

December 3, 2020

Mr. Leo Hellested, P.E.
Office of Waste Management
Solid Waste Section
Rhode Island Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908-5767

Attn: Mr. Robert Schmidt

Re: **Quarterly Monitoring Report**
3rd Quarter (September) 2020, Surface Water and Groundwater Monitoring, Sampling, and Analysis
Tiverton Municipal Sanitary Landfill
Pare Project No.: 94139.25

Dear Mr. Hellested:

Enclosed herewith are results of the statistical analysis of groundwater monitoring data for the third quarterly monitoring round of Year 2020 from the Tiverton Landfill (Landfill). Pare Corporation has prepared this report on behalf of the Town of Tiverton (Town). Pare conducted groundwater gauging and sampling on September 28, 2020. June 2019 is the first quarterly monitoring period where OW-12 has been designated as a background well. OW-17 was installed as an additional background well in April 2019.

Due to unseasonably dry conditions, three (3) of the groundwater monitoring wells were found to be dry at the time of sample collection: background monitoring well OW-9 and compliance monitoring wells OW-14 and OW-15. As these monitoring wells did not contain measurable amounts of groundwater, samples were not collected. Groundwater samples were able to be collected at background wells OW-12 and OW-17, and compliance wells OW-7, OW-13, and OW-16.

Groundwater samples were analyzed by New England Testing Laboratory (NETLAB) of West Warwick, Rhode Island for the constituents listed in the Rhode Island Department of Environmental Management's (RIDEM's) *Solid Waste Regulations No.2, Solid Waste Landfills* (250-RICR-140-05-2), Section 2.3.26, *Constituents for Detection Monitoring*. Certified laboratory results data are enclosed as **Attachment 1** and are summarized on attached Table 1.

Groundwater field parameters consisting of temperature, pH, and specific conductivity were measured at each monitoring well, in accordance with the RIDEM-approved Groundwater Monitoring Plan for the Landfill. Field parameters were collected until three successive measurements stabilized within $\pm 3\%$ for temperature, ± 0.1 standard unit for pH, and $\pm 3\%$ for specific conductivity, in accordance with US EPA's Low-Flow (Minimal Drawdown) Groundwater Sampling Procedures. Field parameters are documented on Field Sampling Data Sheets, which are provided as **Attachment 2**.

Combustible gases are monitored at each well and at the top of the landfill. Each of the well locations, with the exception of OW-15, had no detections of combustible gas observed during this monitoring round. At OW-15 20% of the LEL was recorded. During the previous monitoring round in June 2020, OW-15 had a methane reading of $>99\%$ the Lower Explosive Limit (LEL). Historically, combustible gas monitoring during quarterly groundwater monitoring events had not resulted in detections of LEL exceedances until March 2019, when OW-15 produced a concentration of combustible gases at 44% of the LEL. Subsequent monitoring has resulted in continually increasing



LEL fractions being detected, with readings >99% of the LEL observed during March and June 2020. During the previous monitoring round, the cap on OW-15's standpipe was adjusted to allow for ventilation. Venting the cap, appears to have been effective at reducing the LEL readings at this location; however further monitoring is warranted to determine whether this reduction of combustible gases is a result of allowing the standpipe to vent or is related to drought conditions observed in the field. The results of surface water and groundwater sampling and analysis are summarized in the following section.

HUMAN HEALTH THRESHOLD EVALUATION

Background Well OW-9 – OW-9 was observed to be dry in the field and a sample could not be collected.

Background Well OW-12 – Nine (9) target metals were reported in the groundwater sample collected from OW-12 above the laboratory detection limits. One (1) targeted metal, lead (0.0601 mg/L) was detected above the corresponding MCL of 0.015 mg/L at OW-12. No (0) target VOCs were reported above laboratory detection limits at OW-12.

Background Well OW-17 – Eight (8) target metals were reported in the groundwater sample collected from OW-17 above the laboratory detection limits. None (0) of the detected target metals were reported above their corresponding MCLs or human health thresholds at OW-17. No (0) target VOCs were reported above laboratory detection limits at OW-17.

Compliance Well OW-7 – Twelve (12) target metals were reported in the groundwater sample collected from OW-7 above the laboratory detection limits. One targeted metal, lead (0.0209 mg/L) was detected above the corresponding MCL of 0.015 mg/L at OW-7. No (0) target VOCs were reported above laboratory detection limits at OW-7.

Compliance Well OW-13 – Thirteen (13) target metals were reported in the groundwater sample collected from OW-13 above laboratory detection limits. One target metal, cadmium (0.0112 mg/L), was detected in excess of the MCL of 0.005 mg/L. Two (2) target VOCs; 1,4-dichlorobenzene and chlorobenzene; were detected above the laboratory detection limits but below the applicable MCLs and human health threshold values. No (0) other target VOCs were reported above laboratory detection limits at OW-13.

Compliance Well OW-14 – OW-14 was observed to be dry in the field and a sample could not be collected.

Compliance Well OW-15 – OW-15 was observed to be dry in the field and a sample could not be collected.

Compliance Well OW-16 – Nine (9) target metals were reported in the groundwater sample collected from OW-16 above laboratory detection limits. None (0) of the detected target metals were reported above their corresponding MCLs or human health thresholds at OW-16. No (0) target VOCs were reported above laboratory detection limits at OW-16.

TOLERANCE INTERVAL STATISTICAL EVALUATION

The Tolerance Interval (TI) approach was used to develop Tolerance Limits (TLs) for each target inorganic constituent (i.e., metals) using the background well analytical results from the eight preceding rounds for which analytical results are available. The data from OW-12, recently designated as a background well, was included in a re-evaluation of background TLs beginning with the June 2020 monitoring period. Due to occasional inability to sample one or more background wells, data from the present monitoring period through December 2016 were utilized to calculate applicable background TLs. The TI approach is considered inappropriate for analysis of organic constituents due to their presence being the result of anthropogenic activities. The TL for organic constituents is therefore presumed to be zero (i.e., not present); however, laboratory detection limits are unable to reach this level of



certainty and as such, this method is not applicable to organic constituents and was therefore not performed to evaluate the results of reported VOCs.

Three (3) metals; barium, cadmium, and lead; had reported concentrations that exceeded their corresponding TLs calculated during the September 2020 monitoring round in at least one compliance well. Additionally, barium was detected in background monitoring well OW-12 in excess of the calculated TL, and lead was detected in background monitoring well OW-12 in excess of both the calculated TL and the MCL. In total, there were six (6) TL exceedances of these metals in this monitoring round. The TLs and the corresponding compliance well data from this monitoring round are presented in Table 2. Barium was also detected in compliance wells OW-7 and OW-13 in excess of the calculated TL. Cadmium was detected in compliance well OW-13 in excess of the MCL and is routinely detected in groundwater at the landfill and at OW-13. Lead was detected at OW-7 in excess of the MCL; detectable concentrations of lead are routinely detected in compliance well OW-7; however, an exceedance of the MCL has not been detected since June 2011.

As indicated previously, several groundwater monitoring wells; background monitoring well OW-9 and compliance groundwater monitoring wells OW-13 and OW-14, were dry during this monitoring period due to unusual drought conditions. According to the National Oceanic and Atmospheric Administration (NOAA), average precipitation in Tiverton, Rhode Island is roughly 48-inches per year, with an average of 3.7-inches of precipitation during the month of September. During this monitoring period, less than 1-inch of precipitation was measured over the month of September 2020. Additionally, drought conditions were observed during the previous monitoring round, in June 2020. Since the previous monitoring period, approximately 2.95-inches of precipitation were measured in Tiverton, significantly below the average of 10.32-inches of precipitation historically observed during this period (July – September 2020). Precipitation measurements from the nearest NOAA monitoring station for the months of July through September 2020 are provided as **Attachment 4**.

According to the United States Geologic Survey (USGS)¹, a reduction in groundwater volume may result in less naturally-occurring dilution of products of rock weathering, resulting in an increased concentration of these products observed in groundwater samples and the potential absence or availability of different metals due to the changes in geologic conditions caused by drought. The changes observed in background monitoring well OW-12 appear to be consistent with the USGS information.

CUSUM METHOD STATISTICAL EVALUATION

The Shewhart-CUSUM Method, a supplemental statistical analysis method used in addition to the TI Method, was performed in accordance with the US EPA documents titled "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Interim Final Guidance, April 1989" and "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Addendum to Interim Final Guidance, July, 1992". Graphs of CUSUM values for inorganic metals for each observation well is shown on **Attachment 3**. Due to revised laboratory analytical methodology, the laboratory method detection limits for the parameters have been significantly lowered since the initial calculation of CUSUM parameters. As such, these values were recalculated to adjust for lowered method detection limits, and the CUSUM values for any parameters that exceeded the 1/2 limit of 5 standard deviations were reset to zero at the June 2019 sampling round to evaluate changes to CUSUM values that have occurred within the past year to date. OW-7 and OW-9 have also been incorporated into the Shewhart-CUSUM model as of the previous monitoring round in June 2020.

Barium and lead in background monitoring well OW-12 exceeded their Shewhart-CUSUM thresholds during the September 2020 monitoring round. As indicated in the previous section, this appears to be due to drought conditions

¹ Bexfield, L. (2020). Metals and Other Trace Elements. Retrieved October 6, 2020, from https://www.usgs.gov/mission-areas/water-resources/science/metals-and-other-trace-elements?qt-science_center_objects=0



observed in the field at the time of sample collection. Groundwater at OW-12 during the September 2020 monitoring round was encountered at 15.52-feet below ground surface (BGS), an approximate 10-foot decrease in elevation compared to the previous monitoring round (5.43-feet BGS in June 2020). Additionally, the water column at OW-12 was less than ½-foot from the bottom of the well and purging of the well using a peristaltic pump caused the well to go dry. Upon allowing the well to recharge for roughly 15-minutes, the remaining three (3) well volumes of groundwater were purged *via* hand-bailing, which may have resulted in disturbance of excess sediments. Pare will continue to monitor background monitoring well and precipitation conditions to determine whether these results are representative of groundwater conditions at background monitoring well OW-12.

The Shewhart-CUSUM models between OW-16 and OW-7 indicate a greater degree of impact to OW-7 from metals, specifically arsenic, cadmium, copper, lead and zinc, compared with OW-16. No compounds exceeded their respective Shewhart-CUSUM thresholds in these wells, and no other Shewhart-CUSUM threshold exceeds were identified in groundwater monitoring wells sampled during this monitoring round.

ASSESSMENT MONITORING

The Shewhart-CUSUM analysis is utilized, along with the Tolerance Limits, to identify when Assessment Monitoring should be performed. In accordance with the May 2006 Groundwater Monitoring Plan, Assessment Monitoring is triggered if:

1. An inorganic parameter exceeds the upper Tolerance Limit in two (2) consecutive rounds *and* that parameter exceeds one of the two (2) Shewhart-CUSUM control limits in the latter monitoring round; or
2. An organic parameter exceeds one of the two Shewhart-CUSUM control limits.

The above conditions were not observed during the previous groundwater monitoring round in June 2020, and as such, assessment monitoring was not performed this round. Exceedances of the Shewhart-CUSUM thresholds were detected for barium and lead in background monitoring well OW-12 during the current monitoring round, and both compounds were also identified in excess of the Tolerance Limit in OW-12 during the current monitoring round. Based on this information, an evaluation of the need for assessment monitoring will be performed upon completion of the December 2020 monitoring round.

SURFACE WATER MONITORING

Per the request of the RIDEM in a letter dated January 31, 2019, the Town began incorporating surface water monitoring at surface water locations SW-1, SW-2, and SW-3 into the existing regular quarterly monitoring program. The parameters for surface water monitoring include: Solid Waste Regulations No. 2, Section 2.3.26: *Detection Monitoring* metals, mercury, tin, iron, calcium, magnesium, ammonia, total Kjeldahl nitrogen (TKN), total nitrogen, total phosphorus, and hardness. During the September 2020 monitoring round, the surface water sampling locations were observed to be dry and samples could not be collected. Photographs of the sampling locations were collected and are provided below.



Monitoring Location SW-1:



Normally a stagnant or slightly flowing body of water several inches deep, no surface water was present at SW-1 for sample collection. Soils in the lower elevation areas near SW-1 were observed in the field to be moist.

Monitoring Location SW-2:



Normally a running stream, no surface water was present at SW-2 for sampling collection.

Monitoring Location SW-3:

Normally a stagnant or slightly flowing stream/marsh, no surface water was present at SW-3 for sample collection. Soils at the lower elevation areas near SW-3 were observed in the field to be moist.

During the June 2020 monitoring round, conditions at the surface water sample locations were indicative of reduced surface water presence and flow. Pare opined that ongoing drought conditions were affecting the sample locations and the analytical results received, which produced higher concentrations of several targeted analytes than have previously been observed. Pare sought to compare the June 2020 analysis with the September 2020 round; however, samples could not be collected during the September 2020 monitoring round. The conditions observed during the September 2020 monitoring round appear to support the opinion presented in the June 2020 monitoring report; however, additional sample analysis is needed to further confirm that drought conditions contributed to an increase in targeted analyte concentrations observed during the June 2020 monitoring round. Pare is anticipating that samples will be able to be obtained during the December 2020 monitoring round.

MTBE ANALYSIS

Many of the most recent Assessment Monitoring rounds have been conducted due to MTBE concentrations in groundwater. Reported MTBE concentrations have generally risen since September 2006, as depicted in **Attachment 5**. Graph 1 in **Attachment 5** compares the recent increases in reported MTBE data from September 2006 to September 2020, while Figure 2 compares the MTBE concentrations detected at OW-7 and OW-16 since November 2017. MTBE concentrations are compared to historical concentrations and drinking water advisories defined in the US EPA document titled “2011 Edition of the Drinking Water Standards and Health Advisories”.

Although reported MTBE concentrations appeared to be trending slowly upward, MTBE has never been reported above its odor threshold (0.020 mg/L) or its taste threshold (0.040 mg/L). The US EPA has not established a human health advisory concentration for MTBE.



Since the beginning of quarterly monitoring in 2018, concentrations of MTBE now appear to be stabilizing in OW-13, OW-14, and OW-15, with all detected concentrations during the June 2020 round being lower than the highest concentrations historically detected at each well and well below the odor and taste thresholds as well as being below the RIDEM GA Groundwater Objectives. During the September 2020 monitoring round, OW-14 and OW-15 were observed to be dry in the field and samples could not be collected. Remaining wells sampled during the September 2020 monitoring round did not produce detectable concentrations of MTBE.

Despite CUSUM values of MTBE at OW-13, OW-14, and OW-15 remaining above their threshold during the September 2020 monitoring round, Pare does not recommend Assessment Monitoring due to the aforementioned MTBE trend. The lack of Section 2.3.27 parameters in the past suggests that the presence of MTBE trend does not indicate an increased likelihood that Section 2.3.27 parameters would be present beneath the Landfill.

MTBE concentrations at OW-7 and OW-16 appear to be relatively similar and trending toward an overall decrease in concentration. The data appears to indicate a hydrogeological connection between the overburden and bedrock groundwater aquifers in this area, as well as seasonal fluctuations in concentrations of MTBE, which appear to increase during the winter months at OW-16 while decreasing at OW-7, and decrease during the summer months at OW-16 while increasing at OW-7. Of note, MTBE was not detected during the September 2020 monitoring round.

The absence of detectable MTBE concentrations in groundwater at the Landfill during the September 2020 monitoring round is thought to be related to the depressed groundwater elevations observed across the Landfill during this monitoring round, likely related to drought conditions. Should drought conditions be alleviated, Pare expects to find detectable concentrations of MTBE in future monitoring events.

CONCLUSIONS AND RECOMMENDATIONS

Currently, the Town conducts Detection Monitoring at the Landfill for the parameters listed in Section 2.3.26 of the State Solid Waste Regulations, as well as mercury and tin. During this monitoring round, three (3) metals; barium, cadmium, and lead; exceeded their tolerance limits (TLs) in at least one well. Additionally, while compliant with the Site-specific TL, the concentrations of cadmium detected at OW-13 and lead detected at OW-7 exceeded the MCL. Concentrations of barium and lead were also detected in excess of the Site-specific TL at background monitoring well OW-12, with the concentration of lead also exceeding the MCL. Based on the ongoing drought conditions observed during the past two (2) monitoring rounds, Pare is of the opinion that continued detection monitoring, including at least one (1) round performed subsequent to drought relief, will be conducted prior to determining whether assessment monitoring should be implemented. Historically, barium, cadmium and lead have been routinely detected in groundwater at the Site, and past assessment monitoring due to an influx of these compounds in groundwater has not been indicative of the presence of additional Section 2.3.27 parameters. As such, Pare is of the opinion that Assessment Monitoring is not warranted for the December 2020 monitoring round.

Several parameters in surface water were identified during the June 2020 monitoring round in excess of previous concentrations detected as well as applicable human health thresholds and/or freshwater aquatic life criteria. Specifically, arsenic, iron, lead and zinc were detected in excess of one or more criteria in all three (3) surface water samples, and chromium, barium and copper were detected in excess of one or more criteria in SW-3. Concentrations of detected parameters were, on average, higher than previously detected in all three (3) surface water samples. Pare is of the opinion that below average precipitation and the resulting stagnation and anaerobic conditions generated because of the absence of precipitation resulted in excess microbial respiration at the sample locations, resulting in the generation of metal ions and inorganic metal compounds that were subsequently present in the sample at the time of sample collection. Pare attempted to conduct the September 2020 monitoring round between 24- and 72-hours after a significant storm event occurred, however less than 1-inch of rain occurred during the entire month of September and this could not be completed. During the September 2020 monitoring event, the surface water sampling locations were observed to be dry, and no samples could be collected.



Mr. Leo Hellested, P.E.

(8)

December 3, 2020

Pare recommended that wells OW-7 and OW-16 be incorporated into the compliance monitoring regimen in the 2017 Annual Groundwater Monitoring Report. Despite OW-7 having several years of sampling data, the sampling rounds were selected on a rotating basis with wells OW-6 and OW-8 for alternate monitoring. Pare recommended that wells OW-7 and OW-16 be sampled for two years, or eight consecutive monitoring rounds, prior to initiating statistical analysis. The June 2020 monitoring round marked the eighth consecutive round of sampling, and the initial statistical analyses was presented in the June 2020 report. During the September 2020 monitoring round, laboratory analysis of these sampling locations did not identify detectable concentrations of MTBE, which have historically been detected in both OW-7 and OW-16. Pare is of the opinion that drought conditions contributed to the absence of MTBE in groundwater during this monitoring round, and that future monitoring will produce detectable MTBE concentrations in these wells upon alleviation of the drought.

Historically, methane has not been an issue at the landfill; however, the last four (4) monitoring rounds have seen methane detections at monitoring well OW-15, including a >99% LEL reading in June 2020 and a 20% LEL during September 2020. Adjusting the cap at OW-15 to allow for ventilation has been effective at reducing the LEL values measured at this well. Compliance well OW-15 is almost 400 feet from the nearest property line and given that no other wells had combustible gases at detectable levels, it does not appear that this occurrence of combustible gases warrants immediate action.

Should the RIDEM have any questions regarding this letter or the attached data, please feel free to contact the undersigned at (401) 334-4100, thank you.

Very truly yours,

Timothy P. Thies, P.E.
Senior Vice President

TPT/AWB/abv

Attachments

Figure 1 – Site Plan Depicting Notable Features and Sampling Locations

Table 1 – Historical Analytical Data, Observation Wells

Table 2 – Tolerance Intervals for September 2020 Monitoring Period

Attachment 1 – Laboratory Analytical Report, Observation Well Sampling

Attachment 2 – Field Sampling Data Sheets, Surface Water and Observation Water Logs

Attachment 3 – Shewhart/CUSUM Graphs for Inorganic Compounds, Observation Wells

Attachment 4 – July, August and September 2020 Precipitation Data, Tiverton, RI

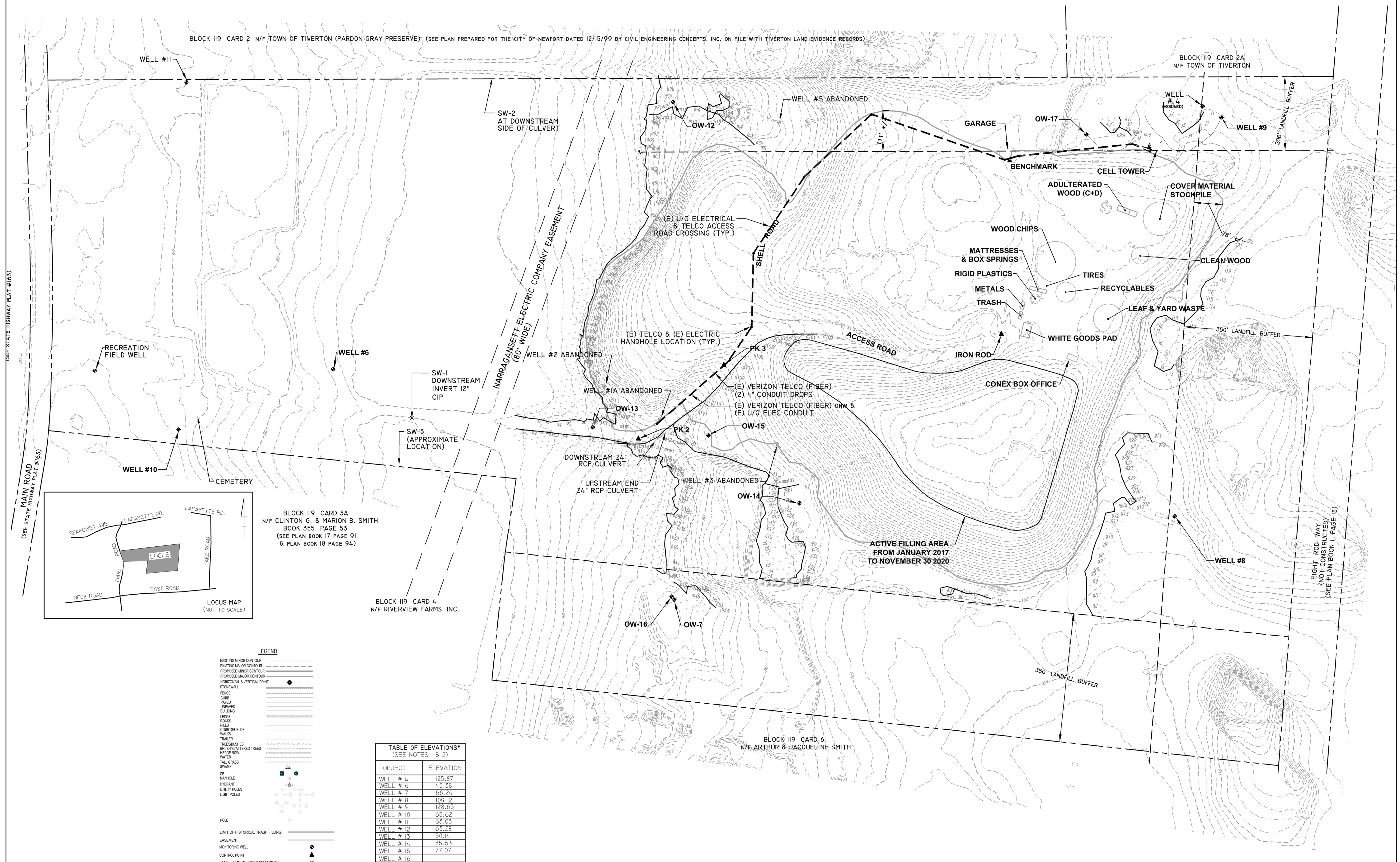
Attachment 5 – MTBE Historical Concentration Graphs

Cc: Richard Rogers, Tiverton Public Works Director (w/encl.)
Jay Lambert, Tiverton Landfill Subcommittee (w/encl.)
Christopher Cotta, Tiverton Town Administrator (w/encl.)
Arianne Barton, Pare Corporation (w/o encl.)

FIGURE 1

Site Plan Depicting Notable Features and Sampling Locations





BLOCK 119 CARD 2 N/F TOWN OF TIVERTON (PARDON GRAY PRESERVE) (SEE PLAN PREPARED FOR THE CITY OF NEWPORT DATED 12/15/99 BY CIVIL ENGINEERING CONCEPTS, INC. ON FILE WITH TIVERTON LAND EVIDENCE RECORDS)

BLOCK 119 CARD 2A N/F TOWN OF TIVERTON

BLOCK 119 CARD 3A
N/F CLINTON G. & MARION B. SMITH
BOOK 355 PAGE 53
(SEE PLAN BOOK 17 PAGE 91
& PLAN BOOK 18 PAGE 94)

BLOCK 119 CARD 4
N/F RIVERVIEW FARMS, INC.

BLOCK 119 CARD 6
N/F ARTHUR & JACQUELINE SMITH

LEGEND

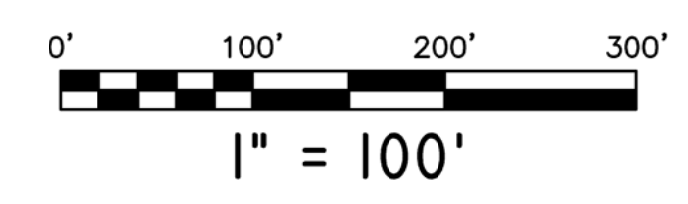
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- HORIZONTAL & VERTICAL POINT
- STONEWALL
- FENCE
- CURB
- PAVED
- UNPAVED
- BUILDING
- LEDGE
- ROCKS
- PILES
- COURTSPLEADS
- MARKS
- TRAILER
- TREES/SHRUBS
- BUSHES/SCATTERED TREES
- EDGE ROW
- WATER
- TALL GRASS
- SWAMP
- CB
- MARKS/LE
- MONUMENT
- UTILITY POLES
- LIGHT POLES
- POLE
- LIMIT OF HISTORICAL TRASH FILLING
- EASEMENT
- MONITORING WELL
- CONTROL POINT
- STAKE = LIMIT OF BURIED SOLID WASTE
- WETLAND
- 50' PERIMETER WETLAND

TABLE OF ELEVATIONS*
(SEE NOTES 1 & 2)

OBJECT	ELEVATION
WELL # 4	125.87
WELL # 6	65.58
WELL # 7	66.26
WELL # 8	109.12
WELL # 9	128.65
WELL # 10	65.62
WELL # 11	65.03
WELL # 12	63.28
WELL # 13	50.14
WELL # 14	85.65
WELL # 15	77.07
WELL # 16	
WELL # 17	
PK NAIL # 2	57.49
PK NAIL # 3	84.11
BENCHMARK	137.96

* ALL WELL ELEVATIONS ARE TO THE TOP OF THE FVC TUBE INSIDE THE WELL CASING.

DATUM = NGVD 29
BASE SURVEY PREPARED BY AEROTECH CORP. ON MAY 13, 2016,
UPDATED BY PARE ON FEBRUARY 9, 2018.



PROJECT NO.	DESIGNED:	DRAWN:	CHECKED:	SCALE:	DATE:
94139.01/025	BMB	TCJ	TPT	1"=100'	MARCH 2020
FIGURE NO.	TIVERTON LANDFILL EXISTING SITE PLAN				
SHEET 1 OF 1	TIVERTON RHODE ISLAND				
DATE	BY	DESCRIPTION	REV#		

TABLE 1

Historical Analytical Data, Observation Wells



TABLE 1
SUMMARY OF GROUNDWATER MONITORING RESULTS
CONSTITUENTS FOR DETECTION MONITORING
MONITORING WELL OW-7
 Concentration (expressed in same units as Threshold Value)

Parameter	Threshold Value	Sep-20	Jun-20	Mar-20	Dec-19	Jun-19	Mar-19	Dec-18	Sep-18	Jun-18	Mar-18	Nov-17	Sep-17	Mar-17	Mar-16	Sep-16	Mar-15
Metals																	
Antimony	0.006 mg/L ¹	0.0002	ND	ND	NT	0.0002	0.0002	0.001	ND	ND	ND	ND	ND	0.0070	ND	ND	ND
Arsenic	0.010 mg/L ¹	ND	0.0001	ND	NT	0.0001	0.0002	ND	ND	0.0100	ND	ND	ND	ND	0.0070	ND	ND
Barium	2 mg/L ¹	0.09	0.025	0.033	NT	0.0270	0.0340	0.0400	0.0540	0.0280	0.0380	0.0350	0.0330	0.0380	0.0390	0.0300	0.0330
Beryllium	0.004 mg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	0.005 mg/L ¹	0.0034	0.0004	0.0005	NT	0.0005	0.0007	ND	0.004	ND	ND	ND	ND	0.0010	ND	0.0010	ND
Chromium	0.1 mg/L ¹	0.0016	ND	0.0001	NT	0.0008	0.0011	0.0040	0.0180	0.0040	0.0050	0.0050	0.0040	0.0060	ND	ND	ND
Cobalt	0.73 mg/L ⁵	0.0018	0.0029	0.0072	NT	0.0078	0.0090	0.0200	0.0220	0.0150	0.0190	0.0180	0.0180	0.0250	0.0280	0.0200	0.0250
Copper	1.3 mg/L ¹	0.004	ND	ND	NT	0.002	0.002	ND	0.03	ND	ND	0.0050	ND	0.0060	0.0060	0.0080	0.0250
Lead	0.015 mg/L ¹	0.0209	0.0011	0.0003	NT	0.0008	0.0013	ND	0.006	ND	ND	ND	ND	ND	ND	0.0010	0.0050
Mercury	0.002 mg/L ¹	ND	ND	ND	NT	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	0.1 mg/L ²	0.003	0.004	0.009	NT	0.0090	0.0110	0.0220	0.0320	0.0180	0.0210	0.0210	0.0190	0.0250	ND	0.0200	0.0240
Selenium	0.05 mg/L ¹	ND	ND	ND	NT	ND	ND	0.005	ND	ND	0.0100	ND	0.0030	ND	0.1070	0.0070	0.1880
Silver	0.1 mg/L ^{2, 3}	0.0001	ND	ND	NT	ND	0.0002	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	0.002 mg/L ¹	0.0002	ND	ND	NT	ND	ND	0.0003	ND	ND	0.0003	ND	ND	ND	ND	ND	ND
Tin	22 mg/L ⁵	ND	ND	ND	NT	ND	ND	ND	0.016	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	0.26 mg/L ⁵	0.001	ND	ND	NT	0.0009	0.0013	ND	0.016	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	2 mg/L ^{2, 3}	0.004	0.002	0.004	NT	0.0070	0.0060	0.0180	0.0850	0.0140	0.0180	0.0200	0.0120	0.0210	0.0050	0.0120	0.0060
Volatile Organic Compounds																	
1,1,1,2-Tetrachloroethane	70 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.2 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5 µg/L ^b	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	7 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.03 µg/L ⁷	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	0.2 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.05 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	µg/L	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	610 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	5.8	ND	ND	ND
Acrylonitrile	0.039 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	90 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromoform	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Bromomethane	10 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	1000 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroethane	4.6 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	5 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.27 µg/L ^{6, 8}	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	61 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl butyl ketone (2-Hexanone)	160 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	4000 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	µg/L	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether (MTBE)	20 - 40 µg/L ⁴	ND	2	4	NT	3.01	4.0	6.38	4.87	3.56	6.80	5.9	5.36	10.3	8.8	ND	ND
Methylene chloride	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Styrene	100 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	4.9	ND
Tetrachloroethylene (PCE)	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	1000 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	100 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.27 µg/L ^{6, 8}	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/L	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	2000 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	410 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	2 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes	10000 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

☐ = Concentration exceeds the specified Threshold Value

Note: Low flow purging and sampling used starting with the June 2005 monitoring round

1. Threshold value given is the Maximum Contaminant Level (MCL) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
5. Threshold value given is the Preliminary Remedial Goal (PRG) for tap water, as provided in the October 2002 USEPA Region 9 PRGs Table 2002 Update
6. Threshold value given is derived from the EPA's National Recommended Water Quality Criteria for Human Health for the consumption of water and organisms, amended 2015.
7. Threshold value given is derived from the EPA's Unregulated Contaminant Monitoring Rule's minimum reporting levels.

a. The Threshold value given for these compounds is the threshold value for a mixture of isomers. For example, cis- and trans-1,3-dichloropropene were not identified as having individual threshold values, however 1,3-dichloropropene was identified as having a numerical value under the National Recommended Water Quality Criteria for Human Health for consumption of water and organisms. As such, the value for total 1,3-dichloropropene was used as the threshold value for the cis- and trans- isomers. The total of the two (2) isomers should not exceed this value even if each individual isomer is present at a concentration below the provided threshold value.

b. No threshold value was identified for 1,1-dichloroethane, however due to the molecular similarities between this compounds and 1,2-dichloroethane, the threshold value for 1,2-dichloroethane is used for reference purposes.


No threshold value has been provided for parameters not identified in the sources listed above

☐ = One half of the laboratory detection limit "DL"

NT = Not Tested due to dry conditions at well.

TABLE 1
SUMMARY OF GROUNDWATER MONITORING RESULTS
CONSTITUENTS FOR DETECTION MONITORING
MONITORING WELL OW-16
Concentration (Expressed in same units as Threshold Value)

Parameter	Threshold Value	Sep-20	Jun-20	Mar-20	Dec-19	Jun-19	Mar-19	Dec-18	Sep-18	Jun-18	Mar-18	Nov-17
Metals												
Antimony	0.006 mg/L ¹	0.0003	0.0002	ND	NT	ND	ND	ND	ND	0.002	ND	ND
Arsenic	0.010 mg/L ¹	ND	0.0001	ND	NT	ND	ND	ND	ND	0.01	ND	ND
Barium	2 mg/L ¹	0.021	0.006	0.009	NT	0.008	0.014	0.017	0.027	0.011	0.0190	0.1000
Beryllium	0.004 mg/L ¹	ND	ND	ND	NT	0.0002	0.0001	ND	ND	ND	ND	ND
Cadmium	0.005 mg/L ¹	0.0003	ND	0.0002	NT	0.0002	0.0003	ND	ND	ND	ND	ND
Chromium	0.1 mg/L ¹	0.0004	0.0003	ND	NT	ND	ND	0.003	0.003	0.004	0.0060	0.0050
Cobalt	0.73 mg/L ⁵	0.0005	0.0006	0.0007	NT	0.0009	0.0008	0.006	0.004	0.002	0.0050	0.0050
Copper	1.3 mg/L ¹	0.001	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Lead	0.015 mg/L ¹	0.0007	0.0008	ND	NT	ND	ND	ND	ND	ND	ND	ND
Mercury	0.002 mg/L ¹	ND	ND	ND	NT	ND	ND	ND	NT	ND	ND	ND
Nickel	0.1 mg/L ²	0.001	0.002	0.002	NT	0.002	0.002	0.013	0.01	0.009	0.0100	0.0100
Selenium	0.05 mg/L ¹	ND	ND	ND	NT	ND	ND	0.009	0.003	ND	0.0100	0.0050
Silver	0.1 mg/L ²⁻³	ND	0.0001	ND	NT	ND	0.0001	ND	ND	ND	ND	ND
Thallium	0.002 mg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	0.0003	ND
Tin	22 mg/L ⁵	ND	ND	ND	NT	ND	ND	ND	NT	ND	ND	ND
Vanadium	0.26 mg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Zinc	2 mg/L ²⁻³	0.004	0.002	0.003	NT	0.004	0.004	0.025	0.019	0.022	0.024	0.0210
Volatile Organic Compounds												
1,1,1,2-Tetrachloroethane	70 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	200 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.2 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	5 µg/L ^b	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethylene	7 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	0.03 µg/L ⁷	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	0.2 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane	0.05 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	600 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
1,4-Dichlorobenzene	75 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	µg/L	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Acetone	610 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Acrylonitrile	0.039 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Benzene	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Bromochloromethane	90 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Bromodichloromethane	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Bromoform	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Bromomethane	10 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	1000 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Carbon tetrachloride	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	100 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Chlorodibromomethane	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Chloroethane	4.6 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Chloroform	80 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Chloromethane	3 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethylene	70 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	0.27 µg/L ^{6-a}	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Dibromomethane	61 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	700 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Methyl butyl ketone (2-Hexanone)	160 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	4000 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Methyl iodide	µg/L	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether (MTBE)	20 - 40 µg/L ⁴	ND	1	ND	NT	4.9	4.67	3.77	3.42	6.53	7.8	4.6
Methylene chloride	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Styrene	100 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethylene (PCE)	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Toluene	1000 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Trans-1,2-Dichloroethylene	100 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	0.27 µg/L ^{6-a}	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/L	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Trichloroethylene (TCE)	5 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	2000 µg/L ²	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Vinyl acetate	410 µg/L ⁵	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	2 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND
Xylenes	10000 µg/L ¹	ND	ND	ND	NT	ND	ND	ND	ND	ND	ND	ND

 = Concentration exceeds the specified Threshold Value

1. Threshold value given is the Maximum Contaminant Level (MCL) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
5. Threshold value given is the Preliminary Remedial Goal (PRG) for tap water, as provided in the October 2002 USEPA Region 9 PRGs Table 2002 Update
6. Threshold value given is derived from the EPA's National Recommended Water Quality Criteria for Human Health for the consumption of water and organisms, amended 2015.
7. Threshold value given is derived from the EPA's Unregulated Contaminant Monitoring Rule's minimum reporting levels.

a. The Threshold value given for these compounds is the threshold value for a mixture of isomers. For example, cis- and trans-1,3-dichloropropylene were not identified as having individual threshold values, however 1,3-dichloropropylene was identified as having a numerical value under the National Recommended Water Quality Criteria for Human Health for consumption of water and organisms. As such, the value for total 1,3-dichloropropylene was used as the threshold value for the cis- and trans- isomers. The total of the two (2) isomers should not exceed this value even if each individual isomer is present at a concentration below the provided threshold value.

b. No threshold value was identified for 1,1-dichloroethane, however due to the molecular similarities between this compounds and 1,2-dichloroethane, the threshold value for 1,2-dichloroethane is used for reference purposes.

No threshold value has been provided for parameters not identified in the sources listed above

" " = One half of the laboratory detection limit "DL"

NT = Not Tested due to dry conditions at well.

TABLE 1
SUMMARY OF GROUNDWATER MONITORING RESULTS
APPENDIX A - CONSTITUENTS FOR DETECTION MONITORING
MONITORING WELL OW-17
Concentration (expressed in same units as Threshold Value)

Parameter	Threshold Value	Sep-20	Jun-20	Mar-20
Metals				
Antimony	0.006 mg/L ¹	0.0002	0.0001	0.0001
Arsenic	0.010 mg/L ¹	0.0002	0.0002	0.0002
Barium	2 mg/L ¹	0.021	0.016	0.018
Beryllium	0.004 mg/L ¹	ND	ND	ND
Cadmium	0.005 mg/L ¹	ND	ND	ND
Chromium	0.1 mg/L ¹	0.0005	0.0006	0.0006
Cobalt	0.73 mg/L ⁵	0.0005	0.0005	0.0005
Copper	1.3 mg/L ¹	ND	ND	ND
Lead	0.015 mg/L ¹	0.0072	0.0052	0.0024
Mercury	0.002 mg/L ¹	ND	ND	ND
Nickel	0.1 mg/L ²	ND	0.001	0.001
Selenium	0.05 mg/L ¹	ND	ND	ND
Silver	0.1 mg/L ^{2,3}	ND	ND	ND
Thallium	0.002 mg/L ¹	ND	ND	ND
Tin	22 mg/L ⁵	ND	ND	0.007
Vanadium	0.26 mg/L ⁵	0.0006	0.0007	0.0006
Zinc	2 mg/L ^{2,3}	0.005	0.005	0.008
Volatile Organic Compounds				
1,1,1,2-Tetrachloroethane	70 µg/L ²	ND	ND	ND
1,1,1-Trichloroethane	200 µg/L ¹	ND	ND	ND
1,1,2,2-Tetrachloroethane	0.2 µg/L ²	ND	ND	ND
1,1,2-Trichloroethane	5 µg/L ¹	ND	ND	ND
1,1-Dichloroethane	5 µg/L ^b	ND	ND	ND
1,1-Dichloroethylene	7 µg/L ¹	ND	ND	ND
1,2,3-Trichloropropane	0.03 µg/L ⁷	ND	ND	ND
1,2-Dibromo-3-chloropropane	0.2 µg/L ¹	ND	ND	ND
1,2-Dibromoethane	0.05 µg/L ¹	ND	ND	ND
1,2-Dichlorobenzene	600 µg/L ¹	ND	ND	ND
1,2-Dichloroethane	5 µg/L ¹	ND	ND	ND
1,2-Dichloropropane	5 µg/L ¹	ND	ND	ND
1,4-Dichlorobenzene	75 µg/L ¹	ND	ND	ND
4-Methyl-2-pentanone	µg/L	ND	ND	ND
Acetone	610 µg/L ⁵	ND	ND	ND
Acrylonitrile	0.039 µg/L ⁵	ND	ND	ND
Benzene	5 µg/L ¹	ND	ND	ND
Bromochloromethane	90 µg/L ²	ND	ND	ND
Bromodichloromethane	80 µg/L ¹	ND	ND	ND
Bromoform	80 µg/L ¹	ND	ND	ND
Bromomethane	10 µg/L ²	ND	ND	ND
Carbon disulfide	1000 µg/L ⁵	ND	ND	ND
Carbon tetrachloride	5 µg/L ¹	ND	ND	ND
Chlorobenzene	100 µg/L ¹	ND	ND	ND
Chlorodibromomethane	80 µg/L ¹	ND	ND	ND
Chloroethane	4.6 µg/L ⁵	ND	ND	ND
Chloroform	80 µg/L ¹	ND	ND	ND
Chloromethane	3 µg/L ²	ND	ND	ND
cis-1,2-Dichloroethylene	70 µg/L ¹	ND	ND	ND
cis-1,3-Dichloropropene	0.27 µg/L ^{6, a}	ND	ND	ND
Dibromomethane	61 µg/L ⁵	ND	ND	ND
Ethylbenzene	700 µg/L ¹	ND	ND	ND
Methyl butyl ketone (2-Hexanone)	160 µg/L ⁵	ND	ND	ND
Methyl ethyl ketone (2-Butanone)	4000 µg/L ²	ND	ND	ND
Methyl iodide	µg/L	ND	ND	ND
Methyl tert-butyl ether (MTBE)	20 - 40 µg/L ⁴	ND	ND	ND
Methylene chloride	5 µg/L ¹	ND	ND	ND
Styrene	100 µg/L ¹	ND	ND	ND
Tetrachloroethylene (PCE)	5 µg/L ¹	ND	ND	ND
Toluene	1000 µg/L ¹	ND	ND	ND
Trans-1,2-Dichloroethylene	100 µg/L ¹	ND	ND	ND
trans-1,3-Dichloropropene	0.27 µg/L ^{6, a}	ND	ND	ND
trans-1,4-Dichloro-2-butene	µg/L	ND	ND	ND
Trichloroethylene (TCE)	5 µg/L ¹	ND	ND	ND
Trichlorofluoromethane	2000 µg/L ²	ND	ND	ND
Vinyl acetate	410 µg/L ⁵	ND	ND	ND
Vinyl chloride	2 µg/L ¹	ND	ND	ND
Xylenes	10000 µg/L ¹	ND	ND	ND

= Concentration exceeds the specified Threshold Value

1. Threshold value given is the Maximum Contaminant Level (MCL) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
5. Threshold value given is the Preliminary Remedial Goal (PRG) for tap water, as provided in the October 2002 USEPA Region 9 PRGs Table 2002 Update
6. Threshold value given is derived from the EPA's National Recommended Water Quality Criteria for Human Health for the consumption of water and organisms, amended 2015.
7. Threshold value given is derived from the EPA's Unregulated Contaminant Monitoring Rule's minimum reporting levels.

a. The Threshold value given for these compounds is the threshold value for a mixture of isomers. For example, cis- and trans-1,3-dichloropropylene were not identified as having individual threshold values, however 1,3-dichloropropylene was identified as having a numerical value under the National Recommended Water Quality Criteria for Human Health for consumption of water and organisms. As such, the value for total 1,3-dichloropropylene was used as the threshold value for the cis- and trans- isomers. The total of the two (2) isomers should not exceed this value even if each individual isomer is present at a concentration below the provided threshold value.

b. No threshold value was identified for 1,1-dichloroethane, however due to the molecular similarities between this compounds and 1,2-dichloroethane, the threshold value for 1,2-dichloroethane is used for reference purposes.

No threshold value has been provided for parameters not identified in the sources listed above

" " = One half of the laboratory detection limit "DL"

NT = Not Tested due to dry conditions at well.

TABLE 2

Tolerance Intervals for September 2020 Monitoring Period



TABLE 2
SUMMARY OF GROUNDWATER MONITORING RESULTS - TOLERANCE INTERVAL COMPARISON
SEP 2020 - SAMPLE ROUND

Concentration (units as specified for Threshold Value)

Parameter	OW-9 Tolerance Limit * TL=AVG+K*S		OW-12 Tolerance Limit * TL=AVG+K*S		Average of OW-9 & OW-12 Tolerance Limit * TL=AVG+K*S		Threshold Value	Background Wells September, 2020			Compliance Wells September, 2020				
								OW-9	OW-12	OW-17	OW-7	OW-13	OW-14	OW-15	OW-16
METALS Antimony	0.0741	mg/L	0.0503	mg/L	0.0622	mg/L	0.006 mg/L ¹	NT	0.0002	0.0002	0.0002	0.0011	NT	NT	0.0003
Arsenic	0.0042	mg/L	0.0260	mg/L	0.0151	mg/L	0.010 mg/L ¹	NT	ND	0.0002	ND	0.0052	NT	NT	ND
Barium	0.0486	mg/L	0.0938	mg/L	0.0712	mg/L	2 mg/L ¹	NT	0.161	0.021	0.09	0.128	NT	NT	0.021
Beryllium	0.0008	mg/L	0.0010	mg/L	0.0009	mg/L	0.004 mg/L ¹	NT	ND	ND	ND	ND	NT	NT	ND
Cadmium	0.2342	mg/L	0.0029	mg/L	0.1185	mg/L	0.005 mg/L ¹	NT	0.0016	ND	0.0034	0.0112	NT	NT	0.0003
Chromium	0.0250	mg/L	0.0193	mg/L	0.0222	mg/L	0.1 mg/L ¹	NT	0.0005	0.0005	0.0016	0.0008	NT	NT	0.0004
Cobalt	0.0043	mg/L	0.0106	mg/L	0.0074	mg/L	0.73 mg/L ⁵	NT	0.0006	0.0005	0.0018	0.0045	NT	NT	0.0005
Copper	0.0683	mg/L	0.0706	mg/L	0.0694	mg/L	1.3 mg/L ¹	NT	ND	ND	0.004	0.029	NT	NT	0.001
Lead	0.0782	mg/L	0.0173	mg/L	0.0477	mg/L	0.015 mg/L ¹	NT	0.0601	0.0072	0.0209	0.0075	NT	NT	0.0007
Mercury	0.0001	mg/L	0.0001	mg/L	0.0001	mg/L	0.002 mg/L ¹	NT	ND	ND	ND	ND	NT	NT	ND
Nickel	0.0234	mg/L	0.0434	mg/L	0.0334	mg/L	0.1 mg/L ²	NT	0.001	ND	0.003	0.006	NT	NT	0.001
Selenium	0.0100	mg/L	0.0100	mg/L	0.0100	mg/L	0.05 mg/L ¹	NT	ND	ND	ND	ND	NT	NT	ND
Silver	0.0005	mg/L	0.0030	mg/L	0.0018	mg/L	0.1 mg/L ^{2,3}	NT	0.0009	ND	0.0001	0.0001	NT	NT	ND
Thallium	0.0001	mg/L	0.0010	mg/L	0.0005	mg/L	0.002 mg/L ¹	NT	0.0005	ND	0.0002	0.0002	NT	NT	ND
Tin	0.0370	mg/L	0.5173	mg/L	0.2771	mg/L	22 mg/L ⁵	NT	ND	ND	ND	ND	NT	NT	ND
Vanadium	0.0099	mg/L	0.0386	mg/L	0.0243	mg/L	0.26 mg/L ⁵	NT	ND	0.0006	0.001	0.0009	NT	NT	ND
Zinc	4.7435	mg/L	0.0512	mg/L	2.3973	mg/L	2 mg/L ^{2,3}	NT	ND	0.005	0.004	0.013	NT	NT	0.004

= Concentration exceeds the Site-specific background Tolerance Limit
 = Concentration exceeds the applicable Threshold Value
 = Concentration exceeds both the applicable Threshold Value and the Site-specific background Tolerance Limit

1. Threshold value given is the Maximum Contaminant Level (MCL) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
2. Threshold value given is the lifetime health advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
3. Threshold value given is the Secondary Drinking Water Regulation (SDWR) as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
4. Threshold value given is the Drinking Water Advisory as provided in the USEPA 2018 Edition of the Drinking Water Standards and Health Advisories
5. Threshold value given is the Preliminary Remedial Goal (PRG) for tap water, as provided in the October 2002 USEPA Region 9 PRGs Table 2002 Update
6. Threshold value given is derived from the EPA's National Recommended Water Quality Criteria for Human Health for the consumption of water and organisms, amended 2015.
7. Threshold value given is derived from the EPA's Unregulated Contaminant Monitoring Rule's minimum reporting levels.

No threshold value has been provided for parameters not identified in the sources listed above

"—" = One half of the laboratory detection limit "DL"

NT = Not Tested due to dry conditions at well.

ATTACHMENT 1

Laboratory Analytical Report, Observation Well Sampling





New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 0J01021
Client Project: 94139 - Tiverton Landfill

Report Date: 08-October-2020

Prepared for:

Travis Johnson
Pare Corporation
8 Blackstone Valley Place
Lincoln, RI 02865

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
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Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 10/01/20. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is OJ01021. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
OJ01021-01	OW-7	Water	09/28/2020	10/01/2020
OJ01021-02	OW-12	Water	09/28/2020	10/01/2020
OJ01021-03	OW-13	Water	09/28/2020	10/01/2020
OJ01021-04	OW-16	Water	09/28/2020	10/01/2020
OJ01021-05	OW-17	Water	09/28/2020	10/01/2020

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

OW-12 (Lab Number: 0J01021-02)**Analysis**

Antimony
Appendix A Volatile Organics
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 7470A
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8

OW-13 (Lab Number: 0J01021-03)**Analysis**

Antimony
Appendix A Volatile Organics
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 7470A
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8

OW-16 (Lab Number: 0J01021-04)**Analysis**

Antimony
Appendix A Volatile Organics
Arsenic
Barium
Beryllium
Cadmium
Chromium

Method

EPA 200.8
EPA 8260C
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8

Request for Analysis (continued)

OW-16 (Lab Number: 0J01021-04) (continued)

Analysis

Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Zinc

Method

EPA 200.8
EPA 200.8
EPA 200.8
EPA 7470A
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8

OW-17 (Lab Number: 0J01021-05)

Analysis

Antimony
Appendix A Volatile Organics
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 7470A
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8

OW-7 (Lab Number: 0J01021-01)

Analysis

Antimony
Appendix A Volatile Organics
Arsenic
Barium
Beryllium
Cadmium
Chromium
Cobalt
Copper
Lead
Mercury
Nickel
Selenium
Silver
Thallium
Tin
Vanadium
Zinc

Method

EPA 200.8
EPA 8260C
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 7470A
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8
EPA 200.8

Method References

Methods for the Determination of Metals in Environmental Samples EPA-600/R-94/111, USEPA, 1994

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

CASE NARRATIVE:

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria. Those compounds whose names include "TIC" were qualitatively screened via reconstructed ion chromatography and no detections were identified to the listed PQLs.

Results: Total Metals

Sample: OW-7

Lab Number: OJ01021-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	0.0002		0.0001	mg/L	10/02/20	10/02/20
Arsenic	ND		0.0001	mg/L	10/02/20	10/02/20
Barium	0.090		0.001	mg/l	10/02/20	10/02/20
Beryllium	ND		0.0001	mg/L	10/02/20	10/02/20
Cadmium	0.0034		0.0001	mg/L	10/02/20	10/02/20
Chromium	0.0016		0.0001	mg/L	10/02/20	10/02/20
Cobalt	0.0018		0.0001	mg/L	10/02/20	10/02/20
Copper	0.004		0.001	mg/l	10/02/20	10/02/20
Mercury	ND		0.0002	mg/L	10/03/20	10/03/20
Nickel	0.003		0.001	mg/l	10/02/20	10/02/20
Selenium	ND		0.005	mg/L	10/02/20	10/02/20
Silver	0.0001		0.0001	mg/L	10/02/20	10/02/20
Thallium	0.0002		0.0001	mg/L	10/02/20	10/02/20
Tin	ND		0.005	mg/l	10/02/20	10/02/20
Vanadium	0.0010		0.0005	mg/L	10/02/20	10/02/20
Zinc	0.004		0.001	mg/l	10/02/20	10/02/20
Lead	0.0209		0.0001	mg/L	10/02/20	10/02/20

Results: Total Metals

Sample: OW-12

Lab Number: OJ01021-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	0.0002		0.0001	mg/L	10/02/20	10/02/20
Arsenic	ND		0.0001	mg/L	10/02/20	10/02/20
Barium	0.161		0.001	mg/l	10/02/20	10/02/20
Beryllium	ND		0.0001	mg/L	10/02/20	10/02/20
Cadmium	0.0016		0.0001	mg/L	10/02/20	10/02/20
Chromium	0.0005		0.0001	mg/L	10/02/20	10/02/20
Cobalt	0.0006		0.0001	mg/L	10/02/20	10/02/20
Copper	ND		0.001	mg/l	10/02/20	10/02/20
Mercury	ND		0.0002	mg/L	10/03/20	10/03/20
Nickel	0.001		0.001	mg/l	10/02/20	10/02/20
Selenium	ND		0.005	mg/L	10/02/20	10/02/20
Silver	0.0009		0.0001	mg/L	10/02/20	10/02/20
Thallium	0.0005		0.0001	mg/L	10/02/20	10/02/20
Tin	ND		0.005	mg/l	10/02/20	10/02/20
Vanadium	ND		0.0005	mg/L	10/02/20	10/02/20
Zinc	ND		0.001	mg/l	10/02/20	10/02/20
Lead	0.0601		0.0001	mg/L	10/02/20	10/02/20

Results: Total Metals**Sample: OW-13****Lab Number: OJ01021-03 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	0.0011		0.0001	mg/L	10/02/20	10/02/20
Arsenic	0.0052		0.0001	mg/L	10/02/20	10/02/20
Barium	0.128		0.001	mg/l	10/02/20	10/02/20
Beryllium	ND		0.0001	mg/L	10/02/20	10/02/20
Cadmium	0.0112		0.0001	mg/L	10/02/20	10/02/20
Chromium	0.0008		0.0001	mg/L	10/02/20	10/02/20
Cobalt	0.0045		0.0001	mg/L	10/02/20	10/02/20
Copper	0.029		0.001	mg/l	10/02/20	10/02/20
Mercury	ND		0.0002	mg/L	10/03/20	10/03/20
Nickel	0.006		0.001	mg/l	10/02/20	10/02/20
Selenium	ND		0.005	mg/L	10/02/20	10/02/20
Silver	0.0001		0.0001	mg/L	10/02/20	10/02/20
Thallium	0.0002		0.0001	mg/L	10/02/20	10/02/20
Tin	ND		0.005	mg/l	10/02/20	10/02/20
Vanadium	0.0009		0.0005	mg/L	10/02/20	10/02/20
Zinc	0.013		0.001	mg/l	10/02/20	10/02/20
Lead	0.0075		0.0001	mg/L	10/02/20	10/02/20

Results: Total Metals**Sample: OW-16****Lab Number: OJ01021-04 (Water)**

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	0.0003		0.0001	mg/L	10/02/20	10/02/20
Arsenic	ND		0.0001	mg/L	10/02/20	10/02/20
Barium	0.021		0.001	mg/l	10/02/20	10/02/20
Beryllium	ND		0.0001	mg/L	10/02/20	10/02/20
Cadmium	0.0003		0.0001	mg/L	10/02/20	10/02/20
Chromium	0.0004		0.0001	mg/L	10/02/20	10/02/20
Cobalt	0.0005		0.0001	mg/L	10/02/20	10/02/20
Copper	0.001		0.001	mg/l	10/02/20	10/02/20
Mercury	ND		0.0002	mg/L	10/03/20	10/03/20
Nickel	0.001		0.001	mg/l	10/02/20	10/02/20
Selenium	ND		0.005	mg/L	10/02/20	10/02/20
Silver	ND		0.0001	mg/L	10/02/20	10/02/20
Thallium	ND		0.0001	mg/L	10/02/20	10/02/20
Tin	ND		0.005	mg/l	10/02/20	10/02/20
Vanadium	ND		0.0005	mg/L	10/02/20	10/02/20
Zinc	0.004		0.001	mg/l	10/02/20	10/02/20
Lead	0.0007		0.0001	mg/L	10/02/20	10/02/20

Results: Total Metals

Sample: OW-17

Lab Number: OJ01021-05 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	0.0002		0.0001	mg/L	10/02/20	10/02/20
Arsenic	0.0002		0.0001	mg/L	10/02/20	10/02/20
Barium	0.021		0.001	mg/l	10/02/20	10/02/20
Beryllium	ND		0.0001	mg/L	10/02/20	10/02/20
Cadmium	ND		0.0001	mg/L	10/02/20	10/02/20
Chromium	0.0005		0.0001	mg/L	10/02/20	10/02/20
Cobalt	0.0005		0.0001	mg/L	10/02/20	10/02/20
Copper	ND		0.001	mg/l	10/02/20	10/02/20
Mercury	ND		0.0002	mg/L	10/03/20	10/03/20
Nickel	ND		0.001	mg/l	10/02/20	10/02/20
Selenium	ND		0.005	mg/L	10/02/20	10/02/20
Silver	ND		0.0001	mg/L	10/02/20	10/02/20
Thallium	ND		0.0001	mg/L	10/02/20	10/02/20
Tin	ND		0.005	mg/l	10/02/20	10/02/20
Vanadium	0.0006		0.0005	mg/L	10/02/20	10/02/20
Zinc	0.005		0.001	mg/l	10/02/20	10/02/20
Lead	0.0072		0.0001	mg/L	10/02/20	10/02/20

Results: Volatile Organic Compounds

Sample: OW-7

Lab Number: 0J01021-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,1-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
1,2,3-Trichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromoethane (EDB)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,3-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2-Hexanone	ND		5	ug/l	10/06/20	10/06/20
4-Methyl-2-pentanone	ND		5	ug/l	10/06/20	10/06/20
Acetone	ND		23	ug/l	10/06/20	10/06/20
Acetonitrile (TIC)	ND		5	ug/l	10/06/20	10/06/20
Acrolein	ND		5	ug/l	10/06/20	10/06/20
Acrylonitrile	ND		5	ug/l	10/06/20	10/06/20
Allyl chloride (TIC)	ND		5	ug/l	10/06/20	10/06/20
Benzene	ND		1	ug/l	10/06/20	10/06/20
Bromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromodichloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromoform	ND		1	ug/l	10/06/20	10/06/20
Carbon Disulfide	ND		1	ug/l	10/06/20	10/06/20
Carbon Tetrachloride	ND		1	ug/l	10/06/20	10/06/20
Chlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Chloroethane	ND		1	ug/l	10/06/20	10/06/20
Chloroform	ND		1	ug/l	10/06/20	10/06/20
Chloroprene (TIC)	ND		1	ug/l	10/06/20	10/06/20
cis-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
cis-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
Dibromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Dichlorodifluoromethane	ND		1	ug/l	10/06/20	10/06/20
Ethyl Methacrylate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Ethylbenzene	ND		1	ug/l	10/06/20	10/06/20
Isobutyl Alcohol (TIC)	ND		20	ug/l	10/06/20	10/06/20
Isodrin (TIC)	ND		5	ug/l	10/06/20	10/06/20
1,3-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Methacrylonitrile (TIC)	ND		10	ug/l	10/06/20	10/06/20
Bromomethane	ND		1	ug/l	10/06/20	10/06/20
Chloromethane	ND		1	ug/l	10/06/20	10/06/20
2-Butanone	ND		5	ug/l	10/06/20	10/06/20
Methyl iodide (TIC)	ND		5	ug/l	10/06/20	10/06/20
Methylmethacrylate (TIC)	ND		10	ug/l	10/06/20	10/06/20
Dibromomethane	ND		1	ug/l	10/06/20	10/06/20
Methylene Chloride	ND		1	ug/l	10/06/20	10/06/20

Results: Volatile Organic Compounds (Continued)

Sample: OW-7 (Continued)

Lab Number: OJ01021-01 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
1,4-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Propionitrile (TIC)	ND		20	ug/l	10/06/20	10/06/20
Styrene	ND		1	ug/l	10/06/20	10/06/20
Tetrachloroethene	ND		1	ug/l	10/06/20	10/06/20
Methyl t-butyl ether (MTBE)	ND		1	ug/l	10/06/20	10/06/20
Toluene	ND		1	ug/l	10/06/20	10/06/20
trans-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
trans-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
trans-1,4-Dichloro-2-Butene (TIC)	ND		5	ug/l	10/06/20	10/06/20
Trichloroethene	ND		1	ug/l	10/06/20	10/06/20
Trichlorofluoromethane	ND		1	ug/l	10/06/20	10/06/20
Vinyl acetate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Vinyl Chloride	ND		1	ug/l	10/06/20	10/06/20
Total xylenes	ND		2	ug/l	10/06/20	10/06/20
Surrogate(s)	Recovery%		Limits			
<i>Toluene-d8</i>	99.0%		70-130		10/06/20	10/06/20
<i>1,2-Dichloroethane-d4</i>	99.4%		70-130		10/06/20	10/06/20
<i>4-Bromofluorobenzene</i>	95.5%		70-130		10/06/20	10/06/20

Results: Volatile Organic Compounds

Sample: OW-12

Lab Number: 0J01021-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,1-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
1,2,3-Trichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromoethane (EDB)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,3-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2-Hexanone	ND		5	ug/l	10/06/20	10/06/20
4-Methyl-2-pentanone	ND		5	ug/l	10/06/20	10/06/20
Acetone	ND		23	ug/l	10/06/20	10/06/20
Acetonitrile (TIC)	ND		5	ug/l	10/06/20	10/06/20
Acrolein	ND		5	ug/l	10/06/20	10/06/20
Acrylonitrile	ND		5	ug/l	10/06/20	10/06/20
Allyl chloride (TIC)	ND		5	ug/l	10/06/20	10/06/20
Benzene	ND		1	ug/l	10/06/20	10/06/20
Bromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromodichloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromoform	ND		1	ug/l	10/06/20	10/06/20
Carbon Disulfide	ND		1	ug/l	10/06/20	10/06/20
Carbon Tetrachloride	ND		1	ug/l	10/06/20	10/06/20
Chlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Chloroethane	ND		1	ug/l	10/06/20	10/06/20
Chloroform	ND		1	ug/l	10/06/20	10/06/20
Chloroprene (TIC)	ND		1	ug/l	10/06/20	10/06/20
cis-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
cis-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
Dibromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Dichlorodifluoromethane	ND		1	ug/l	10/06/20	10/06/20
Ethyl Methacrylate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Ethylbenzene	ND		1	ug/l	10/06/20	10/06/20
Isobutyl Alcohol (TIC)	ND		20	ug/l	10/06/20	10/06/20
Isodrin (TIC)	ND		5	ug/l	10/06/20	10/06/20
1,3-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Methacrylonitrile (TIC)	ND		10	ug/l	10/06/20	10/06/20
Bromomethane	ND		1	ug/l	10/06/20	10/06/20
Chloromethane	ND		1	ug/l	10/06/20	10/06/20
2-Butanone	ND		5	ug/l	10/06/20	10/06/20
Methyl iodide (TIC)	ND		5	ug/l	10/06/20	10/06/20
Methylmethacrylate (TIC)	ND		10	ug/l	10/06/20	10/06/20
Dibromomethane	ND		1	ug/l	10/06/20	10/06/20
Methylene Chloride	ND		1	ug/l	10/06/20	10/06/20

Results: Volatile Organic Compounds (Continued)

Sample: OW-12 (Continued)

Lab Number: 0J01021-02 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
1,4-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Propionitrile (TIC)	ND		20	ug/l	10/06/20	10/06/20
Styrene	ND		1	ug/l	10/06/20	10/06/20
Tetrachloroethene	ND		1	ug/l	10/06/20	10/06/20
Methyl t-butyl ether (MTBE)	ND		1	ug/l	10/06/20	10/06/20
Toluene	ND		1	ug/l	10/06/20	10/06/20
trans-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
trans-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
trans-1,4-Dichloro-2-Butene (TIC)	ND		5	ug/l	10/06/20	10/06/20
Trichloroethene	ND		1	ug/l	10/06/20	10/06/20
Trichlorofluoromethane	ND		1	ug/l	10/06/20	10/06/20
Vinyl acetate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Vinyl Chloride	ND		1	ug/l	10/06/20	10/06/20
Total xylenes	ND		2	ug/l	10/06/20	10/06/20
Surrogate(s)	Recovery%		Limits			
<i>Toluene-d8</i>	98.9%		70-130		10/06/20	10/06/20
<i>1,2-Dichloroethane-d4</i>	101%		70-130		10/06/20	10/06/20
<i>4-Bromofluorobenzene</i>	90.7%		70-130		10/06/20	10/06/20

Results: Volatile Organic Compounds

Sample: OW-13

Lab Number: 0J01021-03 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,1-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
1,2,3-Trichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromoethane (EDB)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,3-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2-Hexanone	ND		5	ug/l	10/06/20	10/06/20
4-Methyl-2-pentanone	ND		5	ug/l	10/06/20	10/06/20
Acetone	ND		23	ug/l	10/06/20	10/06/20
Acetonitrile (TIC)	ND		5	ug/l	10/06/20	10/06/20
Acrolein	ND		5	ug/l	10/06/20	10/06/20
Acrylonitrile	ND		5	ug/l	10/06/20	10/06/20
Allyl chloride (TIC)	ND		5	ug/l	10/06/20	10/06/20
Benzene	ND		1	ug/l	10/06/20	10/06/20
Bromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromodichloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromoform	ND		1	ug/l	10/06/20	10/06/20
Carbon Disulfide	ND		1	ug/l	10/06/20	10/06/20
Carbon Tetrachloride	ND		1	ug/l	10/06/20	10/06/20
Chlorobenzene	5		1	ug/l	10/06/20	10/06/20
Chloroethane	ND		1	ug/l	10/06/20	10/06/20
Chloroform	ND		1	ug/l	10/06/20	10/06/20
Chloroprene (TIC)	ND		1	ug/l	10/06/20	10/06/20
cis-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
cis-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
Dibromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Dichlorodifluoromethane	ND		1	ug/l	10/06/20	10/06/20
Ethyl Methacrylate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Ethylbenzene	ND		1	ug/l	10/06/20	10/06/20
Isobutyl Alcohol (TIC)	ND		20	ug/l	10/06/20	10/06/20
Isodrin (TIC)	ND		5	ug/l	10/06/20	10/06/20
1,3-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Methacrylonitrile (TIC)	ND		10	ug/l	10/06/20	10/06/20
Bromomethane	ND		1	ug/l	10/06/20	10/06/20
Chloromethane	ND		1	ug/l	10/06/20	10/06/20
2-Butanone	ND		5	ug/l	10/06/20	10/06/20
Methyl iodide (TIC)	ND		5	ug/l	10/06/20	10/06/20
Methylmethacrylate (TIC)	ND		10	ug/l	10/06/20	10/06/20
Dibromomethane	ND		1	ug/l	10/06/20	10/06/20
Methylene Chloride	ND		1	ug/l	10/06/20	10/06/20

Results: Volatile Organic Compounds (Continued)

Sample: OW-13 (Continued)

Lab Number: 0J01021-03 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
1,4-Dichlorobenzene	1		1	ug/l	10/06/20	10/06/20
Propionitrile (TIC)	ND		20	ug/l	10/06/20	10/06/20
Styrene	ND		1	ug/l	10/06/20	10/06/20
Tetrachloroethene	ND		1	ug/l	10/06/20	10/06/20
Methyl t-butyl ether (MTBE)	ND		1	ug/l	10/06/20	10/06/20
Toluene	ND		1	ug/l	10/06/20	10/06/20
trans-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
trans-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
trans-1,4-Dichloro-2-Butene (TIC)	ND		5	ug/l	10/06/20	10/06/20
Trichloroethene	ND		1	ug/l	10/06/20	10/06/20
Trichlorofluoromethane	ND		1	ug/l	10/06/20	10/06/20
Vinyl acetate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Vinyl Chloride	ND		1	ug/l	10/06/20	10/06/20
Total xylenes	ND		2	ug/l	10/06/20	10/06/20
Surrogate(s)	Recovery%		Limits			
<i>Toluene-d8</i>	98.6%		70-130		10/06/20	10/06/20
<i>1,2-Dichloroethane-d4</i>	104%		70-130		10/06/20	10/06/20
<i>4-Bromofluorobenzene</i>	92.3%		70-130		10/06/20	10/06/20

Results: Volatile Organic Compounds

Sample: OW-16

Lab Number: 0J01021-04 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,1-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
1,2,3-Trichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromoethane (EDB)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,3-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2-Hexanone	ND		5	ug/l	10/06/20	10/06/20
4-Methyl-2-pentanone	ND		5	ug/l	10/06/20	10/06/20
Acetone	ND		23	ug/l	10/06/20	10/06/20
Acetonitrile (TIC)	ND		5	ug/l	10/06/20	10/06/20
Acrolein	ND		5	ug/l	10/06/20	10/06/20
Acrylonitrile	ND		5	ug/l	10/06/20	10/06/20
Allyl chloride (TIC)	ND		5	ug/l	10/06/20	10/06/20
Benzene	ND		1	ug/l	10/06/20	10/06/20
Bromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromodichloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromoform	ND		1	ug/l	10/06/20	10/06/20
Carbon Disulfide	ND		1	ug/l	10/06/20	10/06/20
Carbon Tetrachloride	ND		1	ug/l	10/06/20	10/06/20
Chlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Chloroethane	ND		1	ug/l	10/06/20	10/06/20
Chloroform	ND		1	ug/l	10/06/20	10/06/20
Chloroprene (TIC)	ND		1	ug/l	10/06/20	10/06/20
cis-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
cis-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
Dibromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Dichlorodifluoromethane	ND		1	ug/l	10/06/20	10/06/20
Ethyl Methacrylate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Ethylbenzene	ND		1	ug/l	10/06/20	10/06/20
Isobutyl Alcohol (TIC)	ND		20	ug/l	10/06/20	10/06/20
Isodrin (TIC)	ND		5	ug/l	10/06/20	10/06/20
1,3-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Methacrylonitrile (TIC)	ND		10	ug/l	10/06/20	10/06/20
Bromomethane	ND		1	ug/l	10/06/20	10/06/20
Chloromethane	ND		1	ug/l	10/06/20	10/06/20
2-Butanone	ND		5	ug/l	10/06/20	10/06/20
Methyl iodide (TIC)	ND		5	ug/l	10/06/20	10/06/20
Methylmethacrylate (TIC)	ND		10	ug/l	10/06/20	10/06/20
Dibromomethane	ND		1	ug/l	10/06/20	10/06/20
Methylene Chloride	ND		1	ug/l	10/06/20	10/06/20

Results: Volatile Organic Compounds (Continued)

Sample: OW-16 (Continued)

Lab Number: 0J01021-04 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
1,4-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Propionitrile (TIC)	ND		20	ug/l	10/06/20	10/06/20
Styrene	ND		1	ug/l	10/06/20	10/06/20
Tetrachloroethene	ND		1	ug/l	10/06/20	10/06/20
Methyl t-butyl ether (MTBE)	ND		1	ug/l	10/06/20	10/06/20
Toluene	ND		1	ug/l	10/06/20	10/06/20
trans-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
trans-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
trans-1,4-Dichloro-2-Butene (TIC)	ND		5	ug/l	10/06/20	10/06/20
Trichloroethene	ND		1	ug/l	10/06/20	10/06/20
Trichlorofluoromethane	ND		1	ug/l	10/06/20	10/06/20
Vinyl acetate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Vinyl Chloride	ND		1	ug/l	10/06/20	10/06/20
Total xylenes	ND		2	ug/l	10/06/20	10/06/20
Surrogate(s)	Recovery%		Limits			
<i>Toluene-d8</i>	97.7%		70-130		10/06/20	10/06/20
<i>1,2-Dichloroethane-d4</i>	102%		70-130		10/06/20	10/06/20
<i>4-Bromofluorobenzene</i>	92.4%		70-130		10/06/20	10/06/20

Results: Volatile Organic Compounds

Sample: OW-17

Lab Number: 0J01021-05 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,1,1,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,1-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2,2-Tetrachloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1,2-Trichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
1,1-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
1,2,3-Trichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dibromoethane (EDB)	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloroethane	ND		1	ug/l	10/06/20	10/06/20
1,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
1,3-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2,2-Dichloropropane	ND		1	ug/l	10/06/20	10/06/20
2-Hexanone	ND		5	ug/l	10/06/20	10/06/20
4-Methyl-2-pentanone	ND		5	ug/l	10/06/20	10/06/20
Acetone	ND		23	ug/l	10/06/20	10/06/20
Acetonitrile (TIC)	ND		5	ug/l	10/06/20	10/06/20
Acrolein	ND		5	ug/l	10/06/20	10/06/20
Acrylonitrile	ND		5	ug/l	10/06/20	10/06/20
Allyl chloride (TIC)	ND		5	ug/l	10/06/20	10/06/20
Benzene	ND		1	ug/l	10/06/20	10/06/20
Bromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromodichloromethane	ND		1	ug/l	10/06/20	10/06/20
Bromoform	ND		1	ug/l	10/06/20	10/06/20
Carbon Disulfide	ND		1	ug/l	10/06/20	10/06/20
Carbon Tetrachloride	ND		1	ug/l	10/06/20	10/06/20
Chlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Chloroethane	ND		1	ug/l	10/06/20	10/06/20
Chloroform	ND		1	ug/l	10/06/20	10/06/20
Chloroprene (TIC)	ND		1	ug/l	10/06/20	10/06/20
cis-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
cis-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
Dibromochloromethane	ND		1	ug/l	10/06/20	10/06/20
Dichlorodifluoromethane	ND		1	ug/l	10/06/20	10/06/20
Ethyl Methacrylate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Ethylbenzene	ND		1	ug/l	10/06/20	10/06/20
Isobutyl Alcohol (TIC)	ND		20	ug/l	10/06/20	10/06/20
Isodrin (TIC)	ND		5	ug/l	10/06/20	10/06/20
1,3-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Methacrylonitrile (TIC)	ND		10	ug/l	10/06/20	10/06/20
Bromomethane	ND		1	ug/l	10/06/20	10/06/20
Chloromethane	ND		1	ug/l	10/06/20	10/06/20
2-Butanone	ND		5	ug/l	10/06/20	10/06/20
Methyl iodide (TIC)	ND		5	ug/l	10/06/20	10/06/20
Methylmethacrylate (TIC)	ND		10	ug/l	10/06/20	10/06/20
Dibromomethane	ND		1	ug/l	10/06/20	10/06/20
Methylene Chloride	ND		1	ug/l	10/06/20	10/06/20

Results: Volatile Organic Compounds (Continued)

Sample: OW-17 (Continued)

Lab Number: OJ01021-05 (Water)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
1,4-Dichlorobenzene	ND		1	ug/l	10/06/20	10/06/20
Propionitrile (TIC)	ND		20	ug/l	10/06/20	10/06/20
Styrene	ND		1	ug/l	10/06/20	10/06/20
Tetrachloroethene	ND		1	ug/l	10/06/20	10/06/20
Methyl t-butyl ether (MTBE)	ND		1	ug/l	10/06/20	10/06/20
Toluene	ND		1	ug/l	10/06/20	10/06/20
trans-1,2-Dichloroethene	ND		1	ug/l	10/06/20	10/06/20
trans-1,3-Dichloropropene	ND		1	ug/l	10/06/20	10/06/20
trans-1,4-Dichloro-2-Butene (TIC)	ND		5	ug/l	10/06/20	10/06/20
Trichloroethene	ND		1	ug/l	10/06/20	10/06/20
Trichlorofluoromethane	ND		1	ug/l	10/06/20	10/06/20
Vinyl acetate (TIC)	ND		5	ug/l	10/06/20	10/06/20
Vinyl Chloride	ND		1	ug/l	10/06/20	10/06/20
Total xylenes	ND		2	ug/l	10/06/20	10/06/20
Surrogate(s)	Recovery%		Limits			
<i>Toluene-d8</i>	97.7%		70-130		10/06/20	10/06/20
<i>1,2-Dichloroethane-d4</i>	101%		70-130		10/06/20	10/06/20
<i>4-Bromofluorobenzene</i>	90.8%		70-130		10/06/20	10/06/20

Quality Control

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B0J0115 - Metals Digestion Waters										
Blank (B0J0115-BLK1)					Prepared & Analyzed: 10/02/20					
Vanadium	ND		0.0005	mg/L						
Copper	ND		0.001	mg/l						
Antimony	ND		0.0001	mg/L						
Silver	ND		0.0001	mg/L						
Cobalt	ND		0.0001	mg/L						
Cadmium	ND		0.0001	mg/L						
Nickel	ND		0.001	mg/l						
Selenium	ND		0.005	mg/L						
Chromium	ND		0.0001	mg/L						
Tin	ND		0.005	mg/l						
Thallium	ND		0.0001	mg/L						
Beryllium	ND		0.0001	mg/L						
Barium	ND		0.001	mg/l						
Zinc	ND		0.001	mg/l						
Arsenic	ND		0.0001	mg/L						
Lead	ND		0.0001	mg/L						
LCS (B0J0115-BS2)										
					Prepared & Analyzed: 10/02/20					
Antimony	0.0201		0.0001	mg/L	0.0200		101	85-115		
Tin	0.022		0.005	mg/l	0.0200		110	85-115		
Zinc	0.202		0.001	mg/l	0.200		101	85-115		
Selenium	0.020		0.005	mg/L	0.0200		97.9	85-115		
Nickel	0.199		0.001	mg/l	0.200		99.7	85-115		
Copper	0.211		0.001	mg/l	0.200		105	85-115		
Cobalt	0.0199		0.0001	mg/L	0.0200		99.3	85-115		
Cadmium	0.0196		0.0001	mg/L	0.0200		97.8	85-115		
Beryllium	0.0203		0.0001	mg/L	0.0200		102	85-115		
Vanadium	0.0198		0.0005	mg/L	0.0200		99.1	85-115		
Thallium	0.0200		0.0001	mg/L	0.0200		100	85-115		
Barium	0.203		0.001	mg/l	0.200		102	85-115		
Arsenic	0.0189		0.0001	mg/L	0.0200		94.6	85-115		
Silver	0.0193		0.0001	mg/L	0.0200		96.5	85-115		
Chromium	0.0200		0.0001	mg/L	0.0200		100	85-115		
Lead	0.0200		0.0001	mg/L	0.0200		99.8	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B0J0154 - Metals Cold-Vapor Mercury										
Blank (B0J0154-BLK1)										
Mercury	ND		0.0002	mg/L						Prepared & Analyzed: 10/03/20
LCS (B0J0154-BS1)										
Mercury	0.0010		0.0002	mg/L	0.00100		104	85-115		Prepared & Analyzed: 10/03/20

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B0J0272 - Purge-Trap					Prepared & Analyzed: 10/06/20					
Blank (B0J0272-BLK1)										
1,1,1,2-Tetrachloroethane	ND		1	ug/l						
1,1,1-Trichloroethane	ND		1	ug/l						
1,1,2,2-Tetrachloroethane	ND		1	ug/l						
1,1,2-Trichloroethane	ND		1	ug/l						
1,1-Dichloroethane	ND		1	ug/l						
1,1-Dichloroethene	ND		1	ug/l						
1,1-Dichloropropene	ND		1	ug/l						
1,2,3-Trichloropropane	ND		1	ug/l						
1,2-Dibromo-3-chloropropane (DBCP)	ND		1	ug/l						
1,2-Dibromoethane (EDB)	ND		1	ug/l						
1,2-Dichloroethane	ND		1	ug/l						
1,2-Dichloropropane	ND		1	ug/l						
1,3-Dichloropropane	ND		1	ug/l						
2,2-Dichloropropane	ND		1	ug/l						
2-Hexanone	ND		5	ug/l						
4-Methyl-2-pentanone	ND		5	ug/l						
Acetone	ND		5	ug/l						
Acetonitrile (TIC)	ND		5	ug/l						
Acrolein	ND		5	ug/l						
Acrylonitrile	ND		5	ug/l						
Allyl chloride (TIC)	ND		5	ug/l						
Benzene	ND		1	ug/l						
Bromochloromethane	ND		1	ug/l						
Bromodichloromethane	ND		1	ug/l						
Bromoform	ND		1	ug/l						
Carbon Disulfide	ND		1	ug/l						
Carbon Tetrachloride	ND		1	ug/l						
Chlorobenzene	ND		1	ug/l						
Chloroethane	ND		1	ug/l						
Chloroform	ND		1	ug/l						
Chloroprene (TIC)	ND		1	ug/l						
cis-1,2-Dichloroethene	ND		1	ug/l						
cis-1,3-Dichloropropene	ND		1	ug/l						
Dibromochloromethane	ND		1	ug/l						
Dichlorodifluoromethane	ND		1	ug/l						
Ethyl Methacrylate (TIC)	ND		5	ug/l						
Ethylbenzene	ND		1	ug/l						
Isobutyl Alcohol (TIC)	ND		20	ug/l						
Isodrin (TIC)	ND		5	ug/l						
1,3-Dichlorobenzene	ND		1	ug/l						
Methacrylonitrile (TIC)	ND		10	ug/l						
Bromomethane	ND		1	ug/l						
Chloromethane	ND		1	ug/l						
2-Butanone	ND		5	ug/l						
Methyl iodide (TIC)	ND		5	ug/l						
Methylmethacrylate (TIC)	ND		10	ug/l						
Dibromomethane	ND		1	ug/l						
Methylene Chloride	ND		1	ug/l						
1,2-Dichlorobenzene	ND		1	ug/l						
1,4-Dichlorobenzene	ND		1	ug/l						
Propionitrile (TIC)	ND		20	ug/l						
Styrene	ND		1	ug/l						
Tetrachloroethene	ND		1	ug/l						
Methyl t-butyl ether (MTBE)	ND		1	ug/l						
Toluene	ND		1	ug/l						
trans-1,2-Dichloroethene	ND		1	ug/l						
trans-1,3-Dichloropropene	ND		1	ug/l						

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B0J0272 - Purge-Trap (Continued)										
Blank (B0J0272-BLK1)					Prepared & Analyzed: 10/06/20					
trans-1,4-Dichloro-2-Butene (TIC)	ND		5	ug/l						
Trichloroethene	ND		1	ug/l						
Trichlorofluoromethane	ND		1	ug/l						
Vinyl acetate (TIC)	ND		5	ug/l						
Vinyl Chloride	ND		1	ug/l						
Total xylenes	ND		2	ug/l						
<hr/>										
<i>Surrogate: Toluene-d8</i>			<i>49.0</i>	<i>ug/l</i>	<i>50.0</i>		<i>97.9</i>	<i>70-130</i>		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			<i>48.2</i>	<i>ug/l</i>	<i>50.0</i>		<i>96.3</i>	<i>70-130</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>			<i>46.5</i>	<i>ug/l</i>	<i>50.0</i>		<i>93.0</i>	<i>70-130</i>		
<hr/>										
LCS (B0J0272-BS1)					Prepared & Analyzed: 10/06/20					
1,1,1,2-Tetrachloroethane	48			ug/l	50.0		95.9	70-130		
1,1,1-Trichloroethane	46			ug/l	50.0		91.7	70-130		
1,1,2,2-Tetrachloroethane	28			ug/l	50.0		55.1	70-130		
1,1,2-Trichloroethane	46			ug/l	50.0		91.6	70-130		
1,1-Dichloroethane	48			ug/l	50.0		96.6	70-130		
1,1-Dichloroethene	48			ug/l	50.0		95.3	70-130		
1,1-Dichloropropene	46			ug/l	50.0		91.2	70-130		
1,2,3-Trichloropropane	44			ug/l	50.0		88.9	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	37			ug/l	50.0		73.9	70-130		
1,2-Dibromoethane (EDB)	46			ug/l	50.0		91.2	70-130		
1,2-Dichloroethane	49			ug/l	50.0		98.4	70-130		
1,2-Dichloropropane	48			ug/l	50.0		96.7	70-130		
1,3-Dichloropropane	47			ug/l	50.0		94.4	70-130		
2,2-Dichloropropane	19			ug/l	50.0		38.9	70-130		
2-Hexanone	35			ug/l	50.0		70.8	70-130		
4-Methyl-2-pentanone	41			ug/l	50.0		82.4	70-130		
Acetone	40			ug/l	50.0		79.5	70-130		
Acrolein	ND		5	ug/l				60-140		
Benzene	48			ug/l	50.0		96.9	70-130		
Bromochloromethane	49			ug/l	50.0		98.2	70-130		
Bromodichloromethane	48			ug/l	50.0		95.8	70-130		
Bromoform	43			ug/l	50.0		86.5	70-130		
Carbon Disulfide	47			ug/l	50.0		94.6	70-130		
Carbon Tetrachloride	47			ug/l	50.0		93.1	70-130		
Chlorobenzene	48			ug/l	50.0		96.0	70-130		
Chloroethane	56			ug/l	50.0		113	70-130		
Chloroform	48			ug/l	50.0		95.1	70-130		
cis-1,2-Dichloroethene	48			ug/l	50.0		96.6	70-130		
cis-1,3-Dichloropropene	40			ug/l	50.0		80.6	70-130		
Dibromochloromethane	46			ug/l	50.0		92.0	70-130		
Dichlorodifluoromethane	52			ug/l	50.0		105	70-130		
Ethylbenzene	52			ug/l	50.0		103	70-130		
1,3-Dichlorobenzene	48			ug/l	50.0		96.9	70-130		
Bromomethane	76			ug/l	50.0		152	70-130		
Chloromethane	55			ug/l	50.0		111	70-130		
2-Butanone	37			ug/l	50.0		74.3	70-130		
Dibromomethane	51			ug/l	50.0		101	70-130		
Methylene Chloride	52			ug/l	50.0		104	70-130		
1,2-Dichlorobenzene	49			ug/l	50.0		98.5	70-130		
1,4-Dichlorobenzene	48			ug/l	50.0		96.3	70-130		
Styrene	51			ug/l	50.0		102	70-130		
Tetrachloroethene	46			ug/l	50.0		92.0	70-130		
Methyl t-butyl ether (MTBE)	41			ug/l	50.0		82.7	70-130		
Toluene	47			ug/l	50.0		94.9	70-130		
trans-1,2-Dichloroethene	48			ug/l	50.0		96.9	70-130		
trans-1,3-Dichloropropene	40			ug/l	50.0		79.6	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B0J0272 - Purge-Trap (Continued)										
LCS (B0J0272-BS1)					Prepared & Analyzed: 10/06/20					
Trichloroethene	62			ug/l	50.0		125	70-130		
Trichlorofluoromethane	57			ug/l	50.0		113	70-130		
Vinyl Chloride	60			ug/l	50.0		121	70-130		
<hr/>										
Surrogate: Toluene-d8			49.7	ug/l	50.0		99.5	70-130		
Surrogate: 1,2-Dichloroethane-d4			48.8	ug/l	50.0		97.6	70-130		
Surrogate: 4-Bromofluorobenzene			49.7	ug/l	50.0		99.4	70-130		
<hr/>										
LCS Dup (B0J0272-BSD1)					Prepared & Analyzed: 10/06/20					
1,1,1,2-Tetrachloroethane	47			ug/l	50.0		94.7	70-130	1.18	200
1,1,1-Trichloroethane	45			ug/l	50.0		90.8	70-130	0.964	200
1,1,2,2-Tetrachloroethane	27			ug/l	50.0		53.4	70-130	3.17	200
1,1,2-Trichloroethane	44			ug/l	50.0		88.8	70-130	3.15	200
1,1-Dichloroethane	48			ug/l	50.0		96.2	70-130	0.373	200
1,1-Dichloroethene	48			ug/l	50.0		95.7	70-130	0.377	200
1,1-Dichloropropene	46			ug/l	50.0		91.4	70-130	0.285	200
1,2,3-Trichloropropane	42			ug/l	50.0		83.2	70-130	6.53	200
1,2-Dibromo-3-chloropropane (DBCP)	35			ug/l	50.0		70.3	70-130	4.91	200
1,2-Dibromoethane (EDB)	44			ug/l	50.0		88.1	70-130	3.43	200
1,2-Dichloroethane	48			ug/l	50.0		95.9	70-130	2.55	200
1,2-Dichloropropane	47			ug/l	50.0		94.7	70-130	2.13	200
1,3-Dichloropropane	46			ug/l	50.0		91.5	70-130	3.10	200
2,2-Dichloropropane	18			ug/l	50.0		36.8	70-130	5.49	200
2-Hexanone	32			ug/l	50.0		64.6	70-130	9.25	200
4-Methyl-2-pentanone	36			ug/l	50.0		72.7	70-130	12.6	200
Acetone	36			ug/l	50.0		71.0	70-130	11.3	200
Acrolein	28		5	ug/l				60-140	200	200
Benzene	48			ug/l	50.0		96.2	70-130	0.704	200
Bromochloromethane	49			ug/l	50.0		98.5	70-130	0.305	200
Bromodichloromethane	47			ug/l	50.0		94.1	70-130	1.77	200
Bromoform	42			ug/l	50.0		83.6	70-130	3.46	200
Carbon Disulfide	47			ug/l	50.0		93.6	70-130	1.06	200
Carbon Tetrachloride	46			ug/l	50.0		92.6	70-130	0.517	200
Chlorobenzene	48			ug/l	50.0		96.2	70-130	0.229	200
Chloroethane	57			ug/l	50.0		115	70-130	1.51	200
Chloroform	47			ug/l	50.0		94.5	70-130	0.633	200
cis-1,2-Dichloroethene	48			ug/l	50.0		96.4	70-130	0.166	200
cis-1,3-Dichloropropene	40			ug/l	50.0		79.4	70-130	1.47	200
Dibromochloromethane	46			ug/l	50.0		91.0	70-130	1.09	200
Dichlorodifluoromethane	52			ug/l	50.0		104	70-130	0.766	200
Ethylbenzene	51			ug/l	50.0		101	70-130	2.15	200
1,3-Dichlorobenzene	48			ug/l	50.0		95.1	70-130	1.85	200
Bromomethane	92			ug/l	50.0		183	70-130	18.6	200
Chloromethane	56			ug/l	50.0		113	70-130	1.81	200
2-Butanone	37			ug/l	50.0		74.9	70-130	0.751	200
Dibromomethane	49			ug/l	50.0		97.9	70-130	3.49	200
Methylene Chloride	53			ug/l	50.0		107	70-130	2.83	200
1,2-Dichlorobenzene	49			ug/l	50.0		97.1	70-130	1.43	200
1,4-Dichlorobenzene	49			ug/l	50.0		97.7	70-130	1.36	200
Styrene	51			ug/l	50.0		101	70-130	0.492	200
Tetrachloroethene	45			ug/l	50.0		89.1	70-130	3.25	200
Methyl t-butyl ether (MTBE)	42			ug/l	50.0		83.6	70-130	1.08	200
Toluene	46			ug/l	50.0		92.6	70-130	2.45	200
trans-1,2-Dichloroethene	48			ug/l	50.0		96.6	70-130	0.289	200
trans-1,3-Dichloropropene	39			ug/l	50.0		78.5	70-130	1.47	200
Trichloroethene	61			ug/l	50.0		122	70-130	2.24	200
Trichlorofluoromethane	57			ug/l	50.0		113	70-130	0.247	200
Vinyl Chloride	61			ug/l	50.0		122	70-130	0.644	200

**Quality Control
(Continued)**

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B0J0272 - Purge-Trap (Continued)										
LCS Dup (B0J0272-BSD1)					Prepared & Analyzed: 10/06/20					
<i>Surrogate: Toluene-d8</i>			49.5	ug/l	50.0		99.0	70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>			47.9	ug/l	50.0		95.8	70-130		
<i>Surrogate: 4-Bromofluorobenzene</i>			49.8	ug/l	50.0		99.5	70-130		

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.



0 J 0 1021

CHAIN OF CUSTODY RECORD

PROJ. NO.		PROJECT NAME/LOCATION				PRESERVATIVE	TESTS**	REMARKS
DATE	TIME	COMPI	GRA	BA	SAMPLE I.D.			
9/28/20	1530	X			OW-7	WCM HCl	X Pp A Metals, Hg, Sn X Pp B VOCs + MTBE	
	1200				OW-12			
	1645				OW-13			
	1445				OW-16			
	1050				OW-17			

SCOPE	SOL	OTHER	NO OF CONTAINERS	LABORATORY REMARKS:	
				Date/Time	Temp. received:
					Cooled <input type="checkbox"/>
X			14 500mL 2x 40mL	10.1.20	1085

Sampled by (Signature)	Date/Time	Received by (Signature)	Date/Time
<i>[Signature]</i>	9/28/20 1700	<i>[Signature]</i>	10.1.20 1085
Relinquished by (Signature)	Date/Time	Received for Laboratory by (Signature)	Date/Time
<i>[Signature]</i>	10.1.20 1546	<i>[Signature]</i>	10.1.20 1546

Special Instructions: List Specific Detection Limit Requirements:	Turnaround (Business Days)
Landfill detection monitoring	Std. <i>[Signature]</i>

**Netlab subcontractors the following tests: Radiologicals, Radon, Asbestos, UCMFRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates, CT ETPH

ATTACHMENT 2

**Field Sampling Data Sheets, Surface Water and Observation
Water Logs**



FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
PARE PROJECT NO.: 94139.01

DATE: 9/28/2020
WEATHER: ~70°F, Partly Cloudy

FIELD TESTING RESULTS:

SURFACE WATER LOCATION: SW-1

READING 1

pH: N/A pH UNITS
SPEC. COND: N/A mS/cm
TEMPERATURE: N/A °C

ODOR PRESENT? YES NO N/A
SAMPLE COLOR N/A

ADDITIONAL COMMENTS Location where samples are normally collected was observed to be dry, no sample was collected as a result

SURFACE WATER LOCATION: SW-2

READING 1

pH: N/A pH UNITS
SPEC. COND: N/A mS/cm
TEMPERATURE: N/A °C

ODOR PRESENT? YES NO N/A
SAMPLE COLOR N/A

ADDITIONAL COMMENTS Stream where samples are normally collected was observed to be dry, no sample was collected as a result

SURFACE WATER LOCATION: SW-3

READING 1

pH: N/A pH UNITS
SPEC. COND: N/A mS/cm
TEMPERATURE: N/A °C

ODOR PRESENT? YES NO N/A
SAMPLE COLOR N/A

ADDITIONAL COMMENTS Location where samples are normally collected was observed to be dry, no sample was collected as a result

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-7

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW):	<u>6.91</u>	feet	MEASURE POINT:	<u>Top of Casing</u>
TOTAL WELL DEPTH (DTB):	<u>11.80</u>	feet	ELEVATION:	<u>67</u>
VOLUME TO PURGE:	<u>2.39</u>	gallons		
ACTUAL VOLUME PURGED:	<u>3.00</u>	gallons	WATER LEVEL MEASUREMENT DEVICE:	<u>Solinst Interface Probe</u>
PURGER TYPE:	<u>Peristaltic Pump</u>			
PURGE RATE (GPM):	<u>0.1 ±</u>			
ELAPSED TIME (MIN):	<u>15 ±</u>			

FIELD TESTING RESULTS

O ₂ (%)	20.9	CO (ppmv)	ND (0)
% LEL	ND (0)	H ₂ S (ppmv)	ND (0)
Total VOCs (ppmv)	ND (0)		

Time:	1505	1508	1511	1514	1519	1522			
pH:	6.68	6.56	6.58	6.60	6.61	6.61			
Sp.Con. (mS/cm):	0.92	0.88	0.84	0.84	0.84	0.83			
Temp (°C):	17.30	17.10	17.00	16.80	16.90	16.90			

NOTES:

Sample collected at 1530, sample color clear, minimal cloudiness

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-9

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): N/A feet
 TOTAL WELL DEPTH (DTB): 15.54 feet
 VOLUME TO PURGE: N/A gallons
 ACTUAL VOLUME PURGED: N/A gallon

MEASURE POINT: Top of Casing
 ELEVATION: 129.1

WATER LEVEL MEASUREMENT DEVICE: Solinst Interface Probe

PURGER TYPE: Peristaltic Pump
 PURGE RATE (GPM): --
 ELAPSED TIME (MIN): --

FIELD TESTING RESULTS

O ₂ (%)	20.9
% LEL	ND (0)
Total VOCs (ppmv)	ND (0.2)

CO (ppmv)	ND (0)
H ₂ S (ppmv)	ND (0)

Time:									
pH:									
Sp.Con. (mS/cm):									
Temp (°C):									

NOTES:

Well was dry, no sample collected. Gauged at 1005

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-12

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 15.52 feet
 TOTAL WELL DEPTH (DTB): 15.98 feet
 VOLUME TO PURGE: 0.22 gallons
 ACTUAL VOLUME PURGED: 1.00 gallon

MEASURE POINT: Top of Casing
 ELEVATION: 63.78
 WATER LEVEL MEASUREMENT DEVICE: Solinst Interface Probe

PURGER TYPE: Peristaltic Pump
 PURGE RATE (GPM): 0.1 ±
 ELAPSED TIME (MIN): 20 ±

FIELD TESTING RESULTS

O ₂ (%)	20.9
% LEL	ND (0)
Total VOCs (ppmv)	ND (0)

CO (ppmv)	ND (0)
H ₂ S (ppmv)	ND (0)

Time:	1120	1123	1140	1142	1145				
pH:	6.69	6.68	6.63	6.64	6.63				
Sp.Con. (mS/cm):	0.46	0.46	0.46	0.46	0.46				
Temp (°C):	16.60	16.00	15.80	15.80	15.70				

yellow = parameters taken with pump

no color = parameters taken during hand-bailing

NOTES:

Sampled at 1200, sample color slightly cloudy, gray

Well went dry during purging and remaining volume was hand-bailed after allowing well to recharge

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-13

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 7.31 feet
 TOTAL WELL DEPTH (DTB): 14.45 feet
 VOLUME TO PURGE: 3.49 gallons
 ACTUAL VOLUME PURGED: 5.00 gallon

MEASURE POINT: Top of Casing
 ELEVATION: 49.39
 WATER LEVEL MEASUREMENT DEVICE: Solinst Interface Probe

PURGER TYPE: Peristaltic Pump
 PURGE RATE (GPM): 0.1 ±
 ELAPSED TIME (MIN): 20 ±

FIELD TESTING RESULTS

O ₂ (%)	20.9
% LEL	ND (0)
Total VOCs (ppmv)	ND (0)

CO (ppmv)	ND (0)
H ₂ S (ppmv)	ND (0)

Time:	1625	1631	1634	1640	1642				
pH:	6.81	6.74	6.71	6.69	6.69				
Sp.Con. (mS/cm):	1.12	1.09	1.09	1.09	1.09				
Temp (°C):	16.70	16.50	16.50	16.40	16.40				

NOTES:

Sampled at 1645, sample color clear

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-14

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): N/A feet
 TOTAL WELL DEPTH (DTB): 10.70 feet
 VOLUME TO PURGE: N/A gallons
 ACTUAL VOLUME PURGED: N/A gallon

MEASURE POINT: Top of Casing
 ELEVATION: 86.13

WATER LEVEL MEASUREMENT DEVICE: Solinst Interface Probe

PURGER TYPE: Peristaltic Pump
 PURGE RATE (GPM): --
 ELAPSED TIME (MIN): --

FIELD TESTING RESULTS

O ₂ (%)	20.9
% LEL	ND (0)
Total VOCs (ppmv)	ND (0)

CO (ppmv)	ND (0)
H ₂ S (ppmv)	ND (0)

Time:									
pH:									
Sp.Con. (mS/cm):									
Temp (°C):									

NOTES:

Well was dry and could not be sampled. Gauged at 1320

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-15

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): ~16.89 feet
 TOTAL WELL DEPTH (DTB): 16.90 feet
 VOLUME TO PURGE: N/A gallons
 ACTUAL VOLUME PURGED: N/A gallons

MEASURE POINT: Top of Casing
 ELEVATION: 76
 WATER LEVEL MEASUREMENT DEVICE: Solinst Interface Probe

PURGER TYPE: Peristaltic Pump
 PURGE RATE (GPM): --
 ELAPSED TIME (MIN): --

FIELD TESTING RESULTS

O ₂ (%)	20.1
% LEL	20.00
Total VOCs (ppmv)	ND (0.4)

CO (ppmv)	ND (0)
H ₂ S (ppmv)	ND (0)

Time:									
pH:									
Sp.Con. (mS/cm):									
Temp (°C):									

NOTES:

Small (< 0.1 foot) amount of water in well insufficient to collect a sample. Attempts to purge and collect sample caused well to go dry. Gauged at 1335

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-16

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 9.65 feet
 TOTAL WELL DEPTH (DTB): 45.80 feet
 VOLUME TO PURGE: 17.68 gallons
 ACTUAL VOLUME PURGED: 18.00 gallons

MEASURE POINT: Top of Casing
 ELEVATION: 69
 WATER LEVEL MEASUREMENT DEVICE: Solinst Interface Probe

PURGER TYPE: Peristaltic Pump
 PURGE RATE (GPM): 0.3 ±
 ELAPSED TIME (MIN): 20 ±

FIELD TESTING RESULTS

O ₂ (%)	20.9
% LEL	ND (0)
Total VOCs (ppmv)	ND (0)

CO (ppmv)	ND (0)
H ₂ S (ppmv)	ND (0)

Time:	1410	1418	1424	1431	1441				
pH:	7.09	7.10	7.08	7.06	7.07				
Sp.Con. (mS/cm):	1.21	1.01	0.92	0.91	0.91				
Temp (°C):	19.20	18.80	18.60	18.50	18.50				

NOTES:

Sampled at 1445, sample color clear

FIELD SAMPLING DATA SHEET

PROJECT NAME: TIVERTON LANDFILL
 PROJECT NO.: 94139.24

DATE: 9/28/2020
 WEATHER: ~70°F, Intermittent showers

WELL ID: OW-17

WELL DIAMETER (INCHES): 2

PURGE DATA

DEPTH TO WATER (DTW): 15.83 feet
 TOTAL WELL DEPTH (DTB): 22.23 feet
 VOLUME TO PURGE: 3.13 gallons
 ACTUAL VOLUME PURGED: 7.00 gallons

MEASURE POINT: Top of Casing
 ELEVATION: 137.5

WATER LEVEL MEASUREMENT DEVICE: Solinst Interface Probe

PURGER TYPE: Peristaltic Pump
 PURGE RATE (GPM): 0.1 ±
 ELAPSED TIME (MIN): 20 ±

FIELD TESTING RESULTS

O ₂ (%)	20.9
% LEL	ND (0)
Total VOCs (ppmv)	ND (0)

CO (ppmv)	ND (0)
H ₂ S (ppmv)	ND (0)

Time:	1025	1031	1037	1041	1045	1048			
pH:	6.50	5.99	5.97	5.97	5.96	5.94			
Sp.Con. (mS/cm):	0.23	0.15	0.14	0.13	0.13	0.13			
Temp (°C):	15.10	14.60	14.40	14.40	14.40	14.30			

NOTES:

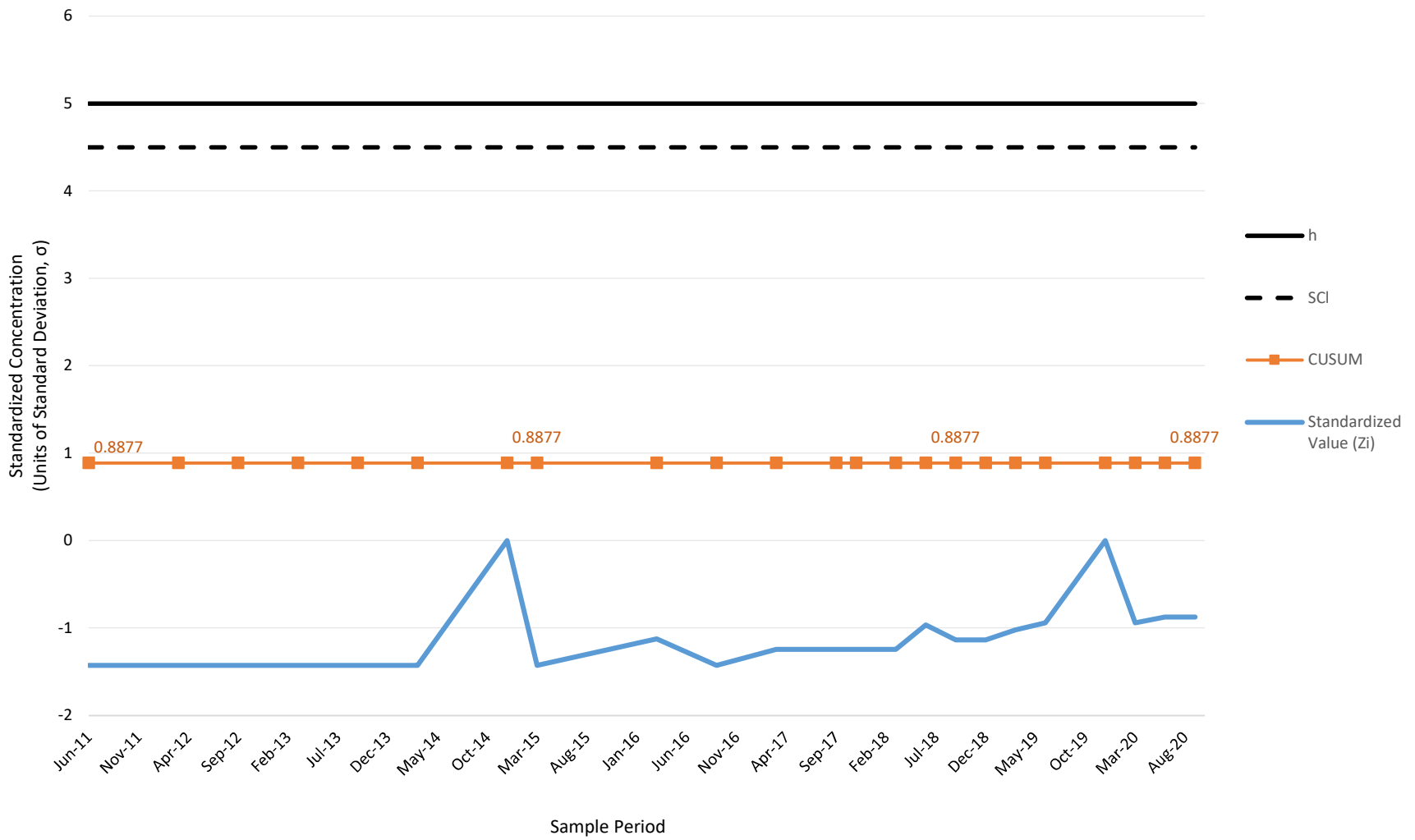
Sampled at 1050, sample slightly cloudy with brown tinge

ATTACHMENT 3

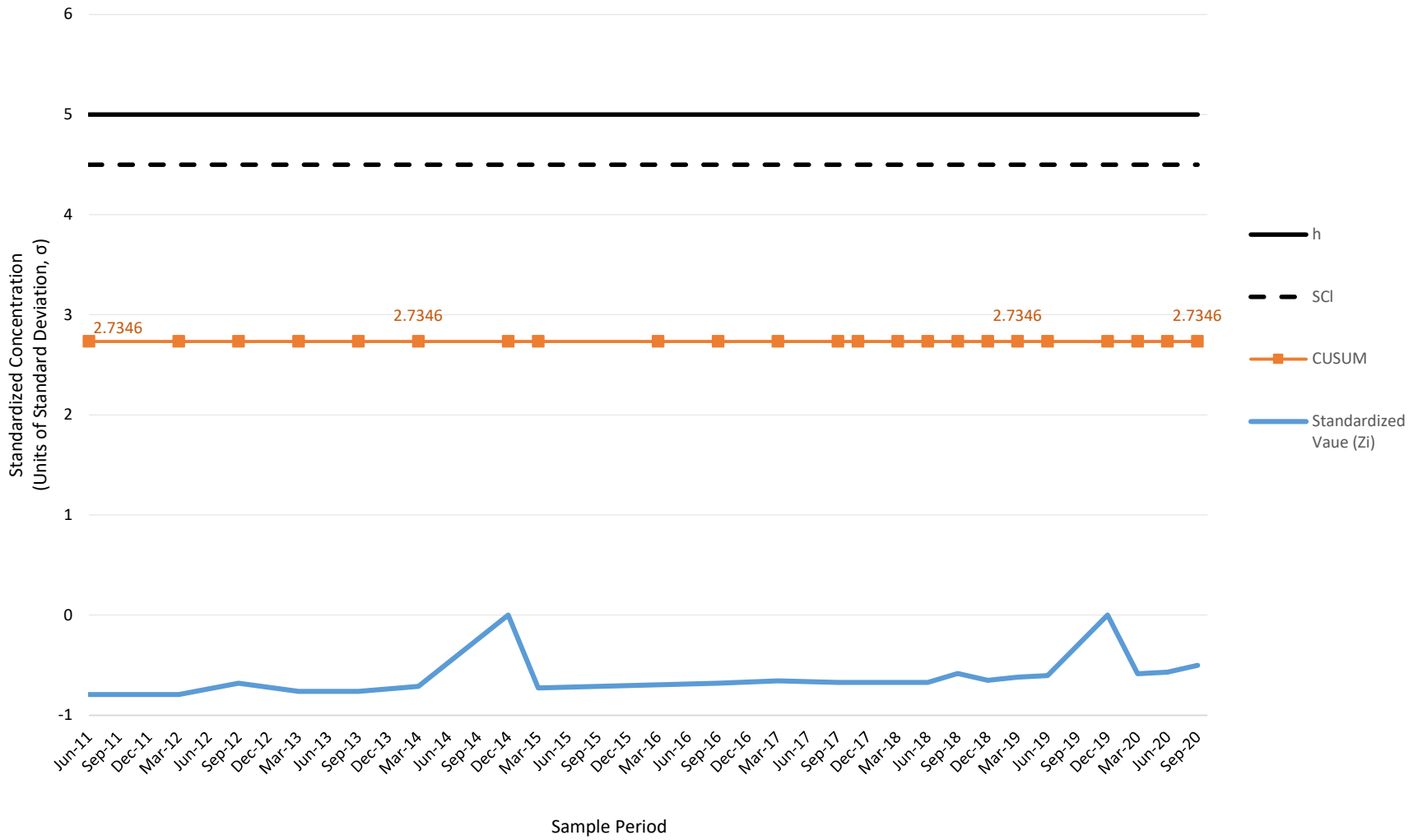
**Shewhart/CUSUM Graphs for Inorganic Compounds, Observation
Wells**



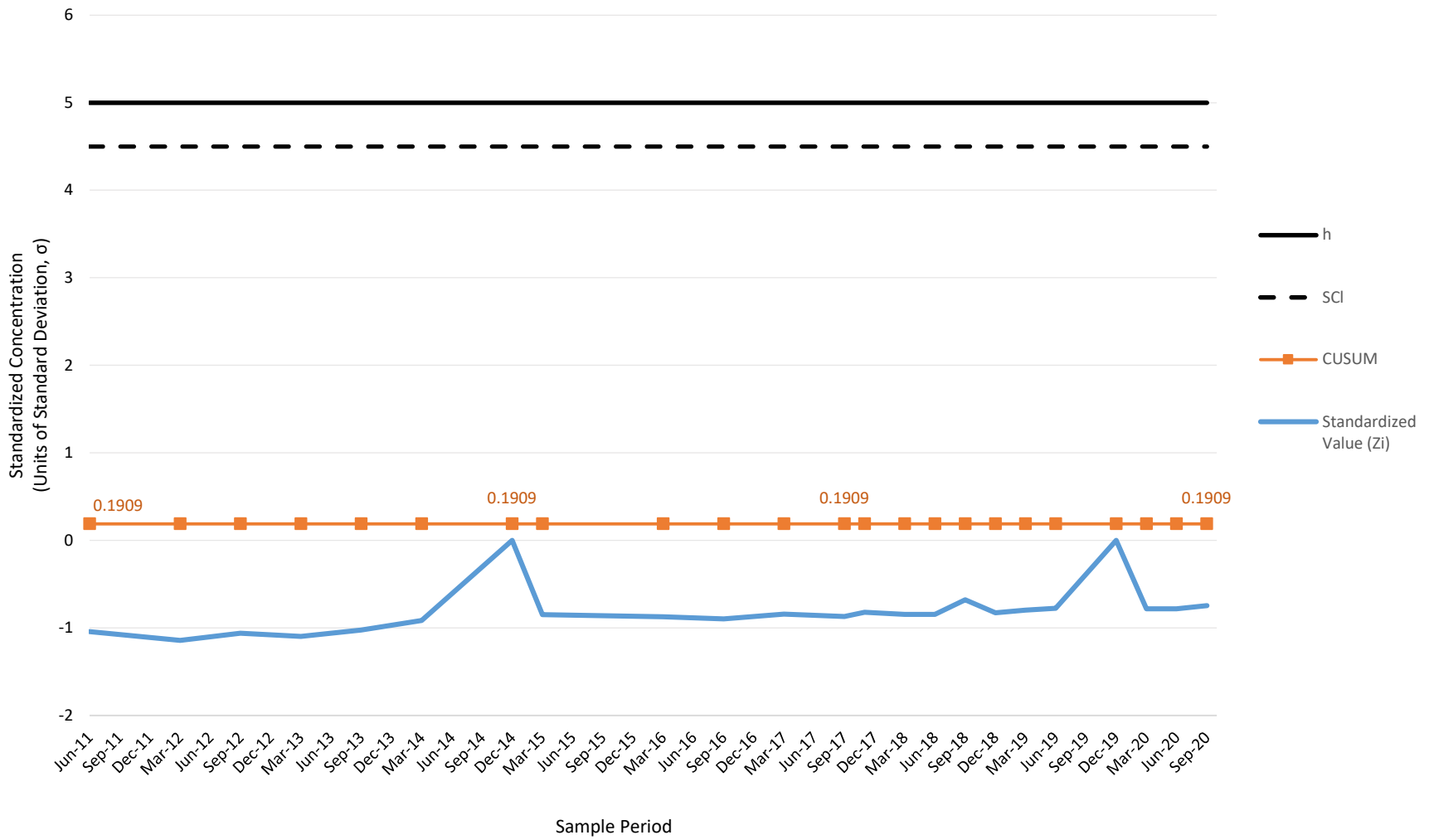
CUSUM Control Chart - Arsenic
Monitoring Well OW-7
Tiverton Landfill



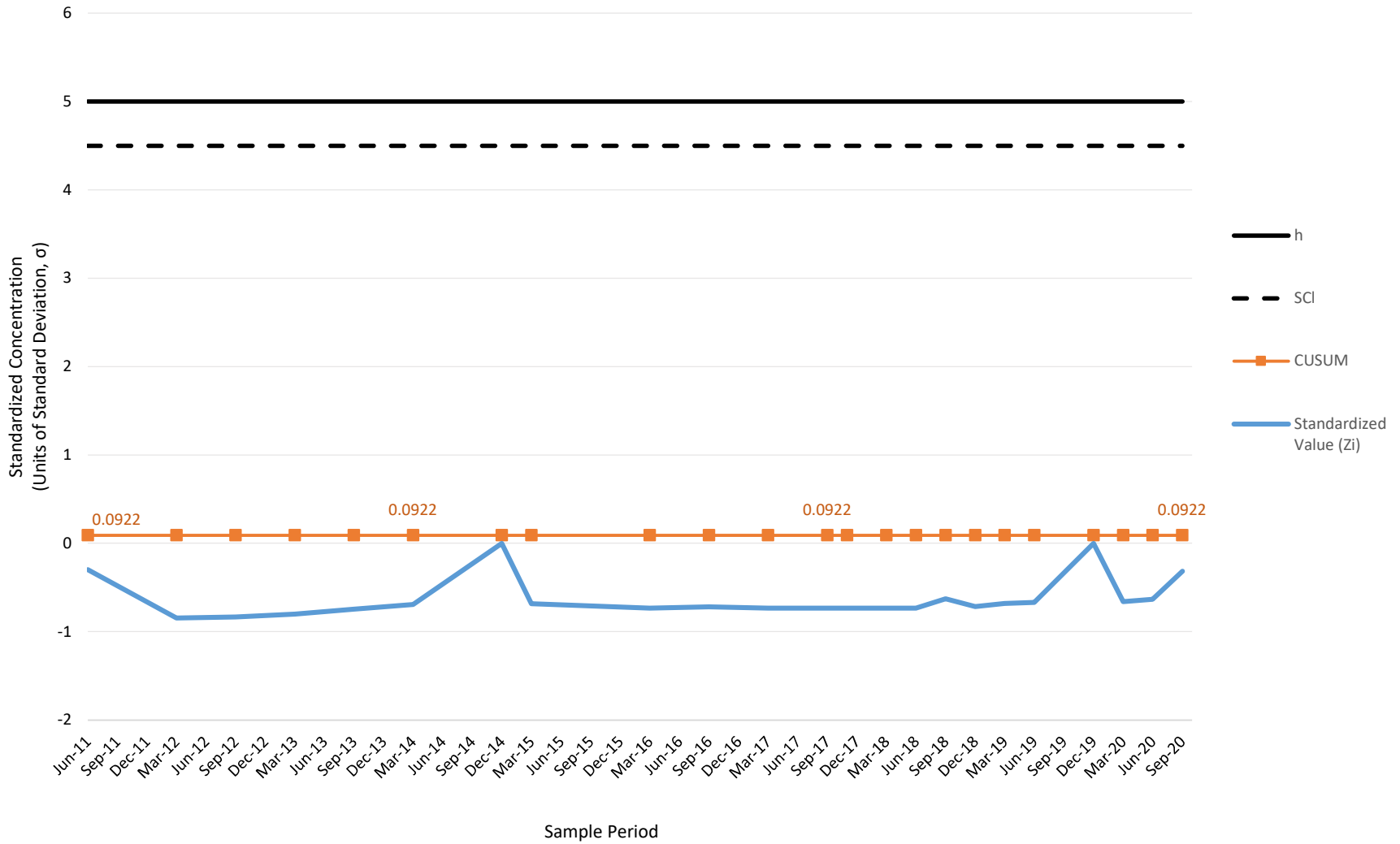
CUSUM Control Chart - Cadmium
Monitoring Well OW-7
Tiverton Landfill



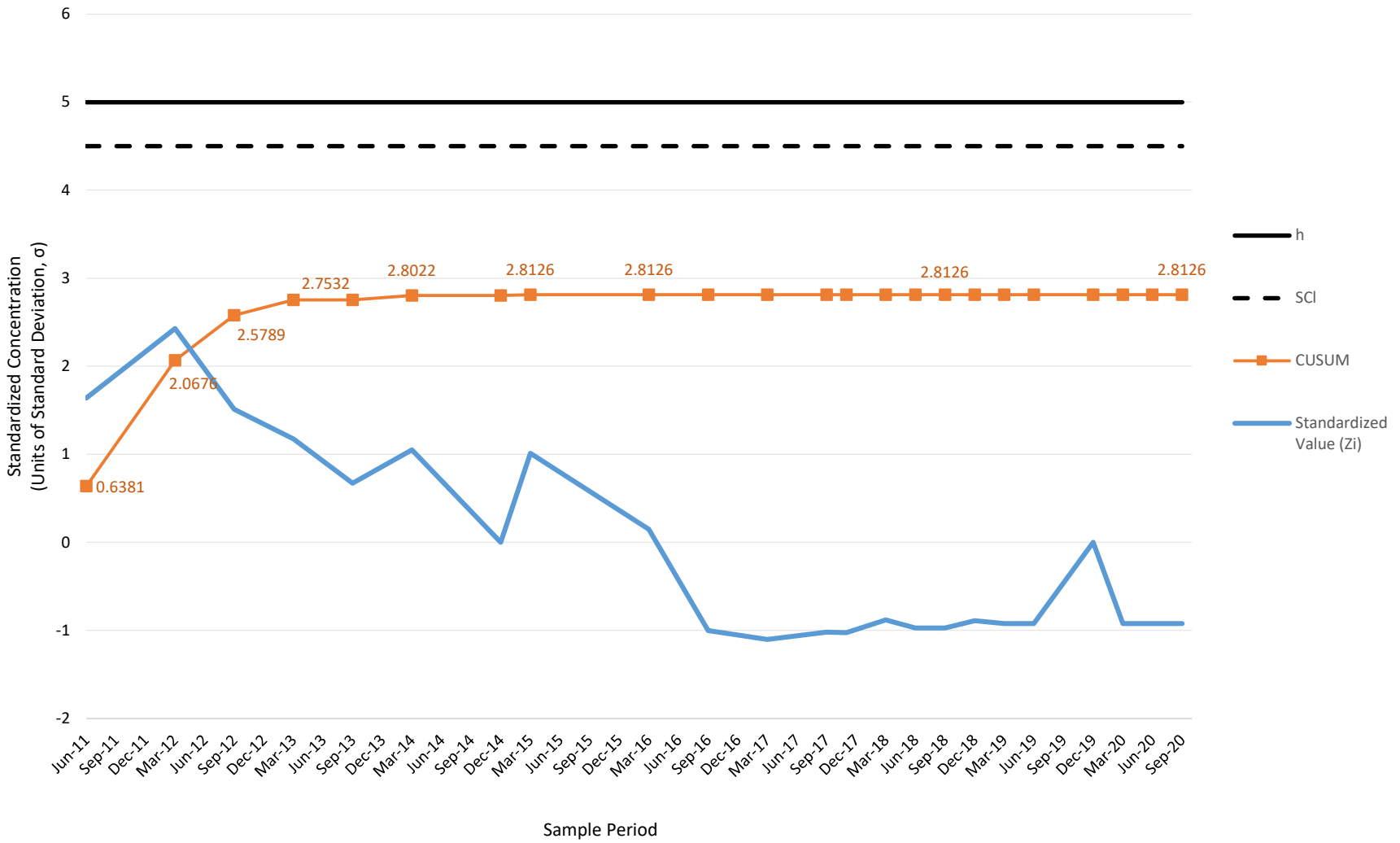
CUSUM Control Chart - Copper
Monitoring Well OW-7
Tiverton Landfill



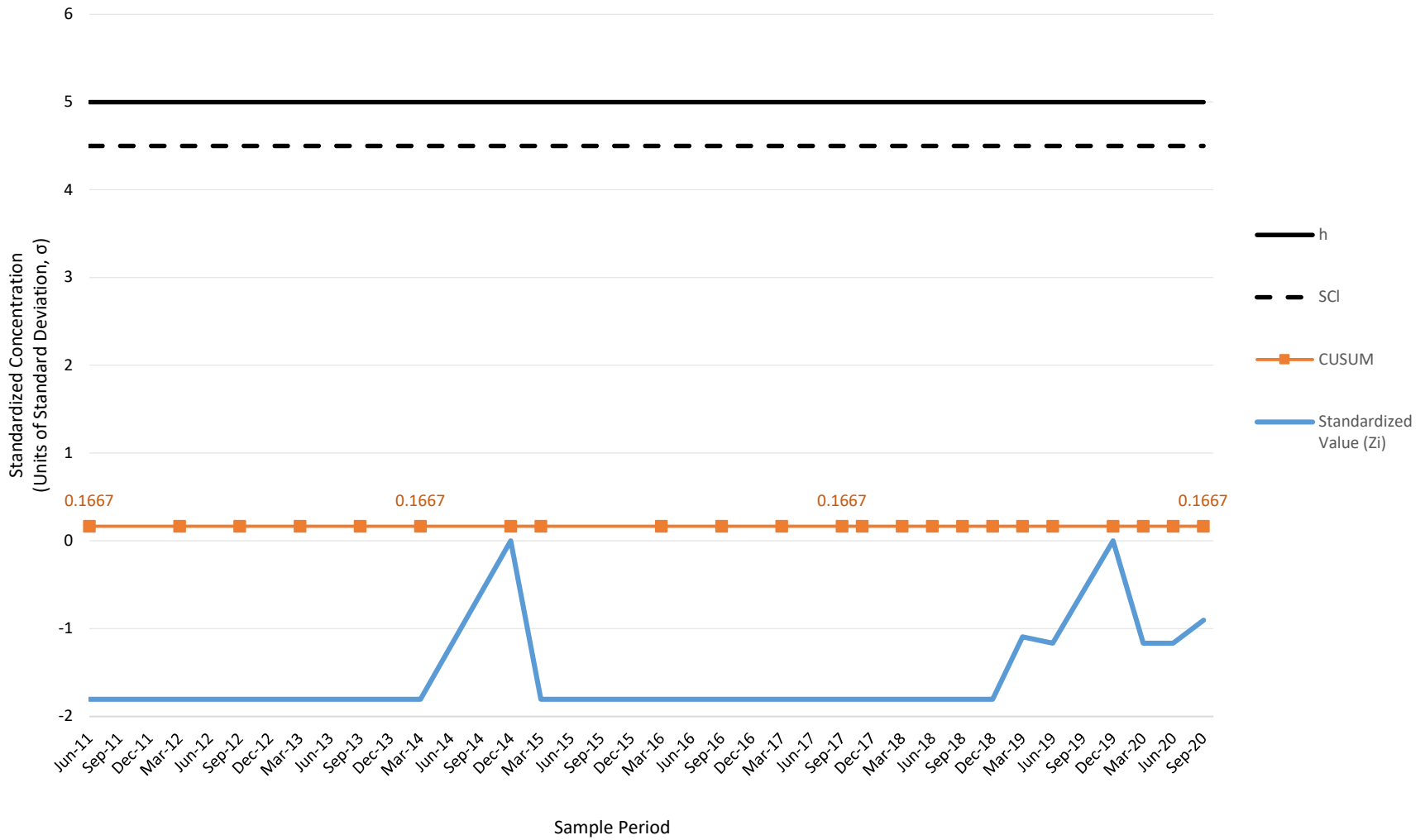
CUSUM Control Chart - Lead
Monitoring Well OW-7
Tiverton Landfill



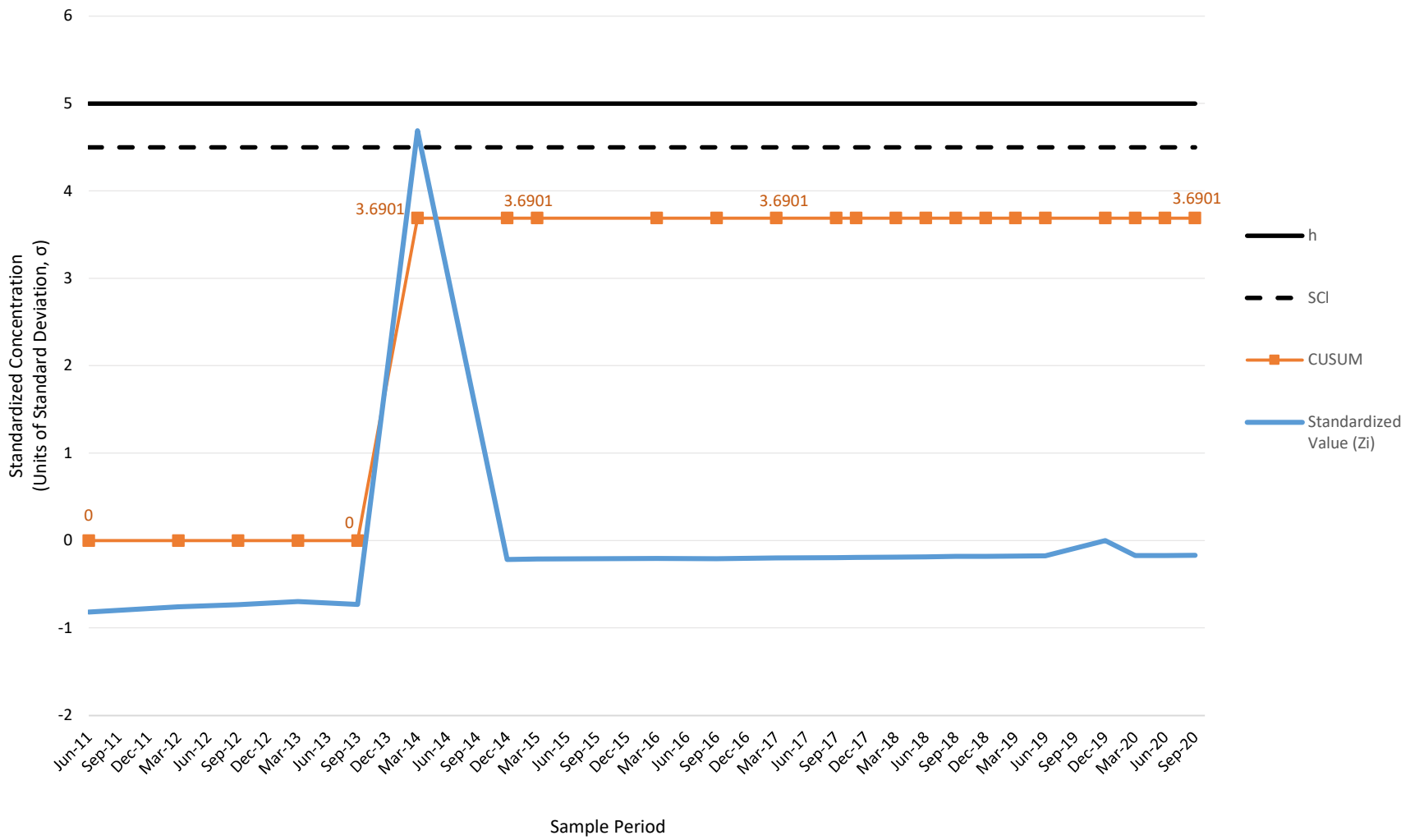
CUSUM Control Chart - Selenium
Monitoring Well OW-7
Tiverton Landfill



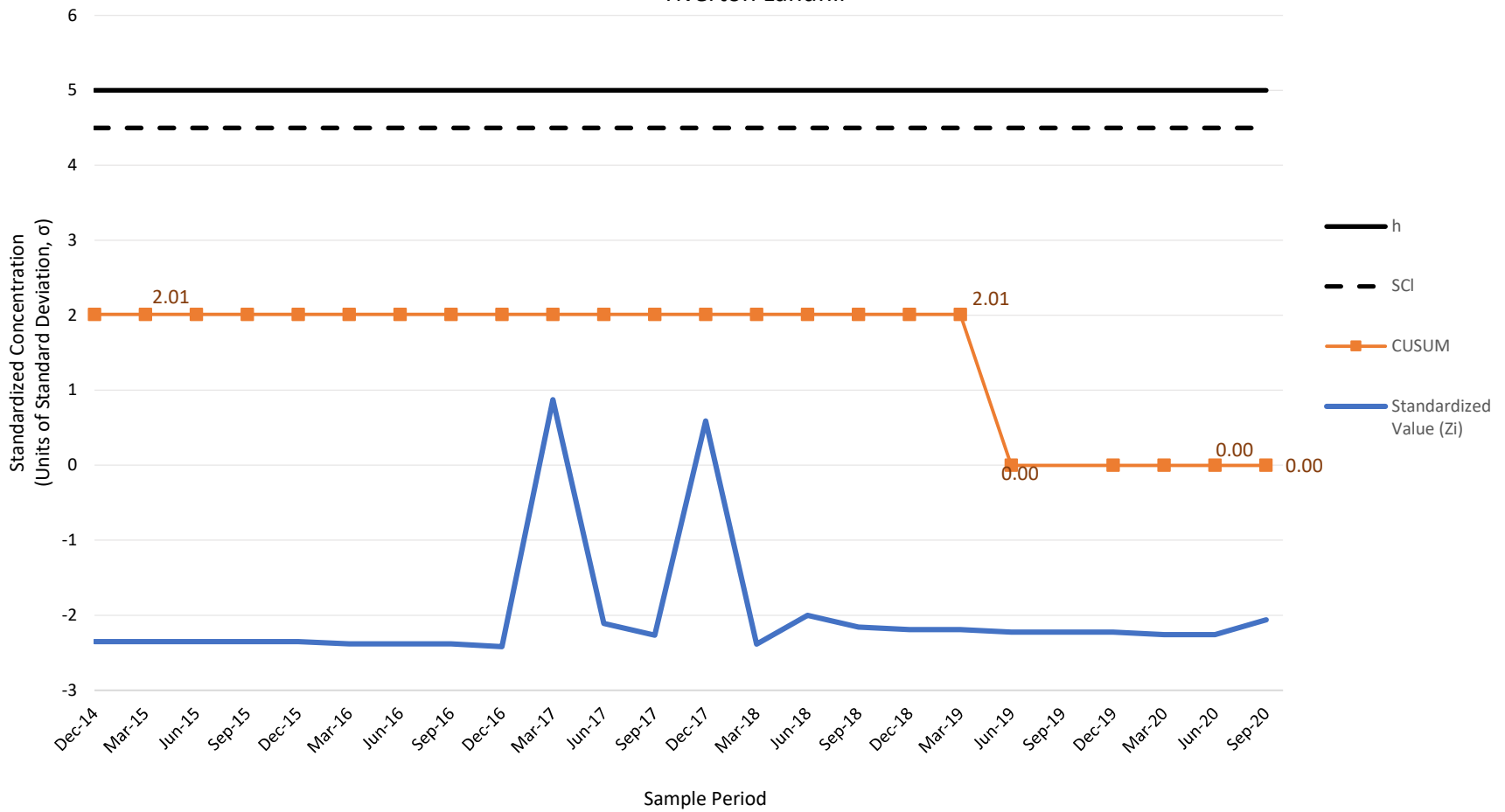
CUSUM Control Chart - Silver
Monitoring Well OW-7
Tiverton Landfill



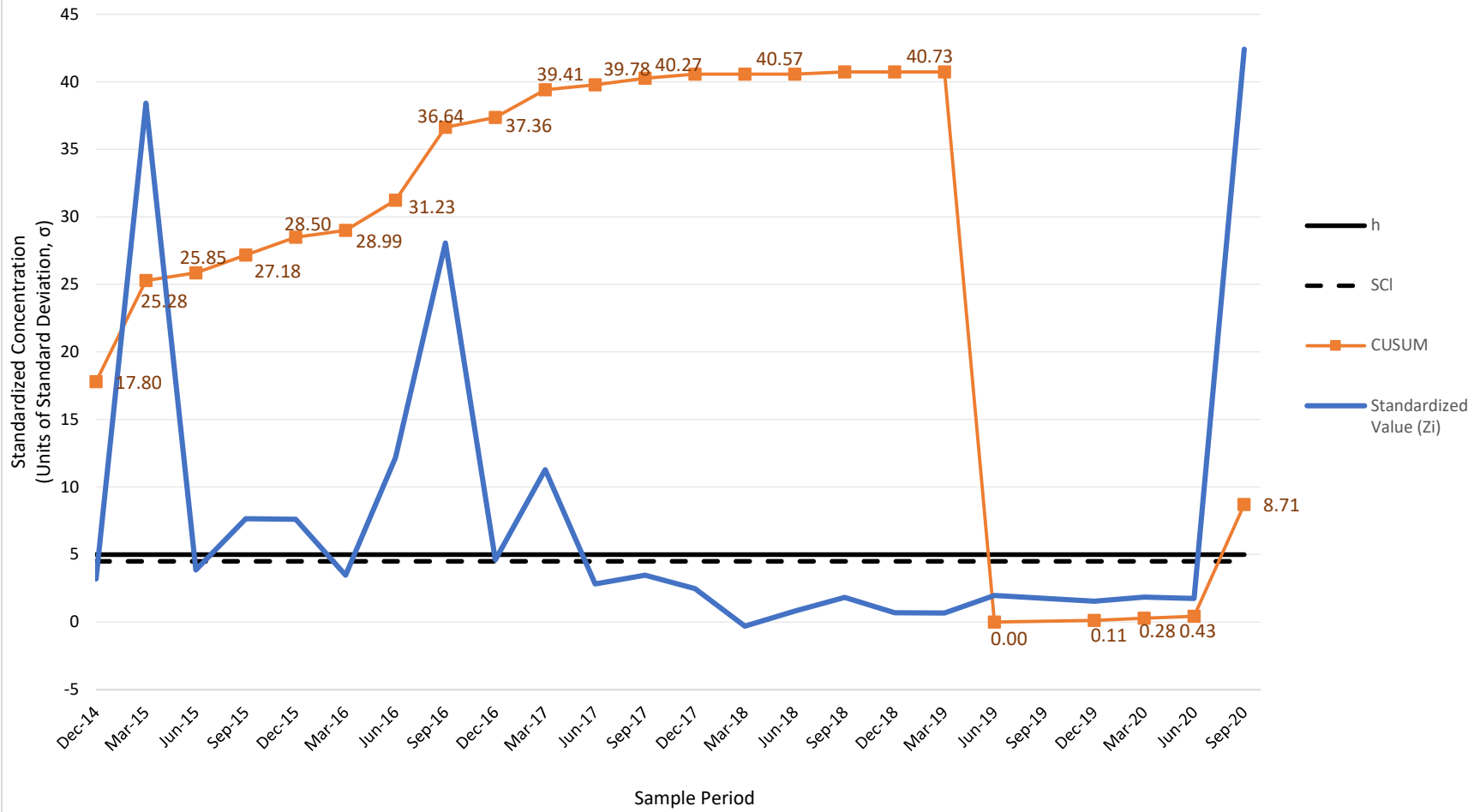
CUSUM Control Chart - Zinc
Monitoring Well OW-7
Tiverton Landfill



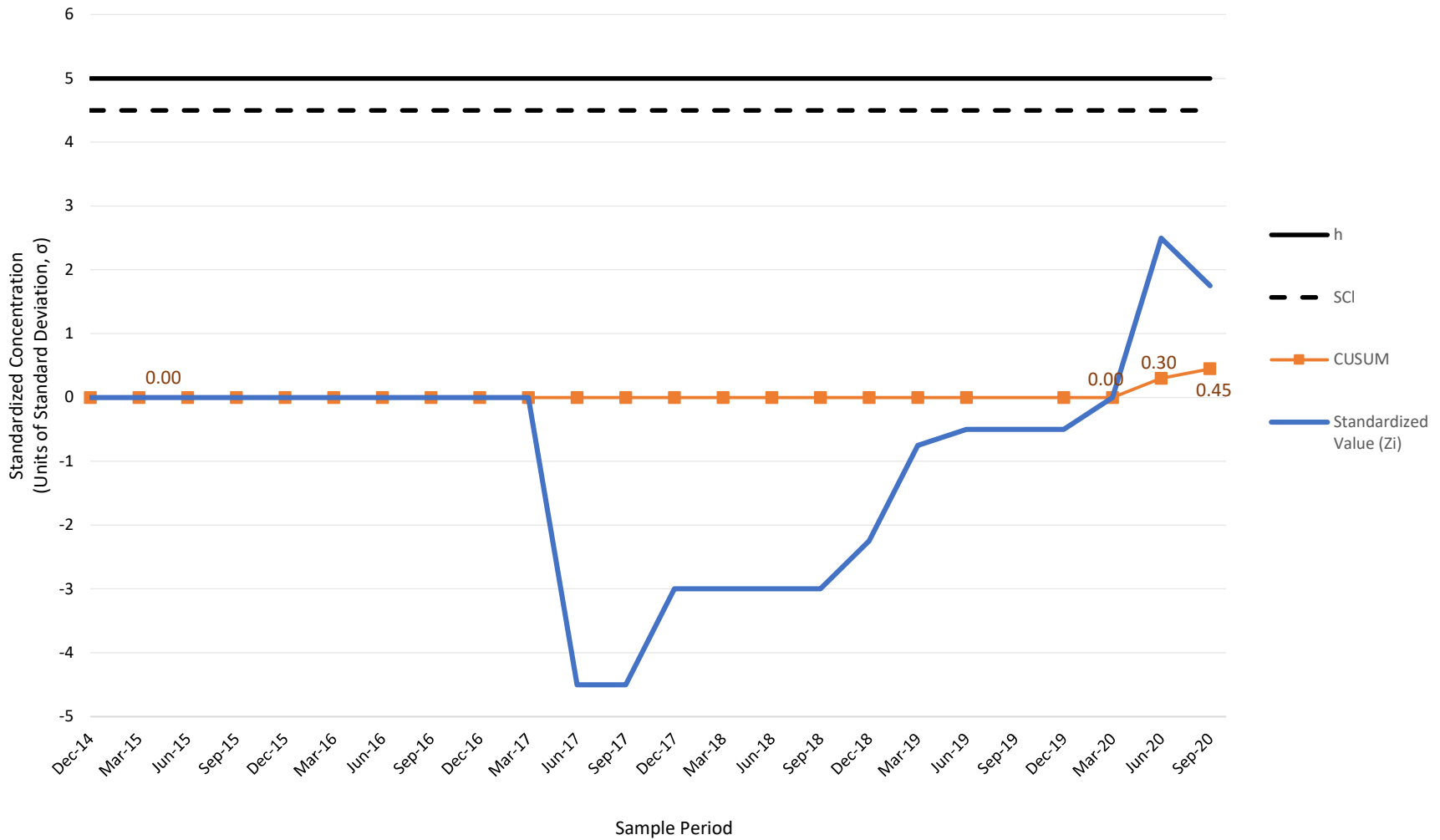
CUSUM Control Chart - Antimony
Background Monitoring Well OW-12
Tiverton Landfill



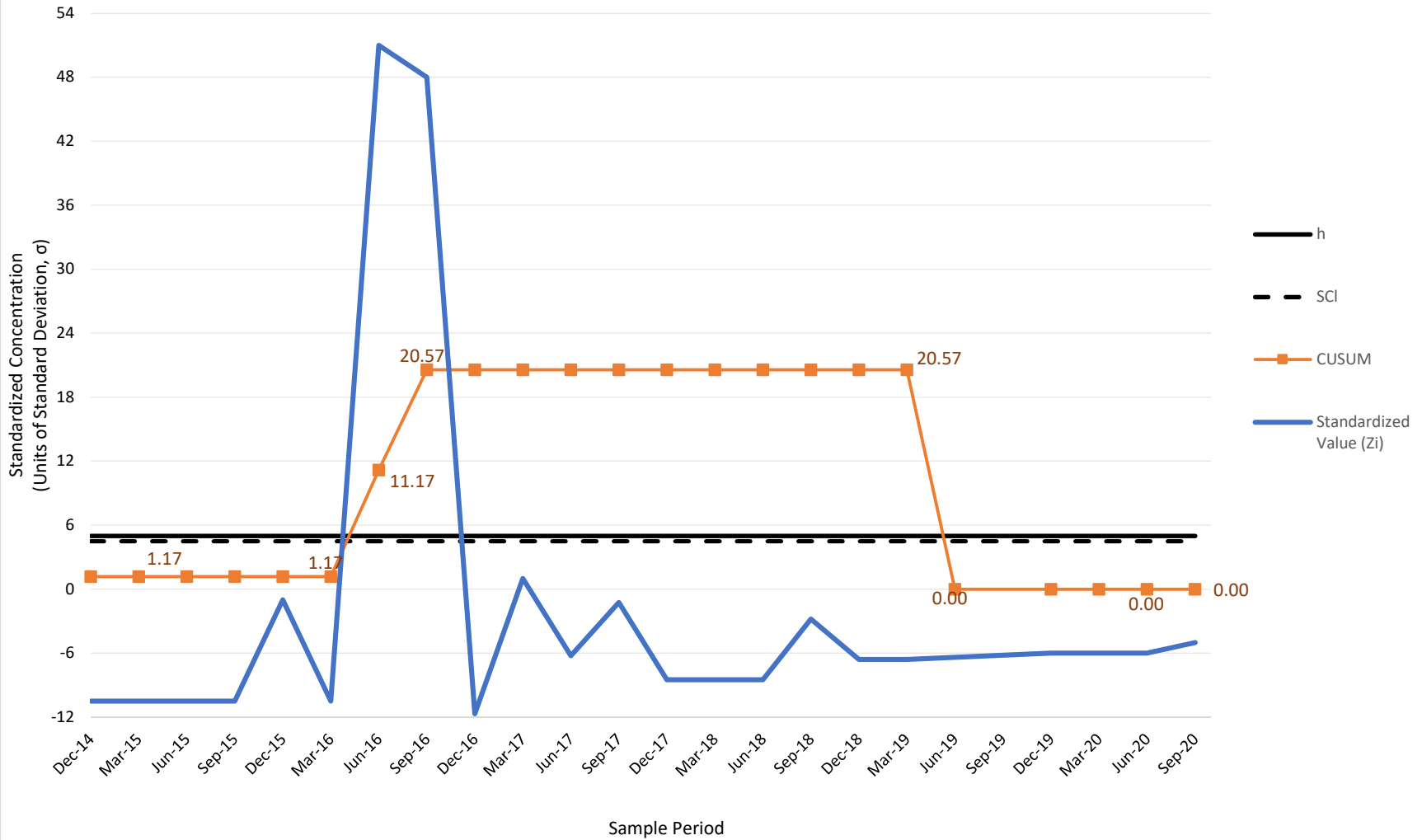
CUSUM Control Chart - Barium
Background Monitoring Well OW-12
Tiverton Landfill



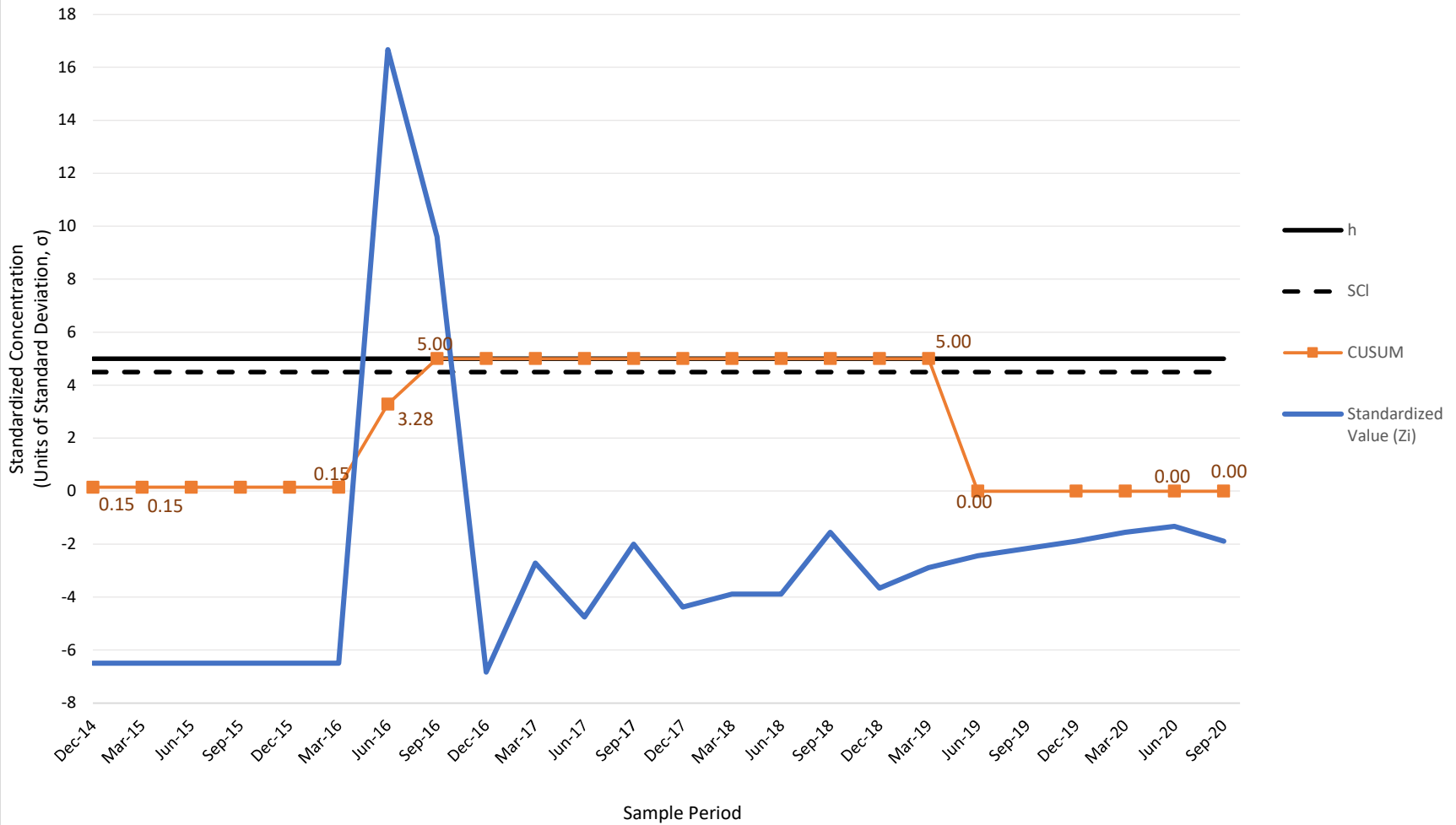
CUSUM Control Chart - Cadmium
Background Monitoring Well OW-12
Tiverton Landfill



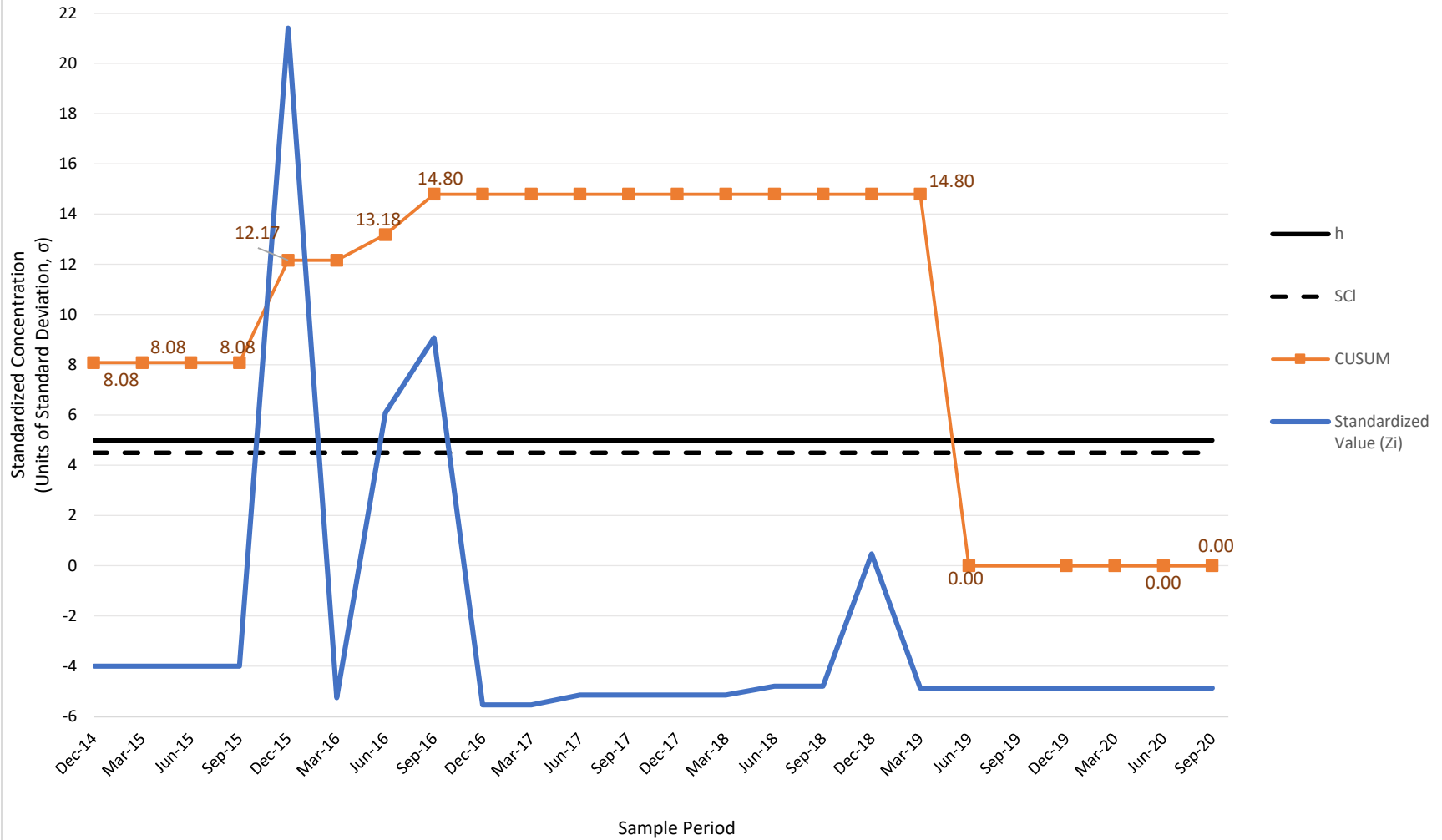
CUSUM Control Chart - Chromium
Background Monitoring Well OW-12
Tiverton Landfill



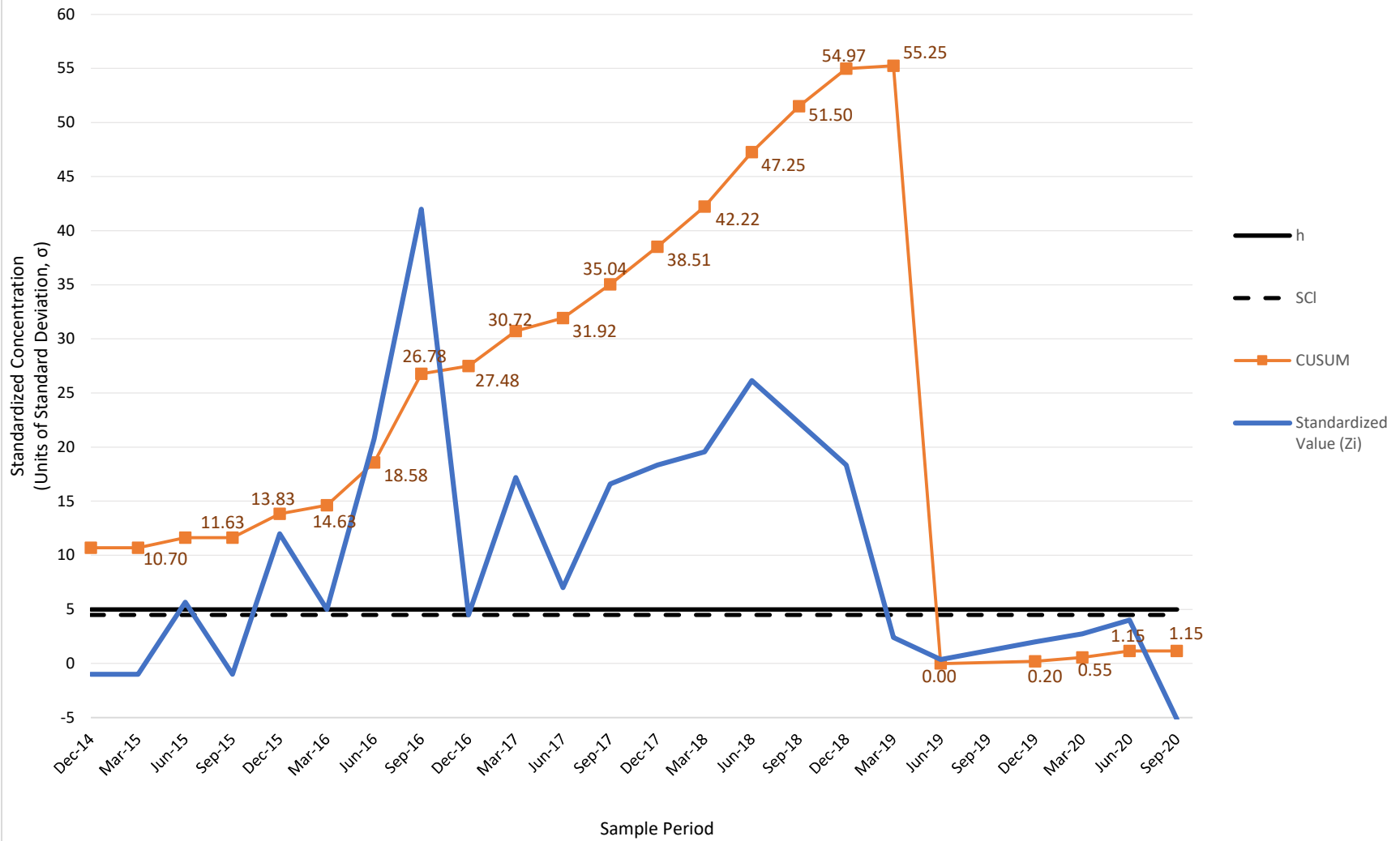
CUSUM Control Chart - Cobalt
 Background Monitoring Well OW-12
 Tiverton Landfill



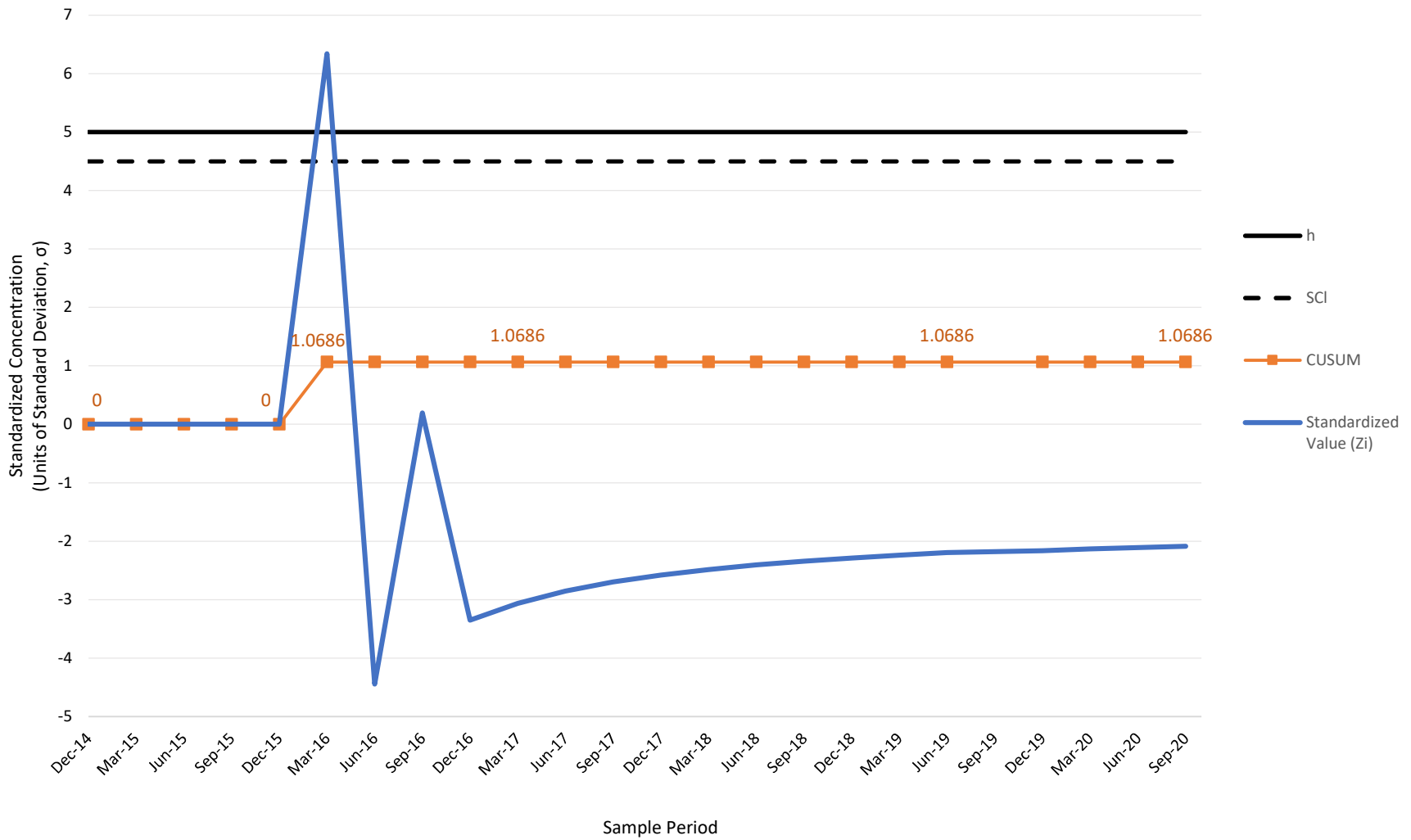
CUSUM Control Chart - Copper
 Background Monitoring Well OW-12
 Tiverton Landfill



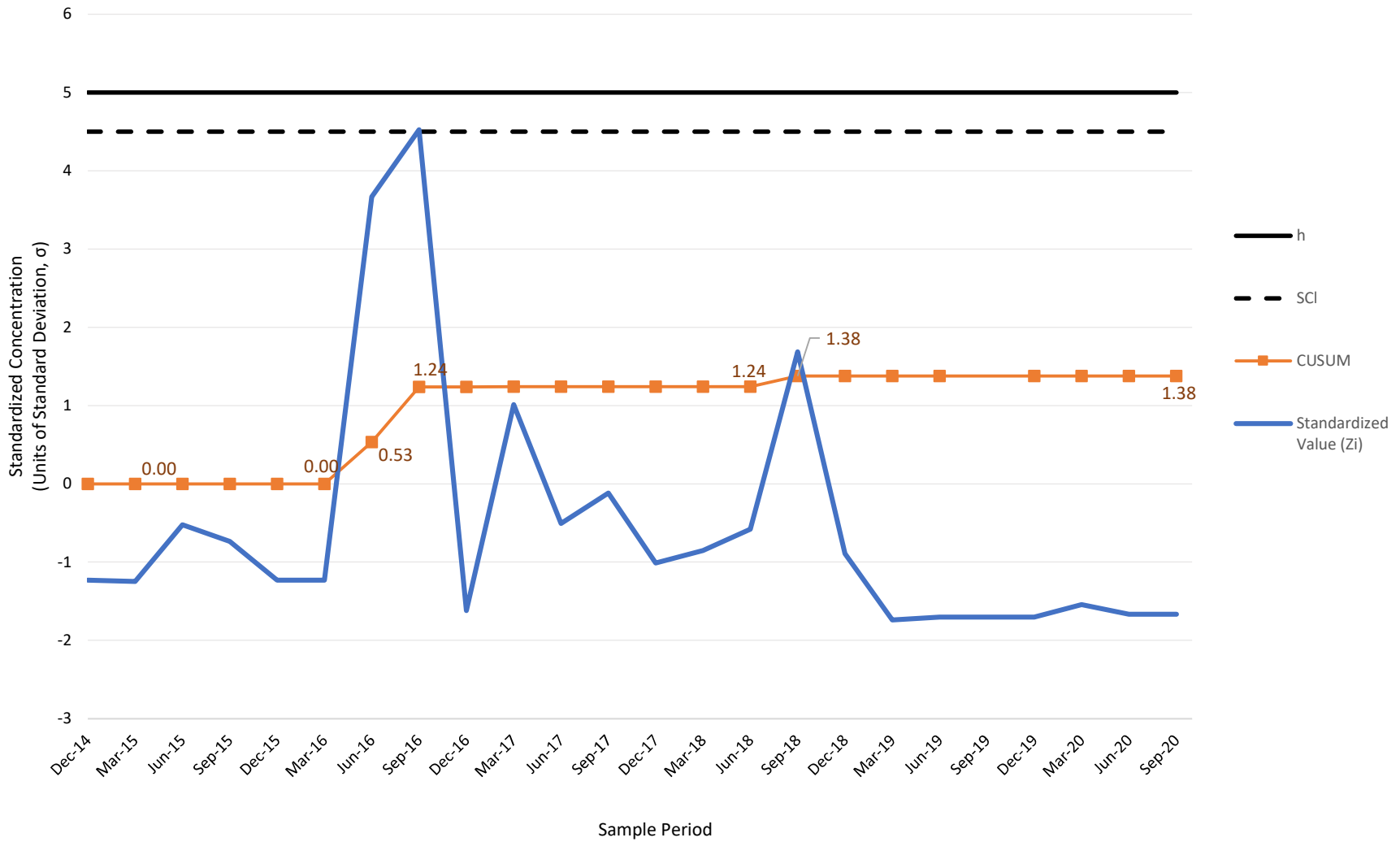
CUSUM Control Chart - Nickel
 Background Monitoring Well OW-12
 Tiverton Landfill



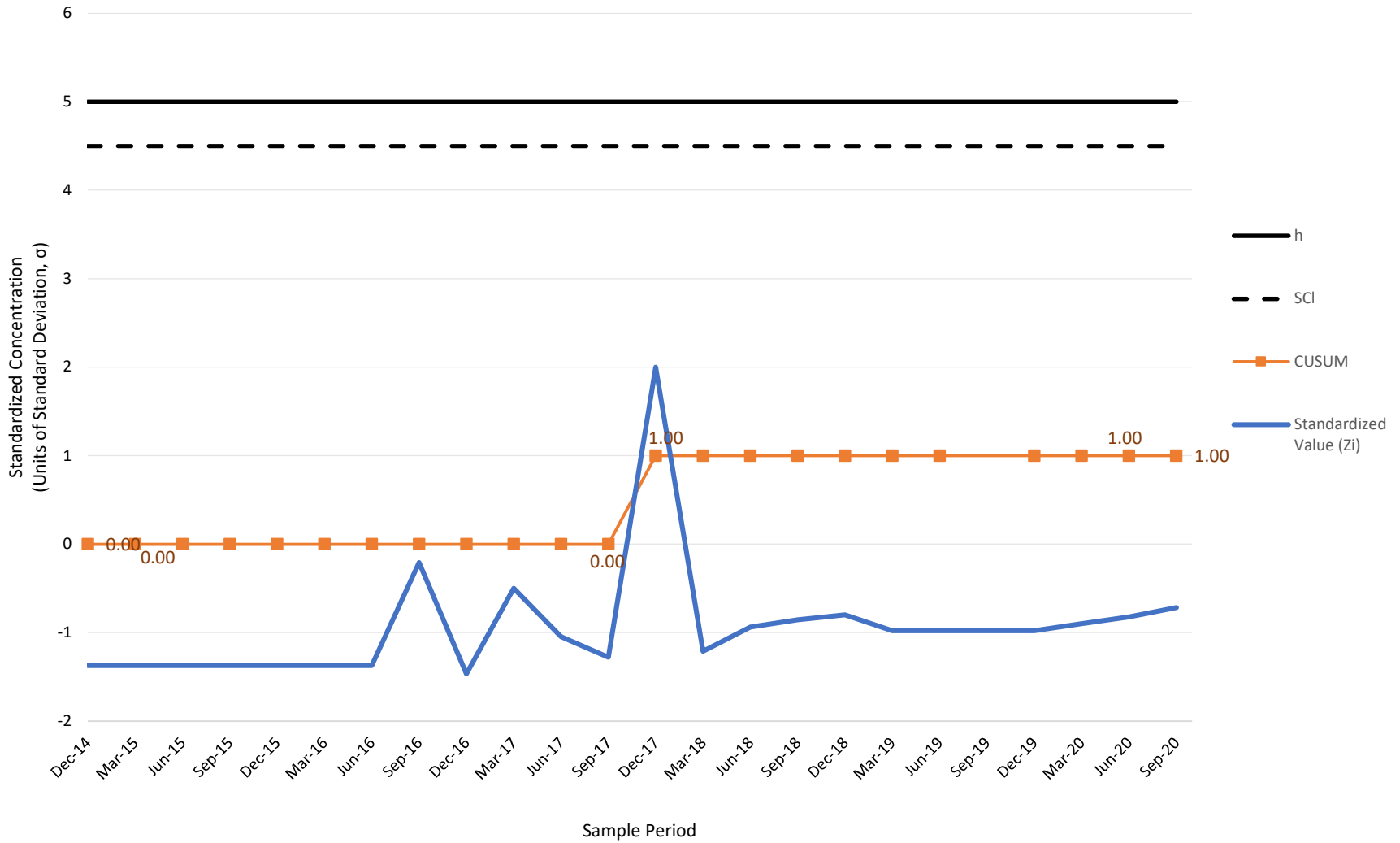
CUSUM Control Chart - Tin
Background Monitoring Well OW-12
Tiverton Landfill



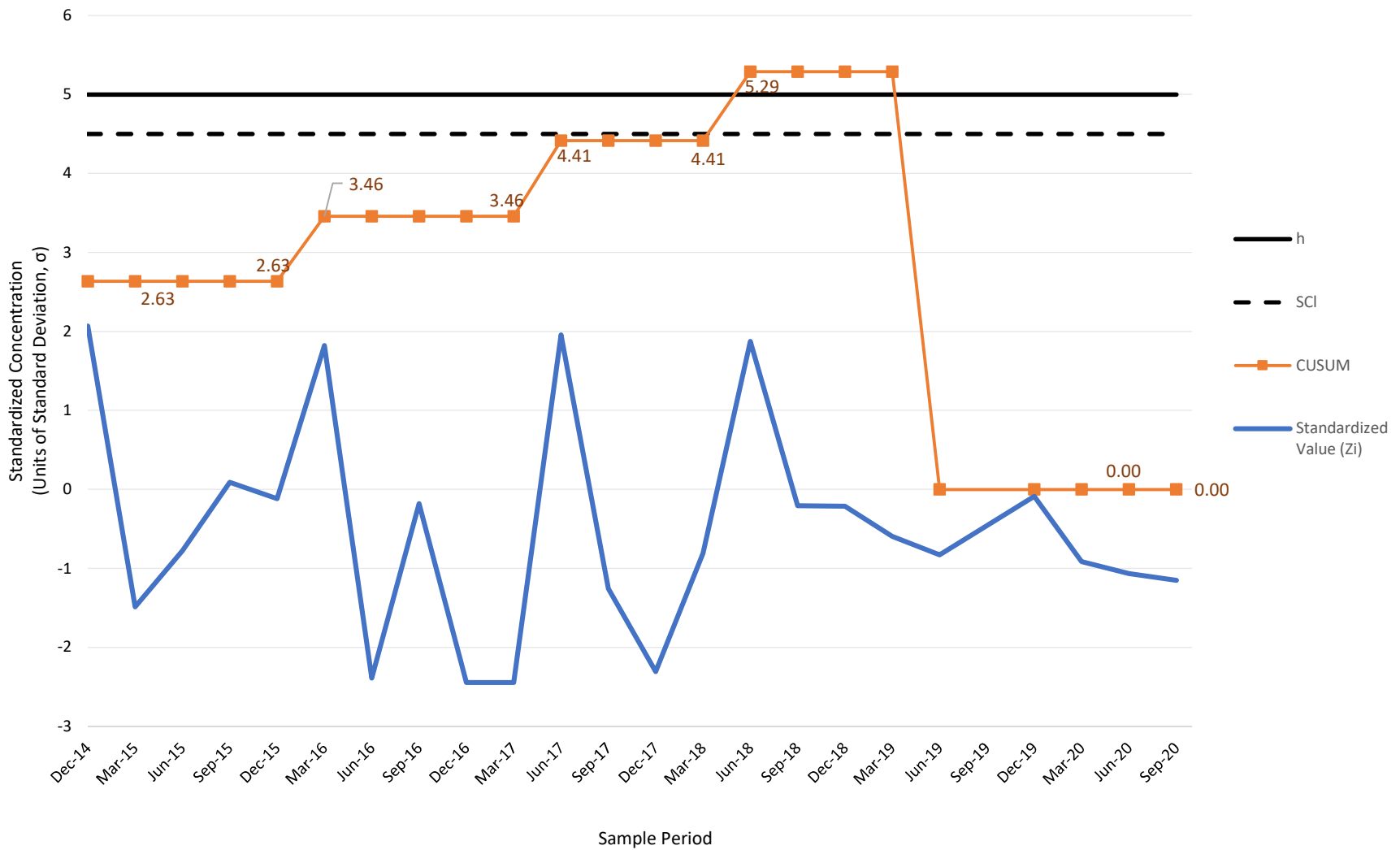
CUSUM Control Chart - Zinc
Background Monitoring Well OW-12
Tiverton Landfill



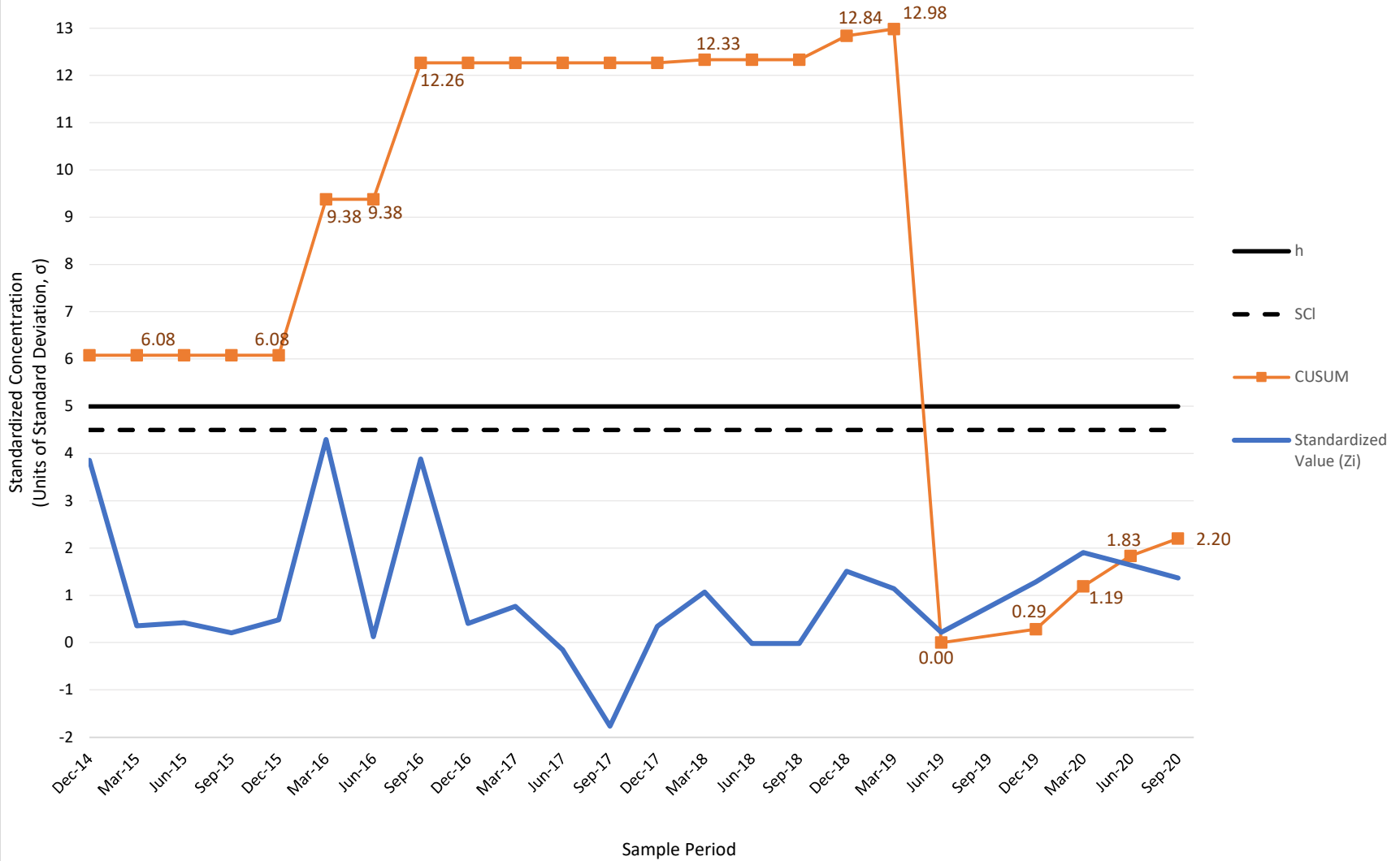
CUSUM Control Chart - Antimony
Monitoring Well OW-13
Tiverton Landfill



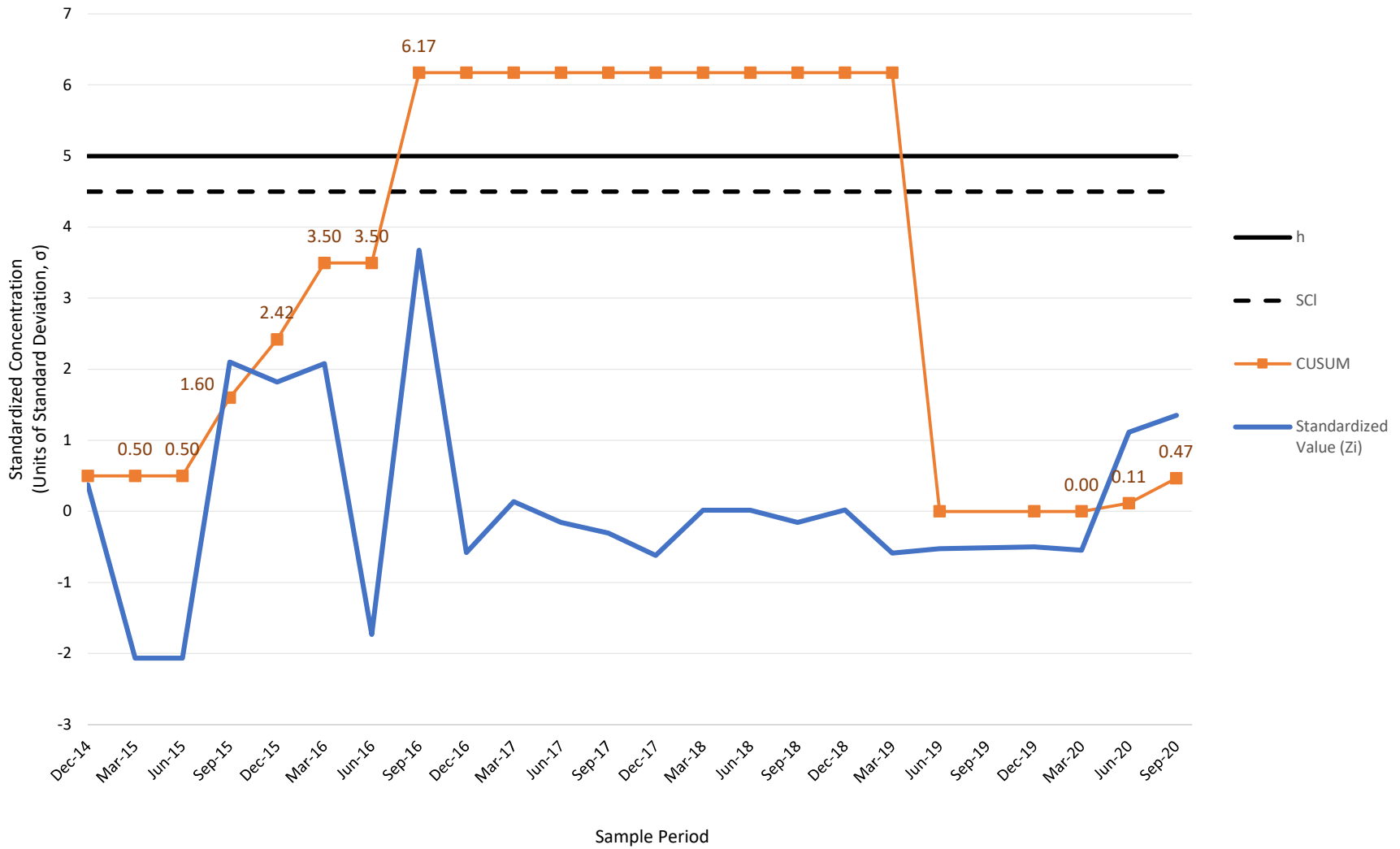
CUSUM Control Chart - Arsenic
Monitoring Well OW-13
Tiverton Landfill



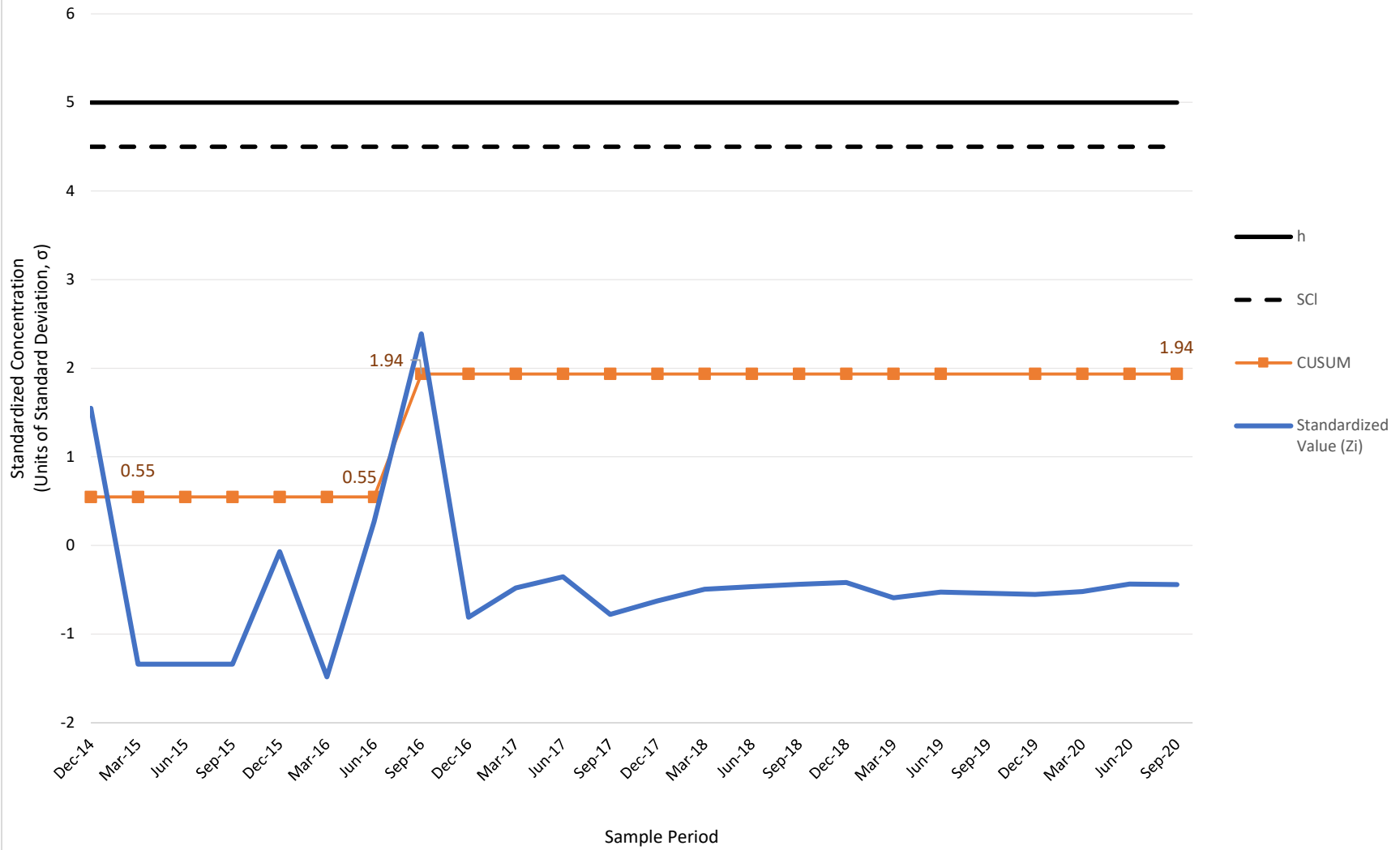
CUSUM Control Chart - Barium
Monitoring Well OW-13
Tiverton Landfill



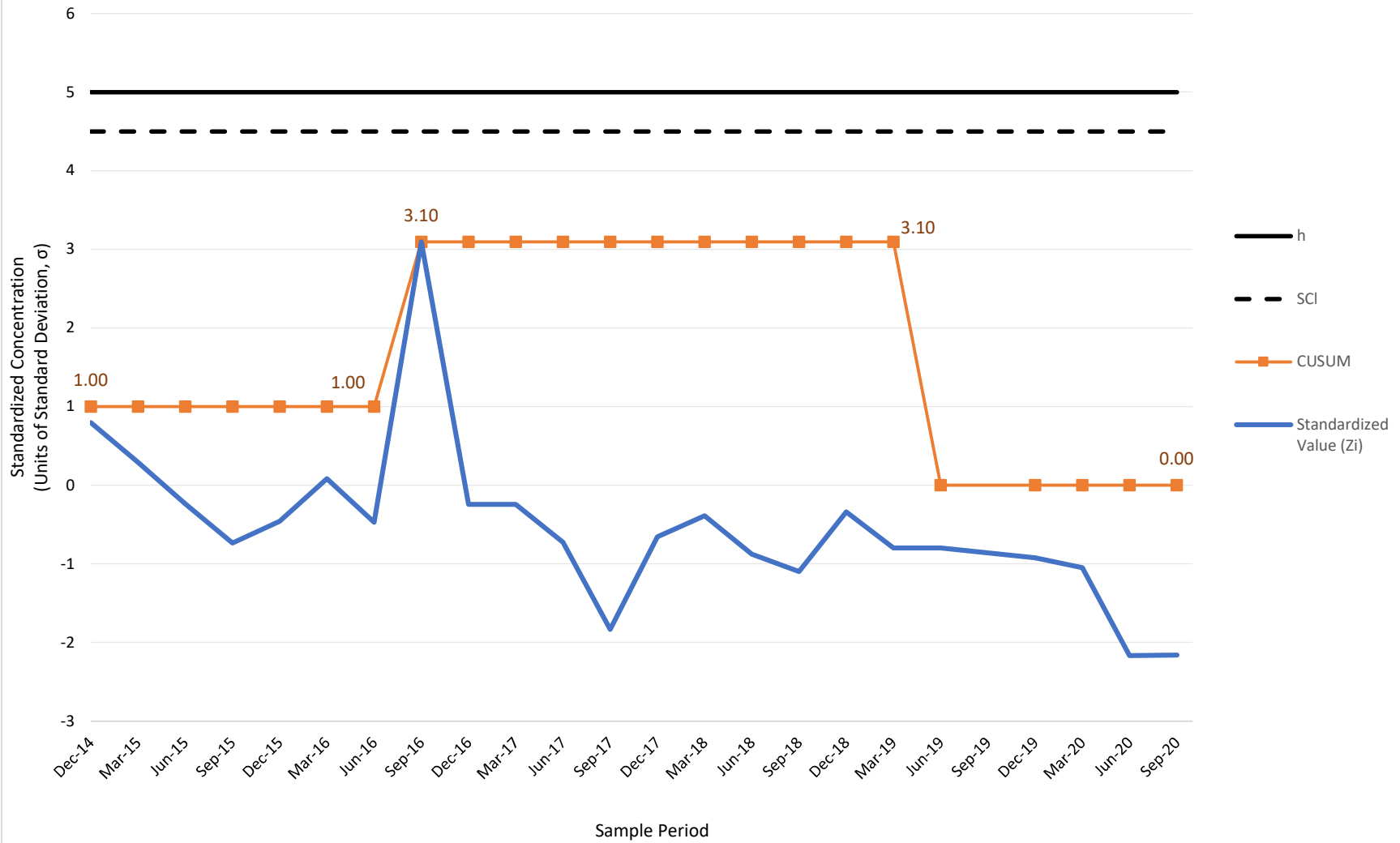
CUSUM Control Chart - Cadmium
Monitoring Well OW-13
Tiverton Landfill



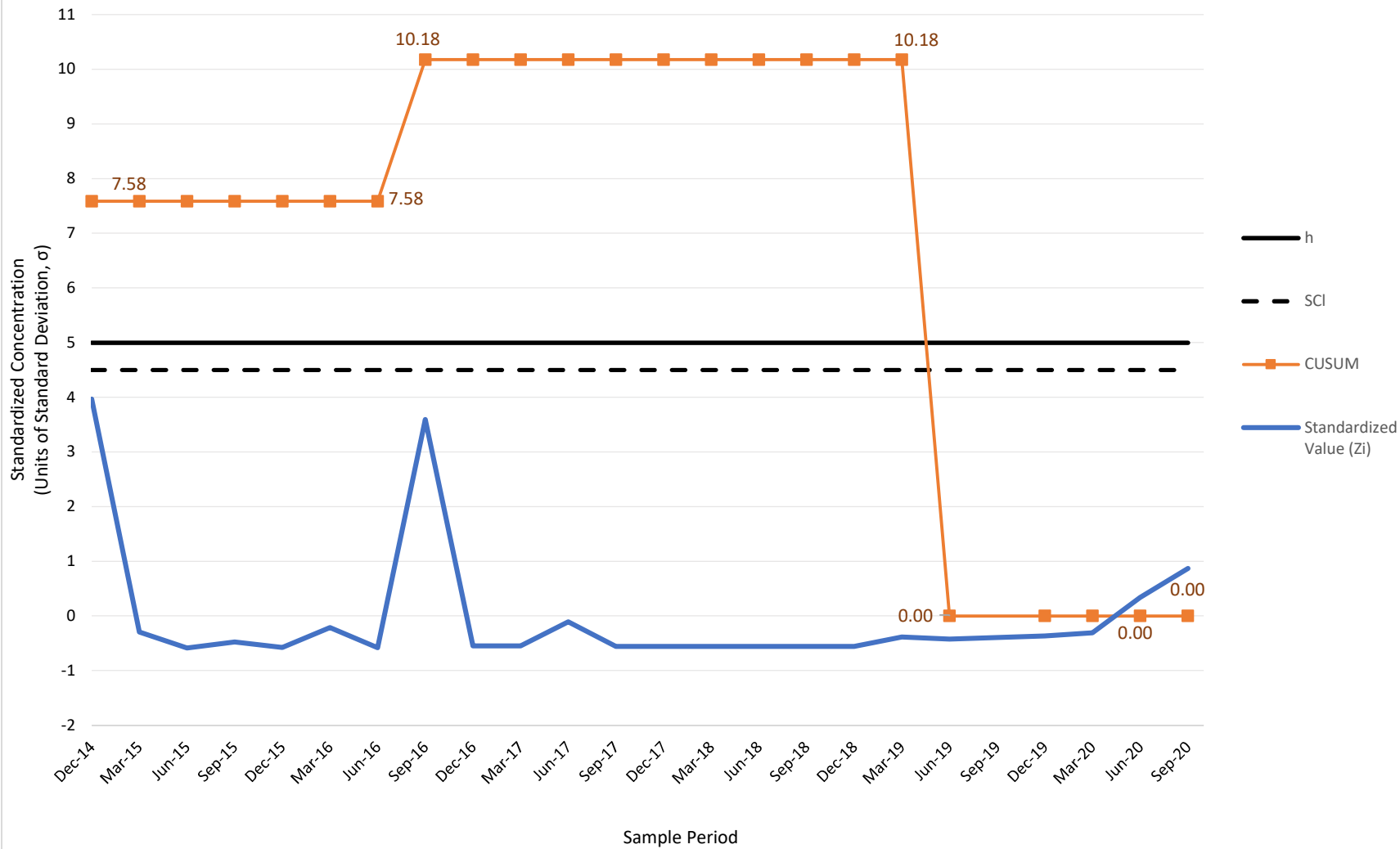
CUSUM Control Chart - Chromium
Monitoring Well OW-13
Tiverton Landfill



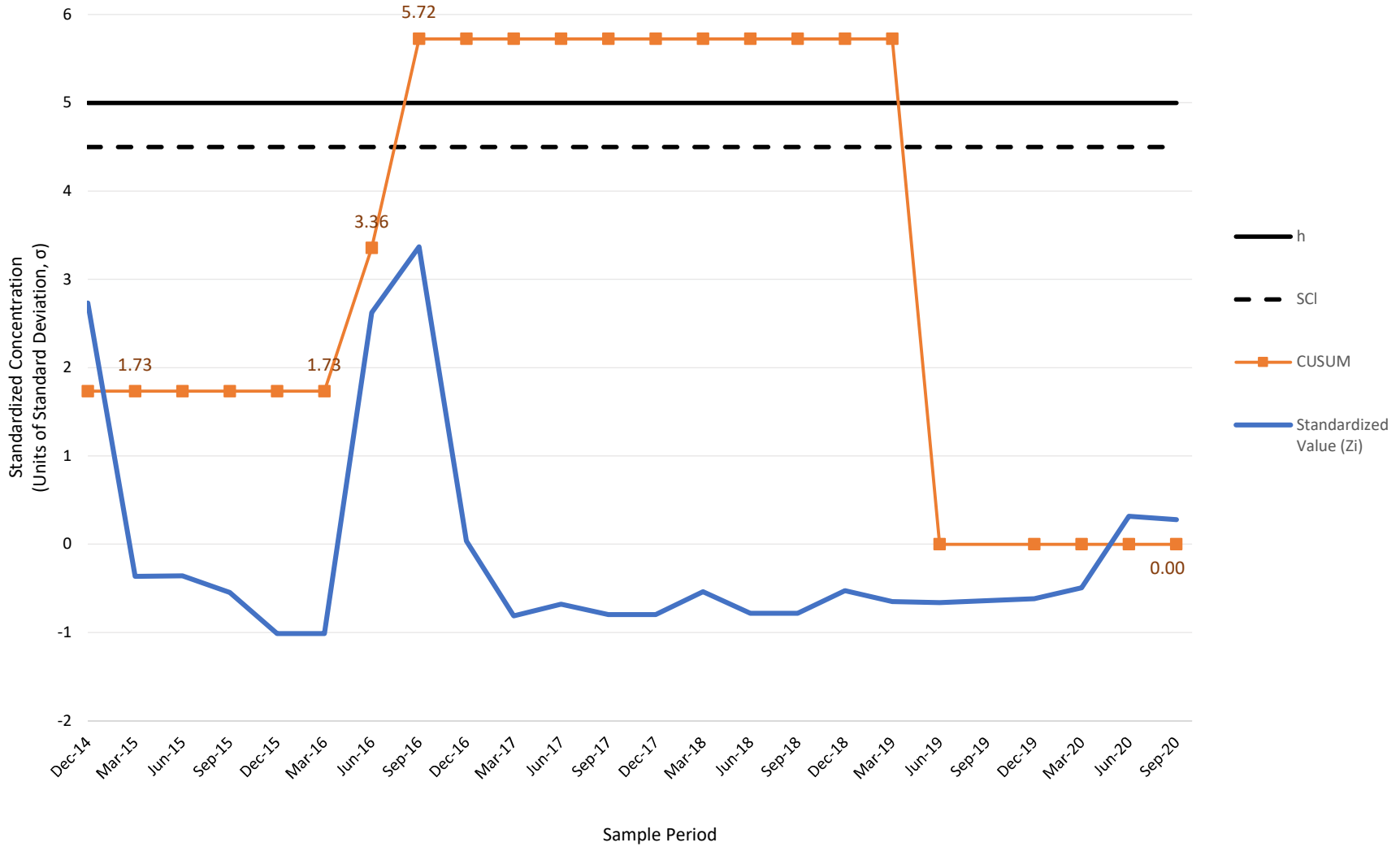
CUSUM Control Chart - Cobalt
Monitoring Well OW-13
Tiverton Landfill



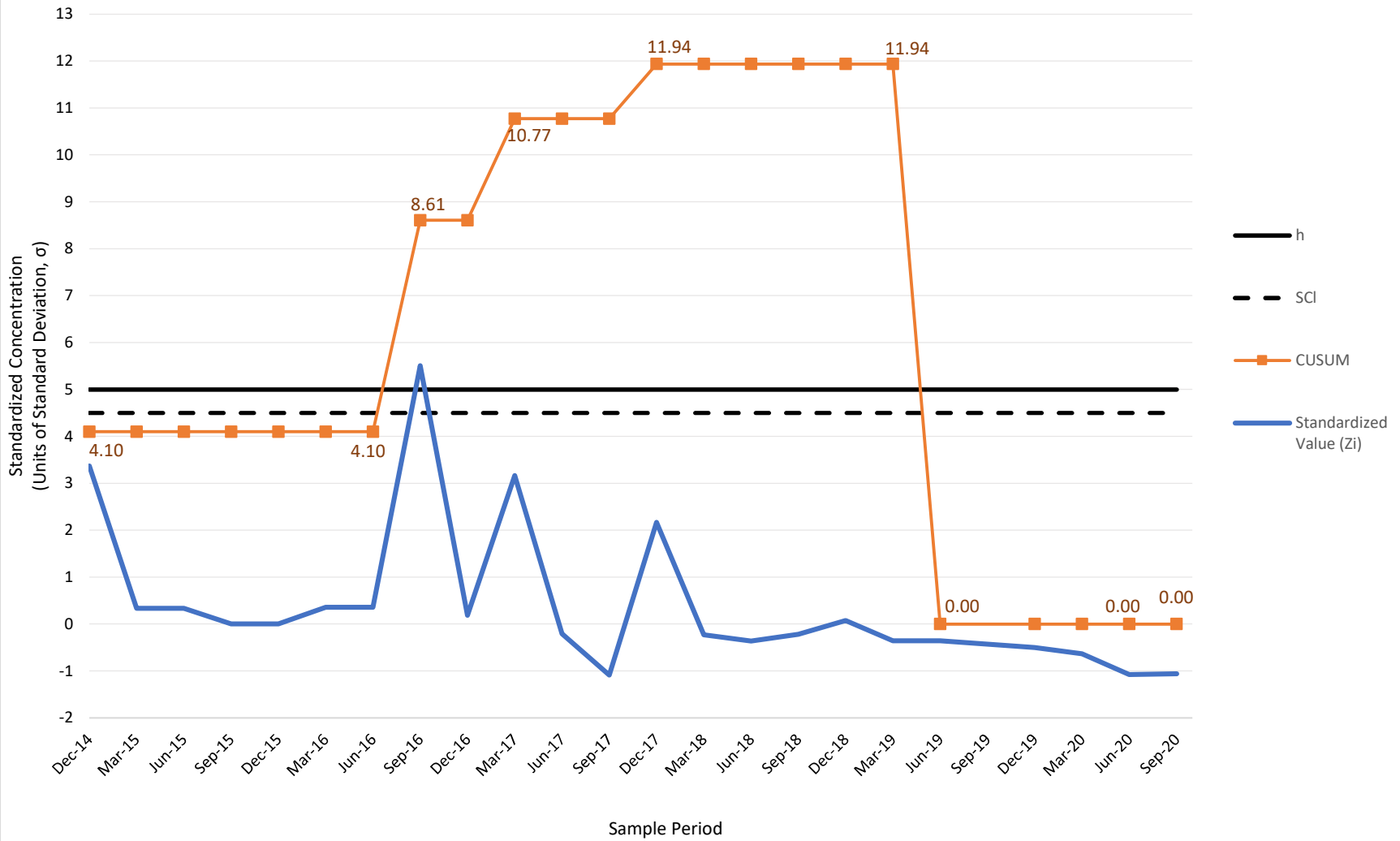
CUSUM Control Chart - Copper
Monitoring Well OW-13
Tiverton Landfill



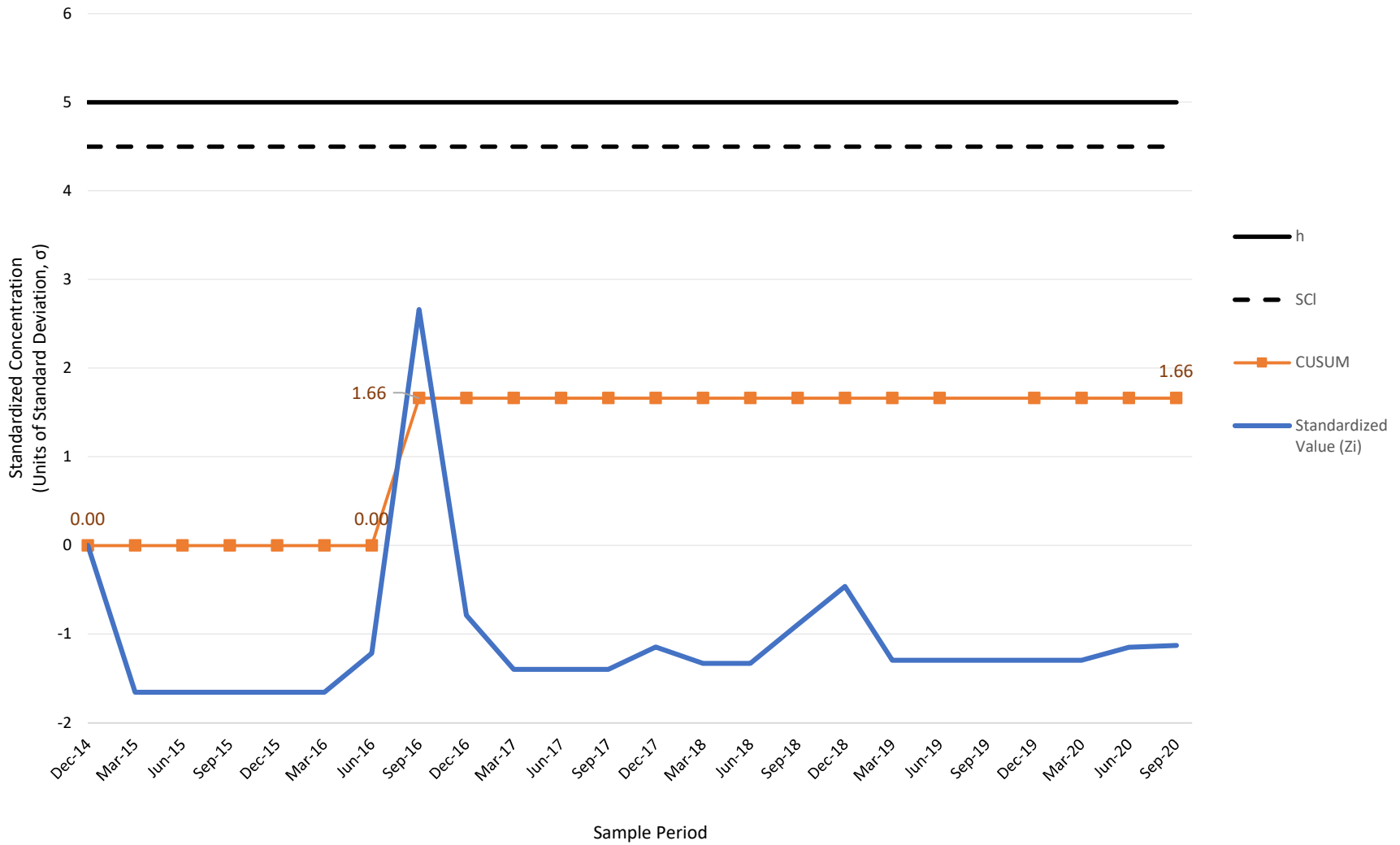
CUSUM Control Chart - Lead
Monitoring Well OW-13
Tiverton Landfill



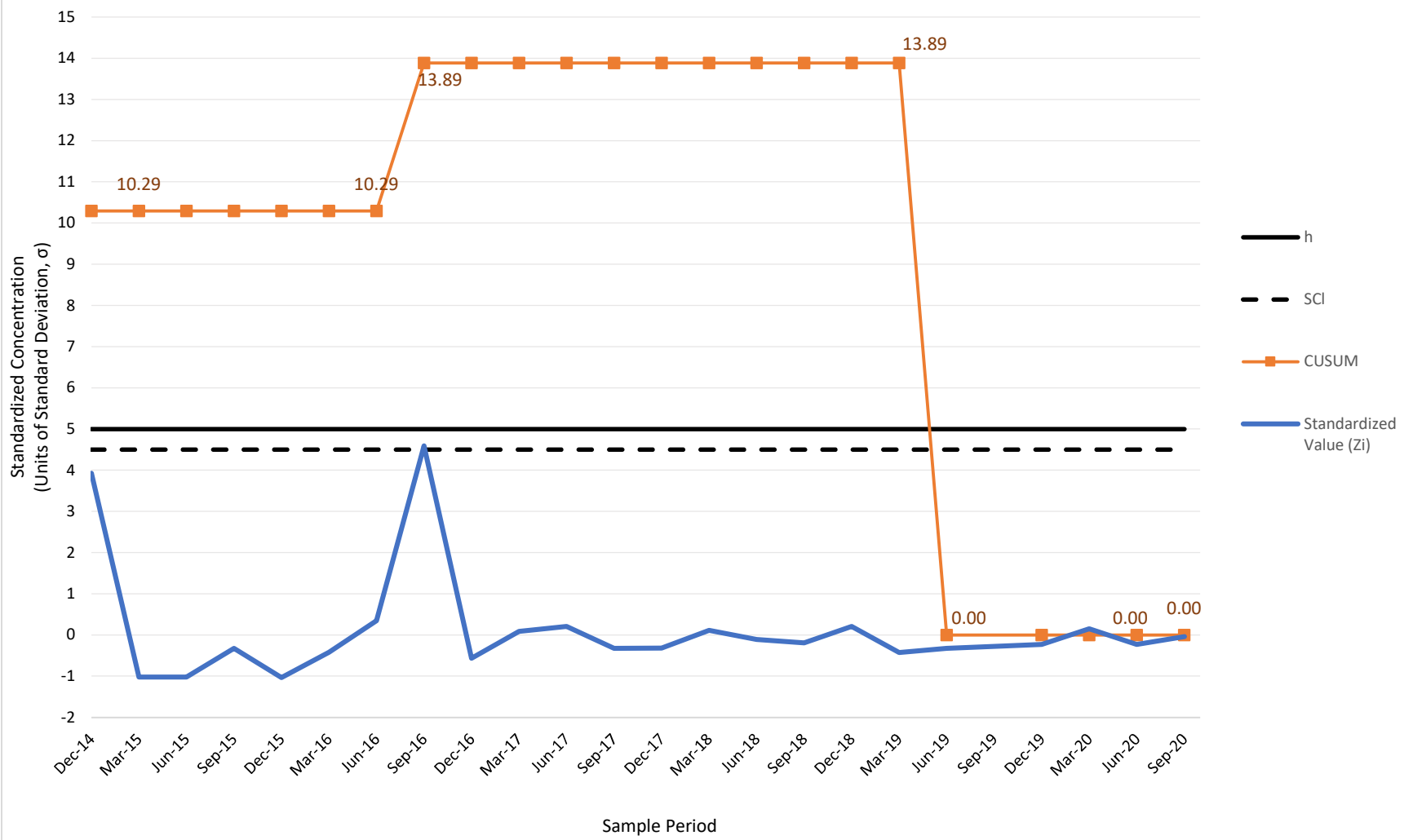
CUSUM Control Chart - Nickel
Monitoring Well OW-13
Tiverton Landfill



CUSUM Control Chart - Vanadium
Monitoring Well OW-13
Tiverton Landfill



CUSUM Control Chart - Zinc
Monitoring Well OW-13
Tiverton Landfill



ATTACHMENT 4

July, August and September 2020 Precipitation Data, Tiverton, RI



Summary of Monthly Normals
1981-2010
 Generated on 10/12/2020

Precipitation (in.)								
	Totals	Mean Number of Days				Precipitation Probabilities Probability that precipitation will be equal to or less than the indicated amount		
	Means	Daily Precipitation				Monthly Precipitation vs. Probability Levels		
Month	Mean	>= 0.01	>= 0.10	>= 0.50	>= 1.00	0.25	0.50	0.75
01	3.85	12.4	7.3	2.9	0.9	2.44	3.70	5.37
02	3.77	10.2	6.5	2.8	1.2	2.67	3.39	5.17
03	5.68	12.4	7.9	3.7	2.1	3.81	5.35	6.60
04	4.82	12.8	7.2	3.1	1.4	3.13	4.64	5.92
05	3.64	12.8	8.2	2.2	0.9	2.58	3.23	4.67
06	3.88	11.8	6.6	2.6	1.4	1.94	2.99	4.74
07	2.79	9.3	5.9	2.1	0.5	1.50	2.43	4.02
08	3.80	9.6	5.2	2.2	1.1	2.20	3.81	4.89
09	3.73	9.2	6.0	2.8	1.6	2.16	3.65	4.59
10	3.93	10.8	7.0	3.1	1.4	2.43	3.41	5.01
11	4.33	10.2	6.5	2.7	1.0	2.70	4.18	5.91
12	4.32	11.8	7.5	2.9	1.5	2.55	4.12	5.56
Summary	48.54	133.3	81.8	33.1	15.0	30.11	44.90	62.45

-7777: a non-zero value that would round to zero

Empty or blank cells indicate data is missing or insufficient occurrences to compute value

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 10/12/2020

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)					
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time			At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	06	01				0.00		0.0										
2020	06	02				0.00		0.0										
2020	06	03				0.03												
2020	06	04				0.00		0.0										
2020	06	05				0.09												
2020	06	06				0.62												
2020	06	07				T												
2020	06	08				0.00		0.0										
2020	06	09				0.00		0.0										
2020	06	10				0.00		0.0										
2020	06	11				0.45												
2020	06	12				0.00		0.0										
2020	06	13				0.00		0.0										
2020	06	14				0.00		0.0										
2020	06	15				0.00		0.0										
2020	06	16				0.00		0.0										
2020	06	17				0.00		0.0										
2020	06	18				0.00		0.0										
2020	06	19				0.00		0.0										
2020	06	20				0.00		0.0										
2020	06	21				0.00		0.0										
2020	06	22				0.00		0.0										
2020	06	23				0.00		0.0										
2020	06	24				0.00		0.0										
2020	06	25				0.00		0.0										
2020	06	26				0.00		0.0										
2020	06	27				0.54												
2020	06	28				0.00		0.0										
2020	06	29				0.81												
2020	06	30				0.09												
Summary						2.63		0.0										

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 10/12/2020

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time			At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth				
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag			Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.	
2020	07	01				0.00		0.0											
2020	07	02				0.00		0.0											
2020	07	03				0.00		0.0											
2020	07	04				0.00		0.0											
2020	07	05				0.00		0.0											
2020	07	06				0.00		0.0											
2020	07	07				0.01													
2020	07	08				0.13													
2020	07	09				0.00		0.0											
2020	07	10				0.00		0.0											
2020	07	11				0.00		0.0											
2020	07	12				0.00		0.0											
2020	07	13				0.00		0.0											
2020	07	14				0.06													
2020	07	15				0.00		0.0											
2020	07	16				0.00		0.0											
2020	07	17				0.16													
2020	07	18				0.00		0.0											
2020	07	19				0.00		0.0											
2020	07	20				0.03													
2020	07	21				0.00		0.0											
2020	07	22				0.16													
2020	07	23				0.00		0.0											
2020	07	24				0.00		0.0											
2020	07	25				0.00		0.0											
2020	07	26				0.00		0.0											
2020	07	27				0.00		0.0											
2020	07	28				0.00		0.0											
2020	07	29				0.00		0.0											
2020	07	30				0.00		0.0											
2020	07	31				0.06													
Summary						0.61		0.0											

Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"s" This data value failed one of NCDC's quality control tests. "At Obs." = Temperature at time of observation

"T" values in the Precipitation or Snow category above indicate a "trace" value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

Generated on 10/12/2020

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time			At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth				
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)				Flag	Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	08	01				0.00		0.0											
2020	08	02				0.00		0.0											
2020	08	03				0.00		0.0											
2020	08	04				0.21													
2020	08	05				0.00		0.0											
2020	08	06				0.00		0.0											
2020	08	07				0.00		0.0											
2020	08	08				0.00		0.0											
2020	08	09				0.00		0.0											
2020	08	10				0.00		0.0											
2020	08	11				0.00		0.0											
2020	08	12				0.00		0.0											
2020	08	13				0.20													
2020	08	14				0.00		0.0											
2020	08	15				0.00		0.0											
2020	08	16				0.26													
2020	08	17																	
2020	08	18				0.14													
2020	08	19				0.06													
2020	08	20				0.00		0.0											
2020	08	21				0.00		0.0											
2020	08	22				0.53													
2020	08	23				0.00		0.0											
2020	08	24				T													
2020	08	25				0.00		0.0											
2020	08	26				0.00		0.0											
2020	08	27				0.08		0.0											
2020	08	28				0.00		0.0											
2020	08	29				0.09													
2020	08	30				0.00		0.0											
2020	08	31				0.00		0.0											
Summary						1.57		0.0											

Empty, or blank, cells indicate that a data observation was not reported.

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Record of Climatological Observations
 These data are quality controlled and may not be identical to the original observations.
 Generated on 10/12/2020

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Year	Month	Day	Temperature (F)			Precipitation					Evaporation		Soil Temperature (F)						
			24 Hrs. Ending at Observation Time		At Obs.	24 Hour Amounts Ending at Observation Time				At Obs. Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in. Depth			8 in. Depth			
			Max.	Min.		Rain, Melted Snow, Etc. (in)	Flag	Snow, Ice Pellets, Hail (in)	Flag				Snow, Ice Pellets, Hail, Ice on Ground (in)	Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
2020	09	01				0.00		0.0											
2020	09	02				0.16													
2020	09	03				0.00		0.0											
2020	09	04				0.09													
2020	09	05				0.00		0.0											
2020	09	06				0.00		0.0											
2020	09	07				0.00		0.0											
2020	09	08				0.00		0.0											
2020	09	09				0.01		0.0											
2020	09	10				0.19													
2020	09	11				T													
2020	09	12				0.00		0.0											
2020	09	13				0.00		0.0											
2020	09	14				0.00		0.0											
2020	09	15				0.00		0.0											
2020	09	16				0.00		0.0											
2020	09	17				0.00		0.0											
2020	09	18				0.00		0.0											
2020	09	19				0.00		0.0											
2020	09	20				0.00		0.0											
2020	09	21				0.00		0.0											
2020	09	22				0.00		0.0											
2020	09	23				0.00		0.0											
2020	09	24				0.00		0.0											
2020	09	25				0.00		0.0											
2020	09	26				0.00		0.0											
2020	09	27				0.02													
2020	09	28				0.00		0.0											
2020	09	29				0.06													
2020	09	30				0.24													
Summary						0.77		0.0											

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Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

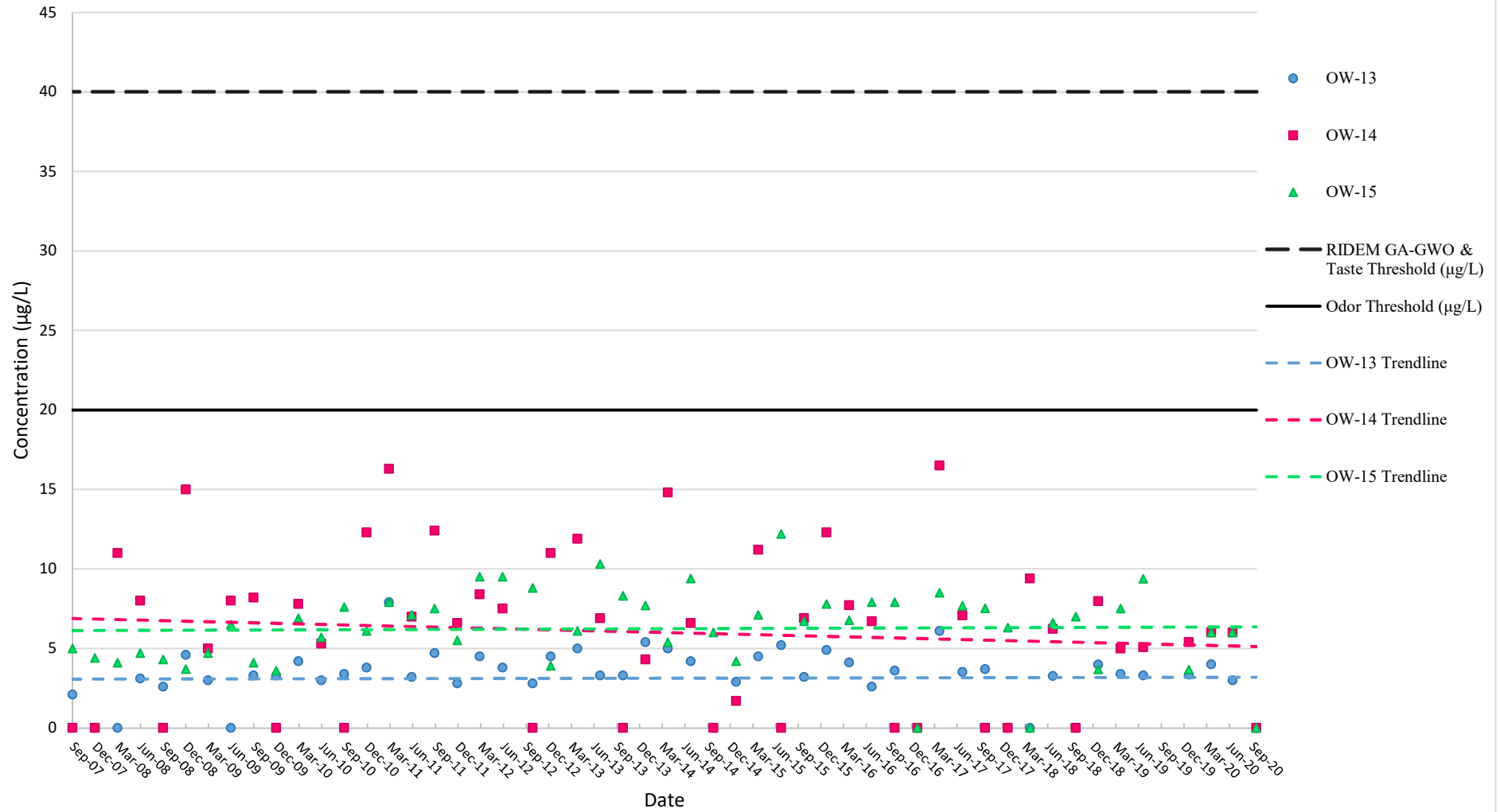
ATTACHMENT 5

MTBE Historical Concentration Graphs



Graph 1

Reported Concentrations of MTBE September 2006 - September 2020



Graph 2

Reported Concentrations of MTBE
Overburden (OW-7) vs. Bedrock (OW-16) Aquifer
November 2017 - September 2020

