	70-125	23.89	3.71	30	
cis-1,2-Dichloroethene	19.25	1.0	20	0	96.2	70-125	20.4	5.8	30	
cis-1,3-Dichloropropene	18.05	1.0	20	0	90.2	70-130	18.7	3.54	30	
Dibromochloromethane	16.82	1.0	20	0	84.1	60-135	17.07	1.48	30	
Dichlorodifluoromethane	24.19	1.0	20	0	121	30-155	25.89	6.79	30	
Ethylbenzene	19.84	1.0	20	0	99.2	75-125	20.1	1.3	30	
Isopropylbenzene	21.8	1.0	20	0	109	75-125	21.22	2.7	30	
Methyl tert-butyl ether	20.47	5.0	20	0	102	65-125	20.62	0.73	30	
Methylene chloride	20.78	5.0	20	0	104	55-140	22.11	6.2	30	
Styrene	19.46	1.0	20	0	97.3	65-135	19.59	0.666	30	
Tetrachloroethene	21.19	2.0	20	0	106	45-150	20.77	2	30	
Toluene	19.67	1.0	20	0	98.4	75-120	19.8	0.659	30	
trans-1,2-Dichloroethene	21.49	1.0	20	0	107	60-140	22.33	3.83	30	
trans-1,3-Dichloropropene	18.71	1.0	20	0	93.6	55-140	18.6	0.59	30	
Trichloroethene	20.72	1.0	20	0	104	70-125	21.03	1.49	30	
Trichlorofluoromethane	23.31	1.0	20	0	117	60-145	24.43	4.69	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1308008
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R124602	Instrument ID VMS5			Method: SW8260					
Vinyl chloride	22.8	1.0	20	0	114	50-145	23.94	4.88	30
Xylenes, Total	59.93	3.0	60	0	99.9	75-130	60.72	1.31	30
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>19.34</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96.7</i>	<i>70-120</i>	<i>19.95</i>	<i>3.11</i>	<i>30</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.48</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>102</i>	<i>75-120</i>	<i>20.19</i>	<i>1.43</i>	<i>30</i>
<i>Surr: Dibromofluoromethane</i>	<i>19.85</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>99.2</i>	<i>85-115</i>	<i>19.37</i>	<i>2.45</i>	<i>30</i>
<i>Surr: Toluene-d8</i>	<i>19.65</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>98.2</i>	<i>85-120</i>	<i>19.5</i>	<i>0.766</i>	<i>30</i>

The following samples were analyzed in this batch:

1308008-01A	1308008-02A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**CONESTOGA-ROVERS
& ASSOCIATES**

CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

1308008
COC NO.: **PL-12439**

PAGE ___ OF ___

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 17322-02Y13				Laboratory Name: ALS				Lab Location: Holland, MI				SSOW ID: 17322-03Y13-003				
Project Name: RACER-ACC Validation				Lab Contact: _____				Lab Quote No: _____				Cooler No: _____				
Project Location: Pontiac, MI				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)				
Chemistry Contact: Paul Wiseman				Matrix Code (see back of COC) Grab (G) or Comp (C)				Unpreserved Hydrochloric Acid (HCl) Nitric Acid (HNO ₃) Sulfuric Acid (H ₂ SO ₄) Sodium Hydroxide (NaOH) Methanol/Water (Soil VOC) EnCores 3x5-g, 1x25-g Other:				Total Containers/Sample TCL VOC's				
Sampler(s): Eric Mickelson																
Carrier: ALS Carrier				Airbill No: _____				Date Shipped: 7-30-13				COMMENTS/ SPECIAL INSTRUCTIONS:				
MS/MSD Request																
Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	TCL VOC's	MS/MSD Request
1	GW-17322-073013-EM-001	7/30/13	1350	WG	G	X								3	X	
2	TB-17322-073013-EM	7/30/13	—	WQ	—	X								1	X	
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

EM

TAT Required in business days (use separate COCs for different TATs):				Total Number of Containers: 4		Notes/ Special Requirements: 4.2c	
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☒ 2 Week ☐ Other:				All Samples in Cooler must be on COC			

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1. Eric Mickelson	CRA	7-31-13	1030	1. [Signature]	ALS	7/31/13	1030
2. [Signature]	ALS	7/31/13	1900	2. [Signature]	ALS	8/1/13	0800
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT — ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE — Fully Executed Copy (CRA) YELLOW — Receiving Laboratory Copy PINK — Shipper GOLDENROD — Sampling Crew

CRA Form: COC-10A (20110804) 2193

ALS Environmental
 3552 12th Avenue
 Holland, Michigan 49424
 Tel: +1 616 399 6070
 Fax: +1 616 399 6185

FACTORY SEAL
 Date: 7/21/85
 Name: [Signature]
 Company: [Signature]

ALS Environmental
 3552 12th Avenue
 Holland, Michigan 49424
 Tel: +1 616 399 6070
 Fax: +1 616 399 6185

FACTORY SEAL
 Date: 7/21/85
 Name: [Signature]
 Company: [Signature]

Seal Broken By: _____
 Date: _____

CITY TRANSFER COMPANY (GROUND/AIR)

SPECIAL SERVICE	SHIPPER COMPANY
GROUND SERVICE	CONTRACT
AIR SERVICE	STREET ADDRESS
AIR & GROUND COMBINED	CITY
CANCELLED CHECKS OR CASH LETTERS	DECLARED VALUE \$
OTHER (LIST COMMODITIES)	ADD'L INSURANCE COST
SPECIAL INSTRUCTIONS	PIECES (DESCRIPTION OF WHAT IS BEING SHIPPED: BOX 12)

DATE: 7/21/85 TIME: 1:15

WEIGHT: 125 LBS

TOTAL \$ 12.50

RECEIVED BY: [Signature]

2913912

Except for "cash letters", the released or declared value of this shipment is specifically declared not to be in excess of \$100.00, unless a greater value is declared in writing on this Bill of Lading for which additional charges will be assessed. Carrier's liability with respect to "cash letter" shipments is limited in its tariffs.

Except on "cash letter" shipments, claims, if any, must be filed in writing within thirty (30) days after pickup. Claims involving "cash letter" shipments must be filed in writing within three (3) days after pickup. Claimant shall give oral notice to carrier as soon as it becomes aware of a potential claim involving a "cash letter" shipment.

CARRIER SHALL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES.

RECEIVED Subject to rates and tariffs in effect on the date hereof

PICKED UP BY	DATE	TIME
DRIVER: <u>[Signature]</u>	<u>7/21</u>	<u>1:15</u> A.M.
ROUTE #:		P.M.

DATE	TIME
<u>7/21</u>	<u>1:15</u> A.M.
	P.M.

ROUTE #: 902

The property described above, in apparent good order, except as noted (contents and conditions of packages unknown), marked, consigned and destined as shown below, which said company agrees to carry to the destination of delivery at said destination if within the territory of its highway operations. It is mutually agreed as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions and provisions of the tariff, whether printed or written, herein contained, including the conditions of the carrier's tariff, which are hereby agreed to by the shipper and accepted for himself and his assigns.

Sample Receipt Checklist

Client Name: **CRA - PLYMOUTH**

Date/Time Received: **01-Aug-13 08:00**

Work Order: **1308008**

Received by: **DS**

Checklist completed by Diane Shaw 01-Aug-13
eSignature Date

Reviewed by: Tom Bramish 01-Aug-13
eSignature Date

Matrices: Groundwater

Carrier name: City Transfer

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>4.2 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>8/1/2013 8:39:43 AM</u>		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:			
Login Notes:			

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



RESOURCE CONSERVATION AND RECOVERY ACT ENVIRONMENTAL INDICATOR CA750 REPORT

**PCC-VALIDATION
PONTIAC, MICHIGAN**

Note: Portions of this report marked with a footnote are superseded by the September 2013 Addendum.

**Prepared by:
Conestoga-Rovers
& Associates**

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**UPDATED SEPTEMBER 2013
MARCH 2013
REF. NO. 017322 (18)**

EXECUTIVE SUMMARY

Conestoga-Rovers & Associates (CRA), on behalf of Revitalizing Auto Communities Environmental Response (RACER) Trust, has prepared this Environmental Indicator (EI) Report - Migration of Contaminated Groundwater Under Control (CA750) for the Centerpoint Campus Validation Center (PCC-Validation) Site.

The purpose of the EI CA750 Report is to (1) provide information and a summarization of the field investigation conducted following submittal of the EI CA725 Report; (2) identify the presence of "contamination" based on comparison of Site data to conservative screening criteria; (3) discuss the extent of "contaminated" groundwater; (4) identify any discharge to surface water bodies; and (5) provide information on proposed future monitoring.

Data collected from 2007-2013 was used to identify the presence of groundwater "contamination". Groundwater met the definition of "contamination" in the shallow portions of the upper-most water bearing unit underlying the Site. "Contamination" was defined as groundwater data that exceeded applicable Part 201 Michigan Department of Environmental Quality (MDEQ) Cleanup Criteria. The only applicable MDEQ Part 201 Cleanup Criteria exceeded was Residential and Non-Residential Drinking Water Criteria (DWC).

The vertical extent of impacted groundwater is limited to the upper-most water bearing unit that is generally thin, discontinuous, and relatively low permeability (silty sands). Downward vertical mobility of impacted groundwater is prohibited by a regionally extensive impermeable clay unit (e.g., aquitard).

The lateral extent of volatile organic compound (VOC) and Semi-volatile organic compound (SVOC) contaminated groundwater is defined with the exception of the VOC vinyl chloride (VC) to the northwest of the Site¹. The low concentration of VC is indicative of a leading edge of a VOC plume with natural degradation occurring. Based on the limited extent of the VOC plume, relatively low concentrations of TCE that appear to be attenuating and the low concentration of VC at the down-gradient edge of the VOC plume, the extent of VOC impacts are limited in nature and migration appears to be under control.

¹ Per the September 2013 Addendum, the lateral extent of VOCs are defined to the northwest of the Site.

The only metals detected off Site were aluminum, iron and manganese to the northwest of the Site. Based on the nature of the metal impacts, the relatively low concentrations, turbidity of the samples and the Site hydrogeology, the extent of metal impacts are limited in nature and migration appears to be under control.

The on-Site extent of LNAPL was defined through the usage of an LIF investigation and verified by monitoring wells with no LNAPL. Based on the LNAPL assessment completed as part of the EI CA725 Report, the NAPL is not considered to be migrating NAPL. Therefore, the extent of LNAPL is clearly defined and migration is under control.

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² Per the September 2013 Addendum, the VOC exceedances in groundwater were updated.

³ Per the September 2013 Addendum, the SVOC exceedances in groundwater were updated.

⁴ Per the September 2013 Addendum, the off-Site VOC contours were updated.

⁵ Per the September 2013 Addendum, the SVOC contours are no longer applicable around MW38-07.

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LIST OF ACRONYMS

AISL	Acute Inhalation Screening Level
ACM	asbestos-containing materials
AMSL	above mean sea level
AOIs	Areas of Interest
AST	aboveground storage tank
ASTM	American Society for Testing and Materials
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CBD	Central Business District
CCR	Current Conditions Report
CRA	Conestoga-Rovers & Associates
Csat	Soil Saturation Concentration Screening Level
DCC	Direct Contact Criteria
DSWD	Detroit Water and Sewerage Department
DWPC	Drinking Water Protection Criteria
DWC	Drinking Water Criteria
ELPO	Electrophoretic Deposition of Paint
ENCORE	Environmental Corporate Remediation
EPCRA	Emergency Planning and Community Right to Know Act
ERTK	Employee right to know
ESA	Environmental Site Assessment
FESL	Flammability and Explosivity Screening Level
FRDS	Federal Reporting Data System
FOIA	Freedom of Information Act
GCC	Groundwater Contact Criteria
GMC	General Motors Corporation
GCC	Groundwater Contact Criteria
GCPC	Groundwater Contact Protection Criteria
GSIC	Groundwater Surface Water Interface Criteria
GSIPC	Groundwater Surface Water Interface Protection Criteria
GTTR	Grand Traverse Railroad
GVIIC	Groundwater Volatilization to Indoor Air Inhalation Criteria
LIF	laser induced fluorescence
LBP	lead-based paint
LNAPL	light non-aqueous phase liquid
LUST	leaky underground storage tank
MDEQ	Michigan Department of Environmental Quality
MI	Michigan
MLC	Motors Liquidation Company
NWI	National Wetland Inventory
OCPC	Oakland County Planning Commission
PAOC	Potential Area of Concern
PAOR	Potential Area of Release
PCBs	polychlorinated biphenyls
PID	Photoionization detector
PNAs	polynuclear aromatic hydrocarbons

PSIC	Particulate Soil Inhalation Criteria
PVC	Pontiac Validation Center
PWS	Public Water Supply
RACER	Revitalizing Auto Communities Environmental Response
RAP	Remedial Action Plan
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SVIIC	Soil Volatilization to Indoor Air Inhalation Criteria
SWMU	solid waste management unit
SVOCs	semi-volatile organic compounds
U.S. EPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	underground storage tank
VOCs	volatile organic compounds
VSIC	Infinite Source Volatile Soil Inhalation Criteria
WMA	waste management area
WWTP	wastewater treatment plant

1.0 INTRODUCTION

This Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) Environmental Indicator (EI) Report – Migration of Contaminated Groundwater Under Control (CA 750) was prepared to fulfill provisions under Section VI.17.b of the 3008(h) Administrative Order on Consent (AOC), docket number RCRA-05-2011-0022, for the Revitalizing Auto Communities Environmental Response (RACER) Trust Pontiac Centerpoint Campus Validation Center (PCC-Validation) Site located at 200 South Boulevard West in the City of Pontiac, Oakland County, Michigan (Site). The Site Location is presented on Figure 1. The Site's United States Environmental Protection Agency (U.S. EPA) Identification Number is MID 980 568 836. This EI CA750 Report was completed as required by the AOC.

Based on the information presented in the Current Conditions Report (CCR) and Supplemental CCR, nine of the 28 Areas of Interest (AOIs) were investigated following the EPA approved Sampling and Analysis Plan and Fundamental Quality Assurance Project Plan dated August 20, 2012 (SAP/QAPP). A Phase III Environmental Site Assessment (ESA) was completed in August 2012 and a Supplemental Phase III ESA was completed in December 2012. The investigations, methods and analytical results were presented and discussed in the January 25, 2013 RCRA EI CA725 report (EI CA725 Report).

On January 24, 2013, two monitoring wells were installed off Site in the right-of-way (ROW) located along the north side of Rapid and Franklin Street. A groundwater monitoring event was completed in February 2013 and included the sampling of 26 groundwater monitoring wells (including the two recently installed wells). The groundwater monitoring event was completed to provide more recent data to support the CA750 determination and comply with the AOC for semi-annual groundwater monitoring. This data was not available during preparation of the EI CA725 Report, but are included in this report. Results from the 2013 event do not change the findings of the EI CA725 Report. See Figure 2 for a Site Plan with sample locations.

The purpose of this CA 750 Report is to present an evaluation of the information that is pertinent to determining whether migration of contaminated groundwater at or from the Site is under control.

1.1 BACKGROUND

The following Sections of the EI CA725 Report provide background information:

- Section 2.0 of the EI CA725 Report provides an overview, a summary of the AOIs, a summary of field investigations, and the general approach.
- Section 3.0 of the EI CA725 Report discusses the environmental setting regionally and in the vicinity of the Site, including information on surface water hydrology, geology, hydrogeology, background soil characteristics, land use, and groundwater use.
- Section 4.0 of the EI CA725 Report presents a summary and discussion of the field investigation results for each of the AOIs investigated as part of the Phase III Environmental Site Assessment (ESA) and Supplemental Phase III ESA. The discussion for each area investigated includes a summary of the scope of the field investigations, a summary and evaluation of the data, and a discussion of whether a potentially significant release of hazardous constituents has been identified.

1.2 REPORT ORGANIZATION

The evaluation and discussion are organized to follow USEPA's CA750 form (Interim Final 2/5/99). This Report is organized as follows:

- Section 1.0 presents an introduction, background and report organization
- Section 2.0 presents the information reviewed and a summarization of the field investigation conducted following submittal of the EI CA725 Report
- Section 3.0 identifies the presence of "contamination" based on comparison of Site data to conservative screening criteria
- Section 4.0 discusses the extent of "contaminated" groundwater
- Section 5.0 identifies any discharge to surface water bodies
- Section 6.0 discusses future monitoring
- Section 7.0 summarizes the conclusions
- Section 8.0 lists the references cited in the Report

Figures and Tables are found at the end of the text. The CA750 form is presented at the front of the report and was completed based on the discussion in this report. Analytical data that were obtained from the 2013 groundwater monitoring event are provided in Appendix B. The data validation report for the 2013 groundwater monitoring event is provided in Appendix C.

2.0 INFORMATION REVIEWED

Question 1 of the CA750 form asks whether all relevant information on known and reasonably suspected releases subject to RCRA corrective action has been considered in making the EI determination.

All relevant information on known or reasonably suspected releases has been considered in preparing this report. Specifically, the following sources were reviewed to support the evaluation of whether migration of contaminated groundwater at the Site is under control:

- 2006 and 2009 Phase I ESAs (CRA, 2006a, CRA, 2006b, and CRA, 2009a)
- Phase II Environmental Site Assessment Work Plan (CRA, 2007)
- Memorandum – Quantitative Risk Assessment Results (ENVIRON, 2008)
- Phase II Environmental Site Assessment (North Parcel) (CRA 2009b)
- Phase II Environmental Site Assessment (South Parcel), (CRA 2009c)
- Memorandum – LNAPL Recovery Memo (CRA 2010)
- Draft Current Conditions Report (CRA 2011)
- Supplemental Current Conditions Report, (CRA 2012a)
- Sampling and Analysis Plan and Fundamental Quality Assurance Project Plan, (CRA 2012b)
- RCRA EI CA725 Report (CRA 2013)

A groundwater monitoring event was conducted in January and February 2013. The sampling event was conducted after submittal of the EI CA725 report. The 2013 groundwater monitoring event is discussed in Section 2.1.

2.1 2013 GROUNDWATER MONITORING EVENT

Prior to the 2013 groundwater monitoring event, on January 24, 2013, monitoring wells MW92S-13 and MW92I-13 were installed and developed following protocol identified in Section 2.2 of the SAP/QAPP. The wells were installed in the ROW located on the northeast corner of Rapid and Franklin Street (Figure 2). MW92S-13 and MW92I-13 were sampled for the first time during the 2013 groundwater monitoring event.

The 2013 groundwater monitoring event was completed from January 31, 2013 through February 5, 2013 as required in Section VI-18e of the AOC. The scope of work was

approved verbally by the EPA and documented via email in the revised Scope of Work dated January 29, 2013 and consisted of the following:

- A complete round of measuring water levels for new and historic monitoring wells
- 23 groundwater monitoring wells sampled for volatile organic compounds (VOCs)
- 20 groundwater monitoring wells sampled for semi-volatile organic compounds (SVOCs)
- 11 groundwater monitoring wells sampled for target analyte list (TAL) metals
- 1 groundwater monitoring well sampled for polychlorinated biphenyls (PCBs)

Groundwater sampling followed methods and procedures (including sample handling, field documentation requirements, field and laboratory analytical methods and QA/QC procedures) outlined in the approved SAP/QAPP. Table 1 provides a sample summary.

Groundwater Analytical Results:

The analytical results for all groundwater samples associated with the 2013 groundwater monitoring event are presented in Tables 2-5 and identified on Figures 3-6. The tables and figures identify analytical results from 2007-2013. According to Tables 2-5, contaminants from the 2013 groundwater monitoring event exceeded the screening criteria for VOCs, SVOCs and Metals. PCBs were non-detect in groundwater. The screening criteria are defined and discussed in Section 3.1.

SVOC impacts were detected at MW38-07. Historically, SVOCs were not identified in the southwest portion of the Site. To verify the SVOC impacts at MW38-07, CRA attempted to re-sample the well on February 20, 2013. During re-sampling, the well went dry and was allowed to sit for 24 hours. On February 21, 2013, the well was re-visited and less than 6 inches of water was observed in the well. Based on the limited groundwater recharge, no sample was collected from MW38-07 and the well was considered dry.

VOC impacts (vinyl chloride or VC) were detected just above Part 201 Drinking Water Criteria at MW92I-13. To verify the VOC impacts, the well was re-sampled on February 20, 2013. The analytical results from the February 2013 sample confirmed VC was present slightly above Part 201 Drinking Water Criteria.

3.0 PRESENCE OF CONTAMINATED GROUNDWATER

Question 2 of the CA750 form asks whether groundwater is known or reasonably suspected to be "contaminated" above appropriately protective levels from releases subject to RCRA corrective action. According to the CA750 form:

"Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

In this report, the presence of "contamination" is identified based on comparison of Site characterization data for groundwater with conservative screening criteria. The screening criteria used in the comparisons and the comparison results are discussed in Section 3.1.

The data used in the comparisons do not include data determined to be not usable during data validation (i.e., R-qualified data). Concentrations qualified as estimated (e.g., J-qualified data) are included. The analytical data for all samples (including those for constituents not detected, R-qualified data, and data for individual samples in duplicate pairs) from 2007 through 2012 are available upon request. Groundwater data collected during the February 2013 event is summarized in Appendix B of this report.

Groundwater data was collected from on-Site and off-Site monitoring wells that are screened in either the shallow portion (generally 5 to 10 feet below ground surface [bgs]) or the intermediate portion (generally 15 to 25 feet bgs) of the upper water bearing unit underlying the Site. The upper water bearing unit is comprised of sand, silt and fill with approximate thicknesses ranging from less than 2 to 20 feet in thickness. Groundwater data from on-Site and off-Site monitoring wells collected from 2007 through 2013 and are summarized on Tables 2-5. The locations of these wells are shown on Figure 2.

Based on a regionally extensive clay unit underlying the upper water bearing unit, groundwater was not collected from the lower aquifer. There is no evidence that the upper water bearing unit has the ability to migrate through the regionally extensive clay. As identified in the 2007 Phase II ESA, the regional clay unit has a vertical hydraulic conductivity of approximately 1×10^{-7} cm/s prohibiting the downward migration of groundwater (e.g., aquitard).

3.1 SCREENING CRITERIA

The screening criteria for the on-Site and off-Site groundwater data is based on MDEQ Part 201 Cleanup Criteria. The following criteria were used for screening groundwater data:

- Residential and Non-Residential Drinking Water Criteria (DWC)
- Residential and Non-Residential Groundwater Volatilization to Indoor Air Inhalation (GVIAI)
- Groundwater Contact Criteria (GCC)
- Water Solubility
- Flammability/Explosivity Screening Level (FESL)
- Acute Inhalation Screening Level (AISL)

The MDEQ Part 201 Drinking Water Criteria for aluminum, iron and manganese is based on the aesthetic drinking water value, as required by Section 20120a(5) of the Natural Resources and Environmental protection Act, 1994 PA 451, as amended (NREPA). The applicable health-based drinking water values are provided as an alternate criteria as identified in Footnote E of Part 201 Cleanup Criteria. For the purposes of this report, the health-based drinking water values are more appropriate than the aesthetic drinking water values. Therefore, the Residential and Non-Residential Health-Based Drinking Water Values for aluminum, iron and manganese are used as the appropriate screening criteria for DWC.

The MDEQ Part 201 Drinking Water Criteria for lead is derived using a biologically based model, as allowed for under Section 20120a(10) of the NREPA, and is not calculated using the algorithms and assumptions specified in pathway specific rules. The generic residential drinking water criterion of 4 ug/L is linked to the generic residential soil direct contact criterion of 400 mg/kg. A higher concentration in drinking water, up to the state action level of 15 ug/L, may be allowed as a site-specific remedy and still allow for drinking water use, under Section 20120a(2) of the NREPA if soil concentrations are appropriately lower than 400 mg/kg. Based on this, acceptable combinations of site-specific soil and drinking water concentrations are presented in Footnote L of the MDEQ Part 201 Cleanup Criteria. Therefore, the appropriate screening criterion for lead is 15 ug/L.

As identified in the draft CCR, groundwater to surface water interface (GSI) pathway was evaluated for the Site and the conclusion was reached that the GSI pathway does not apply at the Site. During the Phase III ESA, the EPA requested additional investigation of storm sewers as potential conduits for off-Site migration and potential

Site exit points. During the Phase III ESA, storm sewer depths were measured and two monitoring wells (MW82-12 and MW83-12) were installed in or immediately adjacent to the bedding of the utility corridor along the western boundary of the Site and represent potential Site exit points. Based on the distance to the nearest water body (discussed in Section 5.0), and no contaminants exceeding Part 201 criteria (except limited metals) at MW82-12 and MW83-12, GSI is not a screening criterion for the on-Site and off-Site groundwater data. GSI is further discussed in Section 5.0.

Although DWC is used as a screening criterion for the purposes of this report, it has historically not been an applicable exposure pathway. Future land use restrictions proposed for the Site include a Site-wide deed restriction to prevent use of groundwater. In addition, the City of Pontiac's source water comes from the lower Lake Huron watershed, Lake Huron Water Treatment Plant in Port Huron. The Site and the surrounding properties are exclusively provided with municipal water as a source of drinking water, and it is not anticipated that future drinking water wells will be installed in the vicinity of the Site. The upper water bearing unit has shown limited connectivity and limited recharge in several monitoring wells and is not used for drinking water. It is unlikely that impacts within the upper water bearing unit would migrate to an aquifer that would be considered a usable drinking water aquifer.

Site-specific background concentrations of metals in soil were developed during the 2009 Phase II ESA. The Site-specific concentrations were developed using statistical calculation procedures presented in the 2002 MDEQ guidance document entitled "Sampling Strategies and Statistics Training Materials" for Part 201 Cleanup Criteria. A Draft Background Soil Investigation Memorandum was completed in 2009 outlining the procedures and was included as Appendix D of the EI CA725 Report. Site-specific background concentrations for metals in soil were used to calculate (or back calculate) background groundwater concentrations by dividing 20x the Site-specific soil concentration for each given metal. The reason for this approach is explained in the March 2005 MDEQ RRD Operational Memorandum No. 1, Technical Support Document - Attachment 9 which states *"Both the 20X and the SWP approaches are used to predict soil leachate concentrations of hazardous substances. The 20X value for soil is derived by multiplying the applicable groundwater criterion (DWC, GSI, or GCC) by 20. Before the SWP methodology was adopted, a 20X approach was used to determine the level of hazardous substance in soil that was protective of groundwater. The multiplier of 20 comes from the dilution factor inherent to the toxicity characteristic leach procedure. Chemical-specific information necessary to develop the SWPV is not available for all hazardous substances, resulting in the ability to generate only 20X values for some hazardous substances."* The Site-specific groundwater calculations were not used as a screening tool, but as a line of evidence to assess the likelihood of native or background metal concentrations in groundwater.

3.2 ANALYTICAL SUMMARY

Groundwater that meets the definition of "contaminated" is an exceedance of screening criteria described in Section 3.1. Groundwater analytical results from 2007 – 2013 are summarized in Tables 2-5 and shown on Figures 3-6.

3.2.1 VOLATILE ORGANIC COMPOUNDS

As identified In Table 2 and shown on Figure 3, VOCs meet the definition of "contaminated" off-Site to the north-northwest of the Site at TMW2I-12 and MW92I-13. Trichloroethene (TCE) was detected above DWC at TMW2I-12 and vinyl chloride (VC) was detected at MW92I-13 above DWC. Historically, TCE was detected above DWC on-Site at MW2-07; however, based on the most recent round of groundwater sampling on January 31, 2013, the concentration did not exceed MDEQ Part 201 Cleanup Criteria so it is not considered "contaminated".

VOCs meet the definition of "contaminated" in the southern portion of the Site at MW74-08 and MW91-12. 1,1,1-Trichloroethane, 1,1-Dichloroethene and TCE were detected at MW74-08 above DWC. TCE was detected at MW91-12 above DWC. Historically, cis-1,2-dichloroethene was detected above DWC at MW74-08; however, based on the two most recent rounds of groundwater sampling on August 28, 2012 and February 1, 2013, the concentration did not exceed MDEQ Part 201 Cleanup Criteria so MW74-08 is not considered "contaminated" with cis-1,2-dichloroethene.

3.2.2 SEMI-VOLATILE ORGANIC COMPOUNDS

As identified on Table 3 and shown on Figure 4, SVOCs meet the definition of "contaminated" in the southern portion of the Site at MW38-07. Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(g,h,i)perylene, Benzo(k)fluoranthene, Chrysene, Indeno(1,2,3-cd)pyrene were detected above DWC and/or GCC and/or Water Solubility at MW38-07. SVOCs were detected during the 2013 groundwater monitoring event. Prior to the event, MW38-07 had never been analyzed for SVOCs because no source was identified near the well or surrounding area. To verify the presence of the detected SVOCs, CRA attempted to re-sample the well on February 20, 2013; however, it went dry and no sample was collected. Therefore, although the initially detected SVOC

constituents meet the definition of "contaminated" the SVOC impacts were not verified by a second round of sampling⁶.

Historically, SVOCs were detected above DWC, GCC and Water Solubility at MW74-08; however, based on the two most recent rounds of groundwater sampling on August 28, 2012 and February 1, 2013, the concentrations did not exceed MDEQ Part 201 Cleanup Criteria; therefore, it is not considered "contaminated".

Historically, SVOCs were detected above Water Solubility at MW37-07; however, based on the two most recent rounds of groundwater sampling on August 28, 2012 and February 1, 2013, the concentrations did not exceed MDEQ Part 201 Cleanup Criteria; therefore, it is not considered "contaminated".

Historically, SVOCs were detected above DWC at MW35-07; however, the well was re-sampled on January 9, 2008 and the concentration did not exceed MDEQ Part 201 Cleanup Criteria; therefore; it is not considered "contaminated".

3.2.3 POLYCHLORINATED BIPHENYLS

As identified In Table 4 and shown on Figure 6, PCBs were detected above DWC at MW2-07; however, the well was re-sampled on August 28, 2012 and the concentration did not exceed MDEQ Part 201 Cleanup Criteria so it is not considered "contaminated".

3.2.4 METALS

Total metals were analyzed even though the monitoring wells are generally turbid (greater than 10 NTU). Most often, turbid groundwater samples tend to display greater metals concentrations in groundwater due to a metal's affinity to sorb to particles or to naturally be a constituent of the sediment. Field filtering for dissolved metals would provide a more representative concentration of metals in groundwater. However, for the purpose of this report, concentrations of total metals, as identified in Table 5 and shown on Figure 5, meet the definition of "contaminated" in multiple wells throughout the Site as identified below:

⁶ Per the September 2013 Addendum, on July 10, 2013 the SVOCs were re-sampled at MW38-07 and results were below laboratory reporting limits. Therefore, groundwater at MW38-07 is not considered "contaminated" with SVOCs.

- Aluminum exceeded Residential Health-Based DWC at MW10-07, MW11-07, MW19-07, MW32-07, MW33-07, MW34-07, MW35-07, MW68-08, MW74-08, MW82-12, MW83-12, MW85-12, MW87-12 and MW92S/I-13
- Arsenic exceeded DWC at MW35-07, MW63-08, MW64-08 and MW88-12
- Iron exceeded Residential and Non-Residential Health-Based DWC at MW10-07, MW33-07, MW48-07, MW64-08, MW81-12, MW82-12, MW88-12, and MW92S/I-13
- Lead exceeded DWC at MW10-07
- Manganese exceeded Residential and Non-Residential Health-Based DWC at MW2-07, MW92S -13
- Sodium exceeded DWC at MW2-07, MW4-07, MW7-07, MW11-07, MW15-07, MW19-07, MW33-07, MW34-07, MW35-07, MW37-07, MW40-07, MW48-07, MW63-08, MW64-08, MW68-08 and MW74-08
- Vanadium exceeded DWC at MW10-07, MW33-07, MW35-07 and MW82-12

As indicated in Section 3.2.1, monitoring well MW38-07 went dry during attempts to resample it and no sample was collected. Therefore, although the detected concentrations in the initial groundwater sample from the well meets the definition of "contaminated" the metal impacts were not verified by a second round of sampling.

Historically, arsenic was detected above DWC at MW82-12; however, based on the recent groundwater sampling on February 1, 2013 the concentrations did not exceed MDEQ Part 201 Cleanup Criteria so it is not considered "contaminated".

Historically, iron was detected above Residential and Non-Residential Health-Based DWC at MW85-12; however, based on the recent groundwater sampling on January 31, 2013, the concentrations did not exceed MDEQ Part 201 Cleanup Criteria so it is not considered "contaminated".

Historically, lead was detected above DWC at MW82-12 and MW63-08; however, based on the recent groundwater sampling on January 31, 2013 and February 1, 2013 the concentrations did not exceed MDEQ Part 201 Cleanup Criteria so it is not considered "contaminated".

3.2.5 LIGHT NONAQUEOUS-PHASE LIQUIDS

As shown on Figure 2, Light nonaqueous-phase liquids (LNAPLs) are present in monitoring wells MW69-08, MW84-12 and MW86-12. The presence of LNAPL is further discussed in Section 4.1.5.

4.0 EXISTING AREA OF CONTAMINATED GROUNDWATER

Question 3 of the CA750 form asks whether the migration of contaminated groundwater has stabilized, such that contaminated groundwater is expected to remain within an "existing area of contaminated groundwater" as defined by monitoring locations designated at the time of the determination.

The extent of contaminated groundwater is discussed below, and outlined in Figures 8-16. The areas of groundwater contamination shown on these figures are based on the groundwater monitoring data collected from 2007-2013. The most recent data for each monitoring well was used in development of the estimated areas of groundwater contamination.

Groundwater collected at the Site is from an upper unit that tends to be present throughout the Site and is comprised of sand, silt and fill material interbedded with clay. This upper unit is not interconnected throughout all areas of the Site. For the purpose of this report, the upper unit is contoured (Figure 7) showing generalized flow patterns. Figure 7 provides a groundwater contour map from data collected in October 2012.

Vertical delineation of "contamination" is limited to the upper unit. There is a regionally extensive clay unit underlying the upper groundwater producing unit that extends to depths greater than 40 feet below ground surface. Therefore, it is unlikely "contaminated" groundwater has migrated to the lower unit. The horizontal delineation of "contaminated" groundwater is discussed in the sections below.

4.1 EXISTING AREA OF ON-SITE CONTAMINATED GROUNDWATER

The databox figures and groundwater elevation contours show general groundwater flow patterns trending to the north or northwest with a depression near former Building 17 and the LNAPL area followed by a mounding area to the northeast. As shown in tables 2-5, the predominant groundwater contaminants found in on-Site monitoring wells are VOCs, SVOCs and Metals.

4.1.1 ON-SITE VOLATILE ORGANIC COMPOUNDS

As identified in Section 3.2.1, VOCs meet the definition of "contaminated" in the southern portion of the Site at MW74-08 and MW91-12. Surrounding wells MW68-08, TMW81-08, MW90-12 MW88-12, TMW71-08, MW37-07, MW87-12 and MW84-12 have

delineated the on-Site VOC impacts to the north, south, east and west. Based on the analytical results, VOCs are limited to the areas near MW74-08 and MW91-12 and clearly defined on-Site. Figure 8 provides a Site map with VOC contours delineating groundwater on-Site around MW74-08 and MW91-12.

In general, based on a limited dataset, concentrations of VOCs in groundwater shows decreasing trends over time throughout the Site. Monitoring well MW74-08 exhibited a decreasing trend of 1, 1, 1-TCA, 1, 1-DCE, cis-1,2-DCE, TCE and VC. Two constituents (cis-1,2-DCE and VC) decreased below Part 201 Cleanup Criteria. Other notable decreases in VOC concentrations included TCE at MW02-07 which decreased by an order of magnitude to below Part 201 Cleanup Criteria. In general, we see decreasing trends of VOC concentrations Site-wide which indicates natural attenuation is likely occurring.

4.1.2 ON-SITE SEMI-VOLATILE ORGANIC COMPOUNDS

As identified in Section 3.2.2, SVOCs meet the definition of "contaminated" in the southern portion of the Site at MW38-07⁷. The SVOC impacts were identified during the recent 2013 groundwater monitoring event, but have not been verified due to an insufficient groundwater volume during the subsequent sampling effort.⁸ The well went dry during purging activities (at approximately 100 ug/L) prior to re-sampling and was allowed to recover for 24 hours. Following the 24 hour recovery time, the well still did not produce enough water to sample. The boring log for this well indicates the well monitors an approximately 0.5 foot thick saturated sand lense with clay above and below the sand. Due to the minimal thickness of this saturated sand and based on MW38-07's limited ability to produce water, it is unlikely that the low concentration of SVOCs detected (each of the SVOCs detected above a generic Part 201 criterion are considered to have low solubility) will migrate via groundwater transport. Therefore, it is unlikely "contaminated" groundwater will migrate and apparent impacts detected in the well are considered delineated to within 10 feet of the well in all directions. Therefore, SVOCs are limited to the area near MW38-07 and are considered defined on-Site. Figure 9 provides a Site map with SVOC contours delineating groundwater on-Site around MW38-07.

⁷ Per the September 2013 Addendum, groundwater at MW38-7 does not meet the definition of "contaminated" with SVOCs.

⁸ Per the September 2013 Addendum, the presence of SVOCs was not confirmed in groundwater in MW38-07 and therefore SVOC impacts above criteria are delineated in the southwestern portion of the Site.

4.1.3 ON-SITE POLYCHLORINATED BIPHENYLS

As identified in Section 3.2.3, PCBs do not meet the definition of "contaminated" and the concentration did not exceed MDEQ Part 201 Cleanup Criteria.

4.1.4 ON-SITE METALS

The metals considered "contaminated" on-Site (with the exception of sodium) tend to be immobile in aerobic aquifers. The impacted groundwater is under aerobic conditions. Under aerobic conditions, metals tend to be in their higher oxidation states and are generally present as insoluble salts or oxides. Therefore, based on the general immobility of the impacted metals in the aerobic groundwater, no significant migration of these metals is likely.

There are concentrations of metals detected in groundwater greater than screening criteria identified in Section 3.2.1; however, with the exception of arsenic and lead, these metals do not have primary maximum contaminant levels (MCLs) as defined by the U.S. EPA for drinking water.

Metals detected during the 2013 groundwater monitoring event at MW38-07 were unable to be verified due to insufficient groundwater recovery during re-sampling efforts. As discussed in Section 4.1.2, the well did not yield enough water to obtain a representative sample. Therefore, it is unlikely "contaminated" groundwater will migrate off Site in the vicinity of MW38-07. The following metals were identified on Site:

Aluminum:

Aluminum "contamination" appears in the north, west and central portions of the Site. There appears to be four main areas where impacts are most widespread as identified below.

- (1) The first area is the southwestern boundary of the Site at MW33-07, MW34-07, MW35-07, MW82-12 and MW87-12. The "contaminated" groundwater appears to be delineated to the north, east and south at MW17-07, MW84-12, MW88-12, MW40-07 and MW38-07.
- (2) The second is two small areas in the central portion of the Site at MW11-07 and MW19-07. The "contaminated" groundwater appears to be delineated to the north, south, east and west at MW07-07, MW15-07, MW78-08, MW63-08 and MW17-07.

- (3) The third area is the central-western boundary of the Site at MW10-07 and MW83-12. The "contaminated" groundwater appears to be delineated to the north, east and south at MW02-07, MW07-07, MW15-07 and MW17-07.
- (4) The fourth area is near the LNAPL at MW32-07, MW68-08, MW74-08 and MW85-12. The "contaminated" groundwater appears to be delineated to the north, south, east and west at MW64-07, MW78-08, MW48-07, MW88-12 and MW84-12.

Aluminum concentrations in groundwater exceeded only the Residential Health-Based DWC. Concentrations did not exceed the Non-Residential Health-Based DWC or any other screening criteria as defined in Section 3.1. In addition, the aluminum concentrations were below the calculated background groundwater concentrations (Table 6) and is considered an earth metal. This indicates aluminum concentrations may be related to background concentrations as described above. All the impacts were delineated to Residential Health Based-DWC on Site except along the southwestern and central western boundary. Therefore, based on the limited impacts and general immobility of aluminum, no significant migration is likely. Figure 10 provides a Site map with aluminum contours delineating groundwater on Site to the extent possible.

Arsenic:

Arsenic "contamination" appears to be clustered in three isolated areas of the Site. Specifically, in the southern portion of the Site in three areas.

- (1) The first area is near Former Plan 5 at MW63-08 and MW64-08. The "contaminated" groundwater appears to be delineated to the north, south, east and west at MW19-07, MW85-12, MW78-08, MW17-07 and MW34-07.
- (2) The second area is near Former Plant 3 at MW88-12. The "contaminated" groundwater appears to be delineated to the north, south east and west at MW74-08, MW48-07, MW40-07 and MW37-07.
- (3) The third area is west of Former Plant 3 at MW35-07. The "contaminated" groundwater appears to be delineated to the north, south, east and west at MW34-07, MW87-12, MW37-07, MW82-12 and MW33-07.

Based on the analytical results, arsenic exceeded only DWC and is limited to the areas identified above and clearly defined on Site Figure 11 provides a Site map with arsenic contours delineating groundwater on Site to the extent possible.

Iron:

Iron "contamination" appears in the western, central and southeastern portions of the site. There appears to be four main areas where impacts are most widespread as identified below.

- (1) The first area is the central-western boundary of the Site at MW10-07. The "contaminated" groundwater appears to be delineated to the north, south and east at MW02-07, MW07-07M, MW11-07, and MW83-12.
- (2) The second area is the south-western boundary of the Site at MW33-07. The "contaminated" groundwater appears to be delineated to the north, south and east at MW17-07, MW34-07, MW35-07 and MW82-12.
- (3) The third area is southern and eastern portion of the Site at MW48-07 and MW88-12. The "contaminated" groundwater appears to be delineated to the north and west at MW78-08, MW74-08, MW87-12, MW35-07, MW82-12 and MW40-07.
- (4) The fourth area is located in central portion of Former Plan 5 at MW64-08. The "contaminated" groundwater appears to be delineated to the north, south east and west at MW63-08, MW78-08, MW85-12 MW34-07 and MW17-07.

Iron concentrations in groundwater exceeded only the Residential and Non-Residential Health-Based DWC. Concentrations did not exceed any other screening criteria as defined in Section 3.1. In addition, the iron concentrations were below the calculated background groundwater concentrations (Table 6) and is considered an earth metal. This indicates iron concentrations may be related to background concentrations. All the impacts were delineated on Site except along the southeastern, central and southwestern boundary. Based on groundwater flow direction and the immobility of metals in an aerobic aquifer, it is unlikely they are migrating off Site. The largest impact on Site is located at MW48-07 which was sampled in 2008 and results may not reflect current groundwater conditions. In addition, the monitoring well is located in the southeastern corner of the Site and is the most up-gradient monitoring well on Site. This up-gradient/background monitoring point indicates background levels for iron are equal to or greater than levels detected onsite. Therefore, based on the limited impacts and general immobility of the iron, no significant migration is likely. Figure 12 provides a Site map with iron contours delineating groundwater on Site to the extent possible.

Lead:

Lead "contamination" appears in the central-western boundary of the Site as identified below.

- (1) The first area is at the western boundary in the central portion of the Site at MW10-07. The "contaminated" groundwater appears to be delineated to the north, south and east at MW02-07, MW07-07, MW11-07 and MW83-12.

Lead concentrations in groundwater exceeded only the DWC of 15 ug/L. The one exceedance at MW10-07 (18 ug/L) only slightly exceeded the DWC and did not exceed any other screening criteria as defined in Section 3.1. In addition, the lead concentrations were below the calculated background groundwater concentrations (Table 6) and is considered an earth metal. This indicates lead concentrations may be related to background concentrations. Lead was not identified elsewhere on Site in groundwater at concentrations exceeding screening criteria. Therefore, based on the limited impacts and general immobility of lead, no significant migration is likely. Figure 13 provides a Site map with lead contours delineating groundwater on Site to the extent possible.

Manganese:

Manganese "contamination" was identified in the northwestern portion of the Site at monitoring well MW02-07. The "contaminated" groundwater is delineated to the south west and east at MW07-07, MW10-07 and MW04-07.

Manganese concentrations in groundwater on Site exceeded only the Residential Health-Based DWC. Concentrations did not exceed the Non-Residential Health-Based DWC or any other screening criteria as defined in Section 3.1 on Site. In addition, the manganese concentration was below the calculated background groundwater concentrations (Table 6). Manganese was detected down-gradient of MW02-07 in off-Site monitoring wells and is therefore discussed further in Section 4.2.4. Figure 14 provides a Site map with manganese contours delineating manganese in groundwater on Site to the extent possible.

Sodium:

Sodium "contamination" is fairly widespread throughout the site. There appears to be two main areas where impacts are most widespread as identified below.

- (1) The first area is the southern half of the Site at MW33-07, MW34-07, MW68-08, MW48-07, MW74-08, MW40-07, MW37-07 and MW35-07. The "contaminated" groundwater appears to be delineated to the north and southwest at MW17-07, MW32-07, MW78-08 and MW38-07.
- (2) The second area is located in the central and northern portion of the Site at MW64-08, MW63-08, MW19-07, MW15-07, MW11-07, MW07-07, MW04-07 and

MW02-07. The "contaminated" groundwater appears to be delineated to the south, east and west at MW10-07, MW17-07, MW32-07 and MW78-08.

Based on the widespread sodium impacts throughout the Site, delineation to the north and south of the Site cannot currently be confirmed; however sodium is considered an earth metal and may be related to background concentrations. Additionally, the upgradient/background well MW48-07 located in the southeast corner of the Site has elevated sodium concentrations that could be related to natural elevated sodium or associated with impacts from the common usage of road salt throughout the area. Figure 15 provides a Site map with sodium contours delineating groundwater on-Site to the extent possible.

Vanadium:

Vanadium "contamination" appears to be clustered in two areas along the western boundary.

- (1) The first area is at the western boundary in the central portion of the Site at MW10-07. The "contaminated" groundwater appears to be delineated to the north, south and east at MW17-07, MW83-12, MW11-07, MW07-07 and MW02-07.
- (2) The second area is at the western boundary in the southern portion of the Site at MW33-07, MW35-07 and MW82-12. The "contaminated" groundwater appears to be delineated to the north, south and east at MW17-07, MW34-07, MW87-12, MW37-07 and MW38-07.

Vanadium concentrations in groundwater exceeded only the Residential DWC. Concentrations did not exceed the Non-Residential DWC or any other screening criteria as defined in Section 3.1. All the impacts were delineated on Site except along the central-western boundary. Vanadium was detected at concentrations of 4.8, 7.3 and 6.6 ug/L (from wells located along the western boundary) slightly greater than the screening criteria of 4.5 ug/L. Therefore, based on the limited impacts and general immobility of vanadium, migration of vanadium-impacted groundwater at concentrations greater than screening criteria is not likely. Figure 16 provides a Site map with vanadium contours delineating groundwater on Site to the extent possible.

4.1.5 ON-SITE LIGHT NONAQUEOUS-PHASE LIQUIDS

As identified in Section 3.2.5, LNAPL was identified at monitoring wells MW69-08, MW84-12 and MW86-12 (AOI 28). During the 2009 Phase II ESA, an LIF survey was conducted to delineate the vertical and horizontal extent of the LNAPL. Additional

evaluation of the LNAPL was conducted during the Phase III ESA. A discussion of the results of the Phase III ESA investigation of the LNAPL is discussed in the LNAPL Memorandum provided in Appendix D of the EI CA725 Report. The LNAPL Memorandum provided the following discussion pertaining to the LNAPL impacts:

- A summary of CRA's understanding of the LNAPL Conceptual Site Model (LCSM)
- An evaluation of potential remedial drivers in a manner consistent with Interstate Technology & Regulatory Council (ITRC) LNAPL guidance and a draft RACER LNAPL remedial decision-making process developed in conjunction with the Michigan Department of Environmental Quality
- Proposed a technically appropriate LNAPL management strategy based on Items 1 and 2 above

The results of the soil core petrophysical testing and other related testing are discussed as part of the LCSM discussion in Appendix D the EI CA725 Report.

In summary, based on the LIF data and additional Phase III ESA characterization of the LNAPL in the southern portion of the Site, the plume is not mobile or expanding. The LNAPL was found to have characteristics of highly degraded fuel oil #2 which tends to indicate the plume has been in the same area for a long period of time. Analytical results of surrounding and down-gradient wells (MW88-12, MW74-08, MW68-08, MW32-07, MW85-12, MW84-12 and MW87-12) indicate dissolved phase VOC impacts are limited to only MW74-08, which is up-gradient of the LNAPL. No SVOC or PCB impacts from the down-gradient and surrounding wells have been identified. Therefore, LNAPL is limited to the southern portion of the Site as defined by the LIF borings and is not expanding. See Figure 2 for a Site map with LNAPL delineation.

4.2 EXISTING AREA OF OFF-SITE CONTAMINATED GROUNDWATER

As identified on Tables 2-5 and shown on Figures 8⁹, 10, 12 and 14, VOCs and metals were detected in the off-Site groundwater at concentrations higher than screening criteria defined in Section 3.1. The only screening criterion exceeded for any constituent on Site or off Site was DWC (which includes applicable Part 201 footnotes).

⁹ Per the September 2013 Addendum, the figure delineating VOCs impacts was updated to include MW93I-13.

4.2.1 OFF-SITE VOLATILE ORGANIC COMPOUNDS

As identified in Section 3.2.1, VOCs meet the definition of "contaminated" to the north-northwest of the Site at off-Site monitoring wells TMW2I-12 and MW92I-13.

TCE impacts at TMW2I-12 are delineated to the north, south, east and west at TMW1S/I-12, MW81-12, MW92S/I-13, TMW3I, TMW3I-12 and MW80-12 and MW02-07. Based on the analytical results, TCE is limited to the area near TMW2I-12 and is clearly defined.

VC impacts at MW92I-13 are delineated to the north, south and east at MW02-07, TMW1S/I-12, TMW2S/I-12, TMW3I-12, TMW4I-12, MW80-12 and MW81-12. VC was detected at a concentration of 2.6 ug/L, slightly greater than the DWC and MCL of 2.0 ug/L in MW92I-13. The well was re-sampled on February 20, 2013, and the VC exceedance was confirmed. However, the relatively low concentration of VC, and TCE detected in two upgradient monitoring wells (MW2-07 and TMW2I-12), indicates that natural degradation of the TCE is occurring and the extents of VC impact are limited in nature¹⁰. Figure 8 provides a Site map with VOC contours delineating groundwater off Site to the extent possible¹¹.

4.2.2 OFF-SITE METALS

In general, the metal impacts were Site wide; however, they are generally defined to Non-Residential DWC at the property boundary. Only iron, manganese and sodium were detected above Non-Residential DWC at the property boundary. While these slightly elevated concentrations of metals may extend beyond on-Site monitoring wells, they are generally immobile in an aerobic aquifer and are associated with a low risk to human health and the environment. Based on the groundwater flow direction, immobility of metals, and the likelihood of the metals as background earth metals, the potential migration of metals off Site does not present a significant risk to human health and the environment. Therefore, since the likelihood of off-Site migration is limited, only off-Site monitoring wells were used to define off-Site impacts to groundwater and no assumptions of migration from other portions of the Site were assessed. Therefore, the following metals were assessed off-Site based on "contamination" from off-site down-gradient monitoring wells MW80-12, MW81-12 and MW92S/I-12:

¹⁰ Per the September 2013 Addendum, the extent of VOC impacts above criteria off-Site to the northwest was delineated based on the analytical results from MW93I-13.

¹¹ Per the September 2013 Addendum, the figure delineating VOCs impacts was updated to include MW93I-13.

- Off-Site aluminum "contamination" is identified at MW92S/I-13. The aluminum impacts are delineated to the north, south and east at MW02-07, MW80-12 and MW81-12. Aluminum concentrations in off-Site groundwater exceeded only the Residential Health-Based DWC. Concentrations did not exceed the Non-Residential Health-Based DWC or any other screening criteria as defined in Section 3.1. As identified in Section 3.2.1, aluminum was detected in groundwater sporadically across the Site and may not be related to Site operations. There is no clear pathway between detections of aluminum in off-Site monitoring wells and areas of aluminum impacted groundwater on Site. In addition, the off-Site aluminum concentrations were below the calculated background groundwater concentrations (Table 6) and are considered an earth metal which indicates aluminum concentrations may be related to background. Figure 10 provides a Site map with aluminum contours delineating groundwater to the extent possible.
- Off-Site iron "contamination" is identified at MW81-12 and MW92S/I-12. Based on the analytical results, iron is delineated to the south and east at MW80-12 and MW02-07. Iron concentrations in off-Site groundwater exceeded only the Residential Health-Based DWC. Concentrations did not exceed the Non-Residential Health-Based DWC or any other screening criteria as defined in Section 3.1. As identified in Section 3.2.1, iron was detected in groundwater sporadically across the Site and may not be related to Site operations. There is no clear pathway between detections of iron in off-Site monitoring wells and areas of iron impacted groundwater on Site. In addition, the off-Site iron concentrations were below the calculated background groundwater concentrations (Table 6) and are considered an earth metal which indicates iron concentrations may be related to background concentrations. Figure 12 provides a Site map with iron contours delineating iron in groundwater to the extent possible.
- Off-Site manganese "contamination" is identified at MW81-12 and MW92S/I-12. Based on the analytical results, manganese is delineated to the south and east at MW80-12 and MW04-07. Manganese concentrations in off-Site groundwater exceeded only the Residential and Non-Residential Health-Based DWC. Concentrations did not exceed any other screening criteria as defined in Section 3.1. As identified in Section 3.2.1, manganese was only detected in on-Site groundwater above screening criteria in one monitoring well at the northwest corner of the Site and may not be related to Site operations. In addition, the off-Site manganese concentration was below the calculated background groundwater concentrations (Table 6) which indicates manganese concentrations may be related to background concentrations. Figure 14 provides a Site map with manganese contours delineating groundwater off Site to the extent possible.

5.0 DISCHARGE TO SURFACE WATER BODIES

Question 4 asks whether contaminated groundwater discharges into surface water bodies. No surface water bodies exist at the Site. The Site is located within the Clinton River and Rouge River drainage basins. The Clinton River is located approximately 0.75 miles north of the Site while the Rouge River is located approximately 3.5 miles southeast of the Site. Several surface water bodies and intermittent drains are also located within a mile of the Site, including Crystal Lake, which is approximately a half mile to the west of the Site. These water bodies are part of the Clinton River watershed which ultimately migrates east over a minimum distance of 26 miles towards the St. Clair River, and becomes part of the Great Lakes water system.

Investigation was completed as part of the Phase III ESA to identify potential pathways for off-Site migration of contamination to a surface water body. During a conference call on September 28, 2011, the EPA requested additional investigation of storm sewers as potential conduits for off-Site migration and potential Site exit points. During the 2012 Phase III ESA, storm sewer depths were measured and two monitoring wells (MW82-12 and MW83-12) were installed in or immediately adjacent to the bedding of the utility corridor. The two monitoring wells were installed along the western boundary of the Site and represent potential Site exit points. Groundwater samples were collected for analysis of PCBs, SVOCs and VOCs and no contaminants exceeded Part 201 criteria (except limited metals) at MW82-12 and MW83-12.

Based on the surface water bodies located over 1,000 feet from the downgradient extent of contaminated groundwater to the north and northwest of the Site, the point source sewer investigation and groundwater levels located below preferential pathways, discharge of contaminated on-Site or off-Site groundwater to surface water bodies is not occurring. Based on the absence of groundwater discharges to surface water, Questions 5 and 6 are not applicable.

6.0 FUTURE MONITORING

Question 7 asks whether future monitoring will be conducted to confirm that the existing areas of contaminated groundwater identified in Question 3 will remain stabilized.

A limited round of groundwater monitoring is planned for 2013. In general, groundwater at the site is turbid (greater than 10 NTU); therefore, dissolved metals will be included for any additional sampling of metals

7.0 CONCLUSION

The presence of "contamination" at the Site is identified based on a comparison of the site investigations and characterization data for groundwater with MDEQ Part 201 criteria (except GSI). Groundwater met the definition of "contamination" in the shallow portions of the upper-most water bearing unit underlying the Site. The clay unit beneath the surficial unit defines the vertical extent of the existing area of groundwater throughout the Site.

The on-Site lateral extent of VOC and SVOC contaminated groundwater is defined on Site and off Site with the exception of VC which is a common breakdown product of TCE. TCE was detected at up-gradient monitoring wells MW2-07 and TMW2I-12 and defined off Site as described in Section 4.2.1. The relatively low concentration of VC indicates that natural degradation of the TCE is occurring and the extents of VC impact are limited in nature and not migrating beyond MW92I-13¹².

The on-Site lateral extent of LNAPL is bounded by monitoring wells with no LNAPL and defined through investigations from 2007-2012. The LNAPL is clearly defined on Site and not mobile.

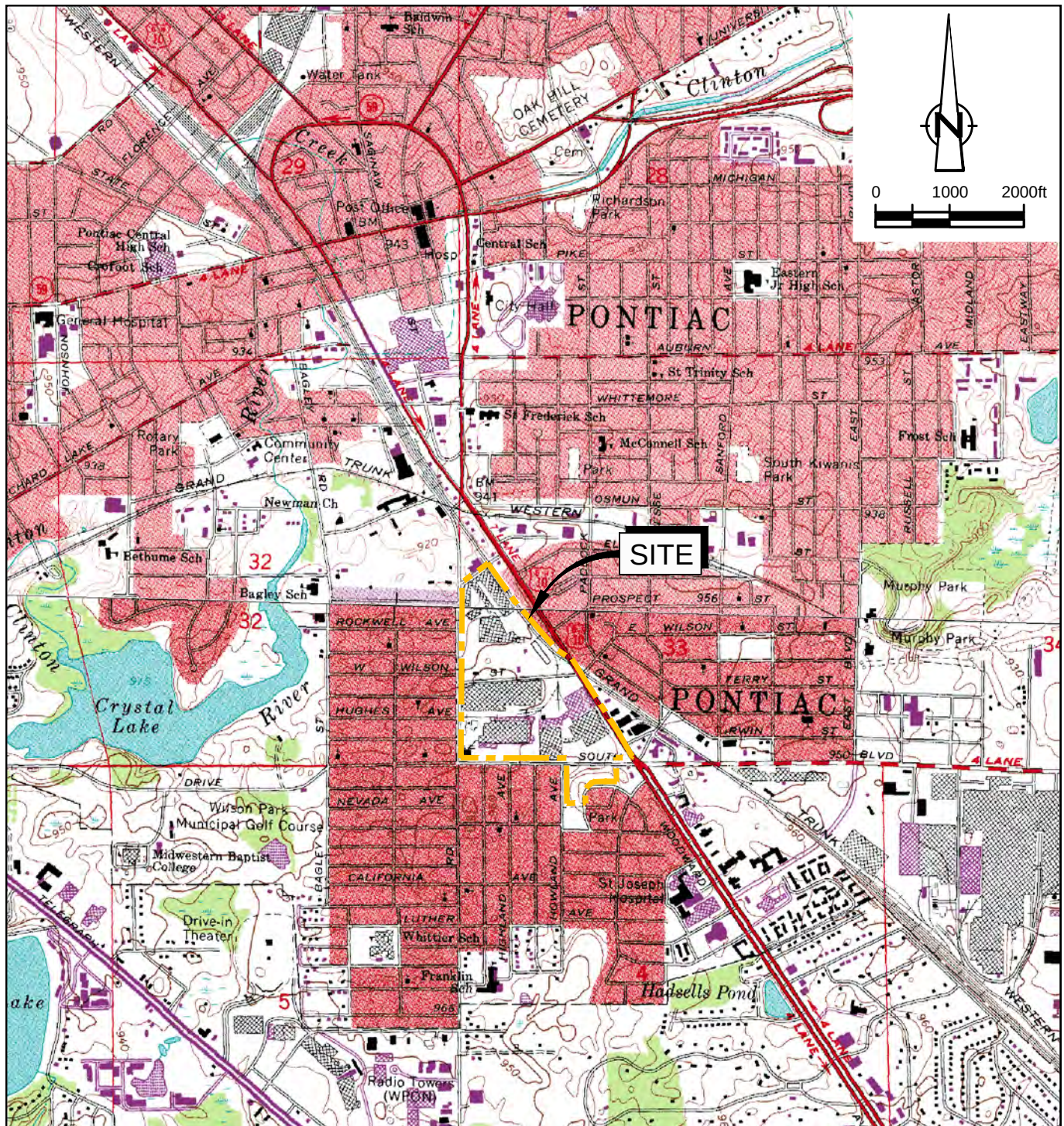
In general, the lateral extent of metal impacts are delineated based on the on-Site and off-Site analytical results, groundwater flow direction, immobility of metals, low risk to human health and the environment, turbidity of the wells, and the likelihood of the metals as background earth metals. The metals considered "contaminated" are generally defined to Non-Residential DWC at the property boundary, with the exception of iron, manganese and sodium. The on-Site metal impacts were detected across the Site are likely not related to Site operations. In addition, based on the nature of the metal impacts, there is no clear pathway between detections from off-site monitoring wells and areas impacted on Site. Therefore, it is likely the extents of metal impact are consistent regionally and not migrating beyond off-Site monitoring wells.

¹² Per the September 2013 Addendum, the extent of VOC impacts above criteria off-Site to the northwest was delineated based on the analytical results from MW93I-13

8.0 REFERENCES

- Aichele, Stephen S., 2005, Water Resources in a Rapidly Growing Region—Oakland County, Michigan: 2005, U.S. Geological Survey Open File Report 2005-1269
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- CRA, Phase II Environmental Site Assessment Work Plan, General Motors Pontiac Centerpoint Campus – Validation Center, Pontiac, Michigan, 2007
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- CRA, Phase II Environmental Site Assessment (North Parcel), General Motors Pontiac Centerpoint Campus – Validation Center, Pontiac, Michigan, 2009b
- CRA, Phase II Environmental Site Assessment (South Parcel), General Motors Pontiac Centerpoint Campus – Validation Center, Pontiac, Michigan, 2009c
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- Westjohn, D.B., and Weaver, T.L. 1998. Hydrogeologic Framework of the Michigan Basin Regional Aquifer System. United States Geological Survey: Colorado
- CRA, Draft Current Conditions Report, PCC-Validation, Pontiac, Michigan, 2011
- CRA, Supplemental Current Conditions Report, PCC-Validation, Pontiac, Michigan, 2012a
- CRA, Sampling and Analysis Plan and Fundamental Quality Assurance Project Plan, PCC-Validation, Pontiac, Michigan, 2012b

FIGURES



SOURCE: USGS QUADRANGLE MAPS;
PONTIAC NORTH AND SOUTH, MICHIGAN; 1968

LEGEND

— — — — — APPROXIMATE SITE BOUNDARY

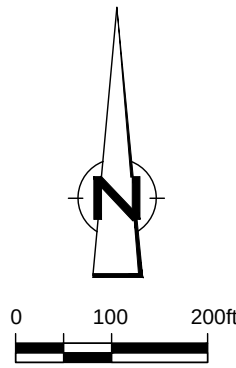
figure 1

SITE LOCATION
PCC - VALIDATION
PONTIAC VALIDATION CENTER
200 South Boulevard West, Pontiac, Michigan





No	Revision	Date	Initial



- LEGEND**
- TP1-07 COMPLETED TEST PIT LOCATION
 - MW28-07 COMPLETED MONITORING WELL LOCATION
 - TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
 - BH8-07 COMPLETED SOIL BORING LOCATION
 - APPROXIMATE SITE BOUNDARY
 - EXISTING STRUCTURE
 - FORMER SITE STRUCTURE
 - MANHOLE
 - CATCH BASIN

SCALE VERIFICATION	
THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.	

Approved		
DRAWING STATUS		

SITE PLAN
WITH SAMPLING LOCATIONS

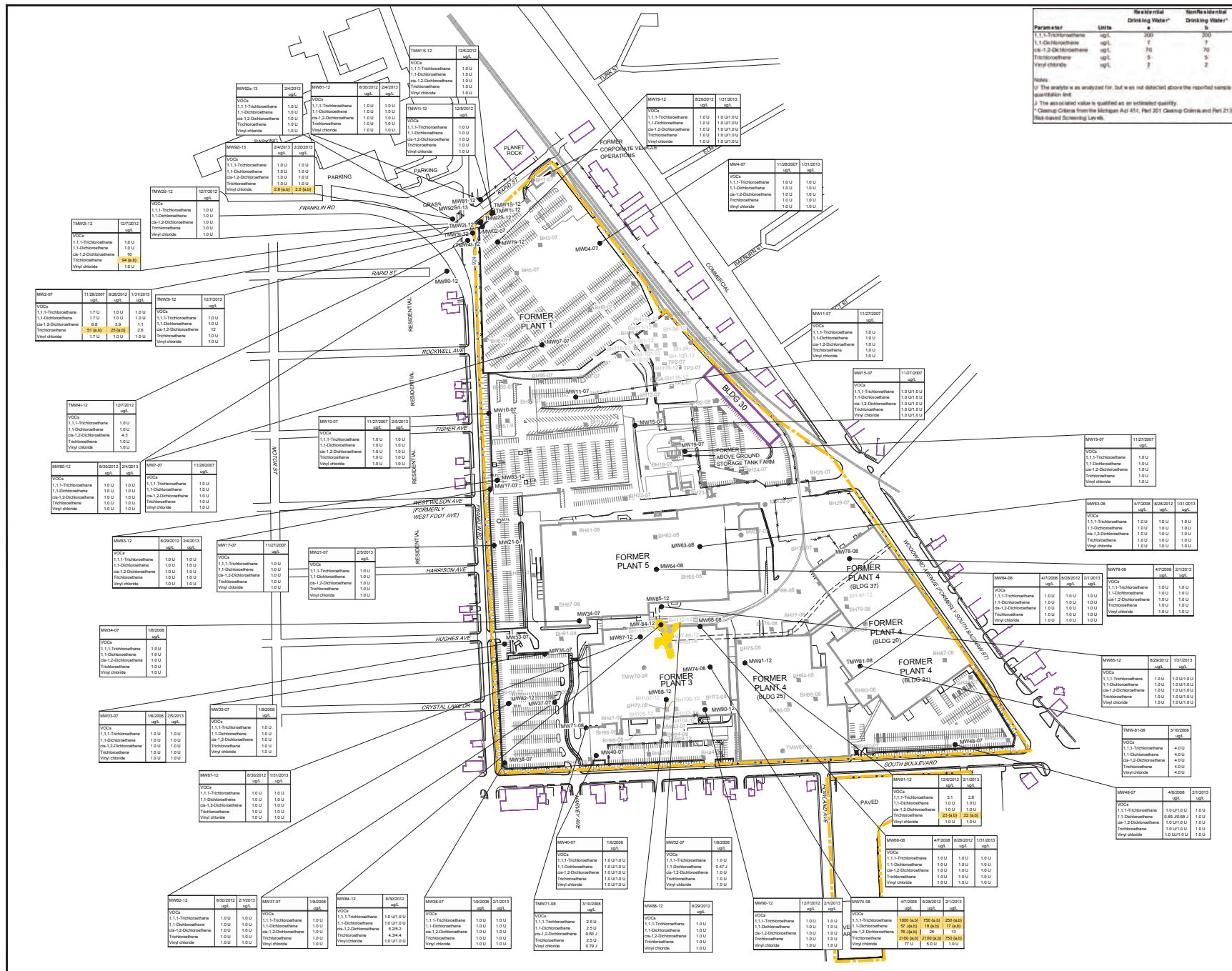
PCC-VALIDATION

PONTIAC, MICHIGAN

**CONESTOGA-ROVERS & ASSOCIATES**

Source Reference:

Project Manager: T.K.	Reviewed By: M.C.	Date: FEBRUARY 2013
Scale: 1:200	Project N°: 017322-T01	Report N°: 018
		Drawing N°: 2



NO

Revision

Date

Initial

LEGEND

TP-07 COMPLETED TEST PIT LOCATION

MW-07 COMPLETED MONITORING WELL LOCATION

TP-07 COMPLETED TEMPORARY MONITORING WELL LOCATION

MW-07 COMPLETED SOIL BORING LOCATION

APPROXIMATE SITE BOUNDARY

EXISTING STRUCTURE

FORMER SITE STRUCTURE

MANHOLE

CATCH BASIN

NOTE: PER THE SEPTEMBER 2013 ADDENDUM, ADDITIONAL VOC SAMPLING WAS CONDUCTED IN JULY 2013. SEE FIGURE 3 OF THE SEPTEMBER 2013 ADDENDUM FOR AN UPDATED MAP WITH VOC EXCEEDANCES

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

Status

Date

Initial

VOC EXCEEDANCES IN GROUNDWATER

PCC-VALIDATION

PONTIAC, MICHIGAN

Source Reference:

Project Manager: T.K.

Reviewed By: M.C.

Date: FEBRUARY 2013

Scale: 1:200

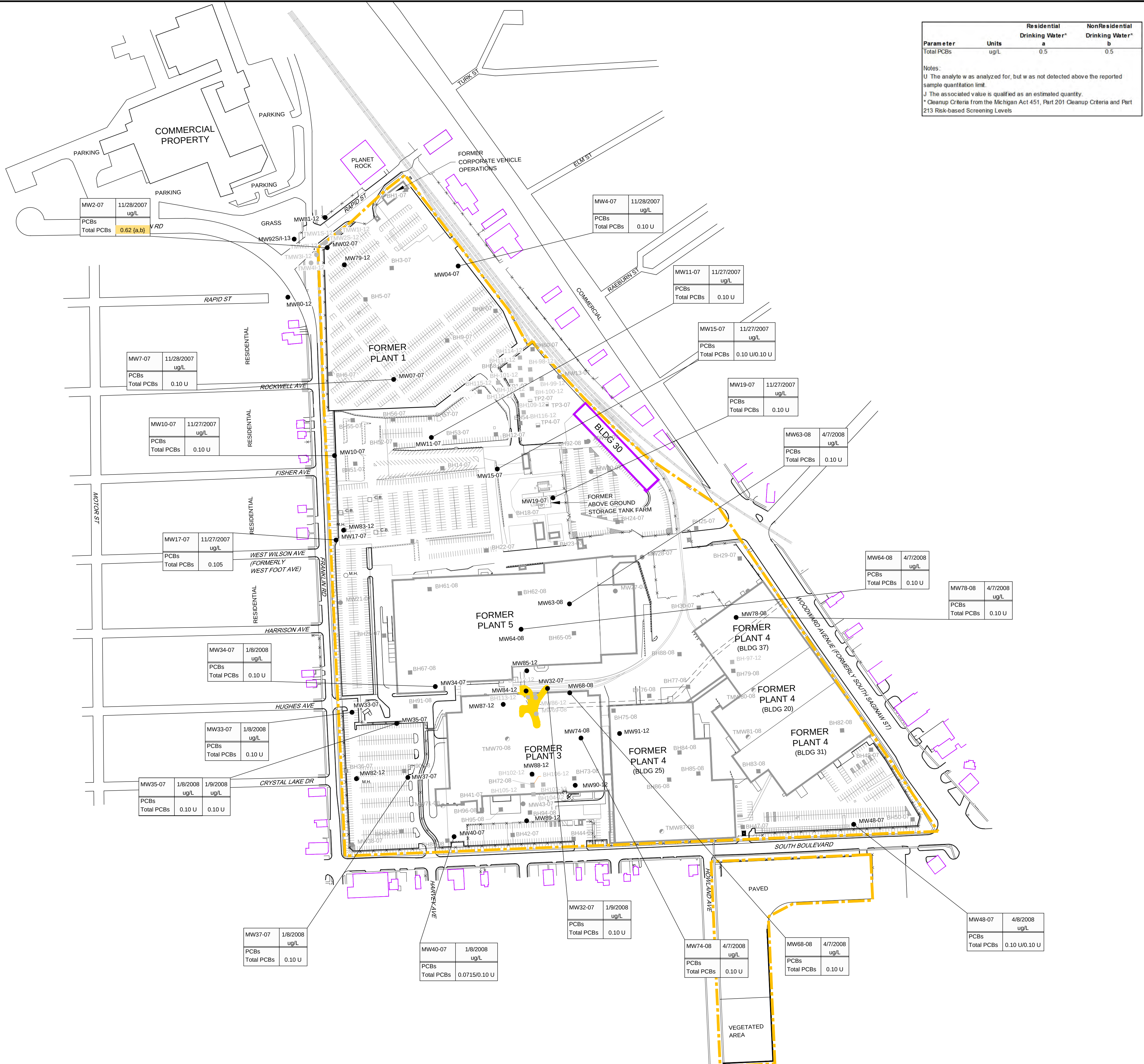
Project No: 017322-T01

Report No: 018

Drawing No: 3

017322-T01P18(EN-DE001) SEP 2013

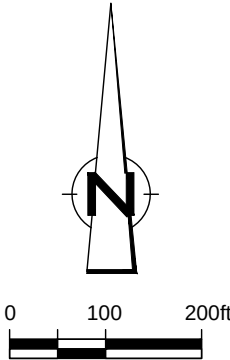




Parameter	Units	Residential	NonResidential
		Drinking Water*	Drinking Water*
Total PCBs	ug/L	a 0.5	b 0.5

Notes:
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J The associated value is qualified as an estimated quantity.
* Cleanup Criteria from the Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels

No	Revision	Date	Initial



- LEGEND
- TP1-07 COMPLETED TEST PIT LOCATION
 - MW28-07 COMPLETED MONITORING WELL LOCATION
 - TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
 - BH8-07 COMPLETED SOIL BORING LOCATION
 - APPROXIMATE SITE BOUNDARY
 - EXISTING STRUCTURE
 - FORMER SITE STRUCTURE
 - M.H. MANHOLE
 - C.B. CATCH BASIN
 - 945 GROUNDWATER CONTOUR

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.



Approved

DRAWING STATUS

Status

Date

Initial

PCBs EXCEEDANCES IN GROUNDWATER

PCC-VALIDATION

PONTIAC, MICHIGAN



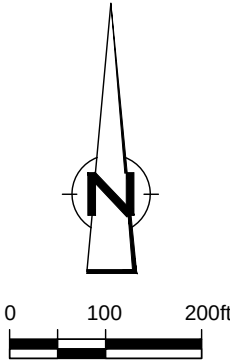
CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:	
T.K.	M.C.	FEBRUARY 2013	
Scale:	Project N°:	Report N°:	Drawing N°:
1:200	017322-T01	018	6



No	Revision	Date	Initial



LEGEND

- BH-98-12 COMPLETED SOIL BORING LOCATION BY CRA IN 2012
- MW88-12 COMPLETED MONITORING WELL LOCATION BY CRA IN 2012
- TP1-07 COMPLETED TEST PIT LOCATION
- MW28-07 COMPLETED MONITORING WELL LOCATION
- TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
- BH8-07 COMPLETED SOIL BORING LOCATION
- MW2-07 MONITORING WELL LOCATION RE-SAMPLED BY CRA IN 2012
- BH111-12 COMPLETED SOIL BORING LOCATION - DECEMBER 2012
- MW90-12 COMPLETED MONITORING WELL LOCATION - DECEMBER 2012
- APPROXIMATE SITE BOUNDARY
- EXISTING STRUCTURE
- FORMER SITE STRUCTURE
- M.H. MANHOLE
- C.B. CATCH BASIN
- 945 GROUNDWATER CONTOUR
- NU ELEVATION NOT USED

NOTE: GROUNDWATER CONTOURS REPRESENT UPPER WATER BEARING UNIT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved	
DRAWING STATUS	
Status	Date Initial

GROUNDWATER CONTOUR
OCTOBER 2012

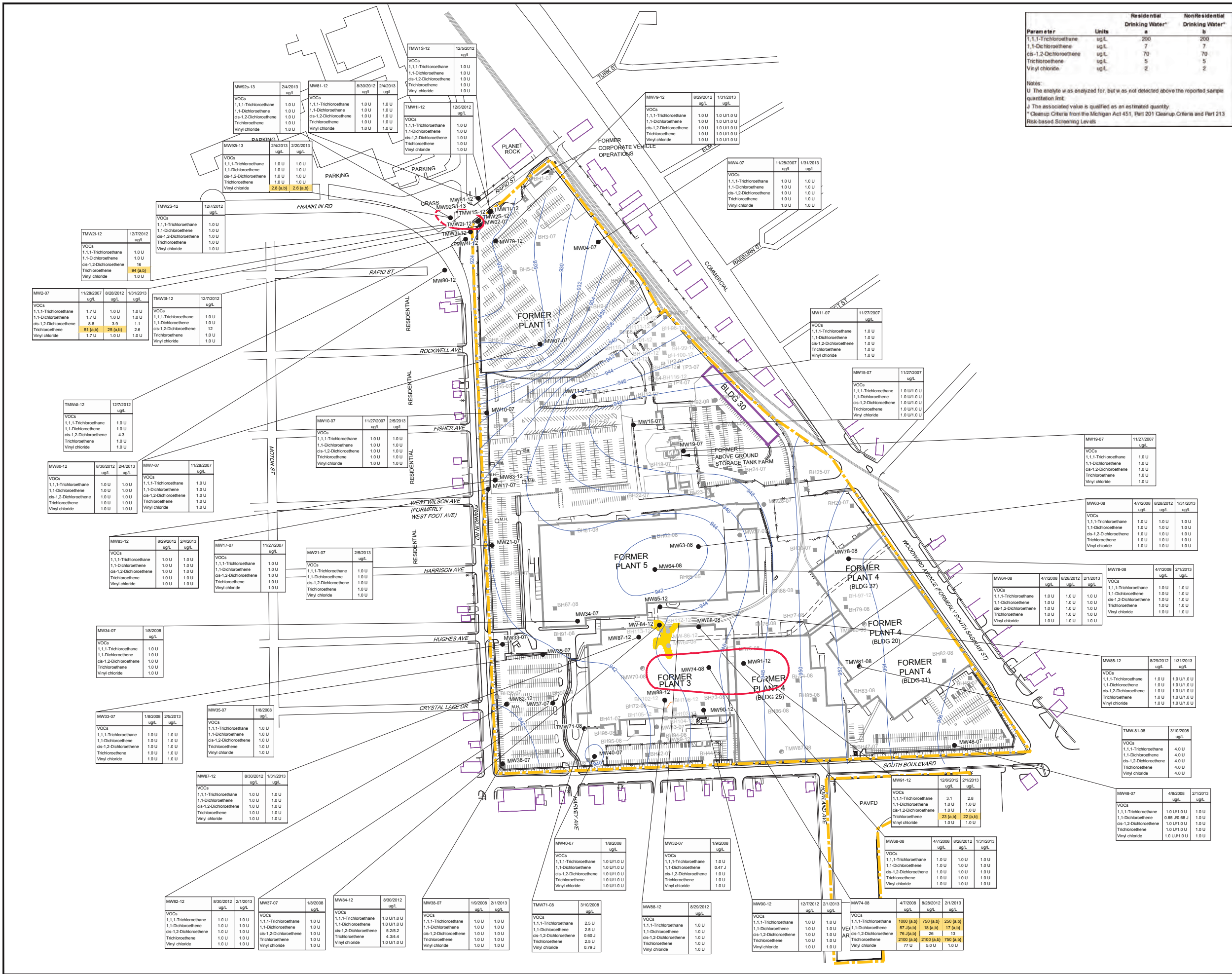
PCC-VALIDATION

PONTIAC, MICHIGAN

 **CONESTOGA-ROVERS & ASSOCIATES**

Source Reference:

Project Manager: T.K.	Reviewed By: M.C.	Date: FEBRUARY 2013
Scale: 1:200	Project N°: 017322-T01	Report N°: 018 Drawing N°: 7



Parameter	Units	Residential	NonResidential
		Drinking Water ^a	Drinking Water ^a
1,1,1-Trichloroethane	ug/L	200	200
1,1-Dichloroethane	ug/L	7	7
cis-1,2-Dichloroethane	ug/L	70	70
Trichloroethene	ug/L	5	5
Vinyl chloride	ug/L	2	2

Notes:
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J The associated value is qualified as an estimated quantity.
^a Cleanup Criteria from the Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels

No	Revision	Date	Initial

LEGEND

- TP1-07 COMPLETED TEST PIT LOCATION
- MW28-07 COMPLETED MONITORING WELL LOCATION
- TMW71-08 COMPLETED TEMPORARY MONITORING WELL LOCATION
- BH8-07 COMPLETED SOIL BORING LOCATION
- APPROXIMATE SITE BOUNDARY
- EXISTING STRUCTURE
- FORMER SITE STRUCTURE
- MANHOLE
- CATCH BASIN
- GROUNDWATER CONTOUR
- TOTAL VOC CONTOUR
- CONTOUR IDENTIFIES EXTENT OF ON-SITE AND OFF-SITE EXCEEDANCES

NOTES: GROUNDWATER CONTOURS REPRESENT UPPER WATER BEARING UNIT

PER THE SEPTEMBER 2013 ADDENDUM, VOCs ARE DEFINED OFF-SITE. SEE FIGURE 3 OF THE SEPTEMBER 2013 ADDENDUM FOR AN UPDATED MAP WITH ON-SITE AND OFF-SITE VOC CONTOURS

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

DRAWING STATUS

ON-SITE AND OFF-SITE VOC CONTOURS

PCC-VALIDATION

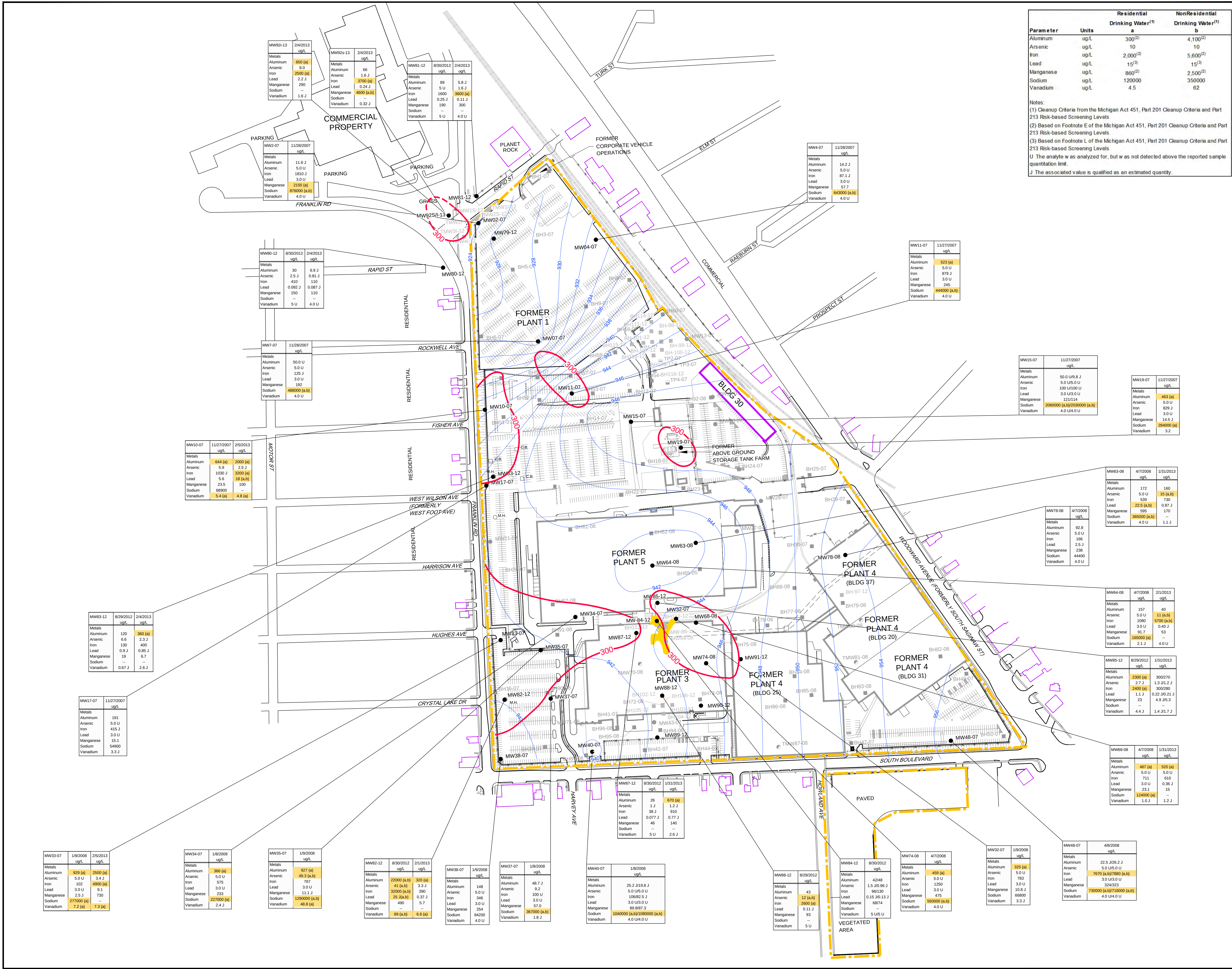
PONTIAC, MICHIGAN

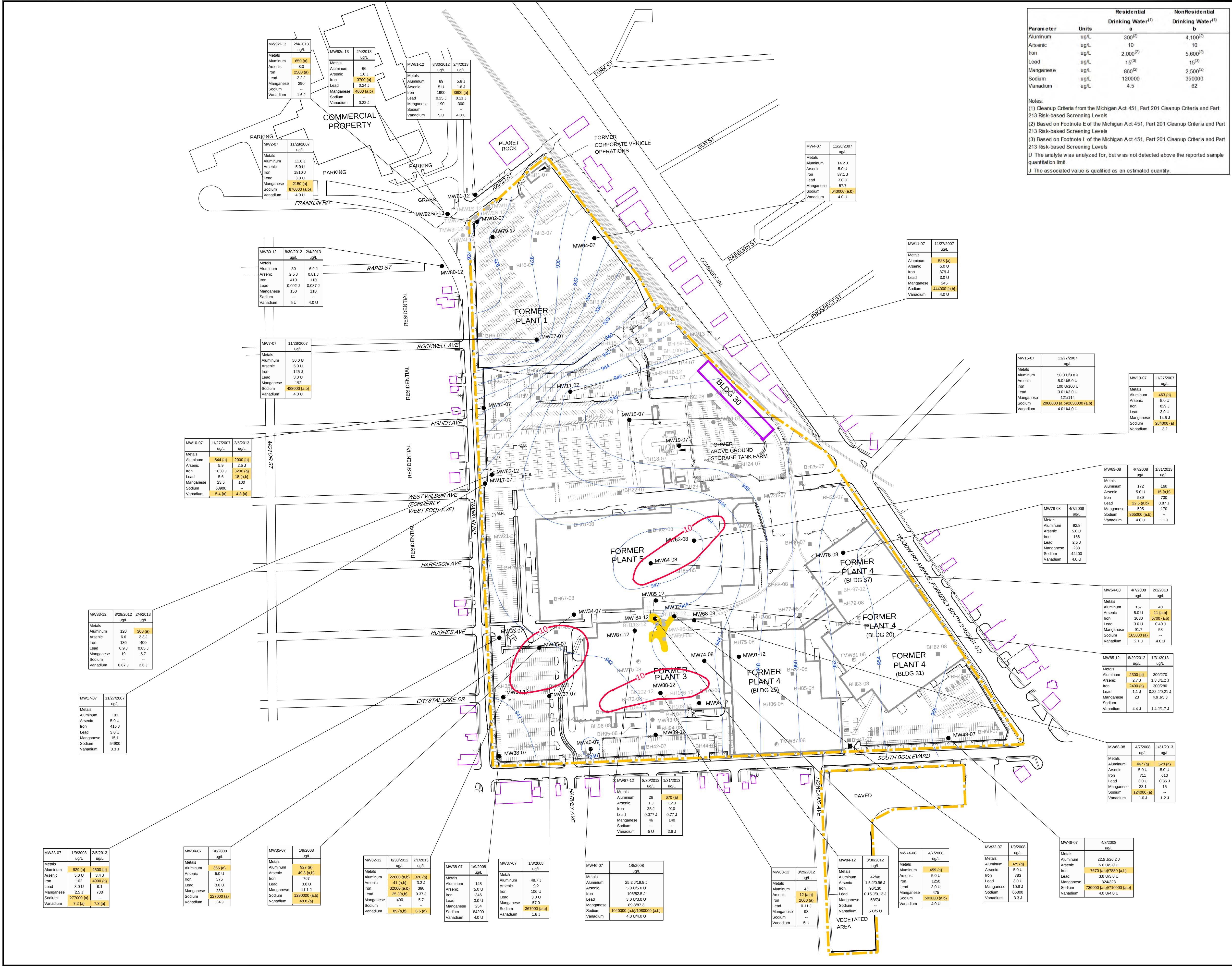
CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:	Reviewed By:	Date:
T.K.	M.C.	FEBRUARY 2013

Scale:	Project No:	Report No:	Drawing No:
1:200	017322-T01	018	8





Parameter	Units	Residential	NonResidential
		Drinking Water ⁽¹⁾	Drinking Water ⁽¹⁾
Aluminum	ug/L	300 ⁽²⁾	4,100 ⁽²⁾
Arsenic	ug/L	10	10
Iron	ug/L	2,000 ⁽²⁾	5,600 ⁽²⁾
Lead	ug/L	15 ⁽³⁾	15 ⁽³⁾
Manganese	ug/L	860 ⁽²⁾	2,500 ⁽²⁾
Sodium	ug/L	120000	350000
Vanadium	ug/L	4.5	62

Notes:
(1) Cleanup Criteria from the Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels
(2) Based on Footnote E of the Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels
(3) Based on Footnote L of the Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels
U The analyte was analyzed for, but was not detected above the reported sample quantification limit.
J The associated value is qualified as an estimated quantity.

NO

Revision

Date

Initial

0

100

200ft

LEGEND

TP1-07

COMPLETED TEST PIT LOCATION

MW28-07

COMPLETED MONITORING WELL LOCATION

TMW71-08

COMPLETED TEMPORARY MONITORING WELL LOCATION

BH8-07

COMPLETED SOIL BORING LOCATION

APPROXIMATE SITE BOUNDARY

EXISTING STRUCTURE

FORMER SITE STRUCTURE

M.H.

MANHOLE

C.B.

CATCH BASIN

945

GROUNDWATER CONTOUR

10

ARSENIC CONTOUR

NOTE: GROUNDWATER CONTOURS REPRESENT UPPER WATER BEARING UNIT

SCALE VERIFICATION

THIS BAR MEASURES 1" ON ORIGINAL. ADJUST SCALE ACCORDINGLY.

Approved

DRAWING STATUS

ON-SITE ARSENIC CONTOURS

PCC-VALIDATION

PONTIAC, MICHIGAN

CONESTOGA-ROVERS & ASSOCIATES

Source Reference:

Project Manager:

Reviewed By:

Date:

T.K.

M.C.

FEBRUARY 2013

Scale:

Project N°:

Report N°:

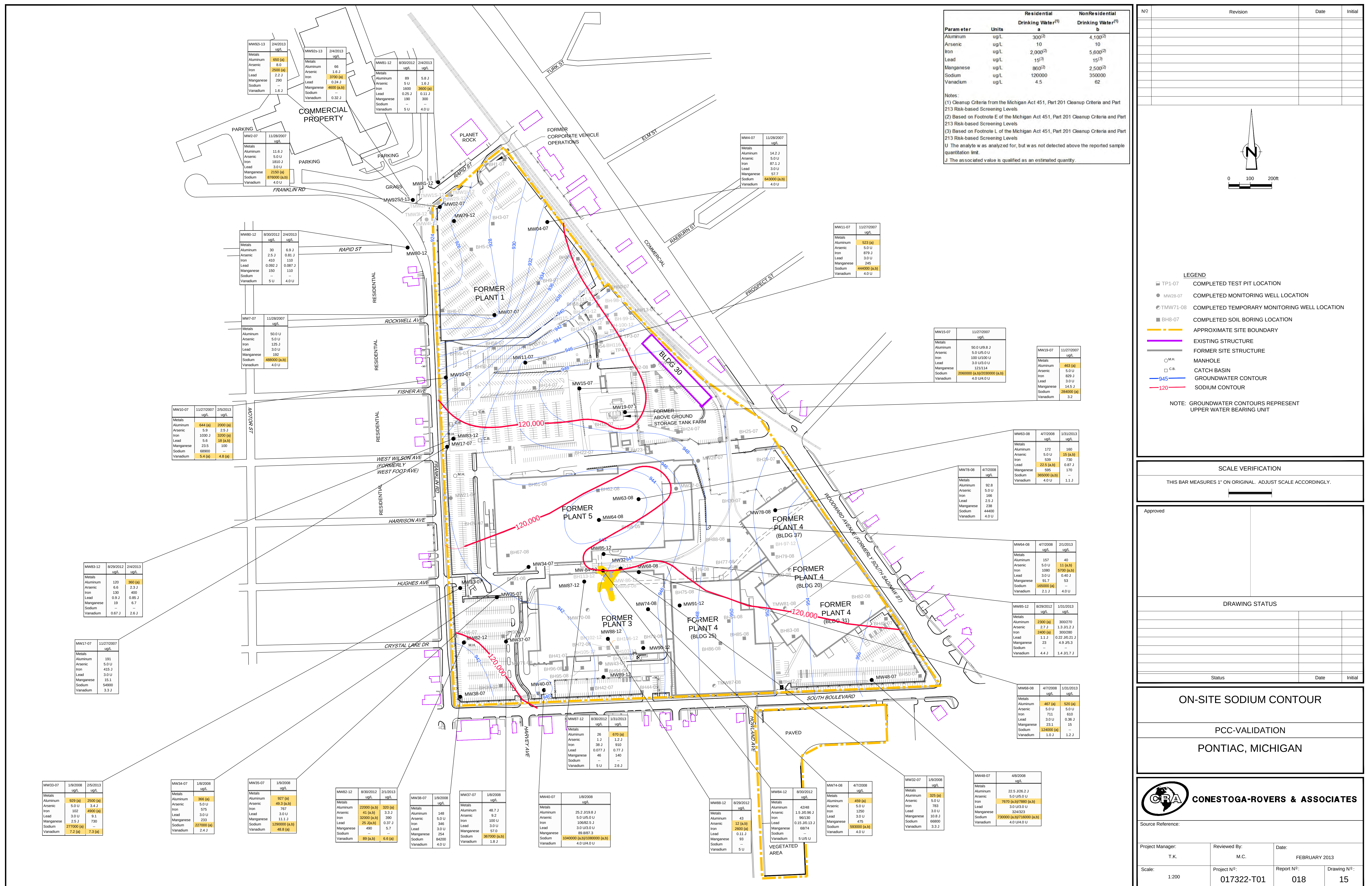
Drawing N°:

1:200

017322-T01

018

11



TABLES

TABLE 1

**GROUNDWATER SAMPLE KEY
SAMPLE SUMMARY
2013 GROUNDWATER MONITORING EVENT
PCC-VALIDATION
PONTIAC, MICHIGAN**

Sample ID	Location Description	Collection Date (mm/dd/yy)	Sample Type	Matrix Code	QAQC	Lab ID	Analysis
GW-17322-013113-CB-001	MW2-07	1/31/2013	Groundwater	WG		ALS	TCL VOCs
GW-17322-013113-DR-002	MW79-12	1/31/2013	Groundwater	WG		ALS	TCL VOCs
GW-17322-013113-DR-003	MW4-07	1/31/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs,
GW-17322-013113-DR-004	MW79-12	1/31/2013	Groundwater	WG	Duplicate	ALS	TCL VOCs
GW-17322-013113-CB-005	MW85-12	1/31/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-013113-CB-006	MW85-12	1/31/2013	Groundwater	WG	Duplicate	ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-013113-DR-007	MW63-08	1/31/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-013113-CB-008	MW68-08	1/31/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-013113-DR-009	MW87-12	1/31/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-013113-DR-010	MW37-07	1/31/2013	Groundwater	WG		ALS	TCL SVOCs
GW-17322-020113-DR-011	MW64-08	2/1/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-020113-DR-012	MW74-08	2/1/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs
GW-17322-020113-DR-013	MW91-12	2/1/2013	Groundwater	WG	MS/MSD	ALS	TCL VOCs, TCL SVOCs
GW-17322-020113-DR-014	MW90-12	2/1/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs
GW-17322-020113-DR-015	MW88-12	2/1/2013	Groundwater	WG		ALS	TCL SVOCs, TCL PCBs
GW-17322-020113-DR-016	MW82-12	2/1/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-020113-DR-017	MW89-12	2/1/2013	Groundwater	WG		ALS	TCL SVOCs
GW-17322-020113-DR-018	MW38-07	2/1/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs
GW-17322-020113-DR-019	MW48-07	2/1/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs
GW-17322-020113-DR-020	MW78-08	2/1/2013	Groundwater	WG		ALS	TCL VOCs
TB-17322-020113	Trip Blank	2/1/2013	Trip Blank	TB		ALS	TCL VOCs, TCL SVOCs
GW-17322-020413-EM-021	MW92I-13	2/4/2013	Groundwater	WG	MS/MSD	ALS	TCL VOCs, TAL Metals
GW-17322-020413-CB-022	MW83-12	2/4/2013	Groundwater	WG		ALS	TCL VOCs, TCL SVOCs, TAL Metals
GW-17322-020413-CB-023	MW80-12	2/4/2013	Groundwater	WG		ALS	TCL VOCs, TAL Metals
GW-17322-020413-EM-024	MW92S-13	2/4/2013	Groundwater	WG		ALS	TCL VOCs, TAL Metals
GW-17322-020413-CB-025	MW81-12	2/4/2013	Groundwater	WG		ALS	TCL VOCs, TAL Metals
GW-17322-020513-EM-026	MW33-07	2/5/2013	Groundwater	WG		ALS	TCL VOCs, TAL Metals
GW-17322-020513-EM-027	MW21-07	2/5/2013	Groundwater	WG		ALS	TCL VOCs
GW-17322-020513-EM-028	MW10-07	2/5/2013	Groundwater	WG		ALS	TCL VOCs, TAL Metals
TB-17322-020513-EM-029	Trip Blank	2/5/2013	Trip Blank	TB		ALS	TCL VOCs
GW-17322-022013-EM-001	MW92i-13	2/20/2013	Groundwater	WG		ALS	TCL VOCs

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
TCL-VOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels:
Residential and Non-Residential Generic Cleanup Criteria (1)

Sample Location:		Residential	NonResidential	MW2-07	MW2-07	MW2-07	MW4-07	MW4-07	MW7-07	MW10-07	MW10-07	MW11-07	MW15-07	MW15-07	MW17-07	MW19-07	MW21-07	MW32-07
Sample Date:		Drinking Water	Drinking Water	11/28/2007	08/28/2012	01/31/2013	11/28/2007	01/31/2013	11/28/2007	11/27/2007	02/05/2013	11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	02/05/2013	01/09/2008
		a	b															
TCL - VOCs	Units																	
1,1,1-Trichloroethane	ug/L	200	200	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	880	2500	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	7	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.47 J
1,2,4-Trimethylbenzene	ug/L	63	63	1.7 U	--	--	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,2-Dichloropropane	ug/L	5	5	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	1.7 U	--	--	1.0 U	--	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U
1,3-Dichlorobenzene	ug/L	6.6	19	1.7 U	1.0 U	1.0 U	0.18 J	1.0 U	1.0 U	1.0 U	1.0 U	0.28 J	0.22 J	0.21 J	1.0 U	0.29 J	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	75	1.7 U	1.0 U	1.0 U	0.30 J	1.0 U	1.0 U	1.0 U	1.0 U	0.48 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	42 U	25 U	25 U	2.5 J	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	ug/L	1000	2900	84 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	84 U	50 U	50 U	3.2 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 UJ
Acetone	ug/L	730	2100	42 U	50 U	50 U	25 U	50 U	25 U	25 U	50 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U
Benzene	ug/L	5	5	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	800	2300	8.4 U	5.0 U	5.0 U	5.0 UJ	5.0 U	5.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	5	5	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	80	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	260	1100	1.7 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U
cis-1,2-Dichloroethene	ug/L	70	70	8.8	3.9	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	74	74	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	800	2300	8.4 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert butyl ether (MTBE)	ug/L	40	40	8.4 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	ug/L	790	790	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.24 J
trans-1,2-Dichloroethene	ug/L	100	100	2.9	1.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	5	51 ^{ab}	25 ^{ab}	2.6	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.22 J
Vinyl chloride	ug/L	2	2	1.7 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	280	280	3.3 U	3.0 U	3.0 U	2.0 U	3.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U

Notes:
U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J The associated value is qualified as an estimated quantity.
UJ The analyte was reported or qualified as not detected however,
the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.
(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
NA - Criteria not available or not applicable.
NE - No exceedances above Part 201 Cleanup Criteria.
51^{ab} - Indicates concentration exceeded Part 201 Cleanup Criteria.
-- = Not analyzed.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
TCL-VOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels:
Residential and Non-Residential Generic Cleanup Criteria (1)

Sample Location:		Residential	NonResidential	MW33-07	MW33-07	MW34-07	MW35-07	MW37-07	MW38-07	MW38-07	MW40-07	MW40-07	MW48-07	MW48-07	MW48-07	MW63-08	MW63-08	MW63-08
Sample Date:		Drinking Water	Drinking Water	01/08/2008	02/05/2013	01/08/2008	01/08/2008	01/08/2008	01/09/2008	02/01/2013	01/08/2008	01/08/2008	04/08/2008	04/08/2008	02/01/2013	04/07/2008	08/28/2012	01/31/2013
		a	b															
TCL - VOCs	Units																	
1,1,1-Trichloroethane	ug/L	200	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	880	2500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.65 J	0.68 J	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	63	63	0.85 J	--	1.0 U	0.22 J	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--
1,2-Dichloropropane	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	0.29 J	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	--	--
1,3-Dichlorobenzene	ug/L	6.6	19	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	25 U	25 U	2.7 J	25 U	7.0 J	25 U	25 U	25 U	25 U	25 U	0.74 J	25 U	25 U	25 U	25 U
2-Hexanone	ug/L	1000	2900	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	50 UJ	50 U	50 UJ	50 UJ	50 UJ	50 UJ	50 U	50 UJ	50 UJ	50 U	50 U	50 U	50 U	50 U	50 U
Acetone	ug/L	730	2100	25 U	50 U	25 U	25 U	25 U	25 U	50 U	25 U	25 U	25 U	25 UJ	50 U	25 UJ	50 U	50 U
Benzene	ug/L	5	5	1.0 U	1.0 U	1.0 U	0.22 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	800	2300	5.0 U	5.0 U	5.0 U	5.0 U	0.36 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	80	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	260	1100	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 UJ	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	70	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	74	74	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	800	2300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert butyl ether (MTBE)	ug/L	40	40	0.23 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	ug/L	790	790	1.8	1.0 U	1.0 U	0.88 J	3.1	0.54 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U
Vinyl chloride	ug/L	2	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	280	280	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U	3.0 U	3.0 U

Notes:
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NA - Criteria not available or not applicable.
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 - Indicates concentration exceeded Part 201 Cleanup Criteria.
-- = Not analyzed.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
TCL-VOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels:
Residential and Non-Residential Generic Cleanup Criteria (1)

Sample Location:		Residential	NonResidential	MW64-08	MW64-08	MW64-08	MW68-08	MW68-08	MW68-08	TMW71-08	MW74-08	MW74-08	MW74-08	MW78-08	MW78-08	MW79-12	MW79-12	MW79-12
Sample Date:		Drinking Water	Drinking Water	04/07/2008	08/28/2012	02/01/2013	04/07/2008	08/28/2012	01/31/2013	03/10/2008	04/07/2008	08/28/2012	02/01/2013	04/07/2008	02/01/2013	08/29/2012	01/31/2013	01/31/2013
		a	b															
TCL - VOCs	Units																	
1,1,1-Trichloroethane	ug/L	200	200	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	1000 ^{ab}	750 ^{ab}	250 ^{ab}	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	880	2500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	230	54	30	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	57 J ^{ab}	18 ^{ab}	17 ^{ab}	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	63	63	1.0 U	--	--	1.0 U	--	--	2.5 U	77 U	--	--	1.0 U	--	--	--	--
1,2-Dichloropropane	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	1.0 U	--	--	1.0 U	--	--	2.5 U	77 U	--	--	1.0 U	--	--	--	--
1,3-Dichlorobenzene	ug/L	6.6	19	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	25 U	25 U	25 U	25 U	25 U	25 U	14 J	1900 U	120 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	ug/L	1000	2900	50 U	50 U	50 U	50 U	50 U	50 U	120 UJ	3800 U	250 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	0.79 J	50 U	50 U	50 U	50 U	50 U	3.0 J	3800 U	250 U	50 U	50 U	50 U	50 U	50 U	50 U
Acetone	ug/L	730	2100	25 UJ	50 U	1.9 J	25 UJ	50 U	50 U	79 J	1900 UJ	250 U	50 U	25 UJ	50 U	50 U	50 U	50 U
Benzene	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	800	2300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.8 J	380 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	80	1.0 U	1.0 U	1.0 U	0.23 J	1.0 U	1.0 U	2.5 U	17 J	7.2	5.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	260	1100	1.0 UJ	5.0 U	5.0 U	1.0 UJ	5.0 U	5.0 U	2.5 UJ	77 UJ	25 U	5.0 U	1.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	70	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.60 J	76 J ^{ab}	26	13	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	74	74	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	800	2300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	12 U	380 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert butyl ether (MTBE)	ug/L	40	40	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	12 U	380 U	25 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	ug/L	790	790	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.58 J	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.5 U	2100 ^{ab}	2100 ^{ab}	750 ^{ab}	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300	1.0 UJ	1.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	2.5 U	77 UJ	5.0 U	1.0 U	1.0 UJ	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.79 J	77 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	280	280	2.0 U	3.0 U	3.0 U	2.0 U	3.0 U	3.0 U	5.0 U	150 U	15 U	3.0 U	2.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Notes:
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J The associated value is qualified as an estimated quantity.
UJ The analyte was reported or qualified as not detected however,
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(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.
NA - Criteria not available or not applicable.
NE - No exceedances above Part 201 Cleanup Criteria.
51^{ab} - Indicates concentration exceeded Part 201 Cleanup Criteria.
-- = Not analyzed.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
TCL-VOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels:
Residential and Non-Residential Generic Cleanup Criteria (1)

Sample Location:		Residential	NonResidential	MW80-12	MW80-12	TMW-81-08	MW81-12	MW81-12	MW82-12	MW82-12	MW83-12	MW83-12	MW84-12	MW84-12	MW85-12	MW85-12	MW85-12	MW87-12
Sample Date:		Drinking Water	Drinking Water	08/30/2012	02/04/2013	03/10/2008	08/30/2012	02/04/2013	08/30/2012	02/01/2013	08/29/2012	02/04/2013	08/30/2012	08/30/2012	08/29/2012	01/31/2013	01/31/2013	08/30/2012
		a	b															
TCL - VOCs	Units																	
1,1,1-Trichloroethane	ug/L	200	200	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	880	2500	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	7	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	63	63	--	--	4.0 U	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	5	5	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	ug/L	72	72	--	--	4.0 U	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	6.6	19	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	75	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	25 U	25 U	36 J	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U
2-Hexanone	ug/L	1000	2900	50 U	50 U	3.8 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	50 U	50 U	7.6 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acetone	ug/L	730	2100	50 U	50 U	180 J	50 U	50 U	2.8 J	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Benzene	ug/L	5	5	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	800	2300	5.0 U	5.0 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	5	5	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.0	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	80	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	12	7.0	6.9	1.0 U
Chloromethane (Methyl chloride)	ug/L	260	1100	0.74 J	5.0 U	4.0 UJ	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	70	70	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.2	5.2	1.0 U	1.0 U	1.0 U	1.0 U
Ethylbenzene	ug/L	74	74	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	800	2300	5.0 U	5.0 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert butyl ether (MTBE)	ug/L	40	40	5.0 U	5.0 U	20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	ug/L	790	790	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	100	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.3	1.0 U	1.0 U	1.0 U
Trichloroethene	ug/L	5	5	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	4.3	4.4	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	2	1.0 U	1.0 U	4.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	280	280	3.0 U	3.0 U	8.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Notes:
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NA - Criteria not available or not applicable.
NE - No exceedances above Part 201 Cleanup Criteria.

51^{ab}

 - Indicates concentration exceeded Part 201 Cleanup Criteria.
-- = Not analyzed.

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
TCL-VOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels:
Residential and Non-Residential Generic Cleanup Criteria (1)

Sample Location:		Residential	NonResidential	MW87-12	MW88-12	MW90-12	MW90-12	MW91-12	MW91-12	MW92i-13	MW92i-13	MW92s-13	TMW1I-12	TMW1S-12	TMW2I-12	TMW2S-12	TMW3I-12	TMW4I-12
Sample Date:		Drinking Water	Drinking Water	01/31/2013	08/29/2012	12/07/2012	02/01/2013	12/06/2012	02/01/2013	02/04/2013	02/20/2013	02/04/2013	12/05/2012	12/05/2012	12/07/2012	12/07/2012	12/07/2012	12/07/2012
		a	b															
TCL - VOCs	Units																	
1,1,1-Trichloroethane	ug/L	200	200	1.0 U	1.0 U	1.0 U	1.0 U	3.1	2.8	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	ug/L	880	2500	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	ug/L	7	7	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	ug/L	63	63	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,2-Dichloropropane	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.8
1,3,5-Trimethylbenzene	ug/L	72	72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	ug/L	6.6	19	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	ug/L	75	75	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Butanone (Methyl ethyl ketone) (MEK)	ug/L	13000	38000	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	1.4 J	25 U	25 U	25 U	25 U
2-Hexanone	ug/L	1000	2900	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
4-Methyl-2-pentanone (Methyl isobutyl ketone) (MIBK)	ug/L	1800	5200	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Acetone	ug/L	730	2100	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	8.2 J	50 U	50 U	50 U	50 U
Benzene	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Carbon disulfide	ug/L	800	2300	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform (Trichloromethane)	ug/L	80	80	1.0 U	1.0 U	1.0 U	1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane (Methyl chloride)	ug/L	260	1100	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
cis-1,2-Dichloroethene	ug/L	70	70	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	16	1.0 U	12	4.3
Ethylbenzene	ug/L	74	74	1.0 U	3.9	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Isopropyl benzene	ug/L	800	2300	5.0 U	3.9 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl tert butyl ether (MTBE)	ug/L	40	40	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Toluene	ug/L	790	790	1.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	ug/L	100	100	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	7.7	1.0 U	3.1	1.0 U
Trichloroethene	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	23 ^{ab}	22 ^{ab}	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	94 ^{ab}	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane (CFC-11)	ug/L	2600	7300	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	ug/L	2	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.8 ^{ab}	2.6 ^{ab}	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylenes (total)	ug/L	280	280	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	0.36 J	3.0 U	0.79 J	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U

Notes:
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51^{ab} - Indicates concentration exceeded Part 201 Cleanup Criteria.
-- = Not analyzed.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
TCL-SVOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

<u>Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels:</u> <u>Residential and Non-Residential Generic Cleanup Criteria (1)</u>																	
Sample Location:		Residential	NonResidential	Groundwater	Water	MW2-07	MW4-07	MW4-07	MW7-07	MW10-07	MW11-07	MW15-07	MW15-07	MW17-07	MW19-07	MW32-07	MW33-07
Sample Date:		Drinking Water	Drinking Water	Contact	Solubility	11/28/2007	11/28/2007	01/31/2013	11/28/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	01/09/2008	01/09/2008
	Units	a	b	f	g												
SVOCs																	
2-Methylnaphthalene	ug/L	260	750	25000	24600	0.20 U	1.0 U	5.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.38
Acenaphthene	ug/L	1300	3800	4200	4240	0.20 U	1.0 U	5.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Acetophenone	ug/L	1500	4400	6100000	6100000	1.0 U	5.0 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U	0.55 J
Anthracene	ug/L	43	43	43	43.4	0.20 U	1.0 U	5.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Benzo(a)anthracene	ug/L	2.1	8.5	9.4	9.4	0.20 U	1.0 U	1.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Benzo(a)pyrene	ug/L	5	5	1	1.62	0.20 U	1.0 U	1.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Benzo(b)fluoranthene	ug/L	1.5	1.5	1.5	1.5	0.20 U	1.0 U	1.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Benzo(g,h,i)perylene	ug/L	1	1	1	0.26	0.20 U	1.0 U	1.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Benzo(k)fluoranthene	ug/L	1	1	1	0.8	0.20 U	1.0 U	1.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Biphenyl (1,1-Biphenyl)	ug/L					1.0 U	5.0 U	5.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U	1.2 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	6	320	340	1.0 U	5.0 U	5.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	0.93 J	2.1
Butyl benzylphthalate (BBP)	ug/L	1200	2700	2700	2690	1.0 U	5.0 U	5.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U	1.2 U
Carbazole	ug/L	85	350	7400	7480	1.0 U	5.0 U	10 U	1.0 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U	1.2 U
Chrysene	ug/L	1.6	1.6	1.6	1.6	0.20 U	1.0 U	1.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Dibenz(a,h)anthracene	ug/L	2	2	2	2.49	0.20 U	1.0 U	2.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Diethyl phthalate	ug/L	5500	16000	1100000	1080000	1.0 U	5.0 U	5.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U	1.2 U
Di-n-butylphthalate (DBP)	ug/L	880	2500	11000	11200	1.0 U	5.0 U	5.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.2 U	1.0 U	1.0 U	1.0 U	1.2 U
Fluoranthene	ug/L	210	210	210	206	0.20 U	1.0 U	1.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Fluorene	ug/L	880	2000	2000	1980	0.20 U	1.0 U	5.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Indeno(1,2,3-cd)pyrene	ug/L	2	2	2	0.022	0.20 U	1.0 U	2.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Naphthalene	ug/L	520	1500	31000	31000	0.20 U	1.0 U	5.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.92
Phenanthrene	ug/L	52	150	1000	1000	0.20 U	1.0 U	2.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U
Pyrene	ug/L	140	140	140	135	0.20 U	1.0 U	5.0 U	0.20 U	0.24 U	0.20 U	0.20 U	0.24 U	0.20 U	0.20 U	0.20 U	0.25 U

Notes:

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(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

NA - Criteria not available or not applicable.

NE - No exceedances above Part 201 Cleanup Criteria.

51^{ab}

- Indicates concentration exceeded Part 201 Cleanup Criteria.

-- = Not analyzed.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
TCL-SVOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																	
Sample Location:		Residential	NonResidential	Groundwater	Water	MW34-07	MW35-07	MW35-07	MW37-07	MW37-07	MW37-07	MW38-07	MW40-07	MW40-07	MW48-07	MW48-07	MW48-07
Sample Date:		Drinking Water	Drinking Water	Contact	Solubility	01/08/2008	01/08/2008	01/09/2008	01/08/2008	08/28/2012	01/31/2013	02/01/2013	01/08/2008	01/08/2008	04/08/2008	04/08/2008	02/01/2013
	Units	a	b	f	g												
SVOCs																	
2-Methylnaphthalene	ug/L	260	750	25000	24600	0.20 U	0.20 U	0.50 U	0.20 U	5.0 U	5.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U	5.0 U
Acenaphthene	ug/L	1300	3800	4200	4240	0.20 U	0.20 U	0.50 U	0.20 U	5.0 U	5.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U	5.0 U
Acetophenone	ug/L	1500	4400	6100000	6100000	1.0 U	1.0 U	2.5 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene	ug/L	43	43	43	43.4	0.20 U	0.20 U	0.50 U	0.20 U	5.0 U	5.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U	5.0 U
Benzo(a)anthracene	ug/L	2.1	8.5	9.4	9.4	0.20 U	0.20 U	0.50 U	0.73	5.0 U	1.0 U	1.7	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Benzo(a)pyrene	ug/L	5	5	1	1.62	0.20 U	0.20 U	0.50 U	0.64	5.0 U	1.0 U	1.8 ^{fg}	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Benzo(b)fluoranthene	ug/L	1.5	1.5	1.5	1.5	0.20 U	0.20 U	0.50 U	1.2	5.0 U	1.0 U	2.1 ^{abfg}	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Benzo(g,h,i)perylene	ug/L	1	1	1	0.26	0.20 U	0.20 U	0.50 U	0.57 ^g	5.0 U	1.0 U	1.3 ^{abfg}	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Benzo(k)fluoranthene	ug/L	1	1	1	0.8	0.20 U	0.20 U	0.50 U	0.38	5.0 U	1.0 U	0.88 J ^g	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L					1.0 U	1.0 U	2.5 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	6	320	340	1.0 U	6.9 ^{ab}	1.4 J	1.5	5.0 U	0.51 J	0.53 J	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
Butyl benzylphthalate (BBP)	ug/L	1200	2700	2700	2690	1.0 U	1.0 U	2.5 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
Carbazole	ug/L	85	350	7400	7480	1.0 U	1.0 U	2.5 U	1.0 U	10 U	10 U	10 U	1.0 U	1.0 U	1.0 U	1.0 U	10 U
Chrysene	ug/L	1.6	1.6	1.6	1.6	0.20 U	0.20 U	0.50 U	0.94	5.0 U	1.0 U	1.9 ^{abfg}	0.20 U	0.20 U	0.20 U	0.20 U	1.0 U
Dibenz(a,h)anthracene	ug/L	2	2	2	2.49	0.20 U	0.20 U	0.50 U	0.20 U	5.0 U	2.0 U	2.0 U	0.20 U	0.20 U	0.20 U	0.20 U	2.0 U
Diethyl phthalate	ug/L	5500	16000	1100000	1080000	1.0 U	1.0 U	2.5 U	1.0 U	20 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
Di-n-butylphthalate (DBP)	ug/L	880	2500	11000	11200	1.0 U	1.0 U	2.5 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U
Fluoranthene	ug/L	210	210	210	206	0.20 U	0.23	0.50 U	2.5	5.0 U	1.0 U	3.9	0.20 U	0.20 U	0.24	0.20 U	1.0 U
Fluorene	ug/L	880	2000	2000	1980	0.20 U	0.20 U	0.50 U	0.20 U	5.0 U	5.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L	2	2	2	0.022	0.20 U	0.20 U	0.50 U	0.49 ^g	5.0 U	2.0 U	1.1 J ^g	0.20 U	0.20 U	0.20 U	0.20 U	2.0 U
Naphthalene	ug/L	520	1500	31000	31000	0.20 U	0.20 U	0.50 U	0.20 U	5.0 U	5.0 U	5.0 U	0.20 U	0.20 U	0.20 U	0.20 U	5.0 U
Phenanthrene	ug/L	52	150	1000	1000	0.20 U	0.22	0.50 U	0.87	5.0 U	2.0 U	1.9 J	0.20 U	0.20 U	0.20 U	0.20 U	2.0 U
Pyrene	ug/L	140	140	140	135	0.20 U	0.20 U	0.50 U	1.7	5.0 U	5.0 U	3.1 J	0.20 U	0.20 U	0.20 U	0.20 U	5.0 U

Notes:

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NA - Criteria not available or not applicable.

NE - No exceedances above Part 201 Cleanup Criteria.

51^{ab} - Indicates concentration exceeded Part 201 Cleanup Criteria.

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TABLE 3
GROUNDWATER ANALYTICAL RESULTS
TCL-SVOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																	
Sample Location:		Residential	NonResidential	Groundwater	Water	MW63-08	MW63-08	MW63-08	MW64-08	MW64-08	MW64-08	MW68-08	MW68-08	MW68-08	TMW71-08	MW74-08	MW74-08
Sample Date:		Drinking Water	Drinking Water	Contact	Solubility	04/07/2008	08/28/2012	01/31/2013	04/07/2008	08/28/2012	02/01/2013	04/07/2008	08/28/2012	01/31/2013	03/10/2008	04/07/2008	08/28/2012
	Units	a	b	f	g												
SVOCs																	
2-Methylnaphthalene	ug/L	260	750	25000	24600	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	--	0.36 U	5.0 U
Acenaphthene	ug/L	1300	3800	4200	4240	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	--	0.66	5.0 U
Acetophenone	ug/L	1500	4400	6100000	6100000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.8 U	1.0 U
Anthracene	ug/L	43	43	43	43.4	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	--	1.3	5.0 U
Benzo(a)anthracene	ug/L	2.1	8.5	9.4	9.4	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	0.35	5.0 U	1.0 U	--	3.4 ^a	5.0 U
Benzo(a)pyrene	ug/L	5	5	1	1.62	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	0.30	5.0 U	1.0 U	--	3.3 ^{fg}	5.0 U
Benzo(b)fluoranthene	ug/L	1.5	1.5	1.5	1.5	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	0.35	5.0 U	1.0 U	--	4.1 ^{abfg}	5.0 U
Benzo(g,h,i)perylene	ug/L	1	1	1	0.26	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	--	2.2 ^{abfg}	5.0 U
Benzo(k)fluoranthene	ug/L	1	1	1	0.8	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	--	1.7 ^{abfg}	5.0 U
Biphenyl (1,1-Biphenyl)	ug/L					1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	--	1.8 U	5.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	6	320	340	1.0 U	5.0 U	0.54 J	1.0 U	5.0 U	5.0 U	0.97 J	5.0 U	5.0 U	--	0.90 J	5.0 U
Butyl benzylphthalate (BBP)	ug/L	1200	2700	2700	2690	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1.0 U	0.60 J	5.0 U	--	1.8 U	5.0 U
Carbazole	ug/L	85	350	7400	7480	1.0 U	10 U	10 U	1.0 U	10 U	10 U	1.0 U	10 U	10 U	--	0.97 J	10 U
Chrysene	ug/L	1.6	1.6	1.6	1.6	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	0.32	5.0 U	1.0 U	--	3.3 ^{abfg}	5.0 U
Dibenz(a,h)anthracene	ug/L	2	2	2	2.49	0.20 U	5.0 U	2.0 U	0.20 U	5.0 U	2.0 U	0.20 U	5.0 U	2.0 U	--	0.61	5.0 U
Diethyl phthalate	ug/L	5500	16000	1100000	1080000	1.0 U	20 U	5.0 U	1.0 U	20 U	5.0 U	1.0 U	20 U	5.0 U	--	1.8 U	20 U
Di-n-butylphthalate (DBP)	ug/L	880	2500	11000	11200	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	1.0 U	5.0 U	5.0 U	--	0.73 J	5.0 U
Fluoranthene	ug/L	210	210	210	206	0.20 U	5.0 U	1.0 U	0.20 U	5.0 U	1.0 U	0.74	5.0 U	1.0 U	--	8.4	5.0 U
Fluorene	ug/L	880	2000	2000	1980	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	--	0.72	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L	2	2	2	0.022	0.20 U	5.0 U	2.0 U	0.20 U	5.0 U	2.0 U	0.20 U	5.0 U	2.0 U	--	2.0 ^g	5.0 U
Naphthalene	ug/L	520	1500	31000	31000	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	--	0.36 U	5.0 U
Phenanthrene	ug/L	52	150	1000	1000	0.20 U	5.0 U	2.0 U	0.20 U	5.0 U	2.0 U	0.59	5.0 U	2.0 U	--	5.8	5.0 U
Pyrene	ug/L	140	140	140	135	0.20 U	5.0 U	5.0 U	0.20 U	5.0 U	5.0 U	0.59	5.0 U	5.0 U	--	6.3	5.0 U

Notes:
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NA - Criteria not available or not applicable.
NE - No exceedances above Part 201 Cleanup Criteria.
51^{ab} - Indicates concentration exceeded Part 201 Cleanup Criteria.
-- = Not analyzed.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
TCL-SVOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																	
Sample Location:		Residential	NonResidential	Groundwater	Water	MW74-08	MW78-08	MW78-08	MW80-12	MW81-12	MW82-12	MW82-12	MW83-12	MW83-12	MW84-12	MW84-12	MW85-12
Sample Date:		Drinking Water	Drinking Water	Contact	Solubility	02/01/2013	04/07/2008	02/01/2013	08/30/2012	08/30/2012	08/30/2012	02/01/2013	08/29/2012	02/04/2013	08/30/2012	08/30/2012	08/29/2012
	Units	a	b	f	g												
SVOCs																	
2-Methylnaphthalene	ug/L	260	750	25000	24600	5.0 U	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acenaphthene	ug/L	1300	3800	4200	4240	5.0 U	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetophenone	ug/L	1500	4400	6100000	6100000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Anthracene	ug/L	43	43	43	43.4	5.0 U	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(a)anthracene	ug/L	2.1	8.5	9.4	9.4	1.0 U	0.20 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U
Benzo(a)pyrene	ug/L	5	5	1	1.62	1.0 U	0.20 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U
Benzo(b)fluoranthene	ug/L	1.5	1.5	1.5	1.5	1.0 U	0.20 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U
Benzo(g,h,i)perylene	ug/L	1	1	1	0.26	1.0 U	0.20 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U
Benzo(k)fluoranthene	ug/L	1	1	1	0.8	1.0 U	0.20 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U
Biphenyl (1,1-Biphenyl)	ug/L					5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	6	320	340	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Butyl benzylphthalate (BBP)	ug/L	1200	2700	2700	2690	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbazole	ug/L	85	350	7400	7480	10 U	1.0 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Chrysene	ug/L	1.6	1.6	1.6	1.6	1.0 U	0.20 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U
Dibenz(a,h)anthracene	ug/L	2	2	2	2.49	2.0 U	0.20 U	2.0 U	5.0 U	5.0 U	5.0 U	2.0 U	5.0 U	2.0 U	5.0 U	5.0 U	5.0 U
Diethyl phthalate	ug/L	5500	16000	1100000	1080000	5.0 U	1.0 U	5.0 U	20 U	20 U	20 U	5.0 U	20 U	5.0 U	20 U	20 U	20 U
Di-n-butylphthalate (DBP)	ug/L	880	2500	11000	11200	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Fluoranthene	ug/L	210	210	210	206	1.0 U	0.20 U	1.0 U	5.0 U	5.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	5.0 U	5.0 U
Fluorene	ug/L	880	2000	2000	1980	5.0 U	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L	2	2	2	0.022	2.0 U	0.20 U	2.0 U	5.0 U	5.0 U	5.0 U	2.0 U	5.0 U	2.0 U	5.0 U	5.0 U	5.0 U
Naphthalene	ug/L	520	1500	31000	31000	5.0 U	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	ug/L	52	150	1000	1000	2.0 U	0.20 U	2.0 U	5.0 U	5.0 U	5.0 U	2.0 U	5.0 U	2.0 U	5.0 U	5.0 U	5.0 U
Pyrene	ug/L	140	140	140	135	5.0 U	0.20 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U

Notes:
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TABLE 3
GROUNDWATER ANALYTICAL RESULTS
TCL-SVOCs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																
Sample Location:		Residential	NonResidential	Groundwater	Water	MW85-12	MW85-12	MW87-12	MW87-12	MW88-12	MW88-12	MW89-12	MW89-12	MW90-12	MW90-12	MW91-12
Sample Date:		Drinking Water	Drinking Water	Contact	Solubility	01/31/2013	01/31/2013	08/30/2012	01/31/2013	08/29/2012	02/01/2013	12/06/2012	02/01/2013	12/07/2012	02/01/2013	02/01/2013
	Units	a	b	f	g											
SVOCs																
2-Methylnaphthalene	ug/L	260	750	25000	24600	5.0 U	5.0 U	5.0 U	5.0 U	29	58	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acenaphthene	ug/L	1300	3800	4200	4240	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Acetophenone	ug/L	1500	4400	6100000	6100000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	--	1.0 U	--	1.0 U	1.0 U
Anthracene	ug/L	43	43	43	43.4	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Benzo(a)anthracene	ug/L	2.1	8.5	9.4	9.4	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(a)pyrene	ug/L	5	5	1	1.62	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.58 J	1.0 U	1.0 U
Benzo(b)fluoranthene	ug/L	1.5	1.5	1.5	1.5	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	0.75 J	1.0 U	1.0 U
Benzo(g,h,i)perylene	ug/L	1	1	1	0.26	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Benzo(k)fluoranthene	ug/L	1	1	1	0.8	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Biphenyl (1,1-Biphenyl)	ug/L					5.0 U	5.0 U	5.0 U	5.0 U	2.2 J	3.2 J	--	5.0 U	--	5.0 U	5.0 U
bis(2-Ethylhexyl)phthalate (DEHP)	ug/L	6	6	320	340	5.0 U	0.67 J	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U	--	5.0 U	5.0 U
Butyl benzylphthalate (BBP)	ug/L	1200	2700	2700	2690	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U	--	5.0 U	5.0 U
Carbazole	ug/L	85	350	7400	7480	10 U	10 U	10 U	10 U	10 U	10 U	--	10 U	--	10 U	10 U
Chrysene	ug/L	1.6	1.6	1.6	1.6	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibenz(a,h)anthracene	ug/L	2	2	2	2.49	2.0 U	2.0 U	5.0 U	2.0 U	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Diethyl phthalate	ug/L	5500	16000	1100000	1080000	5.0 U	5.0 U	20 U	5.0 U	1.4 J	5.0 U	--	5.0 U	--	5.0 U	5.0 U
Di-n-butylphthalate (DBP)	ug/L	880	2500	11000	11200	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	--	5.0 U	--	5.0 U	5.0 U
Fluoranthene	ug/L	210	210	210	206	1.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U	1.2	1.0 U	1.0 U
Fluorene	ug/L	880	2000	2000	1980	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Indeno(1,2,3-cd)pyrene	ug/L	2	2	2	0.022	2.0 U	2.0 U	5.0 U	2.0 U	5.0 U	2.0 U	5.0 U	2.0 U	5.0 U	2.0 U	2.0 U
Naphthalene	ug/L	520	1500	31000	31000	5.0 U	5.0 U	5.0 U	5.0 U	24	58	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Phenanthrene	ug/L	52	150	1000	1000	2.0 U	2.0 U	5.0 U	2.0 U	5.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Pyrene	ug/L	140	140	140	135	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.2 J	5.0 U	5.0 U

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GROUNDWATER ANALYTICAL RESULTS
PCBs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)															
Sample Location:		Residential	NonResidential	MW2-07	MW2-07	MW4-07	MW7-07	MW10-07	MW11-07	MW15-07	MW15-07	MW17-07	MW19-07	MW32-07	MW33-07
Sample Date:		Drinking Water	Drinking Water	11/28/2007	08/28/2012	11/28/2007	11/28/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	01/09/2008	01/08/2008
	Units	a	b												
PCBs															
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.33	0.25 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.086 J	0.10 U	0.10 U	0.10 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.10 U	0.25 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.29	0.25 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Total PCBs	ug/L	0.5	0.5	0.62 ^{ab}	--	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.105	0.10 U	0.10 U	0.10 U

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GROUNDWATER ANALYTICAL RESULTS
PCBs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)															
Sample Location:		Residential	NonResidential	MW34-07	MW35-07	MW35-07	MW37-07	MW40-07	MW40-07	MW48-07	MW48-07	MW63-08	MW64-08	MW68-08	MW74-08
Sample Date:		Drinking Water	Drinking Water	01/08/2008	01/08/2008	01/09/2008	01/08/2008	01/08/2008	01/08/2008	04/08/2008	04/08/2008	04/07/2008	04/07/2008	04/07/2008	04/07/2008
	Units	a	b												
PCBs															
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.10 U	0.10 U	0.10 U	0.10 U	0.041 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Total PCBs	ug/L	0.5	0.5	0.10 U	0.10 U	0.10 U	0.10 U	0.0715	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U

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GROUNDWATER ANALYTICAL RESULTS
PCBs
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)															
Sample Location:		Residential	NonResidential	MW78-08	MW79-12	MW80-12	MW81-12	MW82-12	MW83-12	MW84-12	MW84-12	MW85-12	MW87-12	MW88-12	MW88-12
Sample Date:		Drinking Water	Drinking Water	04/07/2008	08/29/2012	08/30/2012	08/30/2012	08/30/2012	08/29/2012	08/30/2012	08/30/2012	08/29/2012	08/30/2012	08/29/2012	02/01/2013
	Units	a	b												
PCBs															
Aroclor-1248 (PCB-1248)	ug/L	0.5	0.5	0.10 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.20 U
Aroclor-1254 (PCB-1254)	ug/L	0.5	0.5	0.10 U	0.25 U	0.25 U	0.25 U	0.25 U	0.17 J	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.20 U
Aroclor-1260 (PCB-1260)	ug/L	0.5	0.5	0.10 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.20 U
Total PCBs	ug/L	0.5	0.5	0.10 U	--	--	--	--	--	--	--	--	--	--	--

Notes:
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NA - Criteria not available or not applicable.
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TABLE 5
GROUNDWATER ANALYTICAL RESULTS
METALS
PCC - VALIDATION
PONTIAC, MICHIGAN

<i>Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels:</i>																			
<i>Residential and Non-Residential Generic Cleanup Criteria (1)</i>																			
Sample Location:		Residential	NonResidential	MW2-07	MW4-07	MW7-07	MW10-07	MW10-07	MW11-07	MW15-07	MW15-07	MW17-07	MW19-07	MW32-07	MW33-07	MW33-07	MW34-07	MW35-07	MW37-07
Sample Date:		Drinking Water	Drinking Water	11/28/2007	11/28/2007	11/28/2007	11/27/2007	02/05/2013	11/27/2007	11/27/2007	11/27/2007	11/27/2007	11/27/2007	01/09/2008	01/09/2008	02/05/2013	01/08/2008	01/09/2008	01/08/2008
	Units	a	b																
Metals																			
Aluminum	ug/L	300	4100	11.6 J	14.2 J	50.0 U	644 ^a	2000 ^a	523 ^a	9.8 J	50.0 U	191	463 ^a	325 ^a	929 ^a	2500 ^a	366 ^a	927 ^a	48.7 J
Antimony	ug/L	6	6	2.0 U	2.0 U	2.0 U	1.1 J	0.84 J	2.0 U	2.0 U	2.0 U	1.3 J	2.0 U	1.7 J	1.9 J	1.6 J	2.0 U	0.80 J	1.0 J
Arsenic	ug/L	10	10	5.0 U	5.0 U	5.0 U	5.9	2.5 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	3.4 J	5.0 U	49.3 ^{ab}	9.2
Barium	ug/L	2000	2000	394	79.5	197	9.7 J	24	52.6 J	310	296	21.2 J	12.0 J	8.1 J	448	280	95.0 J	46.0 J	150
Cadmium	ug/L	5	5	1.0 U	1.0 U	0.71 J	1.0 U	0.054 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.18 J	1.0 U	1.0 U	1.0 U
Calcium	ug/L	NA	NA	323000	226000	324000	12800	--	67500	334000	321000	47400	29400	22500	221000	--	120000	107000	154000
Chromium	ug/L	100	100	5.1	5.0 U	5.0 U	6.5	4.8 J	5.0 U	5.0 U	5.0 U	9.2	5.0 U	7.6	41.4	8.3	5.0 U	7.5	5.0 U
Chromium III (trivalent)	ug/L	100	100	5.1 J	5 UJ	5 UJ	5 UJ	--	5 UJ	5 UJ	5 UJ	5 UJ	5 UJ	7.6 J	9.9 J	--	5 UJ	5 UJ	5 UJ
Chromium VI (hexavalent)	ug/L	100	100	10 UJ	10 UJ	10 UJ	6 J	--	10 UJ	10 UJ	10 UJ	10 J	10 UJ	10 UJ	30 J	--	10 UJ	8 J	10 UJ
Cobalt	ug/L	40	100	2.5 J	7.0 U	2.1 J	7.0 U	1.7 J	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	2.4 J	7.0 U	7.0 U	7.0 U
Copper	ug/L	1400	4000	2.0 U	2.4 U	2.2 U	4.4	8.9	2.1 U	2.0 U	2.0 U	6.3	2.5 U	2.4 U	7.5	14	2.4 U	7.2	2.3 U
Iron	ug/L	2000	5600	1810 J	87.1 J	125 J	1030 J	3200 ^a	879 J	100 U	100 U	415 J	829 J	783	102	4900 ^a	575	767	100 U
Lead	ug/L	15	15	3.0 U	3.0 U	3.0 U	5.6	18 ^{ab}	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	9.1	3.0 U	3.0 U	3.0 U
Magnesium	ug/L	400000	1100000	56000	16200	70900	2020	--	23400	59300	57100	6860	4700	3590	1000 U	--	28700	1000 U	39800
Manganese	ug/L	860	2500	2150 ^a	57.7	192	23.5	100	245	121	114	15.1	14.5 J	10.8 J	2.5 J	730	233	11.1 J	57.0
Mercury	ug/L	2	2	0.20 U	0.20 U	0.20 U	0.20 U	0.016 J	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.016 J	0.20 U	0.20 U	0.20 U
Nickel	ug/L	100	100	6.7 J	20.0 U	3.5 J	20.0 U	7.2	4.0 J	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	20.0 U	10	20.0 U	3.3 J	5.5 J
Potassium	ug/L	NA	NA	5270 J	11000 J	7370 J	4960 J	--	1860 J	6320 J	6020 J	7770 J	2370 J	2460	20900	--	3740	18200	14100
Selenium	ug/L	50	50	5.0 U	5.0 U	5.0 U	5.0 U	2.0 J	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	1.2 J	5.0 U	5.0 U	5.0 U
Silver	ug/L	34	98	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Sodium	ug/L	120000	350000	876000 ^{ab}	643000 ^{ab}	488000 ^{ab}	68900	--	444000 ^{ab}	2060000 ^{ab}	2030000 ^{ab}	54900	284000 ^a	66800	277000 ^a	--	227000 ^a	1290000 ^{ab}	367000 ^{ab}
Thallium	ug/L	2	2	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	1.0 U	1.0 U
Vanadium	ug/L	4.5	62	4.0 U	4.0 U	4.0 U	5.4 ^a	4.8 ^a	4.0 U	4.0 U	4.0 U	3.3 J	3.2	3.3 J	7.2 ^a	7.3 ^a	2.4 J	48.8 ^a	1.8 J
Zinc	ug/L	2400	5000	5.8 J	20.0 U	5.8 J	16.2 J	22	6.0 J	20.0 U	20.0 U	20.0 U	10.5 J	20.0 U	20.0 U	53	20.0 U	20.0 U	20.0 U

General Chemistry

Cyanide (amenable)	ug/L	200	200	5 U	5 U	5 U	5 U	--	5 U	7.1	5 U	5 U	5 U	5 U	5 U	--	5 U	5 U	5 U

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DWC for aluminum, iron and manganese based on Footnote E of Part 201 Cleanup Criteria.

DWC for lead based on Footnote L of the Part 201 Cleanup Criteria.

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TABLE 5
GROUNDWATER ANALYTICAL RESULTS
METALS
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																			
Sample Location:		Residential	NonResidential	MW38-07	MW40-07	MW40-07	MW48-07	MW48-07	MW63-08	MW63-08	MW64-08	MW64-08	MW68-08	MW68-08	MW74-08	MW78-08	MW80-12	MW80-12	MW81-12
Sample Date:		Drinking Water	Drinking Water	01/09/2008	01/08/2008	01/08/2008	04/08/2008	04/08/2008	04/07/2008	01/31/2013	04/07/2008	02/01/2013	04/07/2008	01/31/2013	04/07/2008	04/07/2008	08/30/2012	02/04/2013	08/30/2012
	Units	a	b																
Metals																			
Aluminum	ug/L	300	4100	148	19.8 J	25.2 J	22.5 J	26.2 J	172	160	157	40	467 ^a	520 ^a	459 ^a	92.8	30	6.9 J	89
Antimony	ug/L	6	6	0.14 J	2.0 U	2.0 U	2.0 U	2.0 U	0.17 J	0.056 J	0.78 J	0.90 J	0.30 J	0.11 J	0.51 J	0.39 J	0.19 J	0.44 J	0.35 J
Arsenic	ug/L	10	10	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	15 ^{ab}	5.0 U	11 ^{ab}	5.0 U	5.0 U	5.0 U	5.0 U	2.5 J	0.81 J	5 U
Barium	ug/L	2000	2000	119	103	102	299	293	111	36	46.7 J	50	23.4 J	15	90.8 J	43.5 J	98	70	280
Cadmium	ug/L	5	5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.065 J	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	0.052 J	1.0 U	0.13 J
Calcium	ug/L	NA	NA	148000	121000	119000	143000	142000	141000	--	73200	--	73200	--	118000	164000	--	--	--
Chromium	ug/L	100	100	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	0.51 J	3.3 J	0.65 J	2.4 J	1.5 J	2.4 J	5.0 U	5 U	0.23 J	1.4 J
Chromium III (trivalent)	ug/L	100	100	--	5 UJ	5 UJ	5 U	5 U	5 U	--	5 U	--	5 U	--	5 U	5 U	--	--	--
Chromium VI (hexavalent)	ug/L	100	100	--	10 UJ	10 UJ	10 U	10 U	10 U	--	10 U	--	10 U	--	10 U	10 U	--	--	--
Cobalt	ug/L	40	100	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U	0.51 J	7.0 U	0.29 J	7.0 U	0.38 J	13.3	7.0 U	1.1 J	0.23 J	4.1 J
Copper	ug/L	1400	4000	3.9	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	1.0 J	2.3 U	0.75 J	2.0 U	0.69 J	4.1	2.0 U	3 J	0.46 J	6.6
Iron	ug/L	2000	5600	346	106	82.5 J	7670 ^{ab}	7880 ^{ab}	539	730	1080	5700 ^{ab}	711	610	1250	166	410	110	1600
Lead	ug/L	15	15	3.0 U	3.0 U	3.0 U	3.0 U	3.0 U	22.5 ^{ab}	0.87 J	3.0 U	0.40 J	3.0 U	0.36 J	3.0 U	2.5 J	0.092 J	0.087 J	0.25 J
Magnesium	ug/L	400000	1100000	80500	80000	77700	33500	33000	32100	--	24500	--	19200	--	29800	56400	--	--	--
Manganese	ug/L	860	2500	254	87.3	89.8	324	323	595	170	91.7	53	23.1	15	475	238	150	110	190
Mercury	ug/L	2	2	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.12 J	0.20 U	0.20 U	0.20 U	0.20 U	0.12 J	0.2 U	0.20 U	0.2 U
Nickel	ug/L	100	100	9.4 J	3.2 J	4.3 J	20.0 U	20.0 U	20.0 U	4.5 J	20.0 U	2.7 J	20.0 U	2.0 J	8.6 J	20.0 U	10	1.7 J	33
Potassium	ug/L	NA	NA	4940	7490	7550	6790 J	6700 J	4550 J	--	5320 J	--	2240 J	--	5990 J	22800 J	--	--	--
Selenium	ug/L	50	50	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.4	5.0 U	4.5 J	4.3 J	5.0 U	5.0 U	5 U	5.0 U	7.4
Silver	ug/L	34	98	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	5 U	0.20 U	0.3 J
Sodium	ug/L	120000	350000	84200	1080000 ^{ab}	1040000 ^{ab}	730000 ^{ab}	716000 ^{ab}	365000 ^{ab}	--	165000 ^a	--	124000 ^a	--	593000 ^{ab}	44400	--	--	--
Thallium	ug/L	2	2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	2.0 U	1.0 U	1.0 U	0.088 J	2.0 U	5 U
Vanadium	ug/L	4.5	62	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	4.0 U	1.1 J	2.1 J	4.0 U	1.0 J	1.2 J	4.0 U	4.0 U	5 U	4.0 U	5 U
Zinc	ug/L	2400	5000	21.5	20.0 U	20.0 U	20.0 U	20.0 U	7.2 J	3.2 J	20.0 U	3.1 J	20.0 U	2.2 J	31.4	20.0 U	10 U	1.2 J	10 U

General Chemistry

Cyanide (amenable)	ug/L	200	200	--	5 U	5 U	5 U	5 U	20	--	5 U	--	5 U	--	14	5 U	--	--	--

Notes:

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The associated value is qualified as an estimated quantity.

UJ The analyte was reported or qualified as not detected however, the sample report limit is qualified as an estimated value and may be inaccurate or imprecise.

(1) Cleanup criteria identified by MDEQ RRD Op Memo No. 1, updated 9/28/2012, pursuant to 1994 PA 451 as amended.

NA - Criteria not available or not applicable.

NE - No exceedances above Part 201 Cleanup Criteria.

51^{ab} - Indicates concentration exceeded Part 201 Cleanup Criteria.

DWC for aluminum, iron and manganese based on Footnote E of Part 201 Cleanup Criteria.

DWC for lead based on Footnote L of the Part 201 Cleanup Criteria.

-- = Not analyzed.

TABLE 5
GROUNDWATER ANALYTICAL RESULTS
METALS
PCC - VALIDATION
PONTIAC, MICHIGAN

Michigan Act 451, Part 201 Cleanup Criteria and Part 213 Risk-based Screening Levels: Residential and Non-Residential Generic Cleanup Criteria (1)																		
Sample Location:		Residential	NonResidential	MW81-12	MW82-12	MW82-12	MW83-12	MW83-12	MW84-12	MW84-12	MW85-12	MW85-12	MW85-12	MW87-12	MW87-12	MW88-12	MW92i-13	MW92s-13
Sample Date:		Drinking Water	Drinking Water	02/04/2013	08/30/2012	02/01/2013	08/29/2012	02/04/2013	08/30/2012	08/30/2012	08/29/2012	01/31/2013	01/31/2013	08/30/2012	01/31/2013	08/29/2012	02/04/2013	02/04/2013
	Units	a	b															
Metals																		
Aluminum	ug/L	300	4100	5.8 J	22000 ^{ab}	320 ^a	120	360 ^a	48	42	2300 ^a	270	300	26	670 ^a	43	650 ^a	66
Antimony	ug/L	6	6	0.065 J	2.5 J	0.80 J	1.1 J	1.2 J	0.29 J	0.32 J	0.54 J	0.20 J	0.21 J	0.94 J	0.37 J	0.098 J	0.20 J	0.11 J
Arsenic	ug/L	10	10	1.6 J	41 ^{ab}	3.3 J	6.6	2.3 J	0.96 J	1.5 J	2.7 J	1.2 J	1.3 J	1 J	1.2 J	12 ^{ab}	8.0	1.6 J
Barium	ug/L	2000	2000	270	140	5.3	25	16	46	51	23	7.4	7.9	92	57	85	230	220
Cadmium	ug/L	5	5	1.0 U	0.72 J	1.0 U	0.12 J	0.043 J	0.079 J	0.11 J	0.49 J	0.097 J	0.11 J	0.15 J	1.0 U	0.11 J	1.0 U	0.076 J
Calcium	ug/L	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium	ug/L	100	100	0.19 J	34	3.6 J	5 U	2.1 J	5 U	0.98 J	3.4 J	0.88 J	0.52 J	5 U	2.1 J	5 U	1.3 J	0.41 J
Chromium III (trivalent)	ug/L	100	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Chromium VI (hexavalent)	ug/L	100	100	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cobalt	ug/L	40	100	0.93 J	20 J	0.50 J	0.62 J	0.25 J	0.95 J	1.1 J	1.3 J	0.33 J	0.35 J	1.3 J	0.88 J	1.5 J	1.0 J	3.0 J
Copper	ug/L	1400	4000	0.21 J	83	2.6 J	3.4 J	3.6 J	4.3 J	3.1 J	9.1	2.9 J	2.7 J	4.9 J	1.8 J	2.1 J	3.7 J	2.5 J
Iron	ug/L	2000	5600	3600 ^a	32000 ^{ab}	390	130	400	130	96	2400 ^a	280	300	38 J	910	2600 ^a	2500 ^a	3700 ^a
Lead	ug/L	15	15	0.11 J	25 ^j ^{ab}	0.37 J	0.9 J	0.85 J	0.15 J	0.13 J	1.1 J	0.21 J	0.22 J	0.077 J	0.77 J	0.11 J	2.2 J	0.24 J
Magnesium	ug/L	400000	1100000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Manganese	ug/L	860	2500	300	490	5.7	19	6.7	68	74	23	4.9 J	5.3	46	140	93	290	4600 ^{ab}
Mercury	ug/L	2	2	0.20 U	0.073 J	0.20 U	0.2 U	0.0090 J	0.2 U	0.2 U	0.2 U	0.20 U	0.20 U	0.2 U	0.20 U	0.2 U	0.20 U	0.20 U
Nickel	ug/L	100	100	3.9 J	54	0.99 J	5.2	1.6 J	8.2	9.1	6.2	1.9 J	1.9 J	10	4.2 J	11	5.5	4.7 J
Potassium	ug/L	NA	NA	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Selenium	ug/L	50	50	0.42 J	12 J	1.3 J	5 U	0.63 J	5 J	5 U	3.8 J	0.96 J	0.83 J	5 U	0.94 J	5 U	0.65 J	0.73 J
Silver	ug/L	34	98	0.20 U	0.18 J	0.20 U	5 U	0.20 U	5 U	5 U	5 U	0.20 U	0.20 U	5 U	0.20 U	5 U	0.20 U	0.20 U
Sodium	ug/L	120000	350000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Thallium	ug/L	2	2	2.0 U	50 U	2.0 U	0.27 J	0.20 J	5 U	5 U	0.17 J	2.0 U	2.0 U	0.06 J	2.0 U	0.36 J	2.0 U	2.0 U
Vanadium	ug/L	4.5	62	4.0 U	89 ^{ab}	6.6 ^a	0.67 J	2.6 J	5 U	5 U	4.4 J	1.4 J	1.7 J	5 U	2.6 J	5 U	1.6 J	0.32 J
Zinc	ug/L	2400	5000	3.7 J	130	4.5 J	10 U	110	10 U	10 U	10 U	2.3 J	2.4 J	10 U	49	10 U	10	9.4 J

General Chemistry

Cyanide (amenable)	ug/L	200	200	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

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51^{ab} - Indicates concentration exceeded Part 201 Cleanup Criteria.

DWC for aluminum, iron and manganese based on Footnote E of Part 201 Cleanup Criteria.

DWC for lead based on Footnote L of the Part 201 Cleanup Criteria.

-- = Not analyzed.

SITE-SPECIFIC GROUNDWATER CALCULATIONS
PCC - VALIDATION
PONTIAC, MICHIGAN

Sample Location:	Calculated for Soil (1)		Calculated for Groundwater (2)	
	Sandy (shallower) soils	Clay (deeper) soils	Sandy (shallower) soils	Clay (deeper) soils
Sample Depth:	Selected	Selected	Selected	Selected
Sample Date:	Background	Background	Background	Background
Sample Type:	Value	Value	Value	Value
	/ 20x	/ 20x	/ 20x	/ 20x
Metals	Units	a	Units	a
Aluminum	ug/kg	10800000	ug/L	540000
Antimony	ug/kg	80 J	ug/L	4 J
Arsenic	ug/kg	7020	ug/L	351
Barium	ug/kg	240000	ug/L	12000
Beryllium	ug/kg	584	ug/L	29.2
Cadmium	ug/kg	549	ug/L	27.45
Calcium	ug/kg	126000000	ug/L	6300000
Chromium III (Trivalent)	ug/kg	18000	ug/L	900
Chromium Total	ug/kg	18700	ug/L	935
Chromium VI (Hexavalent)	ug/kg	950 U	ug/L	47.5 U
Cobalt	ug/kg	11600	ug/L	580
Copper	ug/kg	20600	ug/L	1030
Lead	ug/kg	18200	ug/L	910
Magnesium	ug/kg	20900000	ug/L	1045000
Manganese (Dissolved)	ug/kg	4560000	ug/L	228000
Mercury	ug/kg	54.1	ug/L	2.705
Nickel	ug/kg	20000	ug/L	1000
Potassium	ug/kg	1280000	ug/L	64000
Selenium	ug/kg	922	ug/L	46.1
Silver	ug/kg	95 UJ	ug/L	4.75 UJ
Sodium	ug/kg	1060000	ug/L	53000
Thallium	ug/kg	190	ug/L	9.5
Vanadium	ug/kg	30800	ug/L	1540
Zinc	ug/kg	56300	ug/L	2815

Notes:

(1) Select background levels calculated following MDEQ, 2002, Sampling Strategies and Statistics Training Materials for Part 201 Cleanup Criteria.

(2) conc (ug/kg) x dilution factor = conc (ug/L); therefore / 20x = conc (ug/kg)/20.

Dilution factor = 1, therefore conc (ug/l)= conc (ug/kg).

U The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

J The associated value is qualified as an estimated quantity.

APPENDIX A

CA750 FORM (ALSO IN FRONT OF REPORT)

DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION

Interim Final 2/5/99

RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750)

Migration of Contaminated Groundwater Under Control

Facility Name: PCC-Validation
Facility Address: 200 South Boulevard West, Pontiac, Michigan
Facility EPA ID #: MID 980568836

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the groundwater media, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?
☒ If yes - check here and continue with #2 below.
☐ If no - re-evaluate existing data.
☐ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Migration of Contaminated Groundwater Under Control" EI

A positive "Migration of Contaminated Groundwater Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" groundwater has stabilized, and that monitoring will be conducted to confirm that contaminated groundwater remains within the original "area of contaminated groundwater" (for all groundwater "contamination" subject to RCRA corrective action at or from the identified facility {i.e., site-wide}).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Groundwater Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within groundwater (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated groundwater to be suitable for its designated current and future uses.

Duration/Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 2

2. Is **groundwater** known or reasonably suspected to be "**contaminated**"¹ above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

- X If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.
- _____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."
- _____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The occurrence of groundwater at the Site and the screening criteria for identifying "contaminated" groundwater are discussed in Section 3.0 of the CA750 Report (CRA, 2013c) and the Addendum to the CA750 Report (CRA, 2013b). Comparison of the groundwater data with the screening criteria is summarized in Tables 2-5 of the CA 750 Report and Table 1 of the Addendum. As discussed in Section 3.1 of the CA 750 Report, the screening criteria include the most applicable and restrictive MDEQ Part 201 Cleanup Criteria except Groundwater to Surface Water Interface (GSI) Criteria.

Volatile organic compounds (VOCs) meet the definition of "contaminated" at MW74-08 and MW91-12. 1,1,1-Trichloroethane, 1,1-Dichloroethene and Trichloroethene (TCE) were detected at MW74-08 above Part 201 Drinking Water Criteria (DWC). TCE was detected at MW91-12 above DWC.

VOCs meet the definition of "contaminated" off-Site in the northern portion of the Site at TMW2I-12 and MW92I-13. TCE was detected above DWC at TMW2I-12 and vinyl chloride (VC) was detected at MW92I-13 above DWC.

Metals meet the definition of "contaminated" in multiple wells throughout the Site as identified below:

- *Aluminum exceeded Residential Health-Based DWC at MW10-07, MW11-07, MW19-07, MW32-07, MW33-07, MW34-07, MW35-07, MW68-08, MW74-08, MW82-12, MW83-12, MW85-12, MW87-12 and MW92S/I-13.*
- *Arsenic exceeded DWC at MW35-07, MW63-08, MW64-08 and MW88-12.*
- *Iron exceeded Residential and Non-Residential Health-Based DWC at MW10-07, MW33-07, MW48-07, MW64-08, MW81-12, MW82-12, MW88-12, and MW92S/I-13.*
- *Lead exceeded DWC at MW10-07.*
- *Manganese exceeded Residential and Non-Residential Health-Based DWC at MW2-07, MW92S -13.*
- *Sodium exceeded DWC at MW2-07, MW4-07, MW7-07, MW11-07, MW15-07, MW19-07, MW33-07, MW34-07, MW35-07, MW37-07, MW40-07, MW48-07, MW63-08, MW64-08, MW68-08 and MW74-08.*
- *Vanadium exceeded DWC at MW10-07, MW33-07, MW35-07 and MW82-12.*

Light nonaqueous-phase liquids (LNAPLs) are present in monitoring wells MW69-08, MW84-12 and MW86-12.

¹ "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the groundwater resource and its beneficial uses).

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

Page 3

3. Has the **migration** of contaminated groundwater **stabilized** (such that contaminated groundwater is expected to remain within "existing area of contaminated groundwater"² as defined by the monitoring locations designated at the time of this determination)?

- X If yes - continue, after presenting or referencing the physical evidence (e.g., groundwater sampling/measurement/migration barrier data) and rationale why contaminated groundwater is expected to remain within the (horizontal or vertical) dimensions of the "existing area of groundwater contamination"².
- If no (contaminated groundwater is observed or expected to migrate beyond the designated locations defining the "existing area of groundwater contamination"²) - skip to #8 and enter "NO" status code, after providing an explanation.
- If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s)

A detailed discussion of the migration of contaminated groundwater and rationale why contaminated groundwater is expected to remain within the dimensions of the "existing area of groundwater contamination" is presented in Section 4.0 of the CA750 Report (CRA, 2013c) and the Addendum to the CA750 Report (CRA, 2013b).

The vertical extent of impacted groundwater is limited to the upper-most water bearing unit that is generally thin, discontinuous, and relatively low permeability (silty sands). Downward vertical mobility of impacted groundwater is prohibited by a regionally extensive impermeable clay unit (e.g., aquitard).

The lateral extent of VOC contaminated groundwater is defined on-Site and off-Site, including VC to the northwest of the Site. To delineate the off-Site VC impacts, MW93I-13 was installed down-gradient of MW92I-13 along the ROW located on the north side of Franklin Street. Results from monitoring well MW93I-13 indicated no VOCs were detected above laboratory reporting limits except cis-1,2-dichloroethene (cis-1,2 DCE); however, it did not exceed MDEQ Part 201 Drinking Water Criteria. Therefore, the extent of VOC impacts are delineated, limited in nature and migration appears to be under control.

The on-Site extent of LNAPL was defined through the usage of an LIF investigation and verified by monitoring wells with no LNAPL. Based on the LNAPL assessment completed as part of the EI CA725 Report, the NAPL is not considered to be migrating NAPL. Therefore, the extent of LNAPL is clearly defined and migration is under control.

In general, the metal impacts were site wide; however, they are generally defined to Non-Residential DWC at the property boundary. Only iron, manganese and sodium were detected above Non-Residential DWC at the property boundary. While these slightly elevated concentrations of metals may extend beyond on-Site monitoring wells, they are generally immobile in an aerobic aquifer and are associated with a low risk to human health and the environment. Based on the groundwater flow direction, immobility of metals, and the likelihood of the metals as background earth metals, the potential migration of metals offsite does not present a significant risk to human health and the environment. Therefore, since the likelihood of off-Site migration is limited, only off-Site monitoring wells were used to define off-Site impacts to groundwater and no assumptions of migration from other portions of the Site were assessed. Therefore, the following metals were assessed off-Site based on "contamination" from off-site monitoring wells MW80-12, MW81-12 and MW92S/I-12:

- Off-Site aluminum "contamination" is identified at MW92S/I-13. The aluminum impacts are delineated to the north, south and east. Aluminum concentrations in off-Site groundwater exceeded only the Residential Health-Based DWC. There is no clear pathway between detections of aluminum in off-site monitoring wells and areas of aluminum impacted groundwater on-site. Figure 10 of the CA750 Report (CRA, 2013c) provides a Site map with aluminum contours delineating groundwater to the extent possible*

² "existing area of contaminated groundwater" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant groundwater contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" groundwater remains within this area, and that the further migration of "contaminated" groundwater is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

- *Off-Site iron "contamination" is identified at MW81-12 and MW92S/I-12. Iron is delineated to the south and east. Iron concentrations in off-Site groundwater exceeded only the Residential Health-Based DWC. There is no clear pathway between detections of iron in off-site monitoring wells and areas of iron impacted groundwater on-site. Figure 12 of the CA750 Report (CRA, 2013c) provides a Site map with iron contours delineating iron in groundwater to the extent possible.*
- *Off-Site manganese "contamination" is identified at MW81-12 and MW92S/I-12. Manganese is delineated to the south and east. Manganese concentrations in off-Site groundwater exceeded only the Residential and Non-Residential Health-Based DWC. Figure 14 of the CA750 Report (CRA, 2013c) provides a Site map with manganese contours delineating groundwater off-Site to the extent possible.*

In general, based on the nature of the metal impacts, the relatively low concentrations, turbidity of the samples and the Site hydrogeology, the extent of metal impacts are limited in nature and migration appears to be under control.

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

Page 5

4. Does "contaminated" groundwater discharge into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

 X If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that groundwater "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

No surface water bodies exist at the Site. The Site is located within the Clinton River and Rouge River drainage basins. The Clinton River is located approximately 0.75 miles north of the Site while the Rouge River is located approximately 3.5 miles southeast of the Site. Several surface water bodies and intermittent drains are also located within a mile of the Site, including Crystal Lake, which is approximately a half mile to the west of the Site. These water bodies are part of the Clinton River watershed which ultimately migrates east over a minimum distance of 26 miles towards the St. Clair River, and becomes part of the Great Lakes water system.

Investigation was completed as part of the Phase III ESA to identify potential pathways for off-Site migration of contamination to a surface water body. During a conference call on September 28, 2011, the EPA requested additional investigation of storm sewers as potential conduits for off-Site migration and potential Site exit points. During the 2012 Phase III ESA, storm sewer depths were measured and two monitoring wells (MW82-12 and MW83-12) were installed in or immediately adjacent to the bedding of the utility corridor. The two monitoring wells were installed along the western boundary of the Site and represent potential Site exit points. Groundwater samples were collected for analysis of PCBs, SVOCs and VOCs and no contaminants exceeded Part 201 criteria (except limited metals) at MW82-12 and MW83-12.

Based on the surface water bodies located over 1,000 feet from the downgradient extent of contaminated groundwater to the north and northwest of the Site, the point source sewer investigation and groundwater levels located below preferential pathways, discharge of contaminated on-site or off-site groundwater to surface water bodies is not occurring. Based on the absence of groundwater discharges to surface water, Questions 5 and 6 are not applicable.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

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5. Is the **discharge** of "contaminated" groundwater into surface water likely to be "**insignificant**" (i.e., the maximum concentration³ of each contaminant discharging into surface water is less than 10 times their appropriate groundwater "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?
- _____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration³ of key contaminants discharged above their groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of groundwater contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.
- _____ If no - (the discharge of "contaminated" groundwater into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration³ of each contaminant discharged above its groundwater "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations³ greater than 100 times their appropriate groundwater "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.
- _____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Not applicable.

³ As measured in groundwater prior to entry to the groundwater-surface water/sediment interaction (e.g., hyporheic) zone.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

Page 7

6. Can the **discharge** of "contaminated" groundwater into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or eco-systems that should not be allowed to continue until a final remedy decision can be made and implemented⁴)?

_____ If yes - continue after either:

1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and eco-systems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging groundwater; OR

2) providing or referencing an interim-assessment,⁵ appropriate to the potential for impact, that shows the discharge of groundwater contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and eco-systems, until such time when a full assessment and final remedy decision can be made. Factors which should be considered in the interim-assessment (where appropriate to help identify the impact associated with discharging groundwater) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

_____ If no - (the discharge of "contaminated" groundwater cannot be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or eco-systems.

_____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

Not Applicable.

⁴ Note, because areas of inflowing groundwater can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing groundwater flow pathways near surface water bodies.

⁵ The understanding of the impacts of contaminated groundwater discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or eco-systems.

Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)

Page 8

7. Will groundwater monitoring / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated groundwater has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated groundwater?"

 X If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations which will be tested in the future to verify the expectation (identified in #3) that groundwater contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of groundwater contamination."

 If no -enter "NO" status code in #8.

 If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

A limited round of groundwater monitoring is planned for 2013. In general, groundwater at the site is turbid (greater than 10 NTU); therefore, dissolved metals will be included for any additional sampling of metals.

**Migration of Contaminated Groundwater Under Control
Environmental Indicator (EI) RCRIS code (CA750)**

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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Groundwater Under Control EI (event code CA750), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

 YE YE -Yes, "Migration of Contaminated Groundwater Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Groundwater" is "Under Control" at the PCC-Validation facility, EPA ID #MID 980568836 located at 200 South Boulevard West, Pontiac, Michigan. Specifically, this determination indicates that the migration of "contaminated" groundwater is under control, and that monitoring will be conducted to confirm that contaminated groundwater remains within the "existing area of contaminated groundwater". This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

 NO -Unacceptable migration of contaminated groundwater is observed or expected.

 IN -More information is needed to make a determination.

Completed by (signature)_____ Date _____

(print)_____

(title)_____

Supervisor (signature)_____ Date _____

(print)_____

(title)_____

(EPA Region or State)_____

Locations where References may be found:

USEPA Region 5 has the following documents, which support the determination. Section 8 of the EI CA750 Report (CRA, 2013c) provides the full citation for each of these documents:

- 2006 and 2009 Phase I ESAs (CRA, 2006a, CRA, 2006b, and CRA, 2009a)
- Phase II Environmental Site Assessment Work Plan (CRA, 2007)
- Memorandum – Quantitative Risk Assessment Results (ENVIRON, 2008)
- Phase II Environmental Site Assessment (North Parcel) (CRA 2009b)
- Phase II Environmental Site Assessment (South Parcel), (CRA 2009c)
- Memorandum – LNAPL Recovery Memo (CRA 2010)
- Draft Current Conditions Report (CRA 2011)
- Supplemental Current Conditions Report, (CRA 2012a)
- Sampling and Analysis Plan and Fundamental Quality Assurance Project Plan, (CRA 2012b)
- RCRA EI CA725 Report (CRA 2013a)
- Addendum to the RCRA EI CA750 Report (CRA, 2013b)
- RCRA EI CA750 Report (CRA 2013c)

Contact telephone and e-mail numbers

(name)_____ (phone #)_____

(e-mail)_____

APPENDIX B

LABORATORY ANALYTICAL REPORTS FROM 2013 GROUNDWATER MONITORING



13-Feb-2013

Paul Wiseman
Conestoga-Rovers & Associates
14496 Sheldon Road
Suite 200
Plymouth, MI 48170

Re: **PCC-Validation (017322-T03Y13)**

Work Order: **1302057**

Dear Paul,

ALS Environmental received 21 samples on 02-Feb-2013 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 116.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Beamish".

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager



Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Work Order: 1302057

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1302057-01	GW-17322-013113-CB-001	Groundwater		01/31/13 09:20	02/02/13 08:00	☐
1302057-02	GW-17322-013113-DR-002	Groundwater		01/31/13 09:05	02/02/13 08:00	☐
1302057-03	GW-17322-013113-DR-003	Groundwater		01/31/13 10:00	02/02/13 08:00	☐
1302057-04	GW-17322-013113-DR-004	Groundwater		01/31/13 09:10	02/02/13 08:00	☐
1302057-05	GW-17322-013113-CB-005	Groundwater		01/31/13 10:50	02/02/13 08:00	☐
1302057-06	GW-17322-013113-CB-006	Groundwater		01/31/13 11:05	02/02/13 08:00	☐
1302057-07	GW-17322-013113-DR-007	Groundwater		01/31/13 11:00	02/02/13 08:00	☐
1302057-08	GW-17322-013113-CB-008	Groundwater		01/31/13 13:25	02/02/13 08:00	☐
1302057-09	GW-17322-013113-DR-009	Groundwater		01/31/13 13:45	02/02/13 08:00	☐
1302057-10	GW-17322-013113-DR-010	Groundwater		01/31/13 14:35	02/02/13 08:00	☐
1302057-11	GW-17322-020113-DR-011	Groundwater		02/01/13 08:20	02/02/13 08:00	☐
1302057-12	GW-17322-020113-DR-012	Groundwater		02/01/13 08:45	02/02/13 08:00	☐
1302057-13	GW-17322-020113-DR-013	Groundwater		02/01/13 09:20	02/02/13 08:00	☐
1302057-14	GW-17322-020113-DR-014	Groundwater		02/01/13 10:40	02/02/13 08:00	☐
1302057-15	GW-17322-020113-DR-015	Groundwater		02/01/13 09:15	02/02/13 08:00	☐
1302057-16	GW-17322-020113-DR-016	Groundwater		02/01/13 10:35	02/02/13 08:00	☐
1302057-17	GW-17322-013113-DR-017	Groundwater		02/01/13 13:40	02/02/13 08:00	☐
1302057-18	GW-17322-020113-DR-018	Groundwater		02/01/13 11:35	02/02/13 08:00	☐
1302057-19	GW-17322-020113-DR-019	Groundwater		02/01/13 13:45	02/02/13 08:00	☐
1302057-20	TB-17322-020113	Water		02/01/13	02/02/13 08:00	☐
1302057-21	GW-17322-020113-DR-020	Groundwater		02/01/13 14:35	02/02/13 08:00	☐

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
WorkOrder: 1302057

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Work Order: 1302057

Case Narrative**Analytical Comments:**

Batch R115882, Method VOC_8260_W, Sample 1302057-01A: VOC surrogate out high due to matrix interference, and confirmed by reanalysis.

Batch R115839, Method VOC_8260_W, Sample 1302057-02A: One or more VOC surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

Batch R115839, Method VOC_8260_W, Sample 1302057-03A: One or more VOC surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

Batch R115839, Method VOC_8260_W, Sample 1302057-04A: One or more VOC surrogate recoveries were above the upper control limits. The sample was non-detect, therefore, no qualification is needed.

Batch R115882, Method VOC_8260_W, Sample 1302057-12A: VOC surrogate out due to matrix interference.

QC Comments:

Batch R115839, Method VOC_8260_W, Sample VLCSW1-130204: The LCS recovery was outside of the lower control limit but within the Sporadic Marginal Exceedence limit. No qualification is necessary for Carbon tetrachloride.

Batch R115839, Method VOC_8260_W, Sample 1302057-13A MSD: The MSD recovery was below the lower control limit. The corresponding result in the parent sample may be biased low for Carbon tetrachloride.

Batch R115882, Method VOC_8260_W, Sample VLCSW1-130205: The LCS recovery was outside of the lower control limit but within the Sporadic Marginal Exceedence limit. No qualification is necessary for Carbon tetrachloride.

Batch R115882, Method VOC_8260_W, Sample 1302057-13A MS: The MS and MSD recoveries were below the lower control limit. The corresponding result in the parent sample may be biased low for Carbon tetrachloride.

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Work Order: 1302057

Case Narrative

Batch R115940A, Method VOC_8260_W, Sample VLCSW1-130206: The LCS recovery was outside of the lower control limit but within the Sporadic Marginal Exceedence limit. No qualification is necessary for Carbon tetrachloride.

Batch R115940A, Method VOC_8260_W, Sample 1302167-01A MSD: The MS and MSD recoveries were below the lower control limit. The corresponding result in the parent sample may be biased low for Carbon tetrachloride.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-001
Collection Date: 01/31/13 09:20 AM

Work Order: 1302057
Lab ID: 1302057-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260				Analyst: AK
<u>BatchID: R115882</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/05/13 15:59
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/05/13 15:59
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/05/13 15:59
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/05/13 15:59
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/05/13 15:59
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 15:59
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/05/13 15:59
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/05/13 15:59
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/05/13 15:59
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 15:59
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/05/13 15:59
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/05/13 15:59
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/05/13 15:59
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/05/13 15:59
2-Butanone	U		0.22	25	µg/L	1	02/05/13 15:59
2-Hexanone	U		0.12	50	µg/L	1	02/05/13 15:59
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/05/13 15:59
Acetone	U		0.33	50	µg/L	1	02/05/13 15:59
Benzene	U		0.18	1.0	µg/L	1	02/05/13 15:59
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/05/13 15:59
Bromoform	U		0.15	1.0	µg/L	1	02/05/13 15:59
Bromomethane	U		0.21	5.0	µg/L	1	02/05/13 15:59
Carbon disulfide	U		0.17	5.0	µg/L	1	02/05/13 15:59
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/05/13 15:59
Chlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 15:59
Chloroethane	U		0.46	5.0	µg/L	1	02/05/13 15:59
Chloroform	U		0.15	1.0	µg/L	1	02/05/13 15:59
Chloromethane	U		0.16	5.0	µg/L	1	02/05/13 15:59
cis-1,2-Dichloroethene	1.1		0.11	1.0	µg/L	1	02/05/13 15:59
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/05/13 15:59
Cyclohexane	U		0.22	1.0	µg/L	1	02/05/13 15:59
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/05/13 15:59
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/05/13 15:59
Ethylbenzene	U		0.13	1.0	µg/L	1	02/05/13 15:59
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/05/13 15:59
Methyl acetate	U		0.19	10	µg/L	1	02/05/13 15:59
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/05/13 15:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-001
Collection Date: 01/31/13 09:20 AM

Work Order: 1302057
Lab ID: 1302057-01
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/05/13 15:59
Methylene chloride	U		0.19	5.0	µg/L	1	02/05/13 15:59
Styrene	U		0.11	1.0	µg/L	1	02/05/13 15:59
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/05/13 15:59
Toluene	U		0.12	1.0	µg/L	1	02/05/13 15:59
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 15:59
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/05/13 15:59
Trichloroethene	2.6		0.14	1.0	µg/L	1	02/05/13 15:59
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/05/13 15:59
Vinyl chloride	U		0.17	1.0	µg/L	1	02/05/13 15:59
Xylenes, Total	U		0.29	3.0	µg/L	1	02/05/13 15:59
Surr: 1,2-Dichloroethane-d4	105			70-120	%REC	1	02/05/13 15:59
Surr: 4-Bromofluorobenzene	91.4			75-120	%REC	1	02/05/13 15:59
Surr: Dibromofluoromethane	116	S		85-115	%REC	1	02/05/13 15:59
Surr: Toluene-d8	93.9			85-120	%REC	1	02/05/13 15:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-002
Collection Date: 01/31/13 09:05 AM

Work Order: 1302057
Lab ID: 1302057-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260				Analyst: RS
<u>BatchID: R115839</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 16:03
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 16:03
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 16:03
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 16:03
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 16:03
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 16:03
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 16:03
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 16:03
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 16:03
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 16:03
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 16:03
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 16:03
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 16:03
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 16:03
2-Butanone	U		0.22	25	µg/L	1	02/04/13 16:03
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 16:03
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 16:03
Acetone	U		0.33	50	µg/L	1	02/04/13 16:03
Benzene	U		0.18	1.0	µg/L	1	02/04/13 16:03
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 16:03
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 16:03
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 16:03
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 16:03
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 16:03
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 16:03
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 16:03
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 16:03
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 16:03
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 16:03
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 16:03
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 16:03
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 16:03
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 16:03
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 16:03
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 16:03
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 16:03
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 16:03

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-002
Collection Date: 01/31/13 09:05 AM

Work Order: 1302057
Lab ID: 1302057-02
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 16:03
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 16:03
Styrene	U		0.11	1.0	µg/L	1	02/04/13 16:03
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 16:03
Toluene	U		0.12	1.0	µg/L	1	02/04/13 16:03
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 16:03
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 16:03
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 16:03
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 16:03
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 16:03
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 16:03
Surr: 1,2-Dichloroethane-d4	105			70-120	%REC	1	02/04/13 16:03
Surr: 4-Bromofluorobenzene	91.6			75-120	%REC	1	02/04/13 16:03
Surr: Dibromofluoromethane	115	S		85-115	%REC	1	02/04/13 16:03
Surr: Toluene-d8	94.6			85-120	%REC	1	02/04/13 16:03

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-003
Collection Date: 01/31/13 10:00 AM

Work Order: 1302057
Lab ID: 1302057-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270		Prep: SW3510 / 2/4/13		Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/08/13 23:36
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/08/13 23:36
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/08/13 23:36
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/08/13 23:36
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/08/13 23:36
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/08/13 23:36
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/08/13 23:36
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/08/13 23:36
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/08/13 23:36
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/08/13 23:36
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/08/13 23:36
2-Methylphenol	U		0.60	5.0	µg/L	1	02/08/13 23:36
2-Nitroaniline	U		0.11	20	µg/L	1	02/08/13 23:36
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/08/13 23:36
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/08/13 23:36
3-Nitroaniline	U		2.5	20	µg/L	1	02/08/13 23:36
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/08/13 23:36
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/08/13 23:36
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/08/13 23:36
4-Chloroaniline	U		1.1	10	µg/L	1	02/08/13 23:36
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/08/13 23:36
4-Methylphenol	U		0.55	5.0	µg/L	1	02/08/13 23:36
4-Nitroaniline	U		1.5	20	µg/L	1	02/08/13 23:36
4-Nitrophenol	U		1.6	20	µg/L	1	02/08/13 23:36
Acenaphthene	U		0.11	5.0	µg/L	1	02/08/13 23:36
Acenaphthylene	U		0.12	5.0	µg/L	1	02/08/13 23:36
Acetophenone	U		0.090	1.0	µg/L	1	02/08/13 23:36
Anthracene	U		0.72	5.0	µg/L	1	02/08/13 23:36
Atrazine	U		0.13	3.0	µg/L	1	02/08/13 23:36
Benzaldehyde	U		0.46	1.0	µg/L	1	02/08/13 23:36
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/08/13 23:36
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/08/13 23:36
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/08/13 23:36
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/08/13 23:36
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/08/13 23:36
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/08/13 23:36
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/08/13 23:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-003
Collection Date: 01/31/13 10:00 AM

Work Order: 1302057
Lab ID: 1302057-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/08/13 23:36
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/08/13 23:36
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/08/13 23:36
Caprolactam	U		4.7	10	µg/L	1	02/08/13 23:36
Carbazole	U		0.84	10	µg/L	1	02/08/13 23:36
Chrysene	U		0.71	1.0	µg/L	1	02/08/13 23:36
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/08/13 23:36
Dibenzofuran	U		0.11	4.0	µg/L	1	02/08/13 23:36
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/08/13 23:36
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/08/13 23:36
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/08/13 23:36
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/08/13 23:36
Fluoranthene	U		0.77	1.0	µg/L	1	02/08/13 23:36
Fluorene	U		0.10	5.0	µg/L	1	02/08/13 23:36
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/08/13 23:36
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/08/13 23:36
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/08/13 23:36
Hexachloroethane	U		0.13	5.0	µg/L	1	02/08/13 23:36
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/08/13 23:36
Isophorone	U		0.12	5.0	µg/L	1	02/08/13 23:36
Naphthalene	U		0.12	5.0	µg/L	1	02/08/13 23:36
Nitrobenzene	U		0.10	3.0	µg/L	1	02/08/13 23:36
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/08/13 23:36
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/08/13 23:36
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/08/13 23:36
Phenanthrene	U		0.86	2.0	µg/L	1	02/08/13 23:36
Phenol	U		0.094	5.0	µg/L	1	02/08/13 23:36
Pyrene	U		0.65	5.0	µg/L	1	02/08/13 23:36
Surr: 2,4,6-Tribromophenol	76.8			32-115	%REC	1	02/08/13 23:36
Surr: 2-Fluorobiphenyl	55.5			32-100	%REC	1	02/08/13 23:36
Surr: 2-Fluorophenol	33.6			22-59	%REC	1	02/08/13 23:36
Surr: 4-Terphenyl-d14	96.6			23-112	%REC	1	02/08/13 23:36
Surr: Nitrobenzene-d5	57.2			31-93	%REC	1	02/08/13 23:36
Surr: Phenol-d6	20.4			13-36	%REC	1	02/08/13 23:36

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: RS

BatchID: R115839

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 16:28
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 16:28
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 16:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-003
Collection Date: 01/31/13 10:00 AM

Work Order: 1302057
Lab ID: 1302057-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 16:28
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 16:28
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 16:28
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 16:28
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 16:28
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 16:28
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 16:28
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 16:28
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 16:28
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 16:28
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 16:28
2-Butanone	U		0.22	25	µg/L	1	02/04/13 16:28
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 16:28
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 16:28
Acetone	U		0.33	50	µg/L	1	02/04/13 16:28
Benzene	U		0.18	1.0	µg/L	1	02/04/13 16:28
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 16:28
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 16:28
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 16:28
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 16:28
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 16:28
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 16:28
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 16:28
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 16:28
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 16:28
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 16:28
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 16:28
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 16:28
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 16:28
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 16:28
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 16:28
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 16:28
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 16:28
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 16:28
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 16:28
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 16:28
Styrene	U		0.11	1.0	µg/L	1	02/04/13 16:28
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 16:28
Toluene	U		0.12	1.0	µg/L	1	02/04/13 16:28
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 16:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-003
Collection Date: 01/31/13 10:00 AM

Work Order: 1302057
Lab ID: 1302057-03
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 16:28
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 16:28
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 16:28
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 16:28
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 16:28
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/04/13 16:28
Surr: 4-Bromofluorobenzene	91.8			75-120	%REC	1	02/04/13 16:28
Surr: Dibromofluoromethane	118	S		85-115	%REC	1	02/04/13 16:28
Surr: Toluene-d8	93.2			85-120	%REC	1	02/04/13 16:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-004
Collection Date: 01/31/13 09:10 AM

Work Order: 1302057
Lab ID: 1302057-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260				Analyst: RS
<u>BatchID: R115839</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 16:54
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 16:54
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 16:54
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 16:54
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 16:54
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 16:54
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 16:54
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 16:54
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 16:54
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 16:54
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 16:54
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 16:54
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 16:54
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 16:54
2-Butanone	U		0.22	25	µg/L	1	02/04/13 16:54
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 16:54
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 16:54
Acetone	U		0.33	50	µg/L	1	02/04/13 16:54
Benzene	U		0.18	1.0	µg/L	1	02/04/13 16:54
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 16:54
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 16:54
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 16:54
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 16:54
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 16:54
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 16:54
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 16:54
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 16:54
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 16:54
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 16:54
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 16:54
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 16:54
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 16:54
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 16:54
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 16:54
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 16:54
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 16:54
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 16:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-004
Collection Date: 01/31/13 09:10 AM

Work Order: 1302057
Lab ID: 1302057-04
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 16:54
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 16:54
Styrene	U		0.11	1.0	µg/L	1	02/04/13 16:54
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 16:54
Toluene	U		0.12	1.0	µg/L	1	02/04/13 16:54
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 16:54
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 16:54
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 16:54
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 16:54
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 16:54
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 16:54
Surr: 1,2-Dichloroethane-d4	108			70-120	%REC	1	02/04/13 16:54
Surr: 4-Bromofluorobenzene	93.0			75-120	%REC	1	02/04/13 16:54
Surr: Dibromofluoromethane	119	S		85-115	%REC	1	02/04/13 16:54
Surr: Toluene-d8	92.9			85-120	%REC	1	02/04/13 16:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-005
Collection Date: 01/31/13 10:50 AM

Work Order: 1302057
Lab ID: 1302057-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/5/13	Analyst: LR
<u>BatchID:</u> 46247							
Mercury	U		0.0080	0.20	µg/L	1	02/05/13 14:59
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID:</u> 46294							
Aluminum	270		1.7	10	µg/L	1	02/08/13 15:18
Antimony	0.20	J	0.039	2.0	µg/L	1	02/08/13 15:18
Arsenic	1.2	J	0.72	5.0	µg/L	1	02/08/13 15:18
Barium	7.4		0.27	5.0	µg/L	1	02/08/13 15:18
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:18
Cadmium	0.097	J	0.034	1.0	µg/L	1	02/08/13 15:18
Chromium	0.88	J	0.042	5.0	µg/L	1	02/08/13 15:18
Cobalt	0.33	J	0.039	5.0	µg/L	1	02/08/13 15:18
Copper	2.9	J	0.12	4.0	µg/L	1	02/08/13 15:18
Iron	280		2.8	80	µg/L	1	02/08/13 15:18
Lead	0.21	J	0.027	3.0	µg/L	1	02/08/13 15:18
Manganese	4.9	J	0.11	5.0	µg/L	1	02/08/13 15:18
Nickel	1.9	J	0.17	5.0	µg/L	1	02/08/13 15:18
Selenium	0.96	J	0.41	5.0	µg/L	1	02/08/13 15:18
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:18
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:18
Vanadium	1.4	J	0.30	4.0	µg/L	1	02/08/13 15:18
Zinc	2.3	J	0.59	10	µg/L	1	02/08/13 15:18
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID:</u> 46215							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 12:02
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 12:02
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 12:02
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 12:02
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 12:02
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 12:02
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 12:02
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 12:02
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 12:02
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 12:02
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 12:02
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 12:02
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 12:02

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-005
Collection Date: 01/31/13 10:50 AM

Work Order: 1302057
Lab ID: 1302057-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 12:02
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 12:02
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 12:02
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 12:02
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 12:02
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 12:02
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 12:02
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 12:02
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 12:02
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 12:02
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 12:02
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 12:02
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 12:02
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 12:02
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 12:02
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 12:02
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 12:02
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 12:02
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 12:02
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 12:02
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 12:02
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 12:02
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 12:02
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 12:02
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 12:02
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 12:02
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 12:02
Caprolactam	U		4.7	10	µg/L	1	02/09/13 12:02
Carbazole	U		0.84	10	µg/L	1	02/09/13 12:02
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 12:02
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 12:02
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 12:02
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 12:02
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 12:02
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 12:02
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 12:02
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 12:02
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 12:02
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 12:02
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 12:02

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-005
Collection Date: 01/31/13 10:50 AM

Work Order: 1302057
Lab ID: 1302057-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 12:02
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 12:02
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 12:02
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 12:02
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 12:02
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 12:02
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 12:02
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 12:02
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 12:02
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 12:02
Phenol	U		0.094	5.0	µg/L	1	02/09/13 12:02
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 12:02
Surr: 2,4,6-Tribromophenol	72.7			32-115	%REC	1	02/09/13 12:02
Surr: 2-Fluorobiphenyl	65.6			32-100	%REC	1	02/09/13 12:02
Surr: 2-Fluorophenol	40.5			22-59	%REC	1	02/09/13 12:02
Surr: 4-Terphenyl-d14	94.1			23-112	%REC	1	02/09/13 12:02
Surr: Nitrobenzene-d5	70.4			31-93	%REC	1	02/09/13 12:02
Surr: Phenol-d6	23.6			13-36	%REC	1	02/09/13 12:02

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: RS

BatchID: R115839

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 17:20
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 17:20
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 17:20
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 17:20
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 17:20
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 17:20
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 17:20
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 17:20
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 17:20
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 17:20
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 17:20
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 17:20
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 17:20
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 17:20
2-Butanone	U		0.22	25	µg/L	1	02/04/13 17:20
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 17:20
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 17:20
Acetone	U		0.33	50	µg/L	1	02/04/13 17:20
Benzene	U		0.18	1.0	µg/L	1	02/04/13 17:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-005
Collection Date: 01/31/13 10:50 AM

Work Order: 1302057
Lab ID: 1302057-05
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 17:20
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 17:20
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 17:20
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 17:20
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 17:20
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 17:20
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 17:20
Chloroform	7.0		0.15	1.0	µg/L	1	02/04/13 17:20
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 17:20
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 17:20
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 17:20
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 17:20
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 17:20
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 17:20
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 17:20
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 17:20
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 17:20
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 17:20
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 17:20
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 17:20
Styrene	U		0.11	1.0	µg/L	1	02/04/13 17:20
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 17:20
Toluene	U		0.12	1.0	µg/L	1	02/04/13 17:20
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 17:20
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 17:20
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 17:20
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 17:20
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 17:20
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 17:20
Surr: 1,2-Dichloroethane-d4	108			70-120	%REC	1	02/04/13 17:20
Surr: 4-Bromofluorobenzene	90.8			75-120	%REC	1	02/04/13 17:20
Surr: Dibromofluoromethane	109			85-115	%REC	1	02/04/13 17:20
Surr: Toluene-d8	93.4			85-120	%REC	1	02/04/13 17:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-006
Collection Date: 01/31/13 11:05 AM

Work Order: 1302057
Lab ID: 1302057-06
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/5/13	Analyst: LR
<u>BatchID: 46247</u>							
Mercury	U		0.0080	0.20	µg/L	1	02/05/13 15:01
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID: 46294</u>							
Aluminum	300		1.7	10	µg/L	1	02/08/13 15:23
Antimony	0.21	J	0.039	2.0	µg/L	1	02/08/13 15:23
Arsenic	1.3	J	0.72	5.0	µg/L	1	02/08/13 15:23
Barium	7.9		0.27	5.0	µg/L	1	02/08/13 15:23
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:23
Cadmium	0.11	J	0.034	1.0	µg/L	1	02/08/13 15:23
Chromium	0.52	J	0.042	5.0	µg/L	1	02/08/13 15:23
Cobalt	0.35	J	0.039	5.0	µg/L	1	02/08/13 15:23
Copper	2.7	J	0.12	4.0	µg/L	1	02/08/13 15:23
Iron	300		2.8	80	µg/L	1	02/08/13 15:23
Lead	0.22	J	0.027	3.0	µg/L	1	02/08/13 15:23
Manganese	5.3		0.11	5.0	µg/L	1	02/08/13 15:23
Nickel	1.9	J	0.17	5.0	µg/L	1	02/08/13 15:23
Selenium	0.83	J	0.41	5.0	µg/L	1	02/08/13 15:23
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:23
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:23
Vanadium	1.7	J	0.30	4.0	µg/L	1	02/08/13 15:23
Zinc	2.4	J	0.59	10	µg/L	1	02/08/13 15:23
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 12:28
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 12:28
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 12:28
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 12:28
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 12:28
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 12:28
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 12:28
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 12:28
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 12:28
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 12:28
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 12:28
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 12:28
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 12:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-006
Collection Date: 01/31/13 11:05 AM

Work Order: 1302057
Lab ID: 1302057-06
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 12:28
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 12:28
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 12:28
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 12:28
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 12:28
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 12:28
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 12:28
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 12:28
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 12:28
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 12:28
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 12:28
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 12:28
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 12:28
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 12:28
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 12:28
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 12:28
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 12:28
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 12:28
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 12:28
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 12:28
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 12:28
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 12:28
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 12:28
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 12:28
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 12:28
Bis(2-ethylhexyl)phthalate	0.67	J	0.12	5.0	µg/L	1	02/09/13 12:28
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 12:28
Caprolactam	U		4.7	10	µg/L	1	02/09/13 12:28
Carbazole	U		0.84	10	µg/L	1	02/09/13 12:28
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 12:28
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 12:28
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 12:28
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 12:28
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 12:28
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 12:28
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 12:28
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 12:28
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 12:28
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 12:28
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 12:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-006
Collection Date: 01/31/13 11:05 AM

Work Order: 1302057
Lab ID: 1302057-06
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 12:28
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 12:28
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 12:28
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 12:28
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 12:28
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 12:28
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 12:28
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 12:28
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 12:28
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 12:28
Phenol	U		0.094	5.0	µg/L	1	02/09/13 12:28
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 12:28
Surr: 2,4,6-Tribromophenol	78.3			32-115	%REC	1	02/09/13 12:28
Surr: 2-Fluorobiphenyl	69.9			32-100	%REC	1	02/09/13 12:28
Surr: 2-Fluorophenol	41.8			22-59	%REC	1	02/09/13 12:28
Surr: 4-Terphenyl-d14	99.3			23-112	%REC	1	02/09/13 12:28
Surr: Nitrobenzene-d5	74.4			31-93	%REC	1	02/09/13 12:28
Surr: Phenol-d6	24.6			13-36	%REC	1	02/09/13 12:28

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: RS

BatchID: R115839

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 17:45
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 17:45
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 17:45
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 17:45
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 17:45
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 17:45
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 17:45
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 17:45
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 17:45
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 17:45
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 17:45
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 17:45
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 17:45
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 17:45
2-Butanone	U		0.22	25	µg/L	1	02/04/13 17:45
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 17:45
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 17:45
Acetone	U		0.33	50	µg/L	1	02/04/13 17:45
Benzene	U		0.18	1.0	µg/L	1	02/04/13 17:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-006
Collection Date: 01/31/13 11:05 AM

Work Order: 1302057
Lab ID: 1302057-06
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 17:45
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 17:45
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 17:45
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 17:45
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 17:45
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 17:45
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 17:45
Chloroform	6.9		0.15	1.0	µg/L	1	02/04/13 17:45
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 17:45
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 17:45
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 17:45
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 17:45
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 17:45
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 17:45
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 17:45
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 17:45
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 17:45
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 17:45
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 17:45
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 17:45
Styrene	U		0.11	1.0	µg/L	1	02/04/13 17:45
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 17:45
Toluene	U		0.12	1.0	µg/L	1	02/04/13 17:45
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 17:45
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 17:45
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 17:45
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 17:45
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 17:45
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 17:45
Surr: 1,2-Dichloroethane-d4	105			70-120	%REC	1	02/04/13 17:45
Surr: 4-Bromofluorobenzene	92.4			75-120	%REC	1	02/04/13 17:45
Surr: Dibromofluoromethane	109			85-115	%REC	1	02/04/13 17:45
Surr: Toluene-d8	93.4			85-120	%REC	1	02/04/13 17:45

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-007
Collection Date: 01/31/13 11:00 AM

Work Order: 1302057
Lab ID: 1302057-07
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/5/13	Analyst: LR
<u>BatchID:</u> 46247							
Mercury	U		0.0080	0.20	µg/L	1	02/05/13 15:03
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID:</u> 46294							
Aluminum	160		1.7	10	µg/L	1	02/08/13 15:28
Antimony	0.056	J	0.039	2.0	µg/L	1	02/08/13 15:28
Arsenic	15		0.72	5.0	µg/L	1	02/08/13 15:28
Barium	36		0.27	5.0	µg/L	1	02/08/13 15:28
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:28
Cadmium	0.065	J	0.034	1.0	µg/L	1	02/08/13 15:28
Chromium	0.51	J	0.042	5.0	µg/L	1	02/08/13 15:28
Cobalt	0.51	J	0.039	5.0	µg/L	1	02/08/13 15:28
Copper	1.0	J	0.12	4.0	µg/L	1	02/08/13 15:28
Iron	730		2.8	80	µg/L	1	02/08/13 15:28
Lead	0.87	J	0.027	3.0	µg/L	1	02/08/13 15:28
Manganese	170		0.11	5.0	µg/L	1	02/08/13 15:28
Nickel	4.5	J	0.17	5.0	µg/L	1	02/08/13 15:28
Selenium	U		0.41	5.0	µg/L	1	02/08/13 15:28
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:28
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:28
Vanadium	1.1	J	0.30	4.0	µg/L	1	02/08/13 15:28
Zinc	3.2	J	0.59	10	µg/L	1	02/08/13 15:28
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID:</u> 46215							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 12:54
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 12:54
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 12:54
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 12:54
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 12:54
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 12:54
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 12:54
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 12:54
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 12:54
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 12:54
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 12:54
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 12:54
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 12:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-007
Collection Date: 01/31/13 11:00 AM

Work Order: 1302057
Lab ID: 1302057-07
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 12:54
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 12:54
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 12:54
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 12:54
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 12:54
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 12:54
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 12:54
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 12:54
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 12:54
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 12:54
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 12:54
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 12:54
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 12:54
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 12:54
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 12:54
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 12:54
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 12:54
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 12:54
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 12:54
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 12:54
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 12:54
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 12:54
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 12:54
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 12:54
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 12:54
Bis(2-ethylhexyl)phthalate	0.54	J	0.12	5.0	µg/L	1	02/09/13 12:54
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 12:54
Caprolactam	U		4.7	10	µg/L	1	02/09/13 12:54
Carbazole	U		0.84	10	µg/L	1	02/09/13 12:54
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 12:54
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 12:54
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 12:54
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 12:54
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 12:54
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 12:54
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 12:54
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 12:54
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 12:54
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 12:54
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 12:54

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-007
Collection Date: 01/31/13 11:00 AM

Work Order: 1302057
Lab ID: 1302057-07
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 12:54
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 12:54
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 12:54
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 12:54
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 12:54
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 12:54
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 12:54
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 12:54
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 12:54
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 12:54
Phenol	U		0.094	5.0	µg/L	1	02/09/13 12:54
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 12:54
Surr: 2,4,6-Tribromophenol	74.3			32-115	%REC	1	02/09/13 12:54
Surr: 2-Fluorobiphenyl	54.4			32-100	%REC	1	02/09/13 12:54
Surr: 2-Fluorophenol	33.9			22-59	%REC	1	02/09/13 12:54
Surr: 4-Terphenyl-d14	92.4			23-112	%REC	1	02/09/13 12:54
Surr: Nitrobenzene-d5	58.9			31-93	%REC	1	02/09/13 12:54
Surr: Phenol-d6	20.1			13-36	%REC	1	02/09/13 12:54
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS	
BatchID: R115839							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 18:11
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 18:11
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 18:11
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 18:11
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 18:11
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 18:11
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 18:11
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 18:11
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 18:11
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 18:11
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 18:11
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 18:11
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 18:11
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 18:11
2-Butanone	U		0.22	25	µg/L	1	02/04/13 18:11
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 18:11
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 18:11
Acetone	U		0.33	50	µg/L	1	02/04/13 18:11
Benzene	U		0.18	1.0	µg/L	1	02/04/13 18:11

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-007
Collection Date: 01/31/13 11:00 AM

Work Order: 1302057
Lab ID: 1302057-07
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 18:11
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 18:11
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 18:11
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 18:11
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 18:11
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 18:11
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 18:11
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 18:11
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 18:11
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 18:11
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 18:11
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 18:11
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 18:11
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 18:11
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 18:11
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 18:11
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 18:11
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 18:11
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 18:11
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 18:11
Styrene	U		0.11	1.0	µg/L	1	02/04/13 18:11
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 18:11
Toluene	U		0.12	1.0	µg/L	1	02/04/13 18:11
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 18:11
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 18:11
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 18:11
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 18:11
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 18:11
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 18:11
Surr: 1,2-Dichloroethane-d4	104			70-120	%REC	1	02/04/13 18:11
Surr: 4-Bromofluorobenzene	90.0			75-120	%REC	1	02/04/13 18:11
Surr: Dibromofluoromethane	110			85-115	%REC	1	02/04/13 18:11
Surr: Toluene-d8	92.8			85-120	%REC	1	02/04/13 18:11

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-008
Collection Date: 01/31/13 01:25 PM

Work Order: 1302057
Lab ID: 1302057-08
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/5/13	Analyst: LR
<u>BatchID:</u> 46247							
Mercury	U		0.0080	0.20	µg/L	1	02/05/13 15:05
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID:</u> 46294							
Aluminum	520		1.7	10	µg/L	1	02/08/13 15:33
Antimony	0.11	J	0.039	2.0	µg/L	1	02/08/13 15:33
Arsenic	U		0.72	5.0	µg/L	1	02/08/13 15:33
Barium	15		0.27	5.0	µg/L	1	02/08/13 15:33
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:33
Cadmium	U		0.034	1.0	µg/L	1	02/08/13 15:33
Chromium	1.5	J	0.042	5.0	µg/L	1	02/08/13 15:33
Cobalt	0.38	J	0.039	5.0	µg/L	1	02/08/13 15:33
Copper	0.69	J	0.12	4.0	µg/L	1	02/08/13 15:33
Iron	610		2.8	80	µg/L	1	02/08/13 15:33
Lead	0.36	J	0.027	3.0	µg/L	1	02/08/13 15:33
Manganese	15		0.11	5.0	µg/L	1	02/08/13 15:33
Nickel	2.0	J	0.17	5.0	µg/L	1	02/08/13 15:33
Selenium	4.3	J	0.41	5.0	µg/L	1	02/08/13 15:33
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:33
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:33
Vanadium	1.2	J	0.30	4.0	µg/L	1	02/08/13 15:33
Zinc	2.2	J	0.59	10	µg/L	1	02/08/13 15:33
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID:</u> 46215							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 01:20
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 01:20
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 01:20
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 01:20
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 01:20
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 01:20
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 01:20
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 01:20
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 01:20
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 01:20
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 01:20
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 01:20
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 01:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-008
Collection Date: 01/31/13 01:25 PM

Work Order: 1302057
Lab ID: 1302057-08
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 01:20
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 01:20
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 01:20
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 01:20
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 01:20
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 01:20
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 01:20
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 01:20
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 01:20
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 01:20
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 01:20
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 01:20
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 01:20
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 01:20
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 01:20
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 01:20
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 01:20
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 01:20
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 01:20
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 01:20
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 01:20
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 01:20
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 01:20
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 01:20
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 01:20
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 01:20
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 01:20
Caprolactam	U		4.7	10	µg/L	1	02/09/13 01:20
Carbazole	U		0.84	10	µg/L	1	02/09/13 01:20
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 01:20
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 01:20
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 01:20
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 01:20
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 01:20
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 01:20
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 01:20
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 01:20
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 01:20
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 01:20
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 01:20

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-008
Collection Date: 01/31/13 01:25 PM

Work Order: 1302057
Lab ID: 1302057-08
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 01:20
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 01:20
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 01:20
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 01:20
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 01:20
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 01:20
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 01:20
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 01:20
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 01:20
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 01:20
Phenol	U		0.094	5.0	µg/L	1	02/09/13 01:20
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 01:20
Surr: 2,4,6-Tribromophenol	70.6			32-115	%REC	1	02/09/13 01:20
Surr: 2-Fluorobiphenyl	66.1			32-100	%REC	1	02/09/13 01:20
Surr: 2-Fluorophenol	41.7			22-59	%REC	1	02/09/13 01:20
Surr: 4-Terphenyl-d14	91.8			23-112	%REC	1	02/09/13 01:20
Surr: Nitrobenzene-d5	71.5			31-93	%REC	1	02/09/13 01:20
Surr: Phenol-d6	24.5			13-36	%REC	1	02/09/13 01:20
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS	
BatchID: R115839							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 18:36
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 18:36
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 18:36
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 18:36
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 18:36
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 18:36
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 18:36
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 18:36
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 18:36
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 18:36
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 18:36
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 18:36
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 18:36
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 18:36
2-Butanone	U		0.22	25	µg/L	1	02/04/13 18:36
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 18:36
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 18:36
Acetone	U		0.33	50	µg/L	1	02/04/13 18:36
Benzene	U		0.18	1.0	µg/L	1	02/04/13 18:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-CB-008
Collection Date: 01/31/13 01:25 PM

Work Order: 1302057
Lab ID: 1302057-08
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 18:36
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 18:36
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 18:36
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 18:36
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 18:36
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 18:36
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 18:36
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 18:36
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 18:36
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 18:36
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 18:36
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 18:36
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 18:36
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 18:36
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 18:36
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 18:36
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 18:36
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 18:36
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 18:36
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 18:36
Styrene	U		0.11	1.0	µg/L	1	02/04/13 18:36
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 18:36
Toluene	U		0.12	1.0	µg/L	1	02/04/13 18:36
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 18:36
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 18:36
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 18:36
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 18:36
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 18:36
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 18:36
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/04/13 18:36
Surr: 4-Bromofluorobenzene	90.2			75-120	%REC	1	02/04/13 18:36
Surr: Dibromofluoromethane	111			85-115	%REC	1	02/04/13 18:36
Surr: Toluene-d8	91.6			85-120	%REC	1	02/04/13 18:36

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-009
Collection Date: 01/31/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-09
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/5/13	Analyst: LR
<u>BatchID:</u> 46247							
Mercury	U		0.0080	0.20	µg/L	1	02/05/13 15:07
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID:</u> 46294							
Aluminum	670		1.7	10	µg/L	1	02/08/13 15:38
Antimony	0.37	J	0.039	2.0	µg/L	1	02/08/13 15:38
Arsenic	1.2	J	0.72	5.0	µg/L	1	02/08/13 15:38
Barium	57		0.27	5.0	µg/L	1	02/08/13 15:38
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:38
Cadmium	U		0.034	1.0	µg/L	1	02/08/13 15:38
Chromium	2.1	J	0.042	5.0	µg/L	1	02/08/13 15:38
Cobalt	0.88	J	0.039	5.0	µg/L	1	02/08/13 15:38
Copper	1.8	J	0.12	4.0	µg/L	1	02/08/13 15:38
Iron	910		2.8	80	µg/L	1	02/08/13 15:38
Lead	0.77	J	0.027	3.0	µg/L	1	02/08/13 15:38
Manganese	140		0.11	5.0	µg/L	1	02/08/13 15:38
Nickel	4.2	J	0.17	5.0	µg/L	1	02/08/13 15:38
Selenium	0.94	J	0.41	5.0	µg/L	1	02/08/13 15:38
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:38
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:38
Vanadium	2.6	J	0.30	4.0	µg/L	1	02/08/13 15:38
Zinc	49		0.59	10	µg/L	1	02/08/13 15:38
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID:</u> 46215							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 01:46
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 01:46
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 01:46
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 01:46
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 01:46
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 01:46
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 01:46
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 01:46
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 01:46
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 01:46
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 01:46
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 01:46
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 01:46

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-009
Collection Date: 01/31/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-09
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 01:46
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 01:46
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 01:46
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 01:46
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 01:46
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 01:46
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 01:46
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 01:46
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 01:46
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 01:46
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 01:46
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 01:46
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 01:46
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 01:46
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 01:46
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 01:46
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 01:46
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 01:46
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 01:46
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 01:46
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 01:46
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 01:46
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 01:46
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 01:46
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 01:46
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 01:46
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 01:46
Caprolactam	U		4.7	10	µg/L	1	02/09/13 01:46
Carbazole	U		0.84	10	µg/L	1	02/09/13 01:46
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 01:46
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 01:46
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 01:46
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 01:46
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 01:46
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 01:46
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 01:46
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 01:46
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 01:46
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 01:46
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 01:46

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-009
Collection Date: 01/31/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-09
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 01:46
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 01:46
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 01:46
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 01:46
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 01:46
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 01:46
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 01:46
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 01:46
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 01:46
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 01:46
Phenol	U		0.094	5.0	µg/L	1	02/09/13 01:46
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 01:46
Surr: 2,4,6-Tribromophenol	80.3			32-115	%REC	1	02/09/13 01:46
Surr: 2-Fluorobiphenyl	65.9			32-100	%REC	1	02/09/13 01:46
Surr: 2-Fluorophenol	39.6			22-59	%REC	1	02/09/13 01:46
Surr: 4-Terphenyl-d14	87.8			23-112	%REC	1	02/09/13 01:46
Surr: Nitrobenzene-d5	68.9			31-93	%REC	1	02/09/13 01:46
Surr: Phenol-d6	23.7			13-36	%REC	1	02/09/13 01:46

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: RS

BatchID: R115839

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 19:02
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 19:02
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 19:02
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 19:02
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 19:02
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 19:02
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 19:02
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 19:02
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 19:02
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 19:02
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 19:02
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 19:02
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 19:02
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 19:02
2-Butanone	U		0.22	25	µg/L	1	02/04/13 19:02
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 19:02
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 19:02
Acetone	U		0.33	50	µg/L	1	02/04/13 19:02
Benzene	U		0.18	1.0	µg/L	1	02/04/13 19:02

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-009
Collection Date: 01/31/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-09
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 19:02
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 19:02
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 19:02
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 19:02
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 19:02
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 19:02
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 19:02
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 19:02
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 19:02
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 19:02
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 19:02
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 19:02
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 19:02
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 19:02
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 19:02
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 19:02
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 19:02
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 19:02
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 19:02
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 19:02
Styrene	U		0.11	1.0	µg/L	1	02/04/13 19:02
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 19:02
Toluene	U		0.12	1.0	µg/L	1	02/04/13 19:02
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 19:02
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 19:02
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 19:02
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 19:02
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 19:02
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 19:02
Surr: 1,2-Dichloroethane-d4	107			70-120	%REC	1	02/04/13 19:02
Surr: 4-Bromofluorobenzene	90.2			75-120	%REC	1	02/04/13 19:02
Surr: Dibromofluoromethane	113			85-115	%REC	1	02/04/13 19:02
Surr: Toluene-d8	91.5			85-120	%REC	1	02/04/13 19:02

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-010
Collection Date: 01/31/13 02:35 PM

Work Order: 1302057
Lab ID: 1302057-10
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270		Prep: SW3510 / 2/4/13		Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 02:12
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 02:12
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 02:12
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 02:12
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 02:12
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 02:12
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 02:12
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 02:12
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 02:12
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 02:12
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 02:12
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 02:12
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 02:12
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 02:12
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 02:12
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 02:12
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 02:12
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 02:12
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 02:12
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 02:12
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 02:12
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 02:12
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 02:12
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 02:12
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 02:12
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 02:12
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 02:12
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 02:12
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 02:12
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 02:12
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 02:12
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 02:12
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 02:12
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 02:12
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 02:12
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 02:12
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 02:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-010
Collection Date: 01/31/13 02:35 PM

Work Order: 1302057
Lab ID: 1302057-10
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 02:12
Bis(2-ethylhexyl)phthalate	0.51	J	0.12	5.0	µg/L	1	02/09/13 02:12
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 02:12
Caprolactam	U		4.7	10	µg/L	1	02/09/13 02:12
Carbazole	U		0.84	10	µg/L	1	02/09/13 02:12
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 02:12
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 02:12
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 02:12
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 02:12
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 02:12
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 02:12
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 02:12
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 02:12
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 02:12
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 02:12
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 02:12
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 02:12
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 02:12
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 02:12
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 02:12
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 02:12
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 02:12
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 02:12
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 02:12
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 02:12
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 02:12
Phenol	U		0.094	5.0	µg/L	1	02/09/13 02:12
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 02:12
Surr: 2,4,6-Tribromophenol	64.7			32-115	%REC	1	02/09/13 02:12
Surr: 2-Fluorobiphenyl	46.4			32-100	%REC	1	02/09/13 02:12
Surr: 2-Fluorophenol	29.0			22-59	%REC	1	02/09/13 02:12
Surr: 4-Terphenyl-d14	82.4			23-112	%REC	1	02/09/13 02:12
Surr: Nitrobenzene-d5	49.0			31-93	%REC	1	02/09/13 02:12
Surr: Phenol-d6	17.6			13-36	%REC	1	02/09/13 02:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-011
Collection Date: 02/01/13 08:20 AM

Work Order: 1302057
Lab ID: 1302057-11
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/5/13	Analyst: LR
<u>BatchID:</u> 46247							
Mercury	U		0.0080	0.20	µg/L	1	02/05/13 15:09
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID:</u> 46294							
Aluminum	40		1.7	10	µg/L	1	02/08/13 15:43
Antimony	0.90	J	0.039	2.0	µg/L	1	02/08/13 15:43
Arsenic	11		0.72	5.0	µg/L	1	02/08/13 15:43
Barium	50		0.27	5.0	µg/L	1	02/08/13 15:43
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:43
Cadmium	U		0.034	1.0	µg/L	1	02/08/13 15:43
Chromium	0.65	J	0.042	5.0	µg/L	1	02/08/13 15:43
Cobalt	0.29	J	0.039	5.0	µg/L	1	02/08/13 15:43
Copper	0.75	J	0.12	4.0	µg/L	1	02/08/13 15:43
Iron	5,700		2.8	80	µg/L	1	02/08/13 15:43
Lead	0.40	J	0.027	3.0	µg/L	1	02/08/13 15:43
Manganese	53		0.11	5.0	µg/L	1	02/08/13 15:43
Nickel	2.7	J	0.17	5.0	µg/L	1	02/08/13 15:43
Selenium	U		0.41	5.0	µg/L	1	02/08/13 15:43
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:43
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:43
Vanadium	U		0.30	4.0	µg/L	1	02/08/13 15:43
Zinc	3.1	J	0.59	10	µg/L	1	02/08/13 15:43
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID:</u> 46215							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 02:38
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 02:38
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 02:38
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 02:38
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 02:38
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 02:38
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 02:38
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 02:38
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 02:38
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 02:38
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 02:38
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 02:38
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 02:38

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-011
Collection Date: 02/01/13 08:20 AM

Work Order: 1302057
Lab ID: 1302057-11
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 02:38
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 02:38
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 02:38
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 02:38
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 02:38
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 02:38
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 02:38
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 02:38
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 02:38
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 02:38
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 02:38
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 02:38
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 02:38
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 02:38
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 02:38
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 02:38
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 02:38
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 02:38
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 02:38
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 02:38
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 02:38
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 02:38
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 02:38
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 02:38
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 02:38
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 02:38
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 02:38
Caprolactam	U		4.7	10	µg/L	1	02/09/13 02:38
Carbazole	U		0.84	10	µg/L	1	02/09/13 02:38
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 02:38
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 02:38
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 02:38
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 02:38
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 02:38
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 02:38
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 02:38
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 02:38
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 02:38
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 02:38
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 02:38

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-011
Collection Date: 02/01/13 08:20 AM

Work Order: 1302057
Lab ID: 1302057-11
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 02:38
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 02:38
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 02:38
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 02:38
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 02:38
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 02:38
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 02:38
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 02:38
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 02:38
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 02:38
Phenol	U		0.094	5.0	µg/L	1	02/09/13 02:38
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 02:38
Surr: 2,4,6-Tribromophenol	73.7			32-115	%REC	1	02/09/13 02:38
Surr: 2-Fluorobiphenyl	50.6			32-100	%REC	1	02/09/13 02:38
Surr: 2-Fluorophenol	31.3			22-59	%REC	1	02/09/13 02:38
Surr: 4-Terphenyl-d14	93.4			23-112	%REC	1	02/09/13 02:38
Surr: Nitrobenzene-d5	52.4			31-93	%REC	1	02/09/13 02:38
Surr: Phenol-d6	19.0			13-36	%REC	1	02/09/13 02:38
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: RS	
BatchID: R115839							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 19:28
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 19:28
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 19:28
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 19:28
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 19:28
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 19:28
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 19:28
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 19:28
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 19:28
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 19:28
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 19:28
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 19:28
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 19:28
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 19:28
2-Butanone	U		0.22	25	µg/L	1	02/04/13 19:28
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 19:28
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 19:28
Acetone	1.9	J	0.33	50	µg/L	1	02/04/13 19:28
Benzene	U		0.18	1.0	µg/L	1	02/04/13 19:28

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-011
Collection Date: 02/01/13 08:20 AM

Work Order: 1302057
Lab ID: 1302057-11
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 19:28
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 19:28
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 19:28
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 19:28
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 19:28
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 19:28
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 19:28
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 19:28
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 19:28
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 19:28
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 19:28
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 19:28
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 19:28
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 19:28
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 19:28
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 19:28
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 19:28
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 19:28
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 19:28
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 19:28
Styrene	U		0.11	1.0	µg/L	1	02/04/13 19:28
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 19:28
Toluene	U		0.12	1.0	µg/L	1	02/04/13 19:28
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 19:28
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 19:28
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 19:28
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 19:28
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 19:28
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 19:28
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/04/13 19:28
Surr: 4-Bromofluorobenzene	92.0			75-120	%REC	1	02/04/13 19:28
Surr: Dibromofluoromethane	112			85-115	%REC	1	02/04/13 19:28
Surr: Toluene-d8	93.2			85-120	%REC	1	02/04/13 19:28

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Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-012
Collection Date: 02/01/13 08:45 AM

Work Order: 1302057
Lab ID: 1302057-12
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270	Prep: SW3510 / 2/4/13			Analyst: RM
BatchID: 46215							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 03:04
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 03:04
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 03:04
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 03:04
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 03:04
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 03:04
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 03:04
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 03:04
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 03:04
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 03:04
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 03:04
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 03:04
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 03:04
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 03:04
3,3' -Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 03:04
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 03:04
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 03:04
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 03:04
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 03:04
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 03:04
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 03:04
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 03:04
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 03:04
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 03:04
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 03:04
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 03:04
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 03:04
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 03:04
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 03:04
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 03:04
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 03:04
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 03:04
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 03:04
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 03:04
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 03:04
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 03:04
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 03:04

Note: See Qualifiers page for a list of qualifiers and their definitions.

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Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-012
Collection Date: 02/01/13 08:45 AM

Work Order: 1302057
Lab ID: 1302057-12
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 03:04
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 03:04
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 03:04
Caprolactam	U		4.7	10	µg/L	1	02/09/13 03:04
Carbazole	U		0.84	10	µg/L	1	02/09/13 03:04
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 03:04
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 03:04
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 03:04
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 03:04
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 03:04
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 03:04
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 03:04
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 03:04
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 03:04
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 03:04
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 03:04
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 03:04
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 03:04
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 03:04
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 03:04
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 03:04
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 03:04
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 03:04
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 03:04
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 03:04
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 03:04
Phenol	U		0.094	5.0	µg/L	1	02/09/13 03:04
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 03:04
Surr: 2,4,6-Tribromophenol	74.6			32-115	%REC	1	02/09/13 03:04
Surr: 2-Fluorobiphenyl	65.8			32-100	%REC	1	02/09/13 03:04
Surr: 2-Fluorophenol	37.4			22-59	%REC	1	02/09/13 03:04
Surr: 4-Terphenyl-d14	70.7			23-112	%REC	1	02/09/13 03:04
Surr: Nitrobenzene-d5	69.3			31-93	%REC	1	02/09/13 03:04
Surr: Phenol-d6	23.4			13-36	%REC	1	02/09/13 03:04

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: AK

BatchID: R115882

1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/05/13 16:50
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/05/13 16:50
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/05/13 16:50

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ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-012
Collection Date: 02/01/13 08:45 AM

Work Order: 1302057
Lab ID: 1302057-12
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,1-Dichloroethane	30		0.11	1.0	µg/L	1	02/05/13 16:50
1,1-Dichloroethene	17		0.12	1.0	µg/L	1	02/05/13 16:50
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/05/13 16:50
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/05/13 16:50
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/05/13 16:50
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 16:50
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/05/13 16:50
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/05/13 16:50
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/05/13 16:50
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/05/13 16:50
2-Butanone	U		0.22	25	µg/L	1	02/05/13 16:50
2-Hexanone	U		0.12	50	µg/L	1	02/05/13 16:50
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/05/13 16:50
Acetone	U		0.33	50	µg/L	1	02/05/13 16:50
Benzene	U		0.18	1.0	µg/L	1	02/05/13 16:50
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/05/13 16:50
Bromoform	U		0.15	1.0	µg/L	1	02/05/13 16:50
Bromomethane	U		0.21	5.0	µg/L	1	02/05/13 16:50
Carbon disulfide	U		0.17	5.0	µg/L	1	02/05/13 16:50
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/05/13 16:50
Chlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 16:50
Chloroethane	U		0.46	5.0	µg/L	1	02/05/13 16:50
Chloroform	5.5		0.15	1.0	µg/L	1	02/05/13 16:50
Chloromethane	U		0.16	5.0	µg/L	1	02/05/13 16:50
cis-1,2-Dichloroethene	13		0.11	1.0	µg/L	1	02/05/13 16:50
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/05/13 16:50
Cyclohexane	U		0.22	1.0	µg/L	1	02/05/13 16:50
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/05/13 16:50
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/05/13 16:50
Ethylbenzene	U		0.13	1.0	µg/L	1	02/05/13 16:50
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/05/13 16:50
Methyl acetate	U		0.19	10	µg/L	1	02/05/13 16:50
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/05/13 16:50
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/05/13 16:50
Methylene chloride	U		0.19	5.0	µg/L	1	02/05/13 16:50
Styrene	U		0.11	1.0	µg/L	1	02/05/13 16:50
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/05/13 16:50
Toluene	U		0.12	1.0	µg/L	1	02/05/13 16:50
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 16:50
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/05/13 16:50

Note: See Qualifiers page for a list of qualifiers and their definitions.

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Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-012
Collection Date: 02/01/13 08:45 AM

Work Order: 1302057
Lab ID: 1302057-12
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/05/13 16:50
Vinyl chloride	U		0.17	1.0	µg/L	1	02/05/13 16:50
Xylenes, Total	U		0.29	3.0	µg/L	1	02/05/13 16:50
Surr: 1,2-Dichloroethane-d4	105			70-120	%REC	1	02/05/13 16:50
Surr: 4-Bromofluorobenzene	91.6			75-120	%REC	1	02/05/13 16:50
Surr: Dibromofluoromethane	122	S		85-115	%REC	1	02/05/13 16:50
Surr: Toluene-d8	94.7			85-120	%REC	1	02/05/13 16:50
BatchID: R115940							
1,1,1-Trichloroethane	250		2.7	20	µg/L	20	02/06/13 15:27
Trichloroethene	750		2.7	20	µg/L	20	02/06/13 15:27
Surr: 1,2-Dichloroethane-d4	102			70-120	%REC	20	02/06/13 15:27
Surr: 4-Bromofluorobenzene	90.2			75-120	%REC	20	02/06/13 15:27
Surr: Dibromofluoromethane	104			85-115	%REC	20	02/06/13 15:27
Surr: Toluene-d8	95.0			85-120	%REC	20	02/06/13 15:27

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-013
Collection Date: 02/01/13 09:20 AM

Work Order: 1302057
Lab ID: 1302057-13
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270		Prep: SW3510 / 2/4/13		Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/08/13 21:52
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/08/13 21:52
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/08/13 21:52
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/08/13 21:52
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/08/13 21:52
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/08/13 21:52
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/08/13 21:52
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/08/13 21:52
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/08/13 21:52
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/08/13 21:52
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/08/13 21:52
2-Methylphenol	U		0.60	5.0	µg/L	1	02/08/13 21:52
2-Nitroaniline	U		0.11	20	µg/L	1	02/08/13 21:52
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/08/13 21:52
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/08/13 21:52
3-Nitroaniline	U		2.5	20	µg/L	1	02/08/13 21:52
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/08/13 21:52
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/08/13 21:52
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/08/13 21:52
4-Chloroaniline	U		1.1	10	µg/L	1	02/08/13 21:52
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/08/13 21:52
4-Methylphenol	U		0.55	5.0	µg/L	1	02/08/13 21:52
4-Nitroaniline	U		1.5	20	µg/L	1	02/08/13 21:52
4-Nitrophenol	U		1.6	20	µg/L	1	02/08/13 21:52
Acenaphthene	U		0.11	5.0	µg/L	1	02/08/13 21:52
Acenaphthylene	U		0.12	5.0	µg/L	1	02/08/13 21:52
Acetophenone	U		0.090	1.0	µg/L	1	02/08/13 21:52
Anthracene	U		0.72	5.0	µg/L	1	02/08/13 21:52
Atrazine	U		0.13	3.0	µg/L	1	02/08/13 21:52
Benzaldehyde	U		0.46	1.0	µg/L	1	02/08/13 21:52
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/08/13 21:52
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/08/13 21:52
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/08/13 21:52
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/08/13 21:52
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/08/13 21:52
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/08/13 21:52
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/08/13 21:52

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-013
Collection Date: 02/01/13 09:20 AM

Work Order: 1302057
Lab ID: 1302057-13
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/08/13 21:52
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/08/13 21:52
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/08/13 21:52
Caprolactam	U		4.7	10	µg/L	1	02/08/13 21:52
Carbazole	U		0.84	10	µg/L	1	02/08/13 21:52
Chrysene	U		0.71	1.0	µg/L	1	02/08/13 21:52
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/08/13 21:52
Dibenzofuran	U		0.11	4.0	µg/L	1	02/08/13 21:52
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/08/13 21:52
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/08/13 21:52
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/08/13 21:52
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/08/13 21:52
Fluoranthene	U		0.77	1.0	µg/L	1	02/08/13 21:52
Fluorene	U		0.10	5.0	µg/L	1	02/08/13 21:52
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/08/13 21:52
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/08/13 21:52
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/08/13 21:52
Hexachloroethane	U		0.13	5.0	µg/L	1	02/08/13 21:52
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/08/13 21:52
Isophorone	U		0.12	5.0	µg/L	1	02/08/13 21:52
Naphthalene	U		0.12	5.0	µg/L	1	02/08/13 21:52
Nitrobenzene	U		0.10	3.0	µg/L	1	02/08/13 21:52
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/08/13 21:52
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/08/13 21:52
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/08/13 21:52
Phenanthrene	U		0.86	2.0	µg/L	1	02/08/13 21:52
Phenol	U		0.094	5.0	µg/L	1	02/08/13 21:52
Pyrene	U		0.65	5.0	µg/L	1	02/08/13 21:52
Surr: 2,4,6-Tribromophenol	72.5			32-115	%REC	1	02/08/13 21:52
Surr: 2-Fluorobiphenyl	68.6			32-100	%REC	1	02/08/13 21:52
Surr: 2-Fluorophenol	39.6			22-59	%REC	1	02/08/13 21:52
Surr: 4-Terphenyl-d14	84.1			23-112	%REC	1	02/08/13 21:52
Surr: Nitrobenzene-d5	73.6			31-93	%REC	1	02/08/13 21:52
Surr: Phenol-d6	24.3			13-36	%REC	1	02/08/13 21:52

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: AK

BatchID: R115882

1,1,1-Trichloroethane	2.8		0.14	1.0	µg/L	1	02/05/13 16:25
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/05/13 16:25
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/05/13 16:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-013
Collection Date: 02/01/13 09:20 AM

Work Order: 1302057
Lab ID: 1302057-13
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/05/13 16:25
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/05/13 16:25
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 16:25
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/05/13 16:25
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/05/13 16:25
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/05/13 16:25
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 16:25
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/05/13 16:25
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/05/13 16:25
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/05/13 16:25
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/05/13 16:25
2-Butanone	U		0.22	25	µg/L	1	02/05/13 16:25
2-Hexanone	U		0.12	50	µg/L	1	02/05/13 16:25
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/05/13 16:25
Acetone	U		0.33	50	µg/L	1	02/05/13 16:25
Benzene	U		0.18	1.0	µg/L	1	02/05/13 16:25
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/05/13 16:25
Bromoform	U		0.15	1.0	µg/L	1	02/05/13 16:25
Bromomethane	U		0.21	5.0	µg/L	1	02/05/13 16:25
Carbon disulfide	U		0.17	5.0	µg/L	1	02/05/13 16:25
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/05/13 16:25
Chlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 16:25
Chloroethane	U		0.46	5.0	µg/L	1	02/05/13 16:25
Chloroform	U		0.15	1.0	µg/L	1	02/05/13 16:25
Chloromethane	U		0.16	5.0	µg/L	1	02/05/13 16:25
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/05/13 16:25
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/05/13 16:25
Cyclohexane	U		0.22	1.0	µg/L	1	02/05/13 16:25
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/05/13 16:25
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/05/13 16:25
Ethylbenzene	U		0.13	1.0	µg/L	1	02/05/13 16:25
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/05/13 16:25
Methyl acetate	U		0.19	10	µg/L	1	02/05/13 16:25
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/05/13 16:25
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/05/13 16:25
Methylene chloride	U		0.19	5.0	µg/L	1	02/05/13 16:25
Styrene	U		0.11	1.0	µg/L	1	02/05/13 16:25
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/05/13 16:25
Toluene	U		0.12	1.0	µg/L	1	02/05/13 16:25
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 16:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-013
Collection Date: 02/01/13 09:20 AM

Work Order: 1302057
Lab ID: 1302057-13
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/05/13 16:25
Trichloroethene	22		0.14	1.0	µg/L	1	02/05/13 16:25
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/05/13 16:25
Vinyl chloride	U		0.17	1.0	µg/L	1	02/05/13 16:25
Xylenes, Total	U		0.29	3.0	µg/L	1	02/05/13 16:25
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/05/13 16:25
Surr: 4-Bromofluorobenzene	92.8			75-120	%REC	1	02/05/13 16:25
Surr: Dibromofluoromethane	105			85-115	%REC	1	02/05/13 16:25
Surr: Toluene-d8	95.2			85-120	%REC	1	02/05/13 16:25

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-014
Collection Date: 02/01/13 10:40 AM

Work Order: 1302057
Lab ID: 1302057-14
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270		Prep: SW3510 / 2/4/13		Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 03:30
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 03:30
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 03:30
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 03:30
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 03:30
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 03:30
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 03:30
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 03:30
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 03:30
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 03:30
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 03:30
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 03:30
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 03:30
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 03:30
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 03:30
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 03:30
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 03:30
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 03:30
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 03:30
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 03:30
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 03:30
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 03:30
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 03:30
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 03:30
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 03:30
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 03:30
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 03:30
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 03:30
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 03:30
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 03:30
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 03:30
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 03:30
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 03:30
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 03:30
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 03:30
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 03:30
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 03:30

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-014
Collection Date: 02/01/13 10:40 AM

Work Order: 1302057
Lab ID: 1302057-14
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 03:30
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 03:30
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 03:30
Caprolactam	U		4.7	10	µg/L	1	02/09/13 03:30
Carbazole	U		0.84	10	µg/L	1	02/09/13 03:30
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 03:30
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 03:30
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 03:30
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 03:30
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 03:30
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 03:30
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 03:30
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 03:30
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 03:30
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 03:30
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 03:30
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 03:30
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 03:30
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 03:30
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 03:30
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 03:30
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 03:30
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 03:30
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 03:30
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 03:30
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 03:30
Phenol	U		0.094	5.0	µg/L	1	02/09/13 03:30
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 03:30
Surr: 2,4,6-Tribromophenol	72.3			32-115	%REC	1	02/09/13 03:30
Surr: 2-Fluorobiphenyl	67.9			32-100	%REC	1	02/09/13 03:30
Surr: 2-Fluorophenol	39.4			22-59	%REC	1	02/09/13 03:30
Surr: 4-Terphenyl-d14	98.6			23-112	%REC	1	02/09/13 03:30
Surr: Nitrobenzene-d5	73.2			31-93	%REC	1	02/09/13 03:30
Surr: Phenol-d6	22.8			13-36	%REC	1	02/09/13 03:30

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: RS

BatchID: R115940

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 15:01
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 15:01
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 15:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-014
Collection Date: 02/01/13 10:40 AM

Work Order: 1302057
Lab ID: 1302057-14
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 15:01
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 15:01
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 15:01
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 15:01
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 15:01
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 15:01
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 15:01
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 15:01
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 15:01
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 15:01
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 15:01
2-Butanone	U		0.22	25	µg/L	1	02/06/13 15:01
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 15:01
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 15:01
Acetone	U		0.33	50	µg/L	1	02/06/13 15:01
Benzene	U		0.18	1.0	µg/L	1	02/06/13 15:01
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 15:01
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 15:01
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 15:01
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 15:01
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 15:01
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 15:01
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 15:01
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 15:01
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 15:01
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 15:01
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 15:01
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 15:01
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 15:01
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 15:01
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 15:01
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 15:01
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 15:01
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 15:01
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 15:01
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 15:01
Styrene	U		0.11	1.0	µg/L	1	02/06/13 15:01
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 15:01
Toluene	U		0.12	1.0	µg/L	1	02/06/13 15:01
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 15:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-014
Collection Date: 02/01/13 10:40 AM

Work Order: 1302057
Lab ID: 1302057-14
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 15:01
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 15:01
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 15:01
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 15:01
Xylenes, Total	U		0.29	3.0	µg/L	1	02/06/13 15:01
Surr: 1,2-Dichloroethane-d4	102			70-120	%REC	1	02/06/13 15:01
Surr: 4-Bromofluorobenzene	89.6			75-120	%REC	1	02/06/13 15:01
Surr: Dibromofluoromethane	106			85-115	%REC	1	02/06/13 15:01
Surr: Toluene-d8	93.7			85-120	%REC	1	02/06/13 15:01

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-015
Collection Date: 02/01/13 09:15 AM

Work Order: 1302057
Lab ID: 1302057-15
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
PCBS							
			SW8082			Prep: SW3510 / 2/5/13	Analyst: JD
<u>BatchID: 46230</u>							
Aroclor 1016	U		0.13	0.20	µg/L	1	02/05/13 17:48
Aroclor 1221	U		0.13	0.20	µg/L	1	02/05/13 17:48
Aroclor 1232	U		0.13	0.20	µg/L	1	02/05/13 17:48
Aroclor 1242	U		0.13	0.20	µg/L	1	02/05/13 17:48
Aroclor 1248	U		0.13	0.20	µg/L	1	02/05/13 17:48
Aroclor 1254	U		0.025	0.20	µg/L	1	02/05/13 17:48
Aroclor 1260	U		0.025	0.20	µg/L	1	02/05/13 17:48
Surr: Decachlorobiphenyl	80.0			40-140	%REC	1	02/05/13 17:48
Surr: Tetrachloro-m-xylene	55.0			25-140	%REC	1	02/05/13 17:48
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	3.2	J	0.095	5.0	µg/L	1	02/09/13 03:55
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 03:55
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 03:55
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 03:55
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 03:55
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 03:55
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 03:55
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 03:55
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 03:55
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 03:55
2-Methylnaphthalene	58		0.13	5.0	µg/L	1	02/09/13 03:55
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 03:55
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 03:55
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 03:55
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 03:55
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 03:55
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 03:55
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 03:55
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 03:55
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 03:55
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 03:55
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 03:55
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 03:55
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 03:55
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 03:55
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 03:55

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-015
Collection Date: 02/01/13 09:15 AM

Work Order: 1302057
Lab ID: 1302057-15
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 03:55
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 03:55
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 03:55
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 03:55
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 03:55
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 03:55
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 03:55
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 03:55
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 03:55
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 03:55
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 03:55
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 03:55
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 03:55
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 03:55
Caprolactam	U		4.7	10	µg/L	1	02/09/13 03:55
Carbazole	U		0.84	10	µg/L	1	02/09/13 03:55
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 03:55
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 03:55
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 03:55
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 03:55
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 03:55
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 03:55
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 03:55
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 03:55
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 03:55
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 03:55
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 03:55
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 03:55
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 03:55
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 03:55
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 03:55
Naphthalene	58		0.12	5.0	µg/L	1	02/09/13 03:55
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 03:55
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 03:55
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 03:55
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 03:55
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 03:55
Phenol	U		0.094	5.0	µg/L	1	02/09/13 03:55
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 03:55
<i>Surr: 2,4,6-Tribromophenol</i>	<i>81.3</i>			<i>32-115</i>	<i>%REC</i>	1	02/09/13 03:55

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-015
Collection Date: 02/01/13 09:15 AM

Work Order: 1302057
Lab ID: 1302057-15
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorobiphenyl	60.4			32-100	%REC	1	02/09/13 03:55
Surr: 2-Fluorophenol	37.7			22-59	%REC	1	02/09/13 03:55
Surr: 4-Terphenyl-d14	89.0			23-112	%REC	1	02/09/13 03:55
Surr: Nitrobenzene-d5	65.2			31-93	%REC	1	02/09/13 03:55
Surr: Phenol-d6	22.4			13-36	%REC	1	02/09/13 03:55

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-016
Collection Date: 02/01/13 10:35 AM

Work Order: 1302057
Lab ID: 1302057-16
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/5/13	Analyst: LR
<u>BatchID: 46247</u>							
Mercury	U		0.0080	0.20	µg/L	1	02/05/13 15:11
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID: 46294</u>							
Aluminum	320		1.7	10	µg/L	1	02/08/13 15:48
Antimony	0.80	J	0.039	2.0	µg/L	1	02/08/13 15:48
Arsenic	3.3	J	0.72	5.0	µg/L	1	02/08/13 15:48
Barium	5.3		0.27	5.0	µg/L	1	02/08/13 15:48
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:48
Cadmium	U		0.034	1.0	µg/L	1	02/08/13 15:48
Chromium	3.6	J	0.042	5.0	µg/L	1	02/08/13 15:48
Cobalt	0.50	J	0.039	5.0	µg/L	1	02/08/13 15:48
Copper	2.6	J	0.12	4.0	µg/L	1	02/08/13 15:48
Iron	390		2.8	80	µg/L	1	02/08/13 15:48
Lead	0.37	J	0.027	3.0	µg/L	1	02/08/13 15:48
Manganese	5.7		0.11	5.0	µg/L	1	02/08/13 15:48
Nickel	0.99	J	0.17	5.0	µg/L	1	02/08/13 15:48
Selenium	1.3	J	0.41	5.0	µg/L	1	02/08/13 15:48
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:48
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:48
Vanadium	6.6		0.30	4.0	µg/L	1	02/08/13 15:48
Zinc	4.5	J	0.59	10	µg/L	1	02/08/13 15:48
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/4/13	Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 04:21
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 04:21
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 04:21
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 04:21
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 04:21
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 04:21
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 04:21
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 04:21
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 04:21
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 04:21
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 04:21
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 04:21
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 04:21

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-016
Collection Date: 02/01/13 10:35 AM

Work Order: 1302057
Lab ID: 1302057-16
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 04:21
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 04:21
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 04:21
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 04:21
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 04:21
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 04:21
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 04:21
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 04:21
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 04:21
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 04:21
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 04:21
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 04:21
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 04:21
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 04:21
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 04:21
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 04:21
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 04:21
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 04:21
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 04:21
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 04:21
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 04:21
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 04:21
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 04:21
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 04:21
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 04:21
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 04:21
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 04:21
Caprolactam	U		4.7	10	µg/L	1	02/09/13 04:21
Carbazole	U		0.84	10	µg/L	1	02/09/13 04:21
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 04:21
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 04:21
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 04:21
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 04:21
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 04:21
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 04:21
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 04:21
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 04:21
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 04:21
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 04:21
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 04:21

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-016
Collection Date: 02/01/13 10:35 AM

Work Order: 1302057
Lab ID: 1302057-16
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 04:21
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 04:21
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 04:21
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 04:21
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 04:21
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 04:21
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 04:21
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 04:21
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 04:21
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 04:21
Phenol	U		0.094	5.0	µg/L	1	02/09/13 04:21
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 04:21
Surr: 2,4,6-Tribromophenol	81.6			32-115	%REC	1	02/09/13 04:21
Surr: 2-Fluorobiphenyl	72.3			32-100	%REC	1	02/09/13 04:21
Surr: 2-Fluorophenol	42.5			22-59	%REC	1	02/09/13 04:21
Surr: 4-Terphenyl-d14	94.2			23-112	%REC	1	02/09/13 04:21
Surr: Nitrobenzene-d5	76.0			31-93	%REC	1	02/09/13 04:21
Surr: Phenol-d6	25.7			13-36	%REC	1	02/09/13 04:21
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: AK	
BatchID: R115882							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/05/13 17:41
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/05/13 17:41
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/05/13 17:41
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/05/13 17:41
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/05/13 17:41
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 17:41
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/05/13 17:41
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/05/13 17:41
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/05/13 17:41
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 17:41
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/05/13 17:41
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/05/13 17:41
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/05/13 17:41
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/05/13 17:41
2-Butanone	U		0.22	25	µg/L	1	02/05/13 17:41
2-Hexanone	U		0.12	50	µg/L	1	02/05/13 17:41
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/05/13 17:41
Acetone	U		0.33	50	µg/L	1	02/05/13 17:41
Benzene	U		0.18	1.0	µg/L	1	02/05/13 17:41

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-016
Collection Date: 02/01/13 10:35 AM

Work Order: 1302057
Lab ID: 1302057-16
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/05/13 17:41
Bromoform	U		0.15	1.0	µg/L	1	02/05/13 17:41
Bromomethane	U		0.21	5.0	µg/L	1	02/05/13 17:41
Carbon disulfide	U		0.17	5.0	µg/L	1	02/05/13 17:41
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/05/13 17:41
Chlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 17:41
Chloroethane	U		0.46	5.0	µg/L	1	02/05/13 17:41
Chloroform	U		0.15	1.0	µg/L	1	02/05/13 17:41
Chloromethane	U		0.16	5.0	µg/L	1	02/05/13 17:41
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/05/13 17:41
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/05/13 17:41
Cyclohexane	U		0.22	1.0	µg/L	1	02/05/13 17:41
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/05/13 17:41
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/05/13 17:41
Ethylbenzene	U		0.13	1.0	µg/L	1	02/05/13 17:41
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/05/13 17:41
Methyl acetate	U		0.19	10	µg/L	1	02/05/13 17:41
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/05/13 17:41
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/05/13 17:41
Methylene chloride	U		0.19	5.0	µg/L	1	02/05/13 17:41
Styrene	U		0.11	1.0	µg/L	1	02/05/13 17:41
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/05/13 17:41
Toluene	U		0.12	1.0	µg/L	1	02/05/13 17:41
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 17:41
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/05/13 17:41
Trichloroethene	U		0.14	1.0	µg/L	1	02/05/13 17:41
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/05/13 17:41
Vinyl chloride	U		0.17	1.0	µg/L	1	02/05/13 17:41
Xylenes, Total	U		0.29	3.0	µg/L	1	02/05/13 17:41
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/05/13 17:41
Surr: 4-Bromofluorobenzene	91.0			75-120	%REC	1	02/05/13 17:41
Surr: Dibromofluoromethane	108			85-115	%REC	1	02/05/13 17:41
Surr: Toluene-d8	93.7			85-120	%REC	1	02/05/13 17:41

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-017
Collection Date: 02/01/13 01:40 PM

Work Order: 1302057
Lab ID: 1302057-17
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270	Prep: SW3510 / 2/4/13			Analyst: RM
BatchID: 46215							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 04:47
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 04:47
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 04:47
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 04:47
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 04:47
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 04:47
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 04:47
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 04:47
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 04:47
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 04:47
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 04:47
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 04:47
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 04:47
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 04:47
3,3' -Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 04:47
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 04:47
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 04:47
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 04:47
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 04:47
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 04:47
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 04:47
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 04:47
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 04:47
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 04:47
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 04:47
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 04:47
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 04:47
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 04:47
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 04:47
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 04:47
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 04:47
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 04:47
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 04:47
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 04:47
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 04:47
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 04:47
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 04:47

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-013113-DR-017
Collection Date: 02/01/13 01:40 PM

Work Order: 1302057
Lab ID: 1302057-17
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 04:47
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 04:47
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 04:47
Caprolactam	U		4.7	10	µg/L	1	02/09/13 04:47
Carbazole	U		0.84	10	µg/L	1	02/09/13 04:47
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 04:47
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 04:47
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 04:47
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 04:47
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 04:47
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 04:47
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 04:47
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 04:47
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 04:47
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 04:47
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 04:47
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 04:47
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 04:47
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 04:47
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 04:47
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 04:47
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 04:47
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 04:47
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 04:47
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 04:47
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 04:47
Phenol	U		0.094	5.0	µg/L	1	02/09/13 04:47
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 04:47
Surr: 2,4,6-Tribromophenol	81.9			32-115	%REC	1	02/09/13 04:47
Surr: 2-Fluorobiphenyl	69.9			32-100	%REC	1	02/09/13 04:47
Surr: 2-Fluorophenol	39.7			22-59	%REC	1	02/09/13 04:47
Surr: 4-Terphenyl-d14	89.9			23-112	%REC	1	02/09/13 04:47
Surr: Nitrobenzene-d5	72.7			31-93	%REC	1	02/09/13 04:47
Surr: Phenol-d6	23.3			13-36	%REC	1	02/09/13 04:47

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-018
Collection Date: 02/01/13 11:35 AM

Work Order: 1302057
Lab ID: 1302057-18
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270		Prep: SW3510 / 2/4/13		Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 05:13
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 05:13
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 05:13
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 05:13
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 05:13
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 05:13
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 05:13
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 05:13
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 05:13
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 05:13
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 05:13
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 05:13
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 05:13
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 05:13
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 05:13
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 05:13
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 05:13
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 05:13
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 05:13
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 05:13
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 05:13
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 05:13
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 05:13
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 05:13
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 05:13
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 05:13
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 05:13
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 05:13
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 05:13
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 05:13
Benzo(a)anthracene	1.7		0.57	1.0	µg/L	1	02/09/13 05:13
Benzo(a)pyrene	1.8		0.10	1.0	µg/L	1	02/09/13 05:13
Benzo(b)fluoranthene	2.1		0.74	1.0	µg/L	1	02/09/13 05:13
Benzo(g,h,i)perylene	1.3		0.70	1.0	µg/L	1	02/09/13 05:13
Benzo(k)fluoranthene	0.88	J	0.17	1.0	µg/L	1	02/09/13 05:13
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 05:13
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 05:13

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-018
Collection Date: 02/01/13 11:35 AM

Work Order: 1302057
Lab ID: 1302057-18
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 05:13
Bis(2-ethylhexyl)phthalate	0.53	J	0.12	5.0	µg/L	1	02/09/13 05:13
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 05:13
Caprolactam	U		4.7	10	µg/L	1	02/09/13 05:13
Carbazole	U		0.84	10	µg/L	1	02/09/13 05:13
Chrysene	1.9		0.71	1.0	µg/L	1	02/09/13 05:13
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 05:13
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 05:13
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 05:13
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 05:13
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 05:13
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 05:13
Fluoranthene	3.9		0.77	1.0	µg/L	1	02/09/13 05:13
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 05:13
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 05:13
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 05:13
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 05:13
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 05:13
Indeno(1,2,3-cd)pyrene	1.1	J	0.69	2.0	µg/L	1	02/09/13 05:13
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 05:13
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 05:13
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 05:13
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 05:13
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 05:13
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 05:13
Phenanthrene	1.9	J	0.86	2.0	µg/L	1	02/09/13 05:13
Phenol	U		0.094	5.0	µg/L	1	02/09/13 05:13
Pyrene	3.1	J	0.65	5.0	µg/L	1	02/09/13 05:13
Surr: 2,4,6-Tribromophenol	70.7			32-115	%REC	1	02/09/13 05:13
Surr: 2-Fluorobiphenyl	55.0			32-100	%REC	1	02/09/13 05:13
Surr: 2-Fluorophenol	34.1			22-59	%REC	1	02/09/13 05:13
Surr: 4-Terphenyl-d14	83.6			23-112	%REC	1	02/09/13 05:13
Surr: Nitrobenzene-d5	56.7			31-93	%REC	1	02/09/13 05:13
Surr: Phenol-d6	20.7			13-36	%REC	1	02/09/13 05:13

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: AK

BatchID: R115882

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/05/13 18:07
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/05/13 18:07
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/05/13 18:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-018
Collection Date: 02/01/13 11:35 AM

Work Order: 1302057
Lab ID: 1302057-18
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/05/13 18:07
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/05/13 18:07
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 18:07
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/05/13 18:07
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/05/13 18:07
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/05/13 18:07
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 18:07
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/05/13 18:07
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/05/13 18:07
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/05/13 18:07
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/05/13 18:07
2-Butanone	U		0.22	25	µg/L	1	02/05/13 18:07
2-Hexanone	U		0.12	50	µg/L	1	02/05/13 18:07
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/05/13 18:07
Acetone	U		0.33	50	µg/L	1	02/05/13 18:07
Benzene	U		0.18	1.0	µg/L	1	02/05/13 18:07
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/05/13 18:07
Bromoform	U		0.15	1.0	µg/L	1	02/05/13 18:07
Bromomethane	U		0.21	5.0	µg/L	1	02/05/13 18:07
Carbon disulfide	U		0.17	5.0	µg/L	1	02/05/13 18:07
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/05/13 18:07
Chlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 18:07
Chloroethane	U		0.46	5.0	µg/L	1	02/05/13 18:07
Chloroform	U		0.15	1.0	µg/L	1	02/05/13 18:07
Chloromethane	U		0.16	5.0	µg/L	1	02/05/13 18:07
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/05/13 18:07
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/05/13 18:07
Cyclohexane	U		0.22	1.0	µg/L	1	02/05/13 18:07
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/05/13 18:07
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/05/13 18:07
Ethylbenzene	U		0.13	1.0	µg/L	1	02/05/13 18:07
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/05/13 18:07
Methyl acetate	U		0.19	10	µg/L	1	02/05/13 18:07
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/05/13 18:07
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/05/13 18:07
Methylene chloride	U		0.19	5.0	µg/L	1	02/05/13 18:07
Styrene	U		0.11	1.0	µg/L	1	02/05/13 18:07
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/05/13 18:07
Toluene	U		0.12	1.0	µg/L	1	02/05/13 18:07
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 18:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-018
Collection Date: 02/01/13 11:35 AM

Work Order: 1302057
Lab ID: 1302057-18
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/05/13 18:07
Trichloroethene	U		0.14	1.0	µg/L	1	02/05/13 18:07
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/05/13 18:07
Vinyl chloride	U		0.17	1.0	µg/L	1	02/05/13 18:07
Xylenes, Total	U		0.29	3.0	µg/L	1	02/05/13 18:07
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/05/13 18:07
Surr: 4-Bromofluorobenzene	90.2			75-120	%REC	1	02/05/13 18:07
Surr: Dibromofluoromethane	113			85-115	%REC	1	02/05/13 18:07
Surr: Toluene-d8	92.2			85-120	%REC	1	02/05/13 18:07

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-019
Collection Date: 02/01/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-19
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270		Prep: SW3510 / 2/4/13		Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 05:39
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 05:39
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 05:39
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 05:39
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 05:39
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 05:39
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 05:39
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 05:39
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 05:39
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 05:39
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 05:39
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 05:39
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 05:39
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 05:39
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 05:39
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 05:39
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 05:39
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 05:39
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 05:39
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 05:39
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 05:39
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 05:39
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 05:39
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 05:39
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 05:39
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 05:39
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 05:39
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 05:39
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 05:39
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 05:39
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 05:39
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 05:39
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 05:39
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 05:39
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 05:39
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 05:39
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 05:39

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-019
Collection Date: 02/01/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-19
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 05:39
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 05:39
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 05:39
Caprolactam	U		4.7	10	µg/L	1	02/09/13 05:39
Carbazole	U		0.84	10	µg/L	1	02/09/13 05:39
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 05:39
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 05:39
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 05:39
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 05:39
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 05:39
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 05:39
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 05:39
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 05:39
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 05:39
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 05:39
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 05:39
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 05:39
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 05:39
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 05:39
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 05:39
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 05:39
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 05:39
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 05:39
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 05:39
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 05:39
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 05:39
Phenol	U		0.094	5.0	µg/L	1	02/09/13 05:39
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 05:39
Surr: 2,4,6-Tribromophenol	71.0			32-115	%REC	1	02/09/13 05:39
Surr: 2-Fluorobiphenyl	47.2			32-100	%REC	1	02/09/13 05:39
Surr: 2-Fluorophenol	28.9			22-59	%REC	1	02/09/13 05:39
Surr: 4-Terphenyl-d14	90.1			23-112	%REC	1	02/09/13 05:39
Surr: Nitrobenzene-d5	49.2			31-93	%REC	1	02/09/13 05:39
Surr: Phenol-d6	17.5			13-36	%REC	1	02/09/13 05:39

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: AK

BatchID: R115882

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/05/13 18:33
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/05/13 18:33
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/05/13 18:33

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-019
Collection Date: 02/01/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-19
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/05/13 18:33
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/05/13 18:33
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 18:33
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/05/13 18:33
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/05/13 18:33
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/05/13 18:33
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 18:33
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/05/13 18:33
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/05/13 18:33
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/05/13 18:33
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/05/13 18:33
2-Butanone	U		0.22	25	µg/L	1	02/05/13 18:33
2-Hexanone	U		0.12	50	µg/L	1	02/05/13 18:33
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/05/13 18:33
Acetone	U		0.33	50	µg/L	1	02/05/13 18:33
Benzene	U		0.18	1.0	µg/L	1	02/05/13 18:33
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/05/13 18:33
Bromoform	U		0.15	1.0	µg/L	1	02/05/13 18:33
Bromomethane	U		0.21	5.0	µg/L	1	02/05/13 18:33
Carbon disulfide	U		0.17	5.0	µg/L	1	02/05/13 18:33
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/05/13 18:33
Chlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 18:33
Chloroethane	U		0.46	5.0	µg/L	1	02/05/13 18:33
Chloroform	U		0.15	1.0	µg/L	1	02/05/13 18:33
Chloromethane	U		0.16	5.0	µg/L	1	02/05/13 18:33
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/05/13 18:33
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/05/13 18:33
Cyclohexane	U		0.22	1.0	µg/L	1	02/05/13 18:33
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/05/13 18:33
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/05/13 18:33
Ethylbenzene	U		0.13	1.0	µg/L	1	02/05/13 18:33
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/05/13 18:33
Methyl acetate	U		0.19	10	µg/L	1	02/05/13 18:33
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/05/13 18:33
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/05/13 18:33
Methylene chloride	U		0.19	5.0	µg/L	1	02/05/13 18:33
Styrene	U		0.11	1.0	µg/L	1	02/05/13 18:33
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/05/13 18:33
Toluene	U		0.12	1.0	µg/L	1	02/05/13 18:33
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 18:33

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-019
Collection Date: 02/01/13 01:45 PM

Work Order: 1302057
Lab ID: 1302057-19
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/05/13 18:33
Trichloroethene	U		0.14	1.0	µg/L	1	02/05/13 18:33
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/05/13 18:33
Vinyl chloride	U		0.17	1.0	µg/L	1	02/05/13 18:33
Xylenes, Total	U		0.29	3.0	µg/L	1	02/05/13 18:33
Surr: 1,2-Dichloroethane-d4	107			70-120	%REC	1	02/05/13 18:33
Surr: 4-Bromofluorobenzene	90.8			75-120	%REC	1	02/05/13 18:33
Surr: Dibromofluoromethane	115			85-115	%REC	1	02/05/13 18:33
Surr: Toluene-d8	92.4			85-120	%REC	1	02/05/13 18:33

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: TB-17322-020113
Collection Date: 02/01/13

Work Order: 1302057
Lab ID: 1302057-20
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260				Analyst: RS
<u>BatchID: R115839</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/04/13 15:12
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/04/13 15:12
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/04/13 15:12
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/04/13 15:12
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/04/13 15:12
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 15:12
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/04/13 15:12
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/04/13 15:12
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/04/13 15:12
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 15:12
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/04/13 15:12
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/04/13 15:12
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/04/13 15:12
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/04/13 15:12
2-Butanone	U		0.22	25	µg/L	1	02/04/13 15:12
2-Hexanone	U		0.12	50	µg/L	1	02/04/13 15:12
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/04/13 15:12
Acetone	U		0.33	50	µg/L	1	02/04/13 15:12
Benzene	U		0.18	1.0	µg/L	1	02/04/13 15:12
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/04/13 15:12
Bromoform	U		0.15	1.0	µg/L	1	02/04/13 15:12
Bromomethane	U		0.21	5.0	µg/L	1	02/04/13 15:12
Carbon disulfide	U		0.17	5.0	µg/L	1	02/04/13 15:12
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/04/13 15:12
Chlorobenzene	U		0.13	1.0	µg/L	1	02/04/13 15:12
Chloroethane	U		0.46	5.0	µg/L	1	02/04/13 15:12
Chloroform	U		0.15	1.0	µg/L	1	02/04/13 15:12
Chloromethane	U		0.16	5.0	µg/L	1	02/04/13 15:12
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/04/13 15:12
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/04/13 15:12
Cyclohexane	U		0.22	1.0	µg/L	1	02/04/13 15:12
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/04/13 15:12
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/04/13 15:12
Ethylbenzene	U		0.13	1.0	µg/L	1	02/04/13 15:12
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/04/13 15:12
Methyl acetate	U		0.19	10	µg/L	1	02/04/13 15:12
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/04/13 15:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: TB-17322-020113
Collection Date: 02/01/13

Work Order: 1302057
Lab ID: 1302057-20
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/04/13 15:12
Methylene chloride	U		0.19	5.0	µg/L	1	02/04/13 15:12
Styrene	U		0.11	1.0	µg/L	1	02/04/13 15:12
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/04/13 15:12
Toluene	U		0.12	1.0	µg/L	1	02/04/13 15:12
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/04/13 15:12
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/04/13 15:12
Trichloroethene	U		0.14	1.0	µg/L	1	02/04/13 15:12
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/04/13 15:12
Vinyl chloride	U		0.17	1.0	µg/L	1	02/04/13 15:12
Xylenes, Total	U		0.29	3.0	µg/L	1	02/04/13 15:12
Surr: 1,2-Dichloroethane-d4	105			70-120	%REC	1	02/04/13 15:12
Surr: 4-Bromofluorobenzene	90.7			75-120	%REC	1	02/04/13 15:12
Surr: Dibromofluoromethane	105			85-115	%REC	1	02/04/13 15:12
Surr: Toluene-d8	94.8			85-120	%REC	1	02/04/13 15:12

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-020
Collection Date: 02/01/13 02:35 PM

Work Order: 1302057
Lab ID: 1302057-21
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
SEMI-VOLATILE ORGANIC COMPOUNDS			SW8270		Prep: SW3510 / 2/4/13		Analyst: RM
<u>BatchID: 46215</u>							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 06:05
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 06:05
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 06:05
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 06:05
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 06:05
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 06:05
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 06:05
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 06:05
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 06:05
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 06:05
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 06:05
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 06:05
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 06:05
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 06:05
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 06:05
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 06:05
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 06:05
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 06:05
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 06:05
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 06:05
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 06:05
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 06:05
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 06:05
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 06:05
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 06:05
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 06:05
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 06:05
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 06:05
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 06:05
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 06:05
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 06:05
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 06:05
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 06:05
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 06:05
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 06:05
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 06:05
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 06:05

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-020
Collection Date: 02/01/13 02:35 PM

Work Order: 1302057
Lab ID: 1302057-21
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 06:05
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 06:05
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 06:05
Caprolactam	U		4.7	10	µg/L	1	02/09/13 06:05
Carbazole	U		0.84	10	µg/L	1	02/09/13 06:05
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 06:05
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 06:05
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 06:05
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 06:05
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 06:05
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 06:05
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 06:05
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 06:05
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 06:05
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 06:05
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 06:05
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 06:05
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 06:05
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 06:05
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 06:05
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 06:05
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 06:05
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 06:05
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 06:05
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 06:05
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 06:05
Phenol	U		0.094	5.0	µg/L	1	02/09/13 06:05
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 06:05
Surr: 2,4,6-Tribromophenol	78.9			32-115	%REC	1	02/09/13 06:05
Surr: 2-Fluorobiphenyl	66.0			32-100	%REC	1	02/09/13 06:05
Surr: 2-Fluorophenol	38.6			22-59	%REC	1	02/09/13 06:05
Surr: 4-Terphenyl-d14	94.2			23-112	%REC	1	02/09/13 06:05
Surr: Nitrobenzene-d5	69.3			31-93	%REC	1	02/09/13 06:05
Surr: Phenol-d6	22.5			13-36	%REC	1	02/09/13 06:05

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: AK

BatchID: R115882

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/05/13 18:58
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/05/13 18:58
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/05/13 18:58

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-020
Collection Date: 02/01/13 02:35 PM

Work Order: 1302057
Lab ID: 1302057-21
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/05/13 18:58
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/05/13 18:58
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 18:58
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/05/13 18:58
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/05/13 18:58
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/05/13 18:58
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 18:58
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/05/13 18:58
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/05/13 18:58
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/05/13 18:58
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/05/13 18:58
2-Butanone	U		0.22	25	µg/L	1	02/05/13 18:58
2-Hexanone	U		0.12	50	µg/L	1	02/05/13 18:58
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/05/13 18:58
Acetone	U		0.33	50	µg/L	1	02/05/13 18:58
Benzene	U		0.18	1.0	µg/L	1	02/05/13 18:58
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/05/13 18:58
Bromoform	U		0.15	1.0	µg/L	1	02/05/13 18:58
Bromomethane	U		0.21	5.0	µg/L	1	02/05/13 18:58
Carbon disulfide	U		0.17	5.0	µg/L	1	02/05/13 18:58
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/05/13 18:58
Chlorobenzene	U		0.13	1.0	µg/L	1	02/05/13 18:58
Chloroethane	U		0.46	5.0	µg/L	1	02/05/13 18:58
Chloroform	U		0.15	1.0	µg/L	1	02/05/13 18:58
Chloromethane	U		0.16	5.0	µg/L	1	02/05/13 18:58
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/05/13 18:58
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/05/13 18:58
Cyclohexane	U		0.22	1.0	µg/L	1	02/05/13 18:58
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/05/13 18:58
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/05/13 18:58
Ethylbenzene	U		0.13	1.0	µg/L	1	02/05/13 18:58
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/05/13 18:58
Methyl acetate	U		0.19	10	µg/L	1	02/05/13 18:58
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/05/13 18:58
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/05/13 18:58
Methylene chloride	U		0.19	5.0	µg/L	1	02/05/13 18:58
Styrene	U		0.11	1.0	µg/L	1	02/05/13 18:58
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/05/13 18:58
Toluene	U		0.12	1.0	µg/L	1	02/05/13 18:58
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/05/13 18:58

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T03Y13)
Sample ID: GW-17322-020113-DR-020
Collection Date: 02/01/13 02:35 PM

Work Order: 1302057
Lab ID: 1302057-21
Matrix: GROUNDWATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/05/13 18:58
Trichloroethene	U		0.14	1.0	µg/L	1	02/05/13 18:58
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/05/13 18:58
Vinyl chloride	U		0.17	1.0	µg/L	1	02/05/13 18:58
Xylenes, Total	U		0.29	3.0	µg/L	1	02/05/13 18:58
Surr: 1,2-Dichloroethane-d4	107			70-120	%REC	1	02/05/13 18:58
Surr: 4-Bromofluorobenzene	92.0			75-120	%REC	1	02/05/13 18:58
Surr: Dibromofluoromethane	112			85-115	%REC	1	02/05/13 18:58
Surr: Toluene-d8	92.8			85-120	%REC	1	02/05/13 18:58

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46230** Instrument ID **GC12** Method: **SW8082**

MBLK Sample ID: PBLKW1-46230-46230				Units: µg/L			Analysis Date: 02/05/13 05:10 PM			
Client ID:		Run ID: GC12_130205A		SeqNo: 2212317		Prep Date: 02/05/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	U	0.25								
Aroclor 1221	U	0.25								
Aroclor 1232	U	0.25								
Aroclor 1242	U	0.25								
Aroclor 1248	U	0.25								
Aroclor 1254	U	0.25								
Aroclor 1260	U	0.25								

Surr: Decachlorobiphenyl 0.07 0 0.1 0 70 50-130 0
Surr: Tetrachloro-m-xylene 0.069 0 0.1 0 69 25-140 0

LCS Sample ID: PLCSW1-46230-46230				Units: µg/L			Analysis Date: 02/05/13 05:29 PM			
Client ID:		Run ID: GC12_130205A		SeqNo: 2212318		Prep Date: 02/05/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	2.134	0.25	2.5	0	85.4	50-130	0			
Aroclor 1260	2.272	0.25	2.5	0	90.9	50-130	0			
<i>Surr: Decachlorobiphenyl</i>	0.08	0	0.1	0	80	50-130	0			
<i>Surr: Tetrachloro-m-xylene</i>	0.073	0	0.1	0	73	25-140	0			

MS Sample ID: 1302057-15A MS				Units: µg/L			Analysis Date: 02/05/13 06:07 PM			
Client ID: GW-17322-020113-DR-015		Run ID: GC12_130205A		SeqNo: 2212315		Prep Date: 02/05/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	22.49	2.5	25	0	90	40-140	0			
Aroclor 1260	23.08	2.5	25	0	92.3	40-140	0			
<i>Surr: Decachlorobiphenyl</i>	0.82	0	1	0	82	40-140	0			
<i>Surr: Tetrachloro-m-xylene</i>	0.67	0	1	0	67	25-140	0			

MSD Sample ID: 1302057-15A MSD				Units: µg/L			Analysis Date: 02/05/13 06:26 PM			
Client ID: GW-17322-020113-DR-015		Run ID: GC12_130205A		SeqNo: 2212316		Prep Date: 02/05/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aroclor 1016	21.47	2.5	25	0	85.9	40-140	22.49	4.64	50	
Aroclor 1260	21.74	2.5	25	0	87	40-140	23.08	5.98	50	
<i>Surr: Decachlorobiphenyl</i>	0.77	0	1	0	77	40-140	0.82	6.29	50	
<i>Surr: Tetrachloro-m-xylene</i>	0.64	0	1	0	64	25-140	0.67	4.58	50	

The following samples were analyzed in this batch: 1302057-15A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46247** Instrument ID **HG1** Method: **SW7470**

MBLK	Sample ID: MBLK-46247-46247					Units: mg/L		Analysis Date: 02/05/13 02:26 PM		
Client ID:	Run ID: HG1_130205A				SeqNo: 2208756		Prep Date: 02/05/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury U 0.00020

LCS	Sample ID: LCS-46247-46247					Units: mg/L		Analysis Date: 02/05/13 02:28 PM		
Client ID:	Run ID: HG1_130205A				SeqNo: 2208757		Prep Date: 02/05/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.001907 0.00020 0.002 0 95.4 80-120 0

MS	Sample ID: 1302057-16CMS					Units: mg/L		Analysis Date: 02/05/13 03:19 PM		
Client ID: GW-17322-020113-DR-016	Run ID: HG1_130205A				SeqNo: 2208803		Prep Date: 02/05/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.001933 0.00020 0.002 -0.000001 96.7 75-125 0

MSD	Sample ID: 1302057-16CMSD					Units: mg/L		Analysis Date: 02/05/13 03:21 PM		
Client ID: GW-17322-020113-DR-016	Run ID: HG1_130205A				SeqNo: 2208804		Prep Date: 02/05/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.001901 0.00020 0.002 -0.000001 95.1 75-125 0.001933 1.67 20

The following samples were analyzed in this batch:

1302057-05C	1302057-06C	1302057-07C
1302057-08C	1302057-09C	1302057-11C
1302057-16C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46294** Instrument ID **ICPMS2** Method: **SW6020A**

MBLK Sample ID: MBLK-46294-46294				Units: mg/L			Analysis Date: 02/08/13 01:46 PM			
Client ID:		Run ID: ICPMS2_130208A		SeqNo: 2211840		Prep Date: 02/07/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.010								
Antimony	U	0.0050								
Arsenic	U	0.0050								
Barium	U	0.0050								
Beryllium	U	0.0020								
Cadmium	U	0.0020								
Chromium	U	0.0050								
Cobalt	U	0.0050								
Copper	U	0.0050								
Iron	U	0.080								
Lead	U	0.0050								
Manganese	U	0.0050								
Nickel	U	0.0050								
Selenium	U	0.0050								
Silver	U	0.0050								
Thallium	U	0.0050								
Vanadium	U	0.0050								
Zinc	U	0.010								

LCS Sample ID: LCS-46294-46294				Units: mg/L			Analysis Date: 02/08/13 01:51 PM			
Client ID:		Run ID: ICPMS2_130208A		SeqNo: 2211841		Prep Date: 02/07/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.08383	0.010	0.1	0	83.8	80-120	0			
Antimony	0.08759	0.0050	0.1	0	87.6	80-120	0			
Arsenic	0.08649	0.0050	0.1	0	86.5	80-120	0			
Barium	0.08649	0.0050	0.1	0	86.5	80-120	0			
Beryllium	0.0869	0.0020	0.1	0	86.9	80-120	0			
Cadmium	0.09227	0.0020	0.1	0	92.3	80-120	0			
Chromium	0.08287	0.0050	0.1	0	82.9	80-120	0			
Cobalt	0.08417	0.0050	0.1	0	84.2	80-120	0			
Copper	0.08441	0.0050	0.1	0	84.4	80-120	0			
Iron	8.489	0.080	10	0	84.9	80-120	0			
Lead	0.08461	0.0050	0.1	0	84.6	80-120	0			
Manganese	0.08657	0.0050	0.1	0	86.6	80-120	0			
Nickel	0.08418	0.0050	0.1	0	84.2	80-120	0			
Selenium	0.08449	0.0050	0.1	0	84.5	80-120	0			
Silver	0.08638	0.0050	0.1	0	86.4	80-120	0			
Thallium	0.08145	0.0050	0.1	0	81.4	80-120	0			
Vanadium	0.08619	0.0050	0.1	0	86.2	80-120	0			
Zinc	0.08843	0.010	0.1	0	88.4	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46294** Instrument ID **ICPMS2** Method: **SW6020A**

MS Sample ID: 1302149-01BMS				Units: mg/L			Analysis Date: 02/08/13 02:11 PM			
Client ID:		Run ID: ICPMS2_130208A		SeqNo: 2211845		Prep Date: 02/07/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	1.111	0.010	0.1	0.6478	463	75-125	0			SO
Antimony	0.08549	0.0050	0.1	0.0002027	85.3	75-125	0			
Arsenic	0.09901	0.0050	0.1	0.007959	91.1	75-125	0			
Barium	0.3254	0.0050	0.1	0.2325	92.9	75-125	0			
Beryllium	0.0859	0.0020	0.1	-0.00004392	85.9	75-125	0			
Cadmium	0.09095	0.0020	0.1	0.00003307	90.9	75-125	0			
Chromium	0.08761	0.0050	0.1	0.001294	86.3	75-125	0			
Cobalt	0.08744	0.0050	0.1	0.001011	86.4	75-125	0			
Copper	0.08769	0.0050	0.1	0.003723	84	75-125	0			
Iron	11.31	0.080	10	2.498	88.1	75-125	0			
Lead	0.0888	0.0050	0.1	0.002225	86.6	75-125	0			
Manganese	0.3836	0.0050	0.1	0.2885	95.1	75-125	0			
Nickel	0.08974	0.0050	0.1	0.005502	84.2	75-125	0			
Selenium	0.08802	0.0050	0.1	0.0006497	87.4	75-125	0			
Silver	0.07858	0.0050	0.1	-1.178E-06	78.6	75-125	0			
Thallium	0.0844	0.0050	0.1	-0.0002906	84.7	75-125	0			
Vanadium	0.09637	0.0050	0.1	0.001562	94.8	75-125	0			
Zinc	0.09664	0.010	0.1	0.01007	86.6	75-125	0			

MSD Sample ID: 1302149-01BMSD				Units: mg/L			Analysis Date: 02/08/13 02:16 PM			
Client ID:		Run ID: ICPMS2_130208A		SeqNo: 2211846		Prep Date: 02/07/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	1.109	0.010	0.1	0.6478	461	75-125	1.111	0.18	20	SO
Antimony	0.08832	0.0050	0.1	0.0002027	88.1	75-125	0.08549	3.26	20	
Arsenic	0.1029	0.0050	0.1	0.007959	94.9	75-125	0.09901	3.85	20	
Barium	0.3365	0.0050	0.1	0.2325	104	75-125	0.3254	3.35	20	
Beryllium	0.08964	0.0020	0.1	-0.00004392	89.7	75-125	0.0859	4.26	20	
Cadmium	0.09562	0.0020	0.1	0.00003307	95.6	75-125	0.09095	5.01	20	
Chromium	0.091	0.0050	0.1	0.001294	89.7	75-125	0.08761	3.8	20	
Cobalt	0.09346	0.0050	0.1	0.001011	92.4	75-125	0.08744	6.66	20	
Copper	0.0928	0.0050	0.1	0.003723	89.1	75-125	0.08769	5.66	20	
Iron	12	0.080	10	2.498	95	75-125	11.31	5.92	20	
Lead	0.09208	0.0050	0.1	0.002225	89.9	75-125	0.0888	3.63	20	
Manganese	0.3982	0.0050	0.1	0.2885	110	75-125	0.3836	3.73	20	
Nickel	0.09547	0.0050	0.1	0.005502	90	75-125	0.08974	6.19	20	
Selenium	0.09179	0.0050	0.1	0.0006497	91.1	75-125	0.08802	4.19	20	
Silver	0.08091	0.0050	0.1	-1.178E-06	80.9	75-125	0.07858	2.92	20	
Thallium	0.0884	0.0050	0.1	-0.0002906	88.7	75-125	0.0844	4.63	20	
Vanadium	0.1025	0.0050	0.1	0.001562	101	75-125	0.09637	6.16	20	
Zinc	0.103	0.010	0.1	0.01007	92.9	75-125	0.09664	6.37	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46294** Instrument ID **ICPMS2** Method: **SW6020A**

The following samples were analyzed in this batch:	1302057-05C	1302057-06C	1302057-07C
	1302057-08C	1302057-09C	1302057-11C
	1302057-16C		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46215** Instrument ID **SVMS6** Method: **SW8270**

MBLK				Sample ID: SBLKW1-46215-46215				Units: µg/L		Analysis Date: 02/08/13 06:13 PM		
Client ID:			Run ID: SVMS6_130208A			SeqNo: 2213265		Prep Date: 02/04/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
1,1'-Biphenyl	U	5.0										
2,4,5-Trichlorophenol	U	5.0										
2,4,6-Trichlorophenol	U	5.0										
2,4-Dichlorophenol	U	10										
2,4-Dimethylphenol	U	5.0										
2,4-Dinitrophenol	U	5.0										
2,4-Dinitrotoluene	U	5.0										
2,6-Dinitrotoluene	U	5.0										
2-Chloronaphthalene	U	5.0										
2-Chlorophenol	U	5.0										
2-Methylnaphthalene	U	5.0										
2-Methylphenol	U	5.0										
2-Nitroaniline	U	20										
2-Nitrophenol	U	5.0										
3,3'-Dichlorobenzidine	U	5.0										
3-Nitroaniline	U	20										
4,6-Dinitro-2-methylphenol	U	20										
4-Bromophenyl phenyl ether	U	5.0										
4-Chloro-3-methylphenol	U	5.0										
4-Chloroaniline	U	20										
4-Chlorophenyl phenyl ether	U	5.0										
4-Methylphenol	U	5.0										
4-Nitroaniline	U	20										
4-Nitrophenol	U	20										
Acenaphthene	U	5.0										
Acenaphthylene	U	5.0										
Acetophenone	U	1.0										
Anthracene	U	5.0										
Atrazine	U	1.0										
Benzaldehyde	U	1.0										
Benzo(a)anthracene	U	5.0										
Benzo(a)pyrene	U	5.0										
Benzo(b)fluoranthene	U	5.0										
Benzo(g,h,i)perylene	U	5.0										
Benzo(k)fluoranthene	U	5.0										
Bis(2-chloroethoxy)methane	U	5.0										
Bis(2-chloroethyl)ether	U	5.0										
Bis(2-chloroisopropyl)ether	U	5.0										
Bis(2-ethylhexyl)phthalate	U	5.0										
Butyl benzyl phthalate	U	5.0										
Caprolactam	U	10										
Carbazole	U	10										

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 46215		Instrument ID SVMS6		Method: SW8270				
Chrysene	U	5.0						
Dibenzo(a,h)anthracene	U	5.0						
Dibenzofuran	U	5.0						
Diethyl phthalate	U	20						
Dimethyl phthalate	U	20						
Di-n-butyl phthalate	U	5.0						
Di-n-octyl phthalate	U	5.0						
Fluoranthene	U	5.0						
Fluorene	U	5.0						
Hexachlorobenzene	U	5.0						
Hexachlorobutadiene	U	5.0						
Hexachlorocyclopentadiene	U	20						
Hexachloroethane	U	5.0						
Indeno(1,2,3-cd)pyrene	U	5.0						
Isophorone	U	5.0						
Naphthalene	U	5.0						
Nitrobenzene	U	5.0						
N-Nitrosodi-n-propylamine	U	5.0						
N-Nitrosodiphenylamine	U	5.0						
Pentachlorophenol	U	20						
Phenanthrene	U	5.0						
Phenol	U	5.0						
Pyrene	U	5.0						
<i>Surr: 2,4,6-Tribromophenol</i>	<i>33.53</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>67.1</i>	<i>38-115</i>	<i>0</i>	
<i>Surr: 2-Fluorobiphenyl</i>	<i>32.93</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>65.9</i>	<i>32-100</i>	<i>0</i>	
<i>Surr: 2-Fluorophenol</i>	<i>21.01</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>42</i>	<i>22-59</i>	<i>0</i>	
<i>Surr: 4-Terphenyl-d14</i>	<i>50.91</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>102</i>	<i>23-112</i>	<i>0</i>	
<i>Surr: Nitrobenzene-d5</i>	<i>35.46</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>70.9</i>	<i>31-93</i>	<i>0</i>	
<i>Surr: Phenol-d6</i>	<i>12.48</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>25</i>	<i>13-36</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46215** Instrument ID **SVMS6** Method: **SW8270**

LCS Sample ID: SLCSW1-46215-46215				Units: µg/L			Analysis Date: 02/08/13 05:21 PM			
Client ID:		Run ID: SVMS6_130208A		SeqNo: 2213263		Prep Date: 02/04/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	16.14	5.0	20	0	80.7	50-110	0			
2,4,6-Trichlorophenol	15.93	5.0	20	0	79.6	50-115	0			
2,4-Dichlorophenol	14.95	10	20	0	74.8	50-105	0			
2,4-Dimethylphenol	11.74	5.0	20	0	58.7	30-110	0			
2,4-Dinitrophenol	15.16	5.0	20	0	75.8	15-140	0			
2,4-Dinitrotoluene	16.64	5.0	20	0	83.2	50-120	0			
2,6-Dinitrotoluene	17.41	5.0	20	0	87	50-115	0			
2-Chloronaphthalene	15.44	5.0	20	0	77.2	50-105	0			
2-Chlorophenol	13.59	5.0	20	0	68	35-105	0			
2-Methylnaphthalene	15.35	5.0	20	0	76.8	45-105	0			
2-Methylphenol	11.47	5.0	20	0	57.4	40-110	0			
2-Nitroaniline	16.36	20	20	0	81.8	50-115	0			J
2-Nitrophenol	14.6	5.0	20	0	73	40-115	0			
3-Nitroaniline	16.27	20	20	0	81.4	20-125	0			J
4,6-Dinitro-2-methylphenol	17.08	20	20	0	85.4	40-130	0			J
4-Bromophenyl phenyl ether	16.37	5.0	20	0	81.8	50-115	0			
4-Chloro-3-methylphenol	14.75	5.0	20	0	73.8	45-110	0			
4-Chloroaniline	17.64	20	20	0	88.2	15-110	0			J
4-Chlorophenyl phenyl ether	16.44	5.0	20	0	82.2	50-110	0			
4-Methylphenol	10.29	5.0	20	0	51.4	30-110	0			
4-Nitroaniline	13.11	20	20	0	65.6	35-150	0			J
4-Nitrophenol	4.51	20	20	0	22.6	1-58	0			J
Acenaphthene	16.2	5.0	20	0	81	45-110	0			
Acenaphthylene	15.59	5.0	20	0	78	50-105	0			
Anthracene	17.04	5.0	20	0	85.2	55-110	0			
Benzo(a)anthracene	16.76	5.0	20	0	83.8	55-110	0			
Benzo(a)pyrene	17.78	5.0	20	0	88.9	55-110	0			
Benzo(b)fluoranthene	17.39	5.0	20	0	87	45-120	0			
Benzo(g,h,i)perylene	18.12	5.0	20	0	90.6	40-125	0			
Benzo(k)fluoranthene	18.92	5.0	20	0	94.6	45-125	0			
Bis(2-chloroethoxy)methane	15.7	5.0	20	0	78.5	45-105	0			
Bis(2-chloroethyl)ether	15.46	5.0	20	0	77.3	35-110	0			
Bis(2-chloroisopropyl)ether	15.89	5.0	20	0	79.4	25-130	0			
Bis(2-ethylhexyl)phthalate	18.84	5.0	20	0	94.2	40-125	0			
Butyl benzyl phthalate	18.49	5.0	20	0	92.4	45-115	0			
Carbazole	18.38	10	20	0	91.9	50-150	0			
Chrysene	18.35	5.0	20	0	91.8	55-110	0			
Dibenzo(a,h)anthracene	18.79	5.0	20	0	94	40-125	0			
Dibenzofuran	15.98	5.0	20	0	79.9	55-105	0			
Diethyl phthalate	16.18	20	20	0	80.9	40-120	0			J
Dimethyl phthalate	16.43	20	20	0	82.2	25-125	0			J
Di-n-butyl phthalate	18.28	5.0	20	0	91.4	55-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 46215		Instrument ID SVMS6		Method: SW8270			
Di-n-octyl phthalate	18.9	5.0	20	0	94.5	35-135	0
Fluoranthene	17.91	5.0	20	0	89.6	55-115	0
Fluorene	16.55	5.0	20	0	82.8	50-110	0
Hexachlorobenzene	16.63	5.0	20	0	83.2	50-110	0
Hexachlorobutadiene	14.3	5.0	20	0	71.5	25-105	0
Hexachlorocyclopentadiene	10.74	20	20	0	53.7	25-105	0 J
Hexachloroethane	15.08	5.0	20	0	75.4	30-95	0
Indeno(1,2,3-cd)pyrene	18.54	5.0	20	0	92.7	45-125	0
Isophorone	16.17	5.0	20	0	80.8	50-110	0
Naphthalene	14.98	5.0	20	0	74.9	40-100	0
Nitrobenzene	16.03	5.0	20	0	80.2	45-110	0
N-Nitrosodi-n-propylamine	16.73	5.0	20	0	83.6	35-130	0
N-Nitrosodiphenylamine	17.92	5.0	20	0	89.6	50-110	0
Pentachlorophenol	16.02	20	20	0	80.1	40-115	0 J
Phenanthrene	16.65	5.0	20	0	83.2	50-115	0
Phenol	5.65	5.0	20	0	28.2	12-43	0
Pyrene	17.6	5.0	20	0	88	50-130	0
<i>Surr: 2,4,6-Tribromophenol</i>	38.55	0	50	0	77.1	38-115	0
<i>Surr: 2-Fluorobiphenyl</i>	34.98	0	50	0	70	32-100	0
<i>Surr: 2-Fluorophenol</i>	18.23	0	50	0	36.5	22-59	0
<i>Surr: 4-Terphenyl-d14</i>	47.43	0	50	0	94.9	23-112	0
<i>Surr: Nitrobenzene-d5</i>	37.23	0	50	0	74.5	31-93	0
<i>Surr: Phenol-d6</i>	11.68	0	50	0	23.4	13-36	0

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46215** Instrument ID **SVMS6** Method: **SW8270**

MS Sample ID: 1302057-13B MS				Units: µg/L			Analysis Date: 02/08/13 09:00 PM			
Client ID: GW-17322-020113-DR-013				Run ID: SVMS6_130208A		SeqNo: 2213270		Prep Date: 02/04/13		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	171.6	50	200	0	85.8	50-110	0			
2,4,6-Trichlorophenol	163.3	50	200	0	81.6	50-115	0			
2,4-Dichlorophenol	162.8	100	200	0	81.4	50-105	0			
2,4-Dimethylphenol	131.5	50	200	0	65.8	30-110	0			
2,4-Dinitrophenol	140.7	50	200	0	70.4	15-140	0			
2,4-Dinitrotoluene	172.1	50	200	0	86	50-120	0			
2,6-Dinitrotoluene	176.9	50	200	0	88.4	50-115	0			
2-Chloronaphthalene	158	50	200	0	79	50-105	0			
2-Chlorophenol	155	50	200	0	77.5	35-105	0			
2-Methylnaphthalene	157.5	50	200	0	78.8	45-105	0			
2-Methylphenol	134.6	50	200	0	67.3	40-110	0			
2-Nitroaniline	165.5	200	200	0	82.8	50-115	0			J
2-Nitrophenol	152.7	50	200	0	76.4	40-115	0			
3-Nitroaniline	167.5	200	200	0	83.8	20-125	0			J
4,6-Dinitro-2-methylphenol	159.1	200	200	0	79.6	40-130	0			J
4-Bromophenyl phenyl ether	168.7	50	200	0	84.4	50-115	0			
4-Chloro-3-methylphenol	165.4	50	200	0	82.7	45-110	0			
4-Chloroaniline	196.1	200	200	0	98	15-110	0			J
4-Chlorophenyl phenyl ether	166.9	50	200	0	83.4	50-110	0			
4-Methylphenol	122.2	50	200	0	61.1	30-110	0			
4-Nitroaniline	180.6	200	200	0	90.3	35-150	0			J
4-Nitrophenol	57.1	200	200	0	28.6	1-58	0			J
Acenaphthene	163.4	50	200	0	81.7	45-110	0			
Acenaphthylene	160.2	50	200	0	80.1	50-105	0			
Anthracene	176.3	50	200	0	88.2	55-110	0			
Benzo(a)anthracene	175.6	50	200	0	87.8	55-110	0			
Benzo(a)pyrene	187.1	50	200	0	93.6	55-110	0			
Benzo(b)fluoranthene	172.3	50	200	0	86.2	45-120	0			
Benzo(g,h,i)perylene	186.2	50	200	0	93.1	40-125	0			
Benzo(k)fluoranthene	206	50	200	0	103	45-125	0			
Bis(2-chloroethoxy)methane	161.6	50	200	0	80.8	45-105	0			
Bis(2-chloroethyl)ether	159.6	50	200	0	79.8	35-110	0			
Bis(2-chloroisopropyl)ether	161.5	50	200	0	80.8	25-130	0			
Bis(2-ethylhexyl)phthalate	198.8	50	200	0	99.4	40-125	0			
Butyl benzyl phthalate	194.3	50	200	0	97.2	45-115	0			
Carbazole	211.1	100	200	0	106	50-150	0			
Chrysene	193.3	50	200	0	96.6	55-110	0			
Dibenzo(a,h)anthracene	191.3	50	200	0	95.6	40-125	0			
Dibenzofuran	162.6	50	200	0	81.3	55-105	0			
Diethyl phthalate	166	200	200	0	83	40-120	0			J
Dimethyl phthalate	166.6	200	200	0	83.3	25-125	0			J
Di-n-butyl phthalate	193.6	50	200	0	96.8	55-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 46215		Instrument ID SVMS6		Method: SW8270			
Di-n-octyl phthalate	196	50	200	0	98	35-135	0
Fluoranthene	189.7	50	200	0	94.8	55-115	0
Fluorene	168.1	50	200	0	84	50-110	0
Hexachlorobenzene	169.7	50	200	0	84.8	50-110	0
Hexachlorobutadiene	149.2	50	200	0	74.6	25-105	0
Hexachlorocyclopentadiene	54.8	200	200	0	27.4	25-105	0 J
Hexachloroethane	145.3	50	200	0	72.6	30-95	0
Indeno(1,2,3-cd)pyrene	189.2	50	200	0	94.6	45-125	0
Isophorone	165.5	50	200	0	82.8	50-110	0
Naphthalene	154.9	50	200	0	77.4	40-100	0
Nitrobenzene	165.9	50	200	0	83	45-110	0
N-Nitrosodi-n-propylamine	172	50	200	0	86	35-130	0
N-Nitrosodiphenylamine	184.1	50	200	0	92	50-110	0
Pentachlorophenol	190.2	200	200	0	95.1	40-115	0 J
Phenanthrene	171.3	50	200	0	85.6	50-115	0
Phenol	66.8	50	200	0	33.4	12-43	0
Pyrene	181.4	50	200	0	90.7	50-130	0
<i>Surr: 2,4,6-Tribromophenol</i>	<i>403.2</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>80.6</i>	<i>38-115</i>	<i>0</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>355.8</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>71.2</i>	<i>32-100</i>	<i>0</i>
<i>Surr: 2-Fluorophenol</i>	<i>220.1</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>44</i>	<i>22-59</i>	<i>0</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>506.5</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>101</i>	<i>23-112</i>	<i>0</i>
<i>Surr: Nitrobenzene-d5</i>	<i>377</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>75.4</i>	<i>31-93</i>	<i>0</i>
<i>Surr: Phenol-d6</i>	<i>136.1</i>	<i>0</i>	<i>500</i>	<i>0</i>	<i>27.2</i>	<i>13-36</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **46215** Instrument ID **SVMS6** Method: **SW8270**

MSD Sample ID: 1302057-13B MSD				Units: µg/L			Analysis Date: 02/08/13 09:26 PM			
Client ID: GW-17322-020113-DR-013				Run ID: SVMS6_130208A		SeqNo: 2213271		Prep Date: 02/04/13		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	168.2	50	200	0	84.1	50-110	171.6	2	30	
2,4,6-Trichlorophenol	160.4	50	200	0	80.2	50-115	163.3	1.79	30	
2,4-Dichlorophenol	157.3	100	200	0	78.6	50-105	162.8	3.44	30	
2,4-Dimethylphenol	122.7	50	200	0	61.4	30-110	131.5	6.92	30	
2,4-Dinitrophenol	138.5	50	200	0	69.2	15-140	140.7	1.58	30	
2,4-Dinitrotoluene	168.3	50	200	0	84.2	50-120	172.1	2.23	30	
2,6-Dinitrotoluene	174.3	50	200	0	87.2	50-115	176.9	1.48	30	
2-Chloronaphthalene	154.6	50	200	0	77.3	50-105	158	2.18	30	
2-Chlorophenol	150.6	50	200	0	75.3	35-105	155	2.88	30	
2-Methylnaphthalene	154.4	50	200	0	77.2	45-105	157.5	1.99	30	
2-Methylphenol	128.3	50	200	0	64.2	40-110	134.6	4.79	30	
2-Nitroaniline	163.9	200	200	0	82	50-115	165.5	0	30	J
2-Nitrophenol	148.2	50	200	0	74.1	40-115	152.7	2.99	30	
3-Nitroaniline	164.8	200	200	0	82.4	20-125	167.5	0	30	J
4,6-Dinitro-2-methylphenol	158.2	200	200	0	79.1	40-130	159.1	0	30	J
4-Bromophenyl phenyl ether	164.6	50	200	0	82.3	50-115	168.7	2.46	30	
4-Chloro-3-methylphenol	159	50	200	0	79.5	45-110	165.4	3.95	30	
4-Chloroaniline	191.7	200	200	0	95.8	15-110	196.1	0	30	J
4-Chlorophenyl phenyl ether	164.8	50	200	0	82.4	50-110	166.9	1.27	30	
4-Methylphenol	114.8	50	200	0	57.4	30-110	122.2	6.24	30	
4-Nitroaniline	165.1	200	200	0	82.6	35-150	180.6	0	30	J
4-Nitrophenol	52.1	200	200	0	26	1-58	57.1	0	0	J
Acenaphthene	161.6	50	200	0	80.8	45-110	163.4	1.11	30	
Acenaphthylene	157.6	50	200	0	78.8	50-105	160.2	1.64	30	
Anthracene	172.5	50	200	0	86.2	55-110	176.3	2.18	30	
Benzo(a)anthracene	172.8	50	200	0	86.4	55-110	175.6	1.61	30	
Benzo(a)pyrene	185.2	50	200	0	92.6	55-110	187.1	1.02	30	
Benzo(b)fluoranthene	177	50	200	0	88.5	45-120	172.3	2.69	30	
Benzo(g,h,i)perylene	184.8	50	200	0	92.4	40-125	186.2	0.755	30	
Benzo(k)fluoranthene	195.8	50	200	0	97.9	45-125	206	5.08	30	
Bis(2-chloroethoxy)methane	158.9	50	200	0	79.4	45-105	161.6	1.68	30	
Bis(2-chloroethyl)ether	156.2	50	200	0	78.1	35-110	159.6	2.15	30	
Bis(2-chloroisopropyl)ether	159.8	50	200	0	79.9	25-130	161.5	1.06	30	
Bis(2-ethylhexyl)phthalate	194.4	50	200	0	97.2	40-125	198.8	2.24	30	
Butyl benzyl phthalate	191.9	50	200	0	96	45-115	194.3	1.24	30	
Carbazole	195.5	100	200	0	97.8	50-150	211.1	7.67	30	
Chrysene	188	50	200	0	94	55-110	193.3	2.78	30	
Dibenzo(a,h)anthracene	190	50	200	0	95	40-125	191.3	0.682	30	
Dibenzofuran	159.5	50	200	0	79.8	55-105	162.6	1.92	30	
Diethyl phthalate	163.2	200	200	0	81.6	40-120	166	0	30	J
Dimethyl phthalate	165.1	200	200	0	82.6	25-125	166.6	0	30	J
Di-n-butyl phthalate	188.8	50	200	0	94.4	55-115	193.6	2.51	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: 46215		Instrument ID SVMS6		Method: SW8270					
Di-n-octyl phthalate	194.8	50	200	0	97.4	35-135	196	0.614	30
Fluoranthene	181.9	50	200	0	91	55-115	189.7	4.2	30
Fluorene	164.7	50	200	0	82.4	50-110	168.1	2.04	30
Hexachlorobenzene	166.1	50	200	0	83	50-110	169.7	2.14	30
Hexachlorobutadiene	147.7	50	200	0	73.8	25-105	149.2	1.01	30
Hexachlorocyclopentadiene	61.4	200	200	0	30.7	25-105	54.8	0	30 J
Hexachloroethane	146.4	50	200	0	73.2	30-95	145.3	0.754	30
Indeno(1,2,3-cd)pyrene	188.8	50	200	0	94.4	45-125	189.2	0.212	30
Isophorone	162.4	50	200	0	81.2	50-110	165.5	1.89	30
Naphthalene	152.2	50	200	0	76.1	40-100	154.9	1.76	30
Nitrobenzene	162.4	50	200	0	81.2	45-110	165.9	2.13	30
N-Nitrosodi-n-propylamine	169.3	50	200	0	84.6	35-130	172	1.58	30
N-Nitrosodiphenylamine	179.9	50	200	0	90	50-110	184.1	2.31	30
Pentachlorophenol	181	200	200	0	90.5	40-115	190.2	0	30 J
Phenanthrene	167.8	50	200	0	83.9	50-115	171.3	2.06	30
Phenol	61.9	50	200	0	31	12-43	66.8	7.61	30
Pyrene	179.4	50	200	0	89.7	50-130	181.4	1.11	30
<i>Surr: 2,4,6-Tribromophenol</i>	391.4	0	500	0	78.3	38-115	403.2	2.97	40
<i>Surr: 2-Fluorobiphenyl</i>	349.3	0	500	0	69.9	32-100	355.8	1.84	40
<i>Surr: 2-Fluorophenol</i>	206	0	500	0	41.2	22-59	220.1	6.62	40
<i>Surr: 4-Terphenyl-d14</i>	492.5	0	500	0	98.5	23-112	506.5	2.8	40
<i>Surr: Nitrobenzene-d5</i>	368.9	0	500	0	73.8	31-93	377	2.17	40
<i>Surr: Phenol-d6</i>	125.2	0	500	0	25	13-36	136.1	8.34	40

The following samples were analyzed in this batch:

1302057-03B	1302057-05B	1302057-06B
1302057-07B	1302057-08B	1302057-09B
1302057-10A	1302057-11B	1302057-12B
1302057-13B	1302057-14B	1302057-15A
1302057-16B	1302057-17A	1302057-18B
1302057-19B	1302057-21B	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115839** Instrument ID **VMS9** Method: **SW8260**

MBLK		Sample ID: VBLKW1-130204-R115839				Units: µg/L		Analysis Date: 02/04/13 11:47 AM		
Client ID:		Run ID: VMS9_130204A				SeqNo: 2207876		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1,2-Trichlorotrifluoroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2,4-Trichlorobenzene	U	1.0								
1,2-Dibromo-3-chloropropane	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichlorobenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,2-Dichloropropane	U	2.0								
1,3-Dichlorobenzene	U	2.0								
1,4-Dichlorobenzene	U	2.0								
2-Butanone	U	5.0								
2-Hexanone	U	5.0								
4-Methyl-2-pentanone	U	5.0								
Acetone	U	20								
Benzene	U	1.0								
Bromodichloromethane	U	1.0								
Bromoform	U	1.0								
Bromomethane	U	1.0								
Carbon disulfide	U	2.5								
Carbon tetrachloride	U	1.0								
Chlorobenzene	U	1.0								
Chloroethane	U	1.0								
Chloroform	U	1.0								
Chloromethane	U	1.0								
cis-1,2-Dichloroethene	U	1.0								
cis-1,3-Dichloropropene	U	1.0								
Cyclohexane	U	5.0								
Dibromochloromethane	U	1.0								
Dichlorodifluoromethane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
Methyl acetate	U	2.0								
Methyl tert-butyl ether	U	5.0								
Methylcyclohexane	U	5.0								
Methylene chloride	U	5.0								
Styrene	U	1.0								
Tetrachloroethene	U	2.0								
Toluene	U	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115839	Instrument ID VMS9	Method: SW8260						
trans-1,2-Dichloroethene	U	1.0						
trans-1,3-Dichloropropene	U	1.0						
Trichloroethene	U	1.0						
Trichlorofluoromethane	U	1.0						
Vinyl chloride	U	1.0						
Xylenes, Total	U	3.0						
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.25</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>70-120</i>	<i>0</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>18.7</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>93.5</i>	<i>75-120</i>	<i>0</i>	
<i>Surr: Dibromofluoromethane</i>	<i>20.41</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>102</i>	<i>85-115</i>	<i>0</i>	
<i>Surr: Toluene-d8</i>	<i>19.2</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96</i>	<i>85-120</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115839** Instrument ID **VMS9** Method: **SW8260**

LCS		Sample ID: VLCSW1-130204-R115839				Units: µg/L		Analysis Date: 02/04/13 10:56 AM		
Client ID:		Run ID: VMS9_130204A				SeqNo: 2207513		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	20.42	1.0	20	0	102	65-130	0			
1,1,2,2-Tetrachloroethane	17.83	1.0	20	0	89.2	65-130	0			
1,1,2-Trichloroethane	17.47	1.0	20	0	87.4	75-125	0			
1,1-Dichloroethane	18.04	1.0	20	0	90.2	70-135	0			
1,1-Dichloroethene	18.08	1.0	20	0	90.4	70-130	0			
1,2,4-Trichlorobenzene	20.1	1.0	20	0	100	65-135	0			
1,2-Dibromo-3-chloropropane	17.82	1.0	20	0	89.1	50-130	0			
1,2-Dibromoethane	18.96	1.0	20	0	94.8	80-120	0			
1,2-Dichlorobenzene	18.79	1.0	20	0	94	70-120	0			
1,2-Dichloroethane	17.94	1.0	20	0	89.7	70-130	0			
1,2-Dichloropropane	17.76	2.0	20	0	88.8	75-125	0			
1,3-Dichlorobenzene	18.51	2.0	20	0	92.6	75-125	0			
1,4-Dichlorobenzene	18.39	2.0	20	0	92	75-125	0			
2-Butanone	21.03	5.0	20	0	105	30-150	0			
2-Hexanone	18.9	5.0	20	0	94.5	55-130	0			
4-Methyl-2-pentanone	23.65	5.0	20	0	118	60-135	0			
Acetone	19.41	20	20	0	97	40-140	0			J
Benzene	18.66	1.0	20	0	93.3	80-120	0			
Bromodichloromethane	18.62	1.0	20	0	93.1	75-120	0			
Bromoform	18.75	1.0	20	0	93.8	70-130	0			
Bromomethane	17.95	1.0	20	0	89.8	30-145	0			
Carbon disulfide	19.75	2.5	20	0	98.8	35-165	0			
Carbon tetrachloride	11.69	1.0	20	0	58.4	65-140	0			S
Chlorobenzene	18.3	1.0	20	0	91.5	80-120	0			
Chloroethane	17.57	1.0	20	0	87.8	60-135	0			
Chloroform	19.93	1.0	20	0	99.6	65-135	0			
Chloromethane	18.55	1.0	20	0	92.8	70-125	0			
cis-1,2-Dichloroethene	18.03	1.0	20	0	90.2	70-125	0			
cis-1,3-Dichloropropene	19.04	1.0	20	0	95.2	70-130	0			
Dibromochloromethane	17.53	1.0	20	0	87.6	60-135	0			
Dichlorodifluoromethane	14.71	1.0	20	0	73.6	30-155	0			
Ethylbenzene	18.98	1.0	20	0	94.9	75-125	0			
Isopropylbenzene	20.09	1.0	20	0	100	75-125	0			
Methyl tert-butyl ether	20.69	5.0	20	0	103	65-125	0			
Methylene chloride	21.44	5.0	20	0	107	55-140	0			
Styrene	20.48	1.0	20	0	102	65-135	0			
Tetrachloroethene	17.7	2.0	20	0	88.5	45-150	0			
Toluene	18.09	1.0	20	0	90.4	75-120	0			
trans-1,2-Dichloroethene	18.42	1.0	20	0	92.1	60-140	0			
trans-1,3-Dichloropropene	18.55	1.0	20	0	92.8	55-140	0			
Trichloroethene	16.97	1.0	20	0	84.8	70-125	0			
Trichlorofluoromethane	18.78	1.0	20	0	93.9	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115839	Instrument ID VMS9			Method: SW8260			
Vinyl chloride	18.25	1.0	20	0	91.2	50-145	0
Xylenes, Total	58.24	3.0	60	0	97.1	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.73</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>104</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>19.99</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>100</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>22.06</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>110</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>19.67</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>98.4</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115839** Instrument ID **VMS9** Method: **SW8260**

MS Sample ID: 1302057-13A MS				Units: µg/L		Analysis Date: 02/04/13 08:45 PM				
Client ID: GW-17322-020113-DR-013			Run ID: VMS9_130204A		SeqNo: 2208150		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	23.61	1.0	20	2.84	104	65-130	0			
1,1,2,2-Tetrachloroethane	19.33	1.0	20	0	96.6	65-130	0			
1,1,2-Trichloroethane	17.96	1.0	20	0	89.8	75-125	0			
1,1-Dichloroethane	21.24	1.0	20	0	106	70-135	0			
1,1-Dichloroethene	22.08	1.0	20	0	110	70-130	0			
1,2,4-Trichlorobenzene	17.6	1.0	20	0	88	65-135	0			
1,2-Dibromo-3-chloropropane	19.16	1.0	20	0	95.8	50-130	0			
1,2-Dibromoethane	19.31	1.0	20	0	96.6	80-120	0			
1,2-Dichlorobenzene	17.75	1.0	20	0	88.8	70-120	0			
1,2-Dichloroethane	18.14	1.0	20	0	90.7	70-130	0			
1,2-Dichloropropane	18.27	2.0	20	0	91.4	75-125	0			
1,3-Dichlorobenzene	17.3	2.0	20	0	86.5	75-125	0			
1,4-Dichlorobenzene	17.62	2.0	20	0	88.1	75-125	0			
2-Butanone	22.32	5.0	20	0	112	30-150	0			
2-Hexanone	21.34	5.0	20	0	107	55-130	0			
4-Methyl-2-pentanone	26.43	5.0	20	0	132	60-135	0			
Acetone	25.92	20	20	0	130	40-140	0			
Benzene	18.16	1.0	20	0	90.8	80-120	0			
Bromodichloromethane	18.95	1.0	20	0	94.8	75-120	0			
Bromoform	19.48	1.0	20	0	97.4	70-130	0			
Bromomethane	20.26	1.0	20	0	101	30-145	0			
Carbon disulfide	22.22	2.5	20	0	111	35-165	0			
Carbon tetrachloride	14.56	1.0	20	0	72.8	65-140	0			
Chlorobenzene	18.43	1.0	20	0	92.2	80-120	0			
Chloroethane	20.78	1.0	20	0	104	60-135	0			
Chloroform	20.57	1.0	20	0	103	65-135	0			
Chloromethane	21.92	1.0	20	0	110	70-125	0			
cis-1,2-Dichloroethene	20.53	1.0	20	0	103	70-125	0			
cis-1,3-Dichloropropene	18.15	1.0	20	0	90.8	70-130	0			
Dibromochloromethane	16.97	1.0	20	0	84.8	60-135	0			
Dichlorodifluoromethane	17.05	1.0	20	0	85.2	30-155	0			
Ethylbenzene	18.73	1.0	20	0	93.6	75-125	0			
Isopropylbenzene	20.75	1.0	20	0	104	75-125	0			
Methyl tert-butyl ether	22.62	5.0	20	0	113	65-125	0			
Methylene chloride	23.24	5.0	20	0	116	55-140	0			
Styrene	20.69	1.0	20	0	103	65-135	0			
Tetrachloroethene	17.93	2.0	20	0	89.6	45-150	0			
Toluene	17.68	1.0	20	0	88.4	75-120	0			
trans-1,2-Dichloroethene	21.63	1.0	20	0	108	60-140	0			
trans-1,3-Dichloropropene	17.29	1.0	20	0	86.4	55-140	0			
Trichloroethene	40.54	1.0	20	21.6	94.7	70-125	0			
Trichlorofluoromethane	23.07	1.0	20	0	115	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115839	Instrument ID VMS9		Method: SW8260				
Vinyl chloride	22.09	1.0	20	0	110	50-145	0
Xylenes, Total	58.22	3.0	60	0	97	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>21.01</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>105</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.57</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>103</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>22.02</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>110</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>18.93</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>94.6</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115839** Instrument ID **VMS9** Method: **SW8260**

MSD Sample ID: 1302057-13A MSD				Units: µg/L			Analysis Date: 02/04/13 09:10 PM			
Client ID: GW-17322-020113-DR-013			Run ID: VMS9_130204A		SeqNo: 2208151		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	25.09	1.0	20	2.84	111	65-130	23.61	6.08	30	
1,1,2,2-Tetrachloroethane	18.97	1.0	20	0	94.8	65-130	19.33	1.88	30	
1,1,2-Trichloroethane	17.3	1.0	20	0	86.5	75-125	17.96	3.74	30	
1,1-Dichloroethane	19.86	1.0	20	0	99.3	70-135	21.24	6.72	30	
1,1-Dichloroethene	21	1.0	20	0	105	70-130	22.08	5.01	30	
1,2,4-Trichlorobenzene	18.55	1.0	20	0	92.8	65-135	17.6	5.26	30	
1,2-Dibromo-3-chloropropane	19.73	1.0	20	0	98.6	50-130	19.16	2.93	30	
1,2-Dibromoethane	18.94	1.0	20	0	94.7	80-120	19.31	1.93	30	
1,2-Dichlorobenzene	17.88	1.0	20	0	89.4	70-120	17.75	0.73	30	
1,2-Dichloroethane	18.01	1.0	20	0	90	70-130	18.14	0.719	30	
1,2-Dichloropropane	17.81	2.0	20	0	89	75-125	18.27	2.55	30	
1,3-Dichlorobenzene	17.45	2.0	20	0	87.2	75-125	17.3	0.863	30	
1,4-Dichlorobenzene	17.6	2.0	20	0	88	75-125	17.62	0.114	30	
2-Butanone	23.3	5.0	20	0	116	30-150	22.32	4.3	30	
2-Hexanone	20.56	5.0	20	0	103	55-130	21.34	3.72	30	
4-Methyl-2-pentanone	25.81	5.0	20	0	129	60-135	26.43	2.37	30	
Acetone	24.07	20	20	0	120	40-140	25.92	7.4	30	
Benzene	18.17	1.0	20	0	90.8	80-120	18.16	0.0551	30	
Bromodichloromethane	18.61	1.0	20	0	93	75-120	18.95	1.81	30	
Bromoform	18.67	1.0	20	0	93.4	70-130	19.48	4.25	30	
Bromomethane	18.92	1.0	20	0	94.6	30-145	20.26	6.84	30	
Carbon disulfide	21.11	2.5	20	0	106	35-165	22.22	5.12	30	
Carbon tetrachloride	12.19	1.0	20	0	61	65-140	14.56	17.7	30	S
Chlorobenzene	18.15	1.0	20	0	90.8	80-120	18.43	1.53	30	
Chloroethane	20.23	1.0	20	0	101	60-135	20.78	2.68	30	
Chloroform	21.97	1.0	20	0	110	65-135	20.57	6.58	30	
Chloromethane	21.31	1.0	20	0	107	70-125	21.92	2.82	30	
cis-1,2-Dichloroethene	19.29	1.0	20	0	96.4	70-125	20.53	6.23	30	
cis-1,3-Dichloropropene	17.92	1.0	20	0	89.6	70-130	18.15	1.28	30	
Dibromochloromethane	16.92	1.0	20	0	84.6	60-135	16.97	0.295	30	
Dichlorodifluoromethane	16.31	1.0	20	0	81.6	30-155	17.05	4.44	30	
Ethylbenzene	18.79	1.0	20	0	94	75-125	18.73	0.32	30	
Isopropylbenzene	20.32	1.0	20	0	102	75-125	20.75	2.09	30	
Methyl tert-butyl ether	21.33	5.0	20	0	107	65-125	22.62	5.87	30	
Methylene chloride	22.08	5.0	20	0	110	55-140	23.24	5.12	30	
Styrene	20.64	1.0	20	0	103	65-135	20.69	0.242	30	
Tetrachloroethene	17.72	2.0	20	0	88.6	45-150	17.93	1.18	30	
Toluene	17.45	1.0	20	0	87.2	75-120	17.68	1.31	30	
trans-1,2-Dichloroethene	20.42	1.0	20	0	102	60-140	21.63	5.76	30	
trans-1,3-Dichloropropene	16.91	1.0	20	0	84.6	55-140	17.29	2.22	30	
Trichloroethene	39.95	1.0	20	21.6	91.8	70-125	40.54	1.47	30	
Trichlorofluoromethane	21.74	1.0	20	0	109	60-145	23.07	5.94	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115839	Instrument ID VMS9			Method: SW8260					
Vinyl chloride	21.41	1.0	20	0	107	50-145	22.09	3.13	30
Xylenes, Total	58.18	3.0	60	0	97	75-130	58.22	0.0687	30
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>21.22</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>106</i>	<i>70-120</i>	<i>21.01</i>	<i>0.995</i>	<i>30</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.59</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>103</i>	<i>75-120</i>	<i>20.57</i>	<i>0.0972</i>	<i>30</i>
<i>Surr: Dibromofluoromethane</i>	<i>22.77</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>114</i>	<i>85-115</i>	<i>22.02</i>	<i>3.35</i>	<i>30</i>
<i>Surr: Toluene-d8</i>	<i>18.94</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>94.7</i>	<i>85-120</i>	<i>18.93</i>	<i>0.0528</i>	<i>30</i>

The following samples were analyzed in this batch:

1302057-01A	1302057-02A	1302057-03A
1302057-04A	1302057-05A	1302057-06A
1302057-07A	1302057-08A	1302057-09A
1302057-11A	1302057-13A	1302057-20A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115882** Instrument ID **VMS9** Method: **SW8260**

MBLK		Sample ID: VBLKW1-130205-R115882				Units: µg/L		Analysis Date: 02/05/13 11:43 AM		
Client ID:		Run ID: VMS9_130205A				SeqNo: 2208962		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1,2-Trichlorotrifluoroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2,4-Trichlorobenzene	U	1.0								
1,2-Dibromo-3-chloropropane	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichlorobenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,2-Dichloropropane	U	2.0								
1,3-Dichlorobenzene	U	2.0								
1,4-Dichlorobenzene	U	2.0								
2-Butanone	U	5.0								
2-Hexanone	U	5.0								
4-Methyl-2-pentanone	U	5.0								
Acetone	U	20								
Benzene	U	1.0								
Bromodichloromethane	U	1.0								
Bromoform	U	1.0								
Bromomethane	U	1.0								
Carbon disulfide	U	2.5								
Carbon tetrachloride	U	1.0								
Chlorobenzene	U	1.0								
Chloroethane	U	1.0								
Chloroform	U	1.0								
Chloromethane	U	1.0								
cis-1,2-Dichloroethene	U	1.0								
cis-1,3-Dichloropropene	U	1.0								
Cyclohexane	U	5.0								
Dibromochloromethane	U	1.0								
Dichlorodifluoromethane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
Methyl acetate	U	2.0								
Methyl tert-butyl ether	U	5.0								
Methylcyclohexane	U	5.0								
Methylene chloride	U	5.0								
Styrene	U	1.0								
Tetrachloroethene	U	2.0								
Toluene	U	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115882	Instrument ID VMS9	Method: SW8260						
trans-1,2-Dichloroethene	U	1.0						
trans-1,3-Dichloropropene	U	1.0						
Trichloroethene	U	1.0						
Trichlorofluoromethane	U	1.0						
Vinyl chloride	U	1.0						
Xylenes, Total	U	3.0						
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.57</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>103</i>	<i>70-120</i>	<i>0</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>18.23</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>91.2</i>	<i>75-120</i>	<i>0</i>	
<i>Surr: Dibromofluoromethane</i>	<i>21.5</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>108</i>	<i>85-115</i>	<i>0</i>	
<i>Surr: Toluene-d8</i>	<i>18.97</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>94.8</i>	<i>85-120</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115882** Instrument ID **VMS9** Method: **SW8260**

LCS		Sample ID: VLCSW1-130205-R115882				Units: µg/L		Analysis Date: 02/05/13 10:52 AM		
Client ID:		Run ID: VMS9_130205A				SeqNo: 2208490		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	20.98	1.0	20	0	105	65-130	0			
1,1,2,2-Tetrachloroethane	18.46	1.0	20	0	92.3	65-130	0			
1,1,2-Trichloroethane	17.99	1.0	20	0	90	75-125	0			
1,1-Dichloroethane	19.96	1.0	20	0	99.8	70-135	0			
1,1-Dichloroethene	19.48	1.0	20	0	97.4	70-130	0			
1,2,4-Trichlorobenzene	20.71	1.0	20	0	104	65-135	0			
1,2-Dibromo-3-chloropropane	18.4	1.0	20	0	92	50-130	0			
1,2-Dibromoethane	19.27	1.0	20	0	96.4	80-120	0			
1,2-Dichlorobenzene	19.31	1.0	20	0	96.6	70-120	0			
1,2-Dichloroethane	17.73	1.0	20	0	88.6	70-130	0			
1,2-Dichloropropane	17.96	2.0	20	0	89.8	75-125	0			
1,3-Dichlorobenzene	19.13	2.0	20	0	95.6	75-125	0			
1,4-Dichlorobenzene	19.25	2.0	20	0	96.2	75-125	0			
2-Butanone	23.72	5.0	20	0	119	30-150	0			
2-Hexanone	19.45	5.0	20	0	97.2	55-130	0			
4-Methyl-2-pentanone	24.66	5.0	20	0	123	60-135	0			
Acetone	21.73	20	20	0	109	40-140	0			
Benzene	18.03	1.0	20	0	90.2	80-120	0			
Bromodichloromethane	18.98	1.0	20	0	94.9	75-120	0			
Bromoform	19.82	1.0	20	0	99.1	70-130	0			
Bromomethane	19.74	1.0	20	0	98.7	30-145	0			
Carbon disulfide	21.18	2.5	20	0	106	35-165	0			
Carbon tetrachloride	11.48	1.0	20	0	57.4	65-140	0			S
Chlorobenzene	18.99	1.0	20	0	95	80-120	0			
Chloroethane	19.24	1.0	20	0	96.2	60-135	0			
Chloroform	21.39	1.0	20	0	107	65-135	0			
Chloromethane	19.81	1.0	20	0	99	70-125	0			
cis-1,2-Dichloroethene	19.39	1.0	20	0	97	70-125	0			
cis-1,3-Dichloropropene	19.03	1.0	20	0	95.2	70-130	0			
Dibromochloromethane	18.39	1.0	20	0	92	60-135	0			
Dichlorodifluoromethane	15.17	1.0	20	0	75.8	30-155	0			
Ethylbenzene	19.48	1.0	20	0	97.4	75-125	0			
Isopropylbenzene	20.79	1.0	20	0	104	75-125	0			
Methyl tert-butyl ether	22.25	5.0	20	0	111	65-125	0			
Methylene chloride	21.56	5.0	20	0	108	55-140	0			
Styrene	21.48	1.0	20	0	107	65-135	0			
Tetrachloroethene	18.43	2.0	20	0	92.2	45-150	0			
Toluene	18.56	1.0	20	0	92.8	75-120	0			
trans-1,2-Dichloroethene	19.78	1.0	20	0	98.9	60-140	0			
trans-1,3-Dichloropropene	18.83	1.0	20	0	94.2	55-140	0			
Trichloroethene	17.39	1.0	20	0	87	70-125	0			
Trichlorofluoromethane	20.93	1.0	20	0	105	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115882		Instrument ID VMS9		Method: SW8260				
Vinyl chloride	20.08	1.0	20	0	100	50-145	0	
Xylenes, Total	60.26	3.0	60	0	100	75-130	0	
<i>Surr: 1,2-Dichloroethane-d4</i>	19.86	0	20	0	99.3	70-120	0	
<i>Surr: 4-Bromofluorobenzene</i>	20.12	0	20	0	101	75-120	0	
<i>Surr: Dibromofluoromethane</i>	21.2	0	20	0	106	85-115	0	
<i>Surr: Toluene-d8</i>	20	0	20	0	100	85-120	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115882** Instrument ID **VMS9** Method: **SW8260**

MS Sample ID: 1302057-13A MS				Units: µg/L			Analysis Date: 02/05/13 07:24 PM			
Client ID: GW-17322-020113-DR-013			Run ID: VMS9_130205A		SeqNo: 2209608		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	24.97	1.0	20	2.8	111	65-130	0			
1,1,2,2-Tetrachloroethane	20.09	1.0	20	0	100	65-130	0			
1,1,2-Trichloroethane	18.76	1.0	20	0	93.8	75-125	0			
1,1-Dichloroethane	20.39	1.0	20	0	102	70-135	0			
1,1-Dichloroethene	21.38	1.0	20	0	107	70-130	0			
1,2,4-Trichlorobenzene	18.44	1.0	20	0	92.2	65-135	0			
1,2-Dibromo-3-chloropropane	19.07	1.0	20	0	95.4	50-130	0			
1,2-Dibromoethane	20.2	1.0	20	0	101	80-120	0			
1,2-Dichlorobenzene	18.51	1.0	20	0	92.6	70-120	0			
1,2-Dichloroethane	18.47	1.0	20	0	92.4	70-130	0			
1,2-Dichloropropane	18.69	2.0	20	0	93.4	75-125	0			
1,3-Dichlorobenzene	18.56	2.0	20	0	92.8	75-125	0			
1,4-Dichlorobenzene	18.47	2.0	20	0	92.4	75-125	0			
2-Butanone	23.03	5.0	20	0	115	30-150	0			
2-Hexanone	21.12	5.0	20	0	106	55-130	0			
4-Methyl-2-pentanone	26.26	5.0	20	0	131	60-135	0			
Acetone	21.16	20	20	0	106	40-140	0			
Benzene	18.98	1.0	20	0	94.9	80-120	0			
Bromodichloromethane	19.29	1.0	20	0	96.4	75-120	0			
Bromoform	20.36	1.0	20	0	102	70-130	0			
Bromomethane	21.62	1.0	20	0	108	30-145	0			
Carbon disulfide	22.06	2.5	20	0	110	35-165	0			
Carbon tetrachloride	12.49	1.0	20	0	62.4	65-140	0			S
Chlorobenzene	19.48	1.0	20	0	97.4	80-120	0			
Chloroethane	22.81	1.0	20	0	114	60-135	0			
Chloroform	21.17	1.0	20	0	106	65-135	0			
Chloromethane	20.47	1.0	20	0	102	70-125	0			
cis-1,2-Dichloroethene	20.03	1.0	20	0	100	70-125	0			
cis-1,3-Dichloropropene	18.75	1.0	20	0	93.8	70-130	0			
Dibromochloromethane	17.99	1.0	20	0	90	60-135	0			
Dichlorodifluoromethane	16.12	1.0	20	0	80.6	30-155	0			
Ethylbenzene	20.03	1.0	20	0	100	75-125	0			
Isopropylbenzene	21.72	1.0	20	0	109	75-125	0			
Methyl tert-butyl ether	22.25	5.0	20	0	111	65-125	0			
Methylene chloride	21.82	5.0	20	0	109	55-140	0			
Styrene	21.84	1.0	20	0	109	65-135	0			
Tetrachloroethene	19.37	2.0	20	0	96.8	45-150	0			
Toluene	18.8	1.0	20	0	94	75-120	0			
trans-1,2-Dichloroethene	20.85	1.0	20	0	104	60-140	0			
trans-1,3-Dichloropropene	18.23	1.0	20	0	91.2	55-140	0			
Trichloroethene	41.2	1.0	20	21.9	96.5	70-125	0			
Trichlorofluoromethane	22.28	1.0	20	0	111	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115882	Instrument ID VMS9			Method: SW8260			
Vinyl chloride	21.43	1.0	20	0	107	50-145	0
Xylenes, Total	61.78	3.0	60	0	103	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.61</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>103</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.86</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>104</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>21.48</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>107</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>19.49</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>97.4</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115882** Instrument ID **VMS9** Method: **SW8260**

MSD Sample ID: 1302057-13A MSD				Units: µg/L			Analysis Date: 02/05/13 07:50 PM			
Client ID: GW-17322-020113-DR-013			Run ID: VMS9_130205A		SeqNo: 2209609		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	22.59	1.0	20	2.8	99	65-130	24.97	10	30	
1,1,2,2-Tetrachloroethane	17.66	1.0	20	0	88.3	65-130	20.09	12.9	30	
1,1,2-Trichloroethane	16.88	1.0	20	0	84.4	75-125	18.76	10.5	30	
1,1-Dichloroethane	18.72	1.0	20	0	93.6	70-135	20.39	8.54	30	
1,1-Dichloroethene	19.11	1.0	20	0	95.6	70-130	21.38	11.2	30	
1,2,4-Trichlorobenzene	17.31	1.0	20	0	86.6	65-135	18.44	6.32	30	
1,2-Dibromo-3-chloropropane	17.34	1.0	20	0	86.7	50-130	19.07	9.5	30	
1,2-Dibromoethane	18.01	1.0	20	0	90	80-120	20.2	11.5	30	
1,2-Dichlorobenzene	17.59	1.0	20	0	88	70-120	18.51	5.1	30	
1,2-Dichloroethane	17.03	1.0	20	0	85.2	70-130	18.47	8.11	30	
1,2-Dichloropropane	17.39	2.0	20	0	87	75-125	18.69	7.21	30	
1,3-Dichlorobenzene	17.15	2.0	20	0	85.8	75-125	18.56	7.9	30	
1,4-Dichlorobenzene	17.23	2.0	20	0	86.2	75-125	18.47	6.95	30	
2-Butanone	19.37	5.0	20	0	96.8	30-150	23.03	17.3	30	
2-Hexanone	18.07	5.0	20	0	90.4	55-130	21.12	15.6	30	
4-Methyl-2-pentanone	22.96	5.0	20	0	115	60-135	26.26	13.4	30	
Acetone	20.63	20	20	0	103	40-140	21.16	2.54	30	
Benzene	17.56	1.0	20	0	87.8	80-120	18.98	7.77	30	
Bromodichloromethane	18.2	1.0	20	0	91	75-120	19.29	5.81	30	
Bromoform	18.17	1.0	20	0	90.8	70-130	20.36	11.4	30	
Bromomethane	18.64	1.0	20	0	93.2	30-145	21.62	14.8	30	
Carbon disulfide	20.24	2.5	20	0	101	35-165	22.06	8.61	30	
Carbon tetrachloride	11.72	1.0	20	0	58.6	65-140	12.49	6.36	30	S
Chlorobenzene	17.63	1.0	20	0	88.2	80-120	19.48	9.97	30	
Chloroethane	19.14	1.0	20	0	95.7	60-135	22.81	17.5	30	
Chloroform	18.39	1.0	20	0	92	65-135	21.17	14.1	30	
Chloromethane	18.54	1.0	20	0	92.7	70-125	20.47	9.89	30	
cis-1,2-Dichloroethene	17.5	1.0	20	0	87.5	70-125	20.03	13.5	30	
cis-1,3-Dichloropropene	17.48	1.0	20	0	87.4	70-130	18.75	7.01	30	
Dibromochloromethane	16.54	1.0	20	0	82.7	60-135	17.99	8.4	30	
Dichlorodifluoromethane	14.82	1.0	20	0	74.1	30-155	16.12	8.4	30	
Ethylbenzene	18.01	1.0	20	0	90	75-125	20.03	10.6	30	
Isopropylbenzene	19.49	1.0	20	0	97.4	75-125	21.72	10.8	30	
Methyl tert-butyl ether	20.66	5.0	20	0	103	65-125	22.25	7.41	30	
Methylene chloride	20.56	5.0	20	0	103	55-140	21.82	5.95	30	
Styrene	19.56	1.0	20	0	97.8	65-135	21.84	11	30	
Tetrachloroethene	17.46	2.0	20	0	87.3	45-150	19.37	10.4	30	
Toluene	17.25	1.0	20	0	86.2	75-120	18.8	8.6	30	
trans-1,2-Dichloroethene	18.87	1.0	20	0	94.4	60-140	20.85	9.97	30	
trans-1,3-Dichloropropene	16.82	1.0	20	0	84.1	55-140	18.23	8.05	30	
Trichloroethene	39.19	1.0	20	21.9	86.4	70-125	41.2	5	30	
Trichlorofluoromethane	20.49	1.0	20	0	102	60-145	22.28	8.37	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115882	Instrument ID VMS9			Method: SW8260					
Vinyl chloride	19.59	1.0	20	0	98	50-145	21.43	8.97	30
Xylenes, Total	55.81	3.0	60	0	93	75-130	61.78	10.2	30
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.4</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>102</i>	<i>70-120</i>	<i>20.61</i>	<i>1.02</i>	<i>30</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.14</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>75-120</i>	<i>20.86</i>	<i>3.51</i>	<i>30</i>
<i>Surr: Dibromofluoromethane</i>	<i>20.93</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>105</i>	<i>85-115</i>	<i>21.48</i>	<i>2.59</i>	<i>30</i>
<i>Surr: Toluene-d8</i>	<i>19.21</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96</i>	<i>85-120</i>	<i>19.49</i>	<i>1.45</i>	<i>30</i>

The following samples were analyzed in this batch:

1302057-01A	1302057-12A	1302057-13A
1302057-14A	1302057-16A	1302057-18A
1302057-19A	1302057-21A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115940A** Instrument ID **VMS9** Method: **SW8260**

MBLK		Sample ID: VBLKW1-130206-R115940A				Units: µg/L		Analysis Date: 02/06/13 02:10 PM		
Client ID:		Run ID: VMS9_130206A				SeqNo: 2210591		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1,2-Trichlorotrifluoroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2,4-Trichlorobenzene	U	1.0								
1,2-Dibromo-3-chloropropane	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichlorobenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,2-Dichloropropane	U	2.0								
1,3-Dichlorobenzene	U	2.0								
1,4-Dichlorobenzene	U	2.0								
2-Butanone	U	5.0								
2-Hexanone	U	5.0								
4-Methyl-2-pentanone	U	5.0								
Acetone	U	20								
Benzene	U	1.0								
Bromodichloromethane	U	1.0								
Bromoform	U	1.0								
Bromomethane	U	1.0								
Carbon disulfide	U	2.5								
Carbon tetrachloride	U	1.0								
Chlorobenzene	U	1.0								
Chloroethane	U	1.0								
Chloroform	U	1.0								
Chloromethane	U	1.0								
cis-1,2-Dichloroethene	U	1.0								
cis-1,3-Dichloropropene	U	1.0								
Cyclohexane	U	5.0								
Dibromochloromethane	U	1.0								
Dichlorodifluoromethane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
Methyl acetate	U	2.0								
Methyl tert-butyl ether	U	5.0								
Methylcyclohexane	U	5.0								
Methylene chloride	U	5.0								
Styrene	U	1.0								
Tetrachloroethene	U	2.0								
Toluene	U	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115940A	Instrument ID VMS9	Method: SW8260						
trans-1,2-Dichloroethene	U	1.0						
trans-1,3-Dichloropropene	U	1.0						
Trichloroethene	U	1.0						
Trichlorofluoromethane	U	1.0						
Vinyl chloride	U	1.0						
Xylenes, Total	U	3.0						
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.81</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>104</i>	<i>70-120</i>	<i>0</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>18.24</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>91.2</i>	<i>75-120</i>	<i>0</i>	
<i>Surr: Dibromofluoromethane</i>	<i>20.95</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>105</i>	<i>85-115</i>	<i>0</i>	
<i>Surr: Toluene-d8</i>	<i>18.7</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>93.5</i>	<i>85-120</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115940A** Instrument ID **VMS9** Method: **SW8260**

LCS		Sample ID: VLCSW1-130206-R115940A				Units: µg/L		Analysis Date: 02/06/13 01:19 PM		
Client ID:		Run ID: VMS9_130206A				SeqNo: 2209784		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	18.51	1.0	20	0	92.6	65-130	0			
1,1,2,2-Tetrachloroethane	18.86	1.0	20	0	94.3	65-130	0			
1,1,2-Trichloroethane	17.93	1.0	20	0	89.6	75-125	0			
1,1-Dichloroethane	17.98	1.0	20	0	89.9	70-135	0			
1,1-Dichloroethene	17.95	1.0	20	0	89.8	70-130	0			
1,2,4-Trichlorobenzene	20.67	1.0	20	0	103	65-135	0			
1,2-Dibromo-3-chloropropane	18.19	1.0	20	0	91	50-130	0			
1,2-Dibromoethane	18.61	1.0	20	0	93	80-120	0			
1,2-Dichlorobenzene	18.8	1.0	20	0	94	70-120	0			
1,2-Dichloroethane	17.48	1.0	20	0	87.4	70-130	0			
1,2-Dichloropropane	17.54	2.0	20	0	87.7	75-125	0			
1,3-Dichlorobenzene	18.66	2.0	20	0	93.3	75-125	0			
1,4-Dichlorobenzene	18.65	2.0	20	0	93.2	75-125	0			
2-Butanone	21.91	5.0	20	0	110	30-150	0			
2-Hexanone	19.07	5.0	20	0	95.4	55-130	0			
4-Methyl-2-pentanone	22.97	5.0	20	0	115	60-135	0			
Acetone	18.96	20	20	0	94.8	40-140	0			J
Benzene	17.72	1.0	20	0	88.6	80-120	0			
Bromodichloromethane	18.62	1.0	20	0	93.1	75-120	0			
Bromoform	19.89	1.0	20	0	99.4	70-130	0			
Bromomethane	18	1.0	20	0	90	30-145	0			
Carbon disulfide	19.95	2.5	20	0	99.8	35-165	0			
Carbon tetrachloride	11.06	1.0	20	0	55.3	65-140	0			S
Chlorobenzene	18.39	1.0	20	0	92	80-120	0			
Chloroethane	16.87	1.0	20	0	84.4	60-135	0			
Chloroform	17.69	1.0	20	0	88.4	65-135	0			
Chloromethane	16.84	1.0	20	0	84.2	70-125	0			
cis-1,2-Dichloroethene	18	1.0	20	0	90	70-125	0			
cis-1,3-Dichloropropene	18.71	1.0	20	0	93.6	70-130	0			
Dibromochloromethane	17.96	1.0	20	0	89.8	60-135	0			
Dichlorodifluoromethane	12.17	1.0	20	0	60.8	30-155	0			
Ethylbenzene	18.69	1.0	20	0	93.4	75-125	0			
Isopropylbenzene	20.17	1.0	20	0	101	75-125	0			
Methyl tert-butyl ether	20.74	5.0	20	0	104	65-125	0			
Methylene chloride	20.51	5.0	20	0	103	55-140	0			
Styrene	20.8	1.0	20	0	104	65-135	0			
Tetrachloroethene	17.83	2.0	20	0	89.2	45-150	0			
Toluene	17.99	1.0	20	0	90	75-120	0			
trans-1,2-Dichloroethene	18.24	1.0	20	0	91.2	60-140	0			
trans-1,3-Dichloropropene	18.47	1.0	20	0	92.4	55-140	0			
Trichloroethene	17.33	1.0	20	0	86.6	70-125	0			
Trichlorofluoromethane	18.57	1.0	20	0	92.8	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115940A	Instrument ID VMS9		Method: SW8260				
Vinyl chloride	17.59	1.0	20	0	88	50-145	0
Xylenes, Total	58.1	3.0	60	0	96.8	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.01</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>100</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.48</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>102</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>20.46</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>102</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>19.61</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>98</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115940A** Instrument ID **VMS9** Method: **SW8260**

MS Sample ID: 1302167-01A MS				Units: µg/L			Analysis Date: 02/06/13 11:17 PM			
Client ID:		Run ID: VMS9_130206A		SeqNo: 2210610		Prep Date:		DF: 1000		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	17540	1,000	20000	0	87.7	65-130	0			
1,1,2,2-Tetrachloroethane	17180	1,000	20000	0	85.9	65-130	0			
1,1,2-Trichloroethane	17160	1,000	20000	0	85.8	75-125	0			
1,1-Dichloroethane	18050	1,000	20000	0	90.2	70-135	0			
1,1-Dichloroethene	17380	1,000	20000	0	86.9	70-130	0			
1,2,4-Trichlorobenzene	16440	1,000	20000	0	82.2	65-135	0			
1,2-Dibromo-3-chloropropane	16360	1,000	20000	0	81.8	50-130	0			
1,2-Dibromoethane	18380	1,000	20000	0	91.9	80-120	0			
1,2-Dichlorobenzene	16860	1,000	20000	0	84.3	70-120	0			
1,2-Dichloroethane	17330	1,000	20000	0	86.6	70-130	0			
1,2-Dichloropropane	16950	2,000	20000	0	84.8	75-125	0			
1,3-Dichlorobenzene	16430	2,000	20000	0	82.2	75-125	0			
1,4-Dichlorobenzene	16600	2,000	20000	0	83	75-125	0			
2-Butanone	19070	5,000	20000	730	91.7	30-150	0			
2-Hexanone	17830	5,000	20000	0	89.2	55-130	0			
4-Methyl-2-pentanone	22250	5,000	20000	0	111	60-135	0			
Acetone	20890	20,000	20000	0	104	40-140	0			
Benzene	16810	1,000	20000	0	84	80-120	0			
Bromodichloromethane	17260	1,000	20000	0	86.3	75-120	0			
Bromoform	17370	1,000	20000	0	86.8	70-130	0			
Bromomethane	16350	1,000	20000	0	81.8	30-145	0			
Carbon disulfide	17840	2,500	20000	0	89.2	35-165	0			
Carbon tetrachloride	10230	1,000	20000	0	51.2	65-140	0			S
Chlorobenzene	17080	1,000	20000	0	85.4	80-120	0			
Chloroethane	17830	1,000	20000	0	89.2	60-135	0			
Chloroform	17510	1,000	20000	0	87.6	65-135	0			
Chloromethane	18370	1,000	20000	0	91.8	70-125	0			
cis-1,2-Dichloroethene	16290	1,000	20000	550	78.7	70-125	0			
cis-1,3-Dichloropropene	16560	1,000	20000	0	82.8	70-130	0			
Dibromochloromethane	15430	1,000	20000	0	77.2	60-135	0			
Dichlorodifluoromethane	13150	1,000	20000	0	65.8	30-155	0			
Ethylbenzene	17090	1,000	20000	0	85.4	75-125	0			
Isopropylbenzene	17710	1,000	20000	0	88.6	75-125	0			
Methyl tert-butyl ether	21140	5,000	20000	0	106	65-125	0			
Methylene chloride	20310	5,000	20000	0	102	55-140	0			
Styrene	18730	1,000	20000	0	93.6	65-135	0			
Tetrachloroethene	16280	2,000	20000	0	81.4	45-150	0			
Toluene	16670	1,000	20000	0	83.4	75-120	0			
trans-1,2-Dichloroethene	17680	1,000	20000	0	88.4	60-140	0			
trans-1,3-Dichloropropene	16010	1,000	20000	0	80	55-140	0			
Trichloroethene	16350	1,000	20000	0	81.8	70-125	0			
Trichlorofluoromethane	17720	1,000	20000	0	88.6	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115940A	Instrument ID VMS9		Method: SW8260				
Vinyl chloride	17610	1,000	20000	0	88	50-145	0
Xylenes, Total	52710	3,000	60000	0	87.8	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>19930</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>99.6</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>19840</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>99.2</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>20020</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>100</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>19410</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>97</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: **R115940A** Instrument ID **VMS9** Method: **SW8260**

MSD Sample ID: 1302167-01A MSD				Units: µg/L			Analysis Date: 02/06/13 11:43 PM			
Client ID:		Run ID: VMS9_130206A		SeqNo: 2210612		Prep Date:		DF: 1000		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	17290	1,000	20000	0	86.4	65-130	17540	1.44	30	
1,1,2,2-Tetrachloroethane	17370	1,000	20000	0	86.8	65-130	17180	1.1	30	
1,1,2-Trichloroethane	17080	1,000	20000	0	85.4	75-125	17160	0.467	30	
1,1-Dichloroethane	17870	1,000	20000	0	89.4	70-135	18050	1	30	
1,1-Dichloroethene	17210	1,000	20000	0	86	70-130	17380	0.983	30	
1,2,4-Trichlorobenzene	16140	1,000	20000	0	80.7	65-135	16440	1.84	30	
1,2-Dibromo-3-chloropropane	16020	1,000	20000	0	80.1	50-130	16360	2.1	30	
1,2-Dibromoethane	18100	1,000	20000	0	90.5	80-120	18380	1.54	30	
1,2-Dichlorobenzene	16860	1,000	20000	0	84.3	70-120	16860	0	30	
1,2-Dichloroethane	17080	1,000	20000	0	85.4	70-130	17330	1.45	30	
1,2-Dichloropropane	16620	2,000	20000	0	83.1	75-125	16950	1.97	30	
1,3-Dichlorobenzene	16660	2,000	20000	0	83.3	75-125	16430	1.39	30	
1,4-Dichlorobenzene	16480	2,000	20000	0	82.4	75-125	16600	0.726	30	
2-Butanone	16270	5,000	20000	730	77.7	30-150	19070	15.8	30	
2-Hexanone	17300	5,000	20000	0	86.5	55-130	17830	3.02	30	
4-Methyl-2-pentanone	22530	5,000	20000	0	113	60-135	22250	1.25	30	
Acetone	20870	20,000	20000	0	104	40-140	20890	0.0958	30	
Benzene	16810	1,000	20000	0	84	80-120	16810	0	30	
Bromodichloromethane	17350	1,000	20000	0	86.8	75-120	17260	0.52	30	
Bromoform	17500	1,000	20000	0	87.5	70-130	17370	0.746	30	
Bromomethane	17470	1,000	20000	0	87.4	30-145	16350	6.62	30	
Carbon disulfide	18080	2,500	20000	0	90.4	35-165	17840	1.34	30	
Carbon tetrachloride	10050	1,000	20000	0	50.2	65-140	10230	1.78	30	S
Chlorobenzene	16900	1,000	20000	0	84.5	80-120	17080	1.06	30	
Chloroethane	17200	1,000	20000	0	86	60-135	17830	3.6	30	
Chloroform	17270	1,000	20000	0	86.4	65-135	17510	1.38	30	
Chloromethane	17810	1,000	20000	0	89	70-125	18370	3.1	30	
cis-1,2-Dichloroethene	16130	1,000	20000	550	77.9	70-125	16290	0.987	30	
cis-1,3-Dichloropropene	16470	1,000	20000	0	82.4	70-130	16560	0.545	30	
Dibromochloromethane	16020	1,000	20000	0	80.1	60-135	15430	3.75	30	
Dichlorodifluoromethane	12260	1,000	20000	0	61.3	30-155	13150	7.01	30	
Ethylbenzene	16880	1,000	20000	0	84.4	75-125	17090	1.24	30	
Isopropylbenzene	17590	1,000	20000	0	88	75-125	17710	0.68	30	
Methyl tert-butyl ether	21320	5,000	20000	0	107	65-125	21140	0.848	30	
Methylene chloride	20320	5,000	20000	0	102	55-140	20310	0.0492	30	
Styrene	18990	1,000	20000	0	95	65-135	18730	1.38	30	
Tetrachloroethene	16300	2,000	20000	0	81.5	45-150	16280	0.123	30	
Toluene	16630	1,000	20000	0	83.2	75-120	16670	0.24	30	
trans-1,2-Dichloroethene	17970	1,000	20000	0	89.8	60-140	17680	1.63	30	
trans-1,3-Dichloropropene	16490	1,000	20000	0	82.4	55-140	16010	2.95	30	
Trichloroethene	15620	1,000	20000	0	78.1	70-125	16350	4.57	30	
Trichlorofluoromethane	17180	1,000	20000	0	85.9	60-145	17720	3.09	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302057
Project: PCC-Validation (017322-T03Y13)

QC BATCH REPORT

Batch ID: R115940A	Instrument ID VMS9		Method: SW8260						
Vinyl chloride	17350	1,000	20000	0	86.8	50-145	17610	1.49	30
Xylenes, Total	52490	3,000	60000	0	87.5	75-130	52710	0.418	30
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>19730</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>98.6</i>	<i>70-120</i>	<i>19930</i>	<i>1.01</i>	<i>30</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>19970</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>99.8</i>	<i>75-120</i>	<i>19840</i>	<i>0.653</i>	<i>30</i>
<i>Surr: Dibromofluoromethane</i>	<i>19910</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>99.6</i>	<i>85-115</i>	<i>20020</i>	<i>0.551</i>	<i>30</i>
<i>Surr: Toluene-d8</i>	<i>19510</i>	<i>0</i>	<i>20000</i>	<i>0</i>	<i>97.6</i>	<i>85-120</i>	<i>19410</i>	<i>0.514</i>	<i>30</i>

The following samples were analyzed in this batch: | 1302057-12A | 1302057-14A |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

1302057
COC NO.: **PL-10764**

PAGE 1 OF 2

(See Reverse Side for Instructions)

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT — ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE – Fully Executed Copy (CRA) YELLOW – Receiving Laboratory Copy PINK – Shipper GOLDENROD – Sampling Crew

CRA Form: COC-10A (20110804)



**CONESTOGA-ROVERS
& ASSOCIATES**

CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

1302057
COC NO.: **PL-10765**

PAGE 2 OF 2

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 17322-TB3Y13				Laboratory Name: ALS				Lab Location: Holland, MI				SSOW ID: 17322-TB3Y13-003			
Project Name: RACER Validation				Lab Contact: T. Beamish				Lab Quote No:				Cooler No:			
Project Location: Pontiac, MI				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)			
Chemistry Contact: P. Wiseman				Matrix Code (see back of COC) Grab (G) or Comp (C)				Unpreserved Hydrochloric Acid (HCl) Nitric Acid (HNO ₃) Sulfuric Acid (H ₂ SO ₄) Sodium Hydroxide (NaOH) Methanol/Water (Soil VOC) EnCores 3x5-g, 1x25-g Other:				Total Containers/Sample TEL VOC TEL SVOC TEL Metals			
Sampler(s): D. Rivers / S. Kupper															
Carrier: Pickup - ALS				Airbill No:				Date Shipped: 2/1/13				COMMENTS/ SPECIAL INSTRUCTIONS:			
MS/MSD Request															
Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)			DATE (mm/dd/yy)	TIME (hh:mm)										
16	GW-17322-020113-DR-016			2/1/13	1035	WG	G	2	3	1				6	X
17	↓ ↓ ↓ ↓ -017			↓	1340	↓	↓	2						2	X
18	↓ ↓ ↓ ↓ -018			↓	1135	↓	↓	12	3					5	X
19	↓ ↓ ↓ ↓ -019			↓	1345	↓	↓	2	3					5	X
20	TB-17322-020113			↓	-	WG	-	1						1	X
21	GW-17322-020113-DR-020				1435	WG	-	2	3					5	X
22															
23															
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TAT Required in business days (use separate COCs for different TATs):
☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☒ 2 Week ☐ Other:

Total Number of Containers: **21** **Notes/ Special Requirements:** **1.8c**

All Samples in Cooler must be on COC

RELINQUISHED BY	COMPANY	DATE	TIME	RECEIVED BY	COMPANY	DATE	TIME
1. D. Rivers	CRA	2/1/13	1600	1. [Signature]	ALS	2/1/13	1600
2. [Signature]				2. [Signature]	ALS	2/2/13	0800
3.				3.			

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE - Fully Executed Copy (CRA) YELLOW - Receiving Laboratory Copy PINK - Shipper GOLDENROD - Sampling Crew

CRA Form: COC-10A (20110804)

Sample Receipt Checklist

Client Name: **CRA - PLYMOUTH**

Date/Time Received: **02-Feb-13 08:00**

Work Order: **1302057**

Received by: **DS**

Checklist completed by <u>Diane Shaw</u>	02-Feb-13	Reviewed by: <u>Bill Carey</u>	04-Feb-13
eSignature	Date	eSignature	Date

Matrices: Groundwater

Carrier name: City Transfer

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>1.8 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>2/2/2013 10:08:39 AM</u>		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☒	N/A ☐
pH adjusted by:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



13-Feb-2013

Paul Wiseman
Conestoga-Rovers & Associates
14496 Sheldon Road
Suite 200
Plymouth, MI 48170

Re: **PCC-Validation (017322-T01Y13)**

Work Order: **1302149**

Dear Paul,

ALS Environmental received 8 samples on 05-Feb-2013 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 43.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Beamish", is written over a white background.

Electronically approved by: Tom Beamish

Tom Beamish
Senior Project Manager



Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Work Order: 1302149

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1302149-01	GW-17322-020413-EM-021	Water		02/04/13 11:05	02/05/13 19:00	☐
1302149-02	GW-17322-020413-CB-022	Water		02/04/13 12:00	02/05/13 19:00	☐
1302149-03	GW-17322-020413-CB-023	Water		02/04/13 14:45	02/05/13 19:00	☐
1302149-04	GW-17322-020413-EM-024	Water		02/04/13 14:50	02/05/13 19:00	☐
1302149-05	GW-17322-020413-CB-025	Water		02/04/13 15:55	02/05/13 19:00	☐
1302149-06	GW-17322-020513-EM-026	Water		02/05/13 09:30	02/05/13 19:00	☐
1302149-07	GW-17322-020513-EM-027	Water		02/05/13 10:00	02/05/13 19:00	☐
1302149-08	GW-17322-020513-EM-028	Water		02/05/13 10:25	02/05/13 19:00	☐

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
WorkOrder: 1302149

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

<u>Units Reported</u>	<u>Description</u>
µg/L	Micrograms per Liter

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-EM-021
Collection Date: 02/04/13 11:05 AM

Work Order: 1302149
Lab ID: 1302149-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/7/13	Analyst: LR
<u>BatchID: 46298</u>							
Mercury	U		0.0080	0.20	µg/L	1	02/07/13 15:23
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID: 46294</u>							
Aluminum	650		1.7	10	µg/L	1	02/08/13 14:06
Antimony	0.20	J	0.039	2.0	µg/L	1	02/08/13 14:06
Arsenic	8.0		0.72	5.0	µg/L	1	02/08/13 14:06
Barium	230		0.27	5.0	µg/L	1	02/08/13 14:06
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 14:06
Cadmium	U		0.034	1.0	µg/L	1	02/08/13 14:06
Chromium	1.3	J	0.042	5.0	µg/L	1	02/08/13 14:06
Cobalt	1.0	J	0.039	5.0	µg/L	1	02/08/13 14:06
Copper	3.7	J	0.12	4.0	µg/L	1	02/08/13 14:06
Iron	2,500		2.8	80	µg/L	1	02/08/13 14:06
Lead	2.2	J	0.027	3.0	µg/L	1	02/08/13 14:06
Manganese	290		0.11	5.0	µg/L	1	02/08/13 14:06
Nickel	5.5		0.17	5.0	µg/L	1	02/08/13 14:06
Selenium	0.65	J	0.41	5.0	µg/L	1	02/08/13 14:06
Silver	U		0.025	0.20	µg/L	1	02/08/13 14:06
Thallium	U		0.029	2.0	µg/L	1	02/08/13 14:06
Vanadium	1.6	J	0.30	4.0	µg/L	1	02/08/13 14:06
Zinc	10		0.59	10	µg/L	1	02/08/13 14:06
VOLATILE ORGANIC COMPOUNDS							
			SW8260				Analyst: AK
<u>BatchID: R115926</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 16:10
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 16:10
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 16:10
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 16:10
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 16:10
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 16:10
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 16:10
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 16:10
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 16:10
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 16:10
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 16:10
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 16:10
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 16:10

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-EM-021
Collection Date: 02/04/13 11:05 AM

Work Order: 1302149
Lab ID: 1302149-01
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 16:10
2-Butanone	U		0.22	25	µg/L	1	02/06/13 16:10
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 16:10
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 16:10
Acetone	U		0.33	50	µg/L	1	02/06/13 16:10
Benzene	U		0.18	1.0	µg/L	1	02/06/13 16:10
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 16:10
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 16:10
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 16:10
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 16:10
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 16:10
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 16:10
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 16:10
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 16:10
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 16:10
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 16:10
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 16:10
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 16:10
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 16:10
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 16:10
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 16:10
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 16:10
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 16:10
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 16:10
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 16:10
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 16:10
Styrene	U		0.11	1.0	µg/L	1	02/06/13 16:10
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 16:10
Toluene	U		0.12	1.0	µg/L	1	02/06/13 16:10
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 16:10
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 16:10
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 16:10
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 16:10
Vinyl chloride	2.8		0.17	1.0	µg/L	1	02/06/13 16:10
Xylenes, Total	0.36	J	0.29	3.0	µg/L	1	02/06/13 16:10
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/06/13 16:10
Surr: 4-Bromofluorobenzene	103			75-120	%REC	1	02/06/13 16:10
Surr: Dibromofluoromethane	99.6			85-115	%REC	1	02/06/13 16:10
Surr: Toluene-d8	97.3			85-120	%REC	1	02/06/13 16:10

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-022
Collection Date: 02/04/13 12:00 PM

Work Order: 1302149
Lab ID: 1302149-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/7/13	Analyst: LR
BatchID: 46298							
Mercury	0.0090	J	0.0080	0.20	µg/L	1	02/07/13 15:35
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
BatchID: 46294							
Aluminum	360		1.7	10	µg/L	1	02/08/13 14:21
Antimony	1.2	J	0.039	2.0	µg/L	1	02/08/13 14:21
Arsenic	2.3	J	0.72	5.0	µg/L	1	02/08/13 14:21
Barium	16		0.27	5.0	µg/L	1	02/08/13 14:21
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 14:21
Cadmium	0.043	J	0.034	1.0	µg/L	1	02/08/13 14:21
Chromium	2.1	J	0.042	5.0	µg/L	1	02/08/13 14:21
Cobalt	0.25	J	0.039	5.0	µg/L	1	02/08/13 14:21
Copper	3.6	J	0.12	4.0	µg/L	1	02/08/13 14:21
Iron	400		2.8	80	µg/L	1	02/08/13 14:21
Lead	0.85	J	0.027	3.0	µg/L	1	02/08/13 14:21
Manganese	6.7		0.11	5.0	µg/L	1	02/08/13 14:21
Nickel	1.6	J	0.17	5.0	µg/L	1	02/08/13 14:21
Selenium	0.63	J	0.41	5.0	µg/L	1	02/08/13 14:21
Silver	U		0.025	0.20	µg/L	1	02/08/13 14:21
Thallium	0.20	J	0.029	2.0	µg/L	1	02/08/13 14:21
Vanadium	2.6	J	0.30	4.0	µg/L	1	02/08/13 14:21
Zinc	110		0.59	10	µg/L	1	02/08/13 14:21
SEMI-VOLATILE ORGANIC COMPOUNDS							
			SW8270			Prep: SW3510 / 2/7/13	Analyst: RM
BatchID: 46286							
1,1'-Biphenyl	U		0.095	5.0	µg/L	1	02/09/13 06:31
2,4,5-Trichlorophenol	U		0.12	5.0	µg/L	1	02/09/13 06:31
2,4,6-Trichlorophenol	U		0.11	4.0	µg/L	1	02/09/13 06:31
2,4-Dichlorophenol	U		0.22	10	µg/L	1	02/09/13 06:31
2,4-Dimethylphenol	U		0.24	5.0	µg/L	1	02/09/13 06:31
2,4-Dinitrophenol	U		0.76	5.0	µg/L	1	02/09/13 06:31
2,4-Dinitrotoluene	U		0.78	5.0	µg/L	1	02/09/13 06:31
2,6-Dinitrotoluene	U		0.82	5.0	µg/L	1	02/09/13 06:31
2-Chloronaphthalene	U		0.13	5.0	µg/L	1	02/09/13 06:31
2-Chlorophenol	U		0.73	5.0	µg/L	1	02/09/13 06:31
2-Methylnaphthalene	U		0.13	5.0	µg/L	1	02/09/13 06:31
2-Methylphenol	U		0.60	5.0	µg/L	1	02/09/13 06:31
2-Nitroaniline	U		0.11	20	µg/L	1	02/09/13 06:31

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-022
Collection Date: 02/04/13 12:00 PM

Work Order: 1302149
Lab ID: 1302149-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
2-Nitrophenol	U		0.19	5.0	µg/L	1	02/09/13 06:31
3,3'-Dichlorobenzidine	U		0.54	1.0	µg/L	1	02/09/13 06:31
3-Nitroaniline	U		2.5	20	µg/L	1	02/09/13 06:31
4,6-Dinitro-2-methylphenol	U		0.34	20	µg/L	1	02/09/13 06:31
4-Bromophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 06:31
4-Chloro-3-methylphenol	U		0.65	5.0	µg/L	1	02/09/13 06:31
4-Chloroaniline	U		1.1	10	µg/L	1	02/09/13 06:31
4-Chlorophenyl phenyl ether	U		0.11	5.0	µg/L	1	02/09/13 06:31
4-Methylphenol	U		0.55	5.0	µg/L	1	02/09/13 06:31
4-Nitroaniline	U		1.5	20	µg/L	1	02/09/13 06:31
4-Nitrophenol	U		1.6	20	µg/L	1	02/09/13 06:31
Acenaphthene	U		0.11	5.0	µg/L	1	02/09/13 06:31
Acenaphthylene	U		0.12	5.0	µg/L	1	02/09/13 06:31
Acetophenone	U		0.090	1.0	µg/L	1	02/09/13 06:31
Anthracene	U		0.72	5.0	µg/L	1	02/09/13 06:31
Atrazine	U		0.13	3.0	µg/L	1	02/09/13 06:31
Benzaldehyde	U		0.46	1.0	µg/L	1	02/09/13 06:31
Benzo(a)anthracene	U		0.57	1.0	µg/L	1	02/09/13 06:31
Benzo(a)pyrene	U		0.10	1.0	µg/L	1	02/09/13 06:31
Benzo(b)fluoranthene	U		0.74	1.0	µg/L	1	02/09/13 06:31
Benzo(g,h,i)perylene	U		0.70	1.0	µg/L	1	02/09/13 06:31
Benzo(k)fluoranthene	U		0.17	1.0	µg/L	1	02/09/13 06:31
Bis(2-chloroethoxy)methane	U		0.13	5.0	µg/L	1	02/09/13 06:31
Bis(2-chloroethyl)ether	U		0.11	1.0	µg/L	1	02/09/13 06:31
Bis(2-chloroisopropyl)ether	U		0.12	5.0	µg/L	1	02/09/13 06:31
Bis(2-ethylhexyl)phthalate	U		0.12	5.0	µg/L	1	02/09/13 06:31
Butyl benzyl phthalate	U		0.11	5.0	µg/L	1	02/09/13 06:31
Caprolactam	U		4.7	10	µg/L	1	02/09/13 06:31
Carbazole	U		0.84	10	µg/L	1	02/09/13 06:31
Chrysene	U		0.71	1.0	µg/L	1	02/09/13 06:31
Dibenzo(a,h)anthracene	U		0.67	2.0	µg/L	1	02/09/13 06:31
Dibenzofuran	U		0.11	4.0	µg/L	1	02/09/13 06:31
Diethyl phthalate	U		0.69	5.0	µg/L	1	02/09/13 06:31
Dimethyl phthalate	U		0.14	5.0	µg/L	1	02/09/13 06:31
Di-n-butyl phthalate	U		0.71	5.0	µg/L	1	02/09/13 06:31
Di-n-octyl phthalate	U		0.12	5.0	µg/L	1	02/09/13 06:31
Fluoranthene	U		0.77	1.0	µg/L	1	02/09/13 06:31
Fluorene	U		0.10	5.0	µg/L	1	02/09/13 06:31
Hexachlorobenzene	U		0.10	1.0	µg/L	1	02/09/13 06:31
Hexachlorobutadiene	U		0.12	1.0	µg/L	1	02/09/13 06:31

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-022
Collection Date: 02/04/13 12:00 PM

Work Order: 1302149
Lab ID: 1302149-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Hexachlorocyclopentadiene	U		0.18	5.0	µg/L	1	02/09/13 06:31
Hexachloroethane	U		0.13	5.0	µg/L	1	02/09/13 06:31
Indeno(1,2,3-cd)pyrene	U		0.69	2.0	µg/L	1	02/09/13 06:31
Isophorone	U		0.12	5.0	µg/L	1	02/09/13 06:31
Naphthalene	U		0.12	5.0	µg/L	1	02/09/13 06:31
Nitrobenzene	U		0.10	3.0	µg/L	1	02/09/13 06:31
N-Nitrosodi-n-propylamine	U		0.13	5.0	µg/L	1	02/09/13 06:31
N-Nitrosodiphenylamine	U		0.81	5.0	µg/L	1	02/09/13 06:31
Pentachlorophenol	U		0.11	1.0	µg/L	1	02/09/13 06:31
Phenanthrene	U		0.86	2.0	µg/L	1	02/09/13 06:31
Phenol	U		0.094	5.0	µg/L	1	02/09/13 06:31
Pyrene	U		0.65	5.0	µg/L	1	02/09/13 06:31
Surr: 2,4,6-Tribromophenol	75.6			32-115	%REC	1	02/09/13 06:31
Surr: 2-Fluorobiphenyl	64.3			32-100	%REC	1	02/09/13 06:31
Surr: 2-Fluorophenol	40.4			22-59	%REC	1	02/09/13 06:31
Surr: 4-Terphenyl-d14	86.8			23-112	%REC	1	02/09/13 06:31
Surr: Nitrobenzene-d5	67.3			31-93	%REC	1	02/09/13 06:31
Surr: Phenol-d6	24.4			13-36	%REC	1	02/09/13 06:31

VOLATILE ORGANIC COMPOUNDS

SW8260

Analyst: AK

BatchID: R115926

1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 16:34
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 16:34
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 16:34
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 16:34
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 16:34
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 16:34
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 16:34
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 16:34
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 16:34
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 16:34
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 16:34
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 16:34
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 16:34
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 16:34
2-Butanone	U		0.22	25	µg/L	1	02/06/13 16:34
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 16:34
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 16:34
Acetone	U		0.33	50	µg/L	1	02/06/13 16:34
Benzene	U		0.18	1.0	µg/L	1	02/06/13 16:34

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-022
Collection Date: 02/04/13 12:00 PM

Work Order: 1302149
Lab ID: 1302149-02
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 16:34
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 16:34
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 16:34
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 16:34
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 16:34
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 16:34
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 16:34
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 16:34
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 16:34
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 16:34
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 16:34
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 16:34
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 16:34
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 16:34
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 16:34
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 16:34
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 16:34
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 16:34
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 16:34
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 16:34
Styrene	U		0.11	1.0	µg/L	1	02/06/13 16:34
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 16:34
Toluene	U		0.12	1.0	µg/L	1	02/06/13 16:34
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 16:34
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 16:34
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 16:34
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 16:34
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 16:34
Xylenes, Total	U		0.29	3.0	µg/L	1	02/06/13 16:34
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/06/13 16:34
Surr: 4-Bromofluorobenzene	103			75-120	%REC	1	02/06/13 16:34
Surr: Dibromofluoromethane	99.1			85-115	%REC	1	02/06/13 16:34
Surr: Toluene-d8	96.2			85-120	%REC	1	02/06/13 16:34

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-023
Collection Date: 02/04/13 02:45 PM

Work Order: 1302149
Lab ID: 1302149-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/7/13	Analyst: LR
<u>BatchID:</u> 46298							
Mercury	U		0.0080	0.20	µg/L	1	02/07/13 15:37
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID:</u> 46294							
Aluminum	6.9	J	1.7	10	µg/L	1	02/08/13 14:26
Antimony	0.44	J	0.039	2.0	µg/L	1	02/08/13 14:26
Arsenic	0.81	J	0.72	5.0	µg/L	1	02/08/13 14:26
Barium	70		0.27	5.0	µg/L	1	02/08/13 14:26
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 14:26
Cadmium	U		0.034	1.0	µg/L	1	02/08/13 14:26
Chromium	0.23	J	0.042	5.0	µg/L	1	02/08/13 14:26
Cobalt	0.23	J	0.039	5.0	µg/L	1	02/08/13 14:26
Copper	0.46	J	0.12	4.0	µg/L	1	02/08/13 14:26
Iron	110		2.8	80	µg/L	1	02/08/13 14:26
Lead	0.087	J	0.027	3.0	µg/L	1	02/08/13 14:26
Manganese	110		0.11	5.0	µg/L	1	02/08/13 14:26
Nickel	1.7	J	0.17	5.0	µg/L	1	02/08/13 14:26
Selenium	U		0.41	5.0	µg/L	1	02/08/13 14:26
Silver	U		0.025	0.20	µg/L	1	02/08/13 14:26
Thallium	U		0.029	2.0	µg/L	1	02/08/13 14:26
Vanadium	U		0.30	4.0	µg/L	1	02/08/13 14:26
Zinc	1.2	J	0.59	10	µg/L	1	02/08/13 14:26
VOLATILE ORGANIC COMPOUNDS							
			SW8260				Analyst: AK
<u>BatchID:</u> R115926							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 16:58
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 16:58
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 16:58
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 16:58
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 16:58
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 16:58
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 16:58
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 16:58
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 16:58
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 16:58
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 16:58
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 16:58
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 16:58

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-023
Collection Date: 02/04/13 02:45 PM

Work Order: 1302149
Lab ID: 1302149-03
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 16:58
2-Butanone	U		0.22	25	µg/L	1	02/06/13 16:58
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 16:58
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 16:58
Acetone	U		0.33	50	µg/L	1	02/06/13 16:58
Benzene	U		0.18	1.0	µg/L	1	02/06/13 16:58
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 16:58
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 16:58
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 16:58
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 16:58
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 16:58
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 16:58
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 16:58
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 16:58
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 16:58
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 16:58
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 16:58
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 16:58
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 16:58
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 16:58
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 16:58
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 16:58
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 16:58
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 16:58
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 16:58
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 16:58
Styrene	U		0.11	1.0	µg/L	1	02/06/13 16:58
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 16:58
Toluene	U		0.12	1.0	µg/L	1	02/06/13 16:58
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 16:58
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 16:58
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 16:58
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 16:58
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 16:58
Xylenes, Total	U		0.29	3.0	µg/L	1	02/06/13 16:58
Surr: 1,2-Dichloroethane-d4	104			70-120	%REC	1	02/06/13 16:58
Surr: 4-Bromofluorobenzene	102			75-120	%REC	1	02/06/13 16:58
Surr: Dibromofluoromethane	99.4			85-115	%REC	1	02/06/13 16:58
Surr: Toluene-d8	93.5			85-120	%REC	1	02/06/13 16:58

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-EM-024
Collection Date: 02/04/13 02:50 PM

Work Order: 1302149
Lab ID: 1302149-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/7/13	Analyst: LR
<u>BatchID: 46298</u>							
Mercury	U		0.0080	0.20	µg/L	1	02/07/13 15:39
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID: 46294</u>							
Aluminum	66		1.7	10	µg/L	1	02/08/13 14:31
Antimony	0.11	J	0.039	2.0	µg/L	1	02/08/13 14:31
Arsenic	1.6	J	0.72	5.0	µg/L	1	02/08/13 14:31
Barium	220		0.27	5.0	µg/L	1	02/08/13 14:31
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 14:31
Cadmium	0.076	J	0.034	1.0	µg/L	1	02/08/13 14:31
Chromium	0.41	J	0.042	5.0	µg/L	1	02/08/13 14:31
Cobalt	3.0	J	0.039	5.0	µg/L	1	02/08/13 14:31
Copper	2.5	J	0.12	4.0	µg/L	1	02/08/13 14:31
Iron	3,700		2.8	80	µg/L	1	02/08/13 14:31
Lead	0.24	J	0.027	3.0	µg/L	1	02/08/13 14:31
Nickel	4.7	J	0.17	5.0	µg/L	1	02/08/13 14:31
Selenium	0.73	J	0.41	5.0	µg/L	1	02/08/13 14:31
Silver	U		0.025	0.20	µg/L	1	02/08/13 14:31
Thallium	U		0.029	2.0	µg/L	1	02/08/13 14:31
Vanadium	0.32	J	0.30	4.0	µg/L	1	02/08/13 14:31
Zinc	9.4	J	0.59	10	µg/L	1	02/08/13 14:31
<u>BatchID: 46294</u>							
Manganese	4,600		1.1	50	µg/L	10	02/08/13 16:54
VOLATILE ORGANIC COMPOUNDS							
			SW8260				Analyst: AK
<u>BatchID: R115926</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 17:22
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 17:22
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 17:22
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 17:22
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 17:22
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 17:22
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 17:22
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 17:22
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 17:22
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 17:22
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 17:22
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 17:22

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-EM-024
Collection Date: 02/04/13 02:50 PM

Work Order: 1302149
Lab ID: 1302149-04
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 17:22
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 17:22
2-Butanone	U		0.22	25	µg/L	1	02/06/13 17:22
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 17:22
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 17:22
Acetone	U		0.33	50	µg/L	1	02/06/13 17:22
Benzene	U		0.18	1.0	µg/L	1	02/06/13 17:22
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 17:22
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 17:22
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 17:22
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 17:22
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 17:22
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 17:22
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 17:22
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 17:22
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 17:22
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 17:22
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 17:22
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 17:22
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 17:22
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 17:22
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 17:22
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 17:22
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 17:22
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 17:22
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 17:22
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 17:22
Styrene	U		0.11	1.0	µg/L	1	02/06/13 17:22
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 17:22
Toluene	U		0.12	1.0	µg/L	1	02/06/13 17:22
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 17:22
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 17:22
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 17:22
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 17:22
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 17:22
Xylenes, Total	0.79	J	0.29	3.0	µg/L	1	02/06/13 17:22
Surr: 1,2-Dichloroethane-d4	107			70-120	%REC	1	02/06/13 17:22
Surr: 4-Bromofluorobenzene	103			75-120	%REC	1	02/06/13 17:22
Surr: Dibromofluoromethane	102			85-115	%REC	1	02/06/13 17:22
Surr: Toluene-d8	97.7			85-120	%REC	1	02/06/13 17:22

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-025
Collection Date: 02/04/13 03:55 PM

Work Order: 1302149
Lab ID: 1302149-05
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/7/13	Analyst: LR
<u>BatchID:</u> 46298							
Mercury	U		0.0080	0.20	µg/L	1	02/07/13 15:42
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
<u>BatchID:</u> 46294							
Aluminum	5.8	J	1.7	10	µg/L	1	02/08/13 15:02
Antimony	0.065	J	0.039	2.0	µg/L	1	02/08/13 15:02
Arsenic	1.6	J	0.72	5.0	µg/L	1	02/08/13 15:02
Barium	270		0.27	5.0	µg/L	1	02/08/13 15:02
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:02
Cadmium	U		0.034	1.0	µg/L	1	02/08/13 15:02
Chromium	0.19	J	0.042	5.0	µg/L	1	02/08/13 15:02
Cobalt	0.93	J	0.039	5.0	µg/L	1	02/08/13 15:02
Copper	0.21	J	0.12	4.0	µg/L	1	02/08/13 15:02
Iron	3,600		2.8	80	µg/L	1	02/08/13 15:02
Lead	0.11	J	0.027	3.0	µg/L	1	02/08/13 15:02
Manganese	300		0.11	5.0	µg/L	1	02/08/13 15:02
Nickel	3.9	J	0.17	5.0	µg/L	1	02/08/13 15:02
Selenium	0.42	J	0.41	5.0	µg/L	1	02/08/13 15:02
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:02
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:02
Vanadium	U		0.30	4.0	µg/L	1	02/08/13 15:02
Zinc	3.7	J	0.59	10	µg/L	1	02/08/13 15:02
VOLATILE ORGANIC COMPOUNDS							
			SW8260				Analyst: AK
<u>BatchID:</u> R115926							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 17:46
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 17:46
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 17:46
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 17:46
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 17:46
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 17:46
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 17:46
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 17:46
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 17:46
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 17:46
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 17:46
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 17:46
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 17:46

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020413-CB-025
Collection Date: 02/04/13 03:55 PM

Work Order: 1302149
Lab ID: 1302149-05
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 17:46
2-Butanone	U		0.22	25	µg/L	1	02/06/13 17:46
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 17:46
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 17:46
Acetone	U		0.33	50	µg/L	1	02/06/13 17:46
Benzene	U		0.18	1.0	µg/L	1	02/06/13 17:46
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 17:46
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 17:46
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 17:46
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 17:46
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 17:46
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 17:46
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 17:46
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 17:46
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 17:46
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 17:46
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 17:46
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 17:46
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 17:46
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 17:46
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 17:46
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 17:46
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 17:46
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 17:46
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 17:46
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 17:46
Styrene	U		0.11	1.0	µg/L	1	02/06/13 17:46
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 17:46
Toluene	U		0.12	1.0	µg/L	1	02/06/13 17:46
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 17:46
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 17:46
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 17:46
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 17:46
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 17:46
Xylenes, Total	U		0.29	3.0	µg/L	1	02/06/13 17:46
Surr: 1,2-Dichloroethane-d4	102			70-120	%REC	1	02/06/13 17:46
Surr: 4-Bromofluorobenzene	103			75-120	%REC	1	02/06/13 17:46
Surr: Dibromofluoromethane	102			85-115	%REC	1	02/06/13 17:46
Surr: Toluene-d8	96.3			85-120	%REC	1	02/06/13 17:46

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020513-EM-026
Collection Date: 02/05/13 09:30 AM

Work Order: 1302149
Lab ID: 1302149-06
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/7/13	Analyst: LR
BatchID: 46298							
Mercury	0.016	J	0.0080	0.20	µg/L	1	02/07/13 15:44
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
BatchID: 46294							
Aluminum	2,500		1.7	10	µg/L	1	02/08/13 15:07
Antimony	1.6	J	0.039	2.0	µg/L	1	02/08/13 15:07
Arsenic	3.4	J	0.72	5.0	µg/L	1	02/08/13 15:07
Barium	280		0.27	5.0	µg/L	1	02/08/13 15:07
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:07
Cadmium	0.18	J	0.034	1.0	µg/L	1	02/08/13 15:07
Chromium	8.3		0.042	5.0	µg/L	1	02/08/13 15:07
Cobalt	2.4	J	0.039	5.0	µg/L	1	02/08/13 15:07
Copper	14		0.12	4.0	µg/L	1	02/08/13 15:07
Iron	4,900		2.8	80	µg/L	1	02/08/13 15:07
Lead	9.1		0.027	3.0	µg/L	1	02/08/13 15:07
Manganese	730		0.11	5.0	µg/L	1	02/08/13 15:07
Nickel	10		0.17	5.0	µg/L	1	02/08/13 15:07
Selenium	1.2	J	0.41	5.0	µg/L	1	02/08/13 15:07
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:07
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:07
Vanadium	7.3		0.30	4.0	µg/L	1	02/08/13 15:07
Zinc	53		0.59	10	µg/L	1	02/08/13 15:07
VOLATILE ORGANIC COMPOUNDS							
			SW8260				Analyst: AK
BatchID: R115926							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 18:10
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 18:10
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 18:10
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 18:10
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 18:10
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 18:10
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 18:10
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 18:10
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 18:10
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 18:10
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 18:10
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 18:10
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 18:10

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020513-EM-026
Collection Date: 02/05/13 09:30 AM

Work Order: 1302149
Lab ID: 1302149-06
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 18:10
2-Butanone	U		0.22	25	µg/L	1	02/06/13 18:10
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 18:10
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 18:10
Acetone	U		0.33	50	µg/L	1	02/06/13 18:10
Benzene	U		0.18	1.0	µg/L	1	02/06/13 18:10
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 18:10
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 18:10
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 18:10
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 18:10
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 18:10
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 18:10
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 18:10
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 18:10
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 18:10
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 18:10
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 18:10
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 18:10
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 18:10
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 18:10
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 18:10
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 18:10
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 18:10
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 18:10
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 18:10
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 18:10
Styrene	U		0.11	1.0	µg/L	1	02/06/13 18:10
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 18:10
Toluene	U		0.12	1.0	µg/L	1	02/06/13 18:10
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 18:10
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 18:10
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 18:10
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 18:10
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 18:10
Xylenes, Total	U		0.29	3.0	µg/L	1	02/06/13 18:10
Surr: 1,2-Dichloroethane-d4	104			70-120	%REC	1	02/06/13 18:10
Surr: 4-Bromofluorobenzene	104			75-120	%REC	1	02/06/13 18:10
Surr: Dibromofluoromethane	99.6			85-115	%REC	1	02/06/13 18:10
Surr: Toluene-d8	97.6			85-120	%REC	1	02/06/13 18:10

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020513-EM-027
Collection Date: 02/05/13 10:00 AM

Work Order: 1302149
Lab ID: 1302149-07
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILE ORGANIC COMPOUNDS			SW8260				Analyst: AK
BatchID: <u>R115926</u>							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 18:34
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 18:34
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 18:34
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 18:34
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 18:34
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 18:34
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 18:34
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 18:34
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 18:34
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 18:34
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 18:34
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 18:34
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 18:34
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 18:34
2-Butanone	U		0.22	25	µg/L	1	02/06/13 18:34
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 18:34
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 18:34
Acetone	U		0.33	50	µg/L	1	02/06/13 18:34
Benzene	U		0.18	1.0	µg/L	1	02/06/13 18:34
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 18:34
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 18:34
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 18:34
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 18:34
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 18:34
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 18:34
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 18:34
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 18:34
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 18:34
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 18:34
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 18:34
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 18:34
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 18:34
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 18:34
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 18:34
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 18:34
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 18:34
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 18:34

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020513-EM-027
Collection Date: 02/05/13 10:00 AM

Work Order: 1302149
Lab ID: 1302149-07
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 18:34
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 18:34
Styrene	U		0.11	1.0	µg/L	1	02/06/13 18:34
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 18:34
Toluene	U		0.12	1.0	µg/L	1	02/06/13 18:34
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 18:34
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 18:34
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 18:34
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 18:34
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 18:34
Xylenes, Total	U		0.29	3.0	µg/L	1	02/06/13 18:34
Surr: 1,2-Dichloroethane-d4	104			70-120	%REC	1	02/06/13 18:34
Surr: 4-Bromofluorobenzene	102			75-120	%REC	1	02/06/13 18:34
Surr: Dibromofluoromethane	98.6			85-115	%REC	1	02/06/13 18:34
Surr: Toluene-d8	94.1			85-120	%REC	1	02/06/13 18:34

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020513-EM-028
Collection Date: 02/05/13 10:25 AM

Work Order: 1302149
Lab ID: 1302149-08
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY BY CVAA							
			SW7470			Prep: SW7470 / 2/7/13	Analyst: LR
BatchID: 46298							
Mercury	0.016	J	0.0080	0.20	µg/L	1	02/07/13 15:46
METALS BY ICP-MS							
			SW6020A			Prep: SW3005A / 2/7/13	Analyst: RH
BatchID: 46294							
Aluminum	2,000		1.7	10	µg/L	1	02/08/13 15:12
Antimony	0.84	J	0.039	2.0	µg/L	1	02/08/13 15:12
Arsenic	2.5	J	0.72	5.0	µg/L	1	02/08/13 15:12
Barium	24		0.27	5.0	µg/L	1	02/08/13 15:12
Beryllium	U		0.048	1.0	µg/L	1	02/08/13 15:12
Cadmium	0.054	J	0.034	1.0	µg/L	1	02/08/13 15:12
Chromium	4.8	J	0.042	5.0	µg/L	1	02/08/13 15:12
Cobalt	1.7	J	0.039	5.0	µg/L	1	02/08/13 15:12
Copper	8.9		0.12	4.0	µg/L	1	02/08/13 15:12
Iron	3,200		2.8	80	µg/L	1	02/08/13 15:12
Lead	18		0.027	3.0	µg/L	1	02/08/13 15:12
Manganese	100		0.11	5.0	µg/L	1	02/08/13 15:12
Nickel	7.2		0.17	5.0	µg/L	1	02/08/13 15:12
Selenium	2.0	J	0.41	5.0	µg/L	1	02/08/13 15:12
Silver	U		0.025	0.20	µg/L	1	02/08/13 15:12
Thallium	U		0.029	2.0	µg/L	1	02/08/13 15:12
Vanadium	4.8		0.30	4.0	µg/L	1	02/08/13 15:12
Zinc	22		0.59	10	µg/L	1	02/08/13 15:12
VOLATILE ORGANIC COMPOUNDS							
			SW8260				Analyst: AK
BatchID: R115926							
1,1,1-Trichloroethane	U		0.14	1.0	µg/L	1	02/06/13 18:59
1,1,2,2-Tetrachloroethane	U		0.13	1.0	µg/L	1	02/06/13 18:59
1,1,2-Trichloroethane	U		0.084	1.0	µg/L	1	02/06/13 18:59
1,1,2-Trichlorotrifluoroethane	U		0.18	1.0	µg/L	1	02/06/13 18:59
1,1-Dichloroethane	U		0.11	1.0	µg/L	1	02/06/13 18:59
1,1-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 18:59
1,2,4-Trichlorobenzene	U		0.16	5.0	µg/L	1	02/06/13 18:59
1,2-Dibromo-3-chloropropane	U		0.31	1.0	µg/L	1	02/06/13 18:59
1,2-Dibromoethane	U		0.16	1.0	µg/L	1	02/06/13 18:59
1,2-Dichlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 18:59
1,2-Dichloroethane	U		0.15	1.0	µg/L	1	02/06/13 18:59
1,2-Dichloropropane	U		0.13	1.0	µg/L	1	02/06/13 18:59
1,3-Dichlorobenzene	U		0.16	1.0	µg/L	1	02/06/13 18:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 13-Feb-13

Client: Conestoga-Rovers & Associates
Project: PCC-Validation (017322-T01Y13)
Sample ID: GW-17322-020513-EM-028
Collection Date: 02/05/13 10:25 AM

Work Order: 1302149
Lab ID: 1302149-08
Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
1,4-Dichlorobenzene	U		0.15	1.0	µg/L	1	02/06/13 18:59
2-Butanone	U		0.22	25	µg/L	1	02/06/13 18:59
2-Hexanone	U		0.12	50	µg/L	1	02/06/13 18:59
4-Methyl-2-pentanone	U		0.096	50	µg/L	1	02/06/13 18:59
Acetone	U		0.33	50	µg/L	1	02/06/13 18:59
Benzene	U		0.18	1.0	µg/L	1	02/06/13 18:59
Bromodichloromethane	U		0.12	1.0	µg/L	1	02/06/13 18:59
Bromoform	U		0.15	1.0	µg/L	1	02/06/13 18:59
Bromomethane	U		0.21	5.0	µg/L	1	02/06/13 18:59
Carbon disulfide	U		0.17	5.0	µg/L	1	02/06/13 18:59
Carbon tetrachloride	U		0.12	1.0	µg/L	1	02/06/13 18:59
Chlorobenzene	U		0.13	1.0	µg/L	1	02/06/13 18:59
Chloroethane	U		0.46	5.0	µg/L	1	02/06/13 18:59
Chloroform	U		0.15	1.0	µg/L	1	02/06/13 18:59
Chloromethane	U		0.16	5.0	µg/L	1	02/06/13 18:59
cis-1,2-Dichloroethene	U		0.11	1.0	µg/L	1	02/06/13 18:59
cis-1,3-Dichloropropene	U		0.081	1.0	µg/L	1	02/06/13 18:59
Cyclohexane	U		0.22	1.0	µg/L	1	02/06/13 18:59
Dibromochloromethane	U		0.13	5.0	µg/L	1	02/06/13 18:59
Dichlorodifluoromethane	U		0.20	5.0	µg/L	1	02/06/13 18:59
Ethylbenzene	U		0.13	1.0	µg/L	1	02/06/13 18:59
Isopropylbenzene	U		0.14	5.0	µg/L	1	02/06/13 18:59
Methyl acetate	U		0.19	10	µg/L	1	02/06/13 18:59
Methyl tert-butyl ether	U		0.070	5.0	µg/L	1	02/06/13 18:59
Methylcyclohexane	U		0.99	1.0	µg/L	1	02/06/13 18:59
Methylene chloride	U		0.19	5.0	µg/L	1	02/06/13 18:59
Styrene	U		0.11	1.0	µg/L	1	02/06/13 18:59
Tetrachloroethene	U		0.15	1.0	µg/L	1	02/06/13 18:59
Toluene	U		0.12	1.0	µg/L	1	02/06/13 18:59
trans-1,2-Dichloroethene	U		0.12	1.0	µg/L	1	02/06/13 18:59
trans-1,3-Dichloropropene	U		0.15	1.0	µg/L	1	02/06/13 18:59
Trichloroethene	U		0.14	1.0	µg/L	1	02/06/13 18:59
Trichlorofluoromethane	U		0.18	1.0	µg/L	1	02/06/13 18:59
Vinyl chloride	U		0.17	1.0	µg/L	1	02/06/13 18:59
Xylenes, Total	U		0.29	3.0	µg/L	1	02/06/13 18:59
Surr: 1,2-Dichloroethane-d4	106			70-120	%REC	1	02/06/13 18:59
Surr: 4-Bromofluorobenzene	104			75-120	%REC	1	02/06/13 18:59
Surr: Dibromofluoromethane	102			85-115	%REC	1	02/06/13 18:59
Surr: Toluene-d8	96.1			85-120	%REC	1	02/06/13 18:59

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46298** Instrument ID **HG1** Method: **SW7470**

MBLK	Sample ID: MBLK-46298-46298					Units: mg/L		Analysis Date: 02/07/13 03:13 PM		
Client ID:	Run ID: HG1_130207A				SeqNo: 2210996		Prep Date: 02/07/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury U 0.00020

LCS	Sample ID: LCS-46298-46298					Units: mg/L		Analysis Date: 02/07/13 03:15 PM		
Client ID:	Run ID: HG1_130207A				SeqNo: 2210997		Prep Date: 02/07/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.00194 0.00020 0.002 0 97 80-120 0

MS	Sample ID: 1302149-01BMS					Units: mg/L		Analysis Date: 02/07/13 03:25 PM		
Client ID: GW-17322-020413-EM-021	Run ID: HG1_130207A				SeqNo: 2211002		Prep Date: 02/07/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.001801 0.00020 0.002 0.000004 89.8 75-125 0

MSD	Sample ID: 1302149-01BMSD					Units: mg/L		Analysis Date: 02/07/13 03:27 PM		
Client ID: GW-17322-020413-EM-021	Run ID: HG1_130207A				SeqNo: 2211003		Prep Date: 02/07/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.001801 0.00020 0.002 0.000004 89.8 75-125 0.001801 0 20

The following samples were analyzed in this batch:

1302149-01B	1302149-02B	1302149-03B
1302149-04B	1302149-05B	1302149-06B
1302149-08B		

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46294** Instrument ID **ICPMS2** Method: **SW6020A**

MBLK		Sample ID: MBLK-46294-46294				Units: mg/L		Analysis Date: 02/08/13 01:46 PM		
Client ID:		Run ID: ICPMS2_130208A				SeqNo: 2211840		Prep Date: 02/07/13		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	0.010								
Antimony	U	0.0050								
Arsenic	U	0.0050								
Barium	U	0.0050								
Beryllium	U	0.0020								
Cadmium	U	0.0020								
Chromium	U	0.0050								
Cobalt	U	0.0050								
Copper	U	0.0050								
Iron	U	0.080								
Lead	U	0.0050								
Manganese	U	0.0050								
Nickel	U	0.0050								
Selenium	U	0.0050								
Silver	U	0.0050								
Thallium	U	0.0050								
Vanadium	U	0.0050								
Zinc	U	0.010								

LCS		Sample ID: LCS-46294-46294				Units: mg/L		Analysis Date: 02/08/13 01:51 PM		
Client ID:		Run ID: ICPMS2_130208A				SeqNo: 2211841		Prep Date: 02/07/13		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.08383	0.010	0.1	0	83.8	80-120	0			
Antimony	0.08759	0.0050	0.1	0	87.6	80-120	0			
Arsenic	0.08649	0.0050	0.1	0	86.5	80-120	0			
Barium	0.08649	0.0050	0.1	0	86.5	80-120	0			
Beryllium	0.0869	0.0020	0.1	0	86.9	80-120	0			
Cadmium	0.09227	0.0020	0.1	0	92.3	80-120	0			
Chromium	0.08287	0.0050	0.1	0	82.9	80-120	0			
Cobalt	0.08417	0.0050	0.1	0	84.2	80-120	0			
Copper	0.08441	0.0050	0.1	0	84.4	80-120	0			
Iron	8.489	0.080	10	0	84.9	80-120	0			
Lead	0.08461	0.0050	0.1	0	84.6	80-120	0			
Manganese	0.08657	0.0050	0.1	0	86.6	80-120	0			
Nickel	0.08418	0.0050	0.1	0	84.2	80-120	0			
Selenium	0.08449	0.0050	0.1	0	84.5	80-120	0			
Silver	0.08638	0.0050	0.1	0	86.4	80-120	0			
Thallium	0.08145	0.0050	0.1	0	81.4	80-120	0			
Vanadium	0.08619	0.0050	0.1	0	86.2	80-120	0			
Zinc	0.08843	0.010	0.1	0	88.4	80-120	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46294** Instrument ID **ICPMS2** Method: **SW6020A**

MS Sample ID: 1302149-01BMS				Units: mg/L			Analysis Date: 02/08/13 02:11 PM			
Client ID: GW-17322-020413-EM-021			Run ID: ICPMS2_130208A		SeqNo: 2211845		Prep Date: 02/07/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	1.111	0.010	0.1	0.6478	463	75-125	0			SO
Antimony	0.08549	0.0050	0.1	0.0002027	85.3	75-125	0			
Arsenic	0.09901	0.0050	0.1	0.007959	91.1	75-125	0			
Barium	0.3254	0.0050	0.1	0.2325	92.9	75-125	0			
Beryllium	0.0859	0.0020	0.1	-0.00004392	85.9	75-125	0			
Cadmium	0.09095	0.0020	0.1	0.00003307	90.9	75-125	0			
Chromium	0.08761	0.0050	0.1	0.001294	86.3	75-125	0			
Cobalt	0.08744	0.0050	0.1	0.001011	86.4	75-125	0			
Copper	0.08769	0.0050	0.1	0.003723	84	75-125	0			
Iron	11.31	0.080	10	2.498	88.1	75-125	0			
Lead	0.0888	0.0050	0.1	0.002225	86.6	75-125	0			
Manganese	0.3836	0.0050	0.1	0.2885	95.1	75-125	0			
Nickel	0.08974	0.0050	0.1	0.005502	84.2	75-125	0			
Selenium	0.08802	0.0050	0.1	0.0006497	87.4	75-125	0			
Silver	0.07858	0.0050	0.1	-1.178E-06	78.6	75-125	0			
Thallium	0.0844	0.0050	0.1	-0.0002906	84.7	75-125	0			
Vanadium	0.09637	0.0050	0.1	0.001562	94.8	75-125	0			
Zinc	0.09664	0.010	0.1	0.01007	86.6	75-125	0			

MSD Sample ID: 1302149-01BMSD				Units: mg/L			Analysis Date: 02/08/13 02:16 PM			
Client ID: GW-17322-020413-EM-021			Run ID: ICPMS2_130208A		SeqNo: 2211846		Prep Date: 02/07/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	1.109	0.010	0.1	0.6478	461	75-125	1.111	0.18	20	SO
Antimony	0.08832	0.0050	0.1	0.0002027	88.1	75-125	0.08549	3.26	20	
Arsenic	0.1029	0.0050	0.1	0.007959	94.9	75-125	0.09901	3.85	20	
Barium	0.3365	0.0050	0.1	0.2325	104	75-125	0.3254	3.35	20	
Beryllium	0.08964	0.0020	0.1	-0.00004392	89.7	75-125	0.0859	4.26	20	
Cadmium	0.09562	0.0020	0.1	0.00003307	95.6	75-125	0.09095	5.01	20	
Chromium	0.091	0.0050	0.1	0.001294	89.7	75-125	0.08761	3.8	20	
Cobalt	0.09346	0.0050	0.1	0.001011	92.4	75-125	0.08744	6.66	20	
Copper	0.0928	0.0050	0.1	0.003723	89.1	75-125	0.08769	5.66	20	
Iron	12	0.080	10	2.498	95	75-125	11.31	5.92	20	
Lead	0.09208	0.0050	0.1	0.002225	89.9	75-125	0.0888	3.63	20	
Manganese	0.3982	0.0050	0.1	0.2885	110	75-125	0.3836	3.73	20	
Nickel	0.09547	0.0050	0.1	0.005502	90	75-125	0.08974	6.19	20	
Selenium	0.09179	0.0050	0.1	0.0006497	91.1	75-125	0.08802	4.19	20	
Silver	0.08091	0.0050	0.1	-1.178E-06	80.9	75-125	0.07858	2.92	20	
Thallium	0.0884	0.0050	0.1	-0.0002906	88.7	75-125	0.0844	4.63	20	
Vanadium	0.1025	0.0050	0.1	0.001562	101	75-125	0.09637	6.16	20	
Zinc	0.103	0.010	0.1	0.01007	92.9	75-125	0.09664	6.37	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46294** Instrument ID **ICPMS2** Method: **SW6020A**

The following samples were analyzed in this batch:

1302149-01B	1302149-02B	1302149-03B
1302149-04B	1302149-05B	1302149-06B
1302149-08B		

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46286** Instrument ID **SVMS6** Method: **SW8270**

MBLK				Sample ID: SBLKW1-46286-46286		Units: µg/L		Analysis Date: 02/08/13 06:39 PM		
Client ID:			Run ID: SVMS6_130208A		SeqNo: 2213266		Prep Date: 02/07/13		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1'-Biphenyl	U	5.0								
2,4,5-Trichlorophenol	U	5.0								
2,4,6-Trichlorophenol	U	5.0								
2,4-Dichlorophenol	U	10								
2,4-Dimethylphenol	U	5.0								
2,4-Dinitrophenol	U	5.0								
2,4-Dinitrotoluene	U	5.0								
2,6-Dinitrotoluene	U	5.0								
2-Chloronaphthalene	U	5.0								
2-Chlorophenol	U	5.0								
2-Methylnaphthalene	U	5.0								
2-Methylphenol	U	5.0								
2-Nitroaniline	U	20								
2-Nitrophenol	U	5.0								
3,3'-Dichlorobenzidine	U	5.0								
3-Nitroaniline	U	20								
4,6-Dinitro-2-methylphenol	U	20								
4-Bromophenyl phenyl ether	U	5.0								
4-Chloro-3-methylphenol	U	5.0								
4-Chloroaniline	U	20								
4-Chlorophenyl phenyl ether	U	5.0								
4-Methylphenol	U	5.0								
4-Nitroaniline	U	20								
4-Nitrophenol	U	20								
Acenaphthene	U	5.0								
Acenaphthylene	U	5.0								
Acetophenone	U	1.0								
Anthracene	U	5.0								
Atrazine	U	1.0								
Benzaldehyde	U	1.0								
Benzo(a)anthracene	U	5.0								
Benzo(a)pyrene	U	5.0								
Benzo(b)fluoranthene	U	5.0								
Benzo(g,h,i)perylene	U	5.0								
Benzo(k)fluoranthene	U	5.0								
Bis(2-chloroethoxy)methane	U	5.0								
Bis(2-chloroethyl)ether	U	5.0								
Bis(2-chloroisopropyl)ether	U	5.0								
Bis(2-ethylhexyl)phthalate	U	5.0								
Butyl benzyl phthalate	U	5.0								
Caprolactam	U	10								
Carbazole	U	10								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: 46286		Instrument ID SVMS6		Method: SW8270				
Chrysene	U	5.0						
Dibenzo(a,h)anthracene	U	5.0						
Dibenzofuran	U	5.0						
Diethyl phthalate	U	20						
Dimethyl phthalate	U	20						
Di-n-butyl phthalate	U	5.0						
Di-n-octyl phthalate	U	5.0						
Fluoranthene	U	5.0						
Fluorene	U	5.0						
Hexachlorobenzene	U	5.0						
Hexachlorobutadiene	U	5.0						
Hexachlorocyclopentadiene	U	20						
Hexachloroethane	U	5.0						
Indeno(1,2,3-cd)pyrene	U	5.0						
Isophorone	U	5.0						
Naphthalene	U	5.0						
Nitrobenzene	U	5.0						
N-Nitrosodi-n-propylamine	U	5.0						
N-Nitrosodiphenylamine	U	5.0						
Pentachlorophenol	U	20						
Phenanthrene	U	5.0						
Phenol	U	5.0						
Pyrene	U	5.0						
<i>Surr: 2,4,6-Tribromophenol</i>	<i>34.53</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>69.1</i>	<i>38-115</i>	<i>0</i>	
<i>Surr: 2-Fluorobiphenyl</i>	<i>34.5</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>69</i>	<i>32-100</i>	<i>0</i>	
<i>Surr: 2-Fluorophenol</i>	<i>21.07</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>42.1</i>	<i>22-59</i>	<i>0</i>	
<i>Surr: 4-Terphenyl-d14</i>	<i>51.56</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>103</i>	<i>23-112</i>	<i>0</i>	
<i>Surr: Nitrobenzene-d5</i>	<i>37.35</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>74.7</i>	<i>31-93</i>	<i>0</i>	
<i>Surr: Phenol-d6</i>	<i>12.6</i>	<i>0</i>	<i>50</i>	<i>0</i>	<i>25.2</i>	<i>13-36</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46286** Instrument ID **SVMS6** Method: **SW8270**

LCS Sample ID: SLCSW1-46286-46286				Units: µg/L			Analysis Date: 02/08/13 05:47 PM			
Client ID:		Run ID: SVMS6_130208A		SeqNo: 2213264		Prep Date: 02/07/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	15.19	5.0	20	0	76	50-110	0			
2,4,6-Trichlorophenol	14.8	5.0	20	0	74	50-115	0			
2,4-Dichlorophenol	13.68	10	20	0	68.4	50-105	0			
2,4-Dimethylphenol	10.47	5.0	20	0	52.4	30-110	0			
2,4-Dinitrophenol	14.82	5.0	20	0	74.1	15-140	0			
2,4-Dinitrotoluene	16.57	5.0	20	0	82.8	50-120	0			
2,6-Dinitrotoluene	16.96	5.0	20	0	84.8	50-115	0			
2-Chloronaphthalene	14.96	5.0	20	0	74.8	50-105	0			
2-Chlorophenol	12.11	5.0	20	0	60.6	35-105	0			
2-Methylnaphthalene	14.96	5.0	20	0	74.8	45-105	0			
2-Methylphenol	10.32	5.0	20	0	51.6	40-110	0			
2-Nitroaniline	15.93	20	20	0	79.6	50-115	0			J
2-Nitrophenol	13.88	5.0	20	0	69.4	40-115	0			
3-Nitroaniline	15.7	20	20	0	78.5	20-125	0			J
4,6-Dinitro-2-methylphenol	16.82	20	20	0	84.1	40-130	0			J
4-Bromophenyl phenyl ether	15.9	5.0	20	0	79.5	50-115	0			
4-Chloro-3-methylphenol	12.98	5.0	20	0	64.9	45-110	0			
4-Chloroaniline	16.86	20	20	0	84.3	15-110	0			J
4-Chlorophenyl phenyl ether	15.98	5.0	20	0	79.9	50-110	0			
4-Methylphenol	9.31	5.0	20	0	46.6	30-110	0			
4-Nitroaniline	13.2	20	20	0	66	35-150	0			J
4-Nitrophenol	4.42	20	20	0	22.1	1-58	0			J
Acenaphthene	15.68	5.0	20	0	78.4	45-110	0			
Acenaphthylene	15.28	5.0	20	0	76.4	50-105	0			
Anthracene	16.9	5.0	20	0	84.5	55-110	0			
Benzo(a)anthracene	16.57	5.0	20	0	82.8	55-110	0			
Benzo(a)pyrene	17.56	5.0	20	0	87.8	55-110	0			
Benzo(b)fluoranthene	16.98	5.0	20	0	84.9	45-120	0			
Benzo(g,h,i)perylene	17.66	5.0	20	0	88.3	40-125	0			
Benzo(k)fluoranthene	18.68	5.0	20	0	93.4	45-125	0			
Bis(2-chloroethoxy)methane	15.43	5.0	20	0	77.2	45-105	0			
Bis(2-chloroethyl)ether	15.31	5.0	20	0	76.6	35-110	0			
Bis(2-chloroisopropyl)ether	15.78	5.0	20	0	78.9	25-130	0			
Bis(2-ethylhexyl)phthalate	18.3	5.0	20	0	91.5	40-125	0			
Butyl benzyl phthalate	18.14	5.0	20	0	90.7	45-115	0			
Carbazole	17.87	10	20	0	89.4	50-150	0			
Chrysene	18.2	5.0	20	0	91	55-110	0			
Dibenzo(a,h)anthracene	18.39	5.0	20	0	92	40-125	0			
Dibenzofuran	15.44	5.0	20	0	77.2	55-105	0			
Diethyl phthalate	16.03	20	20	0	80.2	40-120	0			J
Dimethyl phthalate	16.06	20	20	0	80.3	25-125	0			J
Di-n-butyl phthalate	18.01	5.0	20	0	90	55-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: 46286		Instrument ID SVMS6		Method: SW8270				
Di-n-octyl phthalate	18.63	5.0	20	0	93.2	35-135	0	
Fluoranthene	17.68	5.0	20	0	88.4	55-115	0	
Fluorene	16.04	5.0	20	0	80.2	50-110	0	
Hexachlorobenzene	16.17	5.0	20	0	80.8	50-110	0	
Hexachlorobutadiene	14.15	5.0	20	0	70.8	25-105	0	
Hexachlorocyclopentadiene	10.47	20	20	0	52.4	25-105	0	J
Hexachloroethane	14.81	5.0	20	0	74	30-95	0	
Indeno(1,2,3-cd)pyrene	18.17	5.0	20	0	90.8	45-125	0	
Isophorone	15.74	5.0	20	0	78.7	50-110	0	
Naphthalene	14.73	5.0	20	0	73.6	40-100	0	
Nitrobenzene	15.67	5.0	20	0	78.4	45-110	0	
N-Nitrosodi-n-propylamine	16.37	5.0	20	0	81.8	35-130	0	
N-Nitrosodiphenylamine	17.59	5.0	20	0	88	50-110	0	
Pentachlorophenol	16.27	20	20	0	81.4	40-115	0	J
Phenanthrene	16.41	5.0	20	0	82	50-115	0	
Phenol	5.47	5.0	20	0	27.4	12-43	0	
Pyrene	17.4	5.0	20	0	87	50-130	0	
<i>Surr: 2,4,6-Tribromophenol</i>	37.59	0	50	0	75.2	38-115	0	
<i>Surr: 2-Fluorobiphenyl</i>	34.46	0	50	0	68.9	32-100	0	
<i>Surr: 2-Fluorophenol</i>	16.5	0	50	0	33	22-59	0	
<i>Surr: 4-Terphenyl-d14</i>	45.99	0	50	0	92	23-112	0	
<i>Surr: Nitrobenzene-d5</i>	36.54	0	50	0	73.1	31-93	0	
<i>Surr: Phenol-d6</i>	11.32	0	50	0	22.6	13-36	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46286** Instrument ID **SVMS6** Method: **SW8270**

MS Sample ID: 1302056-02A MS				Units: µg/L			Analysis Date: 02/08/13 10:18 PM			
Client ID:		Run ID: SVMS6_130208A		SeqNo: 2213273		Prep Date: 02/07/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	341.2	100	400	0	85.3	50-110	0			
2,4,6-Trichlorophenol	309.8	100	400	0	77.4	50-115	0			
2,4-Dichlorophenol	308.6	200	400	0	77.2	50-105	0			
2,4-Dimethylphenol	248.6	100	400	0	62.2	30-110	0			
2,4-Dinitrophenol	291.2	100	400	0	72.8	15-140	0			
2,4-Dinitrotoluene	323.2	100	400	0	80.8	50-120	0			
2,6-Dinitrotoluene	349	100	400	0	87.2	50-115	0			
2-Chloronaphthalene	298.2	100	400	0	74.6	50-105	0			
2-Chlorophenol	292	100	400	0	73	35-105	0			
2-Methylnaphthalene	298.6	100	400	0	74.6	45-105	0			
2-Methylphenol	258.2	100	400	0	64.6	40-110	0			
2-Nitroaniline	321.4	400	400	0	80.4	50-115	0			J
2-Nitrophenol	285.8	100	400	0	71.4	40-115	0			
3-Nitroaniline	324	400	400	0	81	20-125	0			J
4,6-Dinitro-2-methylphenol	297.6	400	400	0	74.4	40-130	0			J
4-Bromophenyl phenyl ether	320.8	100	400	0	80.2	50-115	0			
4-Chloro-3-methylphenol	320.2	100	400	0	80	45-110	0			
4-Chloroaniline	337.4	400	400	0	84.4	15-110	0			J
4-Chlorophenyl phenyl ether	322.6	100	400	0	80.6	50-110	0			
4-Methylphenol	232.4	100	400	0	58.1	30-110	0			
4-Nitroaniline	304.6	400	400	0	76.2	35-150	0			J
4-Nitrophenol	117.6	400	400	0	29.4	1-58	0			J
Acenaphthene	313.2	100	400	0	78.3	45-110	0			
Acenaphthylene	303	100	400	0	75.8	50-105	0			
Anthracene	330.8	100	400	0	82.7	55-110	0			
Benzo(a)anthracene	327.6	100	400	0	81.9	55-110	0			
Benzo(a)pyrene	349.4	100	400	0	87.4	55-110	0			
Benzo(b)fluoranthene	334.6	100	400	0	83.6	45-120	0			
Benzo(g,h,i)perylene	349.6	100	400	0	87.4	40-125	0			
Benzo(k)fluoranthene	366.2	100	400	0	91.6	45-125	0			
Bis(2-chloroethoxy)methane	307.2	100	400	0	76.8	45-105	0			
Bis(2-chloroethyl)ether	307	100	400	0	76.8	35-110	0			
Bis(2-chloroisopropyl)ether	309.2	100	400	0	77.3	25-130	0			
Bis(2-ethylhexyl)phthalate	364.2	100	400	0	91	40-125	0			
Butyl benzyl phthalate	359.4	100	400	0	89.8	45-115	0			
Carbazole	367	200	400	0	91.8	50-150	0			
Chrysene	353.6	100	400	0	88.4	55-110	0			
Dibenzo(a,h)anthracene	362	100	400	0	90.5	40-125	0			
Dibenzofuran	310.2	100	400	0	77.6	55-105	0			
Diethyl phthalate	316	400	400	0	79	40-120	0			J
Dimethyl phthalate	319.2	400	400	0	79.8	25-125	0			J
Di-n-butyl phthalate	357.4	100	400	0	89.4	55-115	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: 46286		Instrument ID SVMS6		Method: SW8270				
Di-n-octyl phthalate	366.8	100	400	0	91.7	35-135	0	
Fluoranthene	345.2	100	400	0	86.3	55-115	0	
Fluorene	322.6	100	400	0	80.6	50-110	0	
Hexachlorobenzene	319.2	100	400	0	79.8	50-110	0	
Hexachlorobutadiene	285.2	100	400	0	71.3	25-105	0	
Hexachlorocyclopentadiene	118.2	400	400	0	29.6	25-105	0	J
Hexachloroethane	280.4	100	400	0	70.1	30-95	0	
Indeno(1,2,3-cd)pyrene	356.4	100	400	0	89.1	45-125	0	
Isophorone	312.2	100	400	0	78	50-110	0	
Naphthalene	291.6	100	400	0	72.9	40-100	0	
Nitrobenzene	311	100	400	0	77.8	45-110	0	
N-Nitrosodi-n-propylamine	324.8	100	400	0	81.2	35-130	0	
N-Nitrosodiphenylamine	350.8	100	400	0	87.7	50-110	0	
Pentachlorophenol	376.2	400	400	0	94	40-115	0	J
Phenanthrene	324.6	100	400	0	81.2	50-115	0	
Phenol	125.4	100	400	0	31.4	12-43	0	
Pyrene	335.8	100	400	0	84	50-130	0	
<i>Surr: 2,4,6-Tribromophenol</i>	789.2	0	1000	0	78.9	38-115	0	
<i>Surr: 2-Fluorobiphenyl</i>	680	0	1000	0	68	32-100	0	
<i>Surr: 2-Fluorophenol</i>	428.6	0	1000	0	42.9	22-59	0	
<i>Surr: 4-Terphenyl-d14</i>	959.2	0	1000	0	95.9	23-112	0	
<i>Surr: Nitrobenzene-d5</i>	719.8	0	1000	0	72	31-93	0	
<i>Surr: Phenol-d6</i>	266.6	0	1000	0	26.7	13-36	0	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **46286** Instrument ID **SVMS6** Method: **SW8270**

MSD Sample ID: 1302056-02A MSD				Units: µg/L			Analysis Date: 02/08/13 10:44 PM			
Client ID:		Run ID: SVMS6_130208A		SeqNo: 2213274		Prep Date: 02/07/13		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
2,4,5-Trichlorophenol	359.2	100	400	0	89.8	50-110	341.2	5.14	30	
2,4,6-Trichlorophenol	326.6	100	400	0	81.6	50-115	309.8	5.28	30	
2,4-Dichlorophenol	315	200	400	0	78.8	50-105	308.6	2.05	30	
2,4-Dimethylphenol	250	100	400	0	62.5	30-110	248.6	0.562	30	
2,4-Dinitrophenol	295.2	100	400	0	73.8	15-140	291.2	1.36	30	
2,4-Dinitrotoluene	349.8	100	400	0	87.4	50-120	323.2	7.9	30	
2,6-Dinitrotoluene	368.4	100	400	0	92.1	50-115	349	5.41	30	
2-Chloronaphthalene	301.8	100	400	0	75.4	50-105	298.2	1.2	30	
2-Chlorophenol	291.6	100	400	0	72.9	35-105	292	0.137	30	
2-Methylnaphthalene	300.6	100	400	0	75.2	45-105	298.6	0.668	30	
2-Methylphenol	252.8	100	400	0	63.2	40-110	258.2	2.11	30	
2-Nitroaniline	337.4	400	400	0	84.4	50-115	321.4	0	30	J
2-Nitrophenol	291.8	100	400	0	73	40-115	285.8	2.08	30	
3-Nitroaniline	342.2	400	400	0	85.6	20-125	324	0	30	J
4,6-Dinitro-2-methylphenol	311.8	400	400	0	78	40-130	297.6	0	30	J
4-Bromophenyl phenyl ether	345	100	400	0	86.2	50-115	320.8	7.27	30	
4-Chloro-3-methylphenol	333.8	100	400	0	83.4	45-110	320.2	4.16	30	
4-Chloroaniline	331.8	400	400	0	83	15-110	337.4	0	30	J
4-Chlorophenyl phenyl ether	337.6	100	400	0	84.4	50-110	322.6	4.54	30	
4-Methylphenol	227.6	100	400	0	56.9	30-110	232.4	2.09	30	
4-Nitroaniline	330.4	400	400	0	82.6	35-150	304.6	0	30	J
4-Nitrophenol	123.4	400	400	0	30.8	1-58	117.6	0	0	J
Acenaphthene	324.4	100	400	0	81.1	45-110	313.2	3.51	30	
Acenaphthylene	312.6	100	400	0	78.2	50-105	303	3.12	30	
Anthracene	360.2	100	400	0	90	55-110	330.8	8.51	30	
Benzo(a)anthracene	357	100	400	0	89.2	55-110	327.6	8.59	30	
Benzo(a)pyrene	386.2	100	400	0	96.6	55-110	349.4	10	30	
Benzo(b)fluoranthene	363.6	100	400	0	90.9	45-120	334.6	8.31	30	
Benzo(g,h,i)perylene	382.8	100	400	0	95.7	40-125	349.6	9.07	30	
Benzo(k)fluoranthene	415	100	400	0	104	45-125	366.2	12.5	30	
Bis(2-chloroethoxy)methane	308.4	100	400	0	77.1	45-105	307.2	0.39	30	
Bis(2-chloroethyl)ether	304.2	100	400	0	76	35-110	307	0.916	30	
Bis(2-chloroisopropyl)ether	309.8	100	400	0	77.4	25-130	309.2	0.194	30	
Bis(2-ethylhexyl)phthalate	407	100	400	0	102	40-125	364.2	11.1	30	
Butyl benzyl phthalate	395.4	100	400	0	98.8	45-115	359.4	9.54	30	
Carbazole	420.8	200	400	0	105	50-150	367	13.7	30	
Chrysene	389.4	100	400	0	97.4	55-110	353.6	9.64	30	
Dibenzo(a,h)anthracene	398.4	100	400	0	99.6	40-125	362	9.57	30	
Dibenzofuran	322	100	400	0	80.5	55-105	310.2	3.73	30	
Diethyl phthalate	341.6	400	400	0	85.4	40-120	316	0	30	J
Dimethyl phthalate	337	400	400	0	84.2	25-125	319.2	0	30	J
Di-n-butyl phthalate	395.4	100	400	0	98.8	55-115	357.4	10.1	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: 46286		Instrument ID SVMS6		Method: SW8270					
Di-n-octyl phthalate	405.4	100	400	0	101	35-135	366.8	10	30
Fluoranthene	383.6	100	400	0	95.9	55-115	345.2	10.5	30
Fluorene	340.2	100	400	0	85	50-110	322.6	5.31	30
Hexachlorobenzene	345.4	100	400	0	86.4	50-110	319.2	7.88	30
Hexachlorobutadiene	287.6	100	400	0	71.9	25-105	285.2	0.838	30
Hexachlorocyclopentadiene	114.6	400	400	0	28.6	25-105	118.2	0	30 J
Hexachloroethane	283.4	100	400	0	70.8	30-95	280.4	1.06	30
Indeno(1,2,3-cd)pyrene	391.6	100	400	0	97.9	45-125	356.4	9.41	30
Isophorone	318	100	400	0	79.5	50-110	312.2	1.84	30
Naphthalene	293.6	100	400	0	73.4	40-100	291.6	0.684	30
Nitrobenzene	315.2	100	400	0	78.8	45-110	311	1.34	30
N-Nitrosodi-n-propylamine	326.4	100	400	0	81.6	35-130	324.8	0.491	30
N-Nitrosodiphenylamine	377.6	100	400	0	94.4	50-110	350.8	7.36	30
Pentachlorophenol	412.6	400	400	0	103	40-115	376.2	9.23	30
Phenanthrene	351.2	100	400	0	87.8	50-115	324.6	7.87	30
Phenol	118.8	100	400	0	29.7	12-43	125.4	5.41	30
Pyrene	369.4	100	400	0	92.4	50-130	335.8	9.53	30
<i>Surr: 2,4,6-Tribromophenol</i>	<i>836.4</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>83.6</i>	<i>38-115</i>	<i>789.2</i>	<i>5.81</i>	<i>40</i>
<i>Surr: 2-Fluorobiphenyl</i>	<i>685</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>68.5</i>	<i>32-100</i>	<i>680</i>	<i>0.733</i>	<i>40</i>
<i>Surr: 2-Fluorophenol</i>	<i>405.2</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>40.5</i>	<i>22-59</i>	<i>428.6</i>	<i>5.61</i>	<i>40</i>
<i>Surr: 4-Terphenyl-d14</i>	<i>1020</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>102</i>	<i>23-112</i>	<i>959.2</i>	<i>6.14</i>	<i>40</i>
<i>Surr: Nitrobenzene-d5</i>	<i>719.4</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>71.9</i>	<i>31-93</i>	<i>719.8</i>	<i>0.0556</i>	<i>40</i>
<i>Surr: Phenol-d6</i>	<i>251.2</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>25.1</i>	<i>13-36</i>	<i>266.6</i>	<i>5.95</i>	<i>40</i>

The following samples were analyzed in this batch:

1302149-02C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **R115926** Instrument ID **VMS5** Method: **SW8260**

MBLK		Sample ID: VBLKW1-130206-R115926				Units: µg/L		Analysis Date: 02/06/13 11:21 AM		
Client ID:		Run ID: VMS5_130206A				SeqNo: 2210131		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1,2-Trichlorotrifluoroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2,4-Trichlorobenzene	U	1.0								
1,2-Dibromo-3-chloropropane	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichlorobenzene	U	1.0								
1,2-Dichloroethane	U	1.0								
1,2-Dichloropropane	U	2.0								
1,3-Dichlorobenzene	U	2.0								
1,4-Dichlorobenzene	U	2.0								
2-Butanone	U	5.0								
2-Hexanone	U	5.0								
4-Methyl-2-pentanone	U	5.0								
Acetone	U	20								
Benzene	U	1.0								
Bromodichloromethane	U	1.0								
Bromoform	U	1.0								
Bromomethane	U	1.0								
Carbon disulfide	U	2.5								
Carbon tetrachloride	U	1.0								
Chlorobenzene	U	1.0								
Chloroethane	U	1.0								
Chloroform	U	1.0								
Chloromethane	U	1.0								
cis-1,2-Dichloroethene	U	1.0								
cis-1,3-Dichloropropene	U	1.0								
Cyclohexane	U	5.0								
Dibromochloromethane	U	1.0								
Dichlorodifluoromethane	U	1.0								
Ethylbenzene	U	1.0								
Isopropylbenzene	U	1.0								
Methyl acetate	U	2.0								
Methyl tert-butyl ether	U	5.0								
Methylcyclohexane	U	5.0								
Methylene chloride	U	5.0								
Styrene	U	1.0								
Tetrachloroethene	U	2.0								
Toluene	U	1.0								

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: R115926	Instrument ID VMS5	Method: SW8260						
trans-1,2-Dichloroethene	U	1.0						
trans-1,3-Dichloropropene	U	1.0						
Trichloroethene	U	1.0						
Trichlorofluoromethane	U	1.0						
Vinyl chloride	U	1.0						
Xylenes, Total	U	3.0						
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>21.7</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>108</i>	<i>70-120</i>	<i>0</i>	
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.8</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>104</i>	<i>75-120</i>	<i>0</i>	
<i>Surr: Dibromofluoromethane</i>	<i>20.25</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>85-115</i>	<i>0</i>	
<i>Surr: Toluene-d8</i>	<i>19.23</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96.2</i>	<i>85-120</i>	<i>0</i>	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **R115926** Instrument ID **VMS5** Method: **SW8260**

LCS Sample ID: VLCSW1-130206-R115926				Units: µg/L			Analysis Date: 02/06/13 10:33 AM			
Client ID:		Run ID: VMS5_130206A			SeqNo: 2209582		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	19.83	1.0	20	0	99.2	65-130	0			
1,1,2,2-Tetrachloroethane	20.09	1.0	20	0	100	65-130	0			
1,1,2-Trichloroethane	19.91	1.0	20	0	99.6	75-125	0			
1,1-Dichloroethane	19.44	1.0	20	0	97.2	70-135	0			
1,1-Dichloroethene	20.58	1.0	20	0	103	70-130	0			
1,2,4-Trichlorobenzene	20.34	1.0	20	0	102	65-135	0			
1,2-Dibromo-3-chloropropane	17.79	1.0	20	0	89	50-130	0			
1,2-Dibromoethane	19.64	1.0	20	0	98.2	80-120	0			
1,2-Dichlorobenzene	19.24	1.0	20	0	96.2	70-120	0			
1,2-Dichloroethane	21.63	1.0	20	0	108	70-130	0			
1,2-Dichloropropane	19.86	2.0	20	0	99.3	75-125	0			
1,3-Dichlorobenzene	18.95	2.0	20	0	94.8	75-125	0			
1,4-Dichlorobenzene	18.92	2.0	20	0	94.6	75-125	0			
2-Butanone	21.16	5.0	20	0	106	30-150	0			
2-Hexanone	22.63	5.0	20	0	113	55-130	0			
4-Methyl-2-pentanone	22.87	5.0	20	0	114	60-135	0			
Acetone	15.72	20	20	0	78.6	40-140	0			J
Benzene	19.76	1.0	20	0	98.8	80-120	0			
Bromodichloromethane	20.6	1.0	20	0	103	75-120	0			
Bromoform	18.86	1.0	20	0	94.3	70-130	0			
Bromomethane	22.46	1.0	20	0	112	30-145	0			
Carbon disulfide	22	2.5	20	0	110	35-165	0			
Carbon tetrachloride	20.53	1.0	20	0	103	65-140	0			
Chlorobenzene	18.86	1.0	20	0	94.3	80-120	0			
Chloroethane	20.04	1.0	20	0	100	60-135	0			
Chloroform	20.24	1.0	20	0	101	65-135	0			
Chloromethane	19.07	1.0	20	0	95.4	70-125	0			
cis-1,2-Dichloroethene	19.99	1.0	20	0	100	70-125	0			
cis-1,3-Dichloropropene	20.34	1.0	20	0	102	70-130	0			
Dibromochloromethane	19.96	1.0	20	0	99.8	60-135	0			
Dichlorodifluoromethane	13.07	1.0	20	0	65.4	30-155	0			
Ethylbenzene	19.59	1.0	20	0	98	75-125	0			
Isopropylbenzene	19.62	1.0	20	0	98.1	75-125	0			
Methyl tert-butyl ether	21.11	5.0	20	0	106	65-125	0			
Methylene chloride	22.02	5.0	20	0	110	55-140	0			
Styrene	19.52	1.0	20	0	97.6	65-135	0			
Tetrachloroethene	18.7	2.0	20	0	93.5	45-150	0			
Toluene	18.97	1.0	20	0	94.8	75-120	0			
trans-1,2-Dichloroethene	19.78	1.0	20	0	98.9	60-140	0			
trans-1,3-Dichloropropene	19.78	1.0	20	0	98.9	55-140	0			
Trichloroethene	17.77	1.0	20	0	88.8	70-125	0			
Trichlorofluoromethane	20.19	1.0	20	0	101	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: R115926	Instrument ID VMS5		Method: SW8260				
Vinyl chloride	19.18	1.0	20	0	95.9	50-145	0
Xylenes, Total	58.78	3.0	60	0	98	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.91</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>105</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>21.47</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>107</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>20.29</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>101</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>19.65</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>98.2</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **R115926** Instrument ID **VMS5** Method: **SW8260**

MS Sample ID: 1302149-01A MS				Units: µg/L			Analysis Date: 02/06/13 08:11 PM			
Client ID: GW-17322-020413-EM-021			Run ID: VMS5_130206A		SeqNo: 2210696		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	23	1.0	20	0	115	65-130	0			
1,1,2,2-Tetrachloroethane	19.93	1.0	20	0	99.6	65-130	0			
1,1,2-Trichloroethane	20.34	1.0	20	0	102	75-125	0			
1,1-Dichloroethane	21.51	1.0	20	0	108	70-135	0			
1,1-Dichloroethene	24.51	1.0	20	0	123	70-130	0			
1,2,4-Trichlorobenzene	20.13	1.0	20	0	101	65-135	0			
1,2-Dibromo-3-chloropropane	18.68	1.0	20	0	93.4	50-130	0			
1,2-Dibromoethane	20.59	1.0	20	0	103	80-120	0			
1,2-Dichlorobenzene	20.01	1.0	20	0	100	70-120	0			
1,2-Dichloroethane	22.36	1.0	20	0	112	70-130	0			
1,2-Dichloropropane	20.68	2.0	20	0	103	75-125	0			
1,3-Dichlorobenzene	20.31	2.0	20	0	102	75-125	0			
1,4-Dichlorobenzene	19.87	2.0	20	0	99.4	75-125	0			
2-Butanone	18.32	5.0	20	0	91.6	30-150	0			
2-Hexanone	21.55	5.0	20	0	108	55-130	0			
4-Methyl-2-pentanone	21.88	5.0	20	0	109	60-135	0			
Acetone	16.02	20	20	0	80.1	40-140	0			J
Benzene	22.36	1.0	20	0	112	80-120	0			
Bromodichloromethane	20.23	1.0	20	0	101	75-120	0			
Bromoform	18.34	1.0	20	0	91.7	70-130	0			
Bromomethane	21.23	1.0	20	0	106	30-145	0			
Carbon disulfide	27.9	2.5	20	0	140	35-165	0			
Carbon tetrachloride	24.62	1.0	20	0	123	65-140	0			
Chlorobenzene	20.67	1.0	20	0	103	80-120	0			
Chloroethane	23.38	1.0	20	0	117	60-135	0			
Chloroform	22.46	1.0	20	0	112	65-135	0			
Chloromethane	21.66	1.0	20	0	108	70-125	0			
cis-1,2-Dichloroethene	22.73	1.0	20	0	114	70-125	0			
cis-1,3-Dichloropropene	20.42	1.0	20	0	102	70-130	0			
Dibromochloromethane	19.21	1.0	20	0	96	60-135	0			
Dichlorodifluoromethane	18.4	1.0	20	0	92	30-155	0			
Ethylbenzene	21.87	1.0	20	0	109	75-125	0			
Isopropylbenzene	22.09	1.0	20	0	110	75-125	0			
Methyl tert-butyl ether	22.76	5.0	20	0	114	65-125	0			
Methylene chloride	23	5.0	20	0	115	55-140	0			
Styrene	21.15	1.0	20	0	106	65-135	0			
Tetrachloroethene	22.95	2.0	20	0	115	45-150	0			
Toluene	21.21	1.0	20	0	106	75-120	0			
trans-1,2-Dichloroethene	22.53	1.0	20	0	113	60-140	0			
trans-1,3-Dichloropropene	18.81	1.0	20	0	94	55-140	0			
Trichloroethene	21.2	1.0	20	0	106	70-125	0			
Trichlorofluoromethane	24.11	1.0	20	0	121	60-145	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: R115926	Instrument ID VMS5	Method: SW8260					
Vinyl chloride	26.63	1.0	20	2.8	119	50-145	0
Xylenes, Total	63.72	3.0	60	0.36	106	75-130	0
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>19.84</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>99.2</i>	<i>70-120</i>	<i>0</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>20.94</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>105</i>	<i>75-120</i>	<i>0</i>
<i>Surr: Dibromofluoromethane</i>	<i>19.36</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96.8</i>	<i>85-115</i>	<i>0</i>
<i>Surr: Toluene-d8</i>	<i>18.85</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>94.2</i>	<i>85-120</i>	<i>0</i>

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: **R115926** Instrument ID **VMS5** Method: **SW8260**

MSD				Sample ID: 1302149-01A MSD			Units: µg/L		Analysis Date: 02/06/13 08:35 PM	
Client ID: GW-17322-020413-EM-021				Run ID: VMS5_130206A			SeqNo: 2210697		Prep Date:	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	18.82	1.0	20	0	94.1	65-130	23	20	30	
1,1,2,2-Tetrachloroethane	16.77	1.0	20	0	83.8	65-130	19.93	17.2	30	
1,1,2-Trichloroethane	15.82	1.0	20	0	79.1	75-125	20.34	25	30	
1,1-Dichloroethane	17.63	1.0	20	0	88.2	70-135	21.51	19.8	30	
1,1-Dichloroethene	20.6	1.0	20	0	103	70-130	24.51	17.3	30	
1,2,4-Trichlorobenzene	17.63	1.0	20	0	88.2	65-135	20.13	13.2	30	
1,2-Dibromo-3-chloropropane	15.08	1.0	20	0	75.4	50-130	18.68	21.3	30	
1,2-Dibromoethane	16.68	1.0	20	0	83.4	80-120	20.59	21	30	
1,2-Dichlorobenzene	16.39	1.0	20	0	82	70-120	20.01	19.9	30	
1,2-Dichloroethane	18.16	1.0	20	0	90.8	70-130	22.36	20.7	30	
1,2-Dichloropropane	17.06	2.0	20	0	85.3	75-125	20.68	19.2	30	
1,3-Dichlorobenzene	16.78	2.0	20	0	83.9	75-125	20.31	19	30	
1,4-Dichlorobenzene	16.86	2.0	20	0	84.3	75-125	19.87	16.4	30	
2-Butanone	14.42	5.0	20	0	72.1	30-150	18.32	23.8	30	
2-Hexanone	19.82	5.0	20	0	99.1	55-130	21.55	8.36	30	
4-Methyl-2-pentanone	19.97	5.0	20	0	99.8	60-135	21.88	9.13	30	
Acetone	14.74	20	20	0	73.7	40-140	16.02	0	30	J
Benzene	18.27	1.0	20	0	91.4	80-120	22.36	20.1	30	
Bromodichloromethane	17.05	1.0	20	0	85.2	75-120	20.23	17.1	30	
Bromoform	14.73	1.0	20	0	73.6	70-130	18.34	21.8	30	
Bromomethane	18.79	1.0	20	0	94	30-145	21.23	12.2	30	
Carbon disulfide	21.67	2.5	20	0	108	35-165	27.9	25.1	30	
Carbon tetrachloride	20.22	1.0	20	0	101	65-140	24.62	19.6	30	
Chlorobenzene	16.81	1.0	20	0	84	80-120	20.67	20.6	30	
Chloroethane	19.47	1.0	20	0	97.4	60-135	23.38	18.2	30	
Chloroform	17.89	1.0	20	0	89.4	65-135	22.46	22.7	30	
Chloromethane	18.44	1.0	20	0	92.2	70-125	21.66	16.1	30	
cis-1,2-Dichloroethene	18.41	1.0	20	0	92	70-125	22.73	21	30	
cis-1,3-Dichloropropene	16.92	1.0	20	0	84.6	70-130	20.42	18.7	30	
Dibromochloromethane	15.71	1.0	20	0	78.6	60-135	19.21	20	30	
Dichlorodifluoromethane	15.02	1.0	20	0	75.1	30-155	18.4	20.2	30	
Ethylbenzene	18.24	1.0	20	0	91.2	75-125	21.87	18.1	30	
Isopropylbenzene	18.82	1.0	20	0	94.1	75-125	22.09	16	30	
Methyl tert-butyl ether	18.42	5.0	20	0	92.1	65-125	22.76	21.1	30	
Methylene chloride	18.68	5.0	20	0	93.4	55-140	23	20.7	30	
Styrene	16.88	1.0	20	0	84.4	65-135	21.15	22.5	30	
Tetrachloroethene	18.56	2.0	20	0	92.8	45-150	22.95	21.2	30	
Toluene	17.2	1.0	20	0	86	75-120	21.21	20.9	30	
trans-1,2-Dichloroethene	18.21	1.0	20	0	91	60-140	22.53	21.2	30	
trans-1,3-Dichloropropene	16.07	1.0	20	0	80.4	55-140	18.81	15.7	30	
Trichloroethene	17.39	1.0	20	0	87	70-125	21.2	19.7	30	
Trichlorofluoromethane	19.7	1.0	20	0	98.5	60-145	24.11	20.1	30	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Conestoga-Rovers & Associates
Work Order: 1302149
Project: PCC-Validation (017322-T01Y13)

QC BATCH REPORT

Batch ID: R115926	Instrument ID VMS5			Method: SW8260					
Vinyl chloride	21.69	1.0	20	2.8	94.4	50-145	26.63	20.4	30
Xylenes, Total	54.2	3.0	60	0.36	89.7	75-130	63.72	16.1	30
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>20.65</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>103</i>	<i>70-120</i>	<i>19.84</i>	<i>4</i>	<i>30</i>
<i>Surr: 4-Bromofluorobenzene</i>	<i>21.55</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>108</i>	<i>75-120</i>	<i>20.94</i>	<i>2.87</i>	<i>30</i>
<i>Surr: Dibromofluoromethane</i>	<i>19.35</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>96.8</i>	<i>85-115</i>	<i>19.36</i>	<i>0.0517</i>	<i>30</i>
<i>Surr: Toluene-d8</i>	<i>19.17</i>	<i>0</i>	<i>20</i>	<i>0</i>	<i>95.8</i>	<i>85-120</i>	<i>18.85</i>	<i>1.68</i>	<i>30</i>

The following samples were analyzed in this batch:

1302149-01A	1302149-02A	1302149-03A
1302149-04A	1302149-05A	1302149-06A
1302149-07A	1302149-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



**CONESTOGA-ROVERS
& ASSOCIATES**

CHAIN OF CUSTODY RECORD

14496 Sheldon Road, Suite #200, Plymouth, Michigan 48170

Phone: (734) 453-5123

Fax: (734) 453-5201

1302149

COC NO.: **PL-10418**

PAGE 1 OF 1

(See Reverse Side for Instructions)

Project No/ Phase/Task Code: 17322-TD3Y13				Laboratory Name: ALS				Lab Location: Holland, MI				SSOW ID: 17322-TD3Y13-003						
Project Name: RACER-Validation				Lab Contact:				Lab Quote No: -				Cooler No:						
Project Location: Pontiac, MI				SAMPLE TYPE				CONTAINER QUANTITY & PRESERVATION				ANALYSIS REQUESTED (See Back of COC for Definitions)						
Chemistry Contact: Paul Wiseman				Matrix Code (see back of COC) Grab (G) or Comp (C)				Unpreserved Hydrochloric Acid (HCl) Nitric Acid (HNO ₃) Sulfuric Acid (H ₂ SO ₄) Sodium Hydroxide (NaOH) Methanol/Water (Soil VOC) EnCores 3x5-g, 1x25-g Other:				Total Containers/Sample TCL VOC's TAL Metals SVOC's						
Sampler(s): Eric Mickelson & Carrie Bandy																		
Airbill No:				Date Shipped: 2-5-13				Carrier: ALS				COMMENTS/ SPECIAL INSTRUCTIONS:						
Item	SAMPLE IDENTIFICATION (Containers for each sample may be combined on one line)	DATE (mm/dd/yy)	TIME (hh:mm)	Matrix Code	Grab (G) or Comp (C)	Unpreserved	Hydrochloric Acid (HCl)	Nitric Acid (HNO ₃)	Sulfuric Acid (H ₂ SO ₄)	Sodium Hydroxide (NaOH)	Methanol/Water (Soil VOC)	EnCores 3x5-g, 1x25-g	Other:	Total Containers/Sample	MS/MSD Request			
1	GW-17322-020413-EM-021	2/4/13	1105	WG	G		X	X						11	X	X	X	
2	GW-17322-020413-CB-022		1200			X	X	X						6	X	X	X	
3	GW-17322-020413-CB-023		1445				X	X						4	X	X		
4	GW-17322-020413-EM-024		1450				X	X						4	X	X		
5	GW-17322-020413-CB-025		1555				X	X						4	X	X		
6	GW-17322-020513-EM-026	2/5/13	0930			X	X							4	X	X		
7	GW-17322-020513-EM-027		1000				X							3	X			
8	GW-17322-020513-EM-028		1025			X	X							4	X	X		
9	TB-17322-020513-EM-029		-	WD	-		X							1	X			
10	EM																	
11																		
12																		
13																		
14																		
15																		
TAT Required in business days (use separate COCs for different TATs): ☐ 1 Day ☐ 2 Days ☐ 3 Days ☐ 1 Week ☒ 2 Week ☐ Other:						Total Number of Containers: 41		Notes/ Special Requirements:										
All Samples in Cooler must be on COC																		
RELINQUISHED BY		COMPANY		DATE		TIME		RECEIVED BY		COMPANY		DATE		TIME				
1. Eric Mickelson		CRA		2-5-13		1200		1.		ALS		2/5/13		1200				
2.		ALS		2-5-13		1900		2.		ALS		2/6/13		0855				
3.								3.										

THE CHAIN OF CUSTODY IS A LEGAL DOCUMENT - ALL FIELDS MUST BE COMPLETED ACCURATELY

Distribution: WHITE - Fully Executed Copy (CRA) YELLOW - Receiving Laboratory Copy PINK - Shipper GOLDENROD - Sampling Crew

CRA Form: COC-10A (20110804)

JB

Sample Receipt Checklist

Client Name: CRA - PLYMOUTH

Date/Time Received: 05-Feb-13 19:00

Work Order: 1302149

Received by: KRW

Checklist completed by Keith Wurenga 06-Feb-13
eSignature Date

Reviewed by: Tom Beamish 06-Feb-13
eSignature Date

Matrices: Water

Carrier name: ALSHN

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☐	No ☒	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>4.0 C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>2/6/2013 9:26:42 AM</u>		
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐
Water - pH acceptable upon receipt?	Yes ☒	No ☐	N/A ☐
pH adjusted?	Yes ☐	No ☒	N/A ☐
pH adjusted by:			
Login Notes:			

Client Contacted: yes Date Contacted: 06-Feb-13 Person Contacted: Paul Wiseman

Contacted By: Tom Beamish Regarding: Trip blank broken prior to arrival at lab

Comments:

CorrectiveAction:

APPENDIX C

DATA REVIEW AND DATA VALIDATION (2013 DATA ONLY) PERFORMED BY CRA



**CONESTOGA-ROVERS
& ASSOCIATES**

14496 Sheldon Road, Suite #200

Plymouth, Michigan 48170

Telephone: (734) 453-5123

Fax: (734) 453-5201

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MEMORANDUM

TO: Tom Kinney

REF. NO.: 017322

FROM: Paul Wiseman/tl/19/Det. 

DATE: March 18, 2013

E-Mail and Hard Copy if Requested

RE: **Analytical Data Quality Assessment and Reduced/Full Validation
Phase III Environmental Assessment – Groundwater Sampling
PCC Validation
Pontiac, Michigan
January and February 2013**

INTRODUCTION

The following document details a data quality assessment and reduced/full validation of analytical results for groundwater samples collected in support of the Phase III Environmental Assessment at the PCC Validation Site during January and February 2013. Samples were submitted to ALS, located in Holland, Michigan (ALS-Holland). A sample collection and analysis summary is presented in Table 1. A summary of the analytical methodology is presented in Table 2.

Evaluation of the data was based on information obtained from the finished data sheets, raw data, chain of custody forms, calibration data, blank data, duplicate data, recovery data from surrogate spikes, laboratory control samples (LCS), and matrix spike samples (MS); and field quality assurance/quality control (QA/QC) samples. The assessment of analytical and in-house data included checks for: data consistency (by observing comparability of duplicate analyses); adherence to accuracy and precision criteria; and transmittal errors.

The QA/QC criteria by which these data have been assessed are outlined in the analytical methods referenced in Table 2 and the documents entitled:

- i) "Sampling and Analysis Plan and Fundamental Quality Assurance Project Plan", April 2012
- ii) "USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review", United States Environmental Protection Agency (USEPA) 540/R-99-008, October 1999
- iii) "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review", USEPA 540/R-94-013, February 1994

Items ii) and iii) will subsequently be referred to as the "Guidelines" in this Memorandum.

CRA MEMORANDUM

INTRODUCTION (CONT'D)

Full Contract Laboratory Program (CLP) equivalent raw data deliverables were provided by the laboratory. The data quality assessment and reduced/full validation presented in the following subsections were performed with a full validation on 10% of the laboratory deliverables as noted and specified in Table 1, and a reduced validation on all based on the sample results, supporting quality assurance/quality control (QA/QC) and all raw data provided.

SAMPLE HOLDING TIME AND PRESERVATION

The sample holding time criteria and sample preservation requirements for the analyses are summarized in Table 2. Sample chain of custody documents and analytical reports were used to determine sample holding times. All samples were prepared and analyzed within the required holding times.

All samples were properly preserved, delivered on ice, and stored by the laboratory at the required temperature (0-6°C).

GAS CHROMATOGRAPHY/MASS SPECTROMETER (GC/MS) - TUNING AND MASS CALIBRATION (INSTRUMENT PERFORMANCE CHECK) AND INDUCTIVELY COUPLED PLASMA/MASS SPECTROMETER (ICP/MS) - FULL VALIDATION

Organic Analyses

Prior to volatile organic compound (VOC) and semi-volatile organic compound (SVOC) analysis, GC/MS instrumentation is tuned to ensure optimization over the mass range of interest. To evaluate instrument tuning, methods require the analysis of specific tuning compounds bromofluorobenzene (BFB) and decafluorotriphenylphosphine (DFTPP), respectively. The resulting spectra must meet the criteria cited in the methods before analysis is initiated. Analysis of the tuning compound must then be repeated every 12 hours throughout sample analysis to ensure the continued optimization of the instrument.

Tuning compounds were analyzed at the required frequency throughout the volatile and semi-volatile analysis periods. All tuning criteria were met, indicating that proper optimization of the instrumentation was achieved.

Inorganic Analyses

To ensure adequate mass resolution, identification, and to some degree, sensitivity; the performance of each ICP/MS instrument used for metals analyses is checked prior to calibration and initiating an analysis sequence through the analysis of a tuning solution.

Instrument performance check data were reviewed. The tuning solution was analyzed at the required frequency throughout the analyses. The results of all instrument performance checks were within the method acceptance criteria, indicating that proper optimization of the instrumentation was achieved.

CRA MEMORANDUM

INITIAL CALIBRATION - ORGANIC ANALYSES - FULL VALIDATION

GC/MS

To quantify VOC and SVOC compounds of interest in samples, calibration of the GC/MS over a specific concentration range must be performed. Initially, a five-point calibration curve containing all compounds of interest is analyzed to characterize instrument response for each analyte over a specific concentration range. Linearity of the calibration curve and instrument sensitivity are evaluated against the following criteria:

- i) All relative response factors (RRFs) must be greater than or equal to 0.05
- ii) The percent relative standard deviation (RSD) values must not exceed 30.0 percent or a minimum coefficient of determination of 0.99 if quadratic equation calibration curves are used

The initial calibration data for VOCs and SVOCs were reviewed. All compounds met the above criteria for sensitivity and linearity.

INITIAL CALIBRATION - INORGANIC ANALYSES - FULL VALIDATION

Initial calibration of the instruments ensures that they are capable of producing satisfactory quantitative data at the beginning of a series of analyses. For Inductively Coupled Plasma (ICP & ICP/MS) analysis, a calibration blank and at least one standard must be analyzed at each wavelength to establish the analytical curve. For mercury atomic absorption (AA) analyses, a calibration blank and a minimum of five standards must be analyzed to establish the analytical curve and resulting correlation coefficients must be 0.995 or greater. For instrumental general chemistry analyses, a calibration blank and a minimum of five, this could vary by method, standards must be analyzed to establish the analytical curve and resulting correlation coefficients must be 0.995 or greater.

After the analyses of the calibration curves, an initial calibration verification (ICV) standard must be analyzed to verify the analytical accuracy of the calibration curves. All analyte recoveries from the analyses of the ICVs must be within the following control limits:

<i>Analytical Method</i>	<i>Parameter</i>	<i>Control Limits</i>
ICP/MS	Metals	90 - 110%
Cold Vapor AA	Mercury	80 - 120%

Upon review of the data, it was determined that the calibration curves and ICVs were analyzed at the proper frequencies and that all of the above-specified criteria were met.

CRA MEMORANDUM

CONTINUING CALIBRATION - ORGANICS ANALYSES - FULL VALIDATION

GC/MS

To ensure that instrument calibration for VOC and SVOC analyses is acceptable throughout the sample analysis period, continuing calibration standards must be analyzed and compared to the initial calibration curve every 12 hours.

The following criteria were employed to evaluate continuing calibration data:

- i) All RRF values must be greater than or equal to 0.05
- ii) Percent difference (%D) values must not exceed 25 percent

Calibration standards were analyzed at the required frequency, and the results met the above criteria for instrument sensitivity and stability with the exception of the qualified samples presented in Table 3.

CONTINUING CALIBRATION - INORGANIC ANALYSES - FULL VALIDATION

To ensure that instrument calibration is acceptable throughout the sample analysis period, continuing calibration verification (CCV) standards are analyzed on a regular basis. Each CCV is deemed acceptable if all analyte recoveries are within the control limits specified above for the ICVs. If some of the CCV analyte recoveries are outside the control limits, samples analyzed before and after the CCV, up until the previous and proceeding CCV analyses, are affected.

For this study, CCVs were analyzed at the proper frequency. All analyte recoveries reported for the CCVs were within the specified limits.

CONTRACT REQUIRED DETECTION LIMIT (CRDL) STANDARD ANALYSES - FULL VALIDATION

To verify the linearity of the ICP & ICP/MS calibration near the detection limit, a standard is analyzed which contains the ICP & ICP/MS analytes at specified concentrations. This standard must be analyzed at the beginning and end of each sample analysis run or a minimum of twice per 8-hour period.

CRDL recoveries were evaluated using the criteria specified in the October 2004 "Guidelines". The CRDL recoveries were acceptable.

LABORATORY BLANK ANALYSES

Method preparation blanks are prepared from a purified matrix and analyzed with investigative samples to determine the existence and magnitude of sample contamination introduced during the analytical procedures. Additionally, initial and continuing calibration blanks (ICBs/CCBs) are routinely analyzed after each ICV/CCV for the inorganic parameters.

CRA MEMORANDUM

LABORATORY BLANK ANALYSES (CONT'D)

For this study, laboratory method blanks were analyzed at a minimum frequency of one per 20 investigative samples and/or one per analytical batch.

Organic Analyses

All method blank results were non-detect, indicating that laboratory contamination was not a factor for this investigation.

The method blank samples did not contain target compounds with concentrations that impacted the investigative samples.

Inorganic Analyses

Upon review of the ICBs, CCBs, and preparation blanks, it was noted that metal concentrations were observed above the method detection limit (MDL). Most investigative samples associated with the low level detections reported either non-detect concentrations or concentrations significantly greater than the associated laboratory blank concentrations for the analytes of interest. These sample results were not impacted by the contamination detected. Associated positive sample results with similar concentrations to the levels reported in the blanks were qualified non-detect as presented in Table 4.

SURROGATE SPIKE RECOVERIES

In accordance with the methods employed, all samples, blanks and QC samples analyzed for organics are spiked with surrogate compounds prior to sample extraction and/or analysis. Surrogate recoveries provide a means to evaluate the effects of ALS-Holland performance on individual sample matrices.

All samples submitted for VOC, SVOC and PCB determinations were spiked with the appropriate number of surrogate compounds prior to sample analysis.

Each individual surrogate compound is expected to meet the laboratory (method) control limits with the exception of SVOC analyses. According to the "Guidelines" for SVOC analyses, up to one outlying surrogate in the base/neutral or acid fractions is acceptable as long as the recovery is at least 10 percent.

Surrogate recoveries were assessed against laboratory (method) control limits. All surrogate recoveries met the above criteria with the exception of the qualified samples presented in Table 5.

INTERNAL STANDARDS (IS) ANALYSES - FULL VALIDATION

Internal standard data were evaluated for all VOC, SVOC and ICP/MS metals sample analyses.

CRA MEMORANDUM

INTERNAL STANDARDS (IS) ANALYSES - FULL VALIDATION (CONT'D)

Organics Analyses

To ensure that changes in the GC/MS sensitivity and response do not affect sample analysis results, internal standard compounds are added to each sample prior to analysis. All results are then calculated as a ratio of the internal standard responses.

The sample internal standard results were evaluated against the following criteria:

- i) the retention time of the internal standard must not vary more than ± 30 seconds from the associated calibration standard
- ii) internal standard area counts must not vary by more than a factor of two (-50 percent to +100 percent) from the associated calibration standard

All organic internal standard recoveries and retention times met the above criteria.

Inorganic Analyses

Internal standard elements were added to all samples prior to metals analysis by ICP/MS. Overall instrument stability and performance for metals analyses were monitored using the internal standard intensity data. Internal standard recoveries were assessed using control limits of 60-125%.

All inorganic internal standard recoveries were acceptable, demonstrating adequate analytical performance.

LABORATORY CONTROL SAMPLE (LCS) ANALYSES

LCS are prepared and analyzed as samples to assess the analytical efficiencies of the methods employed, independent of sample matrix effects.

For this study, LCS was analyzed at a minimum frequency of one per 20 investigative samples and/or one per analytical batch.

Organic Analyses

The LCS contained all compounds of interest. All LCS recoveries were within the laboratory control limits, demonstrating acceptable analytical accuracy with the exception of the qualified samples presented in Table 6.

Inorganic Analyses

The LCS contained all analytes of interest. LCS recoveries were assessed per the "Guidelines". All LCS recoveries were within the control limits, demonstrating acceptable analytical accuracy.

CRA MEMORANDUM

MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) ANALYSES - ORGANIC ANALYSES

To evaluate the effects of sample matrices on the extraction or digestion process, measurement procedures, and accuracy of a particular analysis, samples are spiked with a known concentration of the analyte of concern and analyzed as MS/MSD samples. The relative percent difference (RPD) between the MS and MSD is used to assess analytical precision. If the original sample concentration is significantly greater than the spike concentration, the recovery is not assessed.

MS/MSD analyses were performed as specified in Table 1. The laboratory performed additional site-specific MS/MSD analyses internally.

Organic Analyses

The MS/MSD samples were spiked with all compounds of interest. All percent recoveries and RPD values were within the laboratory control limits, demonstrating acceptable analytical accuracy and precision with the exception of the qualified samples presented in Table 7.

Inorganic Analyses

The MS/MSD samples were spiked with the analytes of interest and the results were evaluated using the "Guidelines". All percent recoveries and RPD values were within the control limits, demonstrating acceptable analytical accuracy and precision.

ICP AND ICP/MS SERIAL DILUTION - INORGANIC ANALYSES - FULL VALIDATION

The serial dilution determines whether significant physical or chemical interferences exist due to sample matrix. A minimum of one per 20 investigative samples or at least one per analytical batch must be analyzed at a five-fold dilution. For samples with sufficient analyte concentrations (> 50 times the instrument detection limit), the serial dilution results must agree within 10 percent of the original results.

The percent D acceptance criteria was met.

ICP INTERFERENCE CHECK SAMPLE ANALYSIS (ICS) - INORGANIC ANALYSES - FULL VALIDATION

To verify that the laboratory has established proper inter-element and background correction factors, ICSs are analyzed. These samples contain high concentrations of aluminum, calcium, magnesium and iron and are analyzed at the beginning and end of each sample analysis period. The ICSs are evaluated against recovery control limits of 80 to 120 percent.

ICS analysis results were evaluated for all samples using the criteria in the "Guidelines". All ICS recoveries and results were acceptable.

CRA MEMORANDUM

FIELD QA/QC SAMPLES

The field QA/QC consisted of one (1) trip blank sample, and two (2) field duplicate sample sets.

Trip Blank Sample Analysis

To evaluate contamination from sample collection, transportation, storage, and analytical activities, six (6) trip blanks were collected and submitted to the laboratory for VOC analysis.

The samples that were qualified due to trip blank contamination are summarized in Table 8. The remaining trip blank samples did not contain target compounds with concentrations that impacted the investigative samples.

Field Duplicate Sample Analysis

To assess the analytical and sampling protocol precision, five (5) field duplicate samples were collected and submitted "blind" to the laboratory, as specified in Table 1. The RPDs associated with these duplicate samples must be less than 50 and 100 percent for water and soil samples, respectively. If the reported concentration in either the investigative sample or its duplicate is less than five times the reporting limit (RL), the evaluation criteria is one or two times the RL value for water and soil samples, respectively.

All field duplicate results were within acceptable agreement, demonstrating acceptable sampling and analytical precision.

ANALYTE REPORTING

Non-detect data were reported down to the laboratory's method detection limit (MDL) for each analyte. Positive analyte detections less than the RL but greater than the MDL were qualified as estimated (J).

TARGET COMPOUND IDENTIFICATION

To minimize erroneous compound identification during organic analyses, qualitative criteria including compound retention time and mass spectra (if applicable) were evaluated according to the identification criteria established by the methods. The samples identified in Table 1 were reviewed. The organic compounds reported adhered to the specified identification criteria.

CONCLUSION

Based on this assessment, the data produced by ALS-Holland were found to exhibit acceptable levels of accuracy and precision based on the provided information and may be used with the qualifications noted.

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY - GROUNDWATER SAMPLES
 PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
 PCC VALIDATION
 PONTIAC, MICHIGAN
 JANUARY AND FEBRUARY 2013

						Analysis/Parameters			
Sample Identification	Location	Matrix	QC Samples	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)	TCL VOC	TCL SVOC	TCL PCB	TAL Metals
ALS SDG No.: 1302057									
GW-17322-013113-CB-001	MW2-07	water		1/31/2013	9:20:00 AM	X			
GW-17322-013113-DR-002	MW79-12	water		1/31/2013	9:05:00 AM	X			
GW-17322-013113-DR-003	MW4-07	water		1/31/2013	10:00:00 AM	X	X		
GW-17322-013113-DR-004	MW79-12	water	DUP (-002)	1/31/2013	9:10:00 AM	X			
GW-17322-013113-CB-005	MW85-12	water		1/31/2013	10:50:00 AM	X	X		X
GW-17322-013113-CB-006	MW85-12	water	DUP (-005)	1/31/2013	11:05:00 AM	X	X		X
GW-17322-013113-DR-007	MW63-08	water		1/31/2013	11:00:00 AM	X	X		X
GW-17322-013113-CB-008	MW68-08	water		1/31/2013	1:25:00 PM	X	X		X
GW-17322-013113-DR-009	MW87-12	water		1/31/2013	1:45:00 PM	X	X		X
GW-17322-013113-DR-010	MW37-07	water		1/31/2013	2:35:00 PM		X		
GW-17322-020113-DR-011	MW64-08	water		2/1/2013	8:20:00 AM	X	X		X
GW-17322-020113-DR-012	MW74-08	water		2/1/2013	8:45:00 AM	X	X		
GW-17322-020113-DR-013	MW91-12	water	MS/MSD	2/1/2013	9:20:00 AM	X	X		
GW-17322-020113-DR-014	MW90-12	water		2/1/2013	10:40:00 AM	X	X		
GW-17322-020113-DR-015	MW88-12	water	MS/MSD-P	2/1/2013	9:15:00 AM		X	X	
GW-17322-020113-DR-016	MW82-12	water	MS/MSD-P	2/1/2013	10:35:00 AM	X	X		X
GW-17322-020113-DR-017	MW89-12	water		2/1/2013	1:40:00 PM		X		
GW-17322-020113-DR-018	MW38-07	water		2/1/2013	11:35:00 AM	X	X		
GW-17322-020113-DR-019	MW48-07	water		2/1/2013	1:45:00 PM	X	X		
TB-17322-020113	--	water	Trip Blank	2/1/2013	2/1/2013	X			
GW-17322-020113-DR-020	MW78-08	water		2/1/2013	2:35:00 PM	X	X		

TABLE 1

SAMPLE COLLECTION AND ANALYSIS SUMMARY - GROUNDWATER SAMPLES
 PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
 PCC VALIDATION
 PONTIAC, MICHIGAN
 JANUARY AND FEBRUARY 2013

							Analysis/Parameters			
Sample Identification	Location	Matrix	QC Samples	Collection Date (mm/dd/yyyy)	Collection Time (hr:min)		TCL VOC	TCL SVOC	TCL PCB	TAL Metals
ALS SDG No.: 1302149 ¹										
GW-17322-020413-EM-021	MW92i-13	water	MS/MSD	2/4/2013	11:05:00 AM		X			X
GW-17322-020413-CB-022	MW83-12	water		2/4/2013	12:00:00 PM		X	X		X
GW-17322-020413-CB-023	MW80-12	water		2/4/2013	2:45:00 PM		X			X
GW-17322-020413-EM-024	MW92s-13	water		2/4/2013	2:50:00 PM		X			X
GW-17322-020413-CB-025	MW81-12	water		2/4/2013	3:55:00 PM		X			X
GW-17322-020513-EM-026	MW33-07	water		2/5/2013	9:30:00 AM		X			X
GW-17322-020513-EM-027	MW21-07	water		2/5/2013	10:00:00 AM		X			
GW-17322-020513-EM-028	MW10-07	water		2/5/2013	10:25:00 AM		X			X
ALS SDG No.: 1302677										
GW-17322-022013-EM-001	MW92i-13	water		2/20/2013	9:55:00 AM		X			

Notes:

- (1) - This SDG received "full" data validation.
- DUP - Field Duplicate Sample of sample in parenthesis
- MS/MSD - Matrix Spike/Matrix Spike Duplicate
- MS/MSD-P - Matrix Spike/Matrix Spike Duplicate (Partial parameters)
- PCB - Polychlorinated biphenyls
- QC - Quality Control
- SVOC - Semivolatile Organic Compounds
- TAL - Target Analyte List
- TCL - Target Compound List
- VOC - Volatile Organic Compounds

TABLE 2

SUMMARY OF ANALYTICAL METHODS, HOLDING TIME PERIODS, AND PRESERVATIVES
 PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
 PCC VALIDATION
 PONTIAC, MICHIGAN
 JANUARY AND FEBRUARY 2013

<i>Parameter</i>	<i>Method</i> ¹	<i>Matrix</i>	<i>Holding Time</i>	<i>Preservation</i> ²
TCL VOC	SW-846 8260	Water	- 14 days from sample collection to completion of analysis.	pH < 2 and Iced, 4 ± 2° C
TCL SVOC	SW-846 8270C	Water	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis	Iced, 4 ± 2° C
PCB	SW-846 8082	Water	- 7 days from sample collection to extraction - 40 days from extraction to completion of analysis	Iced, 4 ± 2° C
TAL Metals		Water	- 180 days from sample collection to completion of analysis	pH < 2 and Iced, 4 ± 2° C
Aluminum	SW-846 6020			
Antimony	SW-846 6020			
Arsenic	SW-846 6020			
Barium	SW-846 6020			
Beryllium	SW-846 6020			
Cadmium	SW-846 6020			
Chromium	SW-846 6020			
Cobalt	SW-846 6020			
Copper	SW-846 6020			
Iron	SW-846 6020			
Lead	SW-846 6020			
Manganese	SW-846 6020			
Nickel	SW-846 6020			
Selenium	SW-846 6020			
Silver	SW-846 6020			
Thallium	SW-846 6020			
Vanadium	SW-846 6020			
Zinc	SW-846 6020			
Mercury	SW-846 7470A/7471A	Water	- 28 days from sample collection to completion of analysis	pH < 2 and Iced, 4 ± 2° C

Notes

² pH preservation is not required in soil samples.

¹ Method References:

SW-846 - "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", SW-846, 3rd Edition, and Promulgated updates, November 1986
 SM - "Standards Methods for the Examination of Water and Wastewater," APHA, 19th Edition, 1995

TABLE 3

QUALIFIED SAMPLE RESULTS DUE TO VIOLATION OF CONTINUING CALIBRATION REQUIREMENTS
 PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
 PCC VALIDATION
 PONTIAC, MICHIGAN
 JANUARY AND FEBRUARY 2013

<i>Parameter</i>	<i>Analyte</i>	<i>Calibration Date</i>	<i>RRF</i>	<i>% Recovery or %D</i>	<i>Associated Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TCL VOC	Methyl acetate	2/6/2013	---	29.9	GW-17322-020413-CB-022	10 UJ	µg/L
					GW-17322-020413-CB-023	10 UJ	µg/L
					GW-17322-020413-CB-025	10 UJ	µg/L
					GW-17322-020413-EM-021	10 UJ	µg/L
					GW-17322-020413-EM-024	10 UJ	µg/L
					GW-17322-020513-EM-026	10 UJ	µg/L
					GW-17322-020513-EM-027	10 UJ	µg/L
					GW-17322-020513-EM-028	10 UJ	µg/L

Notes:

UJ - Non-detect with an Estimated Report Limit
 RRF - Relative Response Factor
 %D - Percent Difference
 TCL - Target Compound List
 VOC - Volatile Organic Compounds

TABLE 4

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO LABORATORY BLANK CONTAMINATION
 PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
 PCC VALIDATION
 PONTIAC, MICHIGAN
 JANUARY AND FEBRUARY 2013

<i>Parameter</i>	<i>Analyte</i>	<i>Analysis Date</i>	<i>Blank Result</i>	<i>Sample ID</i>	<i>Original Result</i>	<i>Qualified Result</i>	<i>Units</i>
TAL Metals	Thallium	2/8/2013	0.20 J	GW-17322-020413-CB-022	0.21 J	2.0 U	µg/L
TAL Metals	Aluminum	2/8/2013	1.9 J	GW-17322-020413-CB-023	6.9 J	10 U	µg/L
		2/8/2013	1.8 J	GW-17322-020413-CB-025	5.8 J	10 U	µg/L

Notes:

U - Qualified as Not Detected at the report limit

J - Estimated Concentration

TAL - Target Analyte List

TABLE 5

SUMMARY OF QUALIFIED SAMPLE DATA DUE TO VIOLATION OF SURROGATE RECOVERY ACCEPTANCE CRITERIA
 PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
 PCC VALIDATION
 PONTIAC, MICHIGAN
 JANUARY AND FEBRUARY 2013

<i>Parameter</i>	<i>Analyte</i>	<i>Surrogate</i>	<i>Surrogate % Rec</i>	<i>Control Limits % Rec</i>	<i>Sample ID</i>	<i>Qualified Result</i>	<i>Units</i>
TCL VOC	cis-1,2-Dichloroethene	Dibromofluoromethane	116	85 - 115	GW-17322-013113-CB-001	1.1 J	µg/L
	Trichloroethene					2.6 J	µg/L
TCL VOC	cis-1,2-Dichloroethene	Dibromofluoromethane	122	85 - 115	GW-17322-020113-DR-012	13 J	µg/L
	Chloroform (Trichloromethane)					5.5 J	µg/L
	1,1-Dichloroethane					30 J	µg/L
	1,1-Dichloroethene					17 J	µg/L

Notes:

J - Estimated Concentration

%Rec - Percent Recovery

TCL - Target Compound List

VOC - Volatile Organic Compounds

TABLE 6

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING LABORATORY CONTROL SAMPLE RESULTS
 PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
 PCC VALIDATION
 PONTIAC, MICHIGAN
 JANUARY AND FEBRUARY 2013

<i>Parameter</i>	<i>Analyte</i>	<i>LCS Date</i>	<i>LCS (percent)</i>	<i>Control Limits (percent)</i>	<i>Associated Sample ID</i>	<i>Qualified Results</i>	<i>Units</i>
TCL VOC	Carbon tetrachloride	1/31/2013	58.4	65 - 140	GW-17322-013113-CB-005	1.0 UJ	µg/L
					GW-17322-013113-CB-006	1.0 UJ	µg/L
					GW-17322-013113-CB-008	1.0 UJ	µg/L
					GW-17322-013113-DR-002	1.0 UJ	µg/L
					GW-17322-013113-DR-003	1.0 UJ	µg/L
					GW-17322-013113-DR-004	1.0 UJ	µg/L
					GW-17322-013113-DR-007	1.0 UJ	µg/L
					GW-17322-013113-DR-009	1.0 UJ	µg/L
TCL VOC	Carbon tetrachloride	2/5/2013	57.4	65-140	GW-17322-013113-CB-001	1.0 UJ	µg/L
					GW-17322-020113-DR-012	1.0 UJ	µg/L
					GW-17322-020113-DR-013	1.0 UJ	µg/L
					GW-17322-020113-DR-016	1.0 UJ	µg/L
					GW-17322-020113-DR-018	1.0 UJ	µg/L
					GW-17322-020113-DR-019	1.0 UJ	µg/L
					GW-17322-020113-DR-020	1.0 UJ	µg/L
TCL VOC	Carbon tetrachloride	2/6/2013	55.3	65-140	GW-17322-020113-DR-014	1.0 UJ	µg/L

Notes:

- UJ - Non-detect with an Estimated Report Limit
- LCS - Laboratory control sample.
- TCL - Target analyte list
- VOC - Volatile organic compound

TABLE 7

QUALIFIED SAMPLE RESULTS DUE TO OUTLYING MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS
PHASE III ENVIRONMENTAL ASSESSMENT - GROUNDWATER SAMPLING
PCC VALIDATION
PONTIAC, MICHIGAN
JANUARY AND FEBRUARY 2013

<i>Parameter</i>	<i>Sample ID</i>	<i>Analyte</i>	<i>MS</i>	<i>MSD</i>	<i>RPD</i>	<i>Control Limits</i>		<i>Qualified Result</i>	<i>Units</i>
			<i>% Recovery</i>	<i>% Recovery</i>	<i>(percent)</i>	<i>% Recovery</i>	<i>RPD</i>		
TCL VOC	GW-17322-020113-DR-012	Carbon tetrachloride	58.6	62.4	6.39	65 - 140	30	1.0 UJ	µg/L

Notes:

- UJ - Non-detect with an Estimated report limit
- MS - Matrix spike.
- MSD - Matrix spike duplicate.
- RPD - Relative percent difference.