

US EPA ARCHIVE DOCUMENT

Technical Memorandum

To: Dale Bridgeford, MDEQ, Peter Quackenbush, MDEQ, Joseph Kelly, USEPA

From: Stacy Metz and Graham Crockford

Subject: **STATUS UPDATE** - Investigation of the Potential Groundwater to Surface Water Migration Pathway: Former Tecumseh Products Company Site in Tecumseh, Michigan (RCRA-05-2010-0012)

Date: October 14, 2015

cc: Jason Smith, Tecumseh Products Company
Chris DeWetter, Tecumseh Products Company
Douglas McClure, Conlin, McKenney & Philbrick, PC

Project No.: 220003.0001.0000

Tecumseh Products Company (TPC) retained TRC Environmental Corporation (TRC), to investigate soil and groundwater conditions at the former TPC site located in Tecumseh, Michigan. The potential for unacceptable risk to the environment related to the potential discharge of affected groundwater to nearby surface water and the wetlands was evaluated in the 2012 RI/EI Report. This evaluation included the development of site-specific mixing zone-based groundwater to surface water interface (GSI) criteria/*de minimis* determination on surface water, which was submitted to the Michigan Department of Environmental Quality (MDEQ) and the United States Environmental Protection Agency (USEPA) in June 2012 then revised and re-submitted in August 2013 to reflect MDEQ rule changes related to mixing zone determinations. MDEQ/USEPA reviewed the application and requested additional information in order to further review the mixing zone-based GSI.

Between April and June 2015, High Resolution Site Characterization (HRSC) activities were completed by TPC to supplement existing site characterization data and more precisely document the nature and extent of chlorinated volatile organic compounds (CVOCs) in groundwater. These data were useful in addressing some comments related to the GSI issues. In subsequent investigation activities completed in August and September 2015, TRC performed the following:

- **Verified the Approximate Boundary of Wetland Area:** Performed a site reconnaissance and a GPS survey to more precisely document the up gradient (western) perimeter of the wetland area, based on visual observations, prior to placement of GSI monitoring points.
- **Assessed Groundwater Quality at the Wetland Boundary:** Installed and sampled five hand-driven monitoring points (B-108 to B-112) along the up gradient perimeter of the wetland area,

Technical Memorandum

down gradient from monitoring wells MW-22 and MW-31 at the locations shown on Figure 1; a conceptual cross section is attached as Figure 2. TRC collected groundwater levels relative to ground surface and adjacent wetland/surface water features to determine if water appears to be venting, or discharging to the wetlands, adjacent to the River Raisin, or directly into the river.

The laboratory report is included as Attachment A. These data are summarized on Table 1. Data showed that:

- **Groundwater data in one location exceeds generic GSI Criteria in groundwater underlying the wetland.** Groundwater samples from four of the five locations were below generic GSI criteria for all volatile organic compounds (VOCs). Samples collected from soil boring B-108 detected trichloroethene (1,200 µg/L), cis-1,2-dichloroethene (1,100 µg/L), and vinyl chloride (23 µg/L) above generic GSI criteria; but below the final acute values (FAVs). The potential venting area for VOCs to the wetland or river is limited to approximately 250 lineal feet along the western edge of the wetland from soil boring B-109, north of soil boring B-108, south to the seep sample location, as shown on Figure 1.
- **Groundwater elevation data show the potential for discharge to the wetland.** The first round of water levels have been collected, and water levels from sample location B-108 show there is a potential for venting to the wetland. Because groundwater is potentially venting to the wetland adjacent to the River Raisin above the generic GSI criteria, further investigation is appropriate.

Demonstrating GSI Pathway Compliance

In June 2014, the MDEQ released the draft guidance for GSI Pathway Compliance¹ to outline several approaches to address the GSI pathway. TRC has implemented several of these GSI compliance options at a variety of sites. Each site is unique, so it is important to consider site-specific conditions and use multiple lines of evidence in order to obtain GSI compliance, which may involve using a combination of the available options.

Because generic GSI criteria is exceeded and there is a potential for venting to a wetland, a mixing zone-based approach alone will not be successful in addressing GSI compliance, therefore, toxicity testing will be performed to demonstrate that potentially venting groundwater does not pose an ecological risk to wetland biota. If toxicity testing demonstrates that the affected groundwater does not pose an ecological risk to wetland biota, this data, in combination with a mixing-zone based approach for the River Raisin will be used to demonstrate GSI compliance. Proposed activities include:

- **Locating the area of highest VOC impacts:** Toxicity testing should be performed on the groundwater with the highest VOC concentrations that is potentially venting to the wetland. Therefore additional sampling will be completed to verify the location of highest VOC impacts. Additional VOC sampling is proposed for one additional shallower location immediately adjacent to soil boring B-108 (approximately 3-5 feet below ground surface [ft bgs]), a shallow

¹ MDEQ RRD, June 2014 Draft MDEQ Groundwater/Surface Water Interface Pathway Compliance Options, Remediation and Redevelopment Division Resource Materials.

Technical Memorandum

(approximately 3-5 feet ft bgs) and a deep (approximately 6-9 ft bgs) sampling point located approximately 75 feet north of soil boring B-108, and a shallow (approximately 3-5 feet ft bgs) and a deep (approximately 6-9 ft bgs) sampling point located approximately 75 feet south of soil boring B-108.

- **Performance of Toxicity Testing:** Using the VOC sample data from these wells, TRC will select the sample location with the highest VOC concentrations for toxicity testing. At that location a groundwater sample will be collected for toxicity testing in order to determine whether or not the groundwater which has the potential to vent to the wetland poses an unacceptable ecological risk.
- **Establishment of Hydraulic Properties:** Even though the groundwater elevation data suggests that there is a potential to discharge to the wetland, because the wetland is underlain by a 2-3 foot layer of low permeability of organic rich muck, it is more likely that a bulk of the VOC mass flux is horizontal beneath the wetland and discharging to the River Raisin through the underlying more highly conductive sand layer. A professional survey of monitoring points will be used to establish groundwater elevation data so that hydraulic gradient relative to the existing monitoring well network can be established. In addition, *in situ* hydraulic conductivity testing, to facilitate calculation of groundwater discharge and mass flux through the wetland and to the River Raisin, will be completed so that precise values for these parameters can be used in the development of mixing zone based GSI criteria for compliance at the River Raisin.
- **GSI Compliance Points:** Once the aforementioned data is collected, appropriate GSI compliance points will be established so that monitoring of groundwater quality can be used to verify that GSI compliance is maintained.

Technical Memorandum

Table 1

Table 1
Summary of Detected Volatile Organic Compounds in Groundwater at GSI Boring Locations
Former Tecumseh Products Company Site
Tecumseh, Michigan

Analyte		Acetone	1,1-Dichloro-ethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Toluene ⁽¹⁾	1,1,1-Trichloroethane	Trichloroethene	Vinyl Chloride
Residential DW Criteria		730	880	70	100	1,000	200	5.0	2.0
Non-Residential DW Criteria		2100	2,500	70	100	1,000	200	5.0	2.0
Residential GWSL for Vapor Intrusion		8.20E+06	4,300	83	360	36,000	17,000	10	2.8
Non-Residential GWSL for Vapor Intrusion		3.40E+07	18,000	350	1,500	1.50E+05	71,000	41	52
GSI Criteria		1700	740	620	1,500 ⁽²⁾	270	89	200 ⁽²⁾	13 ⁽²⁾
Groundwater Contact Criteria		3.10E+07	2.40E+06	2.00E+05	2.20E+05	5.30E+05	1.30E+06	13,000 ⁽³⁾	1,000
Units		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
B-108 (5.6-8.6')	9/1/2015	<200	15	1,100	11	<10	25	1,200	23
B-109 (7.4-10.4')	9/1/2015	<20	6.5	6.9	<1.0	<1.0	<1.0	2.7	<1.0
B-109 (7.4-10.4') (DUP-01)	9/1/2015	<20	6.6	7.1	<1.0	<1.0	<1.0	2.8	<1.0
B-110 (7.3-10.3')	9/1/2015	41	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-111 (3.3-6.3')	9/1/2015	<20	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
B-112 (4.4-7.4')	9/1/2015	25	<1.0	<1.0	<1.0	1.1	<1.0	<1.0	<1.0

Notes:

Health-Based Residential and Non-Residential Drinking Water (DW) Criteria and Groundwater/Surface Water Interface (GSI) Criteria from MDEQ RRD Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, December 30, 2013. Groundwater Contact (GC) Criteria from MDEQ RRD Part 201 Generic Cleanup Criteria/Part 213 Risk Based Cleanup Levels, September 28, 2012. Groundwater Screening Levels (GWSLs) for Vapor Intrusion were taken from the MDEQ Guidance Document for the Vapor Intrusion Pathway, May 2013.

ug/L = micrograms per liter

Bold font denotes concentrations detected above laboratory reporting limits

Denotes concentrations above one or more criteria

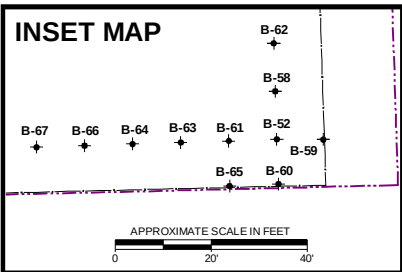
1) Compound may exhibit characteristic ignitability as defined in 40 C.F.R. § 261.21

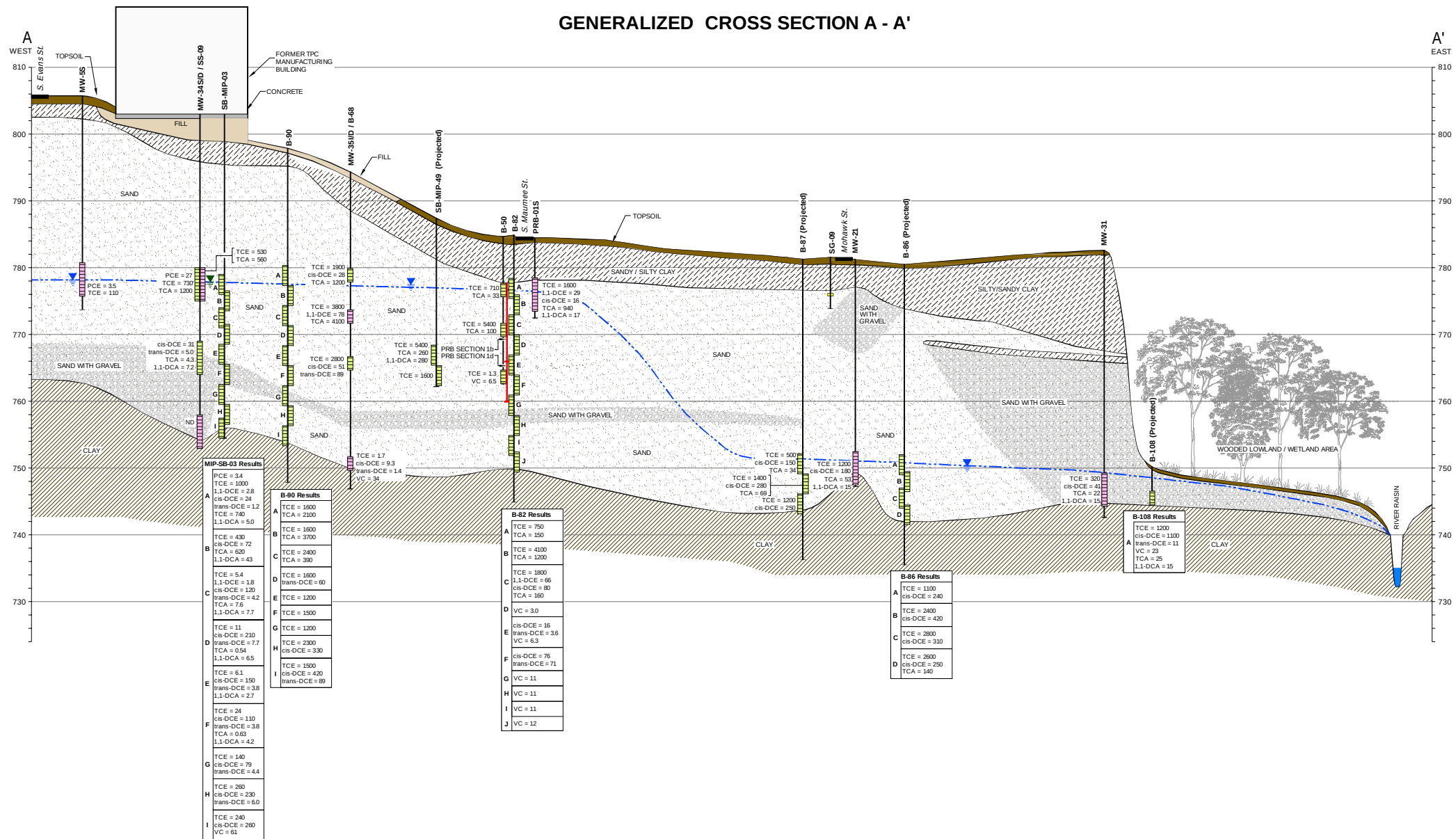
2) Criterion is not protective for surface water used as a drinking water source as described in footnote {X} of MDEQ Op Memo 1 Part 201, Attachment 1.

3) At the request of USEPA, a site-specific groundwater contact criteria for trichloroethene (TCE) was recalculated to reflect revised TCE toxicity data which were published by USEPA on September 28, 2011.

Technical Memorandum

Figures





LEGEND

	TOPSOIL		SANDY / SILTY CLAY
	SAND		CONCRETE
	CLAY		FILL
	SILTY SAND		COARSE GRAINED SOILS (S)

STRATIGRAPHIC BOUNDARY BASED ON NEAREST SOIL BORING OR MONITORING WELL (DASHED WHERE INFERRED)

APPROXIMATE GROUNDWATER ELEVATION

PIEZOMETRIC WATER LEVEL INDICATOR (DEEP WELL)

TEMPORARY WELL SCREEN

WELL SCREEN

SOIL GAS SAMPLE POINT SCREEN

PCE = TETRACHLOROETHENE
TCE = TRICHLOROETHENE
TCA = 1,1,1-TRICHLOROETHANE
1,1-DCE = 1,1-DICHLOROETHENE
1,1-DCA = 1,1-DICHLOROETHANE
cis-DCE = 1,2-cis-DICHLOROETHENE
trans-DCE = 1,2-trans-DICHLOROETHENE
VC = VINYL CHLORIDE

- NOTES**
- GROUND SURFACE AND STRATIGRAPHIC CONTACTS ARE APPROXIMATE AND EXTRAPOLATED FROM NEAREST SOIL BORING DATA.
 - SEE FIGURE 1 FOR LOCATION / ORIENTATION OF THIS GEOLOGIC CROSS SECTION.
 - GROUNDWATER ANALYTICAL DATA AND GROUNDWATER ELEVATIONS REFLECT THE MOST RECENT SAMPLE EVENT AS OF SEPTEMBER 2015.
 - DETECTED GROUNDWATER CONCENTRATIONS FOR CONSTITUENTS OF HIGHEST CONCERN ARE PROVIDED IN MICROGRAMS PER LITER.
 - COARSE GRAINED SOILS INCLUDE FINE GRAVEL, GRAVEL WITH SAND, SAND WITH GRAVEL, AND COARSE SAND.

3				
2				
1				
NO.	BY	DATE	REVISION	APPD
PROJECT: FORMER TECUMSEH PRODUCTS SITE TECUMSEH, MICHIGAN				
TITLE: CROSS SECTION A - A'				
DRAWN BY: DGS		SCALE: AS INDICATED	PROJ. NO. 220003.0001	
CHECKED BY: SM		DATE PRINTED:	FILE NO. 220003.0001.02.000	
APPROVED BY: GC		FIGURE 2		
DATE: OCTOBER 2015				

1540 Eisenhower Place
Ann Arbor, MI 48108
Phone: 734.971.7080
Fax: 734.971.9022

Technical Memorandum

Attachment A Laboratory Report

US EPA ARCHIVE DOCUMENT

September 14, 2015

TRC Companies. - Ann Arbor Office
Attn: Ms. Stacy Metz
1540 Eisenhower Place
Ann Arbor, MI 48108

Project: Tecumseh Products Groundwater

Dear Ms. Stacy Metz,

Enclosed is a copy of the laboratory report for the following work order(s) received by TriMatrix Laboratories:

Work Order	Received	Description
1509063	09/02/2015	Laboratory Services

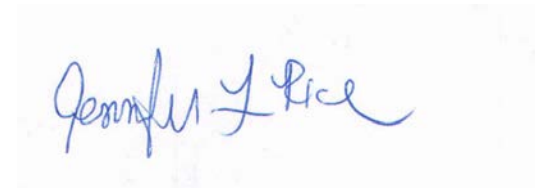
This report relates only to the sample(s) as received. Test results are in compliance with the requirements of the National Environmental Laboratory Accreditation Program (NELAP) and/or one of the following certification programs:

ACCLASS DoD-ELAP/ISO17025 (#ADE-1542); Arkansas DEP (#88-0730/13-049-0); Florida DEP (#E87622-24); Georgia EPD (#E87622-24); Illinois DEP (#200026/003329); Kansas DPH (#E-10302); Kentucky DEP (#0021); Louisiana DEP (#103068); Michigan DPH (#0034); Minnesota DPH (#491715); New York ELAP (#11776/48855); North Carolina DNRE (#659); Virginia DCLS (#460153/2592); Wisconsin DNR (#999472650); USDA Soil Import Permit (#P330-12-00236).

Any qualification or narration of results, including sample acceptance requirements and test exceptions to the above referenced programs, is presented in the Statement of Data Qualifications and Project Technical Narrative sections of this report. Estimates of analytical uncertainties and certification documents for the test results contained within this report are available upon request.

If you have any questions or require further information, please do not hesitate to contact me.

Sincerely,



Jennifer L. Rice
Project Chemist

PROJECT TECHNICAL NARRATIVE(s)

No Project Narrative is associated with this report.

STATEMENT OF DATA QUALIFICATIONS

Volatile Organic Compounds by EPA Method 8260B

Qualification: The sample was received at an incorrect preservation pH.

Analysis: USEPA-8260B

Sample: 1509063-01 B-110 (7.3-10.3')

Qualification: The corresponding CCV for this analytical batch had a recovery exceeding the upper control limit of the method. A positive result for this analyte in any associated samples are considered estimated. Non-detectable results are not qualified.

Analysis: USEPA-8260B

Sample/Analyte:	1509063-01	B-110 (7.3-10.3')	Bromomethane
	1509063-01	B-110 (7.3-10.3')	Carbon Disulfide
	1509063-02	DUP-01	Bromomethane
	1509063-02	DUP-01	Carbon Disulfide
	1509063-03	B-109 (7.4-10.4')	Bromomethane
	1509063-03	B-109 (7.4-10.4')	Carbon Disulfide
	1509063-04	B-108 (5.6-8.6')	Bromomethane
	1509063-04	B-108 (5.6-8.6')	Carbon Disulfide
	1509063-05	B-111 (3.3-6.3')	Bromomethane
	1509063-05	B-111 (3.3-6.3')	Carbon Disulfide
	1509063-06	B-112 (4.4-7.4')	Bromomethane
	1509063-06	B-112 (4.4-7.4')	Carbon Disulfide
	1509063-07	TB-01	Bromomethane
	1509063-07	TB-01	Carbon Disulfide

ANALYTICAL REPORT

Client: **TRC Companies. - Ann Arbor Office**
 Project: Tecumseh Products Groundwater
 Client Sample ID: **B-110 (7.3-10.3')**
 Lab Sample ID: **1509063-01**
 Matrix: Water
 Unit: ug/L
 Dilution Factor: 1
 QC Batch: 1509569

Work Order: **1509063**
 Description: Laboratory Services
 Sampled: 09/01/15 12:20
 Sampled By: Javier Jasso
 Received: 09/02/15 17:35
 Prepared: 09/08/15 08:00 By: BAG
 Analyzed: 09/08/15 12:22 By: BAG
 Analytical Batch: 5I09017

*Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	41	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
*74-83-9	Bromomethane	<5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
*75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	<5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	<5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	<5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: **TRC Companies. - Ann Arbor Office**
 Project: Tecumseh Products Groundwater
 Client Sample ID: **B-110 (7.3-10.3')**
 Lab Sample ID: **1509063-01**
 Matrix: Water
 Unit: ug/L
 Dilution Factor: 1
 QC Batch: 1509569

Work Order: **1509063**
 Description: Laboratory Services
 Sampled: 09/01/15 12:20
 Sampled By: Javier Jasso
 Received: 09/02/15 17:35
 Prepared: 09/08/15 08:00 By: BAG
 Analyzed: 09/08/15 12:22 By: BAG
 Analytical Batch: 5I09017

*Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<1.0	1.0
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0
100-41-4	Ethylbenzene	<1.0	1.0
60-29-7	Ethyl Ether	<5.0	5.0
591-78-6	2-Hexanone	<5.0	5.0
74-88-4	Iodomethane	<1.0	1.0
98-82-8	Isopropylbenzene	<1.0	1.0
99-87-6	4-Isopropyltoluene	<5.0	5.0
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0
75-09-2	Methylene Chloride	<5.0	5.0
78-93-3	2-Butanone (MEK)	<5.0	5.0
91-57-6	2-Methylnaphthalene	<5.0	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0
91-20-3	Naphthalene	<5.0	5.0
103-65-1	n-Propylbenzene	<1.0	1.0
100-42-5	Styrene	<1.0	1.0
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0
127-18-4	Tetrachloroethene	<1.0	1.0
109-99-9	Tetrahydrofuran	<5.0	5.0
108-88-3	Toluene	<1.0	1.0
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0
71-55-6	1,1,1-Trichloroethane	<1.0	1.0
79-00-5	1,1,2-Trichloroethane	<1.0	1.0
79-01-6	Trichloroethene	<1.0	1.0
75-69-4	Trichlorofluoromethane	<1.0	1.0
96-18-4	1,2,3-Trichloropropane	<1.0	1.0
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0

Continued on next page

*See Statement of Data Qualifications

US EPA ARCHIVE DOCUMENT

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063	
Project: Tecumseh Products Groundwater	Description: Laboratory Services	
Client Sample ID: B-110 (7.3-10.3')	Sampled: 09/01/15 12:20	
Lab Sample ID: 1509063-01	Sampled By: Javier Jasso	
Matrix: Water	Received: 09/02/15 17:35	
Unit: ug/L	Prepared: 09/08/15 08:00	By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 12:22	By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017	

*Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
75-01-4	Vinyl Chloride	<1.0	1.0
179601-23-1	Xylene, Meta + Para	<2.0	2.0
95-47-6	Xylene, Ortho	<1.0	1.0
Surrogates:			
		% Recovery	Control Limits
	<i>Dibromofluoromethane</i>	97	85-118
	<i>1,2-Dichloroethane-d4</i>	100	87-122
	<i>Toluene-d8</i>	100	85-113
	<i>4-Bromofluorobenzene</i>	99	82-110

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: **TRC Companies. - Ann Arbor Office**
 Project: Tecumseh Products Groundwater
 Client Sample ID: **DUP-01**
 Lab Sample ID: **1509063-02**
 Matrix: Water
 Unit: ug/L
 Dilution Factor: 1
 QC Batch: 1509569

Work Order: **1509063**
 Description: Laboratory Services
 Sampled: 09/01/15 00:00
 Sampled By: Javier Jasso
 Received: 09/02/15 17:35
 Prepared: 09/08/15 08:00 By: BAG
 Analyzed: 09/08/15 12:51 By: BAG
 Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
*74-83-9	Bromomethane	<5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
*75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	<5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	<5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	<5.0	5.0
75-34-3	1,1-Dichloroethane	6.6	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	7.1	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: **TRC Companies. - Ann Arbor Office**
 Project: Tecumseh Products Groundwater
 Client Sample ID: **DUP-01**
 Lab Sample ID: **1509063-02**
 Matrix: Water
 Unit: ug/L
 Dilution Factor: 1
 QC Batch: 1509569

Work Order: **1509063**
 Description: Laboratory Services
 Sampled: 09/01/15 00:00
 Sampled By: Javier Jasso
 Received: 09/02/15 17:35
 Prepared: 09/08/15 08:00 By: BAG
 Analyzed: 09/08/15 12:51 By: BAG
 Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<1.0	1.0
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0
100-41-4	Ethylbenzene	<1.0	1.0
60-29-7	Ethyl Ether	<5.0	5.0
591-78-6	2-Hexanone	<5.0	5.0
74-88-4	Iodomethane	<1.0	1.0
98-82-8	Isopropylbenzene	<1.0	1.0
99-87-6	4-Isopropyltoluene	<5.0	5.0
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0
75-09-2	Methylene Chloride	<5.0	5.0
78-93-3	2-Butanone (MEK)	<5.0	5.0
91-57-6	2-Methylnaphthalene	<5.0	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0
91-20-3	Naphthalene	<5.0	5.0
103-65-1	n-Propylbenzene	<1.0	1.0
100-42-5	Styrene	<1.0	1.0
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0
127-18-4	Tetrachloroethene	<1.0	1.0
109-99-9	Tetrahydrofuran	<5.0	5.0
108-88-3	Toluene	<1.0	1.0
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0
71-55-6	1,1,1-Trichloroethane	<1.0	1.0
79-00-5	1,1,2-Trichloroethane	<1.0	1.0
79-01-6	Trichloroethene	2.8	1.0
75-69-4	Trichlorofluoromethane	<1.0	1.0
96-18-4	1,2,3-Trichloropropane	<1.0	1.0
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0

Continued on next page

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: DUP-01	Sampled: 09/01/15 00:00
Lab Sample ID: 1509063-02	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 12:51 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
75-01-4	Vinyl Chloride	<1.0	1.0
179601-23-1	Xylene, Meta + Para	<2.0	2.0
95-47-6	Xylene, Ortho	<1.0	1.0
Surrogates:			
	% Recovery	Control Limits	
<i>Dibromofluoromethane</i>	<i>97</i>	<i>85-118</i>	
<i>1,2-Dichloroethane-d4</i>	<i>101</i>	<i>87-122</i>	
<i>Toluene-d8</i>	<i>99</i>	<i>85-113</i>	
<i>4-Bromofluorobenzene</i>	<i>99</i>	<i>82-110</i>	

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-109 (7.4-10.4')	Sampled: 09/01/15 10:48
Lab Sample ID: 1509063-03	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 13:19 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
*74-83-9	Bromomethane	<5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
*75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	<5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	<5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	<5.0	5.0
75-34-3	1,1-Dichloroethane	6.5	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	6.9	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-109 (7.4-10.4')	Sampled: 09/01/15 10:48
Lab Sample ID: 1509063-03	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 13:19 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<1.0	1.0
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0
100-41-4	Ethylbenzene	<1.0	1.0
60-29-7	Ethyl Ether	<5.0	5.0
591-78-6	2-Hexanone	<5.0	5.0
74-88-4	Iodomethane	<1.0	1.0
98-82-8	Isopropylbenzene	<1.0	1.0
99-87-6	4-Isopropyltoluene	<5.0	5.0
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0
75-09-2	Methylene Chloride	<5.0	5.0
78-93-3	2-Butanone (MEK)	<5.0	5.0
91-57-6	2-Methylnaphthalene	<5.0	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0
91-20-3	Naphthalene	<5.0	5.0
103-65-1	n-Propylbenzene	<1.0	1.0
100-42-5	Styrene	<1.0	1.0
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0
127-18-4	Tetrachloroethene	<1.0	1.0
109-99-9	Tetrahydrofuran	<5.0	5.0
108-88-3	Toluene	<1.0	1.0
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0
71-55-6	1,1,1-Trichloroethane	<1.0	1.0
79-00-5	1,1,2-Trichloroethane	<1.0	1.0
79-01-6	Trichloroethene	2.7	1.0
75-69-4	Trichlorofluoromethane	<1.0	1.0
96-18-4	1,2,3-Trichloropropane	<1.0	1.0
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0

Continued on next page

ANALYTICAL REPORT

Client:	TRC Companies. - Ann Arbor Office	Work Order:	1509063
Project:	Tecumseh Products Groundwater	Description:	Laboratory Services
Client Sample ID:	B-109 (7.4-10.4')	Sampled:	09/01/15 10:48
Lab Sample ID:	1509063-03	Sampled By:	Javier Jasso
Matrix:	Water	Received:	09/02/15 17:35
Unit:	ug/L	Prepared:	09/08/15 08:00 By: BAG
Dilution Factor:	1	Analyzed:	09/08/15 13:19 By: BAG
QC Batch:	1509569	Analytical Batch:	5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
75-01-4	Vinyl Chloride	<1.0	1.0
179601-23-1	Xylene, Meta + Para	<2.0	2.0
95-47-6	Xylene, Ortho	<1.0	1.0
Surrogates:			
		% Recovery	Control Limits
	<i>Dibromofluoromethane</i>	97	85-118
	<i>1,2-Dichloroethane-d4</i>	101	87-122
	<i>Toluene-d8</i>	100	85-113
	<i>4-Bromofluorobenzene</i>	99	82-110

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-108 (5.6-8.6')	Sampled: 09/01/15 11:50
Lab Sample ID: 1509063-04	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 10	Analyzed: 09/08/15 15:59 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<200	200
107-13-1	Acrylonitrile	<20	20
71-43-2	Benzene	<10	10
108-86-1	Bromobenzene	<10	10
74-97-5	Bromochloromethane	<10	10
75-27-4	Bromodichloromethane	<10	10
75-25-2	Bromoform	<10	10
*74-83-9	Bromomethane	<50	50
104-51-8	n-Butylbenzene	<10	10
135-98-8	sec-Butylbenzene	<10	10
98-06-6	tert-Butylbenzene	<10	10
*75-15-0	Carbon Disulfide	<10	10
56-23-5	Carbon Tetrachloride	<10	10
108-90-7	Chlorobenzene	<10	10
75-00-3	Chloroethane	<50	50
67-66-3	Chloroform	<10	10
74-87-3	Chloromethane	<50	50
96-12-8	1,2-Dibromo-3-chloropropane	<50	50
124-48-1	Dibromochloromethane	<10	10
106-93-4	1,2-Dibromoethane	<10	10
74-95-3	Dibromomethane	<10	10
110-57-6	trans-1,4-Dichloro-2-butene	<10	10
95-50-1	1,2-Dichlorobenzene	<10	10
541-73-1	1,3-Dichlorobenzene	<10	10
106-46-7	1,4-Dichlorobenzene	<10	10
75-71-8	Dichlorodifluoromethane	<50	50
75-34-3	1,1-Dichloroethane	15	10
107-06-2	1,2-Dichloroethane	<10	10
75-35-4	1,1-Dichloroethene	<10	10
156-59-2	cis-1,2-Dichloroethene	1100	10
156-60-5	trans-1,2-Dichloroethene	11	10

Continued on next page

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-108 (5.6-8.6')	Sampled: 09/01/15 11:50
Lab Sample ID: 1509063-04	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 10	Analyzed: 09/08/15 15:59 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<10	10
10061-01-5	cis-1,3-Dichloropropene	<10	10
10061-02-6	trans-1,3-Dichloropropene	<10	10
100-41-4	Ethylbenzene	<10	10
60-29-7	Ethyl Ether	<50	50
591-78-6	2-Hexanone	<50	50
74-88-4	Iodomethane	<10	10
98-82-8	Isopropylbenzene	<10	10
99-87-6	4-Isopropyltoluene	<50	50
1634-04-4	Methyl tert-Butyl Ether	<50	50
75-09-2	Methylene Chloride	<50	50
78-93-3	2-Butanone (MEK)	<50	50
91-57-6	2-Methylnaphthalene	<50	50
108-10-1	4-Methyl-2-pentanone (MIBK)	<50	50
91-20-3	Naphthalene	<50	50
103-65-1	n-Propylbenzene	<10	10
100-42-5	Styrene	<10	10
630-20-6	1,1,1,2-Tetrachloroethane	<10	10
79-34-5	1,1,2,2-Tetrachloroethane	<10	10
127-18-4	Tetrachloroethene	<10	10
109-99-9	Tetrahydrofuran	<50	50
108-88-3	Toluene	<10	10
87-61-6	1,2,3-Trichlorobenzene	<50	50
120-82-1	1,2,4-Trichlorobenzene	<50	50
71-55-6	1,1,1-Trichloroethane	25	10
79-00-5	1,1,2-Trichloroethane	<10	10
79-01-6	Trichloroethene	1200	10
75-69-4	Trichlorofluoromethane	<10	10
96-18-4	1,2,3-Trichloropropane	<10	10
95-63-6	1,2,4-Trimethylbenzene	<10	10
108-67-8	1,3,5-Trimethylbenzene	<10	10

Continued on next page

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-108 (5.6-8.6')	Sampled: 09/01/15 11:50
Lab Sample ID: 1509063-04	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 10	Analyzed: 09/08/15 15:59 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
75-01-4	Vinyl Chloride	23	10
179601-23-1	Xylene, Meta + Para	<20	20
95-47-6	Xylene, Ortho	<10	10

<i>Surrogates:</i>	<i>% Recovery</i>	<i>Control Limits</i>
<i>Dibromofluoromethane</i>	<i>98</i>	<i>85-118</i>
<i>1,2-Dichloroethane-d4</i>	<i>101</i>	<i>87-122</i>
<i>Toluene-d8</i>	<i>100</i>	<i>85-113</i>
<i>4-Bromofluorobenzene</i>	<i>100</i>	<i>82-110</i>

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-111 (3.3-6.3')	Sampled: 09/01/15 14:25
Lab Sample ID: 1509063-05	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 15:31 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
*74-83-9	Bromomethane	<5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
*75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	<5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	<5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	<5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-111 (3.3-6.3')	Sampled: 09/01/15 14:25
Lab Sample ID: 1509063-05	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 15:31 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<1.0	1.0
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0
100-41-4	Ethylbenzene	<1.0	1.0
60-29-7	Ethyl Ether	<5.0	5.0
591-78-6	2-Hexanone	<5.0	5.0
74-88-4	Iodomethane	<1.0	1.0
98-82-8	Isopropylbenzene	<1.0	1.0
99-87-6	4-Isopropyltoluene	<5.0	5.0
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0
75-09-2	Methylene Chloride	<5.0	5.0
78-93-3	2-Butanone (MEK)	<5.0	5.0
91-57-6	2-Methylnaphthalene	<5.0	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0
91-20-3	Naphthalene	<5.0	5.0
103-65-1	n-Propylbenzene	<1.0	1.0
100-42-5	Styrene	<1.0	1.0
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0
127-18-4	Tetrachloroethene	<1.0	1.0
109-99-9	Tetrahydrofuran	<5.0	5.0
108-88-3	Toluene	<1.0	1.0
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0
71-55-6	1,1,1-Trichloroethane	<1.0	1.0
79-00-5	1,1,2-Trichloroethane	<1.0	1.0
79-01-6	Trichloroethene	<1.0	1.0
75-69-4	Trichlorofluoromethane	<1.0	1.0
96-18-4	1,2,3-Trichloropropane	<1.0	1.0
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0

Continued on next page

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-111 (3.3-6.3')	Sampled: 09/01/15 14:25
Lab Sample ID: 1509063-05	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 15:31 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
75-01-4	Vinyl Chloride	<1.0	1.0
179601-23-1	Xylene, Meta + Para	<2.0	2.0
95-47-6	Xylene, Ortho	<1.0	1.0
Surrogates:			
	% Recovery	Control Limits	
<i>Dibromofluoromethane</i>	<i>99</i>	<i>85-118</i>	
<i>1,2-Dichloroethane-d4</i>	<i>112</i>	<i>87-122</i>	
<i>Toluene-d8</i>	<i>100</i>	<i>85-113</i>	
<i>4-Bromofluorobenzene</i>	<i>105</i>	<i>82-110</i>	

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-112 (4.4-7.4')	Sampled: 09/01/15 14:10
Lab Sample ID: 1509063-06	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 14:45 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	25	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
*74-83-9	Bromomethane	<5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
*75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	<5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	<5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	<5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-112 (4.4-7.4')	Sampled: 09/01/15 14:10
Lab Sample ID: 1509063-06	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 14:45 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<1.0	1.0
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0
100-41-4	Ethylbenzene	<1.0	1.0
60-29-7	Ethyl Ether	<5.0	5.0
591-78-6	2-Hexanone	<5.0	5.0
74-88-4	Iodomethane	<1.0	1.0
98-82-8	Isopropylbenzene	<1.0	1.0
99-87-6	4-Isopropyltoluene	<5.0	5.0
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0
75-09-2	Methylene Chloride	<5.0	5.0
78-93-3	2-Butanone (MEK)	<5.0	5.0
91-57-6	2-Methylnaphthalene	<5.0	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0
91-20-3	Naphthalene	<5.0	5.0
103-65-1	n-Propylbenzene	<1.0	1.0
100-42-5	Styrene	<1.0	1.0
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0
127-18-4	Tetrachloroethene	<1.0	1.0
109-99-9	Tetrahydrofuran	<5.0	5.0
108-88-3	Toluene	1.1	1.0
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0
71-55-6	1,1,1-Trichloroethane	<1.0	1.0
79-00-5	1,1,2-Trichloroethane	<1.0	1.0
79-01-6	Trichloroethene	<1.0	1.0
75-69-4	Trichlorofluoromethane	<1.0	1.0
96-18-4	1,2,3-Trichloropropane	<1.0	1.0
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0

Continued on next page

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: B-112 (4.4-7.4')	Sampled: 09/01/15 14:10
Lab Sample ID: 1509063-06	Sampled By: Javier Jasso
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 14:45 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
75-01-4	Vinyl Chloride	<1.0	1.0
179601-23-1	Xylene, Meta + Para	<2.0	2.0
95-47-6	Xylene, Ortho	<1.0	1.0
Surrogates:			
		% Recovery	Control Limits
	<i>Dibromofluoromethane</i>	97	85-118
	<i>1,2-Dichloroethane-d4</i>	101	87-122
	<i>Toluene-d8</i>	100	85-113
	<i>4-Bromofluorobenzene</i>	100	82-110

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: TB-01	Sampled: 09/01/15 00:00
Lab Sample ID: 1509063-07	Sampled By: TML
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 11:54 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B

CAS Number	Analyte	Analytical Result	RL
67-64-1	Acetone	<20	20
107-13-1	Acrylonitrile	<2.0	2.0
71-43-2	Benzene	<1.0	1.0
108-86-1	Bromobenzene	<1.0	1.0
74-97-5	Bromochloromethane	<1.0	1.0
75-27-4	Bromodichloromethane	<1.0	1.0
75-25-2	Bromoform	<1.0	1.0
*74-83-9	Bromomethane	<5.0	5.0
104-51-8	n-Butylbenzene	<1.0	1.0
135-98-8	sec-Butylbenzene	<1.0	1.0
98-06-6	tert-Butylbenzene	<1.0	1.0
*75-15-0	Carbon Disulfide	<1.0	1.0
56-23-5	Carbon Tetrachloride	<1.0	1.0
108-90-7	Chlorobenzene	<1.0	1.0
75-00-3	Chloroethane	<5.0	5.0
67-66-3	Chloroform	<1.0	1.0
74-87-3	Chloromethane	<5.0	5.0
96-12-8	1,2-Dibromo-3-chloropropane	<5.0	5.0
124-48-1	Dibromochloromethane	<1.0	1.0
106-93-4	1,2-Dibromoethane	<1.0	1.0
74-95-3	Dibromomethane	<1.0	1.0
110-57-6	trans-1,4-Dichloro-2-butene	<1.0	1.0
95-50-1	1,2-Dichlorobenzene	<1.0	1.0
541-73-1	1,3-Dichlorobenzene	<1.0	1.0
106-46-7	1,4-Dichlorobenzene	<1.0	1.0
75-71-8	Dichlorodifluoromethane	<5.0	5.0
75-34-3	1,1-Dichloroethane	<1.0	1.0
107-06-2	1,2-Dichloroethane	<1.0	1.0
75-35-4	1,1-Dichloroethene	<1.0	1.0
156-59-2	cis-1,2-Dichloroethene	<1.0	1.0
156-60-5	trans-1,2-Dichloroethene	<1.0	1.0

Continued on next page

*See Statement of Data Qualifications

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: TB-01	Sampled: 09/01/15 00:00
Lab Sample ID: 1509063-07	Sampled By: TML
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 11:54 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
78-87-5	1,2-Dichloropropane	<1.0	1.0
10061-01-5	cis-1,3-Dichloropropene	<1.0	1.0
10061-02-6	trans-1,3-Dichloropropene	<1.0	1.0
100-41-4	Ethylbenzene	<1.0	1.0
60-29-7	Ethyl Ether	<5.0	5.0
591-78-6	2-Hexanone	<5.0	5.0
74-88-4	Iodomethane	<1.0	1.0
98-82-8	Isopropylbenzene	<1.0	1.0
99-87-6	4-Isopropyltoluene	<5.0	5.0
1634-04-4	Methyl tert-Butyl Ether	<5.0	5.0
75-09-2	Methylene Chloride	<5.0	5.0
78-93-3	2-Butanone (MEK)	<5.0	5.0
91-57-6	2-Methylnaphthalene	<5.0	5.0
108-10-1	4-Methyl-2-pentanone (MIBK)	<5.0	5.0
91-20-3	Naphthalene	<5.0	5.0
103-65-1	n-Propylbenzene	<1.0	1.0
100-42-5	Styrene	<1.0	1.0
630-20-6	1,1,1,2-Tetrachloroethane	<1.0	1.0
79-34-5	1,1,2,2-Tetrachloroethane	<1.0	1.0
127-18-4	Tetrachloroethene	<1.0	1.0
109-99-9	Tetrahydrofuran	<5.0	5.0
108-88-3	Toluene	<1.0	1.0
87-61-6	1,2,3-Trichlorobenzene	<5.0	5.0
120-82-1	1,2,4-Trichlorobenzene	<5.0	5.0
71-55-6	1,1,1-Trichloroethane	<1.0	1.0
79-00-5	1,1,2-Trichloroethane	<1.0	1.0
79-01-6	Trichloroethene	<1.0	1.0
75-69-4	Trichlorofluoromethane	<1.0	1.0
96-18-4	1,2,3-Trichloropropane	<1.0	1.0
95-63-6	1,2,4-Trimethylbenzene	<1.0	1.0
108-67-8	1,3,5-Trimethylbenzene	<1.0	1.0

Continued on next page

ANALYTICAL REPORT

Client: TRC Companies. - Ann Arbor Office	Work Order: 1509063
Project: Tecumseh Products Groundwater	Description: Laboratory Services
Client Sample ID: TB-01	Sampled: 09/01/15 00:00
Lab Sample ID: 1509063-07	Sampled By: TML
Matrix: Water	Received: 09/02/15 17:35
Unit: ug/L	Prepared: 09/08/15 08:00 By: BAG
Dilution Factor: 1	Analyzed: 09/08/15 11:54 By: BAG
QC Batch: 1509569	Analytical Batch: 5I09017

Volatile Organic Compounds by EPA Method 8260B (Continued)

CAS Number	Analyte	Analytical Result	RL
75-01-4	Vinyl Chloride	<1.0	1.0
179601-23-1	Xylene, Meta + Para	<2.0	2.0
95-47-6	Xylene, Ortho	<1.0	1.0
Surrogates:			
	% Recovery	Control Limits	
<i>Dibromofluoromethane</i>	<i>97</i>	<i>85-118</i>	
<i>1,2-Dichloroethane-d4</i>	<i>100</i>	<i>87-122</i>	
<i>Toluene-d8</i>	<i>99</i>	<i>85-113</i>	
<i>4-Bromofluorobenzene</i>	<i>99</i>	<i>82-110</i>	

QUALITY CONTROL REPORT

Volatile Organic Compounds by EPA Method 8260B

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
---------	--------------	------------	--------	--------------	----------------	-----	------------	----

QC Batch: 1509569 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank

Unit: ug/L

Analyzed: 09/08/2015 By: BAG

Analytical Batch: 5109017

Acetone	<20		20
Acrylonitrile	<2.0		2.0
Benzene	<1.0		1.0
Bromobenzene	<1.0		1.0
Bromochloromethane	<1.0		1.0
Bromodichloromethane	<1.0		1.0
Bromoform	<1.0		1.0
Bromomethane	<5.0	--	5.0
n-Butylbenzene	<1.0	--	1.0
sec-Butylbenzene	<1.0	--	1.0
tert-Butylbenzene	<1.0		1.0
Carbon Disulfide	<1.0	--	1.0
Carbon Tetrachloride	<1.0		1.0
Chlorobenzene	<1.0		1.0
Chloroethane	<5.0		5.0
Chloroform	<1.0		1.0
Chloromethane	<5.0		5.0
1,2-Dibromo-3-chloropropane	<5.0		5.0
Dibromochloromethane	<1.0		1.0
1,2-Dibromoethane	<1.0		1.0
Dibromomethane	<1.0		1.0
trans-1,4-Dichloro-2-butene	<1.0		1.0
1,2-Dichlorobenzene	<1.0		1.0
1,3-Dichlorobenzene	<1.0	--	1.0
1,4-Dichlorobenzene	<1.0	--	1.0
Dichlorodifluoromethane	<5.0		5.0
1,1-Dichloroethane	<1.0		1.0
1,2-Dichloroethane	<1.0		1.0
1,1-Dichloroethene	<1.0		1.0
cis-1,2-Dichloroethene	<1.0		1.0
trans-1,2-Dichloroethene	<1.0		1.0
1,2-Dichloropropane	<1.0		1.0
cis-1,3-Dichloropropene	<1.0		1.0
trans-1,3-Dichloropropene	<1.0		1.0
Ethylbenzene	<1.0		1.0
Ethyl Ether	<5.0		5.0

Continued on next page

QUALITY CONTROL REPORT

Volatile Organic Compounds by EPA Method 8260B (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
---------	--------------	------------	--------	--------------	----------------	-----	------------	----

QC Batch: 1509569 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)

Unit: ug/L

Analyzed: 09/08/2015 By: BAG

Analytical Batch: 5I09017

2-Hexanone	<5.0		5.0
Iodomethane	<1.0		1.0
Isopropylbenzene	<1.0		1.0
4-Isopropyltoluene	<5.0	--	5.0
Methyl tert-Butyl Ether	<5.0		5.0
Methylene Chloride	<5.0	--	5.0
2-Butanone (MEK)	<5.0		5.0
2-Methylnaphthalene	<5.0	--	5.0
4-Methyl-2-pentanone (MIBK)	<5.0	--	5.0
Naphthalene	<5.0	--	5.0
n-Propylbenzene	<1.0		1.0
Styrene	<1.0		1.0
1,1,1,2-Tetrachloroethane	<1.0		1.0
1,1,2,2-Tetrachloroethane	<1.0		1.0
Tetrachloroethene	<1.0		1.0
Tetrahydrofuran	<5.0		5.0
Toluene	<1.0		1.0
1,2,3-Trichlorobenzene	<5.0	--	5.0
1,2,4-Trichlorobenzene	<5.0	--	5.0
1,1,1-Trichloroethane	<1.0		1.0
1,1,2-Trichloroethane	<1.0		1.0
Trichloroethene	<1.0		1.0
Trichlorofluoromethane	<1.0		1.0
1,2,3-Trichloropropane	<1.0		1.0
1,2,4-Trimethylbenzene	<1.0	--	1.0
1,3,5-Trimethylbenzene	<1.0		1.0
Vinyl Chloride	<1.0		1.0
Xylene, Meta + Para	<2.0		2.0
Xylene, Ortho	<1.0		1.0

Surrogates:

<i>Dibromofluoromethane</i>	<i>97</i>	<i>85-118</i>
<i>1,2-Dichloroethane-d4</i>	<i>100</i>	<i>87-122</i>
<i>Toluene-d8</i>	<i>99</i>	<i>85-113</i>

Continued on next page

QUALITY CONTROL REPORT

Volatile Organic Compounds by EPA Method 8260B (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
---------	--------------	------------	--------	--------------	----------------	-----	------------	----

QC Batch: 1509569 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Method Blank (Continued)

Unit: ug/L

Analyzed: 09/08/2015 By: BAG
 Analytical Batch: 5I09017

Surrogates (Continued):

4-Bromofluorobenzene

100 82-110

Laboratory Control Sample

Unit: ug/L

Analyzed: 09/08/2015 By: BAG
 Analytical Batch: 5I09017

Benzene	40.0	41.0	103	84-119	--	1.0
Chlorobenzene	40.0	40.3	101	84-118	--	1.0
1,1-Dichloroethene	40.0	43.0	108	77-123	--	1.0
Toluene	40.0	41.0	103	85-118	--	1.0
Trichloroethene	40.0	38.8	97	82-119	--	1.0

Surrogates:

Dibromofluoromethane

100 85-118

1,2-Dichloroethane-d4

101 87-122

Toluene-d8

100 85-113

4-Bromofluorobenzene

99 82-110

Matrix Spike 1509063-06 B-112 (4.4-7.4')

Unit: ug/L

Analyzed: 09/08/2015 By: BAG
 Analytical Batch: 5I09017

Benzene	<1.0	40.0	40.9	102	80-129	--	1.0
Chlorobenzene	<1.0	40.0	38.9	97	80-121	--	1.0
1,1-Dichloroethene	<1.0	40.0	43.6	109	74-134	--	1.0
Toluene	1.12	40.0	41.8	102	79-129	--	1.0
Trichloroethene	0.290	40.0	37.7	94	75-127	--	1.0

Surrogates:

Dibromofluoromethane

102 85-118

1,2-Dichloroethane-d4

101 87-122

Toluene-d8

101 85-113

4-Bromofluorobenzene

100 82-110

Matrix Spike Duplicate 1509063-06 B-112 (4.4-7.4')

Unit: ug/L

Analyzed: 09/08/2015 By: BAG
 Analytical Batch: 5I09017

Benzene	<1.0	40.0	42.8	107	80-129	4	9	1.0
---------	------	------	-------------	-----	--------	---	---	-----

Continued on next page

QUALITY CONTROL REPORT

Volatile Organic Compounds by EPA Method 8260B (Continued)

Analyte	Sample Conc.	Spike Qty.	Result	Spike % Rec.	Control Limits	RPD	RPD Limits	RL
---------	--------------	------------	--------	--------------	----------------	-----	------------	----

QC Batch: 1509569 (Continued) 5030B Aqueous Purge & Trap/USEPA-8260B

Matrix Spike Duplicate (Continued) 1509063-06 B-112 (4.4-7.4')

Analyzed: 09/08/2015 By: BAG

Unit: ug/L

Analytical Batch: 5I09017

Chlorobenzene	<1.0	40.0	41.4	104	80-121	6	8	1.0
1,1-Dichloroethene	<1.0	40.0	45.2	113	74-134	4	11	1.0
Toluene	1.12	40.0	44.2	108	79-129	6	9	1.0
Trichloroethene	0.290	40.0	40.2	100	75-127	6	10	1.0

Surrogates:

Dibromofluoromethane 101 85-118

1,2-Dichloroethane-d4 100 87-122

Toluene-d8 100 85-113

4-Bromofluorobenzene 101 82-110



5560 Corporate Exchange Court SE
Grand Rapids, MI 49512

Phone (616) 975-4500 Fax (616) 942-7463
www.trimatrixlabs.com

Chain of Custody Record

COC No.

151249

For Lab Use Only

Analyses Requested

Pg.

1 of 1

VOA Recept

Receipt Log No.

Project Client

Work Order No.

Client Name

Address

City, State Zip

Phone/Fax

Project Name

Client Project No.

Invoice To

Contact/Report To

Project No.

Client Project No.

Invoice To

Contact/Report To

Container Type

Container Type

Container Type

Container Type

PRESERVATIVES

A. NONE pH<7

B. HNO₃ pH<2

C. H₂SO₄ pH<2

D. 1+1 HCl pH<2

E. NaOH pH>12

F. ZnAc/NaOH pH>9

G. MeOH

H. Other (note below)

Schedule

Matrix Code

Sample Number

Field Sample ID

Cooler ID

Sample Date

Sample Time

Matrix

Number of Containers Submitted

Time

Sample Comments

Sampled By (print)

Sampler's Signature

Company

How Shipped?

Tracking No.

Requisitioned By

Requisitioned Date

Hand

Carrier

Date

Time

Comments

Requisitioned By

Requisitioned Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

Date

Time

WHITE COPY - REPORT

YELLOW COPY - LABORATORY

PINK COPY - FIELD

SAMPLE RECEIVING / LOG-IN CHECKLIST

1509063



Client: <u>TRC</u>	Work Order #: <u>1508</u>
Receipt Record Page/Line #: <u>14-30</u>	Project Chemist: _____ Sample #: _____

Recorded by (initials/date): <u>DN 9/2/15</u>	☒ Cooler ☐ Box ☐ Other	Qty Received: <u>1</u>	☒ IR Gun (#202) ☐ Thermometer Used ☐ Digital Thermometer (#54) ☐ Other (# _____)	☐ See Additional Cooler Information Form
---	--	------------------------	--	---

Cooler #	Time	Cooler #	Time	Cooler #	Time	Cooler #	Time	
<u>5/10</u>	<u>2:03</u>							
Custody Seals:		Custody Seals:		Custody Seals:		Custody Seals:		
☒ None ☐ Present / Intact ☐ Present / Not Intact		☐ None ☐ Present / Intact ☐ Present / Not Intact		☐ None ☐ Present / Intact ☐ Present / Not Intact		☐ None ☐ Present / Intact ☐ Present / Not Intact		
Coolant Type:		Coolant Type:		Coolant Type:		Coolant Type:		
☒ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None		☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None		☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None		☐ Loose Ice ☐ Bagged Ice ☐ Blue Ice ☐ None		
Coolant Location:		Coolant Location:		Coolant Location:		Coolant Location:		
Dispersed / Top / Middle / Bottom		Dispersed / Top / Middle / Bottom		Dispersed / Top / Middle / Bottom		Dispersed / Top / Middle / Bottom		
Temp Blank Present: ☐ Yes ☐ No		Temp Blank Present: ☐ Yes ☐ No		Temp Blank Present: ☐ Yes ☐ No		Temp Blank Present: ☐ Yes ☐ No		
If Present, Temperature Blank Location is:		If Present, Temperature Blank Location is:		If Present, Temperature Blank Location is:		If Present, Temperature Blank Location is:		
☐ Representative ☐ Not Representative		☐ Representative ☐ Not Representative		☐ Representative ☐ Not Representative		☐ Representative ☐ Not Representative		
Observed °C	Correction Factor °C	Actual °C	Observed °C	Correction Factor °C	Actual °C	Observed °C	Correction Factor °C	
Temp Blank: <u>2.5</u>	<u>0</u>	<u>2.5</u>	Temp Blank:			Temp Blank:		
Sample 1: <u>5.4</u>	<u>0</u>	<u>5.4</u>	Sample 1:			Sample 1:		
Sample 2: <u>6.0</u>	<u>0</u>	<u>6.0</u>	Sample 2:			Sample 2:		
Sample 3: <u>6.4</u>	<u>0</u>	<u>6.4</u>	Sample 3:			Sample 3:		
3 Sample Average °C: <u>5.9</u>			3 Sample Average °C:			3 Sample Average °C:		
☐ Cooler ID on COC? ☒ VOC Trip Blank received?			☐ Cooler ID on COC? ☐ VOC Trip Blank received?			☐ Cooler ID on COC? ☐ VOC Trip Blank received?		

If any shaded areas checked, complete Sample Receiving Non-Conformance and/or Inventory Form

Paperwork Received

Yes	No
☒	☐ Chain of Custody record(s)? If No, Initiated By _____
☒	☐ Received for Lab Signed/Date/Time?
☒	☐ Shipping document?
☒	☐ Other _____

COC Information

☐ TriMatrix COC	☐ Other _____
COC ID Numbers: <u>151249</u>	

Check COC for Accuracy

Yes	No
☒	☐ Analysis Requested?
☒	☐ Sample ID matches COC?
☒	☐ Sample Date and Time matches COC?
☒	☐ Container type completed on COC?
☒	☐ All container types indicated are received?

Sample Condition Summary

N/A	Yes	No
☒	☐	☒ Broken containers/lids?
☒	☐	☒ Missing or incomplete labels?
☒	☐	☒ Illegible information on labels?
☒	☐	☒ Low volume received?
☒	☐	☒ Inappropriate or non-TriMatrix containers received?
☒	☐	☐ VOC vials / TOX containers have headspace?
☒	☐	☐ Extra sample locations / containers not listed on COC?

Check Sample Preservation

N/A	Yes	No
☒	☐	☒ Temperature Blank OR average sample temperature, $\geq 6^{\circ}\text{C}$?
☒	☐	☐ If either is $\geq 6^{\circ}\text{C}$, was thermal preservation required?
☒	☐	If "Yes", Project Chemist Approval Initials: _____
☒	☐	If "Yes" Completed Non Con Cooler - Cont Inventory Form?
☒	☐	Completed Sample Preservation Verification Form?
☒	☐	☒ Samples chemically preserved correctly?
☒	☐	If "No", added orange tag?
☒	☐	☒ Received pre-preserved VOC soils?
		☐ MeOH ☐ Na ₂ SO ₄

Check for Short Hold-Time Prep/Analyses

☐ Bacteriological	AFTER HOURS ONLY: COPIES OF COC TO LAB AREA(S) ☒ NONE RECEIVED ☐ RECEIVED, COCs TO LAB(S)
☐ Air Bags	
☐ EnCores / Methanol Pre-Preserved	
☐ Formaldehyde/Aldehyde	
☐ Green-tagged containers	
☐ Yellow/White-tagged 1 L ambers (SV Prep-Lab)	

Notes

☐ Trip Blank received	☐ Trip Blank not listed on COC
Cooler Received (Date/Time): <u>DN 9/2/15</u>	Paperwork Delivered (Date/Time): <u>9/2/15</u>
≤ 1 Hour Goal Met?	
Yes / No	