Stericycle
Environmental Solutions

April 10, 2018

Ms. Kaia Petersen
Department of Ecology
Hazardous Waste and Toxics Reduction
Southwest Regional Office
PO Box 47775
Olympia, WA 98504-7775

Re: Burlington Environmental, LLC; a wholly-owned subsidiary of PSC Environmental Services, LLC, a wholly-owned subsidiary of Stericycle Environmental Solutions, Inc. Tacoma Facility, Dangerous Waste Permit No. WAD 020 257 945

Dear Ms. Petersen:

Enclosed, please find two copies of the Annual Progress Report for the period of January 1, 2017 through December 31, 2017 which includes the groundwater sampling conducted in 2017, and water level measurements conducted in June and December 2017, as required by Section E of the Stericycle Tacoma Facility dangerous waste permit No. WAD 020 257 945.

If you have questions or concerns related to this report, please contact me at (425) 227-6149 or at William.Beck@STERICYCLE.com.

Respectfully,

William Beck
Project Manager
Corrective Action Group

Enclosures: 2017 Progress Report, Stericycle Facility, Tacoma, Washington

Cc: Tacoma Main Public Library – Repository
Citizens for a Healthy Bay – Repository
Steve Teel, Ecology
Mr. Russell Post, Tacoma Public Utilities
Mr. Bill Sullivan, Puyallup Tribe of Indians
Mr. Desiree Pooley, Tacoma Public Works
Mr. Jerry Bartlett, Emerald Recycling
Mr. Doug Kunkle, EPI
Mr. Scott Hooten, Port of Tacoma
Ms. Natasya Gray, DOF

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

William Beck
Stericycle CA Project Manager

This report was prepared by Stericycle Environmental Solutions, Inc. under the supervision of the Geologist whose seal and signature appears below.

The findings, recommendations, specifications, or professional opinions are presented in accordance with generally accepted professional geologic practice.

John A. Maloy, L Hg.
Licensed Hydrogeologist #1367
Expiration Date: June 11, 2018

ANNUAL
PROGRESS REPORT

2017

STERICYCLE
ENVIRONMENTAL
SOLUTIONS, INC.

TACOMA FACILITY

TACOMA, WASHINGTON

April 10, 2018

STERICYCLE ENVIRONMENTAL
SOLUTIONS, INC.
Corrective Action Group
18000 72nd Avenue South, Suite 217
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(425) 227-0311

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ATTACHMENTS

1 DESCRIPTION OF WORK COMPLETED

Stericycle Environmental Solutions, Inc. prepared this Annual Progress Report to document the corrective action activities conducted in 2017 and to present the results of the sampling activities conducted in the second quarter 2017 for the Burlington Environmental LLC. (Burlington) Tacoma Facility located at 1701 Alexander Avenue in the City of Tacoma, Washington (the "Facility"). Burlington is a wholly owned subsidiary of PSC Environmental Services, LLC. (PSC), a wholly owned subsidiary of Stericycle Environmental Solutions, Inc., hereafter referred to in this report as Stericycle. This report was prepared in accordance with the requirements of Section E of the Facility's Dangerous Waste Permit (Permit No. WAD 020 257 945) (the "Permit"), reissued in March 2012 for the period of March 22, 2012 through March 22, 2022.

Stericycle submitted a revised Long Term Groundwater Monitoring Plan (GWMP) to Ecology during the fourth quarter 2011. The GWMP included a reduction of the sampling program to an annual sampling in June of each subsequent year. The draft groundwater monitoring plan was submitted to Ecology in October 2011 for review and was included as Section I-5 in the RCRA Part B Permit Application in December 2011, which is a part of the revised permit effective through March 22, 2022.

The GWMP requires groundwater sampling during the 2nd Quarter of each year, but also requires that groundwater level measurements are also taken in the 4th Quarter (December). Well inspections are required for every quarter.

This report, therefore, relates information on the 2nd Quarter 2017 Groundwater Monitoring event and the 4th Quarter 2017 groundwater level measurements.

1.1 Construction Activities

Extensive construction-related activities were completed at the Tacoma facility in 2017 under permit approval from Ecology.

1.2 Second / Fourth Quarter 2017 Liquid-Level Measurements and LNAPL Recovery

Stericycle conducted groundwater monitoring at the Tacoma facility during the second and fourth quarters on June 5, 2017 and again on December 4, 2017. Field activities included gauging the depth to groundwater, and where present, the depth to LNAPL. Sampling was conducted at the following monitoring points:

- Monitoring points that are part of the routine quarterly groundwater sampling program:
  - Facility groundwater-monitoring wells: CTMW-1, CTMW-5 through CTMW-10, CTMW-11R, CTMW-12, CTMW-14, CTMW-15, CTMW-17, CTMW-17D, CTMW-18, CTMW-20, CTMW-21, CTMW-23. CTMW-24, CTMW-24D, and CTMW-25D.
  - Potter Properties well MW-1.

  - Stericycle piezometers: PZ-1, and PZ-4 through PZ-10.

- Shallow-aquifer monitoring points associated with the Interim Measure:
  - 1999 LNAPL-interceptor trench piezometers: TP-1 through TP-5.
  - 2000 LNAPL-interceptor trench piezometers: TP-8 through TP-10.

- Monitoring points added to the quarterly groundwater gauging program at the request of Ecology:
  - Three shallow-aquifer monitoring wells (SB-1A, SB-2A and SB-3A) on the Port of Tacoma property that abuts the Facility on the west.
  - Three monitoring well nests (CCW-2, CCW-3 and CCW-5) on the CleanCare property that abuts the Facility on the east.

- In addition, Stericycle obtained groundwater elevation data from the adjacent property owner for the following wells:
  - Monitoring wells (EMW-1 through EMW-4) located on the Emerald Services, Inc. (Emerald) property located southeast of the Facility.

1.3 Second Quarter 2017 Groundwater Sampling

As part of the second quarter 2017 groundwater monitoring event, Stericycle collected groundwater samples from the groundwater monitoring wells in the Stericycle monitoring network from June 6 through June 7, 2017. Prior to sampling, Stericycle personnel purged each well. During purging, Stericycle personnel monitored the following groundwater stabilization criteria: purging flow rate; volume purged; water temperature; dissolved oxygen; turbidity; specific conductivity; redox potential; pH; pump speed; and total volume purged before and at stabilization. Attachment A provides a summary of these and other measurements taken in the field during sampling. When the field purging parameter measurements indicated that the groundwater quality in the well had stabilized, Stericycle collected groundwater samples into laboratory-provided sample containers, and placed the sample containers in a cooler with ice.

The groundwater samples from select wells were submitted to an independent laboratory [ALS Environmental (ALS)] for analysis. The sampling program includes analysis of: volatile organic compounds (VOCs); one semi-volatile organic compound (SVOC), 1,4-dioxane; gasoline-range organics (GRO) as total petroleum hydrocarbons (TPH); diesel-range organics (DRO) and lube oil-range organics (LRO); total metals from unfiltered samples and, when necessary, dissolved from filtered samples. Groundwater samples are not collected from wells CTMW-1, CTMW-6, CTMW-10 and MW-1 because of the historic presence of LNAPL.

2 SUMMARY OF FINDINGS

2.1 Second Quarter 2017

2.1.1 Interim Measure

The results of the Interim Measure activities are summarized below:

Upon completion of the water level measurement activities, Stericycle personnel attempted to recover light non-aqueous phase liquids (LNAPL) from all wells with measurable LNAPL using a peristaltic pump and disposable tubing. The following documents the LNAPL recovery effort conducted during the second quarter field work on June 5, 2016:

- CTMW-1: Purged ~70 ml of product
- CTMW-6: Purged ~50 ml of product
- CTMW-10: No LNAPL Present; no purge recovery
- PZ-1: Purged ~10 ml of product
- PZ-6: Purged ~100 ml of product; too viscous for WL readings
- MW-1: No LNAPL Present; no purge recovery

The gauging data associated with the Interim Measure are presented in Table 1.

The following documents the LNAPL recovery effort conducted during the fourth quarter field work on December 4, 2017:

- CTMW-1: No LNAPL Present; no purge recovery
- CTMW-6: Purged ~70 ml of product; too viscous for WL readings
- CTMW-10: No LNAPL Present; no purge recovery
- PZ-1: No LNAPL Present; no purge recovery
- PZ-6: Purged ~80 ml of product; too viscous for WL readings
- MW-1: No LNAPL Present; no purge recovery

The gauging data associated with the Interim Measure are presented in Table 1.

2.1.2 Hydrogeologic Results

On June 5 and December 4, 2017, Stericycle conducted groundwater monitoring activities that included gauging the depth to groundwater from the wells located on the Facility and in select wells on the former CleanCare facility. The depth to groundwater, LNAPL thickness, and the calculated groundwater elevations for data are summarized in the Table 1.

The results of the second quarter 2017 gauging activities are summarized below:

Second Quarter 2017

Shallow Aquifer

- The calculated groundwater elevation contours for the shallow-aquifer monitoring points are illustrated on Figure 2. The groundwater contours indicate the presence of one elongated mound in the groundwater elevation surface in the central portion of the Facility.

- LNAPL was detected in all of the wells and piezometers tested, but mostly at trace levels, see Section 2.1.1 for recovery volumes. In order to accurately measure the LNAPL thickness and calculate the potentiometric surface, Stericycle placed small diameter piezometers (1-inch diameter PVC casing) inside the annulus of wells CTMW-1, CTMW-6, CTMW-10, and MW-1. The depth to the potentiometric surface is measured inside the piezometer and the depth to LNAPL is measured outside the piezometer. The thickness of LNAPL in these wells is calculated in accordance with the following formula:

$$LNAPL_{thickness} = \frac{DepthToPS - DepthToLNAPL}{1 - SpecificGravity}$$

  The maximum LNAPL-thickness in the shallow aquifer was observed in well PZ-1 at 1 ft. Due to the high viscosity of the LNAPL only 230 ml of LNAPL was recovered from the wells (see Section 2.1.1). The calculated LNAPL thickness in monitoring points and the historic extent of LNAPL are documented in Table 1 and illustrated on Figure 3.

Deep Aquifer

- The deep aquifer beneath the Facility is influenced by tidal fluctuations in Commencement Bay. Of the important tidal constituents for Commencement Bay, the one with the highest frequency is semidiurnal (i.e., with a period of about 12 hours). Because of this, the water level can fluctuate over its entire range of values within about 6 hours. Therefore, to obtain representative estimates of deep-aquifer groundwater elevations, hydraulic gradients, and groundwater flow rates; the deep-aquifer water-level measurements must be completed within a period less than four hours. Stericycle measured the water levels at the deep-aquifer monitoring wells (Stericycle wells CTMW-7, CTMW-9, CTMW-12, CTMW-17D; CTMW-24D, and CTMW-25D and CleanCare wells CCW-2C, CCW-3C and CCW-5C) within a 4-hour period. The depth to groundwater and the calculated groundwater elevations at the deep-aquifer monitoring points for these measurements are summarized in Table 1.

- The deep-aquifer groundwater-elevation contours indicate that the direction of groundwater flow during the monitoring period flows to the south and southwest of the facility. The calculated groundwater elevation contours for the deep-aquifer monitoring points are illustrated on Figure 4.

Fourth Quarter 2017

Shallow Aquifer

- The calculated groundwater elevation contours for the shallow-aquifer monitoring points are illustrated on Figure 5. The groundwater contours indicate the presence of one elongated mound in the groundwater elevation surface in the central portion of the Facility.

- LNAPL was detected in two of the wells and piezometers tested, except wells CTMW-6 and PZ-6 see Section 2.1.1 for recovery volumes. In order to accurately measure the LNAPL thickness and calculate the potentiometric surface, Stericycle placed small diameter piezometers (1-inch diameter PVC casing) inside the annulus of wells CTMW-1, CTMW-6, CTMW-10, and MW-1. The depth to the potentiometric surface is measured inside the piezometer and the depth to LNAPL is measured outside the piezometer. The thickness of LNAPL in these wells is calculated in accordance with the following formula:

$$LNAPL_{thickness} = \frac{DepthToPS - DepthToLNAPL}{1 - SpecificGravity}$$

  LNAPL-thickness in the shallow aquifer was not determined. Due to the high viscosity of the LNAPL only 150 ml were recovered from the wells (see Section 2.1.1). The calculated LNAPL thickness in monitoring points and the historic extent of LNAPL are documented in Table 1 and illustrated on Figure 6.

Deep Aquifer

- The deep aquifer beneath the Facility is influenced by tidal fluctuations in Commencement Bay. Of the important tidal constituents for Commencement Bay, the one with the highest frequency is semidiurnal (i.e., with a period of about 12 hours). Because of this, the water level can fluctuate over its entire range of values within about 6 hours. Therefore, to obtain representative estimates of deep-aquifer groundwater elevations, hydraulic gradients, and groundwater flow rates; the deep-aquifer water-level measurements must be completed within a period less than four hours. Stericycle measured the water levels at the deep-aquifer monitoring wells (Stericycle wells CTMW-7, CTMW-9, CTMW-12, CTMW-17D; CTMW-24D, and CTMW-25D and CleanCare wells CCW-2C, CCW-3C and CCW-5C) within a 4-hour period. The depth to groundwater and the calculated groundwater elevations at the deep-aquifer monitoring points for these measurements are summarized in Table 5.

- The deep-aquifer groundwater-elevation contours indicate that the direction of groundwater flow during the monitoring period flows to the southwest and west. The calculated groundwater elevation contours for the deep-aquifer monitoring points are illustrated on Figure 7.

2.1.3 Groundwater Sampling Results

Stericycle personnel conducted groundwater sampling activities at the Tacoma facility during the second quarter 2017 between June 6 and June 7, 2017. Prior to sampling, Stericycle personnel purged each well. During purging, Stericycle personnel monitored the following groundwater stabilization criteria: purging flow rate; water temperature; dissolved oxygen; turbidity; specific conductivity; redox potential; pH; pump speed; and total volume purged. A table summarizing the field purging parameter measurements is provided in Attachment A. When the field purging parameter measurements indicated that the groundwater quality in the well had stabilized, Stericycle collected groundwater samples for laboratory analysis into laboratory provided sample containers, and placed the sample containers in a cooler with ice.

The groundwater samples collected from select wells were submitted to the project laboratory (ALS) for laboratory analysis. The sampling program includes analysis of: VOCs; one SVOC, 1,4-dioxane; GRO as TPH; DRO and LRO; total metals from unfiltered samples and, where necessary, dissolved metals from filtered samples. CAS analyzed the samples and prepared reports documenting the results. Copies of the analytical reports are provided in Attachment B.

The data validation report was generated for the second quarter 2017 sampling event was submitted to Stericycle on August 29, 2017. The groundwater analytical results were reviewed and validated by Stericycle consultant, QA/QC Solutions, Inc. (QA/QC Solutions). QA/QC Solutions' review indicated the following:

- Overall, the data are of good quality; 124 results were qualified as estimated (J), 10 results reported as detected and were restated as undetected (U); and no results were rejected (*R*).

Copies of the validation reports are provided in Attachment C.

The laboratory analytical results and QA/QC Solutions' validation qualifiers are summarized in Tables 2 through 6. The lowest of the Washington State Model Toxics Control Act (MTCA) Method A and Method B groundwater cleanup levels (minimum CULs) were compared to the groundwater analytical results in the attached tables and are summarized bellow.

- Concentrations of VOCs in excess of their minimum CULs were not detected in the groundwater samples collected from the wells completed within the deep-aquifer. The following shallow zone wells had VOCs detected in excess of their minimum CULs in groundwater samples: Trichloroethene in well CTMW-17 at 1.2 ug/L (the CUL is 0.54 ug/L); and Vinyl Chloride in well CTMW-17 at 0.061 ug/L (the CUL is 0.029 ug/L). The laboratory analytical results for VOCs and minimum CULs are presented in Table 2.

- Concentrations of 1,4-dioxane were detected in excess of the minimum CUL in both shallow and deep aquifer wells, specifically wells CTMW-7, CTMW-9, CTMW-15, CTMW-18, CTMW-24D and CTMW-25D. The laboratory analytical results and minimum CUL for 1,4-dioxane are presented in Table 3. Of note, the 1,4-Dioxane Method B value decreased in 2011 by a factor of approximately 18 (from 7.955 ug/L to 0.438 ug/L), based on revisions to Ecology's CLARC table.

- Gasoline range organics (GRO), diesel range organics (DRO), and lube oil range organic (LRO) were not detected in excess of their minimum CULs. However, the laboratory reporting limit (RL) for lube oil range organics was reported as slightly higher than the MTCA CUL of 500 ug/L – ranging from 500 to 530 ug/L. The laboratory analytical results for petroleum hydrocarbons is presented in Table 4.

- Concentrations of arsenic were detected in excess of its minimum CUL in all of the groundwater samples using EPA Method 6020 (see Table 5). In addition, lead was detected excess of its minimum CUL in shallow well CTMW-17, similar to the 2016 results. The laboratory analytical results for total metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc) are presented in Table 5.

- In the Draft Remedial Investigation Report submitted in July 2002, Stericycle proposed to collect both filtered and unfiltered samples for metals analysis for one year in order to determine the effect of suspended particulates on reported dissolved and total metals concentrations. However, no consistent trends between concentrations of filtered and unfiltered samples have been observed, suggesting that elevated metals concentrations in groundwater samples from permanent monitoring wells do not appear to be associated with quantification of suspended particulates. As a result, Stericycle no longer routinely analyzes groundwater samples for dissolved metals, unless turbidity stabilizes at a reading of 5 NTU or greater during purging. During the second quarter 2017, turbidity measurements stabilized at a levels less than 5 NTU in all the wells tested on site.

2.1.4 Problems Encountered

Six VOCs both had reporting limits above their applicable MTCA cleanup criteria but only two of these also exceeded the applicable method detection limits (see Table 6). The VOCs included: 1,2,3-Trichloropropane, acrolein, acrylonitrile, cis-1,3-dichloropropene, methacrylonitrile, and trans-1,3-Dichloropropene. Also, arsenic had a reporting limit and method detection limit above it's MTCA cleanup criteria (see Table 6).

Repairs to the surface cover at the Parcel B interceptor trench were completed during the reporting period, which included paving over the entire trench with asphalt cover, per our approved plan.

2.2 Annual 2018 Progress Report

The next progress report Stericycle will submit to Ecology for the Tacoma Facility will be on April 15, 2019, per the Groundwater Monitoring Plan approved by Ecology in effect as of March 2012. The report will include a summary of all annual activities, including the quarterly well assessments, the second quarter 2018 groundwater sampling, and the December 2018 Groundwater Level Measurements.

3 PROJECTED WORK FOR THE NEXT REPORTING PERIOD

The projected corrective action activities for the next reporting period are summarized below:

- Stericycle personnel plan to conduct second quarter 2018 groundwater-monitoring event in June 2017. As part of the second quarter 2018 groundwater-sampling event, Stericycle personnel will measure water levels (and where appropriate, LNAPL thicknesses) at monitoring wells and piezometers in the network. Stericycle will submit the groundwater samples collected during the event to CAS for laboratory analysis. Laboratory data will be reviewed and validated by an independent expert chemist at QA/QC Solutions.

- Stericycle shall continue to measure water levels (and where appropriate, LNAPL thicknesses) at the LNAPL-interceptor trench piezometers, as part of the Interim Action. Stericycle personnel will measure the levels at the same time that the levels are measured at the other wells and piezometers.

- Stericycle shall abandon-in-place the Parcel B LNAPL interceptor trench in the third quarter 2018 in anticipation of placing modular office units in the adjacent area on Parcel B. All work will be done in accordance with the Permit and Ecology approval of the plan.

TABLES

Table 1
Water Elevation Data and LNAPL Thickness
January through December 2017
Stericycle Tacoma Facility

PERIOD: From 06/05/2017 thru 12/04/2017 - Inclusive

Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
CCW-2A	6/5/2017	12.22	09:29	3.25	0.00	8.97	NA	8.97
CCW-2A	12/4/2017	12.22	14:01	1.39	0.00	10.83	1.86	10.83
CCW-2B	6/5/2017	12.12	09:31	3.01	0.00	9.11	NA	9.11
CCW-2B	12/4/2017	12.12	14:03	1.99	0.00	10.13	1.02	10.13
CCW-2C	6/5/2017	12.06	09:27	9.03	0.00	3.03	NA	3.03
CCW-2C	12/4/2017	12.06	13:59	8.57	0.00	3.49	0.46	3.49
CCW-3A	6/5/2017	13.75	09:36	4.29	0.00	9.46	NA	9.46
CCW-3A	12/4/2017	13.75	14:11	3.40	0.00	10.35	0.89	10.35
CCW-3B	6/5/2017	14.11	09:38	4.93	0.00	9.18	NA	9.18
CCW-3B	12/4/2017	14.11	14:13	3.75	0.00	10.36	1.18	10.36
CCW-3C	6/5/2017	15.68	09:34	12.59	0.00	3.09	NA	3.09
CCW-3C	12/4/2017	15.68	14:09	12.15	0.00	3.53	0.44	3.53
CCW-5B	6/5/2017	12.62	09:43	3.61	0.00	9.01	NA	9.01
CCW-5B	12/4/2017	12.62	14:05	2.35	0.00	10.27	1.26	10.27
CCW-5C	6/5/2017	12.40	09:41	9.25	0.00	3.15	NA	3.15
CCW-5C	12/4/2017	12.40	14:07	8.75	0.00	3.65	0.50	3.65
CTMW-1	6/5/2017	13.43	11:18	NM	NA	NA	NA	NA
CTMW-1	12/4/2017	13.43	15:29	3.25	0.00	10.18	-3.25	10.18
CTMW-10	6/5/2017	12.80	11:07	4.02	0.00	8.78	NA	8.78
CTMW-10	12/4/2017	12.80	15:25	2.30	0.00	10.50	1.72	10.50
CTMW-12	6/5/2017	18.29	09:17	15.43	0.00	2.86	NA	2.86
CTMW-12	12/4/2017	18.29	13:51	15.14	0.00	3.15	0.29	3.15
CTMW-14	6/5/2017	13.13	09:48	7.64	0.00	5.49	NA	5.49
CTMW-14	12/4/2017	13.13	13:45	3.22	0.00	9.91	4.42	9.91
CTMW-15	6/5/2017	13.28	10:16	5.93	0.00	7.35	NA	7.35
CTMW-15	12/4/2017	13.28	14:35	4.89	0.00	8.39	1.04	8.39
CTMW-17	6/5/2017	19.32	09:19	8.81	0.00	10.51	NA	10.51
CTMW-17	12/4/2017	19.32	13:55	6.95	0.00	12.37	1.86	12.37

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

Table 1
Water Elevation Data and LNAPL Thickness
January through December 2017
Stericycle Tacoma Facility

PERIOD: From 06/05/2017 thru 12/04/2017 - Inclusive

Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
CTMW-17D	6/5/2017	16.64	09:21	13.62	0.00	3.02	NA	3.02
CTMW-17D	12/4/2017	16.64	13:53	13.25	0.00	3.39	0.37	3.39
CTMW-18	6/5/2017	19.36	10:39	8.53	0.00	10.83	NA	10.83
CTMW-18	12/4/2017	19.36	14:54	7.11	0.00	12.25	1.42	12.25
CTMW-20	6/5/2017	11.03	10:26	2.50	0.00	8.53	NA	8.53
CTMW-20	12/4/2017	11.03	14:40	1.27	0.00	9.76	1.23	9.76
CTMW-24	6/5/2017	16.35	09:55	7.48	0.00	8.87	NA	8.87
CTMW-24	12/4/2017	16.35	14:24	5.40	0.00	10.95	2.08	10.95
CTMW-24D	6/5/2017	16.39	09:53	13.75	0.00	2.64	NA	2.64
CTMW-24D	12/4/2017	16.39	14:26	13.35	0.00	3.04	0.40	3.04
CTMW-25D	6/5/2017	13.06	10:18	10.53	0.00	2.53	NA	2.53
CTMW-25D	12/4/2017	13.06	14:37	9.75	0.00	3.31	0.78	3.31
CTMW-5	6/5/2017	14.10	10:23	5.02	0.00	9.08	NA	9.08
CTMW-5	12/4/2017	14.10	14:43	2.86	0.00	11.24	2.16	11.24
CTMW-6	6/5/2017	14.80	11:47	NM	NA	NA	NA	NA
CTMW-6	12/4/2017	14.80	15:33	NM	NA	NA	NA	NA
CTMW-7	6/5/2017	14.75	09:13	11.81	0.00	2.94	NA	2.94
CTMW-7	12/4/2017	14.75	13:47	11.50	0.00	3.25	0.31	3.25
CTMW-8	6/5/2017	14.77	09:10	5.50	0.00	9.27	NA	9.27
CTMW-8	12/4/2017	14.77	13:40	4.37	0.00	10.40	1.13	10.40
CTMW-9	6/5/2017	14.38	09:08	11.57	0.00	2.81	NA	2.81
CTMW-9	12/4/2017	14.38	13:42	11.20	0.00	3.18	0.37	3.18
EMW-1	6/5/2017	10.84	12:41	2.40	0.00	8.44	NA	8.44
EMW-1	12/4/2017	10.84	12:25	1.40	0.00	9.44	1.00	9.44
EMW-2	6/5/2017	10.44	12:52	2.68	0.00	7.76	NA	7.76
EMW-2	12/4/2017	10.44	12:50	1.94	0.00	8.50	0.74	8.50
EMW-3R	6/5/2017	11.15	12:17	2.91	0.00	8.24	NA	8.24

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

Table 1
Water Elevation Data and LNAPL Thickness
January through December 2017
Stericycle Tacoma Facility

PERIOD: From 06/05/2017 thru 12/04/2017 - Inclusive

Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
EMW-3R	12/4/2017	11.15	13:05	2.49	0.00	8.66	0.42	8.66
EMW-4	6/5/2017	10.60	12:34	2.25	0.00	8.35	NA	8.35
EMW-4	12/4/2017	10.60	13:20	1.23	0.00	9.37	1.02	9.37
MW-1	6/5/2017	10.84	11:12	2.25	0.00	8.59	NA	8.59
MW-1	12/4/2017	10.84	15:27	0.83	0.00	10.01	1.42	10.01
PZ-1	6/5/2017	13.79	11:35	3.40	1.00	10.39	NA	11.38
PZ-1	12/4/2017	13.79	15:31	0.52	0.00	13.27	2.88	13.27
PZ-10	6/5/2017	12.61	10:41	1.47	0.00	11.14	NA	11.14
PZ-10	12/4/2017	12.61	14:52	1.13	0.00	11.48	0.34	11.48
PZ-5	6/5/2017	12.86	09:50	3.89	0.00	8.97	NA	8.97
PZ-5	12/4/2017	12.86	14:14	2.85	0.00	10.01	1.04	10.01
PZ-6	6/5/2017	12.10	12:13	NM	NA	NA	NA	NA
PZ-6	12/4/2017	12.10	15:50	NM	NA	NA	NA	NA
PZ-7	6/5/2017	20.97	10:04	11.07	0.00	9.90	NA	9.90
PZ-7	12/4/2017	20.97	14:21	10.01	0.00	10.96	1.06	10.96
PZ-8	6/5/2017	14.84	10:02	8.01	0.00	6.83	NA	6.83
PZ-8	12/4/2017	14.84	14:19	6.44	0.00	8.40	1.57	8.40
PZ-9	6/5/2017	15.55	09:59	6.50	0.00	9.05	NA	9.05
PZ-9	12/4/2017	15.55	14:17	5.17	0.00	10.38	1.33	10.38
SB-1A	6/5/2017	12.34	10:51	4.61	0.00	7.73	NA	7.73
SB-1A	12/4/2017	12.34	15:15	1.95	0.00	10.39	2.66	10.39
SB-2A	6/5/2017	11.91	10:54	5.20	0.00	6.71	NA	6.71
SB-2A	12/4/2017	11.91	15:18	3.35	0.00	8.56	1.85	8.56
SB-3A	6/5/2017	13.58	10:48	4.53	0.00	9.05	NA	9.05
SB-3A	12/4/2017	13.58	15:11	2.65	0.00	10.93	1.88	10.93
TP-1	6/5/2017	13.88	10:37	1.82	0.00	12.06	NA	12.06
TP-1	12/4/2017	13.88	14:50	1.20	0.00	12.68	0.62	12.68

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

Table 1
Water Elevation Data and LNAPL Thickness
January through December 2017
Stericycle Tacoma Facility

PERIOD: From 06/05/2017 thru 12/04/2017 - Inclusive

Site ID	Date	Measuring Point Elevation (feet)	Time	Depth To Water (feet)	LNAPL Thickness (feet)	Potentiometric Surface Elevation (feet)	Change in Groundwater Elevation (feet)	Freshwater Head Surface Elevation (feet)
TP-10	6/5/2017	10.62	10:14	1.99	0.00	8.63	NA	8.63
TP-10	12/4/2017	10.62	14:33	0.48	0.00	10.14	1.51	10.14
TP-2	6/5/2017	13.92	10:35	1.96	0.00	11.96	NA	11.96
TP-2	12/4/2017	13.92	14:49	1.33	0.00	12.59	0.63	12.59
TP-3	6/5/2017	13.65	10:33	1.70	0.00	11.95	NA	11.95
TP-3	12/4/2017	13.65	14:48	1.07	0.00	12.58	0.63	12.58
TP-4	6/5/2017	13.81	10:31	1.83	0.00	11.98	NA	11.98
TP-4	12/4/2017	13.81	14:47	1.21	0.00	12.60	0.62	12.60
TP-5	6/5/2017	13.84	10:29	1.96	0.00	11.88	NA	11.88
TP-5	12/4/2017	13.84	14:46	1.32	0.00	12.52	0.64	12.52
TP-6	6/5/2017	10.69	00:00	NM	NA	NA	NA	NA
TP-6	12/4/2017	10.69	14:29	0.45	0.00	10.24	-0.45	10.24
TP-7	6/5/2017	9.89	00:00	NM	NA	NA	NA	NA
TP-7	12/4/2017	9.89	00:00	NM	NA	NA	NA	NA
TP-8	6/5/2017	10.32	10:10	1.66	0.00	8.66	NA	8.66
TP-8	12/4/2017	10.32	14:31	0.14	0.00	10.18	1.52	10.18
TP-9	6/5/2017	10.21	10:12	1.55	0.00	8.66	NA	8.66
TP-9	12/4/2017	10.21	14:32	0.10	0.00	10.11	1.45	10.11

Elevations based on Datum NGVD 1929
NM = Not Measured, D = Dry Well

Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,1,1,2-Tetra chloroethane (ug/l)	Lab Quals	Expert Qual	1,1,1-Tri-chloroethane (ug/l)	Lab Quals	Expert Qual	1,1,2,2,-Tetra chloroethane (ug/l)	Lab Qual	Expert Qual	1,1,2-Tri-chloroethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1.6827**			**200**			**0.2188**			**0.7675**		
CTMW-12	06/07/2017 - 09:26	26.000	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-17	06/07/2017 - 10:58	16.000	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-20	06/06/2017 - 10:39	6.600	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-24	06/07/2017 - 07:47	10.600	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-5	06/07/2017 - 06:45	9.950	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.50	U		<0.50	U		<0.20	U		<0.50	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.50	U	J	<0.50	U	J	<0.20	U		<0.50	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<0.50	U		<0.50	U		<0.20	U		<0.50	U	

Methods 8260C, 8260C SIM

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,1-Dichloro-ethane (ug/l)	Lab Quals	Expert Qual	1,1-Dichloro-ethene (ug/l)	Lab Quals	Expert Qual	1,2,3-Trichloro propane (ug/l)	Lab Qual	Expert Qual	1,2-Dichloro-ethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**7.68**			**400**			**0.00146**			**0.4808**		
CTMW-12	06/07/2017 - 09:26	26.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-17	06/07/2017 - 10:58	16.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.50	J	J	<0.020	J	J	[<0.50]	U		<0.20	J	J
CTMW-20	06/06/2017 - 10:39	6.600	<0.50	U		<0.020	U		[<0.50]	U		<0.20	J	J
CTMW-24	06/07/2017 - 07:47	10.600	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-5	06/07/2017 - 06:45	9.950	<0.50	J	J	<0.020	U		[<0.50]	U		<0.20	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.50	U	J	<0.020	U		[<0.50]	U	J	<0.20	U	
CTMW-9	06/06/2017 - 14:03	24.000	<0.50	U		<0.020	U		[<0.50]	U		<0.20	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,2-Dichloro-propane (ug/l)	Lab Quals	Expert Qual	2-Butanone (ug/l)	Lab Quals	Expert Qual	2-chloroethyl vinylether (ug/l)	Lab Qual	Expert Qual	2-Hexanone (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1.22**			**4800**								
CTMW-12	06/07/2017 - 09:26	26.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-17	06/07/2017 - 10:58	16.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-20	06/06/2017 - 10:39	6.600	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-24	06/07/2017 - 07:47	10.600	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-5	06/07/2017 - 06:45	9.950	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.50	U		<20	U		<5.0	U		<20	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.50	U	J	<20	J	J	<5.0	U	J	<20	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<0.50	U		<20	U		<5.0	U		<20	U	

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	4-Methyl-2-pentanone (ug/l)	Lab Quals	Expert Qual	Acetone (ug/l)	Lab Quals	Expert Qual	Acetonitrile (ug/l)	Lab Qual	Expert Qual	Acrolein (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**640**			**7200**						**4**		
CTMW-12	06/07/2017 - 09:26	26.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-14	06/06/2017 - 07:11	9.500	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-15	06/06/2017 - 08:49	8.600	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-17	06/07/2017 - 10:58	16.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-18	06/06/2017 - 11:20	11.800	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-20	06/06/2017 - 10:39	6.600	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-24	06/07/2017 - 07:47	10.600	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-5	06/07/2017 - 06:45	9.950	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-7	06/06/2017 - 12:00	25.000	<20	U		<20	U		<50	U	J	[<20]	U	
CTMW-8	06/06/2017 - 13:13	8.500	<20	U	J	31		J	<50	U	J	[<20]	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<20	U		<20	U		<50	U	J	[<20]	U	

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Acrylonitrile (ug/l)	Lab Quals	Expert Qual	Allyl chloride (ug/l)	Lab Quals	Expert Qual	Benzene (ug/l)	Lab Qual	Expert Qual	Bromo-dichloro-methane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.081**			**800**			**0.7955**			**0.7056**		
CTMW-12	06/07/2017 - 09:26	26.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-14	06/06/2017 - 07:11	9.500	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-15	06/06/2017 - 08:49	8.600	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2017 - 10:58	16.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-17D	06/07/2017 - 10:16	28.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-18	06/06/2017 - 11:20	11.800	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-20	06/06/2017 - 10:39	6.600	[<5.0]	U		<5.0	U		<0.50	J	J	<0.50	U	
CTMW-24	06/07/2017 - 07:47	10.600	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-24D	06/07/2017 - 08:33	24.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-25D	06/06/2017 - 09:48	19.700	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-5	06/07/2017 - 06:45	9.950	[<5.0]	U		<5.0	U		<0.50	J	J	<0.50	U	
CTMW-7	06/06/2017 - 12:00	25.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	
CTMW-8	06/06/2017 - 13:13	8.500	[<5.0]	U	J	<5.0	U	J	<0.50	J	J	<0.50	U	J
CTMW-9	06/06/2017 - 14:03	24.000	[<5.0]	U		<5.0	U		<0.50	U		<0.50	U	

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Bromoform (ug/l)	Lab Quals	Expert Qual	Bromomethane (ug/l)	Lab Quals	Expert Qual	Carbon disulfide (ug/l)	Lab Qual	Expert Qual	Carbon tetrachloride (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**5.5380**			**11.2**			**800**			**0.625**		
CTMW-12	06/07/2017 - 09:26	26.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-17	06/07/2017 - 10:58	16.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-20	06/06/2017 - 10:39	6.600	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-24	06/07/2017 - 07:47	10.600	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-5	06/07/2017 - 06:45	9.950	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.50	U	J	<0.50	U	J	<0.50	U	J	<0.20	U	
CTMW-9	06/06/2017 - 14:03	24.000	<0.50	U		<0.50	U		<0.50	U		<0.20	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Chlorobenzene (ug/l)	Lab Quals	Expert Qual	Chloroethane (ug/l)	Lab Quals	Expert Qual	Chloroform (ug/l)	Lab Qual	Expert Qual	Chloromethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**160**						**1.41**					
CTMW-12	06/07/2017 - 09:26	26.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2017 - 10:58	16.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-20	06/06/2017 - 10:39	6.600	<0.50	J	J	0.92			<0.50	U		<0.50	U	
CTMW-24	06/07/2017 - 07:47	10.600	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-5	06/07/2017 - 06:45	9.950	0.60			<0.50	U		<0.50	U		<0.50	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.50	U	J	<0.50	U	J	<0.50	U	J	<0.50	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	cis-1,2-Dichloroethylene (ug/l)	Lab Quals	Expert Qual	cis-1,3-Dichloropropene (ug/l)	Lab Quals	Expert Qual	Dibromochloro-methane (ug/l)	Lab Qual	Expert Qual	Dichloro-difluoro-methane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**16**			**0.438**			**0.5208**			**1600**		
CTMW-12	06/07/2017 - 09:26	26.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2017 - 10:58	16.000	0.78			[<0.50]	U		<0.50	U		<0.50	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.50	J	J	[<0.50]	U		<0.50	U		<0.50	U	
CTMW-20	06/06/2017 - 10:39	6.600	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-24	06/07/2017 - 07:47	10.600	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-5	06/07/2017 - 06:45	9.950	<0.50	J	J	[<0.50]	U		<0.50	U		<0.50	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.50	U	J	[<0.50]	U	J	<0.50	U	J	<0.50	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<0.50	U		[<0.50]	U		<0.50	U		<0.50	U	

Methods 8260C, 8260C SIM

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Ethyl methacrylate (ug/l)	Lab Quals	Expert Qual	Ethylbenzene (ug/l)	Lab Quals	Expert Qual	Isobutyl alcohol (ug/l)	Lab Qual	Expert Qual	m, p-Xylene (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**720**			**700**			**2400**			**1600**		
CTMW-12	06/07/2017 - 09:26	26.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-14	06/06/2017 - 07:11	9.500	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-15	06/06/2017 - 08:49	8.600	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-17	06/07/2017 - 10:58	16.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-18	06/06/2017 - 11:20	11.800	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-20	06/06/2017 - 10:39	6.600	<5.0	U		<0.50	U		<100	U	J	<0.50	J	J
CTMW-24	06/07/2017 - 07:47	10.600	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-5	06/07/2017 - 06:45	9.950	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-7	06/06/2017 - 12:00	25.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	
CTMW-8	06/06/2017 - 13:13	8.500	<5.0	U	J	<0.50	U	J	<100	U	J	<0.50	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<5.0	U		<0.50	U		<100	U	J	<0.50	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Methacrylonitrile (ug/l)	Lab Quals	Expert Qual	Methyl iodide (ug/l)	Lab Quals	Expert Qual	Methylene bromide (ug/l)	Lab Qual	Expert Qual	Methylene chloride (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1.6**						**80**			**5.0**		
CTMW-12	06/07/2017 - 09:26	26.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-14	06/06/2017 - 07:11	9.500	[<5.0]	U		<5.0	J	U	<0.50	U		<2.0	U	
CTMW-15	06/06/2017 - 08:49	8.600	[<5.0]	U		<5.0	J	U	<0.50	U		<2.0	U	
CTMW-17	06/07/2017 - 10:58	16.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-17D	06/07/2017 - 10:16	28.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-18	06/06/2017 - 11:20	11.800	[<5.0]	U		<5.0	U		<0.50	U		<2.0	J	U
CTMW-20	06/06/2017 - 10:39	6.600	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-24	06/07/2017 - 07:47	10.600	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-24D	06/07/2017 - 08:33	24.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-25D	06/06/2017 - 09:48	19.700	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-5	06/07/2017 - 06:45	9.950	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-7	06/06/2017 - 12:00	25.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	
CTMW-8	06/06/2017 - 13:13	8.500	[<5.0]	U	J	<5.0	U	J	<0.50	U	J	<2.0	U	J
CTMW-9	06/06/2017 - 14:03	24.000	[<5.0]	U		<5.0	U		<0.50	U		<2.0	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	o-Xylene (ug/l)	Lab Quals	Expert Qual	Tetrachloro-ethene (ug/l)	Lab Quals	Expert Qual	Toluene (ug/l)	Lab Qual	Expert Qual	trans-1,2-Dichloroethene (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1600**			**5**			**640**			**160**		
CTMW-12	06/07/2017 - 09:26	26.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2017 - 10:58	16.000	<0.50	U		<0.50	J	J	<0.50	J	J	<0.50	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.50	U		<0.50	J	J	<0.50	U		<0.50	U	
CTMW-20	06/06/2017 - 10:39	6.600	<0.50	U		<0.50	U		<0.50	J	J	<0.50	U	
CTMW-24	06/07/2017 - 07:47	10.600	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-5	06/07/2017 - 06:45	9.950	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.50	U	J	<0.50	U	J	0.75		J	<0.50	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<0.50	U		<0.50	U		<0.50	U		<0.50	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Trans-1,3-Dichloropropene (ug/l)	Lab Quals	Expert Qual	trans-1,4-Dichloro-2-butene (ug/l)	Lab Quals	Expert Qual	Trichloro-ethene (ug/l)	Lab Qual	Expert Qual	Trichloro fluoromethane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.4375**						**0.54**			**2400**		
CTMW-12	06/07/2017 - 09:26	26.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-14	06/06/2017 - 07:11	9.500	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-15	06/06/2017 - 08:49	8.600	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-17	06/07/2017 - 10:58	16.000	[<0.50]	U		<10	U		[1.2]			<0.50	U	
CTMW-17D	06/07/2017 - 10:16	28.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-18	06/06/2017 - 11:20	11.800	[<0.50]	U		<10	U		<0.50	J	J	<0.50	U	
CTMW-20	06/06/2017 - 10:39	6.600	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-24	06/07/2017 - 07:47	10.600	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-24D	06/07/2017 - 08:33	24.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-25D	06/06/2017 - 09:48	19.700	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-5	06/07/2017 - 06:45	9.950	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-7	06/06/2017 - 12:00	25.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	
CTMW-8	06/06/2017 - 13:13	8.500	[<0.50]	U	J	<10	U	J	<0.50	U	J	<0.50	U	J
CTMW-9	06/06/2017 - 14:03	24.000	[<0.50]	U		<10	U		<0.50	U		<0.50	U	

Methods 8260C, 8260C SIM

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Table 2
Volatile Organic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Vinyl acetate (ug/l)	Lab Quals	Expert Qual	Vinyl chloride (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**8000**			**0.029**		
CTMW-12	06/07/2017 - 09:26	26.000	<5.0	U		<0.020	U	
CTMW-14	06/06/2017 - 07:11	9.500	<5.0	U		<0.020	U	
CTMW-15	06/06/2017 - 08:49	8.600	<5.0	U		<0.020	U	
CTMW-17	06/07/2017 - 10:58	16.000	<5.0	U		[0.061]		
CTMW-17D	06/07/2017 - 10:16	28.000	<5.0	U		<0.020	U	
CTMW-18	06/06/2017 - 11:20	11.800	<5.0	U		<0.020	J	J
CTMW-20	06/06/2017 - 10:39	6.600	<5.0	U		0.026		
CTMW-24	06/07/2017 - 07:47	10.600	<5.0	U		<0.020	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<5.0	U		<0.020	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<5.0	U		<0.020	U	
CTMW-5	06/07/2017 - 06:45	9.950	<5.0	U		<0.020	J	J
CTMW-7	06/06/2017 - 12:00	25.000	<5.0	U		<0.020	U	
CTMW-8	06/06/2017 - 13:13	8.500	<5.0	U		<0.020	J	J
CTMW-9	06/06/2017 - 14:03	24.000	<5.0	U		<0.020	U	

Methods 8260C, 8260C SIM

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Table 3
1,4-Dioxane in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,4-Dioxane (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.438**		
CTMW-15	06/06/2017 - 08:49	8.600	[3.9]		
CTMW-18	06/06/2017 - 11:20	11.800	[0.80]		
CTMW-24	06/07/2017 - 07:47	10.600	<0.40	U	
CTMW-24D	06/07/2017 - 08:33	24.000	[2.7]		
CTMW-25D	06/06/2017 - 09:48	19.700	[31]		
CTMW-5	06/07/2017 - 06:45	9.950	<0.40	U	J
CTMW-7	06/06/2017 - 12:00	25.000	[22]		
CTMW-8	06/06/2017 - 13:13	8.500	<0.40	U	
CTMW-9	06/06/2017 - 14:03	24.000	[29]		

Methods 8270D SIM

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 4
Total Petroleum Hydrocarbons in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Diesel (ug/l)	Lab Quals	Expert Qual	Gasoline (ug/l)	Lab Quals	Expert Qual	Lube Oil (ug/l)	Lab Qual	Expert Qual
MTCA A & B Minimum Level			**500**			**800**			**500**		
CTMW-12	06/07/2017 - 09:26	26.000	<250	U		NT			[<500]	U	
CTMW-14	06/06/2017 - 07:11	9.500	<250	U		NT			[<500]	U	
CTMW-15	06/06/2017 - 08:49	8.600	<250	U		NT			[<500]	U	
CTMW-17	06/07/2017 - 10:58	16.000	<250	U		NT			[<500]	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<260	U		NT			[<520]	U	
CTMW-18	06/06/2017 - 11:20	11.800	<270	U		<50	U		[<530]	U	
CTMW-20	06/06/2017 - 10:39	6.600	<250	U		<50	U		[<500]	U	
CTMW-24	06/07/2017 - 07:47	10.600	<260	U		NT			[<520]	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<260	U		NT			[<520]	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<270	U		NT			[<530]	U	
CTMW-5	06/07/2017 - 06:45	9.950	<260	U		NT			[<520]	U	
CTMW-7	06/06/2017 - 12:00	25.000	<260	U		NT			[<520]	U	
CTMW-8	06/06/2017 - 13:13	8.500	<260	U		NT			[<520]	U	
CTMW-9	06/06/2017 - 14:03	24.000	<260	U		NT			[<520]	U	

Methods NWTPH-Gx, Dx-SG

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 5
Total Inorganic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Arsenic (mg/l)	Lab Quals	Expert Qual	Cadmium (mg/l)	Lab Quals	Expert Qual	Chromium (mg/l)	Lab Qual	Expert Qual	Copper (mg/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.000058**			**0.0050**			**0.050**			**0.59**		
CTMW-12	06/07/2017 - 09:26	26.000	[<0.00050]	J	J	<0.000020	U		0.00308			0.00015		
CTMW-14	06/06/2017 - 07:11	9.500	[0.00347]			0.000120			<0.00020	J	J	0.00666		
CTMW-15	06/06/2017 - 08:49	8.600	[0.00153]			0.000046			0.00038			0.00078		
CTMW-17	06/07/2017 - 10:58	16.000	[0.0169]			0.00137			0.00087			0.0368		
CTMW-17D	06/07/2017 - 10:16	28.000	[<0.00050]	J	J	0.000018	J	J	0.00350			0.00021		
CTMW-18	06/06/2017 - 11:20	11.800	[0.00361]			0.000143			0.00024			0.00126		
CTMW-20	06/06/2017 - 10:39	6.600	[0.00309]			<0.000020	J	J	0.00052			0.00021		
CTMW-24	06/07/2017 - 07:47	10.600	[0.00078]			<0.000020	J	J	<0.00020	J	J	0.00026		
CTMW-24D	06/07/2017 - 08:33	24.000	[0.00070]			<0.000020	U		0.00642			0.00052		
CTMW-25D	06/06/2017 - 09:48	19.700	[0.00177]			<0.000020	J	J	0.0148			0.00341		
CTMW-5	06/07/2017 - 06:45	9.950	[0.163]			0.000083			0.00433			0.0114		
CTMW-7	06/06/2017 - 12:00	25.000	[<0.00050]	J	J	<0.000020	J	J	0.00252			0.00012		
CTMW-8	06/06/2017 - 13:13	8.500	[0.00125]			<0.000020	J	J	<0.00020	U		0.00048		
CTMW-9	06/06/2017 - 14:03	24.000	[<0.00050]	J	J	<0.000020	J	J	0.00302			0.00018		

Methods 6000/7000 Series

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Table 5
Total Inorganic Compounds in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	Lead (mg/l)	Lab Quals	Expert Qual	Mercury (mg/l)	Lab Quals	Expert Qual	Nickel (mg/l)	Lab Qual	Expert Qual	Zinc (mg/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.015**			**0.0020**			**0.32**			**4.8**		
CTMW-12	06/07/2017 - 09:26	26.000	0.000023			<0.00020	U		0.00073			<0.0020	U	
CTMW-14	06/06/2017 - 07:11	9.500	0.000089			<0.00020	U		0.00062			0.0042		
CTMW-15	06/06/2017 - 08:49	8.600	0.000026			<0.00020	U		0.00125			<0.0020	J	U
CTMW-17	06/07/2017 - 10:58	16.000	[0.0222]			<0.00020	U		0.00460			0.0708		
CTMW-17D	06/07/2017 - 10:16	28.000	0.000091			<0.00020	U		0.00158			<0.0020	J	U
CTMW-18	06/06/2017 - 11:20	11.800	0.000193			<0.00020	U		0.00880			0.0041		
CTMW-20	06/06/2017 - 10:39	6.600	<0.000020	J	J	<0.00020	U		0.00091			<0.0020	U	
CTMW-24	06/07/2017 - 07:47	10.600	0.000060			<0.00020	U		0.00203			<0.0020	J	U
CTMW-24D	06/07/2017 - 08:33	24.000	0.000043			<0.00020	U		0.00072			<0.0020	J	U
CTMW-25D	06/06/2017 - 09:48	19.700	0.000313			<0.00020	U		0.00503			<0.0020	J	U
CTMW-5	06/07/2017 - 06:45	9.950	0.00247			<0.00020	U		0.00995			0.0325		
CTMW-7	06/06/2017 - 12:00	25.000	<0.000020	J	J	<0.00020	U		0.00248			0.00124		
CTMW-8	06/06/2017 - 13:13	8.500	0.000103			<0.00020	U		0.00097			<0.0020	J	U
CTMW-9	06/06/2017 - 14:03	24.000	<0.000020	J	J	<0.00020	U		0.00755			0.00092		U

Methods 6000/7000 Series

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 6
Select COCs in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

Site	Date / Time	Sample Depth	1,2,3-Trichloropropane (ug/l)	Lab Quals	Expert Qual	Acrolein (ug/l)	Lab Quals	Expert Qual	Acrylonitrile (ug/l)	Lab Qual	Expert Qual	cis-1,3-Dichloropropene (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**0.00146**			**4**			**0.081**			**0.438**		
CTMW-12	06/07/2017 - 09:26	26.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-14	06/06/2017 - 07:11	9.500	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-15	06/06/2017 - 08:49	8.600	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-17	06/07/2017 - 10:58	16.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-17D	06/07/2017 - 10:16	28.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-18	06/06/2017 - 11:20	11.800	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-20	06/06/2017 - 10:39	6.600	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-24	06/07/2017 - 07:47	10.600	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-24D	06/07/2017 - 08:33	24.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-25D	06/06/2017 - 09:48	19.700	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-5	06/07/2017 - 06:45	9.950	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-7	06/06/2017 - 12:00	25.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	
CTMW-8	06/06/2017 - 13:13	8.500	[<0.20]	U	J	<1.2	U	J	[<0.53]	U	J	<0.18	U	J
CTMW-9	06/06/2017 - 14:03	24.000	[<0.20]	U		<1.2	U		[<0.53]	U		<0.18	U	

Methods 8260C, 8260C SIM

( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

Table 6
Select COCs in Groundwater
2017 Annual Report
Stericycle Tacoma Facility

PERIOD: From 06/06/2017 thru 06/07/2017 - Inclusive
SAMPLE TYPE: Water

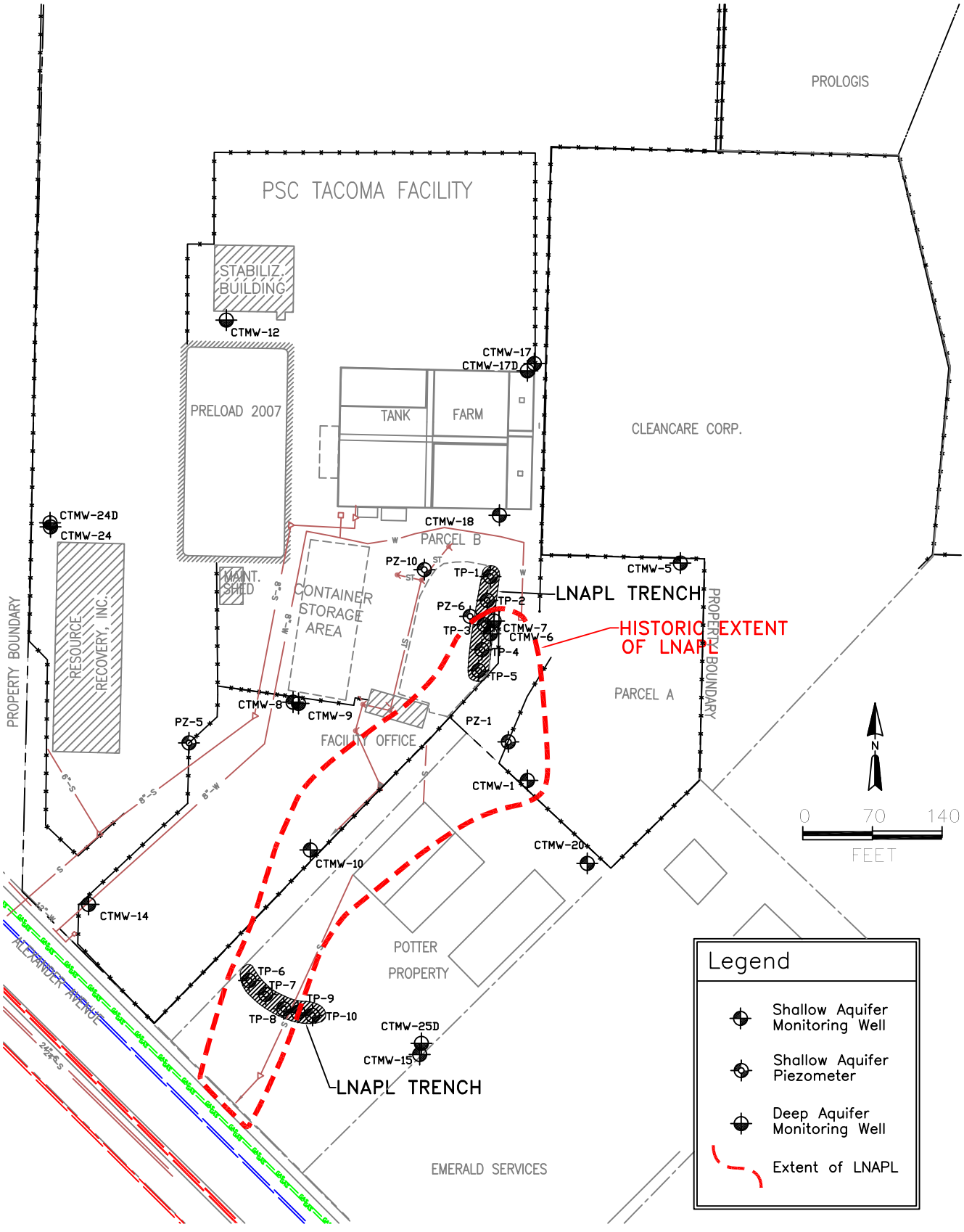
Site	Date / Time	Sample Depth	Methacrylonitrile (ug/l)	Lab Quals	Expert Qual	Trans-1,3-Dichloropropene (ug/l)	Lab Quals	Expert Qual
MTCA A & B Minimum Level			**1.6**			**0.4375**		
CTMW-12	06/07/2017 - 09:26	26.000	<0.35	U		<0.068	U	
CTMW-14	06/06/2017 - 07:11	9.500	<0.35	U		<0.068	U	
CTMW-15	06/06/2017 - 08:49	8.600	<0.35	U		<0.068	U	
CTMW-17	06/07/2017 - 10:58	16.000	<0.35	U		<0.068	U	
CTMW-17D	06/07/2017 - 10:16	28.000	<0.35	U		<0.068	U	
CTMW-18	06/06/2017 - 11:20	11.800	<0.35	U		<0.068	U	
CTMW-20	06/06/2017 - 10:39	6.600	<0.35	U		<0.068	U	
CTMW-24	06/07/2017 - 07:47	10.600	<0.35	U		<0.068	U	
CTMW-24D	06/07/2017 - 08:33	24.000	<0.35	U		<0.068	U	
CTMW-25D	06/06/2017 - 09:48	19.700	<0.35	U		<0.068	U	
CTMW-5	06/07/2017 - 06:45	9.950	<0.35	U		<0.068	U	
CTMW-7	06/06/2017 - 12:00	25.000	<0.35	U		<0.068	U	
CTMW-8	06/06/2017 - 13:13	8.500	<0.35	U	J	<0.068	U	J
CTMW-9	06/06/2017 - 14:03	24.000	<0.35	U		<0.068	U	

Methods 8260C, 8260C SIM

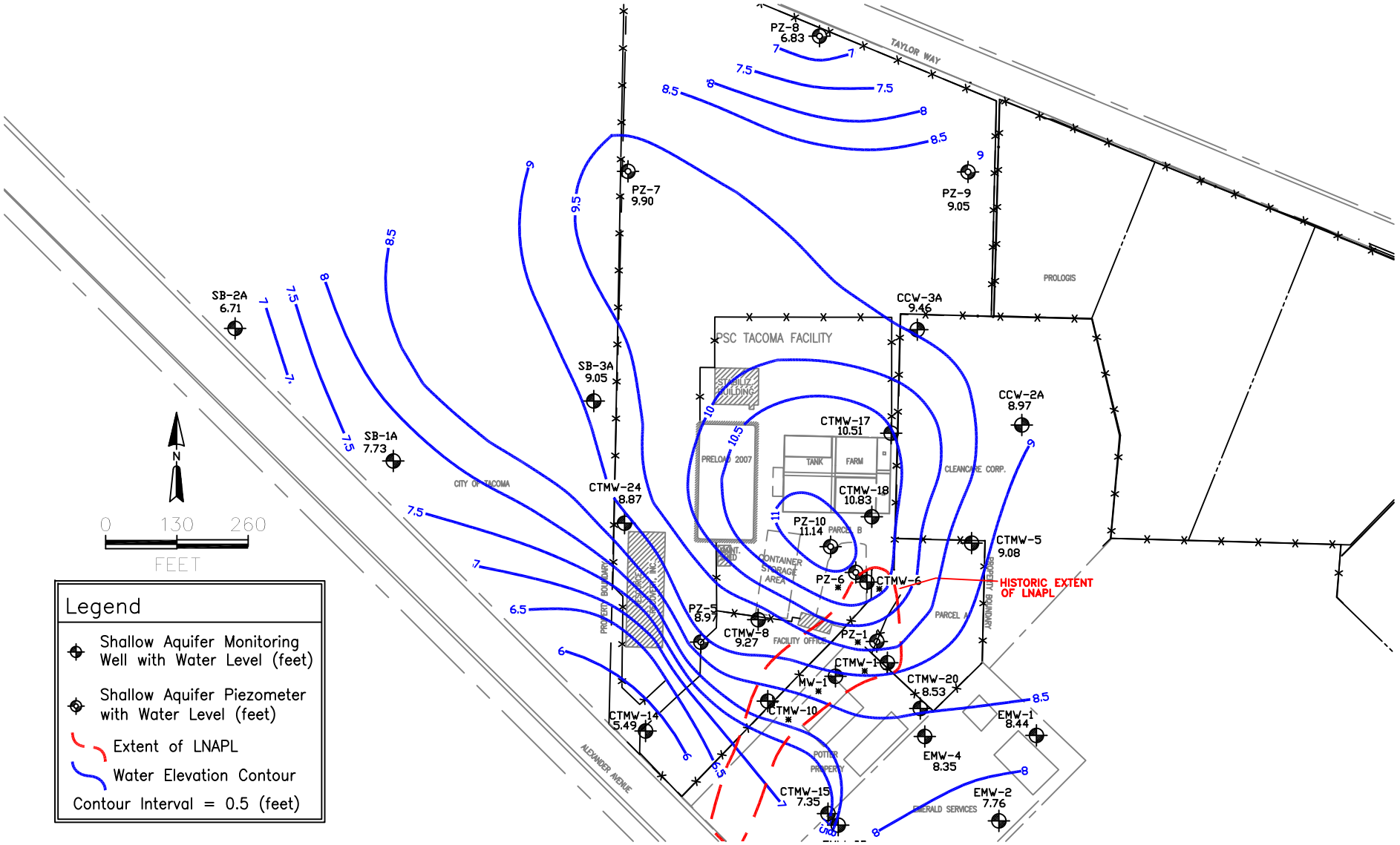
( ) = Below reporting limit.

[ ] = Equal to or exceeds minimum clean up level.

FIGURES



Stericycle	TITLE: Site Map Stericycle Tacoma Facility	DWN: dtb	DES.:	PROJECT NO.: Annual 2017	
		CHKD:	APPD:		
		DATE: 4/5/18	REV.:	FIGURE NO.: 1	

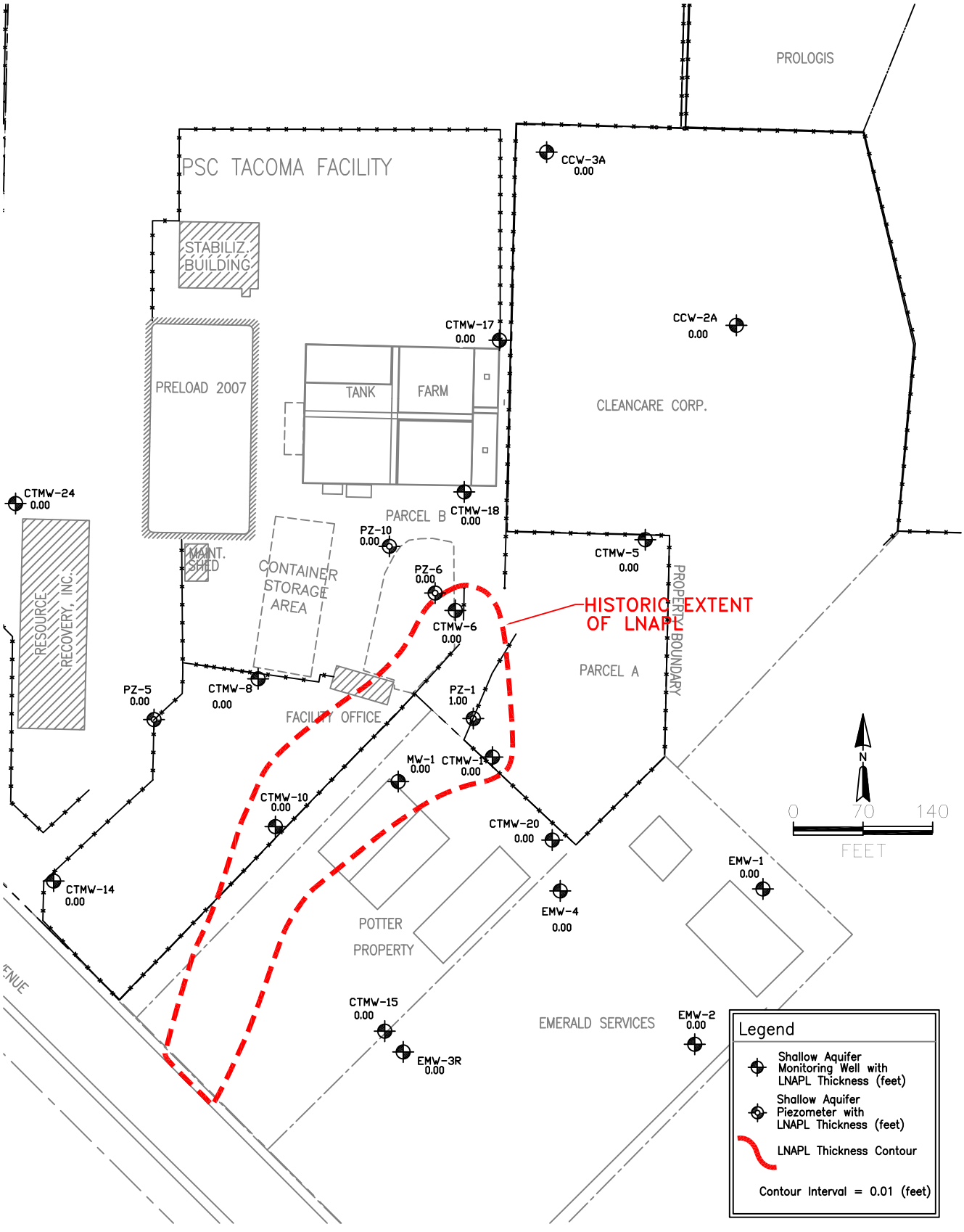


Stericycle®

TITLE:

Groundwater Elevations
Shallow Aquifer, June 5, 2017
Stericycle Tacoma Facility

DWN: dtb	DES.:	PROJECT NO.: Annual 2017	
CHKD:	APPD:	FIGURE NO.: 2	
DATE: 4/5/18	REV.:		

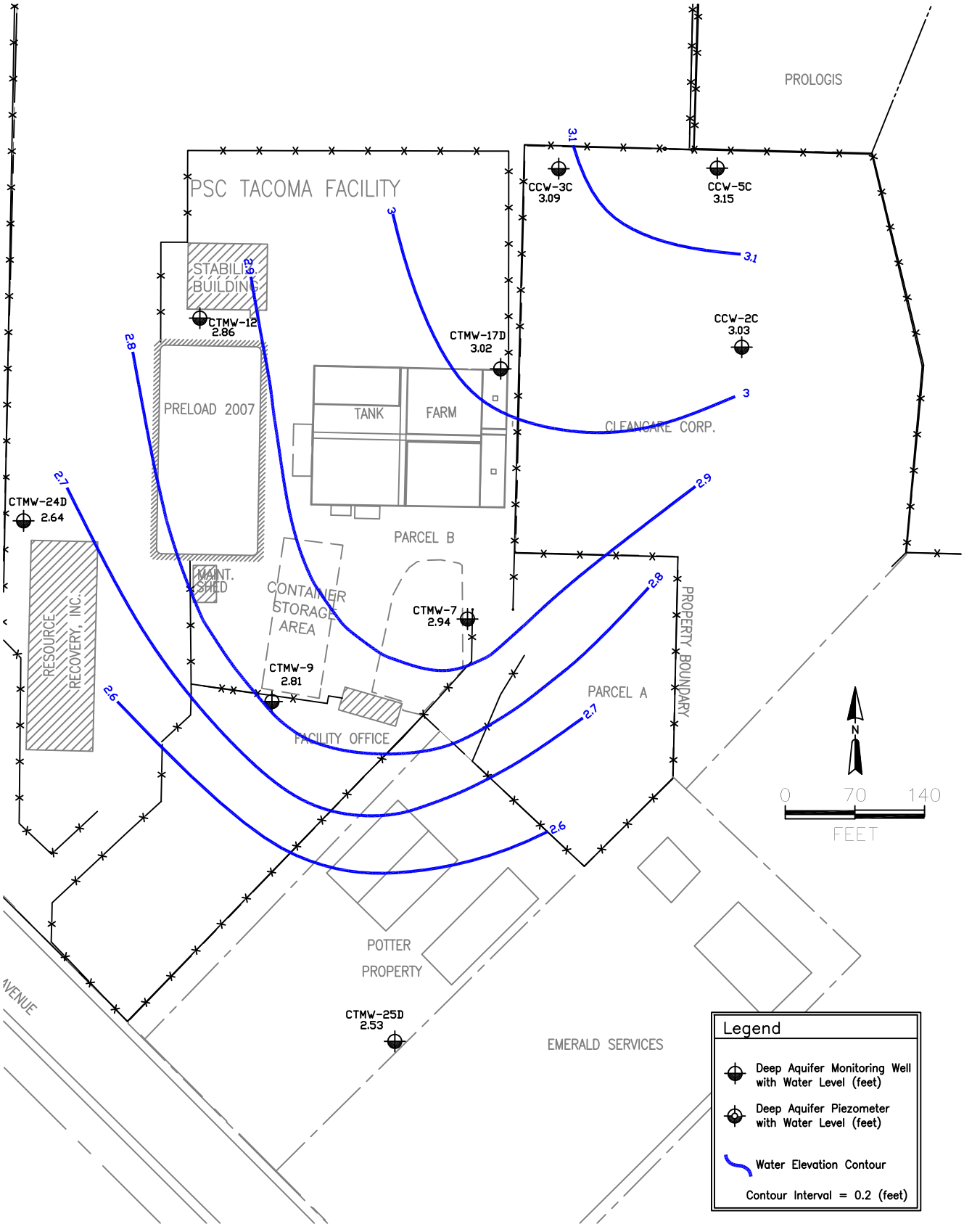


Stericycle

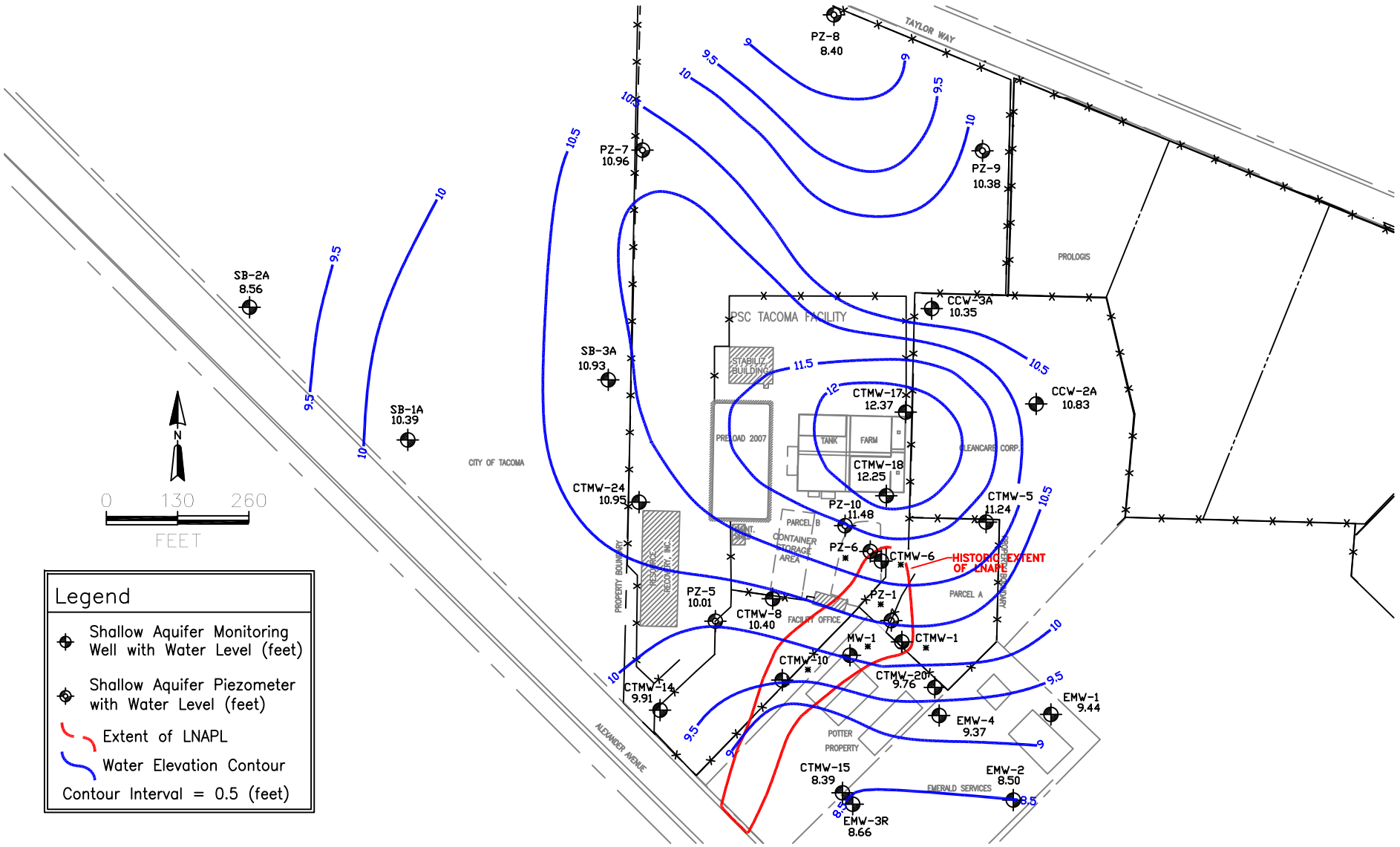
TITLE:

Calculated LNAPL Thickness
June 5, 2017
Stericycle Tacoma Facility

DWN: dtb	DES.:	PROJECT NO.: Annual 2017	
CHKD:	APPD:		
DATE: 4/6/18	REV.:	FIGURE NO.: 3	



Stericycle	TITLE: Groundwater Elevations Deep Aquifer, June 5, 2017 Stericycle Tacoma Facility	DWN: dtb	DES.:	PROJECT NO.: Annual 2017
		CHKD:	APPD:	
		DATE: 4/6/18	REV.:	FIGURE NO.: 4

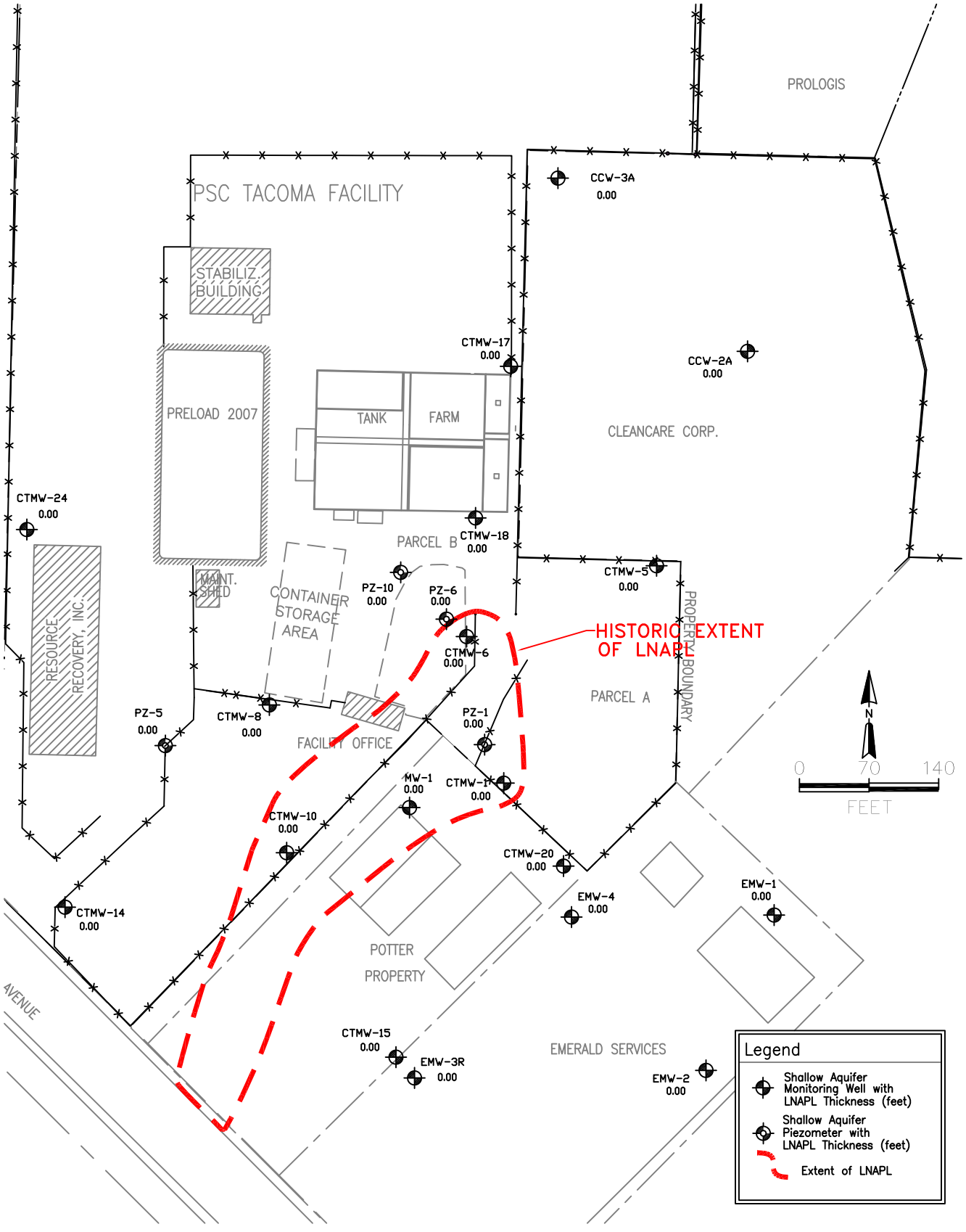


Stericycle®

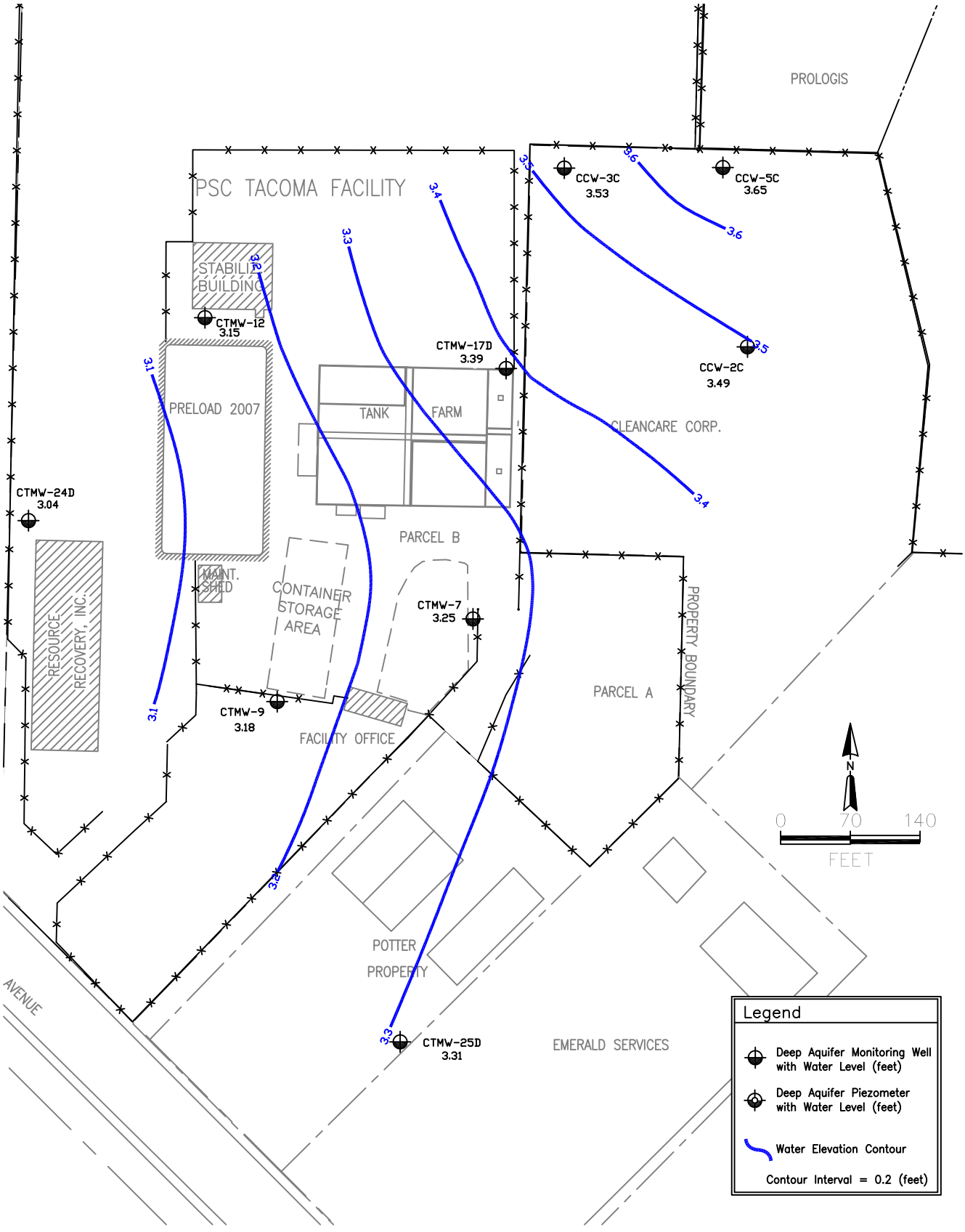
TITLE:

Groundwater Elevations
Shallow Aquifer, December 4, 2017
Stericycle Tacoma Facility

DWN:	DES.:	PROJECT NO.:
dtb		Annual 2017
CHKD:	APPD:	FIGURE NO.:
DATE: 4/6/18	REV.:	5



Stericycle	TITLE: Calculated LNAPL Thickness December 11, 2017 Stericycle Tacoma Facility	DWN: dtb	DES.:	PROJECT NO.: Annual 2017
		CHKD:	APPD:	
		DATE: 4/6/18	REV.:	FIGURE NO.: 6



Stericycle	TITLE: Groundwater Elevations Deep Aquifer, December 11, 2017 Stericycle Tacoma Facility	DWN: dtb	DES.:	PROJECT NO.: Annual 2017
		CHKD:	APPD:	
		DATE: 4/6/18	REV.:	FIGURE NO.: 7

ATTACHMENT A

Groundwater Quality Worksheet, Stericycle Tacoma 2017

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Relative Change (%) +/- 3%	Redox Potential (mV)	Relative Change (mV) +/- 10mV	pH	Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
Well CTMW-12	Volume purged before 1st reading																	
6\07\17 FC5000T		1.2													12	1.6	0.06	
9:14:08	400		15.87	1.97		0.91		1.640		-43		6.19		3.0 cpm	All parametrs stable when sample was collected.			
9:17:06	400	1.2	15.72	1.48	-0.49	1.01	9.9	1.646	0.36	-48	-5	6.18	-0.01	3.0 cpm	Turbidity < 5 NTU			
9:20:06	400	1.2	15.66	1.40	-0.08	1.19	15.13	1.638	-0.49	-49	-1	6.14	-0.04	3.0 cpm	Do> 0.20 mg/L			
9:23:07	400	1.2	15.68	1.33	-0.07	0.60	-98.33	1.652	0.85	-49	0	6.18	0.04	3.0 cpm				
9:26:11	400	1.2	15.73	1.27	-0.06	0.29	-106.9	1.657	0.3	-49	0	6.21	0.03	3.0 cpm				
Well CTMW-14	Volume purged before 1st reading																	
6\06\17 FC5000T		0.3													12	0.4	0.41	
6:59:08	100		13.30	5.17	#Error	0.95	#Error	0.390	#Error	73	#Error	6.89		0.2 cpm	All parametrs stable when sample was collected.			
7:02:12	100	0.3	13.23	5.78	0.61	1.17	18.8	0.386	-0.93	55	-18	6.7	-0.19	0.2 cpm	Turbidity < 5 NTU			
7:05:15	100	0.3	13.20	6.17	0.39	0.85	-37.65	0.385	-0.31	55	0	6.65	-0.05	0.2 cpm	Do> 0.20 mg/L			
7:08:05	100	0.3	13.22	6.35	0.18	0.98	13.27	0.384	-0.18	55	0	6.69	0.04	0.2 cpm				
7:11:08	100	0.3	13.23	6.62	0.27	0.80	-22.5	0.384	-0.1	57	2	6.62	-0.07	0.2 cpm				
Well CTMW-15	Volume purged before 1st reading																	
6\06\17 FC5000T		0.3													36	1.0	2.17	
8:13:24	100		14.64	5.37		3.32		1.230		-93		6.8		0.2 cpm	All parametrs stable when sample was collected.			
8:16:14	100	0.3	14.60	6.14	0.77	4.95	32.93	1.141	-7.8	-85	8	6.55	-0.25	0.2 cpm	Turbidity < 5 NTU			
8:19:09	100	0.3	14.58	6.37	0.23	6.02	17.77	1.031	-10.67	-75	10	6.55	0.00	0.2 cpm	Do> 0.20 mg/L			
8:22:05	100	0.3	14.60	6.46	0.09	4.93	-22.11	0.931	-10.72	-66	9	6.62	0.07	0.2 cpm				
8:25:19	100	0.3	14.61	6.46	0.00	5.43	9.21	0.829	-12.29	-57	9	6.57	-0.05	0.2 cpm				
8:28:15	100	0.3	14.62	6.41	-0.05	4.12	-31.8	0.758	-9.48	-50	7	6.75	0.18	0.2 cpm				
8:31:07	100	0.3	14.62	6.46	0.05	3.99	-3.26	0.706	-7.28	-43	7	6.7	-0.05	0.2 cpm				
8:34:09	100	0.3	14.63	6.41	-0.05	3.32	-20.18	0.662	-6.6	-38	5	6.52	-0.18	0.2 cpm				
8:37:38	100	0.3	14.65	6.35	-0.06	3.55	6.48	0.624	-6.24	-33	5	6.51	-0.01	0.2 cpm				
8:40:08	100	0.3	14.67	6.38	0.03	3.21	-10.59	0.605	-3.01	-30	3	6.71	0.20	0.2 cpm				
8:43:12	100	0.3	14.70	6.38	0.00	2.38	-34.87	0.577	-4.94	-28	2	6.64	-0.07	0.2 cpm				
8:46:23	100	0.3	14.74	6.41	0.03	2.37	-0.42	0.568	-1.51	-26	2	6.63	-0.01	0.2 cpm				
8:49:15	100	0.3	14.78	6.40	-0.01	2.21	-7.24	0.565	-0.55	-24	2	6.57	-0.06	0.2 cpm				
Well CTMW-17	Volume purged before 1st reading																	
6\07\17 FC5000T		0.6													12	0.8	0.12	
10:46:09	200		16.74	3.27		3.37		0.454		-5		6.42		1.0 cpm	All parametrs stable when sample was collected.			
10:49:05	200	0.6	16.32	3.97	0.70	1.54	-118.83	0.410	-10.86	-5	0	6.41	-0.01	1.0 cpm	Turbidity < 5 NTU			
10:52:21	200	0.6	16.36	4.12	0.15	1.45	-6.21	0.400	-2.45	-1	4	6.39	-0.02	1.0 cpm	Do> 0.20 mg/L			
10:55:05	200	0.6	16.39	4.10	-0.02	1.41	-2.84	0.393	-1.73	1	2	6.39	0.00	1.0 cpm				
10:58:07	200	0.6	16.49	3.98	-0.12	0.93	-51.61	0.395	0.3	5	4	6.46	0.07	1.0 cpm				

relative change calculated after 2nd reading

Groundwater Quality Worksheet, Stericycle Tacoma 2017

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Relative Change (%) +/- 3%	Redox Potential (mV)	Relative Change (mV) +/- 10mV	pH	Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
Well CTMW-17D 6\07\17 FC5000T	Volume purged before 1st reading	1.2													15	1.9	0.03	
10:01:05	400		15.19	2.51		2.36		1.545		-34		6.35		3.0 cpm	All parametrs stable when sample was collected.			
10:04:23	400	1.2	14.66	1.86	-0.65	3.81	38.06	1.565	1.28	-45	-11	6.29	-0.06	3.0 cpm	Turbidity < 5 NTU			
10:07:07	400	1.2	14.65	1.57	-0.29	3.61	-5.54	1.568	0.19	-49	-4	6.33	0.04	3.0 cpm	Do> 0.20 mg/L			
10:10:07	400	1.2	14.67	1.38	-0.19	2.61	-38.31	1.566	-0.13	-52	-3	6.35	0.02	3.0 cpm				
10:13:23	400	1.2	14.65	1.27	-0.11	2.44	-6.97	1.566	0	-52	0	6.34	-0.01	3.0 cpm				
10:16:15	400	1.2	14.60	1.27	0.00	2.23	-9.42	1.568	0.13	-49	3	6.3	-0.04	3.0 cpm				
Well CTMW-18 6\06\17 FC5000T	Volume purged before 1st reading	0.6													12	0.8	0.37	
11:08:16	200		17.65	2.43		6.05		0.431		20		6.12		1.0 cpm	All parametrs stable when sample was collected.			
11:11:06	200	0.6	16.72	2.63	0.20	2.36	-156.36	0.432	0.12	21	1	6.1	-0.02	1.0 cpm	Turbidity < 5 NTU			
11:14:08	200	0.6	16.42	2.66	0.03	2.67	11.61	0.433	0.32	21	0	6.02	-0.08	1.0 cpm	Do> 0.20 mg/L			
11:17:06	200	0.6	16.29	2.67	0.01	2.06	-29.61	0.438	1.05	20	-1	6	-0.02	1.0 cpm				
11:20:04	200	0.6	16.35	2.72	0.05	2.01	-2.49	0.440	0.43	20	0	6.1	0.10	1.0 cpm				
Well CTMW-20 6\06\17 FC5000T	Volume purged before 1st reading	1.2													24	2.9	0.09	
10:15:32	400		13.12	1.82		3.16		0.885		-87		6.58		3.0 cpm	All parametrs stable when sample was collected.			
10:18:10	400	1.2	13.04	1.57	-0.25	1.90	-66.32	0.841	-5.28	-95	-8	6.48	-0.10	3.0 cpm	Turbidity < 5 NTU			
10:21:43	400	1.2	13.31	1.50	-0.07	1.61	-18.01	0.705	-19.32	-96	-1	6.63	0.15	3.0 cpm	Do> 0.20 mg/L			
10:24:59	400	1.2	13.45	1.50	0.00	1.33	-21.05	0.627	-12.31	-93	3	6.59	-0.04	3.0 cpm				
10:27:20	400	1.2	13.52	1.40	-0.10	1.35	1.48	0.591	-6.21	-91	2	6.62	0.03	3.0 cpm				
10:30:05	400	1.2	13.60	1.38	-0.02	0.95	-42.11	0.571	-3.43	-91	0	6.63	0.01	3.0 cpm				
10:33:06	400	1.2	13.64	1.31	-0.07	1.32	28.03	0.562	-1.66	-91	0	6.57	-0.06	3.0 cpm				
10:36:05	400	1.2	13.66	1.30	-0.01	1.06	-24.53	0.559	-0.47	-90	1	6.62	0.05	3.0 cpm				
10:39:07	400	1.2	13.70	1.23	-0.07	1.19	10.92	0.557	-0.4	-89	1	6.58	-0.04	3.0 cpm				
Well CTMW-24 6\07\17 FC5000T	Volume purged before 1st reading	0.6													12	0.8	0.37	
7:35:05	200		14.56	3.06		0.54		0.425		-24		5.47		1.0 cpm	All parametrs stable when sample was collected.			
7:38:05	200	0.6	14.40	2.54	-0.52	0.37	-45.95	0.428	0.7	-36	-12	5.49	0.02	1.0 cpm	Turbidity < 5 NTU			
7:41:23	200	0.6	14.39	2.63	0.09	0.30	-23.33	0.429	0.37	-42	-6	5.46	-0.03	1.0 cpm	Do> 0.20 mg/L			
7:44:06	200	0.6	14.32	2.55	-0.08	0.22	-36.36	0.428	-0.26	-45	-3	5.44	-0.02	1.0 cpm				
7:47:06	200	0.6	14.23	2.40	-0.15	0.31	29.03	0.426	-0.47	-48	-3	5.41	-0.03	1.0 cpm				

relative change calculated after 2nd reading

Groundwater Quality Worksheet, Stericycle Tacoma 2017

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Relative Change (%) +/- 3%	Redox Potential (mV)	Relative Change (mV) +/- 10mV	pH	Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
Well CTMW-24D 6\07\17 FC5000T	Volume purged before 1st reading	1.2													12	1.6	0.09	
8:21:09	400		13.78	1.96		4.34		2.673		-49		5.93		3.0 cpm	All parametrs stable when sample was collected.			
8:24:05	400	1.2	13.37	1.83	-0.13	3.73	-16.35	2.716	1.58	-51	-2	5.97	0.04	3.0 cpm	Turbidity < 5 NTU			
8:27:05	400	1.2	13.29	1.67	-0.16	2.88	-29.51	2.730	0.51	-51	0	5.93	-0.04	3.0 cpm	Do> 0.20 mg/L			
8:30:23	400	1.2	13.30	1.57	-0.10	1.87	-54.01	2.745	0.55	-53	-2	5.98	0.05	3.0 cpm				
8:33:13	400	1.2	13.33	1.52	-0.05	2.02	7.43	2.743	-0.07	-54	-1	6.02	0.04	3.0 cpm				
Well CTMW-25D 6\06\17 FC5000T	Volume purged before 1st reading	1.2													18	2.2	0.06	
9:30:14	400		14.02	2.35		4.17		1.195		-33		6.65		3.0 cpm	All parametrs stable when sample was collected.			
9:33:11	400	1.2	13.79	1.80	-0.55	3.56	-17.13	1.225	2.45	-54	-21	6.76	0.11	3.0 cpm	Turbidity < 5 NTU			
9:36:05	400	1.2	13.81	1.61	-0.19	8.74	59.27	1.344	8.85	-62	-8	6.57	-0.19	3.0 cpm	Do> 0.20 mg/L			
9:39:34	400	1.2	13.85	1.54	-0.07	2.90	-201.38	1.520	11.58	-71	-9	6.52	-0.05	3.0 cpm				
9:42:06	400	1.2	13.86	1.42	-0.12	2.18	-33.03	1.612	5.71	-73	-2	6.41	-0.11	3.0 cpm				
9:45:47	400	1.2	13.89	1.32	-0.10	2.18	0	1.630	1.1	-74	-1	6.44	0.03	3.0 cpm				
9:48:18	400	1.2	13.92	1.29	-0.03	2.09	-4.31	1.647	1.03	-74	0	6.37	-0.07	3.0 cpm				
Well CTMW-5 6\07\17 FC5000T	Volume purged before 1st reading	1.125													12	1.5	0.14	
6:33:08	375		12.72	5.15		1.71		0.197		84		5.42		4.0 cpm	All parametrs stable when sample was collected.			
6:36:46	375	1.125	12.67	1.40	-3.75	1.38	-23.91	0.173	-13.85	51	-33	5.33	-0.09	4.0 cpm	Turbidity < 5 NTU			
6:39:16	375	1.125	12.73	0.95	-0.45	0.99	-39.39	0.171	-1.52	45	-6	5.33	0.00	4.0 cpm	Do> 0.20 mg/L			
6:42:01	375	1.125	12.79	0.94	-0.01	1.10	10	0.170	-0.18	36	-9	5.36	0.03	4.0 cpm				
6:45:06	375	1.125	12.80	0.96	0.02	0.89	-23.6	0.171	0.47	35	-1	5.4	0.04	4.0 cpm				
Well CTMW-7 6\06\17 FC5000T	Volume purged before 1st reading	1.2													12	1.6	0.08	
11:48:05	400		16.09	1.60		5.21		2.616		-55		6.37		3.0 cpm	All parametrs stable when sample was collected.			
11:51:05	400	1.2	16.30	2.59	0.99	4.98	-4.62	2.644	1.06	-74	-19	6.36	-0.01	3.0 cpm	Turbidity < 5 NTU			
11:54:07	400	1.2	15.68	1.71	-0.88	3.98	-25.13	2.636	-0.3	-73	1	6.45	0.09	3.0 cpm	Do> 0.20 mg/L			
11:57:46	400	1.2	15.51	1.58	-0.13	3.37	-18.1	2.679	1.61	-75	-2	6.42	-0.03	3.0 cpm				
12:00:06	400	1.2	15.51	1.54	-0.04	3.16	-6.65	2.616	-2.41	-77	-2	6.47	0.05	3.0 cpm				
Well CTMW-8 6\06\17 FC5000T	Volume purged before 1st reading	0.6													15	1.0	2.07	
12:58:25	200		19.08	2.21		23.6		5.929		-160		11.69		1.0 cpm	All parametrs stable when sample was collected.			
13:01:06	200	0.6	17.72	3.06	0.85	10.94	-115.72	6.323	6.23	-169	-9	11.69	0.00	1.0 cpm	Turbidity < 5 NTU			
13:04:17	200	0.6	17.48	3.16	0.10	7.52	-45.48	6.384	0.96	-167	2	11.63	-0.06	1.0 cpm	Do> 0.20 mg/L			
13:07:06	200	0.6	17.38	3.14	-0.02	4.43	-69.75	6.417	0.51	-164	3	11.87	0.24	1.0 cpm				

relative change calculated after 2nd reading

Groundwater Quality Worksheet, Stericycle Tacoma 2017

Time	Flow rate (ml/min)	Volume Purged (L)	Temp. (C)	Dissolved Oxygen (ppm)	Relative Change (ppm) +/- 0.3ppm	Turbidity (NTU)	Relative Change (%) +/- 10%	Specific Conductivity (mS/cm)	Relative Change (%) +/- 3%	Redox Potential (mV)	Relative Change (mV) +/- 10mV	pH	Relative Change +/- 0.1	Pump Speed (Hz or cpm)	Total Purge Time Before Stabilization (min)	Total Volume Purged at Stabilization (gallons)	Draw-down (0.01 ft)	Comments
13:10:21	200	0.6	17.39	3.01	-0.13	3.78	-17.2	6.427	0.16	-163	1	11.85	-0.02	1.0 cpm				
13:13:06	200	0.6	17.41	2.94	-0.07	2.91	-29.9	6.434	0.11	-163	0	11.82	-0.03	1.0 cpm				
Well CTMW-9	Volume purged before 1st reading																	
6\06\17 FC5000T		1.2													12	1.6	0.08	
13:51:05	400		17.67	1.58		3.92		4.393		-122		6.47		3.0 cpm	All parametrs stable when sample was collected.			
13:54:15	400	1.2	16.34	1.41	-0.17	5.46	28.21	4.455	1.39	-98	24	5.78	-0.69	3.0 cpm	Turbidity < 5 NTU			
13:57:46	400	1.2	16.13	1.25	-0.16	2.11	-158.77	4.433	-0.5	-91	7	6.1	0.32	3.0 cpm	Do> 0.20 mg/L			
14:00:35	400	1.2	16.07	1.22	-0.03	3.08	31.49	4.420	-0.29	-89	2	6.16	0.06	3.0 cpm				
14:03:31	400	1.2	15.93	1.30	0.08	2.51	-22.71	4.372	-1.1	-86	3	6.13	-0.03	3.0 cpm				

relative change calculated after 2nd reading

GENERAL Field Event: Tacoma 2Q17 Date (mm / dd / yyyy): 6 / 5 / 2017

PERSONNEL Name(s): Jimmy McKechnie/Slavik Karashchuk Organization: Stericycle

LIQUID-LEVEL METER Brand: WLM Series Water Level Meter Model: Mini EZ Reel Serial No.: 001

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet)	Comments	NOTES
		Time (24-h clock) (hh mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
CTMW-1	--	0750		1118	4.92	N/A		LNAPL too viscous for WL reading. Purged ~ 70 ml of product.	Inner casing for accurate water levels
CTMW-5	x	0753		1023		5.02			
CTMW-6	--	0800		1147	4.80	N/A		LNAPL too viscous for WL reading. Purged ~ 50 ml of product.	Inner casing for accurate water levels
CTMW-7	x	0801		0913		11.81			
CTMW-8	x	0713		0910		5.50			
CTMW-9	--	0714		0908		11.57			
CTMW-10	--	0708		1107	N/A	4.02		No LNAPL present.	Inner casing for accurate water levels
CTMW-12		0723		0917		15.43			
CTMW-14	--	0711		0948		7.64			
CTMW-15	--	0739		1016		5.93			
CTMW-17	x	0721		0919		8.81			
CTMW-17D	--	0900		0921		13.62		Drilled out bolts due to being damaged/stripped. Replaced 3 bolts.	
CTMW-18	x	0802		1039		8.53			
CTMW-20	--	0748		1026		2.50			
CTMW-24		0719		0955		7.48			
CTMW-24D		0718		0953		13.75			
CTMW-25D		0740		1018		10.53			
PZ-1	--	0751		1135	3.39	3.40		Trace of LNAPL. Purged ~ 10 ml of product.	
PZ-5	--	0716		0950		3.89			
PZ-6	--	0802		1213	1.45	N/A		LNAPL too viscous for WL reading. Purged ~ 100 ml of product.	Inner casing for accurate water levels
PZ-7		0730		1004		11.07			
PZ-8	--	0728		1002		8.01			
PZ-9	--	0726		0959		6.50			
PZ-10	--	0804		1041		1.47			
MW-1	--	0745		1112	N/A	2.25		No LNAPL present.	Inner casing for accurate water levels
TP-1		0759		1037		1.82			

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet)	Comments	NOTES
		Time (24-h clock) (hh mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
TP-2	--	0758		1035		1.96			
TP-3	--	0757		1033		1.70			
TP-4	--	0756		1031		1.83			
TP-5	--	0755		1029		1.96			
TP-6	--	N/A		N/A		N/A		Trailer parked on top of well. Unable to locate.	
TP-7	--	N/A		N/A		N/A		Trailer parked on top of well. Unable to locate.	
TP-8	--	0735		1010		1.66			
TP-9	--	0736		1012		1.55			
TP-10	--	0737		1014		1.99			
SB-1A	--	0810		1051		4.61			
SB-2A	--	0814		1054		5.20			
SB-3A	--	0807		1048		4.53			
CCW-2A	--	0821		0929		3.25			
CCW-2B	--	0822		0931		3.01			
CCW-2C	--	0820		0927		9.03			
CCW-3A	--	0825		0936		4.29		Water in monument.	
CCW-3B	--	0824		0938		4.93		Water in monument.	
CCW-3C	--	0826		0934		12.59			
CCW-5B	--	0831		0943		3.61		Water in monument.	
CCW-5C	--	0829		0941		9.25		Water in monument.	

Notes

(1) Shading indicates wells/piezometers with a history of LNAPL accumulation

(2) **Bold** indicates wells/piezometers whose water levels must be measured within a single one-hour period

TABLE 2. GROUNDWATER ELEVATION DATA SUMMARY
EMERALD ENVIRONMENTAL SERVICES, INC., TACOMA, WASHINGTON

Location	Date/Time Measured	Measuring Point Elevation (ft-msl)	Depth to Product (ft-bmp)	Depth to Water (ft-bmp)	Water Elevation (ft-msl)	Measured Total Depth (ft-bmp)
MW-1	6/5/17 12:41	14.34	ND	2.40	11.94	7.03
MW-2	6/5/17 12:52	13.94	ND	2.68	11.26	8.22
MW-3R	6/5/17 12:17	14.65	ND	2.91	11.74	7.54
MW-4	6/5/17 12:34	14.10	ND	2.25	11.85	8.83

Notes:
ND - Not Detected
ft-msl - feet above mean sea level
ft-bmp - feet below measuring point
ft-bgs - feet below ground surface

GENERAL Field Event: Tacoma 4Q17 Date (mm / dd / yyyy): 12 / 04 / 2017

PERSONNEL Name(s): Jimmy McKechnie/Slavik Karashchuk Organization: Stericycle

LIQUID-LEVEL METER Brand: WLM Series Water Level Meter Model: Mini EZ Reel Serial No.: 001

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet)	Comments	NOTES
		Time (24-h clock) (hh:mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh:mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
CTMW-1	--	1247		1529	N/A	3.25		No LNAPL present / Did not purge.	Inner casing for accurate water levels
CTMW-5	x	1249		1443		2.86			
CTMW-6	--	1256		1533	3.60	N/A		Product too viscous for WL / purged ~ 70 ml. of product.	Inner casing for accurate water levels
CTMW-7	x	1257		1347		11.50			
CTMW-8	x	1229		1340		4.37			
CTMW-9	--	1228		1342		11.20			
CTMW-10	--	1231		1525	N/A	2.30		No LNAPL present / Did not purge.	Inner casing for accurate water levels
CTMW-12		1213		1351		15.14			
CTMW-14	--	1227		1345		3.22			
CTMW-15	--	1240		1435		4.89			
CTMW-17	x	1215		1355		6.95			
CTMW-17D	--	1214		1353		13.25			
CTMW-18	x	1301		1454		7.11			
CTMW-20	--	1245		1440		1.27			
CTMW-24		1224		1424		5.40			
CTMW-24D		1225		1426		13.35			
CTMW-25D		1241		1437		9.75			
PZ-1	--	1248		1531	N/A	0.52		No LNAPL present / Did not purge.	
PZ-5	--	1210		1414		2.85			
PZ-6	--	1258		1550	0.03	N/A		Product too viscous for WL / purged ~ 80 ml. of product.	Inner casing for accurate water levels
PZ-7		1222		1421		10.01			
PZ-8	--	1221		1419		6.44			
PZ-9	--	1220		1417		5.17			
PZ-10	--	1259		1452		1.13			
MW-1	--	1244		1527	N/A	0.83		No LNAPL present / Did not purge.	Inner casing for accurate water levels
TP-1		1255		1450		1.20			

Well or Piezometer	Dedicated Pump (VERIFY) (X = yes)	Well Venting		Liquid-Level Measurement			Total Well Depth (4th Q only) (feet)	Comments	NOTES
		Time (24-h clock) (hh:mm)	Headspace PID Reading (ppm)	Time (24-h clock) (hh.mm)	Depth to LNAPL (feet)	Depth to Water (feet)			
TP-2	--	1254		1449		1.33			
TP-3	--	1253		1448		1.07			
TP-4	--	1252		1447		1.21			
TP-5	--	1251		1446		1.32			
TP-6	--	1234		1429		0.45			
TP-7	--	N/A		N/A		N/A		Trailer Parked on top of well	
TP-8	--	1236		1431		0.14			
TP-9	--	1237		1432		0.10			
TP-10	--	1238		1433		0.48			
SB-1A	--	1313		1515		1.95			
SB-2A	--	1315		1518		3.35			
SB-3A	--	1310		1511		2.65			
CCW-2A	--	1322		1401		1.39		Water in monument / threads stripped.	
CCW-2B	--	1324		1403		1.99		Water in monument / threads stripped.	
CCW-2C	--	1320		1359		8.57		Water in monument / threads stripped.	
CCW-3A	--	1326		1411		3.4			
CCW-3B	--	1328		1413		3.75			
CCW-3C	--	1327		1409		12.15			
CCW-5B	--	1330		1405		2.35		Water in monument / threads stripped.	
CCW-5C	--	1332		1407		8.75		Water in monument / threads stripped.	

Notes

(1) Shading indicates wells/piezometers with a history of LNAPL accumulation

(2) **Bold** indicates wells/piezometers whose water levels must be measured within a single one-hour period

TABLE 2. GROUNDWATER ELEVATION DATA SUMMARY
EMERALD ENVIRONMENTAL SERVICES, INC., TACOMA, WASHINGTON

Location	Date/Time Measured	Measuring Point Elevation (ft-msl)	Depth to Product (ft-bmp)	Depth to Water (ft-bmp)	Water Elevation (ft-msl)	Measured Total Depth (ft-bmp)
MW-1	12/4/17 12:25	14.34	ND	1.40	12.94	7.05
MW-2	12/4/17 12:50	13.94	ND	1.94	12.00	8.25
MW-3R	12/4/17 13:05	14.65	ND	2.49	12.16	7.54
MW-4	12/4/17 13:20	14.10	ND	1.23	12.87	8.85

Notes:
ND - Not Detected
ft-msl - feet above mean sea level
ft-bmp - feet below measuring point
ft-bgs - feet below ground surface

ATTACHMENT B

See separate file on this disc for the Laboratory Analytical Reports

ATTACHMENT C

QA/QC Solutions, LLC

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August 29, 2017

William Beck and Duane Beery
Stericycle Environmental Solutions
1800 72nd Avenue South, Suite 217
Kent, Washington 98032

Subject: Tacoma 2nd Quarter 2017 Data Validation Review
Client Project No.: 376.01
QA/QC Solutions, LLC Project No.: 072017.1 (QA/QC Support, Tacoma 2ndQ17)

Dear Bill and Duane:

This letter documents the results of the data validation review of the chemical analyses of organic and inorganic compounds completed on groundwater samples associated with Stericycle Environmental Solutions Tacoma 2nd quarter 2017 sampling event.

The data were validated to verify the laboratory quality assurance and quality control (QA/QC) procedures were documented and that the overall quality of the data reported is sufficient to support its intended purposes. A summary of the data set, the analytical methods used to complete the chemical analyses, the data validation procedures used, and the overall assessment of data quality is presented below.

Data Set

The data set consisted of 18 water samples (i.e., 14 groundwater samples, 1 field duplicate, 2 trip blanks, and 1 field blank) that were collected in June 2017. A summary of the samples collected and the analyses completed is presented in Table 1.

All organic and inorganic chemical analyses were completed by ALS Group USA Corp. dba ALS Environmental (ALS) located in Kelso, Washington under service requests K1705774. ALS submitted a complete hardcopy data validation deliverables and electronic data deliverables (EDDs).

Analytical Methods

The analytical methods used to complete the chemical analyses included the following:

- Total metals (i.e., arsenic, cadmium, chromium, copper, lead, nickel, and zinc) by digestion with 1% nitric acid (selected samples) or with nitric and hydrochloric acids (selected samples) and analysis by inductively coupled plasma-mass spectrometry (ICP-MS) using U.S. EPA SW-846 Method 6020A (U.S. EPA 2017).

- Total mercury by digestion with hydrogen peroxide and nitric acid, addition of nickel nitrate solution, and analysis by cold vapor atomic absorption (CVAA) using U.S. EPA SW-846 Method 7470A (U.S. EPA 2017).
- Gasoline-range petroleum hydrocarbons by purge and trap and analysis by gas chromatography/flame ionization detection (GC/FID) using the Washington Department of Ecology NWTPH-Gx method (Ecology 1997).
- Diesel- and oil-range petroleum hydrocarbons by extraction and analysis by GC/FID using the Washington Department of Ecology NWTPH-Dx (extended) method (Ecology 1997).
- Volatile organic compounds (VOCs) (46 target analytes with co-elutions included) by purge and trap and analysis by gas chromatography/mass spectrometry (GC/MS) operated in the full scan mode using U.S. EPA SW-846 Methods 5030B and 8260C, respectively (U.S. EPA 2017).
- VOCs (5 target analytes) by purge and trap and analysis by GC/MS operated in the selected ion monitoring (SIM) mode to achieve lower reporting limits using U.S. EPA SW-846 Methods 5030B and 8260C, respectively (U.S. EPA 2017).
- 1,4-Dioxane by separatory funnel extraction and analysis by GC/MS operated in the SIM mode using U.S. EPA SW-846 Methods 3510C and 8270D-SIM, respectively (U.S. EPA 2017).

Data Validation Procedures

Data validation procedures included evaluating a summary of the sample results and applicable quality control results reported by the laboratory; this level of validation is also referred to as an abbreviated data review (equivalent to "Stage 2B" review per U.S. EPA 2009, which is equivalent to "Level EPA2B" for use with the Washington Department of Ecology EIMS database). The analytical data were validated generally following the applicable guidance and requirements:

- *Guidance on Environmental Data Verification and Validation* (U.S. EPA 2002)
- *USEPA Contract Laboratory Program, National Functional Guidelines for Superfund Organic Methods Data Review*. Final. OSWER 9240.1-45. USEPA/540/R-08/01 (U.S. EPA 2008).
- *Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use*. OSWER No. 9200.1-85. EPA 540-R-08-005. (U.S. EPA 2009).
- *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Superfund Data Review*. Final. OSWER 9240.1-51. EPA 540-R-10-011 (U.S. EPA 2010).
- Method-specific and laboratory-established quality control requirements, as applicable.

Data validation procedures were modified to accommodate QA/QC requirements for methods (e.g., petroleum hydrocarbon analyses) that are not specifically addressed by the USEPA Nation Functional Guidelines. In this situation, method-specific and laboratory-established control limits were used, as necessary, to determine if qualification of the data was necessary. The laboratory data deliverables that were validated included the following:

- Case narratives discussing analytical problems (if any) and procedures.
- Chain-of-custody documentation to verify completeness of the data set.
- Sample preparation logs or laboratory summary result forms to verify analytical holding times were met.
- Results for applicable instrument tuning, initial calibration, and continuing calibration verification (CCV) results to assess instrument performance.
- Results for applicable instrument blanks (i.e., initial calibration blanks [ICBs] and continuing calibration blanks [CCBs]), method blanks, trip blanks, and field blanks to determine whether an analyte that was reported as detected in any sample was the result of possible contamination introduced at the laboratory, during transport of samples, or during field sampling, respectively.
- Results for applicable internal standards performance (VOC and 1,4-Dioxane analyses) to verify that instrument sensitivity and response was stable during the analysis of the samples.
- Results for applicable method-specific quality control measurements for metals (i.e., serial dilutions and interference check samples for metals analyses) to assess potential matrix interference effects.
- Results for applicable surrogate compound (or system monitoring compound for VOC analyses), laboratory control sample (LCS) (i.e., blank spike), duplicate LCS, matrix spike (MS), and matrix spike duplicate (MSD) recoveries to assess analytical accuracy.
- Results for applicable laboratory duplicate sample, duplicate LCS, and MSD analyses to assess analytical precision.
- Results for the field duplicate samples to provide additional information in support of the quality assurance review.
- A review of instrument printouts (e.g., chromatograms and quantification reports analyses for gasoline-range petroleum hydrocarbons) to assess the validity of analyte identification reported as either detected or undetected.
- Laboratory summaries of analytical results.

Verification of applicable laboratory calculations, transcriptions, review of instrument printouts, and review of bench sheets were generally not completed during the abbreviated data validation review. There may be analytical problems that could only be identified by completing a thorough review (i.e., 100-percent data validation) of all original instrument printouts and associated analytical quality control results. Verification of all possible factors that could result in the degradation of data quality was not completed nor should be inferred at this time. The laboratory case narrative did not indicate any significant problems with data that were not reviewed. The adequacy of the sampling procedures was not completed during data validation.

Performance based control limits established by the laboratory and control limits provided in the method protocols were used to evaluate data quality and determine the need for data qualification. Applicable laboratory control limits (e.g., recoveries for surrogate compounds, LCSs and LCS duplicates, and MS/MSDs) were used during data validation. Data qualifiers were assigned during data validation to both hardcopy data sheets (data validation copies only) and the EDD when applicable QA/QC limits were not

met and qualification of the data was warranted. Data qualifiers were assigned following guidance specified by U.S. EPA (2002, 2008, and 2010) and the quality control requirements specified in the applicable analytical methods referenced below.

Overall Assessment of Data Quality

Overall, the data reported are of good quality and the results for the applicable QA/QC procedures that were used by the laboratory during the analysis of the samples were generally acceptable. Selected sample results required qualification during data validation because method-specific QA/QC criteria were not met; results maybe qualified for more than one reason. During data validation, the following actions were taken:

- A total of 124 results reported as detected were qualified as estimated (assigned a *J* qualifier).
- A total of 10 results reported as detected were restated as undetected (assigned a *U* qualifier).
- No results required rejection (*R*).

Analytical data that did not meet method- and/or laboratory-established control limits for applicable quality control measurements were qualified as estimated (*J)* by the laboratory or during data validation. These qualified data are considered usable and have an acceptable degree of uncertainty (i.e., may be less precise or less accurate than unqualified data). Analytical data that were reported as undetected (*U*) by the laboratory or that were restated as undetected (*U*) during data validation are usable. A summary of the qualified sample data and the reason(s) for qualification is presented in Table 2.

The data and reasons for qualification (*note that results may be qualified for more than one reason) included the following:

Metals and VOC Analyses

A total of 45 results reported as detected at a concentration above the method detection limit (MDL), but less than the method reporting limit (MRL) were qualified as estimated (*J*). These qualified results may exhibit a greater degree of uncertainty than a concentration that is reported above the MRL.

Metals Analyses

- A total of 7 metals results reported as detected for zinc were restated as undetected (*U*) because the concentrations were either less than the concentration found in the associated trip blanks or were less than between ≤2 times and ≤5 times the concentration found the associated blanks.

VOC Analyses

- All results reported acetonitrile and isobutyl alcohol were qualified as estimated (*J*) because the method-specific minimum relative response factor (RRF) requirement of ≥0.01 was not met in the associated initial calibration standards and CCVs.

- Two results reported as detected for Iodomethane and two results reported as detected for methylene chloride were restated as undetected (*U*) because the concentrations were either less than the concentration found in the associated trip blanks or were less than between ≤2 times and ≤5 times the concentration found the associated method, trip, and/or filed blank. These qualified results were either restated as undetected at the concentration found in the associated trip blank or were restated as undetected at the concentration reported if it was between ≤2 times and ≤5 times the concentration found the associated blank.
- All 45 VOC results reported as undetected or detected for Sample CTMW-8-0617 were qualified as estimated (*J*) because the recovery of one of the three surrogate compounds was below the lower laboratory-established control limit.

1,4-Dioxane Analyses

- The recovery of the surrogate compound 1,4-Dioxane–d8 was below the lower laboratory-established control limit for Sample CTMW-5-0607. The undetected results reported for 1,4-Dioxane was qualified as estimated (*J*). The laboratory re-extracted this sample, but past holding time constraint (see below for further comments).

During data validation, it was confirmed that selected data-validation-specific and/or method-specific QA/QC measurement criteria were not met. Qualification of the sample results was not required because the overall quality of the data reported was not affected. Some of the QA/QC measurement criteria that were not met (but not inclusive of all exceedances noted) included the following:

Diesel-Range Petroleum Hydrocarbons Analyses

- The control criteria for the surrogate compound o-Terphenyl was not met in on CCV. No qualification was required for this exceedance because the recoveries of this surrogate compound in the associated samples were acceptable.
- The relative percent difference (RPD) criterion for the replicate analysis of all analytes in sample CTMW-7-0617 and CTMW-24D-0617 was not applicable. The analyte concentrations were not significantly greater than the MRL; therefore, meaningful RPDs cannot be calculated.

VOC Analyses

- The percent differences for selected target compounds were above the method-specific control limit of 20 percent in some CCVs. No data required qualification because more than 80 percent of the target compounds were within the 20 percent difference method-specific control limit allowed in Method 8260C (U.S. EPA 2017).
- For the analysis of VOCs by SIM, the RRF for 1,1,2,2-Tetrachloroethane was below the control limit of 0.300 in one CCV associated with the analysis of eight samples. Because sufficient sensitivity was shown to be adequate to detect this VOC if were present data quality was not significantly affected. No results were qualified at this time for this reason.
-

1,4-Dioxane Analyses

- Sample CTMW-5-0617 was re-extracted 8-days past the method holding time constraint due to low surrogate recovery reported for the initial extraction of this sample. Results for the initial extraction and analysis have been reported and qualified as discussed above.
- The recovery of the surrogate compound 1,4-Dioxane–d8 in the in the batch MS associated with the re-extraction of Sample CTMW-5-0617 below the lower laboratory-established control limit. No action was required for this reason because the surrogate recoveries for specific to the sample they are reported and the associated re-extraction results were not used.
- The RPD for 1,4-Dioxane for the recoveries between the batch MS/MSD associated with the re-extraction of Sample CTMW-5-0617 was above the applicable control limit. No action was required for this reason because the associated re-extraction results were not used.
- For the matrix spike complete on Sample CTMW-7-0617, the one MS recovery and three MSD recoveries were below the lower applicable laboratory-established control limit. Sample results are not qualified based solely on MS/MSD results (U.S. EPA 2008), so action was taken at this time.

In some instances, selected samples required dilution prior to analysis (as is required by the analytical methods) to obtain concentrations that were within the linear range of the instrument or to minimize the effects of matrix interferences to obtain reportable results.

This concludes the data validation review. Should you have any questions regarding the information presented herein, please contact me by telephone at 503.763.6948 or by e-mail at jjmcateer@msn.com.

Cordially,

QA/QC Solutions, LLC
James J. Mc Ateer, Jr., Managing Member

cc: Chris Waldron, Pioneer Technologies Corporation
Natasya Gray, L.G., Dalton, Olmsted & Fuglevand, Inc.

Attachments

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Table 1. Summary of Samples Collected and Analyses Completed for Tacoma Second Quarter 2017 Groundwater Sampling Event

Sample Number	Laboratory Sample Number	Sample Date	Sample Time	Sample Depth	Total Metals by 6020A	Total Mercury by 7470A	NWTPH-Gx by WDOE Method	NWTPH-Dx by WDOE Method	VOCs by 8260C	VOCS by 8260C SIM	1,4-Dioxane by 8270D SIM
Trip Blank #1-0617	K1705774-001	6/6/17	06:05	0			✓		✓	✓	
CTMW-14-0617	K1705774-002	6/6/17	07:11	9.5	✓	✓		✓	✓	✓	
CTMW-15-0617	K1705774-003	6/6/17	08:49	8.6	✓	✓		✓	✓	✓	✓
CTMW-25D-0617	K1705774-004	6/6/17	09:48	19.7	✓	✓		✓	✓	✓	✓
CTMW-20-0617	K1705774-005	6/6/17	10:39	6.6	✓	✓	✓	✓	✓	✓	
CTMW-18-0617	K1705774-006	6/6/17	11:20	11.8	✓	✓	✓	✓	✓	✓	✓
CTMW-7-0617	K1705774-007	6/6/17	12:00	25	✓	✓		✓	✓	✓	✓
CTMW-9-7-0617	K1705774-008	6/6/17	12:00	25	✓	✓		✓	✓	✓	✓
CTMW-8-0617	K1705774-009	6/6/17	13:13	8.5	✓	✓		✓	✓	✓	✓
CTMW-9-0617	K1705774-010	6/6/17	14:03	24	✓	✓		✓	✓	✓	✓
Trip Blank #2-0617	K1705774-011	6/7/17	06:00	0					✓	✓	
CTMW-5-0617	K1705774-012	6/7/17	06:45	9.95	✓	✓		✓	✓	✓	✓
CTMW-24-0617	K1705774-013	6/7/17	07:47	10.6	✓	✓		✓	✓	✓	✓
CTMW-24D-0617	K1705774-014	6/7/17	08:33	24	✓	✓		✓	✓	✓	✓
CTMW-12-0617	K1705774-015	6/7/17	09:26	26	✓	✓		✓	✓	✓	
CTMW-17D-0617	K1705774-016	6/7/17	10:16	28	✓	✓		✓	✓	✓	
CTMW-17-0617	K1705774-017	6/7/17	10:58	16	✓	✓		✓	✓	✓	
Field Blank #1-0617	K1705774-018	6/7/17	11:22	0	✓	✓		✓	✓	✓	✓
Total Number of Samples:					16	16	3	16	18	18	11

Notes

Dx - diesel-range and oil-range hydrocarbons
Gx - gasoline-range hydrocarbons
NWTPH - Northwest Total Petroleum Hydrocarbons
SIM - selected ion monitoring
VOC - volatile organic compound
WDOE - Washington Department of Ecology

Table 2. Summary of Qualified Data for Tacoma Second Quarter 2017 Groundwater Sampling Event[a]

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
Metals											
CTMW-14-0617	K1705774-002	Chromium	0.00011	mg/L	0.00020	0.00004	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-15-0617	K1705774-003	Zinc	0.0006	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L	False positive
CTMW-25D-0617	K1705774-004	Cadmium	0.000007	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.0009	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L	False positive
CTMW-20-0617	K1705774-005	Cadmium	0.000006	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Lead	0.000008	mg/L	0.000020	0.000002	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-7-0617	K1705774-007	Arsenic	0.00012	mg/L	0.00050	0.00003	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000009	mg/L	0.000020	0.000003	J	J	Concentration >MDL, <MRL	NA	Low or high
		Lead	0.000014	mg/L	0.000020	0.000004	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-9-7-0617	K1705774-008	Arsenic	0.00013	mg/L	0.00050	0.00003	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000009	mg/L	0.000020	0.000003	J	J	Concentration >MDL, <MRL	NA	Low or high
		Lead	0.000016	mg/L	0.000020	0.000004	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-8-0617	K1705774-009	Cadmium	0.000007	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.0005	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L	False positive
CTMW-9-0617	K1705774-010	Arsenic	0.00017	mg/L	0.00050	0.00003	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000006	mg/L	0.000020	0.000003	J	J	Concentration >MDL, <MRL	NA	Low or high
		Lead	0.000013	mg/L	0.000020	0.000004	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.00092	mg/L	0.00050	0.00007		U	Detected in field blank	Detected at 0.0004 mg/L	False positive
CTMW-24-0617	K1705774-013	Cadmium	0.000006	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Chromium	0.00015	mg/L	0.00020	0.00004	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.0010	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L	False positive
CTMW-24D-0617	K1705774-014	Zinc	0.0004	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L	False positive
CTMW-12-0617	K1705774-015	Arsenic	0.00031	mg/L	0.00050	0.00008	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-17D-0617	K1705774-016	Arsenic	0.00047	mg/L	0.00050	0.00008	J	J	Concentration >MDL, <MRL	NA	Low or high
		Cadmium	0.000018	mg/L	0.000020	0.000006	J	J	Concentration >MDL, <MRL	NA	Low or high
		Zinc	0.0007	mg/L	0.0020	0.0002	J	U	Detected in field blank	Detected at 0.0004 mg/L	False positive
Field Blank #1-0617	K1705774-018	Zinc	0.0004	mg/L	0.0020	0.0002	J	J	Concentration >MDL, <MRL	NA	Low or high
VOCs by GC/MS operated in full scan mode											
Trip Blank #1-0617	K1705774-001	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Iodomethane	0.19	ug/L	5.0	0.12	J	J	Concentration >MDL, <MRL	NA	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Methylene Chloride	0.14	ug/L	2.0	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-14-0617	K1705774-002	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Iodomethane	0.28	ug/L	5.0	0.12	J	U	Detected in method and trip blank	Detected at 0.28 ug/L (highest concentration)	False positive
CTMW-15-0617	K1705774-003	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Iodomethane	0.28	ug/L	5.0	0.12	J	U	Detected in method and trip blank	Detected at 0.28 ug/L (highest concentration)	False positive
CTMW-25D-0617	K1705774-004	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
CTMW-20-0617	K1705774-005	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Benzene	0.11	ug/L	0.50	0.062	J	J	Concentration >MDL, <MRL	NA	Low or high
		Chlorobenzene	0.23	ug/L	0.50	0.11	J	J	Concentration >MDL, <MRL	NA	Low or high

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		m,p-Xylene	0.13	ug/L	0.50	0.11	J	J	Concentration >MDL, <MRL	NA	Low or high
		Toluene	0.090	ug/L	0.50	0.054	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-18-0617	K1705774-006	1,1-Dichloroethane	0.10	ug/L	0.50	0.077	J	J	Concentration >MDL, <MRL	NA	Low or high
		Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		cis-1,2-Dichloroethene	0.070	ug/L	0.50	0.067	J	J	Concentration >MDL, <MRL	NA	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Tetrachloroethene	0.18	ug/L	0.50	0.099	J	J	Concentration >MDL, <MRL	NA	Low or high
		Trichloroethene	0.15	ug/L	0.50	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
		Methylene Chloride	0.14	ug/L	2.0	0.10	J	U	Detected in trip and field blank	Detected at 0.14 ug/L (highest concentration)	False positive
CTMW-7-0617	K1705774-007	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
CTMW-9-7-0617	K1705774-008	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Toluene	0.060	ug/L	0.50	0.054	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-8-0617	K1705774-009	1,1-Dichloroethane	ND	ug/L	0.50	0.077	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		1,1,1-Trichloroethane	ND	ug/L	0.50	0.075	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.11	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		1,1,2-Trichloroethane	ND	ug/L	0.50	0.14	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		1,2-Dichloropropane	ND	ug/L	0.50	0.095	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		1,2,3-Trichloropropane	ND	ug/L	0.50	0.20	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		2-Butanone	2.9	ug/L	20	1.9	J	J	Concentration >MDL, <MRL and recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	NA and Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low or high
		2-Chloroethyl Vinyl Ether	ND	ug/L	5.0	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		2-Hexanone	ND	ug/L	20	2.7	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		3-Chloro-1-propene	ND	ug/L	5.0	0.094	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		4-Methyl-2-pentanone	ND	ug/L	20	2.6	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Acetone	31	ug/L	20	3.3		J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01 and recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	RRF <0.01 and Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low or high
		Acrolein	ND	ug/L	20	1.2	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Acrylonitrile	ND	ug/L	5.0	0.53	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Benzene	0.090	ug/L	0.50	0.062	J	J	Concentration >MDL, <MRL and recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	NA and Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low or high
		Bromodichloromethane	ND	ug/L	0.50	0.091	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Bromoform	ND	ug/L	0.50	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Bromomethane	ND	ug/L	0.50	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Carbon Disulfide	ND	ug/L	0.50	0.069	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
		Chlorobenzene	ND	ug/L	0.50	0.11	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Chloroethane	ND	ug/L	0.50	0.16	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Chloroform	ND	ug/L	0.50	0.072	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Chloromethane	ND	ug/L	0.50	0.068	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		cis-1,2-Dichloroethene	ND	ug/L	0.50	0.067	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		cis-1,3-Dichloropropene	ND	ug/L	0.50	0.18	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Dibromochloromethane	ND	ug/L	0.50	0.14	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Dibromomethane	ND	ug/L	0.50	0.15	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Dichlorodifluoromethane	ND	ug/L	0.50	0.13	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Ethyl Methacrylate	ND	ug/L	5.0	0.15	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Ethylbenzene	ND	ug/L	0.50	0.050	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Iodomethane	ND	ug/L	5.0	0.12	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01 and recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	RRF <0.01 and Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low or high
		m,p-Xylene	ND	ug/L	0.50	0.11	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Methacrylonitrile	ND	ug/L	5.0	0.35	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Methylene Chloride	ND	ug/L	2.0	0.10	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		o-Xylene	ND	ug/L	0.50	0.074	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Tetrachloroethene	ND	ug/L	0.50	0.099	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Toluene	0.75	ug/L	0.50	0.054		J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		trans-1,2-Dichloroethene	ND	ug/L	0.50	0.072	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		trans-1,3-Dichloropropene	ND	ug/L	0.50	0.068	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		trans-1,4-Dichloro-2-butene	ND	ug/L	10	0.35	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Trichloroethene	ND	ug/L	0.50	0.10	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Trichlorofluoromethane	ND	ug/L	0.50	0.12	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
		Vinyl Acetate	ND	ug/L	0.50	0.43	U	J	Recovery of 1 of 3 surrogate compounds below lower laboratory-established control limit	Dibromofluoromethane at 52 percent and below lower control limit of 73 percent	Low
CTMW-9-0617	K1705774-010	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
Trip Blank #2-0617	K1705774-011	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Methylene Chloride	0.14	ug/L	2.0	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-5-0617	K1705774-012	1,1-Dichloroethane	0.12	ug/L	0.50	0.077	J	J	Concentration >MDL, <MRL	NA	Low or high
		Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Benzene	0.080	ug/L	0.50	0.062	J	J			
		cis-1,2-Dichloroethene	0.090	ug/L	0.50	0.067	J	J	Concentration >MDL, <MRL	NA	Low or high

Table 2, continued

Sample Number	Laboratory Sample Number	Chemical	Concentration	Units	MRL	MDL	Laboratory Data Flag	Data Validation Qualifier	Quality Control Reason	Quality Control Result	Possible Bias[b,c,d]
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
CTMW-24-0617	K1705774-013	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
CTMW-24D-0617	K1705774-014	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
CTMW-12-0617	K1705774-015	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
CTMW-17D-0617	K1705774-016	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
CTMW-17-0617	K1705774-017	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Tetrachloroethene	0.39	ug/L	0.50	0.099	J	J	Concentration >MDL, <MRL	NA	Low or high
		Toluene	0.060	ug/L	0.50	0.054	J	J	Concentration >MDL, <MRL	NA	Low or high
Field Blank #1-0617	K1705774-018	Acetonitrile	ND	ug/L	50	13	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Isobutyl Alcohol	ND	ug/L	100	6.9	U	J	RRF in calibration standards <0.01	RRF <0.01	Low or high
		Methylene Chloride	0.10	ug/L	2.0	0.10	J	J	Concentration >MDL, <MRL	NA	Low or high
VOCs by GC/MS operated in SIM mode											
CTMW-20-0617	K1705774-005	1,2-Dichloroethane	0.014	ug/L	0.20	0.0058	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-18-0617	K1705774-006	1,1-Dichloroethene	0.013	ug/L	0.020	0.0090	J	J	Concentration >MDL, <MRL	NA	Low or high
		1,2-Dichloroethane	0.052	ug/L	0.20	0.0058	J	J	Concentration >MDL, <MRL	NA	Low or high
		Vinyl Chloride	0.0089	ug/L	0.020	0.0046	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-8-0617	K1705774-009	Vinyl Chloride	0.0061	ug/L	0.020	0.0046	J	J	Concentration >MDL, <MRL	NA	Low or high
CTMW-5-0617	K1705774-012	Vinyl Chloride	0.0048	ug/L	0.020	0.0046	J	J	Concentration >MDL, <MRL	NA	Low or high
1,4-Dioxane by GC/MS operated in SIM mode											
CTMW-5-0617	K1705774-012	1,4-Dioxane	ND	ug/L	0.40	0.16	U	J	Surrogate recovery below lower laboratory-established control limit	1,4-Dioxane-d8 recovery at 58 percent	Low

Total results qualified "J" =	124
Total results qualified "U" =	10
Total results qualified "UJ" =	0
Total results qualified "R" =	0

Notes:

GC/MS - gas chromatography/mass spectrometry
J - estimated
MDL - method detection limit
MRL - method reporting limit
NA - not applicable
ND - not detected
SIM - selected ion monitoring
U - undetected at detection limit shown
VOC - volatile organic compound

[a] Summary of qualified data is for natural and field quality control samples only
[b] Low bias - concentration reported is exhibits low bias and the actual reporting limit or concentration may be greater than reported
[c] High bias - result reported exhibits high bias and the actual reporting limit or concentration may be lower than reported
[d] False positive - compound is likely not present