

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

Cc: Nevada Division of Environmental Protection
United States Environmental Protection Agency

From: Chris Hayes and Dana Grady

Date: August 1, 2023

Subject: Unit 4 Source Area In-Situ Bioremediation Treatability Study Monthly Progress Report

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this memorandum to summarize Tetra Tech's progress during June 2023 toward successfully implementing the Unit 4 Source Area In-Situ Bioremediation (ISB) Treatability Study.

Task Progress Update: June 2023

Task M21 – Unit 4 Source Area ISB Treatability Study

- Current Status –

Phase 2 of the Unit 4 Source Area ISB Treatability Study is ongoing. Since start-up, a substantial dataset has been generated that indicates successful reduction of total dissolved solids (TDS) concentrations in Area 1 as part of the initial TDS reduction period as well as the occurrence of active in-situ bioremediation (ISB) processes in Area 2. Although the effectiveness monitoring program is ongoing and a detailed analysis of the treatability study results will be provided in the Unit 4 Source Area In-Situ Bioremediation Treatability Study Results Report, valuable data have been collected thus far to properly evaluate the treatability study objectives and allow for a detailed technology review in the Feasibility Study. A layout map and construction details of all injection, monitoring, and extraction wells are provided on Figure 1 and in Table 1, respectively. Operations, maintenance, and monitoring activities completed during June 2023 are summarized below.

 - Operations and Maintenance
 - Area 1 –The first phase of the treatability study for Area 1 consisted of a total dissolved solids (TDS) reduction period prior to the injection of a carbon substrate due to the presence of elevated TDS concentrations in groundwater in the Area 1 deep zone. This phase included the injection of clean water (formerly known as stabilized Lake Mead water [SLMW]) in a pulsed manner and continuous groundwater extraction to reduce TDS concentrations to levels that will allow biodegradation processes to proceed (i.e., TDS concentrations to below 21,000 milligrams per liter [mg/L] prior to carbon substrate/water injections). The TDS reduction period began on September 8, 2022 in the Area 1 deep zone. Once TDS concentrations were below the TDS goal of 21,000 mg/L

for three consecutive events, a baseline groundwater sampling event was performed and the second phase of the treatability study, which included the start-up of carbon injections into Area 1 intermediate and deep zones, was initiated. The baseline groundwater sampling event was performed in March 2023 and the carbon injections began on April 6, 2023.

The ISB injection process into Area 1 consists of daily-pulsed injections of a carbon substrate solution, followed by daily injections of anaerobic distribution water (clean water amended with Vitamin C). The carbon substrate solution consists of 0.5 percent molasses solution, 0.5 molar sodium bicarbonate solution, trace mineral solution, and vitamin B12. The carbon substrate solution also initially contained filtered biosolids collected from the on-site fluidized bed reactors. The addition of the biosolids in the carbon substrate solution was discontinued on June 6, 2023 after the Area 1 60-day evaluation period. The macronutrient solution consisting of urea and diammonium phosphate is not currently being added to the injectate solution to minimize precipitate formation. The macronutrient solution may be added in the future if required based on effectiveness monitoring results. Summaries of Area 1 extractions and injections are provided in Tables 2 and 3, respectively. Specific details of ongoing operations in June 2023 include the following:

- Area 1 Intermediate Zone – A total of 29,306 gallons of groundwater was extracted from two extraction wells screened within Area 1 intermediate zone while approximately 33,915 gallons of carbon substrate solution and 25,817 gallons of distribution water were injected into two injection wells. A notable decline in extraction rates was observed in May 2023, with extraction rates reducing from an average of 1.6 gallons per minute (gpm) to an average of 0.5 gpm. Due to these reduced extraction rates, the duration of extraction operations in Area 1 intermediate extraction wells U4-E-011 and U4-E-021 was reduced from 24 hours to approximately 12 hours per day (i.e., the same time period as injection operations) on June 7, 2023. The reduced time for extraction was implemented in an effort to improve declining extraction rates in Area 1. As a result, extraction rates improved to an average of approximately 0.8 gpm.
- Area 1 Deep Zone – Approximately 15,709 gallons of groundwater were extracted from one extraction well screened within the Area 1 deep zone, while approximately 18,804 gallons of carbon substrate solution and 13,731 gallons of distribution water were injected into four Area 1 deep injection wells. A slight decline in extraction rate was observed in the Area 1 deep zone in May 2023, with the extraction rate reducing from an average of 0.8 gpm to an average of 0.5 gpm. As a result, the duration of extraction operations in extraction well U4-E-03D was temporarily reduced from 24 hours to 12 hours per day (i.e., the same time period as injection operations) on June 7, 2023. The reduced time for extraction was implemented in an effort to improve the declining extraction rate. Extraction rates at U4-E-03D continued to measure 0.5 gpm during the 12-hour operation, and therefore, extraction duration at U4-E-03D was returned to 24-hour operation on June 14, 2023. Slight increases in injection pressure were observed at injection wells U4-E-04D and U4-E-05D, with the maximum injection pressures increasing from 35 psi in early June 2023 to 40 psi in late June 2023.

- Filtered biosolids were unable to be collected from June 1 through June 5 due to active equipment repairs being completed by ETI, and as a result, biosolids were not included in the carbon substrate solution during this period.
- Area 2 – Because TDS concentrations in Area 2 were lower than Area 1 and averaged approximately 19,500 mg/L during baseline sampling, ISB injection/extraction activities were implemented without an initial TDS reduction step. Carbon substrate solution/water injection and groundwater extraction operations in both the intermediate and deep zones within Area 2 began on September 13, 2022 and are ongoing. The injection process consists of daily-pulsed injections of a carbon substrate solution, followed by daily injections of anaerobic distribution water (clean water amended with Vitamin C). The carbon substrate solution currently consists of 0.5 percent molasses solution, 0.5 molar sodium bicarbonate solution, trace mineral solution, and vitamin B12. The carbon substrate solution also initially contained filtered biosolids collected from the on-site fluidized bed reactors. The addition of the biosolids in the carbon substrate solution was discontinued on December 15, 2022 following completion of the first 90 days of system operation (in accordance with the NDEP-approved Unit 4 Source Area ISB Treatability Study Work Plan Addendum). The macronutrient solution consisting of urea and diammonium phosphate is not currently being added to the injectate solution to minimize precipitate formation. This macronutrient solution may be added in the future if required based on effectiveness monitoring results. Summaries of Area 2 extractions and injections are provided in Tables 2 and 4, respectively. Specific details of ongoing operations during June 2023 include the following:
 - Area 2 Intermediate Zone – Approximately 7,131 gallons of groundwater were extracted from two extraction wells, while approximately 13,183 gallons of carbon substrate solution and 9,626 gallons of distribution water were injected into two injection wells. Area 2 intermediate operations were temporarily suspended on June 2, 2023 and resumed on June 9, 2023 due to maintenance to the Area 2 injection manifold. When Area 2 operations resumed, the injection rates and durations were slightly modified at Area 2 intermediate injection wells to minimize wear and future maintenance on the Area 2 injection manifold, while maintaining the same daily injection quantities of carbon substrate solution. The extraction rates at extraction well U4-E-06I continued to be significantly reduced in June 2023, with unrecordable flow rates on 3 of the 25 days of active Area 2 extraction operations within the month of June.
 - Area 2 Deep Zone – Approximately 3,819 gallons of groundwater were extracted from one extraction well, while approximately 26,709 gallons of carbon substrate solution and 20,560 gallons of distribution water were injected into four injection wells. Area 2 operations were temporarily suspended on June 2, 2023 and resumed on June 9, 2023 due to maintenance to the Area 2 injection manifold. Extraction rates declined to an average of 0.2 gpm at extraction well U4-E-08D. Due to these reduced extraction rates, the duration of extraction operations was reduced from 24 hours to 12 hours per day (i.e., the same time period as injection operations) on June 7, 2023. The reduced time for extraction was implemented in an effort to improve the declining extraction rate.
- Effectiveness Monitoring – The effectiveness monitoring program for both Area 1 and Area 2 included a baseline groundwater sampling event completed in April 2022 prior to system start-up. Following start-up in early September 2022, the effectiveness monitoring program was implemented in accordance with the Work Plan Addendum. Available draft groundwater analytical

results from the baseline sampling event and subsequent monitoring events performed from September 2022 to May 2023 are presented in Table 5. Final validated data will be provided in the final treatability study results report.

- Area 1 Effectiveness Monitoring – A monthly monitoring program was implemented in Area 1 during the TDS-reduction period from September 2022 to February 2023. In March 2023, a second baseline event was performed in Area 1 injection, extraction, and monitoring wells as part of a second baseline groundwater sampling event prior to the startup of carbon injections in Area 1, which began on April 6, 2023. After start-up of Area 1 ISB operations, one biweekly sampling event of Area 1 monitoring wells was conducted in April 2023 followed by monthly sampling thereafter, with the most recent monthly sampling event completed from June 12 to June 16, 2023. The results from the biweekly April 2023 and monthly May 2023 events are summarized below. Groundwater analytical results from the most recent June 2023 sampling event will be provided in future monthly progress reports as data become available from the laboratory.
- Area 1 Intermediate – During the April 2023 sampling event (performed two weeks after the start of ISB operations in Area 1), results from groundwater samples collected from two intermediate monitoring wells (U4-MW-021 and U4-MW-051) indicated perchlorate concentration reductions of greater than 80 percent compared to pre-ISB baseline concentrations in March 2023. This reducing trend continued during the May 2023 sampling event (performed one month after the start of ISB operations in Area 1), with results from groundwater samples collected from all three intermediate monitoring wells within Area 1 indicating perchlorate reductions ranging from 93 percent to 99 percent when compared to pre-ISB baseline concentrations. Of these results, the greatest concentration reduction occurred in the groundwater sample collected from U4-MW-71 where the perchlorate concentration reduced from 325 mg/L in the March 2023 pre-ISB baseline to 1.81 mg/L in May 2023. Chlorate and nitrate concentration trends were similar to perchlorate, with reductions in groundwater samples collected from all three monitoring wells during the May 2023 sampling event ranging from 91 percent to greater than 99 percent when compared to the March 2023 pre-ISB baseline concentrations.
 - Samples collected during the April 2023 sampling event indicated hexavalent chromium concentrations ranging from 3.98 micrograms per liter ($\mu\text{g/L}$) to 5,170 $\mu\text{g/L}$, which were significantly lower than March 2023 pre-ISB baseline concentrations of up to 69,400 $\mu\text{g/L}$. By May 2023, hexavalent chromium concentrations had reduced to less than 5 $\mu\text{g/L}$ in groundwater samples collected from all three Area 1 intermediate monitoring wells.
 - Concentrations of TOC continued to increase one month after the start of ISB, with TOC concentrations in groundwater samples collected during the May 2023 sampling event ranging from 141 mg/L to 531 mg/L (compared to pre-ISB concentrations in March 2023 ranging from 1.99 mg/L to 25.9 mg/L). Based on the observed increases in total organic carbon (TOC) concentrations, the carbon substrate injectate solution arrived at all three Area 1 intermediate monitoring well locations within the first two weeks after the start of ISB operations in Area 1. The combination of contaminant concentration decreases, and TOC concentration increases indicate that the injected carbon substrate solution is being successfully distributed throughout the Area 1 intermediate zone.

- Area 1 Deep – The April and May 2023 sampling events included collection of groundwater samples from four monitoring wells and two extraction wells screened in the Area 1 deep zone. The results of these effectiveness monitoring events are discussed below.
 - During the April 2023 sampling event (performed two weeks after the start of ISB operations in Area 1), results from groundwater samples collected from two of the four Area 1 deep zone monitoring wells (U4-MW-05D and U4-MW-07D) indicated reductions in perchlorate concentrations ranging from 29 percent to 70 percent compared to pre-ISB baseline concentrations in March 2023. Results from the May 2023 sampling event (performed one month after the start of carbon substrate injections) indicated that perchlorate concentrations continued to decrease, with perchlorate concentration reductions in groundwater samples collected from these two monitoring wells ranging from 46 percent to 90 percent compared to pre-ISB baseline concentrations. The lowest perchlorate concentration detected was in the groundwater sample collected from U4-MW-07D, with a perchlorate concentration of 41.7 mg/L in May 2023 compared to 400 mg/L during the pre-ISB baseline sampling event. No reductions in perchlorate concentrations were observed in the groundwater samples collected from monitoring wells U4-MW-02D and M-251-100 during the April 2023 and May 2023 sampling events. Chlorate and nitrate concentration reductions showed a similar pattern but were slightly greater than perchlorate concentration reductions, with chlorate and nitrate concentration reductions in groundwater samples collected from U4-MW-05D and U4-MW-07D during the May 2023 sampling event ranging from 60 percent to 87 percent when compared to pre-ISB baseline concentrations. Chlorate and nitrate concentrations in groundwater samples collected from U4-MW-02D and M-251-100 during the April and May 2023 sampling events were similar or higher than the March 2023 pre-ISB baseline concentrations.
 - Hexavalent chromium concentrations in groundwater samples collected from U4-MW-05D and U4-MW-07D during the May 2023 sampling event measured 692 µg/L and 10,400 µg/L, respectively, which are the lowest concentrations measured in samples collected from each of these monitoring wells to date.
 - TOC concentrations increased in groundwater samples collected from monitoring wells U4-MW-05D and U4-MW-07D to as high as 94 mg/L and 416 mg/L, respectively, during the April/May 2023 sampling events (compared to pre-ISB TOC concentrations in March 2023 of less than 2.0 mg/L). Based on the observed increases in TOC concentrations, the carbon substrate injectate solution arrived at two Area 1 deep monitoring wells (U4-MW-05D and U4-MW-07D) and the Area 1 deep extraction well (U4-E-03D) within one month after ISB injections began in Area 1. Notably, the lowest perchlorate concentration detected during this reporting period was in the groundwater sample collected from U4-MW-07D, which correlates with the arrival of elevated TOC at this location.
- Area 2 Effectiveness Monitoring - During the first month of operations in Area 2, one biweekly sampling event of Area 2 monitoring wells was conducted in September 2022. The monitoring program then shifted to monthly sampling in October 2022 for Area 2 and is ongoing.

- Area 2 Intermediate – In April and May 2023, groundwater samples were collected from three intermediate monitoring wells located within Area 2 and two extraction wells screened in the Area 2 intermediate zone. The results of these effectiveness monitoring events are discussed below.
 - Perchlorate concentrations in groundwater samples collected in April and May 2023 from all three monitoring wells located in the Area 2 intermediate zone (U4-MW-11I, U4-MW-12I, and U4-MW-13I) continued to display decreasing trends, with perchlorate concentration reductions of greater than 99 percent compared to baseline concentrations. Perchlorate concentrations in groundwater samples collected from monitoring well U4-MW12I during the April and May 2023 sampling events were the lowest to date, with concentrations of 0.00213 mg/L and 0.0317 mg/L, respectively. As with perchlorate, both chlorate and nitrate concentrations in groundwater samples collected from all three Area 2 intermediate monitoring wells continued to be reduced by greater than 98 percent compared to baseline concentrations, including nitrate concentrations of less than the sample detection limit of 0.1 mg/L.
 - Hexavalent chromium concentrations in groundwater samples collected from all three Area 2 intermediate monitoring wells were reduced by greater than 99 percent compared to baseline, with concentrations ranging from less than 0.5 µg/L to 0.606 µg/L in April and May 2023.
 - Groundwater samples collected in April and May 2023 also exhibited elevated TOC concentrations ranging from 19.8 mg/L to 374 mg/L, which are significantly higher than the average baseline TOC concentration of 1.3 mg/L. The combination of contaminant concentration decreases, and TOC concentration increases indicate that the injected carbon substrate solution is being successfully distributed throughout Area 2 intermediate.
- Area 2 Deep – Groundwater samples were collected from three deep monitoring wells, and one deep extraction well during the April and May 2023 monthly sampling events. The results of these effectiveness monitoring events are discussed below.
 - When compared to baseline, perchlorate concentration reductions ranging from 16 percent to 95 percent were observed in groundwater samples collected from the three deep monitoring wells located within Area 2. The perchlorate concentrations continued to decrease in groundwater samples collected from U4-MW13D, which showed concentrations of 224 mg/L and 207 mg/L in April and May 2023, representing reductions of 83 percent and 84 percent, respectively, compared to a baseline concentration of 1,330 mg/L. The most significant perchlorate concentration reduction occurred in the groundwater sample collected from U4-MW-11D, which showed an April 2023 concentration of 64.3 mg/L compared to a baseline concentration of 1,290 mg/L. Concentration reductions for nitrate and chlorate were slightly greater than perchlorate (reductions of up to 84 percent for nitrate and up to 89 percent for chlorate compared to baseline concentrations).
 - Hexavalent chromium concentration reductions ranging from 27 percent to 85 percent were also observed in groundwater samples collected from the three deep monitoring wells located within Area 2 compared to baseline concentrations.
 - TOC concentrations slightly increased above baseline concentrations (average of 2.4 mg/L) in groundwater samples collected from U4-MW-11D and U4-MW-

12D, with concentrations of up to 14.8 mg/L during the April 2023 sampling event.

- Schedule and Progress Updates
 - Area 1 ISB operations are anticipated to continue through April 2024. The 60-day evaluation period for Area 1 ISB operations ended on June 6, 2023. Based on the data collected through June 30, 2023, the following slight system modifications will be made to Area 1 operations.
 - Increase the molasses concentration from 0.5% to 1% in July 2023 in an effort to meet the larger theoretical carbon demand required in Area 1 due to the higher contaminant concentration levels compared to Area 2.
 - Area 2 ISB operations are anticipated to continue through September 2023. Based on the data collected through June 30, 2023, the following slight system modifications will be made to Area 2 operations.
 - Increase the molasses concentration from 0.5% to 1% in July 2023 in an effort to meet the theoretical carbon demand required for Area 2 by the end of the treatability study.
 - Convert extraction well U4-E-08D (screened in the Area 2 deep) to an injection well. In accordance with Section 5.2 of the NDEP-approved Unit 4 Source Area ISB Treatability Study Work Plan Addendum, the well layout, injection, and extraction system were designed to allow for operational flexibility based on on-going effectiveness monitoring results. This included modifying injection/extraction well configurations to enhance in-situ bioremediation.
- The combination of these two modifications will be implemented in an effort to improve carbon substrate distribution and increase the TOC concentrations within the targeted Area 2 deep treatment interval during the final three months of Area 2 operations.
- Health and Safety
 - There were no health and safety incidents related to Task M21 in June 2023.

CERTIFICATION

Unit 4 Source Area In-Situ Bioremediation Treatability Study Monthly Progress Report

**Nevada Environmental Response Trust Site
(Former Tronox LLC Site)
Henderson, Nevada**

Nevada Environmental Response Trust (NERT) Representative Certification

I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of NERT. Based on my own involvement and/or my inquiry of the person or persons who manage the systems(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

**Not Individually, but Solely
as President of the Trustee**

Signature: Jay A. Steinberg, President, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Name: Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Title: Solely as President and not individually

Company: Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Date: August 1, 2023

CERTIFICATION

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Description of Services Provided:

Prepared Unit 4 Source Area In-Situ Bioremediation Treatability Study Monthly Progress Report.



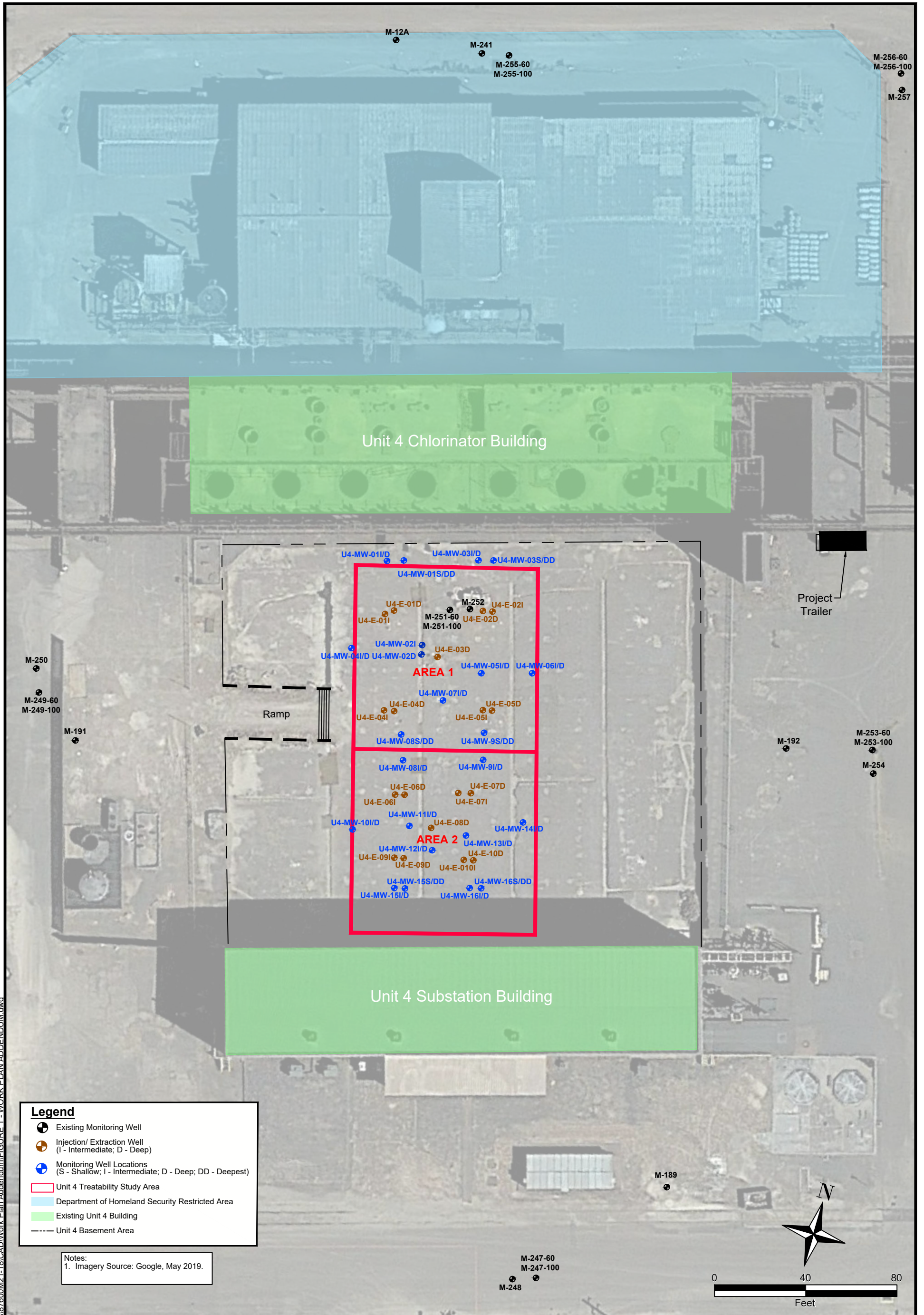
Christopher Hayes, CEM
Environmental Engineer
Tetra Tech, Inc.

August 1, 2023

Date

Nevada CEM Certificate Number: EM2499
Nevada CEM Expiration Date: December 15, 2024

Figures




Legend

- Existing Monitoring Well
- ⊕ Injection/ Extraction Well (I - Intermediate; D - Deep)
- ⊕ Monitoring Well Locations (S - Shallow; I - Intermediate; D - Deep; DD - Deepest)
- ▭ Unit 4 Treatability Study Area
- ▭ Department of Homeland Security Restricted Area
- ▭ Existing Unit 4 Building
- Unit 4 Basement Area

Notes:
1. Imagery Source: Google, May 2019.

\\its318fs3.tl.local\CES\Projects\87600\M21-18\CAD\Work Plan Addendum\FIGURE 1 - WORK PLAN ADDENDUM.dwg

 <p>TETRA TECH</p> <p>www.tetrattech.com 150 S. 4th Street, Unit A Henderson, Nevada 89015 Phone: (702) 854-2293</p>	<p>NEVADA ENVIRONMENTAL RESPONSE TRUST SITE</p> <p>UNIT 4 SOURCE AREA IN-SITU BIOREMEDIATION TREATABILITY STUDY HENDERSON, NEVADA</p> <p>INJECTION/ EXTRACTION AND MONITORING WELL LAYOUT</p>		<p>Project No.: 117-7502021-M21</p> <p>Date: May 10, 2022</p> <p>Designed By: AC</p>
			<p>Figure No.</p> <p>1</p>

Tables

Table 1
Well Construction Details
 Unit 4 Source Area In-Situ Bioremediation Treatability Study

Well ID	Screened Lithology	Northing	Easting	Ground Surface Elevation ¹	Top of Casing Elevation	Construction Type	Casing Material	Screen Material	Slot Size	Filter Pack Gradation	Borehole Diameter	Borehole Total Depth	Well Diameter	Nominal Screen Length	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl				inches		inches	feet bgs ¹	inches	feet	feet bgs ¹	feet bgs ¹	feet bgs ¹
U4-E-01D	UMCf	26717332.49	828215.74	1805.50	1805.11	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	115.0	4	15	110.3	94.7	109.7
U4-E-01I	UMCf	26717330.42	828212.11	1805.40	1805.15	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.0	4	15	90.3	74.6	89.6
U4-E-02D	UMCf	26717338.47	828258.40	1805.55	1804.99	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	115.0	4	15	110.3	94.4	109.4
U4-E-02I	UMCf	26717338.14	828254.24	1805.51	1804.99	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.0	4	15	90.3	74.4	89.4
U4-E-04D	UMCf	26717288.90	828222.53	1805.49	1804.95	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	115.0	4	15	110.3	95.0	110.0
U4-E-03D	UMCf	26717310.37	828241.13	1805.49	1804.94	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	113.0	4	15	111.1	110.1	95.1
U4-E-04I	UMCf	26717288.51	828217.91	1805.64	1805.03	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.0	4	15	90.3	75.0	90.0
U4-E-05D	UMCf	26717295.64	828264.86	1805.48	1804.95	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	115.0	4	15	110.3	95.0	110.0
U4-E-05I	UMCf	26717295.15	828260.95	1805.58	1804.72	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.0	4	15	90.3	75.0	90.0
U4-E-06D	UMCf	26717253.44	828232.43	1805.44	1804.74	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	112.0	4	15	111.1	110.1	95.1
U4-E-06I	UMCf	26717252.90	828228.29	1805.47	1805.04	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.5	4	15	89.2	88.2	73.2
U4-E-07D	UMCf	26717258.48	828261.02	1805.62	1805.31	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	111.5	4	15	110.6	109.6	94.6
U4-E-07I	UMCf	26717257.68	828255.56	1805.62	1805.16	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.0	4	15	90.7	89.7	74.7
U4-E-08D	UMCf	26717240.82	828246.11	1805.45	1804.91	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	120.0	4	15	110.6	109.6	94.6
U4-E-09D	UMCf	26717225.92	828236.22	1805.45	1804.91	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	112.0	4	15	110.5	109.5	94.5
U4-E-09I	UMCf	26717225.46	828232.18	1805.47	1805.14	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	93.3	4	15	90.9	89.9	74.9
U4-E-10D	UMCf	26717229.55	828266.50	1805.66	1805.28	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	112.0	4	15	110.5	109.5	94.5
U4-E-10I	UMCf	26717229.15	828262.34	1805.71	1805.37	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.0	4	15	90.2	89.2	74.2
U4-MW-01I	UMCf	26717353.59	828209.51	1805.57	1805.14	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.0	2	10	86.7	86.7	76.7
U4-MW-01D	UMCf	26717353.51	828209.25	1805.57	1805.10		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	106.7	106.7	96.7
U4-MW-01S	UMCf	26717354.83	828216.42	1805.57	1805.02	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	131.0	2	10	64.7	64.7	54.7
U4-MW-01DD	UMCf	26717354.86	828216.87	1805.57	1805.09		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	129.9	129.9	119.9
U4-MW-02D	UMCf	26717315.33	828230.47	1805.50	1805.07	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	115.0	4	15	110.3	95.0	110.0
U4-MW-02I	UMCf	26717319.45	828230.17	1805.47	1805.07	Single	Schedule 80 PVC	Stainless Steel	0.010	#2/16	8	92.0	4	15	90.3	75.0	90.0
U4-MW-03I	UMCf	26717359.79	828248.76	1805.61	1805.17	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.3	2	10	86.6	86.6	76.6
U4-MW-03D	UMCf	26717360.01	828249.20	1805.61	1805.18		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	106.6	106.6	96.6
U4-MW-03S	UMCf	26717360.79	828255.35	1805.56	1805.19	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	131.3	2	10	64.5	64.5	54.5
U4-MW-03DD	UMCf	26717360.84	828255.62	1805.56	1805.20		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	129.7	129.7	119.7
U4-MW-04I	UMCf	26717313.50	828199.89	1805.49	1805.13	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.5	2	10	86.8	86.8	76.8
U4-MW-04D	UMCf	26717313.36	828199.55	1805.49	1805.15		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	107.0	107.0	97.0
U4-MW-05I	UMCf	26717311.18	828257.53	1805.52	1805.06	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.0	2	10	86.6	86.6	76.6
U4-MW-05D	UMCf	26717311.18	828257.89	1805.52	1805.05		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	108.2	108.2	98.2
U4-MW-06I	UMCf	26717314.46	828279.53	1805.52	1805.21	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.3	2	10	86.5	86.5	76.5
U4-MW-06D	UMCf	26717314.51	828279.82	1805.52	1805.20		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	107.1	107.1	97.1
U4-MW-07I	UMCf	26717296.98	828242.85	1805.36	1805.16	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	109.2	2	10	86.8	86.8	76.8
U4-MW-07D	UMCf	26717296.68	828242.80	1805.36	1805.01		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	106.5	106.5	96.5
U4-MW-08I	UMCf	26717268.25	828229.36	1805.45	1804.97	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.0	2	10	88.0	88.0	78.0
U4-MW-08D	UMCf	26717268.30	828229.62	1805.45	1804.99		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	108.6	108.6	98.6
U4-MW-08S	UMCf	26717279.33	828226.78	1805.47	1804.94	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	131.2	2	10	64.9	64.9	54.9
U4-MW-08DD	UMCf	26717279.35	828227.22	1805.47	1804.95		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	129.8	129.8	119.8
U4-MW-09I	UMCf	26717273.70	828264.04	1805.62	1805.22	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.0	2	10	86.8	86.8	76.8
U4-MW-09D	UMCf	26717273.73	828264.40	1805.62	1805.20		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	106.9	106.9	96.9
U4-MW-09S	UMCf	26717285.44	828262.62	1805.55	1805.12	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	132.0	2	10	65.3	65.3	55.3
U4-MW-09DD	UMCf	26717285.52	828263.00	1805.55	1805.12		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	129.8	129.8	119.8
U4-MW-10I	UMCf	26717234.83	828212.05	1805.55	1805.10	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	109.0	2	10	87.1	87.1	77.1
U4-MW-10D	UMCf	26717235.18	828212.26	1805.55	1805.07		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	106.9	106.9	96.9
U4-MW-11I	UMCf	26717240.19	828236.42	1805.41	1805.03	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	109.0	2	10	87.0	87.0	77.0
U4-MW-11D	UMCf	26717240.23	828236.77	1805.41	1804.96		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	107.4	107.4	97.4
U4-MW-12I	UMCf	26717231.25	828247.87	1805.47	1805.11	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.0	2	10	86.8	86.8	76.8
U4-MW-12D	UMCf	26717231.22	828248.29	1805.47	1805.12		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	107.1	107.1	97.1
U4-MW-13I	UMCf	26717242.66	828261.00	1805.64	1805.28	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	109.0	2	10	87.1	87.1	77.1
U4-MW-13D	UMCf	26717242.70	828261.37	1805.64	1805.35		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	108.2	108.2	98.2
U4-MW-14I	UMCf	26717249.26	828285.32	1805.43	1805.13	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	109.0	2	10	87.3	87.3	77.3
U4-MW-14D	UMCf	26717249.24	828285.84	1805.43	1805.05		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	107.3	107.3	97.3
U4-MW-15I	UMCf	26717212.34	828233.91	1805.48	1805.03	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	109.0	2	10	86.8	86.8	76.8
U4-MW-15D	UMCf	26717212.35	828234.41	1805.48	1804.97		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	106.0	106.0	96.0
U4-MW-15S	UMCf	26717212.89	828238.61	1805.44	1805.05	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	132.0	2	10	64.8	64.8	54.8
U4-MW-15DD	UMCf	26717212.87	828239.01	1805.44	1804.98		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	130.3	130.3	120.3
U4-MW-16I	UMCf	26717217.25	828266.62	1805.68	1805.36	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	108.5	2	10	87.0	87.0	77.0
U4-MW-16D	UMCf	26717217.40	828266.90	1805.68	1805.27		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	106.8	106.8	96.8
U4-MW-16S	UMCf	26717217.87	828271.70	1805.59	1805.24	Dual-Nested	Schedule 80 PVC	Stainless Steel	0.010	#2/16	11	131.0	2	10	64.8	64.8	54.8
U4-MW-16DD	UMCf	26717218.04	828271.95	1805.59	1805.32		Schedule 80 PVC	Stainless Steel	0.010	#2/16			2	10	130.8	130.8	120.8

Notes

amsl - above mean sea level

bgs - below ground surface

bTOC - below top of casing

PVC - polyvinyl chloride

UMCf - Upper Muddy Creek formation

1. Ground surface refers to the concrete floor of the Unit 4 basement, which is approximately 8 feet below the surrounding grade.

2. Well names including E indicate an extraction/injection well. Well names including MW indicate a monitoring well.

Table 2
Summary of Groundwater Extraction Activities - June 2023
 Unit 4 Source Area Bioremediation Treatability Study

Study Area		Area 1 Intermediate								Area 1 Deep				Duration - Area 2 Deep	Area 2 Deep			Duration - Area 2 Intermediate	Area 2 Intermediate					
Well ID		U4-E-011				U4-E-021				U4-E-03D					U4-E-08D				U4-E-061			U4-E-071		
Date	Time	Duration	Average Flow Rate	Volume Extracted	Cumulative Total Volume	Duration	Average Flow Rate	Volume Extracted	Cumulative Total Volume	Duration	Average Flow Rate	Volume Extracted	Cumulative Total Volume		Average Flow Rate	Volume Extracted	Cumulative Total Volume		Average Flow Rate	Volume Extracted	Cumulative Total Volume	Average Flow Rate	Volume Extracted	Cumulative Total Volume
		minutes	gpm	gallons	gallons	minutes	gpm	gallons	gallons	minutes	gpm	gallons	gallons	minutes	gpm	gallons	gallons	minutes	gpm	gallons	gallons	gpm	gallons	gallons
6/1/2023	15:10	1,442	0.4	609.75	110,020.41	1,442	0.6	820.91	108,425.56	1,442	0.5	704.84	224,517.29	1442	0.2	309.60	116,602.26	603	0.0	4.9	105,733.91	0.1	88.52	57,133.46
6/2/2023	17:13	1,563	0.4	640.74	110,661.15	1,563	0.6	908.63	109,334.19	1,563	0.5	770.58	225,287.87	1563	0.2	325.10	116,927.36	726	0.0	0.0	105,733.91	0.1	105.75	57,239.21
6/3/2023	14:58	1,305	0.4	524.20	111,185.35	1,305	0.6	764.06	110,098.25	1,305	0.5	646.78	225,934.65	751	0.2	152.12	117,079.48	39	0.3	11.6	105,745.52	0.3	11.68	57,250.89
6/4/2023	15:00	1,442	0.4	561.47	111,746.82	1,442	0.6	831.33	110,929.58	1,442	0.5	704.86	226,639.51	--	0.0	0.00	117,079.48	--	--	0.0	105,745.52	--	0.0	57,250.89
6/5/2023	15:04	1,444	0.4	537.30	112,284.12	1,444	0.6	833.41	111,762.99	1,444	0.5	674.23	227,313.74	--	0.0	0.00	117,079.48	--	--	0.0	105,745.52	--	0.0	57,250.89
6/6/2023	15:16	1,448	0.4	521.07	112,805.19	1,448	0.6	835.98	112,598.97	1,448	0.5	689.89	228,003.63	--	0.0	0.00	117,079.48	--	--	0.0	105,745.52	--	0.0	57,250.89
6/7/2023	15:06	602	0.4	224.81	113,030.00	597	0.7	410.98	113,009.95	597	0.5	276.57	228,280.20	--	0.0	0.00	117,079.48	--	--	0.0	105,745.52	--	0.0	57,250.89
6/8/2023	15:14	1,439	0.3	395.04	113,425.04	597	0.8	449.64	113,459.59	597	0.5	276.64	228,556.84	--	0.0	0.00	117,079.48	--	--	0.0	105,745.52	--	0.0	57,250.89
6/9/2023	15:12	604	0.4	255.08	113,680.12	604	0.8	481.36	113,940.95	604	0.5	286.08	228,842.92	250	1.0	249.89	117,329.37	250	2.0	499.9	106,245.38	0.2	54.89	57,305.78
6/10/2023	15:09	600	0.4	256.30	113,936.42	600	0.8	491.81	114,432.76	600	0.5	279.91	229,122.83	600	0.2	131.03	117,460.40	600	0.4	241.9	106,487.28	0.2	112.95	57,418.73
6/11/2023	15:07	600	0.4	258.56	114,194.98	600	0.8	506.60	114,939.36	600	0.5	271.56	229,394.39	600	0.3	166.89	117,627.29	600	0.4	245.6	106,732.91	0.2	105.80	57,524.53
6/12/2023	15:29	604	0.4	258.01	114,452.99	604	0.8	509.80	115,449.16	604	0.5	274.15	229,668.54	604	0.2	120.51	117,747.80	604	0.4	258.0	106,990.89	0.2	103.03	57,627.56
6/13/2023	15:14	609	0.4	249.04	114,702.03	609	0.9	523.25	115,972.41	609	0.5	280.66	229,949.20	609	0.2	120.84	117,868.64	609	0.4	266.4	107,257.30	0.2	95.80	57,723.36
6/14/2023	15:05	597	0.4	259.55	114,961.58	597	0.9	529.85	116,502.26	601	0.5	291.39	230,240.59	597	0.2	121.83	117,990.47	597	0.0	0.0	107,257.30	0.2	108.18	57,831.54
6/15/2023	15:07	596	0.4	261.56	115,223.14	596	0.9	535.09	117,037.35	1,442	0.4	617.90	230,858.49	596	0.2	118.80	118,109.27	596	0.4	246.7	107,503.98	0.2	100.07	57,931.61
6/16/2023	15:09	600	0.5	270.09	115,493.23	603	0.9	560.77	117,598.12	1,442	0.4	619.29	231,477.78	600	0.2	117.38	118,226.65	600	0.4	269.6	107,773.57	0.2	107.61	58,039.22
6/17/2023	15:19	594	0.5	270.68	115,763.91	1,307	0.4	580.10	118,178.22	1,450	0.4	623.15	232,100.93	594	0.2	119.66	118,346.31	594	0.0	0.0	107,773.57	0.2	101.10	58,140.32
6/18/2023	15:06	596	0.5	290.83	116,054.74	596	1.0	582.12	118,760.34	1,427	0.4	606.55	232,707.48	596	0.2	137.63	118,483.94	596	0.4	250.1	108,023.65	0.1	54.46	58,194.78
6/19/2023	15:08	596	0.5	311.10	116,365.84	596	1.0	585.38	119,345.72	1,442	0.4	592.89	233,300.37	596	0.2	127.14	118,611.08	596	0.4	218.1	108,241.72	0.1	81.68	58,276.46
6/20/2023	15:10	599	0.5	312.81	116,678.65	1,442	0.6	922.73	120,268.45	1,442	0.4	593.17	233,893.54	599	0.2	130.99	118,742.07	599	0.3	204.8	108,446.48	0.1	88.32	58,364.78
6/21/2023	15:07	598	0.5	295.28	116,973.93	598	1.0	583.20	120,851.65	1,437	0.4	578.24	234,471.78	598	0.2	127.57	118,869.64	598	0.4	247.9	108,694.39	0.1	82.87	58,447.65
6/22/2023	15:06	598	0.5	277.50	117,251.43	598	1.0	580.59	121,432.24	1,439	0.4	574.89	235,046.67	598	0.2	124.87	118,994.51	598	0.4	245.4	108,939.75	0.1	86.28	58,533.93
6/23/2023	15:25	602	0.6	356.32	117,607.75	602	1.0	580.16	122,012.40	1,459	0.4	586.57	235,633.24	602	0.3	150.66	119,145.17	602	0.4	244.6	109,184.31	0.1	82.71	58,616.64
6/24/2023	15:04	596	0.7	388.69	117,996.44	596	1.0	575.20	122,587.60	1,419	0.4	563.61	236,196.85	596	0.3	159.75	119,304.92	596	0.4	241.9	109,426.26	0.1	86.65	58,703.29
6/25/2023	15:04	595	0.5	320.55	118,316.99	595	1.0	573.50	123,161.10	1,440	0.4	574.56	236,771.41	595	0.2	148.03	119,452.95	595	0.4	238.0	109,664.29	0.1	68.96	58,772.25
6/26/2023	15:06	1,441	0.3	431.46	118,748.45	597	1.0	569.03	123,730.13	1,442	0.4	577.35	237,348.76	597	0.2	142.41	119,595.36	597	0.4	221.0	109,885.26	0.1	73.12	58,845.37
6/27/2023	15:08	597	0.7	405.74	119,154.19	597	1.0	569.85	124,299.98	1,442	0.4	548.50	237,897.26	597	0.2	136.76	119,732.12	597	0.3	208.8	110,094.04	0.1	79.71	58,925.08
6/28/2023	15:09	598	0.7	395.70	119,549.89	598	1.0	572.63	124,872.61	1,441	0.4	537.68	238,434.94	598	0.2	133.63	119,865.75	598	0.4	218.4	110,312.46	0.2	95.33	59,020.41
6/29/2023	15:05	596	0.7	391.64	119,941.53	596	1.0	570.74	125,443.35	1,436	0.4	544.74	238,979.68	596	0.2	135.54	120,001.29	596	0.3	200.9	110,513.33	0.2	97.04	59,117.45
6/30/2023	15:04	595	0.6	370.69	120,312.22	595	1.0	566.04	126,009.39	1,439	0.4	541.71	239,521.39	595	0.2	110.28	120,111.57	595	0.3	180.5	110,693.80	0.2	93.60	59,211.05
September 2022 Total		--	--	--	--	--	--	--	--	--	--	--	24,421	--	--	8,874	--	--	30,780	--	--	9,315	--	--
October 2022 Total		--	--	--	--	--	--	--	--	--	--	--	25,916	--	--	12,872	--	--	25,189	--	--	9,128	--	--
November 2022 Total		--	--	--	--	--	--	--	--	--	--	--	16,563	--	--	13,496	--	--	14,899	--	--	7,172	--	--
December 2022 Total		--	--	--	--	--	--	--	--	--	--	--	20,564	--	--	10,365	--	--	20,580	--	--	6,926	--	--
January 2023 Total		--	--	--	--	--	--	--	--	--	--	--	30,354	--	--	15,544	--	--	6,591	--	--	6,639	--	--
February 2023 Total		--	--	--	--	--	--	--	--	--	--	--	29,553	--	--	14,935	--	--	714	--	--	4,801	--	--
March 2023 Total		--	--	--	--	--	--	--	--	--	--	--	30,458	--	--	16,497	--	--	166	--	--	4,285	--	--
April 2023 Total		--	--	--	67,805	--	--	--	66,327	--	--	--	24,591	--	--	13,005	--	--	5,000	--	--	5,425	--	--
May 2023 Total		--	--	--	41,606	--	--	--	41,277	--	--	--	21,393	--	--	10,705	--	--	1,811	--	--	3,354	--	--
June 2023 Total		--	--	--	10,902	--	--	--	18,405	--	--	--	15,709	--	--	3,819	--	--	4,965	--	--	2,166	--	--
Cumulative Total		--	--	--	120,312	--	--	--	126,009	--	--	--	239,521	--	--	120,112	--	--	110,694	--	--	59,211	--	--

Notes:

- gpm - gallons per minute
- 1. Extraction operations are active 24 hours per day. Volume and duration quantities represent gallons or minutes of extraction since previous record indicated. On January 18, 2023, Area 2 intermediate wells were transitioned from 24-hour operation to 12-hour operation in an effort to improve daily extraction rates. On June 7, 2023, all extraction wells were transitioned to a 12-hour operation to help improve daily extraction rates. All extraction wells continued to operate on a 12-hour-basis thereafter, with the exception of U4-E-03D, which was returned to 24-hour operations due to continued measurement of 0.5 gpm during the 12-hour operation.
- 2. Area 2 extraction operations were temporarily suspended on June 3, 2023 and resumed on June 9, 2023 due to maintenance to the Area 2 injection manifold.

Table 3
 Summary of Injection Activities
 Area 1 - June 2023
 Unit 4 Source Area Bioremediation Treatability Study

Study Area				Area 1 Intermediate								Area 1 Deep								Area 1 Deep							
Well ID			Duration ⁽¹⁾	U4-E-04I				U4-E-05I				U4-E-01D				U4-E-02D				U4-E-04D				U4-E-05D			
Date	Injection Start Time	Injection Stop Time		Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ^(3,4)	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ^(3,4)	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ^(3,4)	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ^(3,4)	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ^(3,4)	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ^(3,4)	Average Flow Rate	Maximum Injection Pressure
				gallons	gallons	gpm	psi	gallons	gallons	gpm	psi	gallons	gallons	gpm	psi	gallons	gallons	gpm	psi	gallons	gallons	gpm	psi	gallons	gallons	gpm	psi
6/1/2023	5:13	14:47	560	566.20	428.24	1.8	18	574.05	438.14	1.8	18	127.13	85.24	0.4	28	98.2	70.58	0.3	23	235.64	172.03	0.7	26	13.26	100.70	0.5	34
6/2/2023	5:15	17:08	695	722.27	577.94	1.9	18	741.63	575.46	1.9	20	193.35	147.55	0.5	25	124.7	98.61	0.3	23	288.25	239.62	0.8	32	0.14	143.35	0.5	35
6/3/2023	5:15	14:08	519	567.35	451.10	2.0	18	572.61	449.05	2.0	19	132.31	110.69	0.5	25	111.1	88.65	0.4	23	232.38	188.00	0.8	29	18.43	76.96	0.4	35
6/4/2023	5:30	14:24	521	544.47	436.03	1.9	20	562.52	441.54	1.9	18	134.63	116.97	0.5	25	97.7	77.00	0.3	23	231.50	173.36	0.8	35	9.36	92.57	0.5	36
6/5/2023	5:30	14:40	536	584.91	445.65	1.9	24	601.70	443.81	2.0	20	121.94	106.60	0.4	28	99.0	81.18	0.3	22	224.01	177.65	0.7	31	10.48	67.77	0.4	34
6/6/2023	5:15	14:13	521	556.25	438.54	1.9	18	547.71	445.26	1.9	19	118.22	103.39	0.4	26	91.5	90.38	0.3	25	247.42	174.36	0.8	26	12.00	65.02	0.5	36
6/7/2023	5:30	14:30	526	572.55	441.63	1.9	19	566.68	448.06	1.9	18	143.75	113.08	0.5	26	105.0	75.56	0.3	25	252.87	164.39	0.8	35	23.02	52.34	0.3	35
6/8/2023	5:30	14:46	542	599.66	446.41	1.9	20	606.07	446.79	1.9	20	126.56	88.29	0.4	31	99.3	83.69	0.3	24	184.46	182.86	0.7	36	18.57	58.82	0.3	36
6/9/2023	5:30	14:53	550	597.93	432.54	1.9	20	597.65	453.53	1.9	20	134.45	84.97	0.4	32	106.0	74.14	0.3	24	217.63	175.07	0.7	35	20.24	43.32	0.2	35
6/10/2023	5:20	14:40	546	553.27	435.01	1.8	20	567.65	450.53	1.9	20	92.34	76.70	0.3	27	86.8	80.92	0.3	25	236.39	185.62	0.8	29	19.26	66.65	0.3	36
6/11/2023	5:20	14:39	546	564.01	416.36	1.8	20	559.19	430.59	1.8	19	108.33	95.42	0.4	27	104.3	74.72	0.3	25	194.72	168.39	0.7	32	3.21	45.81	0.3	34
6/12/2023	5:15	14:38	549	568.64	436.69	1.8	19	563.80	431.48	1.8	18	123.55	98.33	0.4	24	98.0	73.97	0.3	26	223.68	168.64	0.7	35	6.28	45.53	0.3	35
6/13/2023	5:15	15:09	580	604.63	444.95	1.8	20	615.95	461.13	1.9	20	117.20	91.87	0.4	26	104.8	82.03	0.3	25	103.19	77.81	0.3	35	12.14	31.86	0.2	34
6/14/2023	5:15	14:12	523	535.92	404.44	1.8	18	537.07	414.55	1.8	19	120.26	104.14	0.4	26	87.2	79.70	0.3	26	218.65	162.13	0.7	34	9.21	163.26	0.8	36
6/15/2023	5:15	14:33	544	555.92	396.66	1.8	18	557.36	412.45	1.8	18	132.11	106.09	0.4	28	61.7	69.83	0.2	24	214.44	161.98	0.7	34	4.48	148.43	0.7	34
6/16/2023	5:15	14:19	530	547.76	397.25	1.8	20	557.98	421.98	1.8	20	145.34	94.97	0.5	25	94.4	68.15	0.3	27	219.42	160.35	0.7	29	11.02	156.52	0.7	37
6/17/2023	5:15	14:26	537	555.39	409.76	1.8	20	561.96	411.02	1.8	20	96.58	86.28	0.3	28	88.2	76.71	0.3	28	231.67	162.29	0.7	31	9.07	157.23	0.7	37
6/18/2023	5:15	14:23	534	550.73	407.01	1.8	19	548.88	425.61	1.8	19	127.32	100.02	0.4	26	89.1	61.62	0.3	25	225.23	165.17	0.7	31	3.36	163.70	0.7	36
6/19/2023	5:15	14:21	533	536.20	400.58	1.8	18	531.29	416.09	1.8	18	113.07	110.12	0.4	28	93.7	72.40	0.3	26	216.07	166.46	0.7	28	3.36	154.98	0.8	38
6/20/2023	5:15	14:22	533	538.46	402.81	1.8	19	554.99	413.19	1.8	18	127.04	83.69	0.4	28	92.5	71.06	0.3	26	215.79	164.16	0.7	30	18.57	169.82	0.7	35
6/21/2023	5:15	14:23	534	554.93	411.47	1.8	18	558.43	421.07	1.8	19	95.31	74.75	0.3	20	95.5	68.54	0.3	26	211.91	166.47	0.7	37	8.24	165.02	0.7	36
6/22/2023	5:15	14:29	540	541.43	415.31	1.8	18	555.15	418.79	1.8	20	81.17	74.62	0.3	18	100.7	71.47	0.3	27	218.27	165.22	0.7	36	2.24	171.81	0.7	38
6/23/2023	5:15	14:29	539	553.06	404.15	1.8	19	552.60	426.81	1.8	19	104.65	79.05	0.3	16	85.6	72.06	0.3	26	230.47	157.17	0.7	36	20.52	170.42	0.7	38
6/24/2023	5:15	14:17	528	540.42	424.62	1.8	20	567.71	433.48	1.9	20	137.75	67.22	0.4	22	90.0	70.29	0.3	27	226.40	173.53	0.8	30	2.38	170.28	0.8	40
6/25/2023	5:15	14:23	534	537.64	413.83	1.8	19	553.36	426.54	1.8	16	108.88	67.50	0.3	18	99.0	66.80	0.3	27	211.65	162.05	0.7	30	6.14	171.41	0.7	38
6/26/2023	5:15	14:21	531	540.38	408.95	1.8	19	554.20	412.21	1.8	16	123.71	95.99	0.4	13	91.2	70.32	0.3	26	223.74	161.21	0.7	32	21.50	163.45	0.7	40
6/27/2023	5:15	14:21	532	544.06	401.07	1.8	19	549.89	416.26	1.8	16	166.02	87.54	0.5	22	87.2	68.10	0.3	27	224.81	158.83	0.7	34	10.48	166.52	0.7	39
6/28/2023	5:15	14:20	531	544.09	404.84	1.8	19	558.95	413.84	1.8	15	139.54	53.00	0.4	12	100.3	65.05	0.3	28	222.83	157.10	0.7	33	3.21	171.79	0.8	38
6/29/2023	5:15	14:17	528	534.77	413.12	1.8	19	544.08	435.25	1.9	15	82.32	104.70	0.4	11	95.3	76.90	0.3	27	237.00	168.34	0.8	38	8.24	175.79	0.8	37
6/30/2023	5:15	14:21	531	533.57	416.89	1.8	19	547.24	418.92	1.8	15	109.08	47.17	0.3	12	87.9	73.80	0.3	29	242.13	158.87	0.8	40	9.07	170.67	0.7	37
June 2023 Total				16,846.87	12,763.85			17,068.35	13,053.43			3,683.91	2,755.95			2,865.86	2,254.23			6,662.62	5,019.13			5,591.47	3,701.80		
Cumulative Total				46,197.63	34,789.83			46,357.44	35,519.31			10,105.06	144,195.69			7,725.91	141,248.61			18,305.74	149,249.31			17,373.51	147,654.90		

Notes:
 gpm - gallons per minute
 psi - pounds per square inch
 1. Injection duration indicates the total minutes of active injection per day, accounting for any downtime in injections that may have occurred throughout the day. Therefore, injection duration may be less than the difference in daily injection start and stop times indicated.
 2. Carbon substrate solution is batch mixed. Batches of carbon substrate solution includes the following components in solution with Stabilized Lake Mead Water (SLMW): 0.5% molasses, 0.25% filtered Fluidized Bed Reactor (FBR) sludge, 1.25% 0.5 Molar Sodium Bicarbonate Solution, 0.001% trace mineral solution, and 5 milligrams per liter Vitamin B12. Beginning on June 7, 2023, FBR sludge was removed from the carbon substrate solution.
 3. Distribution water solution is batch mixed. Batches of distribution water solution includes 0.0025 pounds of Vitamin C per gallon of Stabilized Lake Mead Water (SLMW).
 4. Prior to April 6, 2023 in Area 1 Deep wells consisted of only Stabilized Lake Mead Water as part of the total dissolved solids (TDS)-reduction period of the treatability study water injection.

Table 4
Summary of Injection Activities
Area 2 - June 2023
 Unit 4 Source Area Bioremediation Treatability Study

Study Area			Area 2 Intermediate								
Well ID			Area 2 Intermediate Duration ⁽¹⁾	U4-E-09I				U4-E-10I			
Date	Injection Start Time	Injection Stop Time		Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ⁽³⁾	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ⁽³⁾	Average Flow Rate	Maximum Injection Pressure
				gallons	gallons	gpm	psi	gallons	gallons	gpm	psi
6/1/2023	5:27	12:52	287	274.30	190.48	1.6	15	280.95	206.49	1.6	18
6/2/2023	5:27	8:15	168	285.79	--	1.7	13	281.16	--	1.7	16
6/3/2023	--	--	--	--	--	--	--	--	--	--	--
6/4/2023	--	--	--	--	--	--	--	--	--	--	--
6/5/2023	--	--	--	--	--	--	--	--	--	--	--
6/6/2023	--	--	--	--	--	--	--	--	--	--	--
6/7/2023	--	--	--	--	--	--	--	--	--	--	--
6/8/2023	--	--	--	--	--	--	--	--	--	--	--
6/9/2023	10:56	12:55	119	--	193.44	1.6	14	--	188.42	1.6	20
6/10/2023	5:20	12:40	287	289.91	206.42	1.7	12	291.31	203.45	1.7	16
6/11/2023	5:20	12:45	287	286.98	187.43	1.7	14	278.47	201.24	1.7	14
6/12/2023	5:15	12:43	287	292.65	198.18	1.7	12	288.25	208.25	1.7	14
6/13/2023	5:15	13:07	287	295.83	220.39	1.8	10	293.63	214.19	1.8	14
6/14/2023	5:15	14:12	395	317.20	201.97	1.3	14	295.11	215.18	1.3	14
6/15/2023	5:15	14:33	544	294.51	204.83	0.9	16	273.34	220.86	0.9	19
6/16/2023	5:15	14:19	530	288.97	209.62	0.9	12	272.79	218.19	0.9	16
6/17/2023	5:15	14:26	400	248.21	193.37	1.1	14	291.63	216.10	1.1	15
6/18/2023	5:15	14:23	534	279.68	206.59	0.9	11	299.49	215.51	0.9	15
6/19/2023	5:15	14:21	533	276.51	204.23	0.9	12	280.30	215.97	0.9	14
6/20/2023	5:15	14:22	533	291.06	214.38	0.9	10	291.44	223.09	0.9	14
6/21/2023	5:15	14:23	534	279.59	202.04	0.9	11	289.81	219.60	0.9	15
6/22/2023	5:15	14:29	540	273.43	206.42	0.9	14	286.32	216.49	0.9	14
6/23/2023	5:15	14:29	539	284.06	196.42	0.9	12	293.46	220.78	0.9	14
6/24/2023	5:15	14:17	528	290.24	224.86	1.0	10	284.76	230.48	1.0	14
6/25/2023	5:15	14:23	534	282.22	155.70	0.8	18	299.66	223.58	0.8	14
6/26/2023	5:15	14:21	531	261.26	179.61	0.8	12	295.02	226.09	0.8	14
6/27/2023	5:15	14:21	532	285.46	217.46	0.9	9	294.94	218.83	0.9	14
6/28/2023	5:15	14:20	531	288.12	208.17	0.9	10	291.61	219.98	0.9	14
6/29/2023	5:15	14:17	528	275.11	222.67	0.9	9	291.11	221.77	0.9	15
6/30/2023	5:15	14:21	531	293.16	214.57	1.0	14	304.34	222.62	1.0	15
June 2023 Total				6,534.25	4,659.25			6,648.90	4,967.16		
Cumulative Total				100,490.32	81,273.88			100,892.67	81,952.68		

Notes:

gpm - gallons per minute

psi - pounds per square inch

1. Injection duration indicates the total minutes of active injection per day, accounting for any downtime in injections that may have occurred throughout the day. Therefore, injection duration may be less than the difference in daily injection start and stop times indicated.

2. Carbon substrate solution is batch mixed. Batches of carbon substrate solution includes the following components in solution with Stabilized Lake Mead Water (SLMW): 0.5% molasses, 1.25% 0.5 Molar Sodium Bicarbonate Solution, 0.001% trace mineral solution, and 5 milligrams per liter Vitamin B12.

3. Distribution water solution is batch mixed. Batches of distribution water solution includes 0.0025 pounds of Vitamin C per gallon of Stabilized Lake Mead Water (SLMW).

4. Area 2 operations were temporarily suspended on June 2, 2023 and resumed on June 9, 2023 due to maintenance to the Area 2 injection manifold.

Table 4
Summary of Injection Activities
Area 2 - June 2023
 Unit 4 Source Area Bioremediation Treatability Study

Study Area			Area 2 Deep																
Well ID			Area 2 Deep Duration ⁽¹⁾	U4-E-06D				U4-E-07D				U4-E-09D				U4-E-010D			
Date	Injection Start Time	Injection Stop Time		Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ⁽³⁾	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ⁽³⁾	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ⁽³⁾	Average Flow Rate	Maximum Injection Pressure	Volume Carbon Solution Injected ⁽²⁾	Volume Distribution Water Solution Injected ⁽³⁾	Average Flow Rate	Maximum Injection Pressure
				gallons	gallons	gpm	psi	gallons	gallons	gpm	psi	gallons	gallons	gpm	psi	gallons	gallons	gpm	psi
6/1/2023	5:27	14:47	546	299.36	224.96	1.0	26	293.89	240.70	1.0	20	294.72	236.11	1.0	16	300.68	233.11	1.0	16
6/2/2023	5:27	8:15	168	148.52	--	0.9	25	157.54	--	0.9	20	155.86	--	0.9	15	154.19	--	0.9	15
6/3/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/4/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/5/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/6/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/7/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/8/2023	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/9/2023	10:56	14:53	237	--	214.73	0.9	26	--	228.92	1.0	18	--	226.41	1.0	26	--	188.23	0.8	20
6/10/2023	5:20	14:40	546	309.71	234.96	1.0	30	296.24	236.06	1.0	19	304.07	231.41	1.0	21	291.32	229.82	1.0	17
6/11/2023	5:20	14:39	546	301.91	220.59	1.0	26	308.22	232.09	1.0	20	305.07	222.12	1.0	15	293.76	228.38	1.0	16
6/12/2023	5:15	14:38	549	292.95	223.49	0.9	26	290.50	236.51	1.0	22	300.86	221.68	1.0	15	308.73	228.72	1.0	16
6/13/2023	5:15	15:09	580	322.54	246.32	1.0	26	333.41	250.56	1.0	19	327.93	238.06	1.0	14	331.92	240.89	1.0	16
6/14/2023	5:15	14:12	523	289.46	217.96	1.0	25	287.76	221.85	1.0	19	277.06	217.45	0.9	14	288.55	216.38	1.0	16
6/15/2023	5:15	14:33	544	293.38	219.25	0.9	27	304.65	230.19	1.0	18	288.88	223.20	0.9	14	285.38	217.27	0.9	16
6/16/2023	5:15	14:19	530	292.66	218.38	1.0	29	289.55	232.06	1.0	20	284.13	217.93	0.9	14	282.28	216.60	0.9	17
6/17/2023	5:15	14:26	537	296.67	219.90	1.0	27	302.68	232.96	1.0	19	304.54	214.19	1.0	14	296.51	228.42	1.0	17
6/18/2023	5:15	14:23	534	296.03	219.30	1.0	25	294.29	229.53	1.0	22	296.21	200.12	0.9	13	292.92	216.78	1.0	16
6/19/2023	5:15	14:21	533	287.29	217.09	0.9	26	301.41	230.19	1.0	18	288.33	220.23	1.0	13	297.73	218.67	1.0	15
6/20/2023	5:15	14:22	533	304.03	221.36	1.0	26	303.48	222.90	1.0	18	282.98	214.41	0.9	13	308.09	223.43	1.0	17
6/21/2023	5:15	14:23	534	284.94	197.60	0.9	26	308.82	227.60	1.0	18	293.77	221.50	1.0	13	304.70	206.57	1.0	17
6/22/2023	5:15	14:29	540	295.12	213.49	0.9	26	309.02	225.35	1.0	18	291.24	215.99	0.9	14	285.30	217.78	0.9	19
6/23/2023	5:15	14:29	539	299.64	226.50	1.0	26	291.69	224.02	1.0	18	295.10	218.58	1.0	14	292.42	224.62	1.0	18
6/24/2023	5:15	14:17	528	281.99	233.86	1.0	26	301.87	242.54	1.0	19	293.93	226.72	1.0	14	293.04	218.23	1.0	18
6/25/2023	5:15	14:23	534	293.40	233.21	1.0	25	286.10	228.56	1.0	18	300.76	222.10	1.0	14	291.20	232.57	1.0	18
6/26/2023	5:15	14:21	531	286.49	224.69	1.0	34	305.24	230.42	1.0	18	295.62	211.77	1.0	14	296.84	211.35	1.0	19
6/27/2023	5:15	14:21	532	294.61	210.81	1.0	25	299.57	225.79	1.0	19	295.95	207.05	0.9	14	282.82	202.47	0.9	17
6/28/2023	5:15	14:20	531	297.16	226.29	1.0	25	299.53	229.02	1.0	20	298.79	217.89	1.0	14	286.93	225.30	1.0	17
6/29/2023	5:15	14:17	528	290.61	226.54	1.0	25	289.33	233.55	1.0	20	297.08	228.58	1.0	15	287.11	221.31	1.0	17
6/30/2023	5:15	14:21	531	298.35	208.00	1.0	25	292.35	224.97	1.0	20	286.55	222.62	1.0	14	293.14	221.08	1.0	17
June 2023 Total			6,656.82	5,099.28				6,747.14	5,316.34			6,659.43	5,076.12			6,645.56	5,067.98		
Cumulative Total			64,621.58	44,370.49				65,432.24	44,186.76			64,643.00	45,005.76			64,016.94	44,850.30		

Notes:

gpm - gallons per minute

psi - pounds per square inch

1. Injection duration indicates the total minutes of active injection per day, accounting for any downtime in injections that may have occurred throughout the day. Therefore, injection duration may be less than the difference in daily injection start and stop times indicated.

2. Carbon substrate solution is batch mixed. Batches of carbon substrate solution includes the following components in solution with Stabilized Lake Mead Water (SLMW): 0.5% molasses, 1.25% 0.5 Molar Sodium Bicarbonate Solution, 0.001% trace mineral solution, and 5 milligrams per liter Vitamin B12.

3. Distribution water solution is batch mixed. Batches of distribution water solution includes 0.0025 pounds of Vitamin C per gallon of Stabilized Lake Mead Water (SLMW).

4. Area 2 operations were temporarily suspended on June 2, 2023 and resumed on June 9, 2023 due to maintenance to the Area 2 injection manifold.

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	E314.0	E300.1		E350.1	E351.2	E365.1	Anions by E300.0/SW9065A				Alkalinity by SM2320B				Dissolved Metals by SW6010B/SW6020					
						Perchlorate	Chlorate	Chlorite	Ammonia (as N)	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Chloride	Nitrate (as N)	Sulfate	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium	
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-E-09I	4/14/2022	N	BL02	UMCf	74.9 - 89.9	130,000	2,210,000	<24,000	<117	<1,400	52.3 J	638,000	9,440	1,100,000	105,000	105,000	<8,450	<8,450	<56.1	1.07 J	30.8	27.1	<0.330	<0.150	
U4-E-10D	4/13/2022	N	BL02	UMCf	94.5 - 109.5	412,000	3,430,000	<24,000	<117	<1,400	33.3 R	895,000	11,200	550,000	59,100	51,600	<8,450	<8,450	102 J	<1.03	6.71	112	<0.330	<0.150	
U4-E-10I	4/13/2022	N	BL02	UMCf	74.2 - 89.2	407,000	3,550,000	<24,000	<117	<1,400	33.3 R	911,000	10,400	711,000	114,000	114,000	<8,450	<8,450	115 J	<1.03	19.6	34.7	<0.330	<0.150	
U4-MW-01D	4/19/2022	N	BL02	UMCf	96.7 - 106.7	708,000	5,180,000	<24,000	---	---	---	1,040,000	5,360	437,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-01D	2/16/2023	N	EM06	UMCf	96.7 - 106.7	647,000	6,010,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-01D	3/20/2023	N	EM07	UMCf	96.7 - 106.7	1,140,000	4,300,000	<24,000	<117	<560	<33.3	955,000	8,720	429,000	126,000	126,000	<8,450	<8,450	<56.1	<1.03	7.27	40.6	<0.330	<0.150	
U4-MW-01DD	4/19/2022	N	BL02	UMCf	119.9 - 129.9	29,800	217,000	<2,400	---	---	---	191,000	230	214,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-01DD	4/19/2022	FD	BL02	UMCf	119.9 - 129.9	28,500	202,000	<2,400	---	---	---	191,000	259	214,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-01DD	3/15/2023	N	EM07	UMCf	119.9 - 129.9	307,000	2,140,000	<24,000	<117	<140	108	539,000	4,730	249,000	62,600	62,600	<8,450	<8,450	<56.1	<1.03	9.69	117	<0.330	<0.150	
U4-MW-01I	4/19/2022	N	BL02	UMCf	76.7 - 86.7	410,000	3,510,000	<24,000	---	---	---	920,000	5,610	590,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-01I	3/20/2023	N	EM07	UMCf	76.7 - 86.7	679,000	5,140,000	<24,000	<117	<280	<33.3	1,420,000	13,400	458,000 J	339,000	339,000	<8,450	<8,450	61.0 J	1.22 J	8.10	48.9	<0.330	<0.150	
U4-MW-01S	4/18/2022	N	BL02	UMCf	54.7 - 64.7	37,300	312,000	<2,400	---	---	---	289,000	2,730	1,290,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-01S	3/15/2023	N	EM07	UMCf	54.7 - 64.7	22,600	241,000	3,630 J	<117	<140 JJ	39.4 J	261,000	5,680	1,190,000	142,000	131,000	10,300 J	<8,450	56.8 J	<1.03	57.0	12.1	<0.330	<0.150	
U4-MW-02D	4/14/2022	N	BL02	UMCf	95.0 - 110.0	2,850,000	24,800,000	<240,000	---	---	---	6,150,000	72,300	993,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-02D	10/11/2022	N	EM02	UMCf	95.0 - 110.0	3,530,000	28,400,000	---	---	---	---	---	84,600	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02D	11/1/2022	N	EM03	UMCf	95.0 - 110.0	3,790,000	27,900,000	---	---	---	---	---	81,900	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02D	12/7/2022	N	EM04	UMCf	95.0 - 110.0	3,590,000	23,500,000	---	---	---	---	---	73,900	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02D	1/10/2023	N	EM05	UMCf	95.0 - 110.0	3,140,000	23,800,000	---	---	---	---	---	63,000	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02D	2/13/2023	N	EM06	UMCf	95.0 - 110.0	3,220,000	21,700,000	---	---	---	---	---	70,200	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02D	3/17/2023	N	EM07	UMCf	95.0 - 110.0	2,190,000	19,700,000	<240,000	<117	<1,400	<33.3	4,810,000	53,100 J-	943,000	126,000	126,000	<8,450	<8,450	<56.1	<10.3	6.71 J	142	<0.330	<1.50	
U4-MW-02D	4/19/2023	N	EM08	UMCf	95.0 - 110.0	3,080,000	21,900,000	<240,000	<117	<5,600	64.6 J	5,540,000	68,100	1,210,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-02D	5/9/2023	N	EM09	UMCf	95.0 - 110.0	2,720,000	25,300,000	<240,000	<117	<2800 R	55.1 J	5,200,000	64,000	1,140,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	4/14/2022	N	BL02	UMCf	75.0 - 90.0	291,000	2,420,000	<24,000	---	---	---	808,000	9,670	1,200,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	10/11/2022	N	EM02	UMCf	75.0 - 90.0	891,000	5,380,000	---	---	---	---	---	15,300	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	11/2/2022	N	EM03	UMCf	75.0 - 90.0	1,190,000	7,270,000	---	---	---	---	---	23,800	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	11/2/2022	FD	EM03	UMCf	75.0 - 90.0	1,200,000	6,610,000	---	---	---	---	---	20,600	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	12/8/2022	N	EM04	UMCf	75.0 - 90.0	103,000	707,000	---	---	---	---	---	<4800 R	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	12/8/2022	FD	EM04	UMCf	75.0 - 90.0	105,000	737,000	---	---	---	---	---	<4800 R	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	1/13/2023	N	EM05	UMCf	75.0 - 90.0	619,000	4,490,000	---	---	---	---	---	13,300	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	1/13/2023	FD	EM05	UMCf	75.0 - 90.0	620,000	4,410,000	---	---	---	---	---	13,100	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	2/15/2023	N	EM06	UMCf	75.0 - 90.0	1,490,000 J+	12,600,000	---	---	---	---	---	35,000	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	2/15/2023	FD	EM06	UMCf	75.0 - 90.0	1,410,000 J+	12,000,000	---	---	---	---	---	37,500	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	3/17/2023	N	EM07	UMCf	75.0 - 90.0	1,300,000	12,000,000	<240,000	<117	<1,400	<33.3	3,130,000	33,700 J-	981,000	311,000	311,000	<8,450	<8,450	<56.1	<5.15	23.8	96.6	<0.330	<0.750	
U4-MW-02I	3/17/2023	FD	EM07	UMCf	75.0 - 90.0	133,000 J	12,300,000	<240,000	<117	<1,400	<33.3	3,120,000	32,300 J-	935,000	306,000	306,000	<8,450	<8,450	<56.1	<5.15	23.3	97.1	<0.330	<0.750	
U4-MW-02I	4/20/2023	N	EM08	UMCf	75.0 - 90.0	33,000	211,000	<2,400	<117	1,780	34.1 J	237,000	208 J+	74,700	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	4/20/2023	FD	EM08	UMCf	75.0 - 90.0	32,200	212,000	<2,400	<117	1,560	<33.3	240,000	222 J+	74,900	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	5/9/2023	N	EM09	UMCf	75.0 - 90.0	35,000	187,000	37,600	<117	894	38.4 J	521,000	<48.0	374,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-02I	5/9/2023	FD	EM09	UMCf	75.0 - 90.0	35,800	190,000	32,800	<117	1,030	43.2 J	510,000	<48.0	372,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-03D	4/20/2022	N	BL02	UMCf	96.6 - 106.6	1,430,000	9,200,000	<240,000	---	---	---	2,110,000	22,400	534,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-03D	2/16/2023	N	EM06	UMCf	96.6 - 106.6	997,000	7,490,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-03D	3/16/2023	N	EM07	UMCf	96.6 - 106.6	1,070,000	6,830,000	<24,000	<117	<1,400	<33.3	1,550,000	16,100	363,000	62,000	62,000	<8,450	<8,450	76.8 J	<5.15	7.03 J	138	<0.330	<0.750	
U4-MW-03D	3/16/2023	FD	EM07	UMCf	96.6 - 106.6	985,000	7,070,000	<24,000	<117	<1,400	<33.3	1,520,000	15,800	358,000	62,100	62,100	<8,450	<8,450	76.7 J	<5.15	7.05 J	137	<0.330	<0.750	
U4-MW-03DD	4/20/2022	N	BL02	UMCf	119.7 - 129.7	152,000	735,000	<2,400	---	---	---	319,000	1,180	255,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-03DD	3/15/2023	N	EM07	UMCf	119.7 - 129.7	5,060	24,200	<240	<117	<140	128	140,000	1,290	159,000	88,000	88,000	<8,450	<8,450	<56.1	<1.03	12.6	24.1	<0.330	<0.150	
U4-MW-03I	4/19/2022	N	BL02	UMCf	76.6 - 86.6	207,000	1,200,000	<24,000	---	---	---	391,000	3,990 J	1,080,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-03I	3/15/2023	N	EM07	UMCf	76.6 - 86.6	930,000	5,940,000	<24,000	<117	<700	<33.3	1,340,000	9,430	335,000	96,300	96,300	<8,450	<8,450	<56.1	<1.03	7.08	121	<0.330	<0.150	
U4-MW-03S	4/18/2022	N	BL02	UMCf	54.5 - 64.5	26,500	262,000	<2,400	---	---	---	222,000	1,750	1,160,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-03S	4/18/2022	FD	BL02	UMCf	54.5 - 64.5	26,200	264,000	<2,400	---	---	---	215,000	1,680	1,180,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-03S	3/15/2023	N	EM07	UMCf	54.5 - 64.5	54,600	389,000	<2,400	<117	<140	72.7 J	241,000	4,110	1,040,000	260,000	152,000	109,000	<8,450	<8,450	<56.1	<1.03	122	10.8	<0.330	<0.150
U4-MW-04D	4/19/2022	N	BL02	UMCf	97.0 - 107.0	3,270,000	26,400,000	<240,000	---	---	---	5,690,000	53,500	1,160,000	---	---	---	---	---	---	---	---	---	---	
U4-MW-04D	2/16/2023	N	EM06	UMCf	97.0 - 107.0	427,000	3,370,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-04D	3/21/2023	N	EM07	UMCf	97.0 - 107.0	42,200	2,770,000	<24,000	<117	<280	<33.3	680,000 J+	10,400	326,00											

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	E314.0	E300.1		E350.1	E351.2	E365.1	Anions by E300.0/SW9065A				Alkalinity by SM2320B				Dissolved Metals by SW6010B/SW6020				
						Perchlorate	Chlorate	Chlorite	Ammonia (as N)	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Chloride	Nitrate (as N)	Sulfate	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-07D	10/12/2022	FD	EM02	UMCf	96.8 - 106.5	61,100	383,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-07D	11/3/2022	N	EM03	UMCf	96.8 - 106.5	53,800	391,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-07D	12/7/2022	N	EM04	UMCf	96.8 - 106.5	53,300	283,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-07D	1/11/2023	N	EM05	UMCf	96.8 - 106.5	66,700	336,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-07D	2/14/2023	N	EM06	UMCf	96.8 - 106.5	43,000	263,000	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-07D	3/16/2023	N	EM07	UMCf	96.8 - 106.5	400,000	278,000	<2,400	<117	<140	39.5 J	167,000	756	230,000	119,000	119,000	<8,450	<8,450	<56.1	<1.03	6.14	26.5	<0.330	<0.150
U4-MW-07D	4/21/2023	N	EM08	UMCf	96.8 - 106.5	120,000	888,000	49,500 J	<117	<140	37.0 J	426,000	1,300	237,000	---	---	---	---	---	---	---	---	---	---
U4-MW-07D	5/11/2023	N	EM09	UMCf	96.8 - 106.5	41,700	111,000	179,000	<117	1,570	<33.3	318,000	<48.0	67,300	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	4/15/2022	N	BL02	UMCf	76.8 - 86.8	140,000	1,150,000	<24,000	---	---	---	463,000	4,200	1,190,000	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	69,100 J-	426,000	---	---	---	---	---	1,290	---	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	11/3/2022	N	EM03	UMCf	76.8 - 86.8	63,700	445,000	---	---	---	---	---	1,280	---	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	66,800	346,000	---	---	---	---	---	1,180	---	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	1/11/2023	N	EM05	UMCf	76.8 - 86.8	86,700	428,000	---	---	---	---	---	1,140 J+	---	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	51,000 J+	515,000	---	---	---	---	---	1,440	---	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	325,000	637,000	<2,400	<117	<140	<33.3	249,000	2,010	253,000	130,000	130,000	<8,450	<8,450	<56.1	<1.03	7.70	32.6	<0.330	<0.150
U4-MW-07I	4/21/2023	N	EM08	UMCf	76.8 - 86.8	135,000	746,000	3,190 J	<117	<140	35.3 J	662,000	<480	379,000	---	---	---	---	---	---	---	---	---	---
U4-MW-07I	5/11/2023	N	EM09	UMCf	76.8 - 86.8	1,810	1,130	80,000	<117	831	48.0 J	591,000	74.4 J	302,000	---	---	---	---	---	---	---	---	---	---
U4-MW-08D	4/13/2022	N	BL02	UMCf	98.6 - 108.6	1,640,000	2,450,000	<24,000	<117	<2,800	68.2 J	4,960,000	71,400	1,130,000	184,000	184,000	<8,450	<8,450	<280	<10.3	10.8 J	144	<1.65	<1.50
U4-MW-08D	12/7/2022	N	EM04	UMCf	98.6 - 108.6	889,000	10,400,000	<240,000	<117	<1,400	63.8 J	2,730,000	26,500	603,000	219,000	219,000	<8,450	<8,450	<92.5	<5.15	8.66 J	81.9 J+	<0.950	<0.750
U4-MW-08D	3/17/2023	N	EM07	UMCf	98.6 - 108.6	821,000	9,450,000	<240,000	<117	<1,400	<33.3	2,780,000	27,700 J-	421,000 J	919,000	919,000	<8,450	<8,450	<56.1	<5.15	17.0	131	<0.330	<0.750
U4-MW-08DD	4/20/2022	N	BL02	UMCf	119.8 - 129.8	25,700	281,000	<2,400	<117	<140	146 J+	213,000	1,520	210,000	89,800	89,800	<8,450	<8,450	<56.1	<1.03	10.9	19.0	<0.330	<0.150
U4-MW-08DD	4/20/2022	FD	BL02	UMCf	119.8 - 129.8	23,800	294,000	<2,400	<117	<140	133 J	227,000	1,610	230,000	84,300	84,300	<8,450	<8,450	<56.1	<1.03	11.1	19.2	<0.330	<0.150
U4-MW-08DD	12/8/2022	N	EM04	UMCf	119.8 - 129.8	8,820	55,300	<12,000	<117	<140	191 J-	175,000	282	179,000	111,000	111,000	<8,450	<8,450	<18.5	1.33 J	10.8	21.3	<0.190	<0.150
U4-MW-08DD	3/15/2023	N	EM07	UMCf	119.8 - 129.8	170,000	966,000	<24,000	<117	<140	162	406,000	1,360	163,000	57,900	57,900	<8,450	<8,450	<56.1	<1.03	6.32	90.8	<0.330	<0.150
U4-MW-08I	4/13/2022	N	BL02	UMCf	78.0 - 88.0	152,000	2,550,000	<24,000	<117	<700	55.5 J	768,000	7,610	1,160,000	175,000	166,000	9,060 J	<8,450	92.7 J	<1.03	43.1	20.6	<0.330	<0.150
U4-MW-08I	12/7/2022	N	EM04	UMCf	78.0 - 88.0	609,000	5,800,000	<240,000	<117	<700	46.0 J	1,660,000	19,200	941,000	164,000	164,000	<8,450	<8,450	<92.5	<5.15	37.2	51.8 J+	<0.950	<0.750
U4-MW-08I	12/7/2022	FD	EM04	UMCf	78.0 - 88.0	566,000	4,980,000	<240,000	<117	<700	<33.3 UJ	1,530,000	17,000	948,000	---	---	---	---	<92.5	<5.15	37.3	49.4 J+	<0.950	<0.750
U4-MW-08I	3/17/2023	N	EM07	UMCf	78.0 - 88.0	872,000	9,870,000	<240,000	<117	<1400 R	<33.3	2,290,000	26,700 J-	796,000	243,000	243,000	<8,450	<8,450	<56.1	<5.15	28.5	87.0	<0.330	<0.750
U4-MW-08S	4/15/2022	N	BL02	UMCf	54.9 - 64.9	11,600	154,000	<2,400	<117	<140	<33.3	227,000	3,430	1,280,000	57,500	15,500 J	42,000	<8,450	<56.1	<1.03	14.5	25.0	<0.330	<0.150
U4-MW-08S	12/7/2022	N	EM04	UMCf	54.9 - 64.9	5,150	52,300	<480	<117	755 J	77.4 J	222,000	1,410	1,050,000	417,000 J	417,000 J	<8,450	<8,450	<18.5	<1.03	77.3	20.0	<0.190	<0.150
U4-MW-08S	12/7/2022	FD	EM04	UMCf	54.9 - 64.9	5,740	55,200	<480	<117	226 J	74.1 J	217,000	1,460	1,070,000	299,000 J	299,000 J	<8,450	<8,450	<18.5	<1.03	76.3	19.4	<0.190	<0.150
U4-MW-08S	3/13/2023	N	EM07	UMCf	54.9 - 64.9	98.0 J	2,860 J	<24.0	<117	639	243	192,000	<48.0	297,000	1,150,000	1,150,000	<8,450	<8,450	63.0 J	<1.03	43.0	184	<0.330	<0.150
U4-MW-08S	3/13/2023	FD	EM07	UMCf	54.9 - 64.9	<0.300 UJ	<240 UJ	<240	<117	723	246	187,000	<48.0	250,000	1,370,000	1,370,000	<8,450	<8,450	<56.1	<1.03	42.3	174	<0.330	<0.150
U4-MW-09D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	1,770,000	14,600,000	<240,000	<117	<1,400	58.0 J	3,270,000	43,200	877,000	179,000	179,000	<8,450	<8,450	<56.1	<1.03	7.44 J	14.2	<0.330	<1.50
U4-MW-09D	12/6/2022	N	EM04	UMCf	96.9 - 106.9	209,000 J+	1,480,000	<240,000 UJ	<117 UJ	<280 UJ	<33.3 UJ	439,000	<4800 UJ	274,000 J	136,000	136,000	<8450 UJ	<8450 UJ	<18.5 UJ	<1.03 UJ	33.5	50.7	<0.190 UJ	<0.150 UJ
U4-MW-09D	3/16/2023	N	EM07	UMCf	96.9 - 106.9	189,000	1,240,000	24,900	<117	<140 R	<33.3	909,000	756 J	200,000	905,000	905,000	<8,450	<8,450	59.0 J	<1.03	25.6	152	<0.330	<0.150
U4-MW-09DD	4/14/2022	N	BL02	UMCf	119.8 - 129.8	25,200	110,000	<2,400	<117	<140	84.5 J	172,000	1,060	178,000	98,100	91,300	<8,450	<8,450	<56.1	<1.03	10.2	27.6	<0.330	<0.150
U4-MW-09DD	12/6/2022	N	EM04	UMCf	119.8 - 129.8	12,200 J+	48,600	<240,000 UJ	<117 UJ	<140 UJ	46.8 J	159,000	963	179,000	83,000	83,000	<8450 UJ	<8450 UJ	<18.5 UJ	<1.03 UJ	11.7	28.5	<0.190 UJ	<0.150 UJ
U4-MW-09DD	3/21/2023	N	EM07	UMCf	119.8 - 129.8	88,700	387,000	<2,400	<117	<140	37.1 J	257,000	1,770	151,000	61,000	61,000	<8,450	<8,450	<56.1	<1.03	9.50	65.3	<0.330	<0.150
U4-MW-09I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	78,700	439,000	<2,400	<117	<140	120 J+	242,000	3,120	1,100,000	109,000	109,000	<8,450	<8,450	<56.1	<1.03	24.8	16.6	<0.330	<0.150
U4-MW-09I	12/6/2022	N	EM04	UMCf	76.8 - 86.8	448,000 J+	2,560,000	<240,000 UJ	<117 UJ	<140 UJ	<33.3 UJ	715,000	7,720 J	431,000 J	133,000	133,000	<8450 UJ	<8450 UJ	<92.5 UJ	<5.15 UJ	20.0	44.2	<0.950 UJ	<0.750 UJ
U4-MW-09I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	340,000	2,090,000	<24,000	<117	<140	<33.3	946,000	2,140	292,000	723,000	723,000	<8,450	<8,450	<56.1	<1.03	25.5	89.2	<0.330	<0.150
U4-MW-09S	4/14/2022	N	BL02	UMCf	55.3 - 65.3	14,800	91,400	<2,400	<117	<140	76.5 J	182,000	2,260	964,000	141,000	123,000	17,900 J	<8,450	<56.1	<1.03	46.2	17.5	<0.330	<0.150
U4-MW-09S	12/6/2022	N	EM04	UMCf	55.3 - 65.3	91,500	503,000	<240,000 UJ	<117 UJ	<140 UJ	<33.3 UJ	256,000	3,360	1,020,000	258,000	238,000	20,400	<8450 UJ	<18.5 UJ	<1.03 UJ	56.2	10.2	<0.190 UJ	<0.150 UJ
U4-MW-09S	3/17/2023	N	EM07	UMCf	55.3 - 65.3	84,500	474,000	<2,400	<117	<140	44.7 J	373,000	1,820	822,000	265,000	249,000	15,300 J	<8,450	<56.1	<1.03	46.3	17.1	<0.330	<0.150
U4-MW-10D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	118,000	2,180,000	<24,000	<117	<700	<33.3	706,000	4,090	340,000	93,000	93,000	<8,450	<8,450	<56.1	<1.03	8.78	58.7	<0.330	

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	E314.0	E300.1		E350.1	E351.2	E365.1	Anions by E300.0/SW9065A				Alkalinity by SM2320B				Dissolved Metals by SW6010B/SW6020				
						Perchlorate	Chlorate	Chlorite	Ammonia (as N)	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Chloride	Nitrate (as N)	Sulfate	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-111	5/19/2023	FD	EM09	UMCf	77.0 - 87.0	478	3,070 J	<24.0	<117	1,150	<33.3	263,000	<48.0	7,860	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	4/15/2022	N	BL02	UMCf	97.1 - 107.1	1,280,000	14,400,000	<24,000	<117	<3,500	67.4 J	3,380,000	61,000	1,130,000	138,000	138,000	<8,450	<8,450	115 J	<10.3	6.66 J	115	<0.330	<1.50
U4-MW-12D	9/27/2022	N	EM01	UMCf	97.1 - 107.1	793,000	8,490,000	<120,000	<117	<1,400	161 J	2,080,000	29,800	696,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	10/12/2022	N	EM02	UMCf	97.1 - 107.1	1,070,000	9,510,000	<240,000	<117	<700	48.9 J	2,150,000	32,400	846,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	11/2/2022	N	EM03	UMCf	97.1 - 107.1	1,030,000	9,430,000	<240,000	<117	<7,000	<33.3	2,060,000	28,700	842,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	12/7/2022	N	EM04	UMCf	97.1 - 107.1	1,060,000	6,990,000	<240,000	<117	<700	45.3 J	2,010,000	22,700	818,000	218,000	218,000	<8,450	<8,450	<92.5	<5.15	14.8	64.9 J+	<0.950	<0.750
U4-MW-12D	1/12/2023	N	EM05	UMCf	97.1 - 107.1	918,000	8,540,000	<240,000	<117	<2,800	<33.3	1,900,000	21,600	624,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	2/15/2023	N	EM06	UMCf	97.1 - 107.1	617,000 J+	8,230,000	<24,000	<117	<1,400	<33.3	1,840,000	21,700	537,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	3/14/2023	N	EM07	UMCf	97.1 - 107.1	567,000 J+	6,130,000	<24,000	<117	<700	<33.3	1,610,000	10,100	468,000	302,000	302,000	<8,450	<8,450	<56.1	<5.15	15.0	98.4	<0.330	<0.750
U4-MW-12D	4/17/2023	N	EM08	UMCf	97.1 - 107.1	1,080,000	8,070,000	<240,000	<117	<1,400	<33.3	1,970,000	19,500	714,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	5/17/2023	N	EM09	UMCf	97.1 - 107.1	1,070,000	8,420,000	<240,000	118 J	<700	<33.3	2,110,000	30,700	907,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	4/14/2022	N	BL02	UMCf	76.8 - 86.8	424,000	4,000,000	<24,000	<117	<1,400	68.0 J	967,000	7,700	1,230,000	147,000	147,000	<8,450	<8,450	<56.1	3.92 J	14.6	48.2	<0.330	2.51 J
U4-MW-12I	4/14/2022	FD	BL02	UMCf	76.8 - 86.8	420,000	3,920,000	<24,000	<117	<1,400	104 J+	968,000	8,310	1,220,000	139,000	139,000	<8,450	<8,450	61.1 J	1.29 J	12.6	47.3	<0.330	<0.150 UJ
U4-MW-12I	9/27/2022	N	EM01	UMCf	76.8 - 86.8	51,500	535,000	<2,400	<117	<140	271 J	278,000	2,190	1,080,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	35,100	475,000 J	<240000 R	<117 UJ	<140 UJ	42.6 J	280,000	535	1,030,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	11/2/2022	N	EM03	UMCf	76.8 - 86.8	28,800	170,000	<2400 UJ	<117	<140 UJ	<33.3	283,000	383	989,000	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	6,800	26,800	<12,000	<117	629 J+	<33.3	---	---	---	592,000	592,000	<8,450	<8,450	<18.5	1.36 J	108	20.7	<0.190	<0.150
U4-MW-12I	12/7/2022	FD	EM04	UMCf	76.8 - 86.8	6,630	28,700	<12,000	<117	739 J+	<33.3	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	1/13/2023	N	EM05	UMCf	76.8 - 86.8	2,450	24,100	<2,400	<117	579	<33.3	197,000	83.5 J	44,500	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	1,720 J+	16,900	46,000	<117	878	<33.3	169,000	99.2 J	24,700	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	3/13/2023	N	EM07	UMCf	76.8 - 86.8	269	1,800	31,200	<117	1,220	<33.3	151,000	<48.0	3,350 J	1,560,000	1,560,000	<8,450	<8,450	<56.1	<1.03	47.2	439	<0.330	<0.150
U4-MW-12I	4/17/2023	N	EM08	UMCf	76.8 - 86.8	2.13 J	<24.0	<24.0	<117	1,270	53.9 J	152,000	48.0 J	1,600 J	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	5/17/2023	N	EM09	UMCf	76.8 - 86.8	31.7	<240	<240 UJ	<117	1,050	98.7 J	143,000	<48.0	894 J	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	4/14/2022	N	BL02	UMCf	98.2 - 108.2	1,330,000	14,700,000	<240,000	<117	<1,400	115 J+	3,130,000	60,700	662,000	128,000	128,000	<8,450	<8,450	375 J	<10.3	5.43 J	173	<1.65	<1.50
U4-MW-13D	9/28/2022	N	EM01	UMCf	98.2 - 108.2	401,000	5,370,000	<24,000	<117	<280	<33.3 UJ	1,330,000	10,900	336,000 J	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	10/11/2022	N	EM02	UMCf	98.2 - 108.2	413,000	4,100,000	<120,000	<117	<560	<33.3	1,400,000	6,780 J	379,000 J	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	11/3/2022	N	EM03	UMCf	98.2 - 108.2	433,000	4,080,000	<240,000	<117	<280	<33.3	1,300,000	6,960	295,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	12/7/2022	N	EM04	UMCf	98.2 - 108.2	411,000	3,380,000	<240,000	257	<700	<33.3	1,190,000	9,910 J	288,000 J	190,000	190,000	<8,450	<8,450	<92.5	<5.15	7.37 J	100	<0.950	<0.750
U4-MW-13D	1/12/2023	N	EM05	UMCf	98.2 - 108.2	383,000	3,950,000	<240,000	<117	<280	<33.3	984,000	10,300	289,000 J	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	2/15/2023	N	EM06	UMCf	98.2 - 108.2	374,000 J+	3,490,000	<24,000	<117	<560	<33.3	820,000	12,000	296,000 J	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	3/17/2023	N	EM07	UMCf	98.2 - 108.2	337,000	3,160,000	<24,000	<117	<280	193	699,000 J+	8,410 J	280,000 J	107,000	107,000	<8,450	<8,450	<56.1	<1.03	5.75	76.8	<0.330	<0.150
U4-MW-13D	4/18/2023	N	EM08	UMCf	98.2 - 108.2	224,000	1,910,000	<24,000	<117	<140	<33.3	567,000	<4,800	241,000 J	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	5/17/2023	N	EM09	UMCf	98.2 - 108.2	207,000	1,660,000	<24,000	<117	<140	<33.3	595,000	15,200 J-	259,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	4/14/2022	N	BL02	UMCf	77.1 - 87.1	418,000	4,180,000	<24,000	<117	<1,400	109 J+	943,000	7,030	1,090,000	116,000	116,000	<8,450	<8,450	<56.1	<1.03	12.6	43.5	<0.330	<0.150
U4-MW-13I	9/28/2022	N	EM01	UMCf	77.1 - 87.1	233,000	1,720,000	<12,000	<117	<280	79.5 J	487,000	9,130 J	1,040,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	10/10/2022	N	EM02	UMCf	77.1 - 87.1	212,000	1,410,000	<24,000	<117	<140	50.5 J	441,000	5,560	1,060,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	11/3/2022	N	EM03	UMCf	77.1 - 87.1	149,000	830,000	<24,000	<117	<140	<33.3	402,000	3,730	932,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	12/6/2022	N	EM04	UMCf	77.1 - 87.1	69,200	337,000	<24000 UJ	122 J	<140 UJ	<33.3 UJ	467,000	<48.0 UJ	545,000	599,000	599,000	<8450 UJ	<8450 UJ	<18.5 UJ	2.00 J	79.2	19.6	<0.190 UJ	<0.150 UJ
U4-MW-13I	1/12/2023	N	EM05	UMCf	77.1 - 87.1	59,400	261,000	<24,000	<117	<140	75.6 J	447,000	360	433,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	2/14/2023	N	EM06	UMCf	77.1 - 87.1	117,000	790,000	<24,000	183 J	<140	<33.3	521,000	1,780	399,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	3/16/2023	N	EM07	UMCf	77.1 - 87.1	2,680 J+	12,500	<240	<117	959 J	66.8 J	341,000	<48.0	55,400	1,100,000	1,100,000	<8,450	<8,450	<56.1	1.14 J	74.9	239	<0.330	0.223 J
U4-MW-13I	4/19/2023	N	EM08	UMCf	77.1 - 87.1	1,350	4,660	<240	<117	848	54.7 J	287,000	<48.0	115,000	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	5/17/2023	N	EM09	UMCf	77.1 - 87.1	5,630	52,900	<240	582	1,360	122 J+	234,000	<48.0	77,800	---	---	---	---	---	---	---	---	---	---
U4-MW-14D	4/13/2022	N	BL02	UMCf	97.3 - 107.3	140,000	462,000	<12,000	<117	<140	33.3 R	349,000	729 J	2,560,000	101,000	101,000	<8,450	<8,450	<56.1	<1.03	21.3	33.5	<0.330	<0.150
U4-MW-14D	12/6/2022	N	EM04	UMCf	97.3 - 107.3	207,000 J+	1,300,000	<24000 UJ	<117 UJ	<140 UJ	<33.3 UJ	432,000	3,700	946,000	71,300	71,300	<8450 UJ	<8450 UJ	20.6 J	<1.03 UJ	14.6	56.2	<0.190 UJ	<0.150 UJ
U4-MW-14D	3/16/2023	N	EM07	UMCf	97.3 - 107.3	159,000	1,260,000	<24,000	<117	<140	38.2 J	316,000	2,420	387,000	85,900	85,900	<8,450	<8,450	<56.1	<1.03	13.2	52.1	<0.330	<0.150
U4-MW-14I	4/14/2022	N	BL02	UMCf	77.3 - 87.3	181,000	506,000	<2,400	<117	<140	173 J+	274,000	2,490	1,410,000	77,600	70,500	<8,450	<8,450	<56.1	<1.03	16.6	23.1	<0.330	<0.150
U4-MW-14I	12/6/2022	N	EM04	UMCf	77.3 - 87.3	249,000	1,060,000	<24000 UJ	<117 UJ	<140 UJ	<33.3 UJ	401,000												

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	E314.0	E300.1		E350.1	E351.2	E365.1	Anions by E300.0/SW9065A			Alkalinity by SM2320B				Dissolved Metals by SW6010B/SW6020					
						Perchlorate	Chlorate	Chlorite	Ammonia (as N)	Total Kjeldahl Nitrogen (TKN)	Phosphorus	Chloride	Nitrate (as N)	Sulfate	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Aluminum	Antimony	Arsenic	Barium	Beryllium	Cadmium
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-T3	12/6/2022	N	EM04	N/A	N/A	766,000	5,280,000	<240,000 UJ	----	----	----	1,250,000	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	1/9/2023	N	EM05	N/A	N/A	886,000	7,910,000	<240,000	----	----	----	1,850,000	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	2/13/2023	N	EM06	N/A	N/A	877,000	7,800,000	<24,000	----	----	----	1,770,000	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	3/13/2023	N	EM07	N/A	N/A	815,000	7,400,000	<24,000	----	----	----	1,810,000	14,500	----	----	----	----	----	----	----	----	----	----	
U4-T3	4/19/2023	N	EM08	N/A	N/A	406,000	2,880,000	<24,000	----	----	----	885,000	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	5/18/2023	N	EM09	N/A	N/A	498,000	4,200,000	<24,000	----	----	----	1,230,000	----	----	----	----	----	----	----	----	----	----	----	

Notes:
 FD - Field duplicate
 E - Field instrument error.
 J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 J- - The result is an estimated quantity, but the result may be biased low.
 J+ - The result is an estimated quantity, but the result may be biased high.
 mg/L - milligrams per liter
 µg/L - micrograms per liter
 N - Normal field sample
 R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
 UMCf- Upper Muddy Creek Formation
 < - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
 -- Not tested.

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Dissolved Metals by SW6010B/SW6020																		
						Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
U4-E-09I	4/14/2022	N	BL02	UMCf	74.9 - 89.9	215,000	9,660	<0.840	6.53	<18.0	<0.849	91,600	21.6	13.2	2.61	199 J	25,300	2.47	<0.0700	1,100,000	<0.121	9.29	16.8 J	3.75 J
U4-E-10D	4/13/2022	N	BL02	UMCf	94.5 - 109.5	436,000	9,680	<0.840	<1.51	<18.0	<0.849	165,000	7.51 J	8.19	20.5	34.0 J	29,700	2.51	<0.0700	1,120,000	<0.121	1.64	6.53 J	<3.02
U4-E-10I	4/13/2022	N	BL02	UMCf	74.2 - 89.2	307,000	16,100	<0.840	4.02 J	<18.0	<0.849	133,000	7.93 J	11.6	2.29	<18.3	26,000	2.58	<0.0700	1,410,000	<0.121	10.6	14.5 J	7.05 J
U4-MW-01D	4/19/2022	N	BL02	UMCf	96.7 - 106.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-01D	2/16/2023	N	EM06	UMCf	96.7 - 106.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-01D	3/20/2023	N	EM07	UMCf	96.7 - 106.7	110,000	4,860	<0.840	6.39	<18.0	<0.849	62,300	<0.934	<1.16	<0.816	---	5,630	3.03	<0.0700	165,000	<0.121	3.18	<4.99	<3.02
U4-MW-01DD	4/19/2022	N	BL02	UMCf	119.9 - 129.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-01DD	4/19/2022	FD	BL02	UMCf	119.9 - 129.9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-01DD	3/15/2023	N	EM07	UMCf	119.9 - 129.9	276,000	8,120	<0.840	3.13 J	<18.0	<0.849	125,000	11.3 J+	6.64	<0.816	---	21,800	1.92 J	<0.0700	377,000	<0.121	2.59	<4.99	<3.02
U4-MW-01I	4/19/2022	N	BL02	UMCf	76.7 - 86.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-01I	3/20/2023	N	EM07	UMCf	76.7 - 86.7	156,000	5,440	<0.840	7.21	<18.0	1.06 J	85,700	4.20 J	<1.16	<0.816	---	7,270	3.38	0.146 J	213,000	0.148 J	3.88	<4.99	<3.02
U4-MW-01S	4/18/2022	N	BL02	UMCf	54.7 - 64.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-01S	3/15/2023	N	EM07	UMCf	54.7 - 64.7	15,200	1,290	<0.840	5.26	66.4 J	<0.849	4,240	<0.934	24.4	<0.816	---	17,500	2.64	<0.0700	859,000	<0.121	2.66	66.7	<3.02
U4-MW-02D	4/14/2022	N	BL02	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02D	10/11/2022	N	EM02	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02D	11/1/2022	N	EM03	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02D	12/7/2022	N	EM04	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02D	1/10/2023	N	EM05	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02D	2/13/2023	N	EM06	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02D	3/17/2023	N	EM07	UMCf	95.0 - 110.0	1,230,000	94,700	<0.840	<15.1	<18.0	<8.49	636,000	5.23 J	16.0	<8.16	---	94,100	7.47 J	1.64 J	6,650,000	<1.21	3.50 J	<4.99	<30.2
U4-MW-02D	4/19/2023	N	EM08	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02D	5/9/2023	N	EM09	UMCf	95.0 - 110.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	4/14/2022	N	BL02	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	10/11/2022	N	EM02	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	11/2/2022	N	EM03	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	11/2/2022	FD	EM03	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	12/8/2022	N	EM04	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	12/8/2022	FD	EM04	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	1/13/2023	N	EM05	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	1/13/2023	FD	EM05	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	2/15/2023	N	EM06	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	2/15/2023	FD	EM06	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	3/17/2023	N	EM07	UMCf	75.0 - 90.0	581,000	61,100	<0.840	<7.55	<18.0	<4.24	294,000	221	23.4	103	---	73,000	6.92 J	<0.350	4,660,000	<0.605	19.3	8.84 J	<15.1
U4-MW-02I	3/17/2023	FD	EM07	UMCf	75.0 - 90.0	555,000	61,000	<0.840	<7.55	<18.0	<4.24	289,000	229	23.8	99.2	---	71,300	4.91 J	<0.350	4,660,000	<0.605	18.7	12.3 J	<15.1
U4-MW-02I	4/20/2023	N	EM08	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	4/20/2023	FD	EM08	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	5/9/2023	N	EM09	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-02I	5/9/2023	FD	EM09	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-03D	4/20/2022	N	BL02	UMCf	96.6 - 106.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-03D	2/16/2023	N	EM06	UMCf	96.6 - 106.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-03D	3/16/2023	N	EM07	UMCf	96.6 - 106.6	692,000	28,100	<0.840	<7.55	<18.0	<4.24	369,000	8.20 J	4.49 J	<4.08	---	35,900	1.88 J	<0.350	1,840,000	<0.605	2.41 J	<4.99	<15.1
U4-MW-03D	3/16/2023	FD	EM07	UMCf	96.6 - 106.6	684,000	28,200	<0.840	<7.55	<18.0	4.90 J	369,000	2.65 J	5.12	<4.08	---	35,900	3.11 J	<0.350	1,890,000	<0.605	2.52 J	<4.99	<15.1
U4-MW-03DD	4/20/2022	N	BL02	UMCf	119.7 - 129.7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-03DD	3/15/2023	N	EM07	UMCf	119.7 - 129.7	30,700	64.2	<0.840	<1.51	<18.0	<0.849	16,400	3.34 J	8.98	<0.816	---	6,600	1.83 J	<0.0700	145,000	<0.121	2.55	7.92 J	<3.02
U4-MW-03I	4/19/2022	N	BL02	UMCf	76.6 - 86.6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-03I	3/15/2023	N	EM07	UMCf	76.6 - 86.6	600,000	25,400	<0.840	<1.51	<18.0	<0.849	325,000	5.11 J	5.12	<0.816	---	37,100	2.88 J+	0.0987 J	1,590,000	0.158 J	4.09	<4.99	<3.02
U4-MW-03S	4/18/2022	N	BL02	UMCf	54.5 - 64.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-03S	4/18/2022	FD	BL02	UMCf	54.5 - 64.5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-03S	3/15/2023	N	EM07	UMCf	54.5 - 64.5	4,160	2,290	<0.840	<1.51	<18.0	<0.849	584 J	3.04 J	20.8	<0.816	---	11,100	3.27 J+	<0.0700	892,000	<0.121	6.81	159	<3.02
U4-MW-04D	4/19/2022	N	BL02	UMCf	97.0 - 107.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-04D	2/16/2023	N	EM06	UMCf	97.0 - 107.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-04D	3/21/2023	N	EM07	UMCf	97.0 - 107.0	43,100	2,740	<0.840	<1.51	<18.0	<0.849	23,700	1.08 J	<1.16	<0.816	---	2,920	2.08	<0.0700	205,000	<0.121	9.80	<4.99	<3.02
U4-MW-04I	4/19/2022	N	BL02	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-04I	3/20/2023	N	EM07	UMCf	76.8 - 86.8	141,000	7,070	<0.840	19.3 J	<18.0	<4.24	71,500	<0.934	1.55 J	<4.08	---	6,810	2.95 J	<0.350	482,000	<0.605	7.91	<4.99	<15.1
U4-MW-05D	4/15/2022	N	BL02	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-05D	10/13/2022	N	EM02	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-05D	11/3/2022	N	EM03	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-05D	12/7/2022	N	EM04	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-05D	1/11/2023	N	EM05	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-05D	2/14/2023	N	EM06	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-05D	3/16/2023	N	EM07	UMCf	98.2 - 108.2	258,000	28,700	<0.840	<7.55	<18.0	<4.24	12												

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Dissolved Metals by SW6010B/SW6020																		
						Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-07D	10/12/2022	FD	EM02	UMCf	96.8 - 106.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07D	11/3/2022	N	EM03	UMCf	96.8 - 106.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07D	12/7/2022	N	EM04	UMCf	96.8 - 106.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07D	1/11/2023	N	EM05	UMCf	96.8 - 106.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07D	2/14/2023	N	EM06	UMCf	96.8 - 106.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07D	3/16/2023	N	EM07	UMCf	96.8 - 106.5	84,500	931	<0.840	<1.51	86.5 J	<0.849	39,700	1.27 J	3.84 J	<0.816	----	5,290	1.91 J	<0.0700	189,000	<0.121	7.45	<4.99	<3.02
U4-MW-07D	4/21/2023	N	EM08	UMCf	96.8 - 106.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07D	5/11/2023	N	EM09	UMCf	96.8 - 106.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	4/15/2022	N	BL02	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	11/3/2022	N	EM03	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	1/11/2023	N	EM05	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	93,500	2,670	<0.840	<1.51	29.1 J	<0.849	46,800	0.976 J	3.33 J	0.924 J	----	7,190	1.39 J	<0.0700	314,000	<0.121	8.83	5.92 J	5.20 J
U4-MW-07I	4/21/2023	N	EM08	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-07I	5/11/2023	N	EM09	UMCf	76.8 - 86.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-MW-08D	4/13/2022	N	BL02	UMCf	98.6 - 108.6	1,610,000	112,000	<4.20	<15.1	<90.0	<8.49	707,000	37.2 J	11.9 J	<8.16	<91.5	102,000	7.61 J	<0.700	7,950,000	<1.21	10.1	<25.0	<30.2
U4-MW-08D	12/7/2022	N	EM04	UMCf	98.6 - 108.6	665,000	49,000	<0.298	<7.55	<140	<4.24	330,000	11.7 J	3.10 J	<4.08	----	43,000	4.50 J	<0.350	3,880,000	<0.605	24.7	6.96 J	<15.1
U4-MW-08D	3/17/2023	N	EM07	UMCf	98.6 - 108.6	532,000	40,100	<0.840	<7.55	<18.0	<4.24	378,000	40.2 J+	4.72 J	<4.08	----	49,900	6.98 J	<0.350	3,810,000	<0.605	103	<4.99	<15.1
U4-MW-08DD	4/20/2022	N	BL02	UMCf	119.8 - 129.8	58,200	764	<0.840	<1.51	<18.0	<0.849	28,400	14.7	9.57	1.49 J	110 J	11,000	2.68	<0.0700	258,000	<0.121	3.24	10.4 J	<3.02
U4-MW-08DD	4/20/2022	FD	BL02	UMCf	119.8 - 129.8	58,000	780	<0.840	<1.51	<18.0	<0.849	28,400	14.6	9.89	1.44 J	107 J	11,100	2.31	<0.0700	258,000	<0.121	3.20	9.34 J	<3.02
U4-MW-08DD	12/8/2022	N	EM04	UMCf	119.8 - 129.8	45,600	56.7	0.145 J	<1.51	<28.1	<0.849	23,100	31.7	10.9	3.15	----	9,950	2.00	<0.0700	179,000	<0.121	3.17	8.61	23.0 J
U4-MW-08DD	3/15/2023	N	EM07	UMCf	119.8 - 129.8	167,000	1,300	<0.840	2.67 J	<18.0	0.963 J	92,600	2.52 J	4.92 J	1.72 J	----	15,400	2.01	<0.0700	359,000	<0.121	2.28	<4.99	<3.02
U4-MW-08I	4/13/2022	N	BL02	UMCf	78.0 - 88.0	107,000	8,950	<0.840	1.90 J	<18.0	<0.849	44,400	5.20 J	18.7	0.820 J	25.4 J	23,000	2.69	<0.0700	1,300,000	<0.121	6.55	23.5	3.30 J
U4-MW-08I	12/7/2022	N	EM04	UMCf	78.0 - 88.0	355,000	31,400	1.54 J	<7.55	<140	<4.24	166,000	29.6	12.8 J	113	----	36,600	3.16 J	<0.350	2,570,000	<0.605	23.7	18.2 J	<15.1
U4-MW-08I	12/7/2022	FD	EM04	UMCf	78.0 - 88.0	349,000	31,000	1.41 J	<7.55	<140	<4.24	163,000	28.6	12.7 J	106	----	36,200	3.40 J	<0.350	2,540,000	<0.605	23.2	18.3 J	<15.1
U4-MW-08I	3/17/2023	N	EM07	UMCf	78.0 - 88.0	538,000	48,700	<0.840	<7.55	<18.0	<4.24	288,000	13.6 J+	16.2	29.8	----	55,900	6.53 J	<0.350	3,640,000	<0.605	41.3	11.9 J	<15.1
U4-MW-08S	4/15/2022	N	BL02	UMCf	54.9 - 64.9	165,000	519	<0.840	<1.51	26.0 J	<0.849	3,570	<0.934	20.1	<0.816	<18.3	20,400	2.19	<0.0700	580,000	<0.121	0.591 J	47.5	<3.02
U4-MW-08S	12/7/2022	N	EM04	UMCf	54.9 - 64.9	68,400	284	0.0886 J	<1.51	31.9 J	<0.849	30,800	10.2	20.4	3.02	----	18,200	1.95 J	<0.0700	624,000	<0.121	13.4	49.2	<3.02
U4-MW-08S	12/7/2022	FD	EM04	UMCf	54.9 - 64.9	67,600	275	0.0711 J	<1.51	39.7 J	<0.849	30,800	10.5	20.0	2.30	----	17,900	1.80 J	<0.0700	612,000	<0.121	13.2	48.5	4.34 J
U4-MW-08S	3/13/2023	N	EM07	UMCf	54.9 - 64.9	73,900	10.3	<0.840	<1.51	38.3 J	<0.849	61,700	428	3.71 J	1.37 J	----	17,800	<0.300	<0.0700	464,000	<0.121	11.8	5.34 J	<3.02
U4-MW-08S	3/13/2023	FD	EM07	UMCf	54.9 - 64.9	68,900	8.64 J	<0.840	<1.51	54.4 J	<0.849	55,500	406	4.57 J	1.59 J	----	16,900	<0.300	<0.0700	467,000	<0.121	13.7	5.55 J	<3.02
U4-MW-09D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	123,000	5,930	<0.840	<15.1	<18.0	<8.49	532,000	4.62 J	<1.16	<8.16	<18.3	6,610	3.90 J	<0.700	475,000	<1.21	10.2	<4.99	165 J
U4-MW-09D	12/6/2022	N	EM04	UMCf	96.9 - 106.9	145,000	7,460	0.202 J	<1.51 UJ	<28.1 UJ	<0.849 UJ	71,500	5.78	6.30	11.1	----	12,100	1.98 J	<0.0700 UJ	680,000	<0.121 UJ	9.26	23.1	<3.02 UJ
U4-MW-09D	3/16/2023	N	EM07	UMCf	96.9 - 106.9	235,000	3,650	<0.840	1.58 J	30.6 J	<0.849	136,000	71.7	1.39 J	10.6	----	17,400	1.73 J	<0.0700	879,000	<0.121	48.7	8.91 J	<3.02
U4-MW-09DD	4/14/2022	N	BL02	UMCf	119.8 - 129.8	41,300	154	<0.840	3.53 J	18.0 J	<0.849	20,000	7.39 J	9.61	<0.816	221 J	7,460	1.98 J	<0.0700	181,000	<0.121	2.98	9.16 J	3.03 J
U4-MW-09DD	12/6/2022	N	EM04	UMCf	119.8 - 129.8	39,300	137	<0.0596 UJ	<1.51 UJ	<28.1 UJ	<0.849 UJ	21,100	1.17 J	9.02	<0.816 UJ	----	7,030	1.86 J	<0.0700 UJ	162,000	<0.121 UJ	3.11	10.6	<3.02 UJ
U4-MW-09DD	3/21/2023	N	EM07	UMCf	119.8 - 129.8	76,600	199	<0.840	<1.51	<18.0	<0.849	43,200	2.54 J	5.69	7.63	----	9,310	2.06	<0.0700	199,000	<0.121	2.36	9.68 J	<3.02
U4-MW-09I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	114,000	2,350	<0.840	2.16 J	<18.0	<0.849	42,300	4.58 J	13.2	0.971 J	172 J	19,300	2.24	<0.0700	588,000	<0.121	5.48	19.1 J	<3.02
U4-MW-09I	12/6/2022	N	EM04	UMCf	76.8 - 86.8	218,000	13,400	0.835 J	8.06 J	<140 UJ	<4.24 UJ	100,000	21.9 J	7.84 J	83.7	----	20,600	2.26 J	<0.350 UJ	1,150,000	<0.605 UJ	10.8	10.7 J	<15.1 UJ
U4-MW-09I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	266,000	8,400	<0.840	<1.51	22.6 J	<0.849	153,000	44.5	3.36 J	105	----	21,400	1.80 J	<0.0700	1,140,000	<0.121	60.5	9.36 J	<3.02
U4-MW-09S	4/14/2022	N	BL02	UMCf	55.3 - 65.3	72,400	398	<0.840	1.69 J	141	<0.849	30,200	5.72 J	19.0	<0.816	168 J	14,000	2.13	<0.0700	461,000	<0.121	6.57	36.3	<3.02
U4-MW-09S	12/6/2022	N	EM04	UMCf	55.3 - 65.3	17,700	2,780	<0.0596 UJ	<1.51 UJ	<28.1 UJ	<0.849 UJ	7,810	1.21 J	14.0	1.83 J	----	9,350	2.30	<0.0700 UJ	841,000	<0.121 UJ	4.45	67.2	<3.02 UJ
U4-MW-09S	3/17/2023	N	EM07	UMCf	55.3 - 65.3	15,100	2,360	<0.840	<1.51	25.0 J	1.12 J	7,010	4.65 J	27.9	1.63 J	----	9,940	2.10	<0.0700	780,000	<0.121	9.84	61.6	8.34 J
U4-MW-10D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	275,000	5,290	<0.840	<1.51	<18.0	<0.849	134,000	23.5	8.67	<0.816	32.2 J	24,200	2.14	<0.0700	626,000	<0.121	9.13	8.78 J	3.53 J
U4-MW-10D	12/5/2022	N	EM04	UMCf	96.9 - 106.9	165,000	3,310	<0.840	<1.51	<18.0	<0.849	87,500	2.32 J	3.34 J	<0.816	----	15,500	2.22	<0.0700	----	<0.121	5.41	7.55 J	<3.02
U4-MW-10D	3/17/2023	N	EM07	UMCf	96.9 - 106.9	230,000	196	1.20 J	2.98 J	421	<0.849	184,000	2,160	3.54 J	11.9	----	18,100	0.811 J	<0.0700	303,000	<0.121	95.1	<4.99	7.73 J
U4-MW-10I	4/14/2022	N	BL02	UMCf	77.1 - 87.1	278,000	5,960	<0.840	2.97 J	27.9 J	<0.849	135,000	25.2	17.8	1.08 J	194 J	31,700	2.88	<0.0700	995,000	0.490 J	6.45	9.70 J	4.88 J
U4-MW-10I	12/5/2022	N	EM04	UMCf	77.1 - 87.1	180,000	490	<0.840	<1.51	<18.0	<0.849	87,800	34.4	16.9	<0.816	----	17,000	2.24	<0.0700	----	<0.121	11.		

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Dissolved Metals by SW6010B/SW6020																		
						Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-111	5/19/2023	FD	EM09	UMCf	77.0 - 87.0	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
U4-MW-12D	4/15/2022	N	BL02	UMCf	97.1 - 107.1	1,230,000	72,500	<4.20	<15.1	92.3 J	<8.49	501,000	59.4	15.8 J	<8.16	365 J	83,300	6.13 J	<0.700	4,920,000	<1.21	10.8	<4.99	<30.2
U4-MW-12D	9/27/2022	N	EM01	UMCf	97.1 - 107.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	10/12/2022	N	EM02	UMCf	97.1 - 107.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	11/2/2022	N	EM03	UMCf	97.1 - 107.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	12/7/2022	N	EM04	UMCf	97.1 - 107.1	662,000	48,500	<0.298	<7.55	<140	<4.24	300,000	23.4 J	8.18 J	<4.08	---	43,100	3.67 J	<0.350	3,260,000	<0.605	23.3	9.35 J	20.1 J
U4-MW-12D	1/12/2023	N	EM05	UMCf	97.1 - 107.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	2/15/2023	N	EM06	UMCf	97.1 - 107.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	3/14/2023	N	EM07	UMCf	97.1 - 107.1	596,000	32,900	<0.840	<7.55	29.5 J	<4.24	286,000	37.2	7.27	<4.08	---	44,100	4.79 J	<0.350	2,610,000	<0.605	13.7	8.65 J	<15.1
U4-MW-12D	4/17/2023	N	EM08	UMCf	97.1 - 107.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12D	5/17/2023	N	EM09	UMCf	97.1 - 107.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	317,000	17,200	<0.840	3.24 J	18.3 J	2.29	126,000	44.1	17.6	4.10 J	122 J	35,700	5.65 J	0.454 J	1,720,000	2.39	9.47	9.09 J	<3.02
U4-MW-12I	4/14/2022	FD	BL02	UMCf	76.8 - 86.8	314,000	16,700	<0.840	2.11 J	41.4 J	<0.849	125,000	44.4	17.7	1.90 J	265 J+	35,500	3.39 J	<0.0700	1,690,000	<0.121	7.29	6.67 J	<3.02
U4-MW-12I	9/27/2022	N	EM01	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	11/2/2022	N	EM03	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	86,600	63.3	0.171 J	<1.51	<28.1	<0.849	44,500	264	15.7	2.09	---	16,700	0.587 J	<0.0700	490,000	<0.121	41.0	6.05	<3.02
U4-MW-12I	12/7/2022	FD	EM04	UMCf	76.8 - 86.8	86,400	64.8	0.173 J	<1.51	41.2 J	<0.849	44,600	264	16.2	3.19	---	16,800	0.457 J	<0.0700	499,000	<0.121	41.4	6.27	<3.02
U4-MW-12I	1/13/2023	N	EM05	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	3/13/2023	N	EM07	UMCf	76.8 - 86.8	127,000	15.9	1.39 J	<7.55	243	<0.849	89,200	1,200	1.40 J	<4.08	---	23,800	0.309 J	<0.0700	591,000	<0.121	15.5	13.0 J	<15.1
U4-MW-12I	4/17/2023	N	EM08	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-12I	5/17/2023	N	EM09	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	4/14/2022	N	BL02	UMCf	98.2 - 108.2	1,520,000	55,300	<4.20	<15.1	<90.0	<8.49	664,000	32.9 J	9.95 J	<8.16	140 J	71,200	4.11 J	<0.700	3,990,000	<1.21	10.8	<25.0	<30.2
U4-MW-13D	9/28/2022	N	EM01	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	10/11/2022	N	EM02	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	11/3/2022	N	EM03	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	12/7/2022	N	EM04	UMCf	98.2 - 108.2	494,000	17,900	<0.298	<7.55	<140	<4.24	276,000	92.8	2.40 J	<4.08	---	26,600	2.64 J	<0.350	1,170,000	<0.605	34.4	4.77 J	<15.1
U4-MW-13D	1/12/2023	N	EM05	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	2/15/2023	N	EM06	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	3/17/2023	N	EM07	UMCf	98.2 - 108.2	303,000	12,900	<0.840	<1.51	<18.0	<0.849	150,000	40.4 J+	4.44 J	0.893 J	---	22,300	2.57	0.289 J	849,000	0.310 J	13.2	6.57 J	13.0 J
U4-MW-13D	4/18/2023	N	EM08	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13D	5/17/2023	N	EM09	UMCf	98.2 - 108.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	4/14/2022	N	BL02	UMCf	77.1 - 87.1	395,000	20,300	<0.840	<1.51	<18.0	<0.849	169,000	28.6	13.8	1.80 J	132 J	33,100	3.62	<0.0700	1,640,000	<0.121	7.29	9.14 J	<3.02
U4-MW-13I	9/28/2022	N	EM01	UMCf	77.1 - 87.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	10/10/2022	N	EM02	UMCf	77.1 - 87.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	11/3/2022	N	EM03	UMCf	77.1 - 87.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	12/6/2022	N	EM04	UMCf	77.1 - 87.1	100,000	892	0.138 J	<1.51 UJ	32.3 J	<0.849 UJ	48,300	161	9.01	2.47	---	16,700	1.08 J	<0.0700 UJ	759,000	<0.121 UJ	38.3	7.72	<3.02 UJ
U4-MW-13I	1/12/2023	N	EM05	UMCf	77.1 - 87.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	2/14/2023	N	EM06	UMCf	77.1 - 87.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	3/16/2023	N	EM07	UMCf	77.1 - 87.1	66,300	255	<0.840	<1.51	52.5 J	<0.849	44,100	228	5.96	2.33	---	13,800	<0.300	<0.0700	655,000	<0.121	19.8	<4.99	<3.02
U4-MW-13I	4/19/2023	N	EM08	UMCf	77.1 - 87.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-13I	5/17/2023	N	EM09	UMCf	77.1 - 87.1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
U4-MW-14D	4/13/2022	N	BL02	UMCf	97.3 - 107.3	561,000	308	<0.840	3.44 J	<18.0	<0.849	152,000	79.2	41.2	9.04	<18.3	25,400	3.31	<0.0700	673,000	<0.121	18.5	22.2	<3.02
U4-MW-14D	12/6/2022	N	EM04	UMCf	97.3 - 107.3	395,000	6,790	<0.0596 UJ	<1.51 UJ	40.3 J	1.09 J	128,000	21.5	5.90	<0.816 UJ	---	19,100	2.46	<0.0700 UJ	469,000	0.156 J	8.22	14.1	<3.02 UJ
U4-MW-14D	3/16/2023	N	EM07	UMCf	97.3 - 107.3	181,000	4,500	<0.840	3.77 J	65.8 J	<0.849	71,500	14.2 J+	3.16 J	<0.816	---	14,500	1.69 J	<0.0700	373,000	<0.121	8.52	9.49 J	6.57 J
U4-MW-14I	4/14/2022	N	BL02	UMCf	77.3 - 87.3	237,000	2,150	<0.840	<1.51	<18.0	<0.849	52,400	19.0	16.2	1.09 J	191 J	25,400	2.53	<0.0700	596,000	<0.121	4.68	13.3 J	<3.02
U4-MW-14I	12/6/2022	N	EM04	UMCf	77.3 - 87.3	524,000	4,710	0.0650 J	<1.51 UJ	<28.1 UJ	<0.849 UJ	139,000	32.4	9.57	1.12 J	---	22,000	2.86	<0.0700 UJ	518,000	0.243 J	15.3	14.3	<3.02 UJ
U4-MW-14I	3/16/2023	N	EM07	UMCf	77.3 - 87.3	250,000	4,510	<0.840	<1.51	<18.0	<0.849	79,600	11.1 J+	5.22	<0.816	---	16,700	1.98 J	<0.0700	413,000	<0.121	11.3	13.6 J	<3.02
U4-MW-15D	4/13/2022	N	BL02	UMCf	96.0 - 106.0	338,000	4,940	<0.840	<1.51	21.8 J	<0.849	157,000	26.1	9.77	0.944 J	<18.3	25,500	2.38	<0.0700	646,000	0.186 J	13.6	8.06 J	<3.02
U4-MW-15D	12/5/2022	N	EM04	UMCf	96.0 - 106.0	208,000	3,170	<0.840	<1.51	<18.0	<0.849	92,400	10.3	6.33	<0.816	---	18,700	2.23	<0.0700	436,000	<0.121	11.6	7.40 J	<3.02
U4-MW-15D	3/20/2023	N	EM07	UMCf	96.0 - 106.0	156,000	3,210	<0.840	2.97 J	<18.0	<0.849	80,100	5.33 J	6.57	<0.816	---	15,400	2.33	<0.0700	318,000	<0.121	6.45	8.42 J	<3.02
U4-MW-15DD	4/13/2022	N	BL02	UMCf	120.3 - 130.3	34,000	64.4	<0.840	2.23 J	162	<0.849	15,400	2.57 J	10.4	2.78	<18.3	6,830	2.15	<0.0700	159,000	<0.121	4.23	17.9 J	<3.02
U4-MW-15DD	12/5/2022	N	EM04	UMCf	120.3 - 130.3	32,300	16.3	<0.840	<1.51	<18.0	<0.849	16,800	5.61 J	7.88	31.6	---	6,430	1.91 J	<0.0700	---	<0.121	3.37	12.9 J	<3.02
U4-MW-15DD	3/15/2023	N	EM07	UMCf	120.3 - 130.3	30,600	13.8	<0.840	1.53 J	45.7 J	4.52 J+	17,300	7.24 J	8.41	44.8	---	6,510	1.89 J	<0.0700	137,000	<0.121	3.10	11.8 J	<3.02
U4-MW-15I	4/12/2022	N																						

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Dissolved Metals by SW6010B/SW6020																		
						Calcium	Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Selenium	Silver	Sodium	Thallium	Uranium	Vanadium	Zinc
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-T3	12/6/2022	N	EM04	N/A	N/A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	1/9/2023	N	EM05	N/A	N/A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	2/13/2023	N	EM06	N/A	N/A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	3/13/2023	N	EM07	N/A	N/A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	4/19/2023	N	EM08	N/A	N/A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
U4-T3	5/18/2023	N	EM09	N/A	N/A	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	

Notes:
 FD - Field duplicate
 E - Field instrument error.
 J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 J- - The result is an estimated quantity, but the result may be biased low.
 J+ - The result is an estimated quantity, but the result may be biased high.
 mg/L - milligrams per liter
 µg/L - micrograms per liter
 N - Normal field sample
 R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
 UMCf- Upper Muddy Creek Formation
 < - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
 -- Not tested.

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	FIELD TESTS									RSK175			SM2540C	SW7199	SW9060A/SM5310B	Volatile Organic Compounds by SW8260B			
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Purge Rate	Sulfide	Temperature	Turbidity	Ethane	Ethene	Methane	Total Dissolved Solids	Chromium, Hexavalent	Total Organic Carbon	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane
						mS/cm	mg/L	mg/L	mV	SU	mL/min	mg/L	C	NTU	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
M-247-100	4/20/2022	N	BL02	UMCf	100.5 - 110.5	0.956	1.80	0.0 U	22.9	8.02	190	0.0 U	26.9	22.0	---	---	---	712,000	<150	---	---	---	---	
M-249-100	4/20/2022	N	BL02	UMCf	99.6 - 109.6	34.552	0.56	0.0 U	140.6	6.99	120	0.0 U	27.5	60.6	---	---	---	54,000,000	77,000	---	---	---	---	
M-251-100	4/19/2022	N	BL02	UMCf	92.5 - 102.5	42.112	1.63	0.0 U	212.1	7.36	100	0.0 U	26.3	17.1	---	---	---	39,900,000	96,900 J-	1,410 J+	<0.147	<0.149	<0.133	<0.158
M-251-100	10/13/2022	N	EM02	UMCf	92.5 - 102.5	16.998	4.13	---	172.0	7.19	280	---	24.9	58.8	---	---	---	25,800,000	57,600	3,660 J+	<0.147	<0.149	<0.133	<0.158
M-251-100	11/2/2022	N	EM03	UMCf	92.5 - 102.5	18.268	4.61	---	118.7	7.71	250	---	24.1	33.2	---	---	---	18,700,000	39,500	1,030 J+	<1.47	<1.49	<1.33	<1.58
M-251-100	12/8/2022	N	EM04	UMCf	92.5 - 102.5	19.870	4.83	---	123.6	7.38	100	---	22.0	17.3	---	---	---	15,000,000 J	32,300	1,720 J+	<0.147	<0.149	<0.133	<0.158
M-251-100	1/11/2023	N	EM05	UMCf	92.5 - 102.5	9.502	5.52	---	132.4	7.49	250	---	22.0	50.5	---	---	---	22,400,000	43,900	1,240 J+	<0.147	<0.149	<0.133	<0.158
M-251-100	2/13/2023	N	EM06	UMCf	92.5 - 102.5	10.973	6.27	---	184.3	8.08	80	---	23.4	21.0	---	---	---	9,740,000	42,700	1,130 J+	<0.147	<0.149	<0.133	<0.158
M-251-100	3/17/2023	N	EM07	UMCf	92.5 - 102.5	12.924	8.09	0.0 U	129.4	7.57	70	0.0 U	23.8	21.3	<4.07	<4.26	<2.91	15,300,000	23,100	1,660 J+	<7.35	<7.45	<6.65	<7.90
M-251-100	4/21/2023	N	EM08	UMCf	92.5 - 102.5	17.375	0.57	0.0 U	106.3	7.44	120	0.0 U	24.3	32.6	---	---	---	18,500,000	34,100	1,460 J+	<0.147	<0.149	<0.133	<0.158
M-251-100	5/9/2023	N	EM09	UMCf	92.5 - 102.5	19.858	4.58	0.0 U	147.1	7.40	140	0.0 U	29.7	9.1	---	---	---	19,900,000	34,200	1,540 J+	<0.147	<0.149	<0.133	<0.158
M-251-60	4/18/2022	N	BL02	UMCf	52.3 - 62.3	5.163	5.64	0.0 U	44.4	10.69	100	0.0 U	30.5	18.3	---	---	---	2,330,000 J	1,510 J-	1,590 J+	<0.147	<0.149	<0.133	<0.158
M-251-60	3/15/2023	N	EM07	UMCf	52.3 - 62.3	3.539	2.45	0.0 U	14.4	11.12	0	0.0 U	23.5	10.4	<4.07	<4.26	<2.91	2,490,000	1,590	3,420 J+	<0.147	<0.149	<0.133	<0.158
M-252	4/21/2022	N	BL02	UMCf	132.3 - 142.3	2.053	5.66	0.0 U	142.6	8.13	100	0.0 U	29.6	9.9	---	---	---	1,410,000	32.5 J	520 J	<0.147	<0.149	<0.133	<0.158
M-252	3/15/2023	N	EM07	UMCf	132.3 - 142.3	1.095	1.94	0.0 U	142.0	8.10	20	0.0 U	21.5	9.8	<4.07	<4.26	<2.91	2,590,000	45.8	1,020 J+	<0.147	<0.149	<0.133	<0.158
M-253-100	4/20/2022	N	BL02	UMCf	100.8 - 110.8	2.393	3.04	0.0 U	36.4	8.03	60	0.0 U	25.2	21.0	---	---	---	2,130,000	598	---	---	---	---	
M-255-100	4/20/2022	N	BL02	UMCf	100.2 - 110.2	2.198	1.87	0.0 U	175.7	7.89	100	0.0 U	25.1	12.0	---	---	---	1,600,000	1,350	---	---	---	---	
U4-E-01D	4/18/2022	N	BL02	UMCf	94.7 - 109.7	42.734	0.85	0.0 U	167.3	7.78	100	0.0 U	26.2	8.7	---	---	---	43,600,000	87,000 J-	1,030 J+	<0.735	<0.745	<0.665	<0.790
U4-E-01D	3/14/2023	N	EM07	UMCf	94.7 - 109.7	1.180	7.21	0.0 U	172.0	8.08	100	0.0 U	21.8	9.1	<4.07	<4.26	<2.91	606,000	1.43	36,400	<0.147	<0.149	<0.133	<0.158
U4-E-011	4/19/2022	N	BL02	UMCf	74.6 - 89.6	0.072	9.17	0.0 U	120.6	8.70	100	0.0 U	26.5	2.7	---	---	---	4,770,000 J	6,190 J-	2,420 J+	<0.147	<0.149	<0.133	<0.158
U4-E-011	4/19/2022	FD	BL02	UMCf	74.6 - 89.6	---	---	---	---	---	---	---	---	---	---	---	---	2,770,000 J	7,860 J-	2,670 J+	<0.147	<0.149	<0.133	<0.158
U4-E-011	3/14/2023	N	EM07	UMCf	74.6 - 89.6	8.100	8.18	0.0 U	138.0	7.74	100	0.0 U	23.0	14.8	<4.07	<4.26	<2.91	6,170,000	16,300	2,230 J+	<0.147	<0.149	<0.133	<0.158
U4-E-011	4/20/2023	N	EM08	UMCf	74.6 - 89.6	6.667	0.56	---	41.1	7.06	---	---	23.3	3.9	---	---	---	4,720,000	9,830	12,700	<0.147	<0.149	<0.133	<0.158
U4-E-011	5/10/2023	N	EM09	UMCf	74.6 - 89.6	19.499	-8.13	---	92.8	6.87	---	---	30.7	12.3	---	---	---	6,020,000	9,400 J-	34,200	<0.147	<0.149	<0.133	<0.158
U4-E-02D	4/20/2022	N	BL02	UMCf	94.4 - 109.4	9.255	0.62	0.0 U	129.9	7.36	130	0.0 U	27.0	2.0	---	---	---	10,800,000	17,400	1,540 J+	<0.147	<0.149	<0.133	<0.158
U4-E-02D	3/14/2023	N	EM07	UMCf	94.4 - 109.4	1.040	5.47	0.0 U	36.0	7.96	100	0.0 U	21.6	14.7	<4.07	<4.26	<2.91	625,000	7.77	2,720 J+	<0.147	<0.149	<0.133	<0.158
U4-E-021	4/18/2022	N	BL02	UMCf	74.4 - 89.4	9.309	4.25	0.0 U	190.6	8.46	105	0.0 U	24.6	9.8	---	---	---	4,130,000	8,910 J-	1,240 J+	<0.147	<0.149	<0.133	<0.158
U4-E-021	3/14/2023	N	EM07	UMCf	74.4 - 89.4	1.211	5.22	0.0 U	162.8	7.49	50	0.0 U	19.2	7.6	<4.07	<4.26	<2.91	1,340,000	1,980 J-	3,580 J+	<0.147	<0.149	<0.133	<0.158
U4-E-021	4/20/2023	N	EM08	UMCf	74.4 - 89.4	5.027	0.34	---	-84.5	7.19	---	---	24.3	56.6	---	---	---	3,830,000	6,860	53,000	<0.147	<0.149	<0.133	<0.158
U4-E-021	5/11/2023	N	EM09	UMCf	74.4 - 89.4	59.186	15.52	---	10.9	8.30	---	---	32.0	28.2	---	---	---	3,440,000	5,730	125,000	<0.147 UJ	<0.149	<0.133	<0.158
U4-E-03D	4/19/2022	N	BL02	UMCf	95.1 - 110.1	36.139	0.68	0.0 U	96.0	7.14	200	0.0 U	28.6	33.2	---	---	---	34,400,000	77,900 J-	1,660 J+	<0.147	<0.149	<0.133	<0.158
U4-E-03D	10/13/2022	N	EM02	UMCf	95.1 - 110.1	---	---	---	---	---	---	---	---	---	---	---	---	18,900,000 J-	48,700	971 J	<29.4	<29.8	<26.6	<31.6
U4-E-03D	11/3/2022	N	EM03	UMCf	95.1 - 110.1	16.802	4.86	---	109.3	7.34	---	---	17.8	225.3	---	---	---	15,400,000	44,000	1,710 J+	<0.147	<0.149	<0.133	<0.158
U4-E-03D	12/6/2022	N	EM04	UMCf	95.1 - 110.1	11.752	6.10	---	198.2	7.40	---	---	22.1	1.8	---	---	---	16,000,000	37,000 J-	1,380 J+	<2.94 UJ	<2.98 UJ	<2.66 UJ	<3.16 UJ
U4-E-03D	1/9/2023	N	EM05	UMCf	95.1 - 110.1	9.776	7.80	---	117.4	7.79	---	---	21.2	0.0	---	---	---	9,860,000	36,100	1,410 J+	<0.147	<0.149	<0.133	<0.158
U4-E-03D	2/13/2023	N	EM06	UMCf	95.1 - 110.1	11.469	7.00	---	83.8	7.44	---	---	22.4	0.1	---	---	---	12,000,000	34,100	1,260 J+	<14.7	<14.9	<13.3	<15.8
U4-E-03D	3/13/2023	N	EM07	UMCf	95.1 - 110.1	---	---	---	---	---	---	---	---	---	---	---	---	11,700,000	35,600	1,920 J+	<14.7	<14.9	<13.3	<15.8
U4-E-03D	3/14/2023	N	EM07	UMCf	95.1 - 110.1	13.740	5.37	0.0 U	76.6	7.30	120	0.0 U	23.7	33.0	<4.07	<4.26	683	12,200,000	35,400	1,520 J+	<29.4	<29.8	<26.6	<31.6
U4-E-03D	4/19/2023	N	EM08	UMCf	95.1 - 110.1	11.829	0.51	---	-58.5	6.55	---	---	21.7	62.2	---	---	---	12,600,000	35,400	83,500	<0.735	<0.745	<0.665	<0.790
U4-E-03D	5/11/2023	N	EM09	UMCf	95.1 - 110.1	121.248	17.27	---	51.7	6.26	---	---	30.3	35.2	---	---	---	8,660,000	28,600	213,000	<0.147 UJ	<0.149	<0.133	<0.158
U4-E-04D	4/19/2022	N	BL02	UMCf	95.0 - 110.0	22.249	1.29	0.0 U	34.2	7.19	70	0.0 U	25.5	15.1	---	---	---	24,000,000	37,500 J-	1,380 J+	<0.147	<0.149	<0.133	<0.158
U4-E-04D	3/14/2023	N	EM07	UMCf	95.0 - 110.0	0.999	6.07	0.0 U	48.3	8.06	100	0.0 U	21.1	13.7	<4.07	<4.26	<2.91	640,000	0.538	3,170 J+	<0.147	<0.149	<0.133	<0.158
U4-E-041	4/18/2022	N	BL02	UMCf	75.0 - 90.0	4.524	0.84	0.0 U	-18.2	8.40	70	0.0 U	27.4	28.9	---	---	---	3,430,000	3,380 J-	863 J	<0.147	<0.149	<0.133	<0.158
U4-E-041	3/14/2023	N	EM07	UMCf	75.0 - 90.0	22.410	4.33	0.0 U	83.0	7.42	0	0.0 U	22.2	15.0	<4.07	<4.26	32.4	20,900,000	60,300	1,580 J+	<7.35	<7.45	<6.65	<7.90
U4-E-05D	4/19/2022	N	BL02	UMCf	95.0 - 110.0	26.037	3.43	0.0 U	177.7	7.33	100	0.0 U	28.8	45.2	---	---	---	28,400,000	47,900 J-	1,070 J+	<0.147	<0.149	<0.133	<0.158
U4-E-05D	3/16/2023	N	EM07	UMCf	95.0 - 110.0	0.537	1.78	0.0 U	116.2	7.65	30	0.0 U	18.5	56.5	<4.07	<4.26	45.8 J+	641,000	0.272 J	2,450 J+	<0.147	<0.149	<0.133	<0.158
U4-E-051	4/19/2022	N	BL02	UMCf	75.0 - 90.0	5.209	0.59	0.0 U	101.8	8.45	100	0.0 U	28.4	10.5	---	---	---	4,070,000	5,710 J-	1,110 J+	<0.147	<0.149	<0.133	<0.158
U4-E-051	3/15/2023	N	EM07	UMCf	75.0 - 90.0	8.778	7.39	0.0 U	56.3	7.92	90	0.0 U	23.0	31.5	<4.07	<4.26	<2.91	2,690,000	8,200	2,960 J+	<0.147 UJ	<0.14		

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	FIELD TESTS								RSK175			SM2540C	SW7199	SW9060A/SM5310B	Volatile Organic Compounds by SW8260B					
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Purge Rate	Sulfide	Temperature	Turbidity	Ethane	Ethene	Methane	Total Dissolved Solids	Chromium, Hexavalent	Total Organic Carbon	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	
						mS/cm	mg/L	mg/L	mV	SU	mL/min	mg/L	C	NTU	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-E-09I	4/14/2022	N	BL02	UMCf	74.9 - 89.9	6.980	5.93	0.0 U	42.3	7.51	100	0.0 U	25.0	53.8	<4.07	<4.26	<2.91	5,550,000	13,000	1,280 J	<0.147	<0.149	<0.133	<0.158	
U4-E-10D	4/13/2022	N	BL02	UMCf	94.5 - 109.5	8.624	0.77	0.0 U	200.4	8.07	100	0.0 U	23.0	13.1	<4.07	<4.26	<2.91	3,940,000	9,360	766 J	<0.147	<0.149	<0.133	<0.158	
U4-E-10I	4/13/2022	N	BL02	UMCf	74.2 - 89.2	9.367	1.04	0.0 U	223.7	7.20	100	0.0 U	21.6	17.0	<4.07	<4.26	<2.91	3,690,000	17,000	1,790 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-01D	4/19/2022	N	BL02	UMCf	96.7 - 106.7	11.556	0.72	0.0 U	130.5	7.14	130	0.0 U	30.0	7.9	---	---	---	7,230,000	16,500 J-	952 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-01D	2/16/2023	N	EM06	UMCf	96.7 - 106.7	7.060	11.76	---	190.0	7.35	60	---	22.9	55.9	---	---	---	---	31,700	---	---	<1.47	<1.49	<1.33	<1.58
U4-MW-01D	3/20/2023	N	EM07	UMCf	96.7 - 106.7	12.024	5.68	0.0 U	164.9	7.53	80	0.0 U	22.7	543.3	<4.07	<4.26	<2.91	11,300,000	26,300	768 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-01DD	4/19/2022	N	BL02	UMCf	119.9 - 129.9	1.873	0.81	0.0 U	70.8	7.75	100	0.0 U	33.3	27.7	---	---	---	1,040,000	477 J	1,120 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-01DD	4/19/2022	FD	BL02	UMCf	119.9 - 129.9	---	---	---	---	---	---	---	---	---	---	---	---	1,020,000	458 J	1,080 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-01DD	3/15/2023	N	EM07	UMCf	119.9 - 129.9	6.737	2.84	0.0 U	61.8	7.33	100	0.0 U	24.7	56.4	<4.07	<4.26	<2.91	3,960,000	11,400	1,100 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-011	4/19/2022	N	BL02	UMCf	76.7 - 86.7	9.209	0.67	0.0 U	103.3	7.70	220	0.0 U	27.3	60.1	---	---	---	3,790,000	<150 UJ	1,160 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-011	3/20/2023	N	EM07	UMCf	76.7 - 86.7	16.598	7.69	0.0 U	137.9	7.59	110	0.0 U	23.5	2768.5	<4.07	<4.26	11.4	12,700,000	26,500	751 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-01S	4/18/2022	N	BL02	UMCf	54.7 - 64.7	4.903	4.81	0.0 U	99.5	8.75	220	0.0 U	27.6	1501.7	---	---	---	3,130,000	1,770 J-	972 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-01S	3/15/2023	N	EM07	UMCf	54.7 - 64.7	4.199	5.90	0.0 U	-4.5	8.44	100	0.0 U	24.7	147.1	<4.07	<4.26	<2.91	2,670,000	1,330	1,420 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-02D	4/14/2022	N	BL02	UMCf	95.0 - 110.0	47.936	0.74	0.0 U	206.4	7.25	100	0.0 U	26.4	5.4	---	---	---	63,700,000	95,800	1,570 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02D	10/11/2022	N	EM02	UMCf	95.0 - 110.0	82.713	0.99	---	202.1	7.14	280	---	26.1	2.9	---	---	---	75,100,000 J-	148,000	787 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02D	11/1/2022	N	EM03	UMCf	95.0 - 110.0	61.099	0.93	---	114.9	7.21	150	---	27.6	1.4	---	---	---	53,300,000	139,000	558 J	<7.35	<7.45	<6.65	<7.90	
U4-MW-02D	12/7/2022	N	EM04	UMCf	95.0 - 110.0	41.262	1.18	---	139.7	7.32	100	---	23.6	5.1	---	---	---	29,900,000	152,000 J-	924 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02D	1/10/2023	N	EM05	UMCf	95.0 - 110.0	28.405	1.73	---	124.2	7.31	250	---	23.0	3.5	---	---	---	36,600,000	110,000	1,850 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02D	2/13/2023	N	EM06	UMCf	95.0 - 110.0	25.274	2.04	---	199.9	7.39	210	---	23.7	11.6	---	---	---	44,500,000	120,000 J-	869 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02D	3/17/2023	N	EM07	UMCf	95.0 - 110.0	38.385	2.05	0.0 U	178.4	7.26	100	0.0 U	24.8	8.9	<4.07	<4.26	<2.91	51,200,000	106,000	1,830 J+	<14.7	<14.9	<13.3	<15.8	
U4-MW-02D	4/19/2023	N	EM08	UMCf	95.0 - 110.0	37.915	0.18	0.0 U	42.5	7.15	120	0.0 U	26.0	9.4	---	---	---	41,000,000	122,000	1,620	<0.735	<0.745	<0.665	<0.790	
U4-MW-02D	5/9/2023	N	EM09	UMCf	95.0 - 110.0	35.930	2.52	0.0 U	94.9	7.25	120	0.0 U	25.5	12.2	---	---	---	26,900,000 J	107,000 J-	1,930 J+	<0.735	<0.745	<0.665	<0.790	
U4-MW-02I	4/14/2022	N	BL02	UMCf	75.0 - 90.0	8.827	3.75	0.0 U	159.8	8.09	100	0.0 U	28.4	15.2	---	---	---	6,660,000	12,800	1,100 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-02I	10/11/2022	N	EM02	UMCf	75.0 - 90.0	20.389	0.98	---	172.7	7.07	280	---	25.3	56.9	---	---	---	11,000,000	33,900	8,510	<0.147	<0.149	<0.133	<0.158	
U4-MW-02I	11/2/2022	N	EM03	UMCf	75.0 - 90.0	17.936	0.44	---	148.7	6.86	200	---	25.0	36.2	---	---	---	15,700,000	48,200	88,500	<1.47	<1.49	<1.33	<1.58	
U4-MW-02I	11/2/2022	FD	EM03	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	20,400,000	46,600	75,900	<1.47	<1.49	<1.33	<1.58	
U4-MW-02I	12/8/2022	N	EM04	UMCf	75.0 - 90.0	1.625	1.11	---	168.4	6.91	100	---	14.5	5.0	---	---	---	1,860,000 J	3,720 J-	31,600 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02I	12/8/2022	FD	EM04	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	3,300,000 J	3,620	161,000 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02I	1/13/2023	N	EM05	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	8,500,000	21,700	76,100	<1.47	<1.49	<1.33	<1.58	
U4-MW-02I	1/13/2023	FD	EM05	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	8,640,000	21,900	74,900 J-	<1.47	<1.49	<1.33	<1.58	
U4-MW-02I	2/15/2023	N	EM06	UMCf	75.0 - 90.0	22.789	1.09	---	232.8	6.61	100	---	23.4	115.7	---	---	---	26,500,000	69,100 J-	10,700	<1.47	<1.49	<1.33	<1.58	
U4-MW-02I	2/15/2023	FD	EM06	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	24,800,000	69,400 J-	13,300	<1.47	<1.49	<1.33	<1.58	
U4-MW-02I	3/17/2023	N	EM07	UMCf	75.0 - 90.0	27.205	0.39	0.0 U	129.0	6.43	105	0.0 U	25.4	37.4	<4.07	<4.26	3,560	30,400,000	69,400	12,000	<29.4	<29.8	<26.6	<31.6	
U4-MW-02I	3/17/2023	FD	EM07	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	<4.07	<4.26	3,310	29,100,000	68,600	12,700	<29.4	<29.8	<26.6	<31.6	
U4-MW-02I	4/20/2023	N	EM08	UMCf	75.0 - 90.0	3.331	0.04	0.0 U	8.1	6.31	130	0.0 U	25.3	129.2	---	---	---	2,060,000	3.98 J-	104,000	<0.147	<0.149	<0.133	<0.158	
U4-MW-02I	4/20/2023	FD	EM08	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	1,990,000	4.15 J-	105,000	<0.147	<0.149	<0.133	<0.158	
U4-MW-02I	5/9/2023	N	EM09	UMCf	75.0 - 90.0	3.966	1.00	0.0 U	135.2	6.57	140	0.0 U	26.8	30.3	---	---	---	2,200,000	4.96	141,000 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-02I	5/9/2023	FD	EM09	UMCf	75.0 - 90.0	---	---	---	---	---	---	---	---	---	---	---	---	2,770,000	5.57	35,900 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-03D	4/20/2022	N	BL02	UMCf	96.6 - 106.6	19.006	2.71	0.0 U	209.7	7.29	100	0.0 U	26.7	31.0	---	---	---	23,000,000	42,100	964 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-03D	2/16/2023	N	EM06	UMCf	96.6 - 106.6	7.848	5.12	---	168.2	7.47	60	---	22.6	35.4	---	---	---	---	31,800	---	---	<0.735	<0.745	<0.665	<0.790
U4-MW-03D	3/16/2023	N	EM07	UMCf	96.6 - 106.6	797.196	3.67	0.0 U	76.1	7.37	100	0.0 U	23.8	35.8	<4.07	<4.26	59.1 J	14,400,000	28,100	816 J	<2.94	<2.98	<2.66	<3.16	
U4-MW-03D	3/16/2023	FD	EM07	UMCf	96.6 - 106.6	---	---	---	---	---	---	---	---	---	<4.07	<4.26	<2.91 UJ	13,400,000	27,200	831 J	<0.735	<0.745	<0.665	<0.790	
U4-MW-03DD	4/20/2022	N	BL02	UMCf	119.7 - 129.7	2.756	1.07	0.0 U	220.6	7.54	100	0.0 U	26.3	24.2	---	---	---	2,070,000	2,660	999 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-03DD	3/15/2023	N	EM07	UMCf	119.7 - 129.7	1.855	2.71	0.0 U	35.0	8.22	110	0.0 U	22.1	-57.2	<4.07	<4.26	<2.91	567,000	60.5	846 J	<0.147	<0.149	<0.133	<0.158	
U4-MW-03I	4/19/2022	N	BL02	UMCf	76.6 - 86.6	6.055	1.28	0.0 U	57.0	8.02	60	0.0 U	30.2	8489.8	---	---	---	2,350,000	<150 UJ	3,300 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-03I	3/15/2023	N	EM07	UMCf	76.6 - 86.6	22.711	4.02	0.0 U	95.9	7.44	100	0.0 U	25.2	159.7	<4.07	<4.26	<2.91	12,000,000	24,500	1,260 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-03S	4/18/2022	N	BL02	UMCf	54.5 - 64.5	4.716	9.18	0.0 U	105.4	9.74	195	0.0 U	27.3	38.0	---	---	---	2,890,000	1,390 J-	1,200 J+	<0.147	<0.149	<0.133	<0.158	
U4-MW-03S	4/18/2022	FD	BL02	UMCf	54.5 - 64.5	---	---	---	---	---	---	---	---	---	---	---	---	2,190,000 J-	1,390 J-	1,320 J+	<0.147	<0.149	<0.133	<0.158	

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	FIELD TESTS									RSK175			SM2540C	SW7199	SW9060A/SM5310B	Volatile Organic Compounds by SW8260B			
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Purge Rate	Sulfide	Temperature	Turbidity	Ethane	Ethene	Methane	Total Dissolved Solids	Chromium, Hexavalent	Total Organic Carbon	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane
						mS/cm	mg/L	mg/L	mV	SU	mL/min	mg/L	C	NTU	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-07D	10/12/2022	FD	EM02	UMCf	96.8 - 106.5	---	---	---	---	---	---	---	---	---	---	---	---	1,330,000	2,120	1,490 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07D	11/3/2022	N	EM03	UMCf	96.8 - 106.5	1.730	6.43	---	111.1	7.85	200	---	23.9	97.4	---	---	---	1,220,000 J+	1,610 J-	1,680 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07D	12/7/2022	N	EM04	UMCf	96.8 - 106.5	1.462	8.66	---	106.4	7.83	100	---	23.8	14.1	---	---	---	1,050,000	1,080 J-	1,580 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07D	1/11/2023	N	EM05	UMCf	96.8 - 106.5	1.736	11.30	---	105.0	7.74	120	---	24.3	22.8	---	---	---	1,260,000	1,380 J-	1,480 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07D	2/14/2023	N	EM06	UMCf	96.8 - 106.5	1.217	9.30	---	161.8	7.79	90	---	22.3	73.4	---	---	---	1,070,000	1,250 J-	1,320	<0.147	<0.149	<0.133	<0.158
U4-MW-07D	3/16/2023	N	EM07	UMCf	96.8 - 106.5	0.029	7.54	0.0 U	140.8	7.92	105	0.0 U	28.6	39.6	<4.07	<4.26	53.0 J+	1,070,000	922	1,930 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07D	4/21/2023	N	EM08	UMCf	96.8 - 106.5	4.642	0.05	0.0 U	-393.7	6.15	120	0.0 U	26.2	106.9	---	---	---	3,630,000	5,020	416,000	<0.147	<0.149	<0.133	<0.158
U4-MW-07D	5/11/2023	N	EM09	UMCf	96.8 - 106.5	37.585	44.89	0.0 U	47.7	5.65	150	0.0 U	27.5	34.4	---	---	---	3,170,000	692	1,390 J+	<0.147 UJ	<0.149	<0.133	<0.158
U4-MW-07I	4/15/2022	N	BL02	UMCf	76.8 - 86.8	5.556	0.59	0.0 U	158.2	7.86	100	0.0 U	25.6	10.7	---	---	---	1,670,000	4,810 J+	2,760 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	2.078	6.24	---	135.0	7.86	50	---	26.9	119.0	---	---	---	1,350,000 J	2,720	1,370 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07I	11/3/2022	N	EM03	UMCf	76.8 - 86.8	1.794	6.05	---	141.5	7.93	180	---	23.9	1667.5	---	---	---	1,340,000	1,650 J-	1,530 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	1.562	8.32	---	96.7	7.97	100	---	24.0	210.3	---	---	---	1,220,000	1,360 J-	1,630 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07I	1/11/2023	N	EM05	UMCf	76.8 - 86.8	1.955	9.11	---	104.4	7.82	150	---	24.3	73.4	---	---	---	1,440,000	1,810 J-	1,420 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-07I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	1.786	8.45	---	124.7	7.66	80	---	22.3	134.0	---	---	---	1,520,000	2,640 J-	1,250	<0.147	<0.149	<0.133	<0.158
U4-MW-07I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	6.144	7.27	0.0 U	83.7	7.72	100	0.2	24.3	259.7	<4.07	<4.26	54.8 J+	1,630,000 J	2,670 J-	25,900 J-	<0.735	<0.745	<0.665	<0.790
U4-MW-07I	4/21/2023	N	EM08	UMCf	76.8 - 86.8	4.708	0.07	0.0 U	-161.7	6.53	130	0.0 U	26.1	277.9	---	---	---	2,670,000	4,860	113,000	<0.147	<0.149	<0.133	<0.158
U4-MW-07I	5/11/2023	N	EM09	UMCf	76.8 - 86.8	42.407	48.03	1.0	-80.3	6.08	150	0.0 U	26.1	156.9	---	---	---	2,820,000	0.158 J	352,000	<0.147	<0.149	<0.133	<0.158
U4-MW-08D	4/13/2022	N	BL02	UMCf	98.6 - 108.6	43.677	1.07	0.0 U	166.4	6.92	100	0.0 U	24.7	98.8 E	<4.07	<4.26	<2.91	48,000,000	106,000	3,420 J	<0.147	<0.149	<0.133	<0.158
U4-MW-08D	12/7/2022	N	EM04	UMCf	98.6 - 108.6	15.745	1.70	0.0 U	52.2	6.62	250	0.0 U	22.4	21.7	<4.07	<4.26	166	14,700,000	52,900 J-	6,460	<0.147	<0.149	<0.133	<0.158
U4-MW-08D	3/17/2023	N	EM07	UMCf	98.6 - 108.6	15.242	1.42	0.0 U	174.5	6.38	0	0.0 U	21.6	144.4	<4.07	<4.26	22,600	22,700,000	44,800	10,900 J-	<14.7	<14.9	<13.3	<15.8
U4-MW-08DD	4/20/2022	N	BL02	UMCf	119.8 - 129.8	1.774	0.95	0.0 U	5.0	7.70	70	0.0 U	24.6	62.4	<4.07	<4.26	<2.91	1,240,000	694	670 J	<0.147	<0.149	<0.133	<0.158
U4-MW-08DD	4/20/2022	FD	BL02	UMCf	119.8 - 129.8	---	---	---	---	---	---	---	---	---	<4.07	<4.26	<2.91	1,220,000	723	672 J	<0.147	<0.149	<0.133	<0.158
U4-MW-08DD	12/8/2022	N	EM04	UMCf	119.8 - 129.8	1.034	1.20	0.0 U	138.4	7.44	200	0.0 U	21.4	20.3	<4.07	<4.26	<2.91	751,000 J	384	1,170 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-08DD	3/15/2023	N	EM07	UMCf	119.8 - 129.8	7.824	2.01	0.0 U	63.2	7.54	80	0.0 U	24.5	8.5	<4.07	<4.26	<2.91	2,690,000	1,280	935 J	<0.147	<0.149	<0.133	<0.158
U4-MW-08I	4/13/2022	N	BL02	UMCf	78.0 - 88.0	8.786	1.97	0.0 U	183.3	7.71	100	0.0 U	22.8	-5857914.0 E	<4.07	<4.26	<2.91	3,380,000	7,950	1,740 J	<0.147	<0.149	<0.133	<0.158
U4-MW-08I	12/7/2022	N	EM04	UMCf	78.0 - 88.0	8.950	2.32	0.0 U	137.7	7.48	250	0.0 U	22.7	304.1	<4.07	<4.26	57.2	11,000,000	33,700	1,790 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-08I	12/7/2022	FD	EM04	UMCf	78.0 - 88.0	---	---	---	---	---	---	---	---	---	<4.07	<4.26	55.5	---	34,200 J-	1,310 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-08I	3/17/2023	N	EM07	UMCf	78.0 - 88.0	7.198	2.29	0.0 U	157.8	6.95	35	0.0 U	20.5	641.8	<4.07	<4.26	17,900	22,300,000	54,200	1,640 J+	<7.35	<7.45	<6.65	<7.90
U4-MW-08S	4/15/2022	N	BL02	UMCf	54.9 - 64.9	3.391	3.42	0.0 U	79.6	9.96	285	0.0 U	27.1	55.4	<4.07	<4.26	<2.91	1,970,000	506 J+	1,190 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-08S	12/7/2022	N	EM04	UMCf	54.9 - 64.9	2.838	2.17	0.0 U	40.0	8.08	250	0.0 U	22.4	182.5	<4.07	<4.26	427	1,600,000	254 J-	3,390 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-08S	12/7/2022	FD	EM04	UMCf	54.9 - 64.9	---	---	---	---	---	---	---	---	---	<4.07	<4.26	472	1,850,000	265 J-	2,830 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-08S	3/13/2023	N	EM07	UMCf	54.9 - 64.9	0.027	7.40	0.0 U	-138.1	7.85	60	0.2	31.0	2.9	<4.07	<4.26	21,300	1,570,000	<0.150	9,910	<0.147	<0.149	<0.133	<0.158
U4-MW-08S	3/13/2023	FD	EM07	UMCf	54.9 - 64.9	---	---	---	---	---	---	---	---	---	<4.07	<4.26	21,300	1,410,000	<0.750 UJ	12,800 J-	<0.147	<0.149	<0.133	<0.158
U4-MW-09D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	25.834	1.79	0.0 U	36.4	7.03	100	0.0 U	24.3	640.2	<4.07	<4.26	<2.91	30,000,000	67,800	1,590 J	<0.147	<0.149	<0.133	<0.158
U4-MW-09D	12/6/2022	N	EM04	UMCf	96.9 - 106.9	3.375	6.84	0.0 U	104.4	7.69	200	0.0 U	22.1	305.7	<4.07 UJ	<4.26 UJ	291	3,560,000	7,060 J-	751 J	<1.47 UJ	<1.49 UJ	<1.33 UJ	<1.58 UJ
U4-MW-09D	3/16/2023	N	EM07	UMCf	96.9 - 106.9	4.632	1.55	0.0 U	-81.6	6.58	0	0.0 U	22.9	678.2	<4.07	<4.26	13,400	4,200,000	3,520	146,000	<1.47	<1.49	<1.33	<1.58
U4-MW-09DD	4/14/2022	N	BL02	UMCf	119.8 - 129.8	1.339	1.49	0.0 U	144.1	7.81	100	0.0 U	23.2	25.6	<4.07	<4.26	<2.91	759,000 J	121	493 J	<0.147	<0.149	<0.133	<0.158
U4-MW-09DD	12/6/2022	N	EM04	UMCf	119.8 - 129.8	1.036	1.23	0.0 U	63.9	7.85	250	0.0 U	22.6	11.4	<4.07 UJ	<4.26 UJ	<2.91 UJ	693,000	134	398 J	<0.147 UJ	<0.149 UJ	<0.133 UJ	<0.158 UJ
U4-MW-09DD	3/21/2023	N	EM07	UMCf	119.8 - 129.8	1.698	4.64	0.0 U	146.4	7.90	70	0.0 U	20.1	26.7	<4.07	<4.26	<2.91	1,290,000	215 J-	310 J	<0.147	<0.149	<0.133	<0.158
U4-MW-09I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	3.354	10.37	0.0 U	8.8	7.57	120	0.0 U	24.5	322.6	<4.07	<4.26	<2.91	2,030,000	2,320	1,090 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-09I	12/6/2022	N	EM04	UMCf	76.8 - 86.8	4.939	5.28	0.0 U	124.5	7.49	250	0.0 U	22.6	1626.2	<4.07 UJ	<4.26 UJ	194	6,780,000	13,500 J-	1,040 J+	<1.47 UJ	<1.49 UJ	<1.33 UJ	<1.58 UJ
U4-MW-09I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	16.829	0.37	0.7	-149.7	6.48	105	0.0 U	24.5	1692.0	<4.07	<4.26	18,200	4,970,000	7,920	43,900	<1.47	<1.49	<1.33	<1.58
U4-MW-09S	4/14/2022	N	BL02	UMCf	55.3 - 65.3	2.893	4.00	0.0 U	179.7	8.27	160	0.0 U	23.4	33.5	<4.07	<4.26	<2.91	1,900,000	387	892 J	<0.147	<0.149	<0.133	<0.158
U4-MW-09S	12/6/2022	N	EM04	UMCf	55.3 - 65.3	3.158	5.76	0.0 U	73.5	8.69	250	0.0 U	21.6	60.9	<4.07 UJ	<4.26 UJ	<2.91 UJ	3,460,000 J	2,740 J-	999 J	<0.147 UJ	<0.149 UJ	<0.133 UJ	<0.158 UJ
U4-MW-09S	3/17/2023	N	EM07	UMCf	55.3 - 65.3	3.822	1.29	0.0 U	97.1	8.96	322	0.0 U	23.0	99.2	<4.07	<4.26	4,840	2,960,000	2,630	2,440 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-10D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	5.411	0.91	0.0 U	206.3	7.33	100	0.0 U	22.6	52.9	<4.07	<4.26	<2.91	4,840,000						

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	FIELD TESTS									RSK175			SM2540C	SW7199	SW9060A/SM 5310B	Volatile Organic Compounds by SW8260B			
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Purge Rate	Sulfide	Temperature	Turbidity	Ethane	Ethene	Methane	Total Dissolved Solids	Chromium, Hexavalent	Total Organic Carbon	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane
						mS/cm	mg/L	mg/L	mV	SU	mL/min	mg/L	C	NTU	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-11I	5/19/2023	FD	EM09	UMCf	77.0 - 87.0	---	---	---	---	---	---	---	---	---	---	---	---	2,430,000	<0.150 R	89,600 J-	<0.147 UJ	<0.149 UJ	<0.133 UJ	<0.158 UJ
U4-MW-12D	4/15/2022	N	BL02	UMCf	97.1 - 107.1	32.048	0.90	0.0 U	90.8	6.98	100	0.0 U	26.2	40.3	<4.07	<4.26	<2.91	29,700,000	63,700 J-	1,440 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-12D	9/27/2022	N	EM01	UMCf	97.1 - 107.1	17.403	5.30	0.0 U	183.7	7.31	100	0.0 U	27.2	97.6	---	---	---	14,900,000	41,900	903 J	<2.94	<2.98	<2.66	<3.16
U4-MW-12D	10/12/2022	N	EM02	UMCf	97.1 - 107.1	11.998	2.16	0.0 U	193.7	7.02	250	0.0 U	23.4	141.7	---	---	---	19,300,000 J-	50,700	1,020 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-12D	11/2/2022	N	EM03	UMCf	97.1 - 107.1	9.367	1.89	0.0 U	145.9	7.12	250	0.0 U	20.8	84.0	---	---	---	16,600,000	47,900	469 J	<1.47	<1.49	<1.33	<1.58
U4-MW-12D	12/7/2022	N	EM04	UMCf	97.1 - 107.1	15.505	2.44	0.0 U	41.1	7.21	100	0.0 U	17.7	89.2	<4.07	<4.26	410	13,400,000	39,900	2,090 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-12D	1/12/2023	N	EM05	UMCf	97.1 - 107.1	9.215	1.80	0.0 U	94.5	6.98	250	0.0 U	21.3	23.7	---	---	---	14,300,000	39,300	1,970 J+	<14.7	<14.9	<13.3	<15.8
U4-MW-12D	2/15/2023	N	EM06	UMCf	97.1 - 107.1	16.607	1.11	0.0 U	42.6	6.93	210	0.0 U	22.0	44.6	---	---	---	13,800,000	37,000 J-	2,920	<14.7	<14.9	<13.3	<15.8
U4-MW-12D	3/14/2023	N	EM07	UMCf	97.1 - 107.1	12.160	1.14	0.0 U	72.1	7.06	100	0.0 U	20.5	234.2	<4.07	<4.26	26,600	12,700,000	28,700	34,300	<7.35	<7.45	<6.65	<7.90
U4-MW-12D	4/17/2023	N	EM08	UMCf	97.1 - 107.1	18.271	10.22	0.0 U	73.8	7.66	120	0.0 U	27.5	32.0	---	---	---	9,900,000	43,400	14,800	<0.735 UJ	<0.745 UJ	<0.665 UJ	<0.790 UJ
U4-MW-12D	5/17/2023	N	EM09	UMCf	97.1 - 107.1	27.758	1.10	0.0 U	99.8	6.14	150	0.0 U	28.5	33.5	---	---	---	21,200,000	46,500	5,670 J+	<14.7	<14.9	<13.3	<15.8
U4-MW-12I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	11.234	1.32	---	35.2	7.74	100	---	26.1	988.9	<4.07	<4.26	<2.91	8,680,000	21,200	1,630 J	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	4/14/2022	FD	BL02	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	<4.07	<4.26	<2.91	8,670,000	19,400	1,930 J	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	9/27/2022	N	EM01	UMCf	76.8 - 86.8	3.677	0.92	0.0 U	121.6	7.60	140	0.0 U	27.4	70.6	---	---	---	2,360,000	2,880 J	1,440 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	2.587	1.25	0.0 U	190.1	7.30	280	0.0 U	23.5	343.0	---	---	---	2,410,000 J-	2,060	4,410 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	11/2/2022	N	EM03	UMCf	76.8 - 86.8	1.684	1.15	0.0 U	95.4	7.23	180	0.0 U	22.6	123.8	---	---	---	4,360,000	1,520	11,100	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	2.533	1.36	0.0 U	-290.6	7.38	80	0.6	20.5	20.9	<4.07	<4.26	1,070	1,370,000	<0.150 UJ	95,000	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	12/7/2022	FD	EM04	UMCf	76.8 - 86.8	---	---	---	---	---	---	---	---	---	<4.07	<4.26	1,110	---	2.33 J	84,500	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	1/13/2023	N	EM05	UMCf	76.8 - 86.8	---	---	0.0 U	---	---	---	0.0 U	---	---	---	---	---	1,580,000	0.446 J	229,000	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	3.485	0.76	0.0 U	-291.6	6.89	210	0.0 U	20.6	2.3	---	---	---	3,010,000	<7.50 UJ	356,000	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	3/13/2023	N	EM07	UMCf	76.8 - 86.8	2.868	0.28	0.5	-279.2	6.90	100	1.4	21.4	4.0	<4.07	<4.26	35,200	2,270,000	<1.50	407,000 J-	<0.147	<0.149	<0.133	<0.158
U4-MW-12I	4/17/2023	N	EM08	UMCf	76.8 - 86.8	3.160	0.35	0.0 U	-233.8	7.15	130	0.4	26.1	18.8	---	---	---	2,040,000	<0.150	354,000	<0.147 UJ	<0.149 UJ	<0.133 UJ	<0.158 UJ
U4-MW-12I	5/17/2023	N	EM09	UMCf	76.8 - 86.8	5.078	0.72	0.5	-107.3	6.19	160	0.4	27.6	10.9	---	---	---	3,020,000	<0.150	374,000 J-	<0.147	<0.149	<0.133	<0.158
U4-MW-13D	4/14/2022	N	BL02	UMCf	98.2 - 108.2	32.518	0.90	0.0 U	136.1	6.94	100	0.0 U	25.2	85.7	<4.07	<4.26	<2.91	30,300,000	56,200	1,640 J	<0.147	<0.149	<0.133	<0.158
U4-MW-13D	9/28/2022	N	EM01	UMCf	98.2 - 108.2	11.793	0.96	0.0 U	-329.7	6.65	100	0.0 U	28.9	50.9	---	---	---	6,280,000 J+	45,000	58,400	<1.47	<1.49	<1.33	<1.58
U4-MW-13D	10/11/2022	N	EM02	UMCf	98.2 - 108.2	11.124	1.77	0.0 U	-147.3	6.57	50	0.0 U	23.5	22.7	---	---	---	6,140,000	19,800	55,200	<0.147	<0.149	<0.133	<0.158
U4-MW-13D	11/3/2022	N	EM03	UMCf	98.2 - 108.2	5.404	1.67	0.0 U	26.5	6.45	250	0.0 U	21.5	138.4	---	---	---	9,360,000 J	1,860	7,010	<0.147	<0.149	<0.133	<0.158
U4-MW-13D	12/7/2022	N	EM04	UMCf	98.2 - 108.2	7.937	2.99	0.0 U	122.7	6.70	80	0.0 U	16.8	55.9	<4.07	<4.26	7,020	7,430,000	16,100	2,790 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-13D	1/12/2023	N	EM05	UMCf	98.2 - 108.2	4.505	1.39	0.0 U	60.0	6.88	250	0.0 U	21.4	76.1	---	---	---	5,460,000	15,100	2,110 J+	<2.94	<2.98	<2.66	<3.16
U4-MW-13D	2/15/2023	N	EM06	UMCf	98.2 - 108.2	8.150	1.44	0.0 U	65.4	6.90	210	0.0 U	20.6	58.9	---	---	---	6,380,000	15,600 J-	2,000 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-13D	3/17/2023	N	EM07	UMCf	98.2 - 108.2	5.920	2.07	0.0 U	172.0	7.19	100	0.0 U	18.5	202.8	<4.07	<4.26	5,480	7,680,000	14,200	1,730 J+	<2.94	<2.98	<2.66	<3.16
U4-MW-13D	4/18/2023	N	EM08	UMCf	98.2 - 108.2	4.930	0.14	0.0 U	74.2	7.35	120	0.0 U	26.3	119.0	---	---	---	5,400,000	9,530	1,240	<0.147	<0.149	<0.133	<0.158
U4-MW-13D	5/17/2023	N	EM09	UMCf	98.2 - 108.2	7.513	1.34	0.0 U	115.2	6.74	140	0.0 U	29.8	63.6	---	---	---	4,570,000	8,150	1,670	<2.94	<2.98	<2.66	<3.16
U4-MW-13I	4/14/2022	N	BL02	UMCf	77.1 - 87.1	11.607	2.38	0.0 U	127.9	7.42	100	0.0 U	23.7	2478.1	<4.07	<4.26	<2.91	8,680,000	21,900	1,080 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-13I	9/28/2022	N	EM01	UMCf	77.1 - 87.1	5.667	2.79	0.0 U	96.9	7.52	100	0.0 U	27.2	70.5	---	---	---	2,540,000 J+	17,000	2,450 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-13I	10/10/2022	N	EM02	UMCf	77.1 - 87.1	6.053	1.93	0.0 U	110.0	7.58	50	0.0 U	27.9	142.6	---	---	---	2,660,000	8,000	1,900 J	<0.147	<0.149	<0.133	<0.158
U4-MW-13I	11/3/2022	N	EM03	UMCf	77.1 - 87.1	2.675	2.64	0.0 U	141.8	7.46	250	0.0 U	20.1	119.3	---	---	---	3,340,000 J	5,840 J-	2,000 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-13I	12/6/2022	N	EM04	UMCf	77.1 - 87.1	3.613	1.73	0.0 U	-292.7	7.58	100	0.1	19.9	94.5	<4.07 UJ	<4.26 UJ	1,300	2,710,000	<0.150 UJ	37,400	<0.735 UJ	<0.745 UJ	<0.665 UJ	<0.790 UJ
U4-MW-13I	1/12/2023	N	EM05	UMCf	77.1 - 87.1	2.079	1.19	0.0 U	-245.9	7.13	250	0.0 U	20.1	118.8	---	---	---	1,960,000	4.48	67,800	<0.147	<0.149	<0.133	<0.158
U4-MW-13I	2/14/2023	N	EM06	UMCf	77.1 - 87.1	3.065	0.61	0.0 U	-309.2	7.19	200	0.0 U	20.7	552.4	---	---	---	3,420,000	0.250 J	43,400	<0.735	<0.745	<0.665	<0.790
U4-MW-13I	3/16/2023	N	EM07	UMCf	77.1 - 87.1	1.654	0.98	0.0 U	-313.7	7.44	0	0.0 U	19.2	114.6	<4.07	<4.26	20,300	1,550,000	1.05 J	43,900	<0.147	<0.149	<0.133	<0.158
U4-MW-13I	4/19/2023	N	EM08	UMCf	77.1 - 87.1	2.452	0.02	0.0 U	-307.7	7.07	130	0.4	23.5	23.1	---	---	---	1,690,000	0.606	25,800 J-	<0.147	<0.149	<0.133	<0.158
U4-MW-13I	5/17/2023	N	EM09	UMCf	77.1 - 87.1	4.125	0.52	0.0 U	-123.7	6.73	160	0.4	29.7	55.5	---	---	---	1,970,000	0.178 J	19,800	<0.147	<0.149	<0.133	<0.158
U4-MW-14D	4/13/2022	N	BL02	UMCf	97.3 - 107.3	5.770	0.87	0.0 U	161.5	7.20	100	0.0 U	26.5	50.4	<4.07	<4.26	<2.91	2,550,000	239	1,220 J+	<0.147	<0.149	<0.133	<0.158
U4-MW-14D	12/6/2022	N	EM04	UMCf	97.3 - 107.3	4.415	2.55	0.0 U	75.3	7.39	80	0.0 U	20.7	58.1	<4.07 UJ	<4.26 UJ	<2.91 UJ	4,530,000	5,860	570 J	<0.735 UJ	<0.745 UJ	<0.665 UJ	<0.790 UJ
U4-MW-14D	3/16/2023	N	EM07	UMCf	97.3 - 107.3	181.910	1.08	0.0 U	143.2	7.47	100	0.0 U	21.8	115.4	<4.07	<4.26	15.0 J+	2,650,000	4,450	1,010 J+	<0.735	<0.745	<0.665	<0.790
U4-MW-14I	4/14/2022	N	BL02																					

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	FIELD TESTS									RSK175			SM2540C	SW7199	SW9060A/SM 5310B	Volatile Organic Compounds by SW8260B			
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Purge Rate	Sulfide	Temperature	Turbidity	Ethane	Ethene	Methane	Total Dissolved Solids	Chromium, Hexavalent	Total Organic Carbon	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane
						mS/cm	mg/L	mg/L	mV	SU	mL/min	mg/L	C	NTU	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-T3	12/6/2022	N	EM04	N/A	N/A	10.943	3.89	----	-8.5	6.72	----	----	21.4	30.1	----	----	----	12,600,000	25,100 J-	76,300	<2.94 UJ	<2.98 UJ	<2.66 UJ	<3.16 UJ
U4-T3	1/9/2023	N	EM05	N/A	N/A	10.447	5.03	----	111.4	7.05	----	----	19.9	0.0	----	----	----	12,200,000	37,400	17,100	<0.147	<0.149	<0.133	<0.158
U4-T3	2/13/2023	N	EM06	N/A	N/A	13.131	7.12	----	159.2	7.44	----	----	23.6	3.3	----	----	----	13,200,000	36,600	17,700	<14.7	<14.9	<13.3	<15.8
U4-T3	3/13/2023	N	EM07	N/A	N/A	9.552	6.11	----	197.0	7.43	----	----	23.5	1.9	----	----	----	11,700,000	39,800	2,980 J+	<3.68	<3.73	<3.33	<3.95
U4-T3	4/19/2023	N	EM08	N/A	N/A	6.951	0.42	----	-27.7	6.94	----	----	22.6	3.7	----	----	----	7,080,000	14,900	31,800	<0.147	<0.149	<0.133	<0.158
U4-T3	5/18/2023	N	EM09	N/A	N/A	17.125	3.18	----	49.6	5.71	----	----	30.9	5.5	----	----	----	10,800,000	20,400	89,500	<0.147	<0.149	<0.133	<0.158

Notes:
 FD - Field duplicate
 E - Field instrument error.
 J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 J- - The result is an estimated quantity, but the result may be biased low.
 J+ - The result is an estimated quantity, but the result may be biased high.
 mg/L - milligrams per liter
 µg/L - micrograms per liter
 N - Normal field sample
 R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
 UMCf- Upper Muddy Creek Formation
 < - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
 -- Not tested.

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone (MEK)	2-Chlorotoluene
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
M-247-100	4/20/2022	N	BL02	UMCf	100.5 - 110.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
M-249-100	4/20/2022	N	BL02	UMCf	99.6 - 109.6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
M-251-100	4/19/2022	N	BL02	UMCf	92.5 - 102.5	0.204 J	0.484 J	<0.142	<0.230	0.428 J	<0.481	<0.322	<0.276	<0.126	<0.107	0.346 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-251-100	10/13/2022	N	EM02	UMCf	92.5 - 102.5	<0.100	0.398 J	<0.297 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-251-100	11/2/2022	N	EM03	UMCf	92.5 - 102.5	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
M-251-100	12/8/2022	N	EM04	UMCf	92.5 - 102.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-251-100	1/11/2023	N	EM05	UMCf	92.5 - 102.5	<0.100	0.206 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-251-100	2/13/2023	N	EM06	UMCf	92.5 - 102.5	<0.100	<0.188	0.158 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	1.46 J	<0.106
M-251-100	3/17/2023	N	EM07	UMCf	92.5 - 102.5	<5.00	<9.40	<7.10	<11.5	<11.9	<24.1	<16.1	<13.8	<6.30	<5.35	<4.09	<7.45	<5.20	<5.50	<5.50	<6.00	<8.05	<59.5	<5.30
M-251-100	4/21/2023	N	EM08	UMCf	92.5 - 102.5	<0.100	0.195 J	0.194 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.142 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-251-100	5/9/2023	N	EM09	UMCf	92.5 - 102.5	<0.100	0.242 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.171 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-251-60	4/18/2022	N	BL02	UMCf	52.3 - 62.3	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-251-60	3/15/2023	N	EM07	UMCf	52.3 - 62.3	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-252	4/21/2022	N	BL02	UMCf	132.3 - 142.3	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	7.60 J	<0.106
M-252	3/15/2023	N	EM07	UMCf	132.3 - 142.3	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
M-253-100	4/20/2022	N	BL02	UMCf	100.8 - 110.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
M-255-100	4/20/2022	N	BL02	UMCf	100.2 - 110.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
U4-E-01D	4/18/2022	N	BL02	UMCf	94.7 - 109.7	<0.500	<0.940	<0.710	<1.15	<1.19	<2.41	<1.61	<1.38	<0.630	<0.535	<0.409	<0.745	<0.520	<0.550	<0.550	<0.600	<0.805	<5.95	<0.530
U4-E-01D	3/14/2023	N	EM07	UMCf	94.7 - 109.7	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-011	4/19/2022	N	BL02	UMCf	74.6 - 89.6	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	3.29 J	<0.106
U4-E-011	4/19/2022	FD	BL02	UMCf	74.6 - 89.6	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	3.45 J	<0.106
U4-E-011	3/14/2023	N	EM07	UMCf	74.6 - 89.6	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.0909 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-011	4/20/2023	N	EM08	UMCf	74.6 - 89.6	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481 JJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-011	5/10/2023	N	EM09	UMCf	74.6 - 89.6	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	5.34 J	<0.106
U4-E-02D	4/20/2022	N	BL02	UMCf	94.4 - 109.4	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-02D	3/14/2023	N	EM07	UMCf	94.4 - 109.4	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-021	4/18/2022	N	BL02	UMCf	74.4 - 89.4	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322 JJ	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104 R	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-021	3/14/2023	N	EM07	UMCf	74.4 - 89.4	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-021	4/20/2023	N	EM08	UMCf	74.4 - 89.4	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481 JJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	5.27 J	<0.106
U4-E-021	5/11/2023	N	EM09	UMCf	74.4 - 89.4	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	12.3	<0.106
U4-E-03D	4/19/2022	N	BL02	UMCf	95.1 - 110.1	0.126 J	0.465 J	<0.142	<0.230	0.293 J	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-03D	10/13/2022	N	EM02	UMCf	95.1 - 110.1	<20.0	<37.6	<28.4	<46.0	<47.4	<96.2	<64.4	<55.2	<25.2	<21.4	<16.4	<29.8	<20.8	<22.0	<22.0	<24.0	<32.2	<238	<21.2
U4-E-03D	11/3/2022	N	EM03	UMCf	95.1 - 110.1	<0.100	0.481 J	0.479 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-03D	12/6/2022	N	EM04	UMCf	95.1 - 110.1	<2.00 JJ	<3.76 JJ	<2.84 JJ	<4.60 JJ	<4.74 JJ	<9.62 JJ	<6.44 JJ	<5.52 JJ	<2.52 JJ	<2.14 JJ	<1.64 JJ	<2.98 JJ	<2.08 JJ	<2.20 JJ	<2.20 JJ	<2.40 JJ	<3.22 JJ	<23.8 JJ	<2.12 JJ
U4-E-03D	1/9/2023	N	EM05	UMCf	95.1 - 110.1	<0.100	0.264 J	0.273 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-03D	2/13/2023	N	EM06	UMCf	95.1 - 110.1	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<119	<10.6
U4-E-03D	3/13/2023	N	EM07	UMCf	95.1 - 110.1	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<119	<10.6
U4-E-03D	3/14/2023	N	EM07	UMCf	95.1 - 110.1	<20.0	<37.6	<28.4	<46.0	<47.4	<96.2	<64.4	<55.2	<25.2	<21.4	<16.4	<29.8	<20.8	<22.0	<22.0	<24.0	<32.2	<238	<21.2
U4-E-03D	4/19/2023	N	EM08	UMCf	95.1 - 110.1	<0.500	<0.940	<0.710	<1.15	<1.19	<2.41	<1.61	<1.38	<0.630	<0.535	<0.409	<0.745	<0.520	<0.550	<0.550	<0.600	<0.805	<5.95	<0.530
U4-E-03D	5/11/2023	N	EM09	UMCf	95.1 - 110.1	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	50.0	<0.106
U4-E-04D	4/19/2022	N	BL02	UMCf	95.0 - 110.0	<0.100	0.223 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-04D	3/14/2023	N	EM07	UMCf	95.0 - 110.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.						

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone (MEK)	2-Chlorotoluene
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-E-09I	4/14/2022	N	BL02	UMCf	74.9 - 89.9	<0.100	0.401 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.118 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	1.24 J	<0.106
U4-E-10D	4/13/2022	N	BL02	UMCf	94.5 - 109.5	<0.100	0.398 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.132 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-E-10I	4/13/2022	N	BL02	UMCf	74.2 - 89.2	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.120 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-01D	4/19/2022	N	BL02	UMCf	96.7 - 106.7	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	3.67 J	<0.106
U4-MW-01D	2/16/2023	N	EM06	UMCf	96.7 - 106.7	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22 UJ	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-01D	3/20/2023	N	EM07	UMCf	96.7 - 106.7	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	1.37 J	<0.106
U4-MW-01DD	4/19/2022	N	BL02	UMCf	119.9 - 129.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	5.15 J	<0.106
U4-MW-01DD	4/19/2022	FD	BL02	UMCf	119.9 - 129.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	5.81 J	<0.106
U4-MW-01DD	3/15/2023	N	EM07	UMCf	119.9 - 129.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-01I	4/19/2022	N	BL02	UMCf	76.7 - 86.7	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-01I	3/20/2023	N	EM07	UMCf	76.7 - 86.7	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-01S	4/18/2022	N	BL02	UMCf	54.7 - 64.7	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-01S	3/15/2023	N	EM07	UMCf	54.7 - 64.7	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02D	4/14/2022	N	BL02	UMCf	95.0 - 110.0	0.135 J	0.735 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.322 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02D	10/11/2022	N	EM02	UMCf	95.0 - 110.0	<0.100	0.517 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02D	11/1/2022	N	EM03	UMCf	95.0 - 110.0	<5.00	<9.40	<7.10	<11.5	<11.9	<24.1	<16.1	<13.8	<6.30	<5.35	<4.09	<7.45	<5.20	<5.50	<5.50	<6.00	<8.05	<59.5	<5.30
U4-MW-02D	12/7/2022	N	EM04	UMCf	95.0 - 110.0	0.165 J	0.832 J	0.619 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.360 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02D	1/10/2023	N	EM05	UMCf	95.0 - 110.0	0.118 J	0.763 J	0.566 J	<0.230 UJ	<0.237	<0.481 UJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02D	2/13/2023	N	EM06	UMCf	95.0 - 110.0	0.124 J	0.902 J	0.663 J	<0.230	0.363 J	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02D	3/17/2023	N	EM07	UMCf	95.0 - 110.0	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<119	<10.6
U4-MW-02D	4/19/2023	N	EM08	UMCf	95.0 - 110.0	<0.500	<0.940	<0.710	<1.15	<1.19	<2.41	<1.61	<1.38	<0.630	<0.535	<0.409	<0.745	<0.520	<0.550	<0.550	<0.600	<0.805	<5.95	<0.530
U4-MW-02D	5/9/2023	N	EM09	UMCf	95.0 - 110.0	<0.500	<0.940	<0.710	<1.15	<1.19	<2.41	<1.61	<1.38	<0.630	<0.535	0.515 J	<0.745	<0.520	<0.550	<0.550	<0.600	<0.805	<5.95	<0.530
U4-MW-02I	4/14/2022	N	BL02	UMCf	75.0 - 90.0	<0.100	0.431 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.102 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02I	10/11/2022	N	EM02	UMCf	75.0 - 90.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-02I	11/2/2022	N	EM03	UMCf	75.0 - 90.0	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-02I	11/2/2022	FD	EM03	UMCf	75.0 - 90.0	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-02I	12/8/2022	N	EM04	UMCf	75.0 - 90.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19 UJ	<0.106
U4-MW-02I	12/8/2022	FD	EM04	UMCf	75.0 - 90.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	34.2 J	<0.106
U4-MW-02I	1/13/2023	N	EM05	UMCf	75.0 - 90.0	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-02I	1/13/2023	FD	EM05	UMCf	75.0 - 90.0	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-02I	2/15/2023	N	EM06	UMCf	75.0 - 90.0	<1.00	<1.88	<1.42	<2.30 UJ	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-02I	2/15/2023	FD	EM06	UMCf	75.0 - 90.0	<1.00	<1.88	<1.42	<2.30 UJ	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-02I	3/17/2023	N	EM07	UMCf	75.0 - 90.0	<20.0	<37.6	<28.4	<46.0	<47.4	<96.2	<64.4	<55.2	<25.2	<21.4	<16.4	<29.8	<20.8	<22.0	<22.0	<24.0	<32.2	<238	<21.2
U4-MW-02I	3/17/2023	FD	EM07	UMCf	75.0 - 90.0	<20.0	<37.6	<28.4	<46.0	<47.4	<96.2	<64.4	<55.2	<25.2	<21.4	<16.4	<29.8	<20.8	<22.0	<22.0	<24.0	<32.2	<238	<21.2
U4-MW-02I	4/20/2023	N	EM08	UMCf	75.0 - 90.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481 UJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	26.0	<0.106
U4-MW-02I	4/20/2023	FD	EM08	UMCf	75.0 - 90.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481 UJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	28.7	<0.106
U4-MW-02I	5/9/2023	N	EM09	UMCf	75.0 - 90.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	21.7 J+	<0.106
U4-MW-02I	5/9/2023	FD	EM09	UMCf	75.0 - 90.0	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	19.6 J+	<0.106
U4-MW-03D	4/20/2022	N	BL02	UMCf	96.6 - 106.6	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-03D	2/16/2023	N	EM06	UMCf	96.6 - 106.6	<0.500	<0.940	<0.710	<1.15	<1.19	<2.41	<1.61 UJ	<1.38	<0.630	<0.535	<0.409	<0.745	<0.520	<0.550	<0.550	<0.600	<0.805	<5.95	<0.530
U4-MW-03D	3/16/2023	N																						

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone (MEK)	2-Chlorotoluene
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-07D	10/12/2022	FD	EM02	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07D	11/3/2022	N	EM03	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07D	12/7/2022	N	EM04	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07D	1/11/2023	N	EM05	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07D	2/14/2023	N	EM06	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07D	3/16/2023	N	EM07	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07D	4/21/2023	N	EM08	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	18.5	<0.106
U4-MW-07D	5/11/2023	N	EM09	UMCf	96.8 - 106.5	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	142	<0.106
U4-MW-07I	4/15/2022	N	BL02	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481 JJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07I	11/3/2022	N	EM03	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07I	1/11/2023	N	EM05	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230 UJ	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-07I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	<0.500	<0.940	<0.710	<1.15	<1.19	<2.41	<1.61	<1.38	<0.630	<0.535	<0.409	<0.745	<0.520	<0.550	<0.550	<0.600	<0.805	<5.95	<0.530
U4-MW-07I	4/21/2023	N	EM08	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	17.3	<0.106
U4-MW-07I	5/11/2023	N	EM09	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	5.24 J	<0.106
U4-MW-08D	4/13/2022	N	BL02	UMCf	98.6 - 108.6	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08D	12/7/2022	N	EM04	UMCf	98.6 - 108.6	<0.100	0.391 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	11.7 J+	<0.106
U4-MW-08D	3/17/2023	N	EM07	UMCf	98.6 - 108.6	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<119	<10.6
U4-MW-08DD	4/20/2022	N	BL02	UMCf	119.8 - 129.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	18.7 J	<0.106
U4-MW-08DD	4/20/2022	FD	BL02	UMCf	119.8 - 129.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	5.79 J	<0.106
U4-MW-08DD	12/8/2022	N	EM04	UMCf	119.8 - 129.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08DD	3/15/2023	N	EM07	UMCf	119.8 - 129.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08I	4/13/2022	N	BL02	UMCf	78.0 - 88.0	<0.100	1.02	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.345 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08I	12/7/2022	N	EM04	UMCf	78.0 - 88.0	<0.100	0.223 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08I	12/7/2022	FD	EM04	UMCf	78.0 - 88.0	<0.100	0.232 J	0.238 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08I	3/17/2023	N	EM07	UMCf	78.0 - 88.0	<5.00	<9.40	<7.10	<11.5	<11.9	<24.1	<16.1	<13.8	<6.30	<5.35	<4.09	<7.45	<5.20	<5.50	<5.50	<6.00	<8.05	<59.5	<5.30
U4-MW-08S	4/15/2022	N	BL02	UMCf	54.9 - 64.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481 JJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	1.31 J	<0.106
U4-MW-08S	12/7/2022	N	EM04	UMCf	54.9 - 64.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08S	12/7/2022	FD	EM04	UMCf	54.9 - 64.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08S	3/13/2023	N	EM07	UMCf	54.9 - 64.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-08S	3/13/2023	FD	EM07	UMCf	54.9 - 64.9	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	2.44 J	<0.106
U4-MW-09D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	<0.100	0.455 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.239 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-09D	12/6/2022	N	EM04	UMCf	96.9 - 106.9	<1.00 UJ	<1.88 UJ	<1.42 UJ	<2.30 UJ	<2.37 UJ	<4.81 UJ	<3.22 UJ	<2.76 UJ	<1.26 UJ	<1.07 UJ	<0.819 UJ	<1.49 UJ	<1.04 UJ	<1.10 UJ	<1.10 UJ	<1.20 UJ	<1.61 UJ	<11.9 UJ	<1.06 UJ
U4-MW-09D	3/16/2023	N	EM07	UMCf	96.9 - 106.9	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-09DD	4/14/2022	N	BL02	UMCf	119.8 - 129.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-09DD	12/6/2022	N	EM04	UMCf	119.8 - 129.8	<0.100 UJ	<0.188 UJ	<0.142 UJ	<0.230 UJ	<0.237 UJ	<0.481 UJ	<0.322 UJ	<0.276 UJ	<0.126 UJ	<0.107 UJ	<0.0819 UJ	<0.149 UJ	<0.104 UJ	<0.110 UJ	<0.110 UJ	<0.120 UJ	<0.161 UJ	<1.19 UJ	<0.106 UJ
U4-MW-09DD	3/21/2023	N	EM07	UMCf	119.8 - 129.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-09I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142																

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone (MEK)	2-Chlorotoluene
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-111	5/19/2023	FD	EM09	UMCf	77.0 - 87.0	<0.100 UJ	<0.188 UJ	<0.142 UJ	<0.230 UJ	<0.237 UJ	<0.481 UJ	<0.322 UJ	<0.276 UJ	<0.126 UJ	<0.107 UJ	<0.0819 UJ	<0.149 UJ	<0.104 UJ	<0.110 UJ	<0.110 UJ	<0.120 UJ	<0.161 UJ	30.9 J-	<0.106 UJ
U4-MW-12D	4/15/2022	N	BL02	UMCf	97.1 - 107.1	<0.100	0.417 J	0.374 J	<0.230	<0.237	<0.481 UJ	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	1.23 J	<0.106
U4-MW-12D	9/27/2022	N	EM01	UMCf	97.1 - 107.1	<2.00	<3.76	<2.84	<4.60	<4.74	<9.62	<6.44	<5.52	<2.52	<2.14	<1.64	<2.98	<2.08	<2.20	<2.20	<2.40	<3.22	<23.8	<2.12
U4-MW-12D	10/12/2022	N	EM02	UMCf	97.1 - 107.1	<0.100	0.326 J	0.350 J	<0.230	0.325 J	<0.481	<0.322	<0.276	<0.126	<0.107	0.157 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-12D	11/2/2022	N	EM03	UMCf	97.1 - 107.1	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-12D	12/7/2022	N	EM04	UMCf	97.1 - 107.1	<0.100	0.351 J	0.507 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.196 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-12D	1/12/2023	N	EM05	UMCf	97.1 - 107.1	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<11.9	<10.6
U4-MW-12D	2/15/2023	N	EM06	UMCf	97.1 - 107.1	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<11.9	<10.6
U4-MW-12D	3/14/2023	N	EM07	UMCf	97.1 - 107.1	<5.00	<9.40	<7.10	<11.5	<11.9	<24.1	<16.1	<13.8	<6.30	<5.35	<4.09	<7.45	<5.20	<5.50	<5.50	<6.00	<8.05	<59.5	<5.30
U4-MW-12D	4/17/2023	N	EM08	UMCf	97.1 - 107.1	<0.500 UJ	<0.940 UJ	<0.710 UJ	<1.15 UJ	<1.19 UJ	<2.41 UJ	<1.61 UJ	<1.38 UJ	<0.630 UJ	<0.535 UJ	<0.409 UJ	<0.745 UJ	<0.520 UJ	<0.550 UJ	<0.550 UJ	<0.600 UJ	<0.805 UJ	<5.95 UJ	<0.530 UJ
U4-MW-12D	5/17/2023	N	EM09	UMCf	97.1 - 107.1	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<11.9	<10.6
U4-MW-12I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	<0.100	0.465 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.144 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	1.87 J	<0.106
U4-MW-12I	4/14/2022	FD	BL02	UMCf	76.8 - 86.8	<0.100	0.461 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.146 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	2.86 J	<0.106
U4-MW-12I	9/27/2022	N	EM01	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-12I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.0834 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-12I	11/2/2022	N	EM03	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-12I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	10.6 J+	<0.106
U4-MW-12I	12/7/2022	FD	EM04	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	10.3 J+	<0.106
U4-MW-12I	1/13/2023	N	EM05	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	9.72 J	<0.106
U4-MW-12I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230 UJ	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	24.7 J+	<0.106
U4-MW-12I	3/13/2023	N	EM07	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	14.6	<0.106
U4-MW-12I	4/17/2023	N	EM08	UMCf	76.8 - 86.8	<0.100 UJ	<0.188 UJ	<0.142 UJ	<0.230 UJ	<0.237 UJ	<0.481 UJ	<0.322 UJ	<0.276 UJ	<0.126 UJ	<0.107 UJ	<0.0819 UJ	<0.149 UJ	<0.104 UJ	<0.110 UJ	<0.110 UJ	<0.120 UJ	<0.161 UJ	22.4 J-	<0.106 UJ
U4-MW-12I	5/17/2023	N	EM09	UMCf	76.8 - 86.8	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	26.4	<0.106
U4-MW-13D	4/14/2022	N	BL02	UMCf	98.2 - 108.2	<0.100	0.565 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.200 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-13D	9/28/2022	N	EM01	UMCf	98.2 - 108.2	<1.00	<1.88	<1.42	<2.30	<2.37	<4.81	<3.22	<2.76	<1.26	<1.07	<0.819	<1.49	<1.04	<1.10	<1.10	<1.20	<1.61	<11.9	<1.06
U4-MW-13D	10/11/2022	N	EM02	UMCf	98.2 - 108.2	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	14.7	<0.106
U4-MW-13D	11/3/2022	N	EM03	UMCf	98.2 - 108.2	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	2.69 J	<0.106
U4-MW-13D	12/7/2022	N	EM04	UMCf	98.2 - 108.2	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-13D	1/12/2023	N	EM05	UMCf	98.2 - 108.2	<2.00	<3.76	<2.84	<4.60	<4.74	<9.62	<6.44	<5.52	<2.52	<2.14	<1.64	<2.98	<2.08	<2.20	<2.20	<2.40	<3.22	<23.8	<2.12
U4-MW-13D	2/15/2023	N	EM06	UMCf	98.2 - 108.2	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-13D	3/17/2023	N	EM07	UMCf	98.2 - 108.2	<2.00	<3.76	<2.84	<4.60	<4.74	<9.62	<6.44	<5.52	<2.52	<2.14	<1.64	<2.98	<2.08	<2.20	<2.20	<2.40	<3.22	<23.8	<2.12
U4-MW-13D	4/18/2023	N	EM08	UMCf	98.2 - 108.2	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-13D	5/17/2023	N	EM09	UMCf	98.2 - 108.2	<2.00	<3.76	<2.84	<4.60	<4.74	<9.62	<6.44	<5.52	<2.52	<2.14	<1.64	<2.98	<2.08	<2.20	<2.20	<2.40	<3.22	<23.8	<2.12
U4-MW-13I	4/14/2022	N	BL02	UMCf	77.1 - 87.1	<0.100	0.403 J	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.133 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-13I	9/28/2022	N	EM01	UMCf	77.1 - 87.1	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-13I	10/10/2022	N	EM02	UMCf	77.1 - 87.1	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	1.81 J	<0.106
U4-MW-13I	11/3/2022	N	EM03	UMCf	77.1 - 87.1	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	<1.19	<0.106
U4-MW-13I	12/6/2022	N	EM04	UMCf	77.1 - 87.1	<0.500 UJ	<0.940 UJ	<0.710 UJ	<1.15 UJ	<1.19 UJ	<2.41 UJ	<1.61 UJ	<1.38 UJ	<0.630 UJ	<0.535 UJ	<0.409 UJ	<0.745 UJ	<0.520 UJ	<0.550 UJ	<0.550 UJ	<0.600 UJ	<0.805 UJ	19.1 J	<0.530 UJ
U4-MW-13I	1/12/2023	N	EM05	UMCf	77.1 - 87.1	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	20.5 J+	<0.106
U4-MW-13I	2/14/2023	N	EM06	UMCf	77.1 - 87.1	<0.500	<0.940	<0.710	<1.15	<1.19	<2.41	<1.61	<1.38	<0.630	<0.53									

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropane	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-Chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane	1,2-Dichloropropane	1,3,5-Trimethylbenzene (Mesitylene)	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Butanone (MEK)	2-Chlorotoluene
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-T3	12/6/2022	N	EM04	N/A	N/A	<2.00 UJ	<3.76 UJ	<2.84 UJ	<4.60 UJ	<4.74 UJ	<9.62 UJ	<6.44 UJ	<5.52 UJ	<2.52 UJ	<2.14 UJ	<1.64 UJ	<2.98 UJ	<2.08 UJ	<2.20 UJ	<2.20 UJ	<2.40 UJ	<3.22 UJ	<23.8 UJ	<2.12 UJ
U4-T3	1/9/2023	N	EM05	N/A	N/A	<0.100	0.236 J	0.273 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	0.0844 J	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	2.47 J	<0.106
U4-T3	2/13/2023	N	EM06	N/A	N/A	<10.0	<18.8	<14.2	<23.0	<23.7	<48.1	<32.2	<27.6	<12.6	<10.7	<8.19	<14.9	<10.4	<11.0	<11.0	<12.0	<16.1	<119	<10.6
U4-T3	3/13/2023	N	EM07	N/A	N/A	<2.50	<4.70	<3.55	<5.75	<5.93	<12.0	<8.05	<6.90	<3.15	<2.68	<2.05	<3.73	<2.60	<2.75	<2.75	<3.00	<4.03	<29.8	<2.65
U4-T3	4/19/2023	N	EM08	N/A	N/A	<0.100	<0.188	0.143 J	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	2.01 J	<0.106
U4-T3	5/18/2023	N	EM09	N/A	N/A	<0.100	<0.188	<0.142	<0.230	<0.237	<0.481	<0.322	<0.276	<0.126	<0.107	<0.0819	<0.149	<0.104	<0.110	<0.110	<0.120	<0.161	26.1 J+	<0.106

Notes:
 FD - Field duplicate
 E - Field instrument error.
 J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 J- - The result is an estimated quantity, but the result may be biased low.
 J+ - The result is an estimated quantity, but the result may be biased high.
 mg/L - milligrams per liter
 µg/L - micrograms per liter
 N - Normal field sample
 R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
 UMCf- Upper Muddy Creek Formation
 < - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
 -- Not tested.

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																	
						2-Hexanone	4-Chlorotoluene	4-Methyl-2-Pentanone	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
M-247-100	4/20/2022	N	BL02	UMCf	100.5 - 110.5	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
M-249-100	4/20/2022	N	BL02	UMCf	99.6 - 109.6	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	
M-251-100	4/19/2022	N	BL02	UMCf	92.5 - 102.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	13.1	8.80	<0.605	<0.128	<0.116	<0.192	8,010	<0.960	<0.126	<0.111	6.51
M-251-100	10/13/2022	N	EM02	UMCf	92.5 - 102.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	6.92	3.40	<0.605	<0.128	<0.116	<0.192	3,950	<0.960	<0.126	<0.111	3.91
M-251-100	11/2/2022	N	EM03	UMCf	92.5 - 102.5	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	5.61 J	<1.29	<6.05	<1.28	<1.16	<1.92	2,420	<9.60	<1.26	<1.11	2.27 J
M-251-100	12/8/2022	N	EM04	UMCf	92.5 - 102.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	4.81	1.77	<0.605	1.55	<0.116	<0.192	2,240	<0.960	<0.126	<0.111	2.75
M-251-100	1/11/2023	N	EM05	UMCf	92.5 - 102.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	4.88	1.80	<0.605	<0.128	<0.116	<0.192	2,680	<0.960	<0.126	<0.111	2.88
M-251-100	2/13/2023	N	EM06	UMCf	92.5 - 102.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	4.13	1.02	<0.605	1.37	<0.116	<0.192	1,480	<0.960	<0.126	<0.111	2.53
M-251-100	3/17/2023	N	EM07	UMCf	92.5 - 102.5	<39.4	<5.70	<23.9	<565	<4.71	<5.90	<6.40	<6.80	<6.45	<30.3	<6.40	<5.80	<9.60	1,630	<48.0	<6.30	<5.55	<7.00
M-251-100	4/21/2023	N	EM08	UMCf	92.5 - 102.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	4.56	1.33	<0.605	1.65	<0.116	<0.192	1,950 J+	<0.960	<0.126	<0.111	1.95
M-251-100	5/9/2023	N	EM09	UMCf	92.5 - 102.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	5.11	2.19	<0.605	1.58	<0.116	<0.192	2,200	<0.960	<0.126	<0.111	2.31
M-251-60	4/18/2022	N	BL02	UMCf	52.3 - 62.3	<0.787	<0.114	<0.478	<11.3	0.132 J	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	13.5	<0.960	<0.126	<0.111	<0.140
M-251-60	3/15/2023	N	EM07	UMCf	52.3 - 62.3	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	0.212 J	<0.605	<0.128	<0.116	<0.192	14.5 J+	<0.960	<0.126	<0.111	<0.140
M-252	4/21/2022	N	BL02	UMCf	132.3 - 142.3	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	0.192 J	<0.960	<0.126	<0.111	<0.140
M-252	3/15/2023	N	EM07	UMCf	132.3 - 142.3	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	17.8 J+	<0.960	<0.126	<0.111	<0.140
M-253-100	4/20/2022	N	BL02	UMCf	100.8 - 110.8	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
M-255-100	4/20/2022	N	BL02	UMCf	100.2 - 110.2	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
U4-E-01D	4/18/2022	N	BL02	UMCf	94.7 - 109.7	<3.94	<0.570	<2.39	<56.5	<0.471	<0.590	<0.640	5.46	9.81 J-	<3.03	<0.640	<0.580	<0.960	6,650	<4.80	<0.630	<0.555	4.26 J
U4-E-01D	3/14/2023	N	EM07	UMCf	94.7 - 109.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	3.04	0.458 J	<0.605	<0.128	<0.116	<0.192	5.08	<0.960	<0.126	<0.111	2.59
U4-E-011	4/19/2022	N	BL02	UMCf	74.6 - 89.6	<0.787	<0.114	<0.478	11.7 J	<0.0941	<0.118	<0.128	0.521 J	0.388 J	<0.605	<0.128	<0.116	<0.192	186 J	<0.960	<0.126	<0.111	0.328 J
U4-E-011	4/19/2022	FD	BL02	UMCf	74.6 - 89.6	0.848 J	<0.114	<0.478	11.7 J	<0.0941	<0.118	<0.128	0.509 J	<0.129	<0.605	<0.128	<0.116	<0.192	280 J	<0.960	<0.126	<0.111	<0.140
U4-E-011	3/14/2023	N	EM07	UMCf	74.6 - 89.6	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.27	0.446 J	<0.605	0.646 J	<0.116	<0.192	1,300	<0.960	<0.126	<0.111	0.871 J
U4-E-011	4/20/2023	N	EM08	UMCf	74.6 - 89.6	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.887 J	<0.129	<0.605	0.439 J	<0.116	<0.192	477 J+	<0.960	<0.126	<0.111	0.207 J
U4-E-011	5/10/2023	N	EM09	UMCf	74.6 - 89.6	<0.787	<0.114	<0.478	44.5 J	<0.0941	<0.118	<0.128	0.980 J	0.189 J	<0.605	<0.128	<0.116	<0.192	553	<0.960	<0.126	<0.111	0.280 J
U4-E-02D	4/20/2022	N	BL02	UMCf	94.4 - 109.4	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	3.33 J+	1.82	<0.605	<0.128	<0.116	<0.192	1,660	<0.960	<0.126	<0.111	1.39
U4-E-02D	3/14/2023	N	EM07	UMCf	94.4 - 109.4	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	3.21	0.376 J	<0.605	<0.128	<0.116	<0.192	6.95	<0.960	<0.126	<0.111	2.36
U4-E-021	4/18/2022	N	BL02	UMCf	74.4 - 89.4	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.65	1.65	<0.605	<0.128	<0.116	<0.192	727	<0.960	<0.126	<0.111	0.956 J
U4-E-021	3/14/2023	N	EM07	UMCf	74.4 - 89.4	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.11	0.378 J	<0.605	0.176 J	<0.116	<0.192	165	<0.960	<0.126	<0.111	1.15
U4-E-021	4/20/2023	N	EM08	UMCf	74.4 - 89.4	<0.787	<0.114	<0.478	17.6 J	<0.0941	<0.118	<0.128	1.66	<0.129	<0.605	0.401 J	<0.116	<0.192	503 J+	<0.960	<0.126	<0.111	0.761 J
U4-E-021	5/11/2023	N	EM09	UMCf	74.4 - 89.4	<0.787	<0.114	<0.478	52.8	<0.0941	<0.118	<0.128	1.19	0.412 J	<0.605	0.376 J	<0.116	<0.192	477	<0.960	<0.126	<0.111	0.499 J
U4-E-03D	4/19/2022	N	BL02	UMCf	95.1 - 110.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	10.9	6.45	<0.605	<0.128	<0.116	<0.192	6,390	<0.960	<0.126	<0.111	4.96
U4-E-03D	10/13/2022	N	EM02	UMCf	95.1 - 110.1	<157	<22.8	<95.6	<2,260	<18.8	<23.6	<25.6	<27.2	<25.8	<121	<25.6	<23.2	<38.4	4,280	<192	<25.2	<22.2	<28.0
U4-E-03D	11/3/2022	N	EM03	UMCf	95.1 - 110.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	9.37	4.31	<0.605	2.75	<0.116	<0.192	4,350	<0.960	<0.126	<0.111	5.14 J+
U4-E-03D	12/6/2022	N	EM04	UMCf	95.1 - 110.1	<15.7 UJ	<2.28 UJ	<9.56 UJ	<226 UJ	<1.88 UJ	<2.36 UJ	<2.56 UJ	7.65 J	3.37 J	<12.1 UJ	6.86 J	<2.32 UJ	<3.84 UJ	3,470	<19.2 UJ	<2.52 UJ	<2.22 UJ	3.45 J
U4-E-03D	1/9/2023	N	EM05	UMCf	95.1 - 110.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	7.40	2.90	<0.605	2.25	<0.116	<0.192	3,520	<0.960	<0.126	<0.111	3.66
U4-E-03D	2/13/2023	N	EM06	UMCf	95.1 - 110.1	<78.7	<11.4	<47.8	<1,130	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	3,130	<96.0	<12.6	<11.1	<14.0
U4-E-03D	3/13/2023	N	EM07	UMCf	95.1 - 110.1	<78.7	<11.4	<47.8	<1,130	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	3,070	<96.0	<12.6	<11.1	<14.0
U4-E-03D	3/14/2023	N	EM07	UMCf	95.1 - 110.1	<157	<22.8	<95.6	<2,260	<18.8	<23.6	<25.6	<27.2	<25.8	<121	<25.6	<23.2	<38.4	12,200	<192	<25.2	<22.2	<28.0
U4-E-03D	4/19/2023	N	EM08	UMCf	95.1 - 110.1	<3.94	<0.570	<2.39	<56.5	<0.471	<0.590	<0.640	4.48 J	2.05 J	<3.03	1.47 J	<0.580	<0.960	3,360 J+	<4.80	<0.630	<0.555	1.97 J
U4-E-03D	5/11/2023	N	EM09	UMCf	95.1 - 110.1	<0.787	<0.114	<0.478	164	<0.0941	<0.118	0.159 J	4.02	1.58	<0.605	<0.128	<0.116	<0.192	2,640	<0.960	<0.126	<0.111	1.55 J-
U4-E-04D	4/19/2022	N	BL02	UMCf	95.0 - 110.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.28	0.947 J	<0.605	<0.128	<0.116	<0.192	2,980	<0.960	<0.126	<0.111	0.812 J
U4-E-04D	3/14/2023	N	EM07	UMCf	95.0 - 110.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	3.30	0.484 J	<0.605	<0.128	<0.116	<0.192	4,96 J	<0.960	<0.126	<0.111	2.85
U4-E-041	4/18/2022	N	BL02	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.591 J	<0.129	<0.605	<0.128	<0.116	<0.192	433	<0.960	<0.126	<0.111	0.141 J
U4-E-041	3/14/2023	N	EM07	UMCf	75.0 - 90.0	<39.4	<5.70	<23.9	<565	<4.71	<5.90	<6.40	<6.80	<6.45	<30.3	12.3 J	<5.80	<9.60	5,600	<48.0	<6.30	<5.55	<7.00
U4-E-05D	4/19/2022	N	BL02	UMCf	95.0 - 110.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	4.11	3.20	<0.605	<0.128	<0.116	<0.1					

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																	
						2-Hexanone	4-Chlorotoluene	4-Methyl-2-Pentanone	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-E-09I	4/14/2022	N	BL02	UMCf	74.9 - 89.9	<0.787	<0.114	<0.478	<11.3	0.188 J	<0.118	<0.128	1.00 J	0.618 J	<0.605	0.610 J	<0.116	<0.192	1.240	<0.960	<0.126	<0.111	0.576 J
U4-E-10D	4/13/2022	N	BL02	UMCf	94.5 - 109.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.14	0.707 J	<0.605	0.717 J	<0.116	<0.192	704 J+	<0.960	<0.126	<0.111	0.612 J
U4-E-10I	4/13/2022	N	BL02	UMCf	74.2 - 89.2	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.478 J	0.509 J	<0.605	0.585 J	<0.116	<0.192	1,330	<0.960	<0.126	<0.111	0.441 J
U4-MW-01D	4/19/2022	N	BL02	UMCf	96.7 - 106.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.564 J	0.346 J	<0.605	<0.128	<0.116	<0.192	608	<0.960	<0.126	<0.111	0.274 J
U4-MW-01D	2/16/2023	N	EM06	UMCf	96.7 - 106.7	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	<1.36	<1.29	<6.05	<1.28	<1.16	<1.92	857	<9.60	<1.26	<1.11	<1.40
U4-MW-01D	3/20/2023	N	EM07	UMCf	96.7 - 106.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.14	0.356 J	<0.605	0.863 J	<0.116	<0.192	1,100	<0.960	<0.126	<0.111	1.08
U4-MW-01DD	4/19/2022	N	BL02	UMCf	119.9 - 129.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.170 J	<0.129	<0.605	<0.128	<0.116	<0.192	21.2	<0.960	<0.126	<0.111	0.190 J
U4-MW-01DD	4/19/2022	FD	BL02	UMCf	119.9 - 129.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	20.3	<0.960	<0.126	<0.111	<0.140
U4-MW-01DD	3/15/2023	N	EM07	UMCf	119.9 - 129.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.644 J	<0.129	<0.605	0.471 J	<0.116	<0.192	363 J+	<0.960	<0.126	<0.111	0.307 J
U4-MW-01I	4/19/2022	N	BL02	UMCf	76.7 - 86.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.622 J	0.371 J	<0.605	<0.128	<0.116	<0.192	395	<0.960	<0.126	<0.111	0.259 J
U4-MW-01I	3/20/2023	N	EM07	UMCf	76.7 - 86.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.99	0.431 J	<0.605	0.789 J	<0.116	<0.192	1,060	<0.960	<0.126	<0.111	1.10
U4-MW-01S	4/18/2022	N	BL02	UMCf	54.7 - 64.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.375 J	0.147 J	<0.605	<0.128	<0.116	<0.192	56.8	<0.960	<0.126	<0.111	<0.140
U4-MW-01S	3/15/2023	N	EM07	UMCf	54.7 - 64.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.346 J	<0.129	<0.605	0.227 J	<0.116	<0.192	32.5 J+	<0.960	<0.126	<0.111	<0.140
U4-MW-02D	4/14/2022	N	BL02	UMCf	95.0 - 110.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	9.08	5.28	<0.605	2.50	<0.116	<0.192	8,990	<0.960	<0.126	<0.111	3.00
U4-MW-02D	10/11/2022	N	EM02	UMCf	95.0 - 110.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	13.2	6.19	<0.605	5.24	<0.116	<0.192	10,700	<0.960	<0.126	<0.111	4.51
U4-MW-02D	11/1/2022	N	EM03	UMCf	95.0 - 110.0	<39.4	<5.70	<23.9	<565	<4.71	<5.90	<6.40	10.6 J	<6.45	<30.3	<6.40	<5.80	<9.60	4,950	<48.0	16.2 J	<5.55	<7.00
U4-MW-02D	12/7/2022	N	EM04	UMCf	95.0 - 110.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	12.1	5.74	<0.605	<0.128	<0.116	<0.192	11,200	<0.960	<0.126	<0.111	4.53
U4-MW-02D	1/10/2023	N	EM05	UMCf	95.0 - 110.0	<0.787	<0.114	0.872 J	<1,130	<0.0941	<0.118	<0.128	9.38	4.64	<0.605	<0.128	<0.116	<0.192	7,970	<0.960	<0.126	<0.111	3.70
U4-MW-02D	2/13/2023	N	EM06	UMCf	95.0 - 110.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	10.7	3.75	<0.605	4.15	<0.116	<0.192	7,230	<0.960	<0.126	<0.111	3.77
U4-MW-02D	3/17/2023	N	EM07	UMCf	95.0 - 110.0	<78.7	<11.4	<47.8	<1,130	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	9,500	<96.0	<12.6	<11.1	<14.0
U4-MW-02D	4/19/2023	N	EM08	UMCf	95.0 - 110.0	<3.94	<0.570	<2.39	<56.5	<0.471	<0.590	<0.640	<2.39	3.77 J	<3.03	2.96 J	<0.580	<0.960	10,100 J+	<4.80	<0.630	<0.555	3.33 J
U4-MW-02D	5/9/2023	N	EM09	UMCf	95.0 - 110.0	<3.94	<0.570	<2.39	<56.5	<0.471	<0.590	<0.640	9.24	3.51 J	<3.03	8.04	<0.580	<0.960	10,300	<4.80	<0.630	<0.555	3.44 J
U4-MW-02I	4/14/2022	N	BL02	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.73	1.62	<0.605	0.809 J	<0.116	<0.192	1,380	<0.960	<0.126	<0.111	1.22
U4-MW-02I	10/11/2022	N	EM02	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	11.9 J	<0.0941	<0.118	<0.128	4.87	2.46	<0.605	2.06	<0.116	<0.192	2,860	<0.960	<0.126	<0.111	1.94
U4-MW-02I	11/2/2022	N	EM03	UMCf	75.0 - 90.0	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	3.93 J	<1.29	<6.05	<1.28	<1.16	<1.92	3,760	<9.60	<1.26	<1.11	<1.40
U4-MW-02I	11/2/2022	FD	EM03	UMCf	75.0 - 90.0	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	2.76 J	<1.29	<6.05	5.26 J	<1.16	<1.92	3,760	<9.60	<1.26	<1.11	<1.40
U4-MW-02I	12/8/2022	N	EM04	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	32.3 J	<0.0941	<0.118	<0.128	0.766 J	0.454 J	<0.605	0.173 J	<0.116	<0.192	474	<0.960	<0.126	<0.111	0.184 J
U4-MW-02I	12/8/2022	FD	EM04	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	61.2	<0.0941	<0.118	<0.128	0.924 J	0.569 J	<0.605	0.214 J	<0.116	<0.192	462	<0.960	<0.126	<0.111	0.426 J
U4-MW-02I	1/13/2023	N	EM05	UMCf	75.0 - 90.0	<7.87	<1.14	<4.78	176 J	<0.941	<1.18	<1.28	2.62 J	<1.29	<6.05	<1.28	<1.16	<1.92	1,910	<9.60	<1.26	<1.11	<1.40
U4-MW-02I	1/13/2023	FD	EM05	UMCf	75.0 - 90.0	<7.87	<1.14	<4.78	190 J	<0.941	<1.18	<1.28	3.20 J	<1.29	<6.05	<1.28	<1.16	<1.92	1,890	<9.60	<1.26	<1.11	<1.40
U4-MW-02I	2/15/2023	N	EM06	UMCf	75.0 - 90.0	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	8.86 J	5.67 J	<6.05	<1.28	<1.16	<1.92	6,040	<9.60	<1.26	<1.11	4.74 J
U4-MW-02I	2/15/2023	FD	EM06	UMCf	75.0 - 90.0	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	8.84 J	6.04 J	<6.05	<1.28	<1.16	<1.92	6,030	<9.60	<1.26	<1.11	4.62 J
U4-MW-02I	3/17/2023	N	EM07	UMCf	75.0 - 90.0	<157	<22.8	<95.6	<2,260	<18.8	<23.6	<25.6	<27.2	<25.8	<121	<25.6	<23.2	<38.4	7,070	<192	<25.2	<22.2	<28.0
U4-MW-02I	3/17/2023	FD	EM07	UMCf	75.0 - 90.0	<157	<22.8	<95.6	<2,260	<18.8	<23.6	<25.6	<27.2	<25.8	<121	<25.6	<23.2	<38.4	7,210	<192	<25.2	<22.2	<28.0
U4-MW-02I	4/20/2023	N	EM08	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	39.3 J	<0.0941	<0.118	<0.128	0.189 J	<0.129	<0.605	<0.128	<0.116	<0.192	128	<0.960	<0.126	<0.111	<0.140
U4-MW-02I	4/20/2023	FD	EM08	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	46.3 J	<0.0941	<0.118	<0.128	0.188 J	<0.129	<0.605	<0.128	<0.116	<0.192	134	<0.960	<0.126	<0.111	<0.140
U4-MW-02I	5/9/2023	N	EM09	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	46.0 J	<0.0941	<0.118	<0.128	0.204 J	<0.129	<0.605	<0.128	<0.116	<0.192	313	<0.960	<0.126	<0.111	<0.140
U4-MW-02I	5/9/2023	FD	EM09	UMCf	75.0 - 90.0	<0.787	<0.114	<0.478	47.8 J	<0.0941	<0.118	<0.128	0.228 J	<0.129	<0.605	<0.128	<0.116	<0.192	301 J+	<0.960	<0.126	<0.111	<0.140
U4-MW-03D	4/20/2022	N	BL02	UMCf	96.6 - 106.6	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.81 J+	0.629 J	<0.605	<0.128	<0.116	<0.192	2,270	<0.960	<0.126	<0.111	0.605 J
U4-MW-03D	2/16/2023	N	EM06	UMCf	96.6 - 106.6	<3.94	<0.570	<2.39	<56.5	<4.71	<0.590	<0.640	1.71 J	<0.645	<3.03	0.835 J	<0.580	<0.960	1,350	<4.80	<0.630	<0.555	<0.700
U4-MW-03D	3/16/2023	N	EM07	UMCf	96.6 - 106.6	<15.7	<2.28	<95.6	<2,260	4.74 J	<2.36	<2.56	<2.72	<2.58	<12.1	<2.56	<2.32	<38.4	1,670	<19.2	<2.52	<2.22	<2.80
U4-MW-03D	3/16/2023	FD	EM07	UMCf	96.6 - 106.6	<3.94	<0.570	<2.39	<56.5	<4.71	<0.590	<0.640	<2.39	<2.58	<3.03	<0.645	<0.580	<0.960	1,620	<4.80	<0.630	<0.555	<0.700
U4-MW-03DD	4/20/2022	N	BL02	UMCf	119.7 - 129.7	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.152 J	<0.129	<0.605	<0.128	<0.116	<0.192	173	<0.960	<0.126	<0.111	<0.140
U4-MW-03DD	3/15/20																						

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																	
						2-Hexanone	4-Chlorotoluene	4-Methyl-2-Pentanone	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-07D	10/12/2022	FD	EM02	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.98	0.201 J	<0.605	<0.128	<0.116	<0.192	95.5	<0.960	<0.126	<0.111	1.83
U4-MW-07D	11/3/2022	N	EM03	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	3.76	0.280 J	<0.605	<0.128	<0.116	<0.192	146	<0.960	<0.126	<0.111	2.53 J+
U4-MW-07D	12/7/2022	N	EM04	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	3.77	0.338 J	<0.605	<0.128	<0.116	<0.192	101	<0.960	<0.126	<0.111	2.25
U4-MW-07D	1/11/2023	N	EM05	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.84	<0.129	<0.605	<0.128	<0.116	<0.192	119	<0.960	<0.126	<0.111	1.21
U4-MW-07D	2/14/2023	N	EM06	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.38	<0.129	<0.605	<0.128	<0.116	<0.192	92.3	<0.960	<0.126	<0.111	<0.140
U4-MW-07D	3/16/2023	N	EM07	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.21	<0.129	<0.605	<0.128	<0.116	<0.192	75.1	<0.960	<0.126	<0.111	0.211 J
U4-MW-07D	4/21/2023	N	EM08	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	23.4 J	<0.0941	<0.118	<0.128	0.461 J	<0.129	<0.605	<0.128	<0.116	<0.192	267 J+	<0.960	<0.126	<0.111	0.146 J
U4-MW-07D	5/11/2023	N	EM09	UMCf	96.8 - 106.5	<0.787	<0.114	<0.478	314	<0.0941	<0.118	0.361 J	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	98.3	<0.960	<0.126	<0.111	<0.140 UJ
U4-MW-07I	4/15/2022	N	BL02	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.676 J	0.206 J	<0.605	0.313 J	<0.116	<0.192	373	<0.960	<0.126	<0.111	0.189 J
U4-MW-07I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	5.11	0.403 J	<0.605	0.425 J	<0.116	<0.192	164	<0.960	<0.126	<0.111	3.22
U4-MW-07I	11/3/2022	N	EM03	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	3.61	0.321 J	<0.605	<0.128	<0.116	<0.192	153	<0.960	<0.126	<0.111	2.52 J+
U4-MW-07I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	4.08	0.353 J	<0.605	<0.128	<0.116	<0.192	129	<0.960	<0.126	<0.111	2.47
U4-MW-07I	1/11/2023	N	EM05	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.79	0.162 J	<0.605	<0.128	<0.116	<0.192	154	<4.80	<0.126	<0.111	1.11
U4-MW-07I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.57	0.149 J	<0.605	<0.128	<0.116	<0.192	180	<0.960	<0.126	<0.111	0.700 J
U4-MW-07I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	<3.94	<0.570	<2.39	<56.5	<0.590	<0.640	1.40 J	<0.645	<3.03	<0.640	<0.580	<0.960	250	<4.80	<0.630	<0.555	<0.700	
U4-MW-07I	4/21/2023	N	EM08	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	62.0	<0.0941	<0.118	<0.128	1.82	0.262 J	<0.605	0.333 J	<0.116	<0.192	578 J+	<0.960	<0.126	<0.111	0.559 J
U4-MW-07I	5/11/2023	N	EM09	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	12.2 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	344	<0.960	<0.126	<0.111	<0.140
U4-MW-08D	4/13/2022	N	BL02	UMCf	98.6 - 108.6	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	0.452 J	<0.605	<0.128	<0.116	<0.192	10,300 J+	<0.960	<0.126	<0.111	0.370 J
U4-MW-08D	12/7/2022	N	EM04	UMCf	98.6 - 108.6	<0.787	<0.114	<0.478	39.5 J	<0.0941	<0.118	<0.128	3.42	0.921 J	<0.605	1.85	<0.116	<0.192	4,240	<0.960	<0.126	<0.111	1.82
U4-MW-08D	3/17/2023	N	EM07	UMCf	98.6 - 108.6	<78.7	<11.4	<47.8	<11.30	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	4,220	<96.0	<12.6	<11.1	<14.0
U4-MW-08DD	4/20/2022	N	BL02	UMCf	119.8 - 129.8	3.03 J	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	90.2	<0.960	<0.126	<0.111	<0.140
U4-MW-08DD	4/20/2022	FD	BL02	UMCf	119.8 - 129.8	1.23 J	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	85.4	<0.960	<0.126	<0.111	<0.140
U4-MW-08DD	12/8/2022	N	EM04	UMCf	119.8 - 129.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	28.1	<0.960	<0.126	<0.111	<0.140
U4-MW-08DD	3/15/2023	N	EM07	UMCf	119.8 - 129.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.192 J	<0.129	<0.605	0.251 J	<0.116	<0.192	126	<0.960	<0.126	<0.111	<0.140
U4-MW-08I	4/13/2022	N	BL02	UMCf	78.0 - 88.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	5.72	2.19	<0.605	2.14	<0.116	<0.192	1,100 J+	<0.960	<0.126	<0.111	1.76
U4-MW-08I	12/7/2022	N	EM04	UMCf	78.0 - 88.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.33	1.08	<0.605	1.46	<0.116	<0.192	2,660	<0.960	<0.126	<0.111	1.02
U4-MW-08I	12/7/2022	FD	EM04	UMCf	78.0 - 88.0	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.52	1.14	<0.605	1.40	<0.116	<0.192	2,560	<0.960	<0.126	<0.111	1.05
U4-MW-08I	3/17/2023	N	EM07	UMCf	78.0 - 88.0	<39.4	<5.70	<23.9	<565	<4.71	<5.90	<6.40	<6.80	<6.45	<30.3	<6.40	<5.80	<9.60	5,210	<48.0	<6.30	<5.55	<7.00
U4-MW-08S	4/15/2022	N	BL02	UMCf	54.9 - 64.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.213 J	<0.129 UJ	<0.605	<0.128	<0.116	<0.192	38.2	<0.960	<0.126	<0.111	<0.140
U4-MW-08S	12/7/2022	N	EM04	UMCf	54.9 - 64.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.290 J	<0.129	<0.605	<0.128	<0.116	<0.192	15.0	<0.960	<0.126	<0.111	<0.140
U4-MW-08S	12/7/2022	FD	EM04	UMCf	54.9 - 64.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.275 J	<0.129	<0.605	<0.128	<0.116	<0.192	15.4	<0.960	<0.126	<0.111	<0.140
U4-MW-08S	3/13/2023	N	EM07	UMCf	54.9 - 64.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	0.792 J	<0.960	<0.126	<0.111	<0.140
U4-MW-08S	3/13/2023	FD	EM07	UMCf	54.9 - 64.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	0.964 J	<0.960	<0.126	<0.111	<0.140
U4-MW-09D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.86	0.936 J	<0.605	0.488 J	<0.116	<0.192	2,940	<0.960	<0.126	<0.111	0.814 J
U4-MW-09D	12/6/2022	N	EM04	UMCf	96.9 - 106.9	<7.87 UJ	<1.14 UJ	<4.78 UJ	<11.3 UJ	<0.941 UJ	<1.18 UJ	<1.28 UJ	3.78 J	<1.29 UJ	<6.05 UJ	2.57 J	<1.16 UJ	<1.92 UJ	602	<9.60 UJ	<1.26 UJ	<1.11 UJ	2.99 J
U4-MW-09D	3/16/2023	N	EM07	UMCf	96.9 - 106.9	<7.87	<1.14	<4.78	287 J	<0.941	<1.18	<1.28	<1.36	<1.29	<6.05	<1.28	<1.16	<1.92	525	<9.60	<1.26	<1.11	<1.40
U4-MW-09DD	4/14/2022	N	BL02	UMCf	119.8 - 129.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	21.9	<0.960	<0.126	<0.111	<0.140
U4-MW-09DD	12/6/2022	N	EM04	UMCf	119.8 - 129.8	<0.787 UJ	<0.114 UJ	<0.478 UJ	<11.3 UJ	<0.0941 UJ	<0.118 UJ	<0.128 UJ	<0.136 UJ	<0.129 UJ	<0.605 UJ	<0.128 UJ	<0.116 UJ	<0.192 UJ	12.5	<0.960 UJ	<0.126 UJ	<0.111 UJ	<0.140 UJ
U4-MW-09DD	3/21/2023	N	EM07	UMCf	119.8 - 129.8	<0.787	<0.114	<0.478 UJ	<11.3	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	15.9 J+	<0.960	<0.126	<0.111	<0.140
U4-MW-09I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	2.49	<0.118	<0.128	0.516 J	0.526 J	<0.605	0.384 J	<0.116	<0.192	130	<0.960	<0.126	<0.111	0.509 J
U4-MW-09I	12/6/2022	N	EM04	UMCf	76.8 - 86.8	<7.87 UJ	<1.14 UJ	<4.78 UJ	<11.3 UJ	<0.941 UJ	<1.18 UJ	<1.28 UJ	4.46 J	<1.29 UJ	<6.05 UJ	2.97 J	<1.16 UJ	<1.92 UJ	1,150	<9.60 UJ	<1.26 UJ	<1.11 UJ	2.89 J
U4-MW-09I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	<7.87	<1.14	<4.78	<11.3	<0.941	<1.18	<1.28	<4.78	<1.29	<6.05	<1.28	<1.16	<1.92	767	<9.60	<1.26	<1.11	<1.40
U4-MW-09S	4/14/2022	N	BL02	UMCf	55.3 - 65.3	<0.787	<0.114	<0.															

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																	
						2-Hexanone	4-Chlorotoluene	4-Methyl-2-Pentanone	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-111	5/19/2023	FD	EM09	UMCf	77.0 - 87.0	<0.787 UJ	<0.114 UJ	<0.478 UJ	45.1 J	<0.0941 UJ	<0.118 UJ	<0.128 UJ	<0.136 UJ	<0.129 UJ	<0.605 UJ	<0.128 UJ	<0.116 UJ	<0.192 UJ	16.4 J-	<0.960 UJ	<0.126 UJ	<0.111 UJ	<0.140 UJ
U4-MW-12D	4/15/2022	N	BL02	UMCf	97.1 - 107.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.15	0.934 J	<0.605	1.81	<0.116	<0.192	4.690	<0.960	<0.126	<0.111	0.664 J
U4-MW-12D	9/27/2022	N	EM01	UMCf	97.1 - 107.1	<15.7	<2.28	<9.56	<226	<1.88	<2.36	<2.56	<2.72	<2.58	<12.1	<2.56	<2.32	<3.84	4.030 J	<19.2	<2.52	<2.22	<2.80
U4-MW-12D	10/12/2022	N	EM02	UMCf	97.1 - 107.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.59	0.380 J	<0.605	1.63	<0.116	<0.192	<0.111	<0.960	<0.126	<0.111	0.454 J
U4-MW-12D	11/2/2022	N	EM03	UMCf	97.1 - 107.1	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	<1.36	<1.29	<6.05	<1.28	<1.16	<1.92	3.140	<9.60	<1.26	<1.11	<1.40
U4-MW-12D	12/7/2022	N	EM04	UMCf	97.1 - 107.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.96	0.515 J	<0.605	<0.128	<0.116	<0.192	3.560	<0.960	<0.126	<0.111	0.535 J
U4-MW-12D	1/12/2023	N	EM05	UMCf	97.1 - 107.1	<78.7	<11.4	<47.8	<1,130	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	3,260	<96.0	<12.6	<11.1	<14.0
U4-MW-12D	2/15/2023	N	EM06	UMCf	97.1 - 107.1	<78.7	<11.4	<47.8	<1,130	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	2,520	<96.0	<12.6	<11.1	<14.0
U4-MW-12D	3/14/2023	N	EM07	UMCf	97.1 - 107.1	<39.4	<5.70	<23.9	<565	<4.71	<5.90	<6.40	<6.80	<6.45	<30.3	10.0 J	<5.80	<9.60	2,740	<48.0	<6.30	<5.55	<7.00
U4-MW-12D	4/17/2023	N	EM08	UMCf	97.1 - 107.1	<3.94 UJ	<0.570 UJ	<2.39 UJ	<56.5 UJ	<0.471 UJ	<0.590 UJ	<0.640 UJ	1.50 J	<0.645 UJ	<3.03 UJ	0.770 J	<0.580 UJ	<0.960 UJ	2,760 J-	<4.80 UJ	<0.630 UJ	<0.555 UJ	<0.700 UJ
U4-MW-12D	5/17/2023	N	EM09	UMCf	97.1 - 107.1	<78.7	<11.4	<47.8	<1,130	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	3,780	<96.0	<12.6	<11.1	<14.0
U4-MW-12D	4/14/2022	N	BL02	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.28	0.688 J	<0.605	0.961 J	<0.116	<0.192	1,670	<0.960	<0.126	<0.111	0.610 J
U4-MW-12I	4/14/2022	FD	BL02	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.16	0.609 J	<0.605	0.812 J	<0.116	<0.192	1,640	<0.960	<0.126	<0.111	0.573 J
U4-MW-12I	9/27/2022	N	EM01	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	13.7 J	<0.0941	<0.118	<0.128	0.456 J	<0.129	<0.605	0.351 J	<0.116	<0.192	231	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.344 J	<0.129 UJ	<0.605	0.486 J	<0.116	<0.192	194	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	11/2/2022	N	EM03	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.236 J	<0.129	<0.605	<0.128	<0.116	<0.192	182	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	16.9 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	91.3	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	12/7/2022	FD	EM04	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	16.1 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	90.0	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	1/13/2023	N	EM05	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	30.3 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	36.5	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	23.4 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	36.5	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	3/13/2023	N	EM07	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	19.6 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	8.18	<0.960	<0.126	<0.111	<0.140
U4-MW-12I	4/17/2023	N	EM08	UMCf	76.8 - 86.8	<0.787 UJ	<0.114 UJ	<0.478 UJ	32.0 J	<0.0941 UJ	<0.118 UJ	<0.128 UJ	<0.136 UJ	<0.129 UJ	<0.605 UJ	<0.128 UJ	<0.116 UJ	<0.192 UJ	0.265 J	<0.960 UJ	<0.126 UJ	<0.111 UJ	<0.140 UJ
U4-MW-12I	5/17/2023	N	EM09	UMCf	76.8 - 86.8	<0.787	<0.114	<0.478	43.1 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	0.714 J	<0.960	<0.126	<0.111	<0.140
U4-MW-13D	4/14/2022	N	BL02	UMCf	98.2 - 108.2	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.63	0.706 J	<0.605	1.11	<0.116	<0.192	3,460	<0.960	<0.126	<0.111	0.639 J
U4-MW-13D	9/28/2022	N	EM01	UMCf	98.2 - 108.2	<7.87	<1.14	<4.78	<113	<0.941	<1.18	<1.28	<1.36	<1.29	<6.05	<1.28	<1.16	<1.92	1,270	<9.60	<1.26	<1.11	<1.40
U4-MW-13D	10/11/2022	N	EM02	UMCf	98.2 - 108.2	<0.787	<0.114	<0.478	66.9	<0.0941	<0.118	<0.128	0.628 J	<0.129	<0.605	<0.128	<0.116	<0.192	983	<0.960	<0.126	<0.111	<0.140
U4-MW-13D	11/3/2022	N	EM03	UMCf	98.2 - 108.2	<0.787	<0.114	<0.478	15.0 J	<0.0941	<0.118	<0.128	1.01 J+	0.198 J	<0.605	0.415 J	<0.116	<0.192	1,060	<0.960	<0.126	<0.111	0.551 J
U4-MW-13D	12/7/2022	N	EM04	UMCf	98.2 - 108.2	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.83	0.233 J	<0.605	<0.128	<0.116	<0.192	874	<0.960	<0.126	<0.111	1.04
U4-MW-13D	1/12/2023	N	EM05	UMCf	98.2 - 108.2	<15.7	<2.28	<9.56	<226	<1.88	<2.36	<2.56	<2.72	<2.58	<12.1	<2.56	<2.32	<3.84	837	<19.2	<2.52	<2.22	<2.80
U4-MW-13D	2/15/2023	N	EM06	UMCf	98.2 - 108.2	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	2.28	<0.129	<0.605	<0.128	<0.116	<0.192	729	<0.960	<0.126	<0.111	1.12
U4-MW-13D	3/17/2023	N	EM07	UMCf	98.2 - 108.2	<15.7	<2.28	<9.56	<226	<1.88	<2.36	<2.56	<2.72	<2.58	<12.1	<2.56	<2.32	<3.84	687	<19.2	<2.52	<2.22	<2.80
U4-MW-13D	4/18/2023	N	EM08	UMCf	98.2 - 108.2	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.62	0.134 J	<0.605	0.223 J	<0.116	<0.192	489	<0.960	<0.126	<0.111	0.572 J
U4-MW-13D	5/17/2023	N	EM09	UMCf	98.2 - 108.2	<15.7	<2.28	<9.56	<226	<1.88	<2.36	<2.56	<2.72	<2.58	<12.1	<2.56	<2.32	<3.84	475	<19.2	<2.52	<2.22	<2.80
U4-MW-13I	4/14/2022	N	BL02	UMCf	77.1 - 87.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	1.18	0.624 J	<0.605	0.865 J	<0.116	<0.192	1,350	<0.960	<0.126	<0.111	0.618 J
U4-MW-13I	9/28/2022	N	EM01	UMCf	77.1 - 87.1	<0.787	<0.114	<0.478	<11.3	0.157 J	<0.118	<0.128	0.584 J	<0.129	<0.605	0.400 J	<0.116	<0.192	154 J-	<0.960	<0.126	<0.111	0.164 J
U4-MW-13I	10/10/2022	N	EM02	UMCf	77.1 - 87.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.505 J	<0.129	<0.605	0.759 J	<0.116	<0.192	451	<0.960	0.394 J	<0.111	<0.140
U4-MW-13I	11/3/2022	N	EM03	UMCf	77.1 - 87.1	<0.787	<0.114	<0.478	<11.3	<0.0941	<0.118	<0.128	0.580 J	<0.129	<0.605	0.426 J	<0.116	<0.192	441	<0.960	<0.126	<0.111	0.159 J
U4-MW-13I	12/6/2022	N	EM04	UMCf	77.1 - 87.1	<3.94 UJ	<0.570 UJ	<2.39 UJ	<56.5 UJ	<0.471 UJ	<0.590 UJ	<0.640 UJ	<0.680 UJ	<0.645 UJ	<3.03 UJ	<0.640 UJ	<0.580 UJ	<0.960 UJ	305	<4.80 UJ	<0.630 UJ	<0.555 UJ	<0.700 UJ
U4-MW-13I	1/12/2023	N	EM05	UMCf	77.1 - 87.1	<0.787	<0.114	<0.478	16.9 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	236	<0.960	<0.126	<0.111	<0.140
U4-MW-13I	2/14/2023	N	EM06	UMCf	77.1 - 87.1	<3.94	<0.570	<2.39	<56.5	<0.590	<0.640	<0.680	<0.645	<3.03	<0.640	<0.580	<0.960	373	<4.80	<0.630	<0.555	<0.700	
U4-MW-13I	3/16/2023	N	EM07	UMCf	77.1 - 87.1	<0.787	<0.114	<0.478	11.3 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	133	<0.960	<0.126	<0.111	<0.140
U4-MW-13I	4/19/2023	N	EM08	UMCf	77.1 - 87.1	<0.787	<0.114	<0.478	16.5 J	<0.0941	<0.118	<0.128	<0.136	<0.129	<0.605	<0.128	<0.116	<0.192	34.8 J+	<0.960	<0.126	<0.111	<0.140
U4-MW-13I	5/17/2023	N	EM09	UMCf	77.1 - 87.1	<0.787	<0																

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																	
						2-Hexanone	4-Chlorotoluene	4-Methyl-2-Pentanone	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon Tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-T3	12/6/2022	N	EM04	N/A	N/A	<15.7 UJ	<2.28 UJ	<9.56 UJ	<226 UJ	<1.88 UJ	<2.36 UJ	<2.56 UJ	3.81 J	<2.58 UJ	<12.1 UJ	6.19 J	<2.32 UJ	<3.84 UJ	2,520	<19.2 UJ	<2.52 UJ	<2.22 UJ	<2.80 UJ
U4-T3	1/9/2023	N	EM05	N/A	N/A	<0.787	<0.114	<0.478	11.4 J	<0.0941	<0.118	<0.128	4.50	1.86	<0.605	1.63	<0.116	<0.192	3,390	<0.960	<0.126	<0.111	2.19
U4-T3	2/13/2023	N	EM06	N/A	N/A	<78.7	<11.4	<47.8	<1,130	<9.41	<11.8	<12.8	<13.6	<12.9	<60.5	<12.8	<11.6	<19.2	3,210	<96.0	<12.6	<11.1	<14.0
U4-T3	3/13/2023	N	EM07	N/A	N/A	<19.7	<2.85	<12.0	<282	<2.35	<2.95	<3.20	<3.40	<3.22	<15.1	<3.20	<2.90	<4.80	1,410	<24.0	<3.15	<2.78	<3.50
U4-T3	4/19/2023	N	EM08	N/A	N/A	<0.787	<0.114	<0.478	12.8 J	<0.0941	<0.118	<0.128	1.94	0.640 J	<0.605	0.658 J	<0.116	<0.192	1,150 J+	<0.960	<0.126	<0.111	0.810 J
U4-T3	5/18/2023	N	EM09	N/A	N/A	<0.787	<0.114	<0.478	121	<0.0941	<0.118	<0.128	1.87	0.557 J	<0.605	<0.128	<0.116	<0.192	1,750	<0.960	<0.126	<0.111	0.668 J

Notes:
 FD - Field duplicate
 E - Field instrument error.
 J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 J- - The result is an estimated quantity, but the result may be biased low.
 J+ - The result is an estimated quantity, but the result may be biased high.
 mg/L - milligrams per liter
 µg/L - micrograms per liter
 N - Normal field sample
 R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
 UMCf- Upper Muddy Creek Formation
 < - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
 -- Not tested.

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						Dibromomet-hane	Dichlorodiflu- oromethane	Diisopropyl Ether (DIPE)	Ethyl Tert- Butyl Ether (ETBE)	Ethylbenzene	Hexachlorob- utadiene	Isopropylben- zene	m,p-Xylene (Sum of Isomers)	Methylene Chloride	Naphthalene	n- Butylbenzene	n- Propylbenzene	o-Xylene	p-Cymene (p- Isopropyltolu- ene)	sec- Butylben- zene	Styrene	tert-Amyl Methyl Ether	tert-Butyl Alcohol	tert-Butyl Methyl Ether (MTBE)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-E-09I	4/14/2022	N	BL02	UMCf	74.9 - 89.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	0.220 J	<0.120	<0.125	<0.118	<0.195	12.7	<0.101
U4-E-10D	4/13/2022	N	BL02	UMCf	94.5 - 109.5	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-E-10I	4/13/2022	N	BL02	UMCf	74.2 - 89.2	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01D	4/19/2022	N	BL02	UMCf	96.7 - 106.7	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	7.15	<0.101
U4-MW-01D	2/16/2023	N	EM06	UMCf	96.7 - 106.7	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993 UJ	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-01D	3/20/2023	N	EM07	UMCf	96.7 - 106.7	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01DD	4/19/2022	N	BL02	UMCf	119.9 - 129.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01DD	4/19/2022	FD	BL02	UMCf	119.9 - 129.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01DD	3/15/2023	N	EM07	UMCf	119.9 - 129.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01I	4/19/2022	N	BL02	UMCf	76.7 - 86.7	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01I	3/20/2023	N	EM07	UMCf	76.7 - 86.7	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01S	4/18/2022	N	BL02	UMCf	54.7 - 64.7	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-01S	3/15/2023	N	EM07	UMCf	54.7 - 64.7	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02D	4/14/2022	N	BL02	UMCf	95.0 - 110.0	0.473 J	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.47 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	5.42	<0.101
U4-MW-02D	10/11/2022	N	EM02	UMCf	95.0 - 110.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.47 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02D	11/1/2022	N	EM03	UMCf	95.0 - 110.0	<6.10	<18.7	<5.25	<5.05	<6.85	<16.9	<5.25	<21.5	<21.5	<50.0	<7.85	<4.97	<8.70	<6.00	<6.25	<5.90	<9.75	<203	<5.05
U4-MW-02D	12/7/2022	N	EM04	UMCf	95.0 - 110.0	0.149 J	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.73 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	14.9	<0.101
U4-MW-02D	1/10/2023	N	EM05	UMCf	95.0 - 110.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.33 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	5.93	<0.101
U4-MW-02D	2/13/2023	N	EM06	UMCf	95.0 - 110.0	0.157 J	<0.374	<0.105	<0.101	<0.137	<0.337 UJ	<0.105	<0.430	1.36 J	<1.00	<0.157 UJ	<9.93	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02D	3/17/2023	N	EM07	UMCf	95.0 - 110.0	<12.2	<37.4	<10.5	<10.1	<13.7	<33.7	<10.5	<43.0	<43.0	<100 UJ	<15.7	<9.93	<17.4	<12.0	<12.5	<11.8	<19.5	<406	<10.1
U4-MW-02D	4/19/2023	N	EM08	UMCf	95.0 - 110.0	<0.610	<1.87	<0.525	<0.505	<0.685	<1.69	<0.525	<2.15	<2.15	<5.00	<0.785	<0.497	<0.870	<0.600	<0.625	<0.590	<0.975	<20.3	<0.505
U4-MW-02D	5/9/2023	N	EM09	UMCf	95.0 - 110.0	<0.610	<1.87	<0.525	<0.505	<0.685	<1.69	<0.525	<2.15	<2.15	<5.00	<0.785	<0.497	<0.870	<0.600	<0.625	<0.590	<0.975	<20.3	<0.505
U4-MW-02I	4/14/2022	N	BL02	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02I	10/11/2022	N	EM02	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.571 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02I	11/2/2022	N	EM03	UMCf	75.0 - 90.0	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	4.54 J	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-02I	11/2/2022	FD	EM03	UMCf	75.0 - 90.0	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-02I	12/8/2022	N	EM04	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	0.335 J	<0.430	3.23 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02I	12/8/2022	FD	EM04	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	12.3 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02I	1/13/2023	N	EM05	UMCf	75.0 - 90.0	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-02I	1/13/2023	FD	EM05	UMCf	75.0 - 90.0	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-02I	2/15/2023	N	EM06	UMCf	75.0 - 90.0	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-02I	2/15/2023	FD	EM06	UMCf	75.0 - 90.0	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-02I	3/17/2023	N	EM07	UMCf	75.0 - 90.0	<24.4	<74.8	<21.0	<20.2	<27.4	<67.4	<21.0	<86.0	<86.0	<200 UJ	<31.4	<19.9	<34.8	<24.0	<25.0	<23.6	<39.0	<812	<20.2
U4-MW-02I	3/17/2023	FD	EM07	UMCf	75.0 - 90.0	<24.4	<74.8	<21.0	<20.2	<27.4	<67.4	<21.0	<86.0	<86.0	<200 UJ	<31.4	<19.9	<34.8	<24.0	<25.0	<23.6	<39.0	<812	<20.2
U4-MW-02I	4/20/2023	N	EM08	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	6.15	<1.00 UJ	<0.157	<0.0993	<0.174 UJ	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02I	4/20/2023	FD	EM08	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	6.54	<1.00 UJ	<0.157	<0.0993	<0.174 UJ	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02I	5/9/2023	N	EM09	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	9.93 J+	<1.00	<0.157	<0.0993	<0.174 UJ	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-02I	5/9/2023	FD	EM09	UMCf	75.0 - 90.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	9.73 J+	<1.00	<0.157	<0.0993	<0.174 UJ	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-03D	4/20/2022	N	BL02	UMCf	96.6 - 106.6	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	5.74 J	<0.101
U4-MW-03D	2/16/2023	N	EM06	UMCf	96.6 - 106.6	<0.610	<1.87	<0.525	<0.505	<0.685	<1.69	<0.525	<2.15	<2.15	<5.00	<0.785	<0.497 UJ	<0.870	<0.600	<0.625	<0.590	<0.975	<20.3	<0.505
U4-MW-03D	3/16/2023	N	EM07	UMCf	96.6 - 106.6																			

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						Dibromomet-hane	Dichlorodiflu- oromethane	Diisopropyl Ether (DIPE)	Ethyl Tert- Butyl Ether (ETBE)	Ethylbenzene	Hexachlorob- utadiene	Isopropylben- zene	m,p-Xylene (Sum of Isomers)	Methylene Chloride	Naphthalene	n- Butylbenzene	n- Propylbenzene	o-Xylene	p-Cymene (p- Isopropyltolu- ene)	sec- Butylben- zene	Styrene	tert-Amyl Methyl Ether	tert-Butyl Alcohol	tert-Butyl Methyl Ether (MTBE)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-07D	10/12/2022	FD	EM02	UMCf	96.8 - 106.5	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07D	11/3/2022	N	EM03	UMCf	96.8 - 106.5	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07D	12/7/2022	N	EM04	UMCf	96.8 - 106.5	0.240 J	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07D	1/11/2023	N	EM05	UMCf	96.8 - 106.5	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07D	2/14/2023	N	EM06	UMCf	96.8 - 106.5	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07D	3/16/2023	N	EM07	UMCf	96.8 - 106.5	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07D	4/21/2023	N	EM08	UMCf	96.8 - 106.5	0.125 J	<0.374	<0.105	<0.101	<0.137 UJ	<0.337	<0.105	<0.430	1.37 J	<1.00	<0.157	<0.0993	<0.174 UJ	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07D	5/11/2023	N	EM09	UMCf	96.8 - 106.5	<0.122 UJ	<0.374	<0.105	1.69	<0.137	<0.337	<0.105	<0.430	11.0	<1.00	<0.157	<0.0993	<0.174 UJ	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	4/15/2022	N	BL02	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.478 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	11/3/2022	N	EM03	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	1/11/2023	N	EM05	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	3/16/2023	N	EM07	UMCf	76.8 - 86.8	<0.610	<1.87	<0.525	<0.505	<0.685	<1.69	<0.525	<2.15	<2.15	<5.00	<0.785	<0.497	<0.870	<0.600	<0.625	<0.590	<0.975	<20.3	<0.505
U4-MW-07I	4/21/2023	N	EM08	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137 UJ	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174 UJ	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-07I	5/11/2023	N	EM09	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	7.26	<0.137	<0.337	<0.105	<0.430	2.67 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08D	4/13/2022	N	BL02	UMCf	98.6 - 108.6	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	8.05	<0.101
U4-MW-08D	12/7/2022	N	EM04	UMCf	98.6 - 108.6	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.846 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08D	3/17/2023	N	EM07	UMCf	98.6 - 108.6	<12.2	<37.4	<10.5	<10.1	<13.7	<33.7	<10.5	<43.0	<43.0	<100 UJ	<15.7	<9.93	<17.4	<12.0	<12.5	<11.8	<19.5	<406	<10.1
U4-MW-08DD	4/20/2022	N	BL02	UMCf	119.8 - 129.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08DD	4/20/2022	FD	BL02	UMCf	119.8 - 129.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08DD	12/8/2022	N	EM04	UMCf	119.8 - 129.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08DD	3/15/2023	N	EM07	UMCf	119.8 - 129.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08I	4/13/2022	N	BL02	UMCf	78.0 - 88.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.14 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	6.37	<0.101
U4-MW-08I	12/7/2022	N	EM04	UMCf	78.0 - 88.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	5.48	<0.101
U4-MW-08I	12/7/2022	FD	EM04	UMCf	78.0 - 88.0	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.436 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08I	3/17/2023	N	EM07	UMCf	78.0 - 88.0	<6.10	<18.7	<5.25	<5.05	<6.85	<16.9	<5.25	<21.5	<21.5	<50.0 UJ	<7.85	<4.97	<8.70	<6.00	<6.25	<5.90	<9.75	<203	<5.05
U4-MW-08S	4/15/2022	N	BL02	UMCf	54.9 - 64.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08S	12/7/2022	N	EM04	UMCf	54.9 - 64.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08S	12/7/2022	FD	EM04	UMCf	54.9 - 64.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08S	3/13/2023	N	EM07	UMCf	54.9 - 64.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-08S	3/13/2023	FD	EM07	UMCf	54.9 - 64.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-09D	4/14/2022	N	BL02	UMCf	96.9 - 106.9	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.520 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-09D	12/6/2022	N	EM04	UMCf	96.9 - 106.9	<1.22 UJ	<3.74 UJ	<1.05 UJ	<1.01 UJ	<1.37 UJ	<3.37 UJ	<1.05 UJ	<4.30 UJ	<4.30 UJ	<10.0 UJ	<1.57 UJ	<0.993 UJ	<1.74 UJ	<1.20 UJ	<1.25 UJ	<1.18 UJ	<1.95 UJ	<40.6 UJ	<1.01 UJ
U4-MW-09D	3/16/2023	N	EM07	UMCf	96.9 - 106.9	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-09DD	4/14/2022	N	BL02	UMCf	119.8 - 129.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-09DD	12/6/2022	N	EM04	UMCf	119.8 - 129.8	<0.122 UJ	<0.374 UJ	<0.105 UJ	<0.101 UJ	<0.137 UJ	<0.337 UJ	<0.105 UJ	<0.430 UJ	<0.430 UJ	<1.00 UJ	<0.157 UJ	<0.0993 UJ	<0.174 UJ	<0.120 UJ	<0.125 UJ	<0.118 UJ	<0.195 UJ	<4.06 UJ	<0.101 UJ
U4-MW-09DD	3/21/2023	N	EM07	UMCf	119.8 - 129.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-09I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	0.232 J</														

Table 5
Groundwater Analytical Results
Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						Dibromomet-hane	Dichlorodiflu- oromethane	Diisopropyl Ether (DIPE)	Ethyl Tert- Butyl Ether (ETBE)	Ethylbenzene	Hexachlorob- utadiene	Isopropylben- zene	m,p-Xylene (Sum of Isomers)	Methylene Chloride	Naphthalene	n- Butylbenzene	n- Propylbenzene	o-Xylene	p-Cymene (p- Isopropyltolu- ene)	sec- Butylben- zene	Styrene	tert-Amyl Methyl Ether	tert-Butyl Alcohol	tert-Butyl Methyl Ether (MTBE)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-MW-111	5/19/2023	FD	EM09	UMCf	77.0 - 87.0	<0.122 UJ	<0.374 UJ	<0.105 UJ	<0.101 UJ	<0.137 UJ	<0.337 UJ	<0.105 UJ	<0.430 UJ	3.38 J	<1.00 UJ	<0.157 UJ	<0.0993 UJ	<0.174 UJ	<0.120 UJ	<0.125 UJ	<0.118 UJ	<0.195 UJ	<4.06 UJ	<0.101 UJ
U4-MW-12D	4/15/2022	N	BL02	UMCf	97.1 - 107.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.639 J	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12D	9/27/2022	N	EM01	UMCf	97.1 - 107.1	<2.44	<7.48	<2.10	<2.02	<2.74	<6.74	<2.10	<8.60	<8.60	<20.0	<3.14	<1.99	<3.48	<2.40	<2.50	<2.36	<3.90	<81.2	<2.02
U4-MW-12D	10/12/2022	N	EM02	UMCf	97.1 - 107.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12D	11/2/2022	N	EM03	UMCf	97.1 - 107.1	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	<4.30	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-12D	12/7/2022	N	EM04	UMCf	97.1 - 107.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.31 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12D	1/12/2023	N	EM05	UMCf	97.1 - 107.1	<12.2	<37.4	<10.5	<10.1	<13.7	<33.7	<10.5	<43.0	<43.0	<100	<15.7	<9.93	<17.4	<12.0	<12.5	<11.8	<19.5	<406	<10.1
U4-MW-12D	2/15/2023	N	EM06	UMCf	97.1 - 107.1	<12.2	<37.4	<10.5	<10.1	<13.7	<33.7	<10.5	<43.0	<43.0	<100 UJ	<15.7	<9.93	<17.4	<12.0	<12.5	<11.8	<19.5 UJ	<406	<10.1
U4-MW-12D	3/14/2023	N	EM07	UMCf	97.1 - 107.1	<6.10	<18.7	<5.25	<5.05	<6.85	<16.9	<5.25	<21.5	<21.5	<50.0	<7.85	<4.97	<8.70	<6.00	<6.25	<5.90	<9.75	<203	<5.05
U4-MW-12D	4/17/2023	N	EM08	UMCf	97.1 - 107.1	<0.610 UJ	<1.87 UJ	<0.525 UJ	<0.505 UJ	<0.685 UJ	<1.69 UJ	<0.525 UJ	<2.15 UJ	<2.15 UJ	<5.00 UJ	<0.785 UJ	<0.497 UJ	<0.870 UJ	<0.600 UJ	<0.625 UJ	<0.590 UJ	<0.975 UJ	<20.3 UJ	<0.505 UJ
U4-MW-12D	5/17/2023	N	EM09	UMCf	97.1 - 107.1	<12.2	<37.4	<10.5	<10.1	<13.7	<33.7	<10.5	<43.0	<43.0	<100	<15.7	<9.93	<17.4	<12.0	<12.5	<11.8	<19.5	<406	<10.1
U4-MW-12I	4/14/2022	N	BL02	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	5.31	<0.101
U4-MW-12I	4/14/2022	FD	BL02	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	9/27/2022	N	EM01	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118 UJ	<0.195	<4.06	<0.101
U4-MW-12I	10/12/2022	N	EM02	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	11/2/2022	N	EM03	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.52 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	12/7/2022	N	EM04	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	4.69 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	12/7/2022	FD	EM04	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	4.62 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	1/13/2023	N	EM05	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.37 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	2/15/2023	N	EM06	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	3/13/2023	N	EM07	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-12I	4/17/2023	N	EM08	UMCf	76.8 - 86.8	<0.122 UJ	<0.374 UJ	<0.105 UJ	<0.101 UJ	<0.137 UJ	<0.337 UJ	<0.105 UJ	<0.430 UJ	<0.430 UJ	<1.00 UJ	<0.157 UJ	<0.0993 UJ	<0.174 UJ	<0.120 UJ	<0.125 UJ	<0.118 UJ	<0.195 UJ	<4.06 UJ	<0.101 UJ
U4-MW-12I	5/17/2023	N	EM09	UMCf	76.8 - 86.8	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.17 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13D	4/14/2022	N	BL02	UMCf	98.2 - 108.2	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	7.16	<0.101
U4-MW-13D	9/28/2022	N	EM01	UMCf	98.2 - 108.2	<1.22	<3.74	<1.05	<1.01	<1.37	<3.37	<1.05	<4.30	5.02 J	<10.0	<1.57	<0.993	<1.74	<1.20	<1.25	<1.18	<1.95	<40.6	<1.01
U4-MW-13D	10/11/2022	N	EM02	UMCf	98.2 - 108.2	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.543 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13D	11/3/2022	N	EM03	UMCf	98.2 - 108.2	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.508 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13D	12/7/2022	N	EM04	UMCf	98.2 - 108.2	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.439 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13D	1/12/2023	N	EM05	UMCf	98.2 - 108.2	<2.44	<7.48	<2.10	<2.02	<2.74	<6.74	<2.10	<8.60	<8.60	<20.0	<3.14	<1.99	<3.48	<2.40	<2.50	<2.36	<3.90	<81.2	<2.02
U4-MW-13D	2/15/2023	N	EM06	UMCf	98.2 - 108.2	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195 UJ	<4.06	<0.101
U4-MW-13D	3/17/2023	N	EM07	UMCf	98.2 - 108.2	<2.44	<7.48	<2.10	<2.02	<2.74	<6.74	<2.10	<8.60	<8.60	<20.0 UJ	<3.14	<1.99	<3.48	<2.40	<2.50	<2.36	<3.90	<81.2	<2.02
U4-MW-13D	4/18/2023	N	EM08	UMCf	98.2 - 108.2	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13D	5/17/2023	N	EM09	UMCf	98.2 - 108.2	<2.44	<7.48	<2.10	<2.02	<2.74	<6.74	<2.10	<8.60	<8.60	<20.0	<3.14	<1.99	<3.48	<2.40	<2.50	<2.36	<3.90	<81.2	<2.02
U4-MW-13I	4/14/2022	N	BL02	UMCf	77.1 - 87.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	4.13 J	<0.101
U4-MW-13I	9/28/2022	N	EM01	UMCf	77.1 - 87.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	2.01 J	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13I	10/10/2022	N	EM02	UMCf	77.1 - 87.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13I	11/3/2022	N	EM03	UMCf	77.1 - 87.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.573 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13I	12/6/2022	N	EM04	UMCf	77.1 - 87.1	<0.610 UJ	<1.87 UJ	<0.525 UJ	<0.505 UJ	<0.685 UJ	<1.69 UJ	<0.525 UJ	<2.15 UJ	7.70 J	<5.00 UJ	<0.785 UJ	<0.497 UJ	<0.870 UJ	<0.600 UJ	<0.625 UJ	<0.590 UJ	<0.975 UJ	<20.3 UJ	<0.505 UJ
U4-MW-13I	1/12/2023	N	EM05	UMCf	77.1 - 87.1	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	1.03 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-MW-13I	2/14/2023	N	EM06	UMCf	77.1 - 87.1	<0.610	<1.87	<0.525	<0.505	<0.685	<1.69	<0.525	<2.15	<2.15	<5.00	<0								

Table 5
Groundwater Analytical Results
 Unit 4 Source Area Bioremediation Treatability Study

Well	Sample Date	QC Type	Event	Screened Lithology	Screened Interval	Volatile Organic Compounds by SW8260B																		
						Dibromomet-hane	Dichlorodiflu- oromethane	Diisopropyl Ether (DIPE)	Ethyl Tert- Butyl Ether (ETBE)	Ethylbenzene	Hexachlorob- utadiene	Isopropylben- zene	m,p-Xylene (Sum of Isomers)	Methylene Chloride	Naphthalene	n- Butylbenzene	n- Propylbenzene	o-Xylene	p-Cymene (p- Isopropyltolu- ene)	sec- Butylben- zene	Styrene	tert-Amyl Methyl Ether	tert-Butyl Alcohol	tert-Butyl Methyl Ether (MTBE)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
U4-T3	12/6/2022	N	EM04	N/A	N/A	<2.44 UJ	<7.48 UJ	<2.10 UJ	<2.02 UJ	<2.74 UJ	<6.74 UJ	<2.10 UJ	<8.60 UJ	<8.60 UJ	<20.0 UJ	<3.14 UJ	<1.99 UJ	<3.48 UJ	<2.40 UJ	<2.50 UJ	<2.36 UJ	<3.90 UJ	<81.2 UJ	<2.02 UJ
U4-T3	1/9/2023	N	EM05	N/A	N/A	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	0.864 J	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-T3	2/13/2023	N	EM06	N/A	N/A	<12.2	<37.4	<10.5	<10.1	<13.7	<33.7	<10.5	<43.0	<43.0	<100	<15.7	<9.93	<17.4	<12.0	<12.5	<11.8	<19.5	<406	<10.1
U4-T3	3/13/2023	N	EM07	N/A	N/A	<3.05	<9.35	<2.63	<2.53	<3.43	<8.43	<2.63	<10.7	<10.7	<25.0	<3.93	<2.48	<4.35	<3.00	<3.13	<2.95	<4.88	<102	<2.53
U4-T3	4/19/2023	N	EM08	N/A	N/A	<0.122	<0.374	<0.105	<0.101	<0.137	<0.337	<0.105	<0.430	<0.430	<1.00	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101
U4-T3	5/18/2023	N	EM09	N/A	N/A	<0.122	<0.374	<0.105	0.962 J	<0.137	<0.337	<0.105	<0.430	1.96 J	<1.00 UJ	<0.157	<0.0993	<0.174	<0.120	<0.125	<0.118	<0.195	<4.06	<0.101

Notes:
 FD - Field duplicate
 E - Field instrument error.
 J - The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
 J- - The result is an estimated quantity, but the result may be biased low.
 J+ - The result is an estimated quantity, but the result may be biased high.
 mg/L - milligrams per liter
 µg/L - micrograms per liter
 N - Normal field sample
 R - The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
 UMCf- Upper Muddy Creek Formation
 < - The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
 -- Not tested.

