

# TECHNICAL MEMORANDUM

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**To:** Nevada Environmental Response Trust

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

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**From:** Dana Grady

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**Date:** October 25, 2022

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**Subject:** Seep Well Field Area Bioremediation Treatability Study Quarterly Progress Report

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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 from July to September 2022 toward successfully implementing the Seep Well Field (SWF) Area Bioremediation Treatability Study.

## Task Progress Update: July 2022 – September 2022

### Task M11 – Seep Well Field Area Bioremediation Treatability Study (SWFTS)

- Task Leader – Dana Grady
- Current Status
  - As presented in Treatability/Pilot Study Modification No. 6, the ongoing efforts related to the SWF Area Bioremediation Treatability Study focus on refinement of operations and maintenance techniques (O&M) associated with long-term implementation of in situ bioremediation (ISB) in the vicinity of the SWF and Las Vegas Wash. Figure 1 provides a map of the injection and monitoring well locations for reference. Well construction details and a summary of the groundwater analytical results for perchlorate, chlorate, nitrate, total organic carbon (TOC), and dissolved oxygen through June 2022 are provided in Tables 1 and 2, respectively.
  - O&M of SWF Area Bioremediation Treatability Study:
    - Injection Activities – No injection activities were performed this quarterly reporting period. The most recent (eighth) injection event was performed in November 2021 and was summarized in the October – December 2021 Quarterly Progress Report.
    - Maintenance Activities – No maintenance activities were performed during this quarterly reporting period. The most recent maintenance event was performed in February 2021 and was summarized in the January – March 2021 Quarterly Progress Report.
  - Performance of the SWF Area Bioremediation Treatability Study:
    - Groundwater perchlorate concentration reductions compared to baseline conditions continue to be observed at most monitoring wells within the treatability study area. During this quarterly reporting period, groundwater sampling activities were performed from

September 13 – September 15, 2022. Groundwater samples could not be collected from four monitoring wells, namely, SWFTS-MW05A/B, SWFTS-MW08A, and SWFTS-MW11 due to access restrictions related to the Cadence Sports Park construction activities. Groundwater analytical results from this most recent sampling event will be provided in future quarterly progress reports when the data are received from the laboratory. During this quarterly reporting period, results were received from the June 2022 groundwater sampling event (performed from June 21 – June 23, 2022). Results from the June 2022 groundwater sampling event are summarized below.

- Although upgradient groundwater concentrations have fluctuated during the treatability study, laboratory results indicated that groundwater samples collected from upgradient monitoring wells SWFTS-MW07A/B and SWFTS-MW11 exhibited the highest perchlorate concentrations since the start of the treatability study during the December 2021 sampling event. The June 2022 perchlorate concentrations in groundwater samples collected from these upgradient locations were slightly lower than the December 2021 sampling event but remained elevated above baseline concentrations and ranged from 15,000 to 19,000  $\mu\text{g/L}$ . Note that no groundwater sample was collected from upgradient well SWFTS-MW08A during the June 2022 sampling event due to access restrictions related to the Cadence Sports Park construction activities. Groundwater concentrations in samples collected from upgradient monitoring wells will continue to be evaluated for the remainder of the treatability study to evaluate long-term concentration trends and large fluctuations, which will be discussed in detail in the annual progress reports.
- Noteworthy findings from the four monitoring wells located between the injection well transects are described below:
  - Following the eighth injection event, the groundwater sample collected in December 2021 from monitoring well SWFTS-MW14 indicated that perchlorate concentrations decreased significantly to 670  $\mu\text{g/L}$ , which represented a reduction of 97% from the baseline concentration. Concentrations of perchlorate at this location have since increased to 4,800  $\mu\text{g/L}$  and 6,400  $\mu\text{g/L}$  in the March 2022 and June 2022 sampling events, respectively. This still represents a 72 percent reduction compared to the baseline concentration, but is a notable increase when compared to long-term concentration trends in groundwater samples collected from this location, likely due to the seven months that have elapsed since the eighth and final injection event. A detailed evaluation of hydraulic gradients and water level fluctuations in this vicinity, which have previously been noted to contribute to elevated perchlorate concentrations, will be provided in the forthcoming annual progress report.
  - As presented in the previous quarterly progress reports, groundwater samples collected from SWFTS-MW15 have indicated a generally slow response to the addition of emulsified vegetable oil. This may potentially be due to preferential flow pathways for carbon substrate migration, heterogeneity of the subsurface creating a potential dead zone, perchlorate upflux from the UMCf, and/or paleochannel effects. However, during the June 2022 groundwater sampling event, the groundwater perchlorate concentration was 1,400  $\mu\text{g/L}$ , which is 91 percent lower than

the baseline concentration of 15,000  $\mu\text{g/L}$ . Perchlorate fluctuations in groundwater samples collected from this monitoring well will continue to be evaluated.

- Following the eighth injection event, perchlorate concentrations in groundwater samples collected from SWFTS-MW02 have been as low as 600  $\mu\text{g/L}$ . However, the perchlorate groundwater concentration increased during the June 2022 sampling event to 14,000  $\mu\text{g/L}$ . The increase in perchlorate concentration in groundwater from this well correlates with increasing chlorate and nitrate concentrations and is likely due to upgradient increasing concentrations similar to the increases observed in upgradient and cross gradient areas located outside of the treatability study area combined with changing and gradually unfavorable geochemical conditions due to the length of time since the last injection event.
- The concentration of perchlorate in groundwater from SWFTS-MW16 has further decreased from 1,800  $\mu\text{g/L}$  to 740  $\mu\text{g/L}$  between the March 2022 and June 2022 sampling events, which represents a 91 percent decrease compared to its baseline concentration.
- Groundwater samples collected from 10 of the 14 downgradient monitoring wells sampled during the June 2022 sampling event indicated perchlorate concentration reductions when compared to baseline concentrations. Noteworthy findings are described below:
  - Perchlorate concentrations in groundwater samples collected from downgradient monitoring wells PC-91 and SWFTS-MW20 continued to show significant reductions compared to baseline conditions, with perchlorate concentrations in groundwater samples measuring 0.82  $\mu\text{g/L}$  and < 0.31  $\mu\text{g/L}$ , respectively, in the June 2022 sampling event (representing reductions of greater than 99 percent when compared to baseline).
  - Several monitoring wells associated with the paleochannel and screened in sediments with high hydraulic conductivities (PC-94, SWFTS-MW09A/B, SWFTS-MW10A, and SWFTS-MW25) continued to indicate increased perchlorate concentrations ranging from 11,000  $\mu\text{g/L}$  to 16,000  $\mu\text{g/L}$  during the June 2022 sampling event. Results observed in groundwater at these monitoring wells likely reflect the increased concentrations observed upgradient in the vicinity of the paleochannel, lower residence time in higher conductivity sediments, and hydraulic changes (as previously described). These wells will continue to be sampled and results evaluated for future trends.
- Chlorate concentrations in groundwater follow trends similar to perchlorate, with greater than 75% reduction in chlorate concentrations in groundwater samples collected from 10 monitoring wells (located between the injection well transects and downgradient) during the June 2022 sampling event when compared to baseline.
- Nitrate concentrations in groundwater were also evaluated since it is often a competing electron acceptor and carbon substrate consumer. When nitrate concentrations increase over time following discontinuation of injections, this could be the first signal for depletion of carbon substrates. Nitrate concentrations

in groundwater were generally greater than 10 milligrams per liter (mg/L) during the baseline sampling event. During the June 2022 sampling event, groundwater samples collected from seven downgradient monitoring wells exhibited nitrate concentrations of less than 5 mg/L, which generally represents a concentration reduction of at least 60% or greater compared to baseline.

- Groundwater perchlorate concentrations in upgradient well SWFTS-MW12 continue to remain reduced compared to baseline concentrations. As detailed during previous progress and annual reports, this well is located approximately 150 feet upgradient from the injection wells and is the well from which most of the distribution water was extracted during the fifth injection event. Modifications have been made in subsequent injection events to decrease the volume of groundwater extracted from SWFTS-MW12 compared to previous injection events to potentially reduce the effect of groundwater extraction during injections on concentrations at SWFTS-MW12. Groundwater samples collected during the June 2022 sampling event indicate that perchlorate concentrations are gradually returning to baseline levels at this upgradient location, with concentrations increasing from 940 µg/L during the March 2022 sampling event to 2,500 µg/L during the June 2022 sampling event.
- Installation of Soil Borings – The 2019 NDEP-approved *SWF Area Bioremediation Treatability Study Results Report* recommended soil sampling prior to conclusion of the treatability study to evaluate and understand the transport phenomena associated with emulsified vegetable oil movement and influence in the aquifer. As a result, a total of 20 soil borings were installed upgradient, between, and downgradient from the injection well transects in August 2022 (as shown on Figure 2). Ten soil borings were advanced to the alluvium-UMCf contact (approximately 40 feet below ground surface within the treatability study area) and ten soil borings were advanced approximately five feet into the UMCf. Up to five soil samples were collected from each soil boring and analyzed for calcium, total organic carbon, volatile fatty acids, and/or microbial assays (perchlorate reductase and phospholipid fatty acids). Color, presence of a remnant emulsified vegetable oil, and olfactory sensing were also noted for each soil boring. The data will be fully evaluated and summarized in the 2022 Annual Progress Report. Preliminary noteworthy findings are summarized briefly below:
  - Calcium – The presence of calcium in the subsurface can be an advantage to on-going in situ bioremediation due to its pH buffering capacity, which can help to counter the acids present in the injected carbon substrate and produced by microorganisms. However, calcium can precipitate with oleate (a by-product of emulsified vegetable oil) and other groundwater anions, which could decrease the porosity in the subsurface. Calcium concentrations in soil ranged from 3,900 mg/kg to 170,000 mg/kg. In general, calcium concentrations increased with increasing depth, and all calcium concentrations in soil greater than 100,000 mg/kg were measured in the soil collected from the UMCf. Some of the highest calcium concentrations in soil collected from the alluvium were observed in the vicinity of SWFTS-IW13B, which is expected based on the more frequent well maintenance required at this injection well to maintain injectability.
  - Total Organic Carbon (TOC) – Soil results indicated low concentrations of TOC that were similar to or less than baseline concentrations, which likely indicates that the injected carbon substrate was utilized by native microorganisms during the ten months that elapsed between the final injection event in November 2021 and soil sample collection in August 2022.
  - Volatile Fatty Acids (VFAs) – The highest concentrations of remnant VFAs were observed in the shallow UMCf at SWFTS-BH11 and SWFTS-BH13, which are in the

vicinity of injection well SWFTS-IW13B. The three lower chain VFAs found at these locations were acetic acid, lactic acid, and propionic acid, which are common hydrolytic and fermented breakdown products of emulsified vegetable oil and are part of the microbially-mediated metabolic pathway during ISB. These results also indicate that some of the injectate may have moved into the shallow UMCf in the vicinity of SWFTS-IW13B.

- Microbial Analyses – Biomass population counts indicated a robust population ranging from 3.65E+05 to 1.75E+08 cells per gram of soil, with numbers typically increasing by an order of magnitude with depth. These microbial results are generally one to two orders of magnitude higher than baseline and indicate the robust presence of Proteobacteria, which have the ability to thrive, grow, and feed on a wide range of carbon substrates. These data point to the presence of a microbial population that does not appear to be deprived of available carbon substrate.
- Schedule and Progress Updates
  - This task remains on schedule. The next effectiveness monitoring event is planned for the fourth quarter of 2022.
  - Due to construction activities within the treatability study area associated with development of the Cadence Sports Park, and the terms of the access agreement between NERT and Basic Environmental Co. LLC (property owner), the SWF Treatability Study is anticipated to conclude in December 2022. Rather than complete a ninth injection event during the 2022 reporting period, the final year of the treatability study will be focused on groundwater monitoring to evaluate long-term concentration trends more than 8 months following injection operations. This will provide additional data that will be valuable for understanding the minimum treatment threshold, injection event frequency, and carbon substrate longevity.
- Health and Safety
  - There were no safety incidents related to Task M11 during the reporting period July through September 2022.

## CERTIFICATION

### Seep Well Field Area Bioremediation Treatability Study Quarterly Progress Report

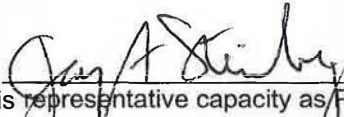
**Nevada Environmental Response Trust Site  
(Former Tronox LLC Site)  
Henderson, Nevada**

#### **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

**Signature:**  \_\_\_\_\_, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Not Individually, but Solely  
as President of the 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:** 10/25/22

## CERTIFICATION

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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 Seep Well Field Area Bioremediation Treatability Study Quarterly Progress Report.



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**David S. Wilson, CEM**

Principal Engineer

Tetra Tech, Inc.

Nevada CEM Certificate Number: 2385

Nevada CEM Expiration Date: September 19, 2024

October 25, 2022

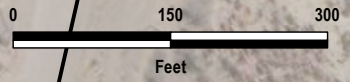
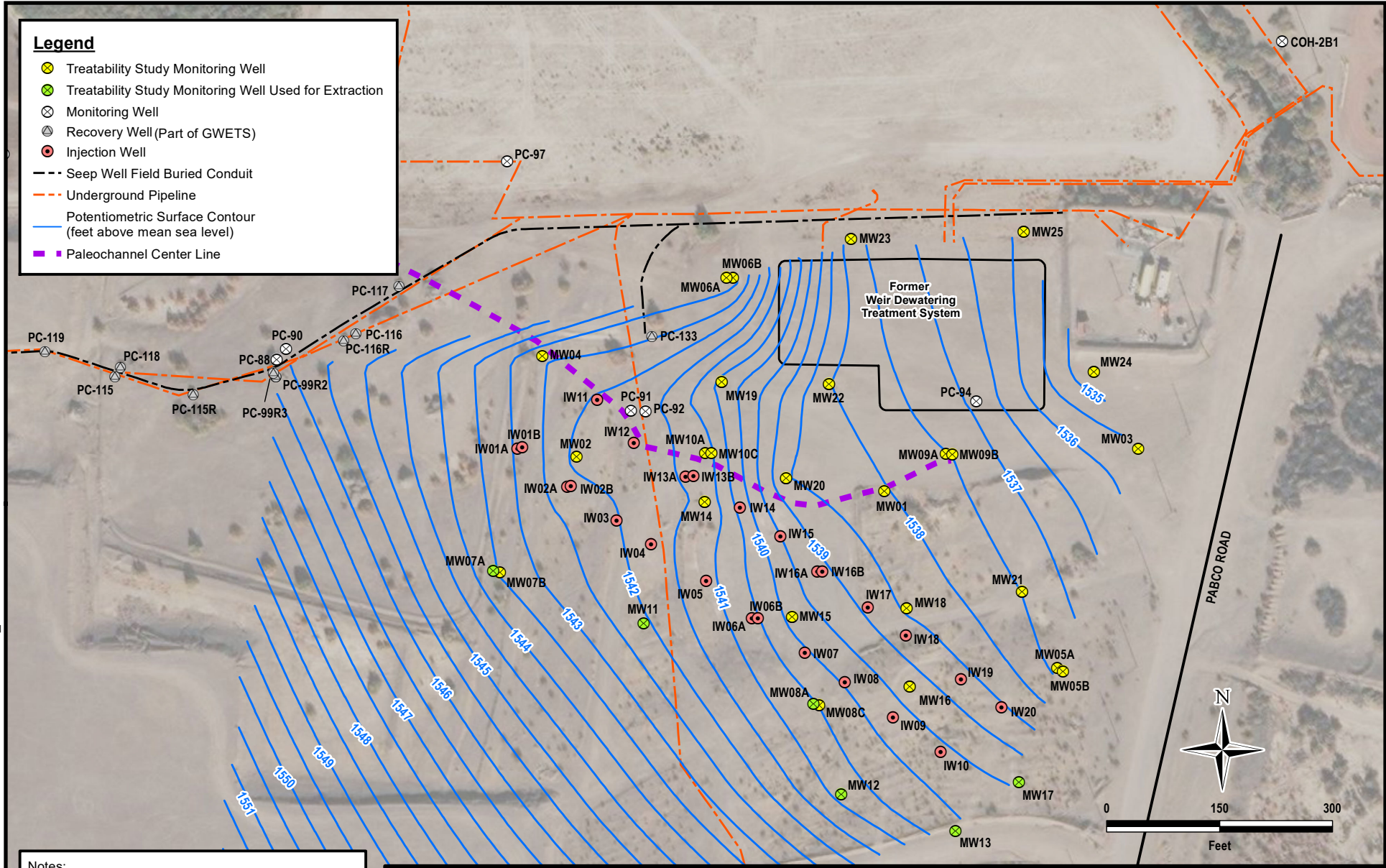
Date

## Figures



**Legend**

- ⊗ Treatability Study Monitoring Well
- ⊗ Treatability Study Monitoring Well Used for Extraction
- ⊗ Monitoring Well
- ⊗ Recovery Well (Part of GWETS)
- ⊗ Injection Well
- - - Seep Well Field Buried Conduit
- - - - - Underground Pipeline
- Potentiometric Surface Contour (feet above mean sea level)
- Paleochannel Center Line



- Notes:**
1. Field Test Area located within Parcel 161-31-101-002.
  2. The prefix 'SWTFS-' not shown for wells labeled as MW or IW. (MW03 = SWTFS-MW03)
  3. Groundwater potentiometric contours presented are based on water levels collected during the groundwater sampling event in December 2021.
  4. Imagery Source: Esri World Map, April 2022.

**Tt TETRA TECH**  
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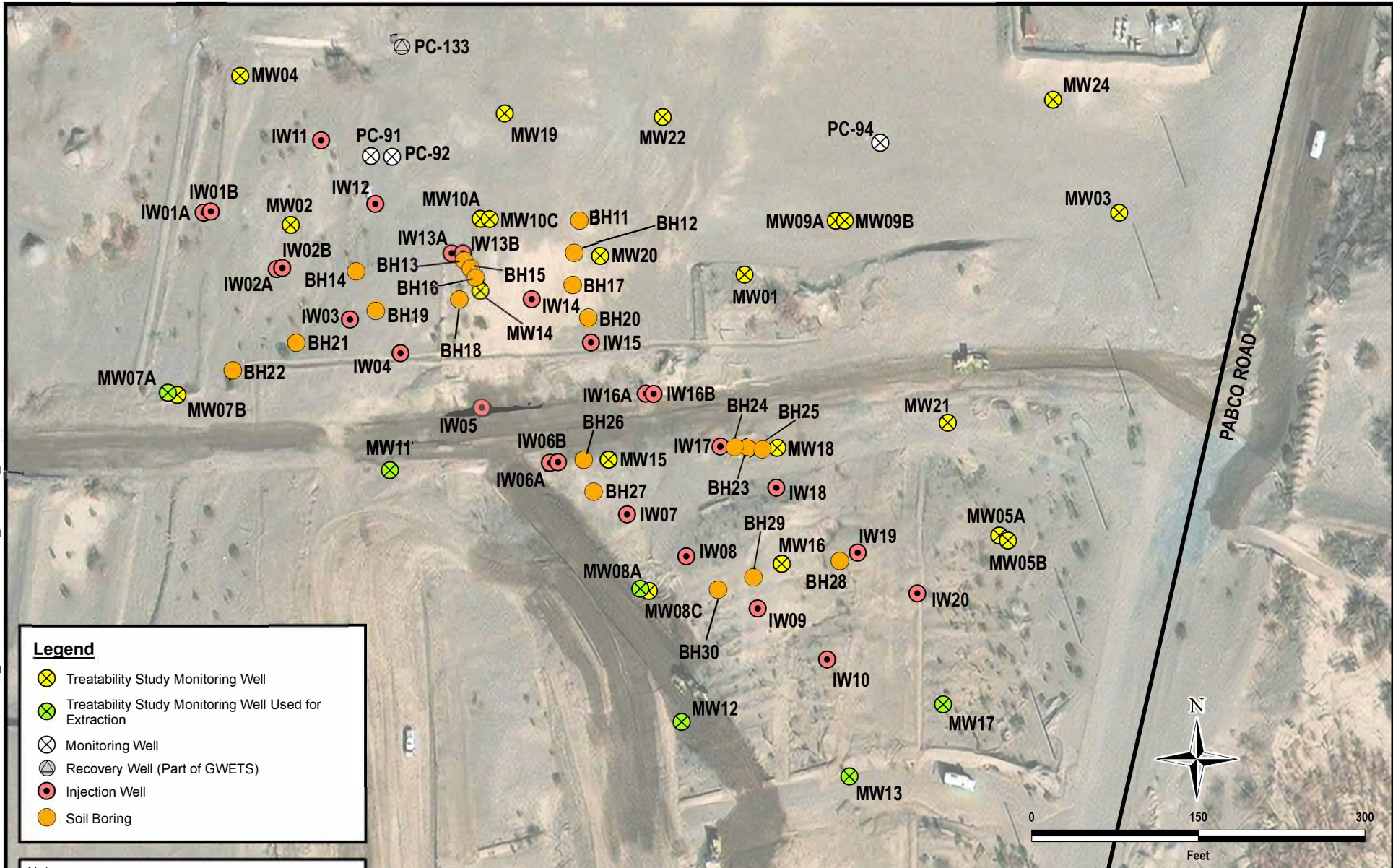
**NEVADA ENVIRONMENTAL RESPONSE TRUST**  
SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY  
QUARTERLY PROGRESS REPORT  
HENDERSON, NEVADA  
**TREATABILITY STUDY LAYOUT**

Project No.:	117-7502021-M11
Date:	MAY 06, 2022
Designed By:	ACC
Figure No.	<b>1</b>

\\TTS134FS1\GEO\UPVOL1\PROJECTS\DATA\NERT\GIS\M11\_2021\PROGRESSRPT



\\TTS134F51\GEOSUP\VOL1\PROJECTS\INERT\GIS\M11\_2020\PROGRESSRPT\_FIGURE2\_TSLAYOUT.MXD



**Legend**

- ⊗ Treatability Study Monitoring Well
- ⊗ Treatability Study Monitoring Well Used for Extraction
- ⊗ Monitoring Well
- ⊗ Recovery Well (Part of GWETS)
- Injection Well
- Soil Boring

**Notes:**

1. Field Test Area located within Parcel 161-31-101-002.
2. The prefix 'SWTFS-' not shown for wells labeled as MW, IW, or BH. (MW03 = SWTFS-MW03)
3. SWTFS-BH01 through SWTFS-BH10 (not shown) were installed as part of the pre-design investigation for the treatability study in February 2017.
4. Imagery Source: Esri World Map.

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**NEVADA ENVIRONMENTAL RESPONSE TRUST**

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY  
QUARTERLY PROGRESS REPORT  
HENDERSON, NEVADA

**AUGUST 2022 SOIL BORING INVESTIGATION**

Project No.:	117-7502018
Date:	OCTOBER 18, 2022
Designed By:	DS
Figure No.	<b>2</b>

## Tables

**Table 1**  
**Well Construction Details**  
 Seep Well Field Area Bioremediation Treatability Study

Monitoring Well/Borehole ID	Screened Lithology	Northing	Easting	Ground Surface Elevation	Top of Casing Elevation	Depth to Water <sup>1</sup>	Nominal Screen Length	Slot Size	Filter Pack Gradation	Well Diameter	Borehole Diameter	Borehole Total Depth	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl	feet bTOC	feet	inches		inches	inches	feet bgs	feet bgs	feet bgs	feet bgs
<b>Pre-Design Soil Boring and Monitoring Well Installation (February-March 2017)</b>															
SWFTS-BH01	-	26732831.60	831699.18	1556.73	-	-	-	-	-	-	6	43.0	-	-	-
SWFTS-BH02	-	26732742.32	831885.75	1562.47	-	-	-	-	-	-	8	50.0	-	-	-
SWFTS-BH03	-	26732633.19	832210.82	1562.75	-	-	-	-	-	-	6	54.0	-	-	-
SWFTS-BH04	-	26732816.71	832065.23	1554.68	-	-	-	-	-	-	6	45.0	-	-	-
SWFTS-BH05	-	26732859.98	832182.99	1553.48	-	-	-	-	-	-	6	40.0	-	-	-
SWFTS-BH06	-	26732914.77	832076.76	1554.08	-	-	-	-	-	-	6	15.0	-	-	-
SWFTS-BH07	-	26732976.44	831954.58	1551.37	-	-	-	-	-	-	6	45.0	-	-	-
SWFTS-BH08	-	26733066.02	832060.99	1550.79	-	-	-	-	-	-	8	53.0	-	-	-
SWFTS-BH09	-	26733156.54	832268.66	1546.93	-	-	-	-	-	-	6	37.0	-	-	-
SWFTS-BH10	-	26733223.18	832077.72	1548.28	-	-	-	-	-	-	6	52.0	-	-	-
SWFTS-MW01	Alluvium	26733003.73	832067.12	1552.68	1552.39	15.25	15	0.020	#3	2	6	43.0	39.4	38.9	24.2
SWFTS-MW02	Alluvium	26733048.86	831657.82	1553.90	1553.63	13.80	15	0.020	#3	2	6	41.0	33.5	33.1	18.4
SWFTS-MW03	Alluvium	26733059.49	832404.39	1549.26	1549.02	14.15	15	0.020	#3	2	6	60.0	42.2	42.1	27.2
SWFTS-MW04	Alluvium	26733183.35	831612.29	1552.16	1551.82	11.15	15	0.020	#3	2	6	45.0	40.9	40.4	25.8
SWFTS-MW05A	Alluvium	26732768.53	832296.89	1555.41	1554.91	18.35	10	0.020	#3	2	6	30.0	29.4	29.3	19.3
SWFTS-MW05B	Alluvium	26732764.09	832304.67	1555.41	1554.86	18.28	10	0.020	#3	2	6	44.0	42.5	42.0	32.3
SWFTS-MW06A	Alluvium	26733287.15	831857.05	1548.86	1548.41	6.43	10	0.020	#3	2	6	22.5	21.9	21.4	11.8
SWFTS-MW06B	Alluvium	26733286.65	831865.75	1549.03	1548.59	6.70	10	0.020	#3	2	6	40.0	36.0	35.5	25.9
SWFTS-MW07A	Alluvium	26732895.65	831555.99	1555.90	1555.64	14.25	15	0.020	#3	4	8	30.5	30.1	29.5	15.0
SWFTS-MW07B	Alluvium	26732897.49	831547.35	1555.90	1555.53	13.95	5	0.020	#3	2	6	55.0	38.9	38.3	33.8
SWFTS-MW08A	Alluvium	26732720.57	831972.55	1556.50	1556.03	17.26	15	0.020	#3	4	8	36.0	35.3	34.8	20.2
SWFTS-MW08C	UMCf	26732718.60	831980.38	1556.56	1556.18	18.34	20	0.020	#3	2	6	70.2	70.0	69.5	49.9
SWFTS-MW09A	Alluvium	26733052.94	832148.65	1551.61	1551.16	14.50	10	0.020	#3	4	8	30.0	29.4	28.9	19.3
SWFTS-MW09B	Alluvium	26733052.55	832157.19	1551.74	1551.27	14.60	5	0.020	#3	2	6	55.5	39.5	39.0	34.4
SWFTS-MW10A	Alluvium	26733054.00	831828.76	1551.92	1551.61	12.23	15	0.020	#3	4	8	36.0	35.5	35.0	20.4
SWFTS-MW10C	UMCf	26733054.15	831836.75	1551.85	1551.61	9.99	20	0.020	#3	2	6	64.0	63.6	63.1	43.5
<b>Injection and Monitoring Well Network Installation (May-July 2017)</b>															
SWFTS-IW01A	Alluvium	26733059.73	831579.19	1553.61	1553.32	13.00	10	0.020	#3	2	8	27.0	26.0	25.6	15.8
SWFTS-IW01B	Alluvium	26733061.20	831585.84	1553.49	1553.07	13.06	10	0.020	#3	2	8	39.0	37.1	36.7	26.9
SWFTS-IW02A	Alluvium	26733009.17	831645.08	1554.49	1554.08	14.23	10	0.020	#3	2	8	29.0	27.0	26.6	16.8
SWFTS-IW02B	Alluvium	26733010.07	831650.33	1554.42	1554.13	14.27	10	0.020	#3	2	8	37.0	36.5	36.1	26.3
SWFTS-IW03	Alluvium	26732964.70	831711.03	1554.71	1554.46	14.80	20	0.020	#3	2	8	38.0	37.0	36.6	16.8
SWFTS-IW04	Alluvium	26732932.97	831756.77	1554.45	1554.04	14.46	15	0.020	#3	2	8	36.5	35.0	34.6	19.8
SWFTS-IW05	Alluvium	26732883.80	831829.89	1552.17	1551.91	12.68	20	0.020	#3	2	8	35.5	34.8	34.4	14.6
SWFTS-IW06A	Alluvium	26732833.83	831891.31	1553.09	1552.79	14.15	10	0.020	#3	2	8	29.0	27.0	26.6	16.8
SWFTS-IW06B	Alluvium	26732834.30	831898.57	1552.81	1552.47	13.85	5	0.020	#3	2	8	35.0	34.0	33.6	28.8
SWFTS-IW07	Alluvium	26732787.99	831961.16	1554.76	1554.48	16.00	20	0.020	#3	2	8	38.0	37.5	37.1	17.3
SWFTS-IW08	Alluvium	26732749.42	832014.32	1557.84	1557.47	19.60	20	0.020	#3	2	8	39.0	37.7	37.3	17.5
SWFTS-IW09	Alluvium	26732702.88	832078.62	1562.81	1562.59	24.38	20	0.020	#3	2	8	47.4	46.8	46.4	26.6
SWFTS-IW10	Alluvium	26732656.78	832141.67	1562.43	1561.95	23.84	20	0.020	#3	2	8	47.6	47.0	46.6	26.8
SWFTS-IW11	Alluvium	26733124.81	831685.02	1552.61	1552.31	12.45	20	0.020	#3	2	8	39.0	37.5	37.1	17.3
SWFTS-IW12	Alluvium	26733067.66	831734.08	1552.94	1552.70	13.10	25	0.020	#3	2	8	41.0	39.5	39.1	14.3
SWFTS-IW13A	Alluvium	26733022.97	831802.64	1552.73	1552.38	13.03	10	0.020	#3	2	8	28.0	26.0	25.6	15.8
SWFTS-IW13B	Alluvium	26733022.94	831812.84	1552.42	1552.12	12.75	10	0.020	#3	2	8	38.8	38.0	37.6	27.8
SWFTS-IW14	Alluvium	26732981.31	831875.23	1551.69	1551.36	12.65	20	0.020	#3	2	8	37.0	36.5	36.1	16.2
SWFTS-IW15	Alluvium	26732942.89	831928.63	1551.17	1550.76	12.66	20	0.020	#3	2	8	37.0	36.6	36.2	16.4
SWFTS-IW16A	Alluvium	26732896.44	831977.77	1553.06	1552.72	14.77	10	0.020	#3	2	8	29.3	27.5	27.1	17.3
SWFTS-IW16B	Alluvium	26732895.94	831984.74	1552.88	1552.43	14.50	10	0.020	#3	2	8	37.0	36.7	36.3	26.5
SWFTS-IW17	Alluvium	26732849.16	832045.01	1554.57	1554.01	16.22	20	0.020	#3	2	8	38.0	37.5	37.1	17.3
SWFTS-IW18	Alluvium	26732811.24	832095.47	1555.71	1555.47	17.84	20	0.020	#3	2	8	39.0	38.5	38.1	18.1
SWFTS-IW19	Alluvium	26732753.36	832168.69	1560.08	1560.06	22.55	20	0.020	#3	2	8	45.0	44.5	44.1	24.3
SWFTS-IW20	Alluvium	26732716.42	832222.65	1563.11	1562.85	25.30	20	0.020	#3	2	8	52.0	51.0	50.6	30.8

**Table 1**  
**Well Construction Details**  
 Seep Well Field Area Bioremediation Treatability Study

Monitoring Well/Borehole ID	Screened Lithology	Northing	Easting	Ground Surface Elevation	Top of Casing Elevation	Depth to Water <sup>1</sup>	Nominal Screen Length	Slot Size	Filter Pack Gradation	Well Diameter	Borehole Diameter	Borehole Total Depth	Well Total Depth	Bottom of Screen	Top of Screen
				feet amsl	feet amsl	feet bTOC	feet	inches		inches	inches	feet bgs	feet bgs	feet bgs	feet bgs
SWFTS-MW11	Alluvium	26732827.46	831747.30	1558.68	1558.10	18.44	25	0.020	#3	4	10	41.7	40.0	39.6	14.8
SWFTS-MW12	Alluvium	26732600.73	832009.72	1559.00	1558.66	19.65	25	0.020	#3	4	10	44.0	41.0	40.6	15.8
SWFTS-MW13	Alluvium	26732551.81	832161.20	1563.57	1563.20	24.65	30	0.020	#3	4	10	50.0	48.0	47.6	17.8
SWFTS-MW14	Alluvium	26732989.39	831828.48	1552.20	1551.89	12.52	20	0.020	#3	2	8	38.4	37.0	36.6	16.8
SWFTS-MW15	Alluvium	26732836.67	831944.36	1553.64	1553.34	15.00	20	0.020	#3	2	8	36.5	35.0	34.6	14.8
SWFTS-MW16	Alluvium	26732742.78	832100.29	1561.83	1561.45	23.50	20	0.020	#3	2	8	44.3	42.0	41.6	21.8
SWFTS-MW17	Alluvium	26732616.54	832245.85	1565.87	1565.56	27.53	30	0.020	#3	4	10	54.5	53.0	52.6	22.8
SWFTS-MW18	Alluvium	26732847.58	832096.15	1554.59	1554.03	16.55	20	0.020	#3	2	8	38.0	37.0	36.6	16.8
SWFTS-MW19	Alluvium	26733148.90	831850.68	1550.57	1550.37	11.48	20	0.020	#3	2	8	33.0	31.5	31.1	11.3
SWFTS-MW20	Alluvium	26733020.92	831936.43	1551.63	1551.22	13.62	25	0.020	#3	2	8	39.0	38.0	37.6	12.8
SWFTS-MW21	Alluvium	26732869.95	832249.88	1553.56	1553.30	16.60	25	0.020	#3	2	8	41.0	40.0	39.6	14.8
SWFTS-MW22	Alluvium	26733146.27	831993.33	1549.55	1549.15	12.82	20	0.020	#3	2	8	33.0	32.0	31.6	11.8
SWFTS-MW23	Alluvium	26733338.19	832022.56	1547.58	1550.16	13.38	20	0.020	#3	2	8	36.8	34.0	33.6	13.8
SWFTS-MW24	Alluvium	26733161.74	832345.44	1547.78	1547.49	13.86	25	0.020	#3	2	8	39.0	38.0	37.6	12.8
SWFTS-MW25	Alluvium	26733347.67	832252.13	1546.73	1546.37	11.20	30	0.020	#3	2	8	44.0	43.0	42.6	12.8

Notes:

amsl - above mean sea level

bTOC - below top of casing

bgs - below ground surface

UMCf - Upper Muddy Creek Formation

1. Baseline depth to water measurements were collected in July 2017.



**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
COH-2B1	8/9/2017	COH-2B1-BL02	N	BL02	1,700	1,800	0.71	970	2.3	1.14
COH-2B1	9/22/2017	SWFTS-COH-2B1-EM01	N	EM01	1,700	1,600	0.53 J	990	2.7	1.19
COH-2B1	10/5/2017	SWFTS-COH-2B1-EM03	N	EM03	1,800	1,400	0.60	940	2.6	0.14
COH-2B1	10/12/2017	SWFTS-COH-2B1-EM04	N	EM04	1,800	1,600	0.58	1,000	2.3	7.92
COH-2B1	10/26/2017	SWFTS-COH-2B1-EM05	N	EM05	1,900	1,400	0.42 J	1,000	2.6	0.40
COH-2B1	12/14/2017	COH-2B1-EM07	N	EM07	1,700	5,000	0.40	950	2.6	-0.06 E
COH-2B1	2/22/2018	COH-2B1-EM08	N	EM08	1,500	1,400	0.57 J	1,100	2.9	0.34
COH-2B1	3/29/2018	COH-2B1-EM09	N	EM09	1,800	1,200	<0.55	940	2.3	0.41
COH-2B1	5/2/2018	COH-2B1-EM10	N	EM10	1,700	1,200	0.45	910	11	0.00
COH-2B1	7/10/2018	COH-2B1-EM11	N	EM11	3,000	2,400	1.4	1,100	1.9	0.47
COH-2B1	8/16/2018	COH-2B1-EM13	N	EM13	1,500	980	0.53 J	940	2.6	0.50
COH-2B1	9/11/2018	COH-2B1-EM14	N	EM14	2,800	3,800	1.5	1,300	1.9	2.18
COH-2B1	10/11/2018	COH-2B1-EM15	N	EM15	1,700	1,000	0.54 J	960	2.7	2.79
COH-2B1	1/3/2019	COH-2B1-EM16	N	EM16	3,200	3,800	2.5	1,300	2.0	0.97
COH-2B1	2/25/2019	COH-2B1-EM17	N	EM17	3,300	4,100	2.1	1,300	2.2	0.00
COH-2B1	4/9/2019	COH-2B1-EM18	N	EM18	1,800	570	0.65 J-	930	2.5	0.56
COH-2B1	5/22/2019	COH-2B1-EM19	N	EM19	1,700	520	0.57	960	2.4	0.12
COH-2B1	7/1/2019	COH-2B1-EM20	N	EM20	1,800	680	0.59	920	2.7	0.37
COH-2B1	8/15/2019	COH-2B1-EM21	N	EM21	1,900	660	0.68	980	2.7	0.43
COH-2B1	11/4/2019	COH-2B1-EM22	N	EM22	2,600	3,200	1.6	1,300	1.9	0.61
COH-2B1	12/18/2019	COH-2B1-EM23	N	EM23	1,800	610 J-	0.45	900	2.2	0.91
COH-2B1	1/28/2020	COH-2B1-EM24	N	EM24	3,200	9,200	4.4	2,100 J+	2.2	5.11
COH-2B1	3/9/2020	COH-2B1-EM25	N	EM25	5,500	11,000	2.4	1,400	2.1 J+	2.35
COH-2B1	4/27/2020	COH-2B1-EM26	N	EM26	2,000	810	0.68	870	2.1	3.28
COH-2B1	7/7/2020	COH-2B1-EM27	N	EM27	2,100	900	0.79	900	3.0	1.01
COH-2B1	10/13/2020	COH-2B1-EM29	N	EM29	3,900	7,100	2.2	1,600	1.9	0.55
LWVPS-MW101A	7/12/2018	LWVPS-MW101A-EM11	N	EM11	6,300	25,000	15	--	0.82 J	2.10
LWVPS-MW104	7/12/2018	LWVPS-MW104-EM11	N	EM11	4,900	35,000	10	--	1.1	1.92
LWVPS-MW104	8/15/2018	LWVPS-MW104-EM13	N	EM13	4,600	36,000	10	2,200	1.5	3.79
LWVPS-MW104	9/13/2018	LWVPS-MW104-EM14	N	EM14	4,200	36,000	11	2,300	1.4	2.84
LWVPS-MW104	10/10/2018	LWVPS-MW104-EM15	N	EM15	4,800	37,000	11	--	1.8	4.3
LWVPS-MW107A	7/12/2018	LWVPS-MW107A-EM11	N	EM11	4,700	9,000	6.1	--	0.90 J	4.00
LWVPS-MW108A	7/12/2018	LWVPS-MW108A-EM11	N	EM11	7,200	17,000	7.2	--	1.3	3.86
LWVPS-MW108A	7/12/2018	LWVPS-MW108A-EM11-FD	FD	EM11	7,300	17,000	7.2	--	1.3	--
LWVPS-MW108A	8/15/2018	LWVPS-MW108A-EM13	N	EM13	5,700	11,000	6.2	1,500	1.9	2.73
LWVPS-MW108A	9/13/2018	LWVPS-MW108A-EM14	N	EM14	4,800	9,200	6.1 J+	1,500	1.6	3.08
LWVPS-MW108A	10/10/2018	LWVPS-MW108A-EM15	N	EM15	5,300	9,800	5.5	--	1.9	2.96
LWVPS-MW109	7/12/2018	LWVPS-MW109-EM11	N	EM11	6,100	25,000	8.9	--	1.2	0.40
LWVPS-MW109	8/15/2018	LWVPS-MW109-EM13	N	EM13	4,800	16,000	7.9	1,900	1.9	2.30
LWVPS-MW109	9/13/2018	LWVPS-MW109-EM14	N	EM14	4,500	9,200	6.7 J+	1,900	1.3	0.59
LWVPS-MW109	10/10/2018	LWVPS-MW109-EM15	N	EM15	4,400	7,300	6.9	--	1.9	2.71
LWVPS-MW111A	7/12/2018	LWVPS-MW111A-EM11	N	EM11	9,100	28,000	7.2	--	1.8	3.34
LWVPS-MW111A	8/15/2018	LWVPS-MW111A-EM13	N	EM13	7,800	30,000	7.9	1,800	2.0	2.23
LWVPS-MW111A	9/13/2018	LWVPS-MW111A-EM14	N	EM14	6,500	30,000	8.1 J+	1,900	1.4	0.35
LWVPS-MW111A	10/10/2018	LWVPS-MW111A-EM15	N	EM15	7,100	28,000	8.4	--	1.8	0.95
LWVPS-MW112A	7/12/2018	LWVPS-MW112A-EM11	N	EM11	5,200	28,000	10	--	1.5	0.89
LWVPS-MW112A	10/10/2018	LWVPS-MW112A-EM15	N	EM15	4,700	24,000	10	--	1.7	1.91
PC-58	3/28/2017	PC-58-BL01	N	BL01	2,600	19,000	9.9	1,200	3.4	0.15
PC-58	7/13/2017	PC-58-BL02	N	BL02	2,600	17,000	9.5	1,500	2.8	0.00
PC-58	10/11/2017	SWFTS-PC-58-EM04	N	EM04	1,800	11,000	9.0	1,100	3.2	3.40
PC-58	11/16/2017	SWFTS-PC-58-EM06	N	EM06	2,100	16,000	10	1,100	2.9	0.65
PC-58	12/14/2017	PC-58-EM07	N	EM07	3,100	24,000	12	1,200	2.9	0.29
PC-58	2/21/2018	PC-58-EM08	N	EM08	3,700	35,000	12	1,300	5.4	2.49
PC-58	3/28/2018	PC-58-EM09-EM09	N	EM09	1,400	12,000	9.8	1,300	2.7	4.31
PC-58	5/2/2018	PC58-EM10	N	EM10	1,200	10,000	9.9	1,400	2.7	0.71

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
PC-58	7/11/2018	PC-58-EM11	N	EM11	1,100	9,800	10	1,500	2.6	1.17
PC-58	8/15/2018	PC-58-EM13	N	EM13	1,300	13,000	10	1,500	3.1	0.38
PC-58	9/13/2018	PC-58-EM14	N	EM14	1,500	22,000	14	1,100	2.5	2.74
PC-58	10/11/2018	PC-58-EM15	N	EM15	1,300	13,000	12	930	3.5	0
PC-58	1/3/2019	PC-58-EM16	N	EM16	980	8,000	10	1,100	3.5	0.83
PC-58	3/1/2019	PC-58-EM17	N	EM17	1,700 J+	13,000	12	1,400	2.8	0.41
PC-58	4/9/2019	PC-58-EM18	N	EM18	1,400	11,000	9.1 J-	1,500	2.6	3.68
PC-58	5/22/2019	PC-58-EM19	N	EM19	1,600	12,000	11	1,400	2.9	1.68
PC-58	7/5/2019	PC-58-EM20	N	EM20	1,600	13,000	11	1,200	3.9	0.43
PC-58	8/15/2019	PC-58-EM21	N	EM21	1,500	10,000	12	1,100	3.7	0.47
PC-58	11/7/2019	PC-58-EM22	N	EM22	1,000	8,700	10	940	3.1	0.64
PC-58	12/20/2019	PC-58-EM23	N	EM23	4,000	30,000	13	980	2.4	1.00
PC-58	1/30/2020	PC-58-EM24	N	EM24	3,200	36,000	14	980	2.7	2.79
PC-58	3/11/2020	PC-58-EM25	N	EM25	2,800	33,000	12	1,000	2.7	1.69
PC-58	5/1/2020	PC-58-EM26	N	EM26	840	8,500	7.7	1,300	2.3	3.13
PC-58	7/9/2020	PC-58-EM27	N	EM27	850	6,400	9.1	1,800	2.5	1.08
PC-58	8/19/2020	PC-58-EM28	N	EM28	830	10,000	8.8	900	3.7	0.64
PC-58	10/16/2020	PC-58-EM29	N	EM29	700	7,400	7.7	670	3.5	1.28
PC-58	12/10/2020	PC-58-EM30	N	EM30	560	5,700	7.6	660	2.6	0.4
PC-58	2/1/2021	PC-58-EM31	N	EM31	730	61,000	7.5	690	2.5	0.6
PC-58	4/1/2021	PC-58-EM32	N	EM32	730	5,700	9.4 J	650	2.5	0.60
PC-58	6/2/2021	PC-58-EM33	N	EM33	680 J-	6,900 J-	8.9 J-	810 J-	2.6 J-	0.20
PC-58	7/22/2021	PC-58-EM34	N	EM34	810	7,700	8.7	790	2.6	0.48
PC-58	9/16/2021	PC-58-EM35	N	EM35	790	5,600	9.9 J	1,200	2.8	0.08
PC-58	12/3/2021	PC-58-EM36	N	EM36	820	6,300	9.1	940	2.7	1.09
PC-58	3/7/2022	PC-58-EM37	N	EM37	4,500	27,000	14	1,300	2.3	0.85
PC-58	6/21/2022	PC-58-EM38	N	EM38	980	6,000	13	1,300	3.2 J	1.22
PC-88	9/22/2017	SWFTS-PC-88-EM01	N	EM01	15,000	6,900	4.8	1,000	2.7	4.15
PC-88	9/28/2017	SWFTS-PC-88-EM02	N	EM02	14,000 J+	6,300	5.8	1,100	2.8	1.13
PC-88	10/4/2017	SWFTS-PC-88-EM03	N	EM03	15,000	6,100	5.1	1,000	2.6	0.21
PC-88	10/11/2017	SWFTS-PC-88-EM04	N	EM04	15,000	6,200	4.6	1,000	2.5	0.37
PC-88	10/11/2017	SWFTS-PC-88-EM04-FD	FD	EM04	15,000	6,000	4.6	1,000	2.6	--
PC-88	10/25/2017	SWFTS-PC-88-EM05	N	EM05	15,000	5,400	5.0	1,000	2.8	0.37
PC-88	11/15/2017	PC-88-EM06	N	EM06	15,000	5,700	4.5	990	2.8	0.46
PC-88	11/15/2017	PC-88-EM06-FD	FD	EM06	16,000	5,700	4.6	1,000	2.9	--
PC-88	12/14/2017	PC-88-EM07	N	EM07	19,000	20,000	9.9	1,200	2.7	0.68
PC-88	2/22/2018	PC-88-EM08	N	EM08	6,700	14,000	12	720	3.0	0.29
PC-88	3/29/2018	PC-88-EM09	N	EM09	9,100	20,000	13	870	2.2	0.45
PC-88	5/2/2018	PC88-EM10	N	EM10	7,100	11,000	11	710	2.3	0.50
PC-88	5/2/2018	PC88-EM10-FD	FD	EM10	6,600	11,000	12	700	2.5	--
PC-88	7/12/2018	PC-88-EM11	N	EM11	16,000	12,000	7.8	910	2.4	0.89
PC-88	7/12/2018	PC-88-EM11-FD	FD	EM11	16,000	12,000	7.6	910	2.3	--
PC-88	8/16/2018	PC-88-EM13	N	EM13	10,000	6,700	6.0	930	2.9	3.31
PC-88	8/16/2018	PC-88-EM13-FD	FD	EM13	11,000	6,800	6.0	940	2.9	--
PC-88	9/12/2018	PC-88-EM14	N	EM14	19,000	13,000	6.7	1,000	2.6	2.28
PC-88	9/12/2018	PC-88-EM14-FD	FD	EM14	19,000	13,000	6.7	1,000	2.4	--
PC-88	10/11/2018	PC-88-EM15	N	EM15	15,000	15,000	6.3 J-	1,000	2.7	0
PC-88	10/11/2018	PC-88-EM15-FD	FD	EM15	15,000	15,000	7.5	1,000	2.7	--
PC-88	1/3/2019	PC-88-EM16	N	EM16	12,000	9,900	7.5	850	2.7	0.93
PC-88	1/3/2019	PC-88-EM16-FD	FD	EM16	12,000	9,900	7.5	860	2.8	--
PC-88	2/28/2019	PC-88-EM17	N	EM17	9,300	5,700	4.4	770	2.9	0.35
PC-88	2/28/2019	PC-88-EM17-FD	FD	EM17	9,100	5,700	4.4	770	3.1	--
PC-88	4/9/2019	PC-88-EM18	N	EM18	12,000	11,000	5.1 J-	910	2.6	0.54
PC-88	4/9/2019	PC-88-EM18-FD	FD	EM18	13,000	10,000	5.0 J-	900	2.7	--
PC-88	5/22/2019	PC-88-EM19	N	EM19	10,000	6,200	4.9	850	2.6	0.05

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
PC-88	5/22/2019	PC-88-EM19-FD	FD	EM19	10,000	6,400	5.0	850	2.5	--
PC-88	7/5/2019	PC-88-EM20	N	EM20	8,800	5,100	3.4	710	3.2	0.39
PC-88	7/5/2019	PC-88-EM20-FD	FD	EM20	10,000	5,000	3.4	720	3.2	--
PC-88	8/15/2019	PC-88-EM21	N	EM21	9,700	3,300	2.8	740	3.0	0.39
PC-88	8/15/2019	PC-88-EM21-FD	FD	EM21	9,900	3,300	3.1	730	3.0	--
PC-88	11/7/2019	PC-88-EM22	N	EM22	11,000	14,000	5.6	850	2.5	0.64
PC-88	11/7/2019	PC-88-EM22-FD	FD	EM22	11,000	15,000	5.5	830	2.4	--
PC-88	12/20/2019	PC-88-EM23	N	EM23	11,000	9,200	5.4	860	2.2	0.83
PC-88	12/20/2019	PC-88-EM23-FD	FD	EM23	12,000	9,100	5.1	850	2.2	--
PC-88	1/30/2020	PC-88-EM24	N	EM24	9,900	13,000	7.9	840	2.7	2.65
PC-88	1/30/2020	PC-88-EM24-FD	FD	EM24	9,900	13,000	7.9	820	2.7	--
PC-88	3/12/2020	PC-88-EM25	N	EM25	7,900	7,000	5.3	660	2.5	1.6
PC-88	3/12/2020	PC-88-EM25-FD	FD	EM25	7,700	6,900	5.5	660	2.4	--
PC-88	5/1/2020	PC-88-EM26	N	EM26	15,000	16,000	8.2	820	2.1	0.26
PC-88	5/1/2020	PC-88-EM26-FD	FD	EM26	15,000	16,000	8.7	840	2.1	--
PC-88	7/9/2020	PC-88-EM27	N	EM27	14,000	8,400	7.6	890	2.7 J-	0.74
PC-88	7/9/2020	PC-88-EM27-FD	FD	EM27	13,000	8,600	7.3	900	3.0	--
PC-88	8/19/2020	PC-88-EM28	N	EM28	11,000	6,000	4.8	790	2.9	0.63
PC-88	8/19/2020	PC-88-EM28-FD	FD	EM28	12,000	5,800	4.7	770	2.7	--
PC-88	10/15/2020	PC-88-EM29	N	EM29	15,000	12,000	6.6	920	2.3	0.49
PC-88	10/15/2020	PC-88-EM29-FD	FD	EM29	15,000	12,000	6.7	920	2.2	--
PC-88	12/10/2020	PC-88-EM30	N	EM30	7,200	3,800	2.7	680	2.6	0.3
PC-88	12/10/2020	PC-88-EM30-FD	FD	EM30	7,400	3,800	2.7	680	3.3	--
PC-88	2/2/2021	PC-88-EM31	N	EM31	3,700	1,500	1.0	500	2.6 J+	0.51
PC-88	2/2/2021	PC-88-EM31-FD	FD	EM31	3,500	1,500	1.1	510	2.7 J+	--
PC-88	3/30/2021	PC-88-EM32	N	EM32	2,500	900 J	0.60	480	2.8	0.51
PC-88	3/30/2021	PC-88-EM32-FD	FD	EM32	2,400	830	0.59	480	2.8	--
PC-88	6/3/2021	PC-88-EM33	N	EM33	2,300	1,100	0.87	460	2.5	0.07
PC-88	6/3/2021	PC-88-EM33-FD	FD	EM33	2,400	1,100	0.87	460	2.7	--
PC-88	7/22/2021	PC-88-EM34	N	EM34	5,300	1,400	1.5	500	2.7	0.38
PC-88	7/22/2021	PC-88-EM34-FD	FD	EM34	5,200	1,500	1.5	500	2.9	--
PC-88	9/16/2021	PC-88-EM35	N	EM35	10,000	4,600	3.8 J	720	2.5	-0.01
PC-88	9/16/2021	PC-88-EM35-FD	FD	EM35	9,800	4,700	3.8 J	710	2.6	--
PC-88	12/2/2021	PC-88-EM36	N	EM36	4,200	1,400	1.4	590	2.9 J+	1.58
PC-88	12/2/2021	PC-88-EM36-FD	FD	EM36	4,300	1,500	1.4	560	2.9 J+	--
PC-88	3/8/2022	PC-88-EM37	N	EM37	3,300	5,200	22	690	3.0 J+	0.58
PC-88	3/8/2022	PC-88-EM37-FD	FD	EM37	3,400	5,300	22	700	2.8 J+	--
PC-88	6/21/2022	PC-88-EM38	N	EM38	9,100	7,000	10	690	2.8 J	0.48
PC-88	6/21/2022	PC-88-EM38-FD	FD	EM38	9,100	7,100	10	700	3.0 J	--
PC-91	3/29/2017	PC-91-BL01	N	BL01	2,400	1,700	1.4	1,100	2.7	0.25
PC-91	7/12/2017	PC-91-BL02	N	BL02	2,500	1,600	1.2	840	2.4	0.31
PC-91	7/12/2017	PC-91-BL02-FD	FD	BL02	2,400	1,500	1.1	790	2.3	--
PC-91	9/21/2017	SWFTS-PC-91-EM01	N	EM01	1,600	820	0.50 J	730	2.3	0.47
PC-91	9/27/2017	SWFTS-PC-91-EM02	N	EM02	1,700	810	0.57	770	2.8	0.72
PC-91	10/4/2017	SWFTS-PC-91-EM03	N	EM03	1,300	590	0.58	700	2.9	0.19
PC-91	10/12/2017	SWFTS-PC-91-EM04	N	EM04	960	440	0.35	770	2.5	0.38 E
PC-91	10/25/2017	SWFTS-PC-91-EM05	N	EM05	750	370	0.62	740	2.7	0.55
PC-91	11/16/2017	SWFTS-PC-91-EM06	N	EM06	700	610	0.65 J-	670	2.8	0.82
PC-91	12/13/2017	PC-91-EM07	N	EM07	770	520	0.38	650	2.5	0.37
PC-91	2/20/2018	PC-91-EM08	N	EM08	900	1,100	0.88 J	770	2.8	0.82
PC-91	3/26/2018	PC-91-EM09	N	EM09	930	1,200	0.78	700	2.5	1.02
PC-91	5/1/2018	PC-91-EM10	N	EM10	860	260	0.56	650	2.4	0.64
PC-91	7/11/2018	PC-91-EM11	N	EM11	190	<5.0	<0.28	480	2.7	3.08
PC-91	7/27/2018	SWFTS-PC-91-EM12	N	EM12	160	<2.0	--	--	--	0.77
PC-91	8/14/2018	PC-91-EM-13	N	EM13	310	12 J	<0.28	--	3.0	1.08



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**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
PC-91	9/12/2018	PC-91-EM14	N	EM14	440	21	<0.28	560	2.6	3.12
PC-91	10/10/2018	PC-91-EM15	N	EM15	460	80	<0.55	570	3.1	0
PC-91	12/20/2018	PC-91-EM16	N	EM16	220	47 J	<0.11	540	3.2	0.68
PC-91	2/26/2019	PC-91-EM17	N	EM17	67	<10	<0.55	520	3.8	0.47
PC-91	4/10/2019	PC-91-EM18	N	EM18	190	38 J	<0.55	480	4.5	1.41
PC-91	5/21/2019	PC-91-EM19	N	EM19	120	56	0.81	500	3.6	0.05
PC-91	7/1/2019	PC-91-EM20	N	EM20	120	52	<0.28	460	3.8	0.42
PC-91	8/12/2019	PC-91-EM21	N	EM21	39 J+	14 J	<0.28	450	3.6	0.44
PC-91	11/6/2019	PC-91-EM22	N	EM22	1.5 J	<10	<0.55	460	5.9	0.56
PC-91	12/17/2019	PC-91-EM23	N	EM23	6.9	<10	<0.55	440	4.3	8.61
PC-91	1/28/2020	PC-91-EM24	N	EM24	230	100	<0.28	490 J+	4.2	5.81
PC-91	3/12/2020	PC-91-EM25	N	EM25	310	170	<0.28	560	3.6	1.49
PC-91	4/30/2020	PC-91-EM26	N	EM26	460	500	<0.28	610	3.9	0.37
PC-91	7/7/2020	PC-91-EM27	N	EM27	<0.95	<10	<0.28	280	12	0.65
PC-91	8/17/2020	PC-91-EM28	N	EM28	<0.95	750	<0.55	500	8.2	0.52
PC-91	10/14/2020	PC-91-EM29	N	EM29	<1.9	36 J	<0.28	510	5.6	0.43
PC-91	12/9/2020	PC-91-EM30	N	EM30	<0.31	<10	<0.014	580	4.4	1.68
PC-91	2/1/2021	PC-91-EM31	N	EM31	50	14 J	<0.014	650	5.1	0.83
PC-91	3/29/2021	PC-91-EM32	N	EM32	<0.31	<24 UJ	<0.014	2.3	530 J-	0.83
PC-91	6/2/2021	PC-91-EM33	N	EM33	<0.31 UJ	200 J-	<0.014 UJ	65 J-	110 J-	0.04
PC-91	7/20/2021	PC-91-EM34	N	EM34	<0.31	170	0.044 J	78	25	0.04
PC-91	9/16/2021	PC-91-EM35	N	EM35	2.3	73 J	<0.014 UJ	98	13	-0.11
PC-91	11/30/2021	PC-91-EM36	N	EM36	0.64 J	170	0.028 J	1.8 J	210	1.78
PC-91	3/7/2022	PC-91-EM37	N	EM37	2.3	<24	0.021 J	150	11	0.36
PC-91	6/21/2022	PC-91-EM38	N	EM38	0.82 J	<24	<0.14	360	5.4	0.28
PC-92	3/29/2017	PC-92-BL01	N	BL01	9,600	17,000	4.2	1,200	2.8	0.35
PC-92	7/12/2017	PC-92-BL02	N	BL02	4,400	10,000	2.6	1,100	2.8	0.31
PC-92	9/21/2017	SWFTS-PC-92-EM01	N	EM01	3,100	7,700	1.7	960	2.6	0.41
PC-92	9/27/2017	SWFTS-PC-92-EM02	N	EM02	3,500	6,800	1.7	950	2.8	0.45
PC-92	10/4/2017	SWFTS-PC-92-EM03	N	EM03	3,700	7,100	2.6	950	2.8	0.12
PC-92	10/12/2017	SWFTS-PC-92-EM04	N	EM04	3,700	7,300	2.1	1,100	2.8	9.88 E
PC-92	10/12/2017	SWFTS-PC-92-EM04-FD	FD	EM04	3,700	6,700	2.0	1,100	2.6	--
PC-92	10/25/2017	SWFTS-PC-92-EM05	N	EM05	4,000	6,900	2.3	1,100	2.9	0.30
PC-92	11/16/2017	SWFTS-PC-92-EM06	N	EM06	2,100	1,300	1.6	790	3.2	0.42
PC-92	11/16/2017	SWFTS-PC-92-EM06-FD	FD	EM06	2,100	1,300	1.1	930	3.3	--
PC-92	12/14/2017	PC-92-EM07	N	EM07	3,300	4,600	2.1	980	3.0	3.78
PC-92	12/14/2017	PC-92-EM07-FD	FD	EM07	3,300	4,800	1.8	1,100	3.0	--
PC-92	2/20/2018	PC-92-EM08	N	EM08	4,900	7,700	2.7	950	3.2	4.60
PC-92	2/20/2018	PC-92-EM08-FD	FD	EM08	5,000	7,400	2.7	960	3.2	--
PC-92	3/26/2018	PC-92-EM09	N	EM09	7,900	19,000	4.5	1,100	2.5	0.51
PC-92	3/26/2018	PC-92-EM09-FD	FD	EM09	8,000	18,000	4.5	1,200	2.5	--
PC-92	5/1/2018	PC-92-EM10	N	EM10	9,200	22,000	5.6	1,200	2.4	0.70
PC-92	7/11/2018	PC-92-EM11	N	EM11	7,300	17,000	4.2	1,000	2.3	1.47
PC-92	7/27/2018	SWFTS-PC-92-EM12	N	EM12	5,200	15,000	--	--	--	0.28
PC-92	8/15/2018	PC-92-EM13	N	EM13	4,700	13,000	3.1	910	3.0	0.98
PC-92	9/12/2018	PC-92-EM14	N	EM14	4,100	12,000	2.6	950	2.6	2.95
PC-92	10/11/2018	PC-92-EM15	N	EM15	4,200	12,000	3.4	980	2.9	0
PC-92	12/20/2018	PC-92-EM16	N	EM16	3,500	13,000	2.6	820	3.1	0.72
PC-92	2/26/2019	PC-92-EM17	N	EM17	2,700	13,000	1.5	880	2.7	0.56
PC-92	4/10/2019	PC-92-EM18	N	EM18	3,100	8,200	2.2	870	2.7	0.84
PC-92	5/21/2019	PC-92-EM19	N	EM19	2,500	6,000	1.5	750	2.3	0.09
PC-92	7/1/2019	PC-92-EM20	N	EM20	3,100	7,000	1.8	840	3.4	0.42
PC-92	8/12/2019	PC-92-EM21	N	EM21	2,800	3,500	1.1	630	3.3	0.41
PC-92	11/6/2019	PC-92-EM22	N	EM22	4,000	11,000	2.0	970	2.8	0.56
PC-92	12/17/2019	PC-92-EM23	N	EM23	3,100	7,700	2.0	810	2.8	0.67

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Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
PC-92	1/28/2020	PC-92-EM24	N	EM24	6,700	20,000	4.7	840 J+	3.0	4.93
PC-92	3/12/2020	PC-92-EM25	N	EM25	8,800	26,000	6.4	1,100	2.5	1.63
PC-92	4/30/2020	PC-92-EM26	N	EM26	3,400	5,300	1.8	830	4.0	5.37
PC-92	7/7/2020	PC-92-EM27	N	EM27	8,600	23,000	5.9	970	3.5	0.72
PC-92	8/17/2020	PC-92-EM28	N	EM28	6,500	20,000	5.0	920	2.9	0.64
PC-92	10/14/2020	PC-92-EM29	N	EM29	6,300	19,000	4.1	1,000	2.5	0.48
PC-92	12/9/2020	PC-92-EM30	N	EM30	5,100	14,000	3.9	1,000	2.5	1.92
PC-92	2/1/2021	PC-92-EM31	N	EM31	7,900	33,000 J	4.2	1,100	2.7	0.9
PC-92	3/29/2021	PC-92-EM32	N	EM32	5,500	11,000	2.7	930	2.5	0.90
PC-92	6/2/2021	PC-92-EM33	N	EM33	6,400 J-	21,000 J-	4.8 J-	1,100 J-	2.5 J-	0.18
PC-92	7/20/2021	PC-92-EM34	N	EM34	4,000	7,800	2.5	780	3.2	0.23
PC-92	9/16/2021	PC-92-EM35	N	EM35	10,000	22,000 J+	6.4 J	1,200	2.2	0.19
PC-92	11/30/2021	PC-92-EM36	N	EM36	4,200	7,400	1.8	1,200	3.2 J+	1.58
PC-92	3/7/2022	PC-92-EM37	N	EM37	15,000	37,000	9.4	1,300	1.9	0.48
PC-92	6/21/2022	PC-92-EM38	N	EM38	15,000	36,000	10	1,500	1.8 J	0.37
PC-94	3/28/2017	PC-94-BL01	N	BL01	13,000	51,000	12	1,800	1.7	0.33
PC-94	7/13/2017	PC-94-BL02	N	BL02	14,000	47,000	12	1,800	1.3	0.41
PC-94	9/20/2017	SWFTS-PC-94-EM01	N	EM01	2,300	3,800	0.58 J	1,800	34	0.15
PC-94	9/26/2017	SWFTS-PC-94-EM02	N	EM02	2,000	3,700	<1.1	1,800	37	0.19
PC-94	10/5/2017	SWFTS-PC-94-EM03	N	EM03	1,700	3,600	1.3 J	1,600	5.2	0.13
PC-94	10/11/2017	SWFTS-PC-94-EM04	N	EM04	970	2,900	0.78 J	1,700	3.9	0.55
PC-94	10/26/2017	SWFTS-PC-94-EM05	N	EM05	540	1,300	1.4	1,700	3.1	3.80
PC-94	11/16/2017	PC-94-EM06	N	EM06	1,500	1,300	0.57 J	1,300	2.2	0.50
PC-94	12/12/2017	PC-94-EM07	N	EM07	4,300	9,300	0.68	1,400	2.1	0.19
PC-94	2/21/2018	PC-94-EM08	N	EM08	7,200	19,000	4.9	1,500	2.1	3.75
PC-94	3/27/2018	PC-94-EM09	N	EM09	6,400	16,000	4.8	1,500	1.9	2.07
PC-94	5/1/2018	PC-94-EM10	N	EM10	6,700	18,000	6.3	1,400	1.5	0.00
PC-94	7/10/2018	PC-94-EM11	N	EM11	4,200	7,200	5.6	1,600	2.0	0.10
PC-94	7/27/2018	SWFTS-PC-94-EM12	N	EM12	1,500	1,600	--	--	--	0.25
PC-94	8/15/2018	PC-94-EM13	N	EM13	2,600	1,800	3.2	1,500	2.2	1.53
PC-94	9/11/2018	PC-94-EM14	N	EM14	3,500	6,200	5.2	1,500	1.7	1.67
PC-94	10/11/2018	PC-94-EM15	N	EM15	3,900	10,000	8.2	1,500	1.9	0
PC-94	12/28/2018	PC-94-EM16	N	EM16	3,200	9,000	8.3	1,400	1.7	4.54
PC-94	2/27/2019	PC-94-EM17	N	EM17	3,100	6,700	6.4	1,400	1.8	0.74
PC-94	4/11/2019	PC-94-EM18	N	EM18	3,000	5,600	5.2	1,500	1.8	1.43
PC-94	5/22/2019	PC-94-EM19	N	EM19	3,600	11,000	7.6	1,500	1.7	0.05
PC-94	7/5/2019	PC-94-EM20	N	EM20	4,100	16,000	8.2	1,400	2.9	4.35
PC-94	8/12/2019	PC-94-EM21	N	EM21	4,600	16,000	7.8	1,200	2.0	1.19
PC-94	11/6/2019	PC-94-EM22	N	EM22	4,200	16,000	7.8	1,300	1.6	3.82
PC-94	12/19/2019	PC-94-EM23	N	EM23	4,000	16,000	6.3	1,200	1.7	1.78
PC-94	1/30/2020	PC-94-EM24	N	EM24	5,600	44,000	7.8	1,200	1.8	4.11
PC-94	3/10/2020	PC-94-EM25	N	EM25	7,100	27,000	8.5 J-	1,300	1.8	2.62
PC-94	4/28/2020	PC-94-EM26	N	EM26	7,400	28,000	8.2	1,300	1.5	0.31
PC-94	7/6/2020	PC-94-EM27	N	EM27	5,100	14,000	6.7	1,400	2.5	1.04
PC-94	8/18/2020	PC-94-EM28	N	EM28	5,400	18,000	5.1	1,400	2.4	0.71
PC-94	10/15/2020	PC-94-EM29	N	EM29	5,900	19,000	7.5	1,300	1.6	0.74
PC-94	12/8/2020	PC-94-EM30	N	EM30	4,400	19,000	8.0	1,400	1.6	1.85
PC-94	2/1/2021	PC-94-EM31	N	EM31	6,500	20,000	8.1	1,400	1.4	0.53
PC-94	3/29/2021	PC-94-EM32	N	EM32	5,300	9,400 J+	6.0	1,200	1.6	0.53
PC-94	6/2/2021	PC-94-EM33	N	EM33	5,300 J-	13,000 J-	6.4 J-	1,300 J-	1.4 J-	0.23
PC-94	7/20/2021	PC-94-EM34	N	EM34	7,400	25,000	7.9	1,300	1.6	0.38
PC-94	9/15/2021	PC-94-EM35	N	EM35	9,100	22,000	8.2	2,000	1.6	0.07
PC-94	11/30/2021	PC-94-EM36	N	EM36	11,000	31,000	9.1	1,700	2.1 J+	1.58
PC-94	3/8/2022	PC-94-EM37	N	EM37	15,000	29,000	9.6	1,600	2.2 J+	0.49
PC-94	6/21/2022	PC-94-EM38	N	EM38	11,000	10,000	9.5	1,700	2.1 J	0.49

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Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
PC-97	7/13/2017	PC-97-BL02	N	BL02	1,900	180	0.84	800	3.0	0.27
PC-97	9/22/2017	SWFTS-PC-97-EM01	N	EM01	2,900	360	2.1	1,000	3.0	0.39
PC-97	9/22/2017	SWFTS-PC-97-EM01-FD	FD	EM01	2,900	340	2.2	1,000	3.0	--
PC-97	9/28/2017	SWFTS-PC-97-EM02	N	EM02	2,600	370	2.1	1,100	3.6	4.28
PC-97	9/28/2017	SWFTS-PC-97-EM02-FD	FD	EM02	2,700	380	2.0	1,100	3.6	--
PC-97	10/4/2017	SWFTS-PC-97-EM03	N	EM03	2,900	460	2.6	900	2.7	0.19
PC-97	10/4/2017	SWFTS-PC-97-EM03-FD	FD	EM03	2,900	410	2.3	970	2.8	--
PC-97	10/11/2017	SWFTS-PC-97-EM04	N	EM04	2,500	400	2.5	1,000	2.7	0.48
PC-97	10/11/2017	SWFTS-PC-97-EM04-FD	FD	EM04	2,700	390	2.3	1,000	2.8	--
PC-97	10/25/2017	SWFTS-PC-97-EM05	N	EM05	3,400	390	2.9	1,100	2.8	0.39
PC-97	10/25/2017	SWFTS-PC-97-EM05-FD	FD	EM05	3,300	410	2.9	1,100	2.9	--
PC-97	11/16/2017	SWFTS-PC-97-EM06	N	EM06	1,600	190	1.8	1,200	3.2	0.48
PC-97	12/13/2017	PC-97-EM07	N	EM07	2,600	320	1.6	930	3.0	0.79
PC-97	12/13/2017	PC-97-EM07-FD	FD	EM07	3,000	320	1.9	930	3.0	--
PC-97	2/21/2018	PC-97-EM08	N	EM08	1,500	77	0.56	750	3.3	2.47
PC-97	3/27/2018	PC-97-EM09	N	EM09	900	<10	0.19	710	3.3	1.68
PC-97	5/1/2018	PC-97-EM10	N	EM10	820	<5.0	0.088 J	610	3.2	2.10
PC-97	7/10/2018	PC-97-EM11	N	EM11	1,700	91	0.32	690	3.0	3.45
PC-97	8/16/2018	PC-97-EM13	N	EM13	1,100	85	0.38 J+	760	3.4	2.94
PC-97	9/12/2018	PC-97-EM14	N	EM14	2,400	210	0.82	760	3.0	1.74
PC-97	10/11/2018	PC-97-EM15	N	EM15	1,700	160	0.71	820	3.4	0.71
PC-97	1/3/2019	PC-97-EM16	N	EM16	1,500	64	0.33	680	3.2	1.07
PC-97	2/28/2019	PC-97-EM17	N	EM17	1,300	80	0.71	720	3.5	0.44
PC-97	4/9/2019	PC-97-EM18	N	EM18	1,600	150	0.71 J-	790	3.0	0.53
PC-97	5/22/2019	PC-97-EM19	N	EM19	2,300	280	1.8	920	3.1	0.07
PC-97	7/5/2019	PC-97-EM20	N	EM20	2,800	360	1.9	950	3.7	0.41
PC-97	8/14/2019	PC-97-EM21	N	EM21	3,100	330	1.7	860	3.3	0.39
PC-97	11/6/2019	PC-97-EM22	N	EM22	1,800	30	1.3	790	2.8	0.56
PC-97	12/20/2019	PC-97-EM23	N	EM23	1,100	48 J	0.29	670	3.1	0.81
PC-97	1/30/2020	PC-97-EM24	N	EM24	640	<4.0	0.12 J	610	3.4	4.31
PC-97	3/12/2020	PC-97-EM25	N	EM25	400	<2.0	<0.11	540	3.2	1.65
PC-97	4/30/2020	PC-97-EM26	N	EM26	390	<10	<0.11	550	3.2	4.82
PC-97	7/9/2020	PC-97-EM27	N	EM27	1,600	45 J	0.36	710	3.6	0.95
PC-97	10/15/2020	PC-97-EM29	N	EM29	2,100	110	1.1	730	3.2	0.52
SWFTS-IW01A	7/11/2017	SWFTS-IW01A-BL02	N	BL02	20,000	51,000	12	--	--	0.55
SWFTS-IW01A	11/14/2017	SWFTS-IW01A-EM06	N	EM06	42	--	<0.55	--	610 J-	0.09
SWFTS-IW01A	11/14/2017	SWFTS-IW01A-EM06B	N	EM06	--	--	--	--	610 J-	--
SWFTS-IW01B	7/11/2017	SWFTS-IW01B-BL02	N	BL02	20,000	48,000	11	--	--	0.61
SWFTS-IW01B	11/14/2017	SWFTS-IW01B-EM06B	N	EM06	--	--	--	--	160 J-	--
SWFTS-IW01B	11/15/2017	SWFTS-IW01B-EM06	N	EM06	170	--	<0.55	--	220	0.17
SWFTS-IW02A	7/11/2017	SWFTS-IW02A-BL02	N	BL02	22,000	52,000	12	2,100	2.0	0.57
SWFTS-IW02A	11/14/2017	SWFTS-IW02A-EM06B	N	EM06	--	--	--	--	3,900 J-	--
SWFTS-IW02B	7/11/2017	SWFTS-IW02B-BL02	N	BL02	22,000	55,000	12	2,100	2.8	0.46
SWFTS-IW02B	11/14/2017	SWFTS-IW02B-EM06B	N	EM06	--	--	--	--	3,100 J-	--
SWFTS-IW03	7/11/2017	SWFTS-IW03-BL02	N	BL02	21,000	58,000	13	--	--	0.48
SWFTS-IW03	7/11/2017	SWFTS-IW03-BL02-FD	FD	BL02	21,000	53,000	12	--	--	--
SWFTS-IW03	12/11/2017	SWFTS-IW03-EM07	N	EM07	--	--	--	--	340 J-	--
SWFTS-IW04	7/11/2017	SWFTS-IW04-BL02	N	BL02	17,000	42,000	11	--	--	0.42
SWFTS-IW04	7/11/2017	SWFTS-IW04-BL02-FD	FD	BL02	16,000	42,000	12	--	--	--
SWFTS-IW04	12/11/2017	SWFTS-IW04-EM07	N	EM07	--	--	--	--	4,600 J-	--
SWFTS-IW05	7/11/2017	SWFTS-IW05-BL02	N	BL02	15,000	45,000	12	1,800	1.7	0.53
SWFTS-IW05	12/11/2017	SWFTS-IW05-EM07	N	EM07	--	--	--	--	3,700 J-	--
SWFTS-IW06A	7/11/2017	SWFTS-IW06A-BL02	N	BL02	15,000	46,000	12	--	--	2.02
SWFTS-IW06A	11/14/2017	SWFTS-IW06A-EM06B	N	EM06	--	--	--	--	440 J-	--
SWFTS-IW06A	11/15/2017	SWFTS-IW06A-EM06	N	EM06	230	--	<0.55	--	630	0.16

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-IW06B	7/11/2017	SWFTS-IW06B-BL02	N	BL02	15,000	41,000	12	--	--	0.38
SWFTS-IW06B	11/14/2017	SWFTS-IW06B-EM06B	N	EM06	--	--	--	--	600 J-	--
SWFTS-IW06B	11/15/2017	SWFTS-IW06B-EM06	N	EM06	20	--	<0.55	--	660	0.36
SWFTS-IW07	7/11/2017	SWFTS-IW07-BL02	N	BL02	15,000	45,000	11	--	--	0.55
SWFTS-IW07	12/11/2017	SWFTS-IW07-EM07	N	EM07	--	--	--	--	5,600 J-	--
SWFTS-IW08	7/12/2017	SWFTS-IW08-BL02	N	BL02	14,000	40,000	12	--	--	0.79
SWFTS-IW08	12/11/2017	SWFTS-IW08-EM07	N	EM07	--	--	--	--	6,700 J-	--
SWFTS-IW09	7/12/2017	SWFTS-IW09-BL02	N	BL02	11,000	48,000	12	1,800	1.7	0.47
SWFTS-IW09	7/12/2017	SWFTS-IW09-BL02-FD	FD	BL02	11,000	47,000	12	1,800	1.4	--
SWFTS-IW09	12/11/2017	SWFTS-IW09-EM07	N	EM07	--	--	--	--	290 J-	--
SWFTS-IW10	7/12/2017	SWFTS-IW10-BL02	N	BL02	7,800	37,000	14	--	--	0.30
SWFTS-IW10	12/11/2017	SWFTS-IW10-EM07	N	EM07	--	--	--	--	290 J-	--
SWFTS-IW11	7/12/2017	SWFTS-IW11-BL02	N	BL02	5,600	6,600	2.0	1,000	2.6	0.38
SWFTS-IW11	12/11/2017	SWFTS-IW11-EM07	N	EM07	--	--	--	--	1,000 J-	--
SWFTS-IW12	7/12/2017	SWFTS-IW12-BL02	N	BL02	6,200	7,800	2.5	--	--	0.51
SWFTS-IW12	12/11/2017	SWFTS-IW12-EM07	N	EM07	--	--	--	--	2,700 J-	--
SWFTS-IW13A	7/11/2017	SWFTS-IW13A-BL02	N	BL02	19,000	52,000	14	--	--	0.54
SWFTS-IW13A	11/14/2017	SWFTS-IW13A-EM06B	N	EM06	--	--	--	--	3,700 J-	--
SWFTS-IW13B	7/11/2017	SWFTS-IW13B-BL02	N	BL02	21,000	53,000	12	--	--	0.46
SWFTS-IW13B	11/14/2017	SWFTS-IW13B-EM06B	N	EM06	--	--	--	--	1,100 J-	--
SWFTS-IW14	7/12/2017	SWFTS-IW14-BL02	N	BL02	21,000	51,000	11	1,800	1.9	0.49
SWFTS-IW14	11/14/2017	SWFTS-IW14-EM06B	N	EM06	--	--	--	--	4,600	--
SWFTS-IW14	11/14/2017	SWFTS-IW14-EM06B-FD	FD	EM06	--	--	--	--	4,500 J-	--
SWFTS-IW15	7/12/2017	SWFTS-IW15-BL02	N	BL02	15,000	44,000	13	--	--	0.32
SWFTS-IW15	12/11/2017	SWFTS-IW15-EM07	N	EM07	--	--	--	--	1,300 J-	--
SWFTS-IW15	12/11/2017	SWFTS-IW15-EM07-FD	FD	EM07	--	--	--	--	1,300 J-	--
SWFTS-IW16A	7/11/2017	SWFTS-IW16A-BL02	N	BL02	17,000	45,000	11	--	--	0.86
SWFTS-IW16A	12/11/2017	SWFTS-IW16A-EM07	N	EM07	--	--	--	--	2,800 J-	--
SWFTS-IW16B	7/11/2017	SWFTS-IW16B-BL02	N	BL02	15,000	44,000	12	--	--	0.42
SWFTS-IW16B	12/11/2017	SWFTS-IW16B-EM07	N	EM07	--	--	--	--	940 J-	--
SWFTS-IW17	7/13/2017	SWFTS-IW17-BL02	N	BL02	13,000	47,000	12	1,600	1.4	0.41
SWFTS-IW17	11/14/2017	SWFTS-IW17-EM06B	N	EM06	--	--	--	--	6,500 J-	--
SWFTS-IW17	11/15/2017	SWFTS-IW17-EM06	N	EM06	<19	--	<1.1	--	7,500	0.36
SWFTS-IW18	7/13/2017	SWFTS-IW18-BL02	N	BL02	14,000	47,000	12	--	--	0.30
SWFTS-IW18	11/14/2017	SWFTS-IW18-EM06B	N	EM06	--	--	--	--	1.8	--
SWFTS-IW19	7/13/2017	SWFTS-IW19-BL02	N	BL02	6,400	57,000	16	--	--	3.30
SWFTS-IW19	12/11/2017	SWFTS-IW19-EM07	N	EM07	--	--	--	--	4,100 J-	--
SWFTS-IW20	7/12/2017	SWFTS-IW20-BL02	N	BL02	4,400	31,000	17	2,300	1.0	4.23
SWFTS-IW20	11/14/2017	SWFTS-IW20-EM06B	N	EM06	--	--	--	--	6,500 J-	--
SWFTS-MW01	3/29/2017	SWFTS-MW01-BL01	N	BL01	15,000	49,000	12	4,700	1.6	1.07
SWFTS-MW01	9/19/2017	SWFTS-MW01-EM01	N	EM01	2,100	39,000	<0.55	1,800	11	1.38
SWFTS-MW01	9/26/2017	SWFTS-MW01-EM02	N	EM02	4,300	10,000	1.4 J	1,800	4.3	0.23
SWFTS-MW01	10/4/2017	SWFTS-MW01-EM03	N	EM03	5,000	13,000	3.3	1,600	2.5	0.20
SWFTS-MW01	10/10/2017	SWFTS-MW01-EM04	N	EM04	5,600	15,000	3.3	1,600	2.2	0.47
SWFTS-MW01	10/25/2017	SWFTS-MW01-EM05	N	EM05	15,000	18,000	5.1	1,500	2.1	0.89
SWFTS-MW01	11/15/2017	SWFTS-MW01-EM06	N	EM06	7,900	22,000	4.9	1,500	1.9	0.81
SWFTS-MW01	12/14/2017	SWFTS-MW01-EM07	N	EM07	8,000	24,000	5.3	1,500	1.9	0.20
SWFTS-MW01	2/20/2018	SWFTS-MW01-EM08	N	EM08	3,900	12,000	3.4	1,400	2.7	2.85
SWFTS-MW01	3/27/2018	SWFTS-MW01-EM09	N	EM09	6,900	26,000	5.3	1,400	1.9	2.42
SWFTS-MW01	4/30/2018	SWFTS-MW01-EM10	N	EM10	9,400	36,000	8.9	1,600	1.4	0.15
SWFTS-MW01	7/10/2018	SWFTS-MW01-EM11	N	EM11	3,100	6,900	1.4	1,300	2.4	0.04
SWFTS-MW01	7/27/2018	SWFTS-MW01-EM12	N	EM12	5,500	28,000	--	--	--	0.29
SWFTS-MW01	7/27/2018	SWFTS-MW01-EM12-FD	FD	EM12	5,500	28,000	--	--	--	--
SWFTS-MW01	8/16/2018	SWFTS-MW01-EM13	N	EM13	6,100	34,000	6.4	1,300	2.0	0.80
SWFTS-MW01	9/10/2018	SWFTS-MW01-EM14	N	EM14	6,300	34,000	8.4	1,400	1.9	6.07

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**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW01	10/9/2018	SWFTS-MW01-EM15	N	EM15	4,700 J	24,000	7.1	1,300	2.1	0.09
SWFTS-MW01	12/27/2018	SWFTS-MW01-EM16	N	EM16	4,300	7,400	9.9	1,300	1.8	0.51
SWFTS-MW01	2/26/2019	SWFTS-MW01-EM17	N	EM17	1,300	<10	1.7	1,100	2.6	0.50
SWFTS-MW01	4/10/2019	SWFTS-MW01-EM18	N	EM18	3,800	<10	5.2	1,200	1.9	0.59
SWFTS-MW01	5/21/2019	SWFTS-MW01-EM19	N	EM19	4,100	<10	6.4	1,200	1.6	0.75
SWFTS-MW01	7/1/2019	SWFTS-MW01-EM20	N	EM20	4,100	<10	5.4	1,300	2.1	0.29
SWFTS-MW01	8/12/2019	SWFTS-MW01-EM21	N	EM21	3,800	<10	3.9	1,100	1.9	0.36
SWFTS-MW01	11/5/2019	SWFTS-MW01-EM22	N	EM22	54	<10	<0.55	870	2.7	0.49
SWFTS-MW01	12/18/2019	SWFTS-MW01-EM23	N	EM23	3,600	<10	3.7	1,100	1.7	0.89
SWFTS-MW01	1/29/2020	SWFTS-MW01-EM24	N	EM24	4,500	<10	5.0	1,200 J+	2.4	4.25
SWFTS-MW01	3/11/2020	SWFTS-MW01-EM25	N	EM25	6,400	<20	4.9	1,200	2.2	2.34
SWFTS-MW01	4/28/2020	SWFTS-MW01-EM26	N	EM26	7,500	110	6.2	1,300	1.8	0.5
SWFTS-MW01	7/8/2020	SWFTS-MW01-EM27	N	EM27	5,300	1,800	2.9	1,400	1.9	2.49
SWFTS-MW01	8/18/2020	SWFTS-MW01-EM28	N	EM28	5,500	16 J	3.9	1,300	2.4	0.61
SWFTS-MW01	10/13/2020	SWFTS-MW01-EM29	N	EM29	5,200	<10	4.4	1,300	2.1	0.98
SWFTS-MW01	12/9/2020	SWFTS-MW01-EM30	N	EM30	4,900	<10	5.2	1,400	1.5	1.91
SWFTS-MW01	2/2/2021	SWFTS-MW01-EM31	N	EM31	5,700	<9.8	5.3	1,300	1.6 J+	0.56
SWFTS-MW01	3/30/2021	SWFTS-MW01-EM32	N	EM32	5,000	<4.9	3.4	1,100	2.3	0.56
SWFTS-MW01	6/4/2021	SWFTS-MW01-EM33	N	EM33	7,000	780	4.0	1,200	1.4 J+	0.17
SWFTS-MW01	7/20/2021	SWFTS-MW01-EM34	N	EM34	8,100	1,800	4.8	1,400	1.6	0.36
SWFTS-MW01	9/15/2021	SWFTS-MW01-EM35	N	EM35	8,600	3,400	4.1	1,300	1.6	0.08
SWFTS-MW01	11/30/2021	SWFTS-MW01-EM36	N	EM36	13,000	11,000	6.9	1,500	2.2 J+	4.32
SWFTS-MW01	3/9/2022	SWFTS-MW01-EM37	N	EM37	1,800	<24	0.33	1,400	3.3	0.54
SWFTS-MW01	6/21/2022	SWFTS-MW01-EM38	N	EM38	9,800	6,200 J+	6.1	1,700	2.0 J	0.41
SWFTS-MW02	3/29/2017	SWFTS-MW02-BL01	N	BL01	25,000	58,000	11	2,200	2.2	0.33
SWFTS-MW02	9/21/2017	SWFTS-MW02-EM01	N	EM01	23,000	52,000	8.5	1,800	2.1	0.16
SWFTS-MW02	9/27/2017	SWFTS-MW02-EM02	N	EM02	23,000	47,000	9.4	2,000	2.2	0.14
SWFTS-MW02	10/4/2017	SWFTS-MW02-EM03	N	EM03	22,000	45,000	8.7	1,900	2.0	1.76
SWFTS-MW02	10/12/2017	SWFTS-MW02-EM04	N	EM04	20,000	23,000	6.2	1,900	2.3	0.25
SWFTS-MW02	10/26/2017	SWFTS-MW02-EM05	N	EM05	21,000	34,000	4.6 J-	2,000	2.5	2.11
SWFTS-MW02	11/14/2017	SWFTS-MW02-EM06	N	EM06	17,000	32,000	6.5	1,900	2.5	0.90
SWFTS-MW02	12/13/2017	SWFTS-MW02-EM07	N	EM07	19,000	38,000	6.7	2,800	2.1	0.01
SWFTS-MW02	2/19/2018	SWFTS-MW02-EM08	N	EM08	14,000	28,000	4.7	1,700	2.5	2.59
SWFTS-MW02	3/27/2018	SWFTS-MW02-EM09	N	EM09	4,400	7,400	0.80	1,300	2.5	1.76
SWFTS-MW02	4/30/2018	SWFTS-MW02-EM10	N	EM10	4,600	6,100	0.95 J	1,500	2.3	1.59
SWFTS-MW02	7/11/2018	SWFTS-MW02-EM11	N	EM11	3,700	5,100	1.7	1,600	1.9	1.86
SWFTS-MW02	7/27/2018	SWFTS-MW02-EM12	N	EM12	2,100	3,900	--	--	--	0.24
SWFTS-MW02	8/15/2018	SWFTS-MW02-EM13	N	EM13	1,700	2,600	0.74 J	1,400	2.5	2.35
SWFTS-MW02	9/10/2018	SWFTS-MW02-EM14	N	EM14	1,300	2,500	<0.55	1,300	2.5	5.31
SWFTS-MW02	10/10/2018	SWFTS-MW02-EM15	N	EM15	1,400	950	<1.1	1,300	3.0	0
SWFTS-MW02	12/20/2018	SWFTS-MW02-EM16	N	EM16	620	77 J	<0.55	1,400 J+	2.4	2.95
SWFTS-MW02	2/25/2019	SWFTS-MW02-EM17	N	EM17	740	32 J	<1.1	1,300	2.5	0.33
SWFTS-MW02	4/9/2019	SWFTS-MW02-EM18	N	EM18	1,300	82 J	<1.1 UJ	1,500	2.1	0.40
SWFTS-MW02	5/21/2019	SWFTS-MW02-EM19	N	EM19	3,200	50 J	<1.1	1,500	2.3	6.97
SWFTS-MW02	7/2/2019	SWFTS-MW02-EM20	N	EM20	4,200	<4.0	<0.55	1,400	2.5	0.34
SWFTS-MW02	8/14/2019	SWFTS-MW02-EM21	N	EM21	3,900	<20	<0.28	1,500	2.4	0.36
SWFTS-MW02	11/7/2019	SWFTS-MW02-EM22	N	EM22	2,700	<10	<0.28	1,200	2.2	0.49
SWFTS-MW02	12/17/2019	SWFTS-MW02-EM23	N	EM23	6,800	2,700	2.6	1,300	1.9	0.60
SWFTS-MW02	1/28/2020	SWFTS-MW02-EM24	N	EM24	6,600	11,000	4.3	1,200 J+	2.9	4.00
SWFTS-MW02	3/12/2020	SWFTS-MW02-EM25	N	EM25	7,500	13,000	5.6	1,300	3.2	1.4
SWFTS-MW02	4/30/2020	SWFTS-MW02-EM26	N	EM26	9,500	17,000	7.1	1,400	2.1	0.49
SWFTS-MW02	7/8/2020	SWFTS-MW02-EM27	N	EM27	7,000	7,700	5.1	1,500	3.1	0.86
SWFTS-MW02	8/17/2020	SWFTS-MW02-EM28	N	EM28	8,800	16,000	7.2	1,400	2.2	0.6
SWFTS-MW02	10/15/2020	SWFTS-MW02-EM29	N	EM29	8,700	16,000	7.1	1,400	1.9	0.46
SWFTS-MW02	12/10/2020	SWFTS-MW02-EM30	N	EM30	8,900	16,000	7.1	1,500	1.8	1.95

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Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW02	2/2/2021	SWFTS-MW02-EM31	N	EM31	9,700	11,000 J+	7.2	1,500	2.3 J+	0.58
SWFTS-MW02	3/30/2021	SWFTS-MW02-EM32	N	EM32	4,900	2,800	2.5	1,400	2.0	0.58
SWFTS-MW02	6/3/2021	SWFTS-MW02-EM33	N	EM33	8,300	10,000	5.7	1,500	1.7	0.20
SWFTS-MW02	7/21/2021	SWFTS-MW02-EM34	N	EM34	7,600	10,000	5.1	1,400	2.3 J+	0.66
SWFTS-MW02	9/16/2021	SWFTS-MW02-EM35	N	EM35	9,800	18,000	7.0	1,400	2.1	0.47
SWFTS-MW02	11/30/2021	SWFTS-MW02-EM36	N	EM36	7,000	7,300	4.1	1,500	2.5 J+	1.49
SWFTS-MW02	3/9/2022	SWFTS-MW02-EM37	N	EM37	600 J-	650	0.11 J+	2,700	5.8	0.50
SWFTS-MW02	6/22/2022	SWFTS-MW02-EM38	N	EM38	14,000	20,000	10	1,700	1.6 J+	0.43
SWFTS-MW03	3/30/2017	SWFTS-MW03-BL01	N	BL01	9,900	47,000	13	2,200	1.6	1.64
SWFTS-MW03	3/30/2017	SWFTS-MW03-BL01-FD	FD	BL01	9,200	47,000	13	2,400	1.7	--
SWFTS-MW03	9/21/2017	SWFTS-MW03-EM01	N	EM01	<4.8	<100	<0.55	2,300	4.2	0.19
SWFTS-MW03	9/27/2017	SWFTS-MW03-EM02	N	EM02	4.8	<100	<0.55	2,200	3.0	0.11
SWFTS-MW03	10/4/2017	SWFTS-MW03-EM03	N	EM03	<0.95	<50	<0.55	2,300	2.3	1.02
SWFTS-MW03	10/12/2017	SWFTS-MW03-EM04	N	EM04	21	<100	<0.55	2,200	2.0	0.14
SWFTS-MW03	10/26/2017	SWFTS-MW03-EM05	N	EM05	990	3,200	0.73 J	2,100	2.1	1.59
SWFTS-MW03	11/16/2017	SWFTS-MW03-EM06	N	EM06	3,200	15,000	3.2	2,100	1.7	0.64
SWFTS-MW03	12/12/2017	SWFTS-MW03-EM07	N	EM07	3,700	22,000	4.3	1,900	1.8	2.21
SWFTS-MW03	2/21/2018	SWFTS-MW03-EM08	N	EM08	3,400	33,000	4.2	1,900	1.7	0.30
SWFTS-MW03	3/27/2018	SWFTS-MW03-EM09	N	EM09	4,200	27,000	6.4	2,000	1.5	0.62
SWFTS-MW03	5/2/2018	SWFTS-MW03-EM10	N	EM10	4,300	30,000	7.9	2,100	1.4	0.45
SWFTS-MW03	7/10/2018	SWFTS-MW03-EM11	N	EM11	1,300	3,000	1.3	2,000	2.3	0.79
SWFTS-MW03	7/27/2018	SWFTS-MW03-EM12	N	EM12	1,900 J+	1,800	--	--	--	0.23
SWFTS-MW03	8/15/2018	SWFTS-MW03-EM13	N	EM13	1,900	280 J	3.6	1,900	1.9	0.48
SWFTS-MW03	9/11/2018	SWFTS-MW03-EM14	N	EM14	2,200	<10	4.9	1,900	1.5	1.84
SWFTS-MW03	10/9/2018	SWFTS-MW03-EM15	N	EM15	2,200	<20	5.9	2,000	2.0	0
SWFTS-MW03	1/2/2019	SWFTS-MW03-EM16	N	EM16	2,500	<10	7.7	2,000	1.8	0.8
SWFTS-MW03	2/27/2019	SWFTS-MW03-EM17	N	EM17	2,700	27 J	10	2,000	1.5	0.95
SWFTS-MW03	4/10/2019	SWFTS-MW03-EM18	N	EM18	2,700	130	8.4	2,100	1.4	0.95
SWFTS-MW03	5/21/2019	SWFTS-MW03-EM19	N	EM19	2,800	150	7.7	2,000	1.4	0.57
SWFTS-MW03	7/1/2019	SWFTS-MW03-EM20	N	EM20	2,800	550	8.2	2,000	1.9	0.34
SWFTS-MW03	8/14/2019	SWFTS-MW03-EM21	N	EM21	3,000	2,700	8.5	2,000	1.8	0.40
SWFTS-MW03	11/4/2019	SWFTS-MW03-EM22	N	EM22	2,100	1,000	6.8	2,000	1.6	0.52
SWFTS-MW03	12/19/2019	SWFTS-MW03-EM23	N	EM23	2,600	770	7.7	1,700	1.5	0.95
SWFTS-MW03	1/30/2020	SWFTS-MW03-EM24	N	EM24	3,100	1,800	8.0	1,800	1.6	2.58
SWFTS-MW03	3/9/2020	SWFTS-MW03-EM25	N	EM25	3,800	4,200	7.6	1,600	1.8	2.24
SWFTS-MW03	4/28/2020	SWFTS-MW03-EM26	N	EM26	3,400	5,400	7.1	1,700	1.7	0.58
SWFTS-MW03	7/6/2020	SWFTS-MW03-EM27	N	EM27	2,600	610	6.5	1,800	1.9	0.84
SWFTS-MW03	8/18/2020	SWFTS-MW03-EM28	N	EM28	2,300	<10	6.7	1,800	2.1	0.66
SWFTS-MW03	10/13/2020	SWFTS-MW03-EM29	N	EM29	2,300	<10	7.9	2,000	1.9	0.48
SWFTS-MW03	12/8/2020	SWFTS-MW03-EM30	N	EM30	2,500	<10	8.6	2,000	1.4	1.97
SWFTS-MW03	2/2/2021	SWFTS-MW03-EM31	N	EM31	2,700	49 J	8.5	1,900	1.5 J+	0.51
SWFTS-MW03	3/30/2021	SWFTS-MW03-EM32	N	EM32	2,300	740	5.8	1,800	1.5	0.51
SWFTS-MW03	6/3/2021	SWFTS-MW03-EM33	N	EM33	3,200	670	5.9	1,900	1.4	0.16
SWFTS-MW03	7/19/2021	SWFTS-MW03-EM34	N	EM34	3,800	4,000	5.8	1,900	1.5	0.31
SWFTS-MW03	9/15/2021	SWFTS-MW03-EM35	N	EM35	4,800	8,800	6.7	2,000	1.4	0.38
SWFTS-MW03	12/1/2021	SWFTS-MW03-EM36	N	EM36	5,100	7,700	6.4	2,100	1.7	1.53
SWFTS-MW03	3/9/2022	SWFTS-MW03-EM37	N	EM37	12,000	1,900	11	1,700	1.5	0.66
SWFTS-MW03	6/22/2022	SWFTS-MW03-EM38	N	EM38	6,100	11,000	8.2	1,900	2.2 J+	1.06
SWFTS-MW04	3/31/2017	SWFTS-MW04-BL01	N	BL01	14,000	26,000	5.5	1,400	2.3	7.02
SWFTS-MW04	9/20/2017	SWFTS-MW04-EM01	N	EM01	3,600	4,900	1.3	750	2.6	0.85
SWFTS-MW04	9/20/2017	SWFTS-MW04-EM01-FD	FD	EM01	3,600	4,800	1.3	820	2.6	--
SWFTS-MW04	9/27/2017	SWFTS-MW04-EM02	N	EM02	3,600	5,400	1.5	780	3.1	2.73
SWFTS-MW04	9/27/2017	SWFTS-MW04-EM02-FD	FD	EM02	3,500	5,400	1.5	860	3.1	--
SWFTS-MW04	10/4/2017	SWFTS-MW04-EM03	N	EM03	4,000	4,700	1.5	840	2.7	0.11
SWFTS-MW04	10/4/2017	SWFTS-MW04-EM03-FD	FD	EM03	3,900	4,700	1.9	840	2.6	--



**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW04	10/11/2017	SWFTS-MW04-EM04	N	EM04	2,900	3,900	1.3	810	2.7	1.39
SWFTS-MW04	10/24/2017	SWFTS-MW04-EM05	N	EM05	3,600	4,200	1.4	840	2.9	0.28
SWFTS-MW04	10/24/2017	SWFTS-MW04-EM05-FD	FD	EM05	3,500	4,200	1.5	880	3.0	--
SWFTS-MW04	11/15/2017	SWFTS-MW04-EM06	N	EM06	3,500	3,400	1.6	900	3.0	0.89
SWFTS-MW04	12/14/2017	SWFTS-MW04-EM07	N	EM07	4,000	4,700	1.8	910	2.9	0.45
SWFTS-MW04	2/21/2018	SWFTS-MW04-EM08	N	EM08	5,200	8,000	2.4	900	2.7	0.37
SWFTS-MW04	3/27/2018	SWFTS-MW04-EM09	N	EM09	6,100	14,000	3.5	1,100	2.5	0.43
SWFTS-MW04	5/1/2018	SWFTS-MW04-EM10	N	EM10	4,100	3,700	1.4	860	2.8	2.80
SWFTS-MW04	7/10/2018	SWFTS-MW04-EM11	N	EM11	6,400	15,000	4.5	940	2.5	0.00
SWFTS-MW04	8/16/2018	SWFTS-MW04-EM13	N	EM13	3,100	8,700	1.9 J+	730	2.9	0.91
SWFTS-MW04	9/12/2018	SWFTS-MW04-EM14	N	EM14	4,000	9,100	2.6	820	2.9	2.64
SWFTS-MW04	10/11/2018	SWFTS-MW04-EM15	N	EM15	3,400	8,300	2.0	790	3.0	0.84
SWFTS-MW04	1/3/2019	SWFTS-MW04-EM16	N	EM16	3,500	6,900	1.6	630	3.1	1.11
SWFTS-MW04	3/1/2019	SWFTS-MW04-EM17	N	EM17	3,500 J+	8,900	2.6	840	2.9	0.55
SWFTS-MW04	4/9/2019	SWFTS-MW04-EM18	N	EM18	3,100	7,500	2.3 J-	870	2.8	0.70
SWFTS-MW04	5/21/2019	SWFTS-MW04-EM19	N	EM19	2,400	5,300	1.2	690	3.0	0.05
SWFTS-MW04	7/5/2019	SWFTS-MW04-EM20	N	EM20	2,100	4,000	1.2	720	3.7	0.40
SWFTS-MW04	8/14/2019	SWFTS-MW04-EM21	N	EM21	3,300	5,400	1.7	730	3.4	0.39
SWFTS-MW04	11/7/2019	SWFTS-MW04-EM22	N	EM22	2,600	4,900	1.9	770	2.9	0.36
SWFTS-MW04	12/19/2019	SWFTS-MW04-EM23	N	EM23	4,200	9,600	2.3	820	2.8	0.89
SWFTS-MW04	1/29/2020	SWFTS-MW04-EM24	N	EM24	9,400	26,000	7.1	1,000 J+	2.7	2.89
SWFTS-MW04	3/12/2020	SWFTS-MW04-EM25	N	EM25	9,100	24,000	6.6	970	2.5	1.64
SWFTS-MW04	5/1/2020	SWFTS-MW04-EM26	N	EM26	12,000	29,000	7.1	1,100	2.2	0.11
SWFTS-MW04	7/7/2020	SWFTS-MW04-EM27	N	EM27	7,100	17,000	4.4	910	2.9	0.85
SWFTS-MW04	8/18/2020	SWFTS-MW04-EM28	N	EM28	6,000	15,000	3.5	890	3.0	0.63
SWFTS-MW04	10/14/2020	SWFTS-MW04-EM29	N	EM29	5,800	15,000	3.4	840	3.0	0.47
SWFTS-MW04	12/10/2020	SWFTS-MW04-EM30	N	EM30	5,300	13,000	3.2	430	2.5	1.89
SWFTS-MW04	2/2/2021	SWFTS-MW04-EM31	N	EM31	4,600	11,000	2.5	830	2.7 J+	0.64
SWFTS-MW04	3/30/2021	SWFTS-MW04-EM32	N	EM32	4,900	13,000	3.3	840	2.6	0.64
SWFTS-MW04	6/3/2021	SWFTS-MW04-EM33	N	EM33	5,300	11,000	2.9	850	2.6	1.12
SWFTS-MW04	7/21/2021	SWFTS-MW04-EM34	N	EM34	4,600	8,900	2.2	770	3.1 J+	0.11
SWFTS-MW04	9/16/2021	SWFTS-MW04-EM35	N	EM35	10,000	24,000	6.3	1,000	2.5	0.48
SWFTS-MW04	12/2/2021	SWFTS-MW04-EM36	N	EM36	7,500	15,000	4.0	990	2.8 J+	1.57
SWFTS-MW04	3/9/2022	SWFTS-MW04-EM37	N	EM37	15,000	17,000	9.7	1,200	1.9	0.55
SWFTS-MW04	6/22/2022	SWFTS-MW04-EM38	N	EM38	12,000	15,000	10	1,200	2.5 J+	0.42
SWFTS-MW05A	3/30/2017	SWFTS-MW05A-BL01	N	BL01	7,400	67,000	18	3,000	1.4	4.28
SWFTS-MW05A	9/20/2017	SWFTS-MW05A-EM01	N	EM01	5,700	51,000	17	2,500	1.1	4.18
SWFTS-MW05A	9/27/2017	SWFTS-MW05A-EM02	N	EM02	5,600	44,000	18	2,500	1.2	3.30
SWFTS-MW05A	10/3/2017	SWFTS-MW05A-EM03	N	EM03	5,800	46,000	16	2,400	0.80 J	5.46
SWFTS-MW05A	10/10/2017	SWFTS-MW05A-EM04	N	EM04	5,600	44,000	16	2,700	1.3	3.41
SWFTS-MW05A	10/23/2017	SWFTS-MW05A-EM05	N	EM05	4,700	43,000	15	2,600	1.3	2.96
SWFTS-MW05A	11/14/2017	SWFTS-MW05A-EM06	N	EM06	5,500	38,000	16	2,500	1.4	2.27
SWFTS-MW05A	12/13/2017	SWFTS-MW05A-EM07	N	EM07	5,300	43,000	17	2,500	1.3	2.10
SWFTS-MW05A	2/20/2018	SWFTS-MW05A-EM08	N	EM08	6,400	53,000	18	2,600	1.4	2.78
SWFTS-MW05A	3/26/2018	SWFTS-MW05A-EM09	N	EM09	6,600	58,000	16	2,500	1.1	0.99
SWFTS-MW05A	4/30/2018	SWFTS-MW05A-EM10	N	EM10	6,400 J	55,000	17	2,600	1.0	2.16
SWFTS-MW05A	7/11/2018	SWFTS-MW05A-EM11	N	EM11	5,200	46,000	15	2,300	0.87 J	2.65
SWFTS-MW05A	7/27/2018	SWFTS-MW05A-EM12	N	EM12	4,300	41,000	--	--	--	3.46
SWFTS-MW05A	8/14/2018	SWFTS-MW05A-EM13	N	EM13	3,600	35,000	10 J+	--	1.5	0.93
SWFTS-MW05A	9/11/2018	SWFTS-MW05A-EM14	N	EM14	3,400	30,000	9.5	2,500	1.2	2.59
SWFTS-MW05A	10/10/2018	SWFTS-MW05A-EM15	N	EM15	4,200	34,000	12	2,300	1.3	2.08
SWFTS-MW05A	12/20/2018	SWFTS-MW05A-EM16	N	EM16	5,000	21,000	16	2,600	1.3	0.68
SWFTS-MW05A	2/27/2019	SWFTS-MW05A-EM17	N	EM17	4,300	10,000	17	2,500	1.5	0.51
SWFTS-MW05A	4/10/2019	SWFTS-MW05A-EM18	N	EM18	3,100	56 J	13	2,500	1.5	0.70
SWFTS-MW05A	5/21/2019	SWFTS-MW05A-EM19	N	EM19	2,600	17 J	13	2,500	1.6	0.65

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW05A	7/1/2019	SWFTS-MW05A-EM20	N	EM20	2,700	<20	14	2,400	1.7	0.44
SWFTS-MW05A	8/13/2019	SWFTS-MW05A-EM21	N	EM21	3,100	33 J	13	2,500	1.9	0.3
SWFTS-MW05A	11/5/2019	SWFTS-MW05A-EM22	N	EM22	3,600 J+	30 J	14	2,500	1.8	0.60
SWFTS-MW05A	12/18/2019	SWFTS-MW05A-EM23	N	EM23	3,400	<10	12	2,400	1.3	0.83
SWFTS-MW05A	1/29/2020	SWFTS-MW05A-EM24	N	EM24	3,800	110	14	2,600 J+	1.4	2.55
SWFTS-MW05A	3/11/2020	SWFTS-MW05A-EM25	N	EM25	3,900	28 J	13 J-	2,600	1.8	2.24
SWFTS-MW05A	4/29/2020	SWFTS-MW05A-EM26	N	EM26	3,700	<20	13	2,600	1.4	0.57
SWFTS-MW05A	7/8/2020	SWFTS-MW05A-EM27	N	EM27	3,800	49 J	14	2,800	1.8 J-	0.79
SWFTS-MW05A	8/18/2020	SWFTS-MW05A-EM28	N	EM28	2,900	<10	11	2,700	2.9	0.64
SWFTS-MW05A	10/14/2020	SWFTS-MW05A-EM29	N	EM29	3,300 J-	<10	10	2,700	1.2	0.53
SWFTS-MW05A	12/8/2020	SWFTS-MW05A-EM30	N	EM30	3,700	<20	14	2,800	1.1	1.76
SWFTS-MW05A	2/2/2021	SWFTS-MW05A-EM31	N	EM31	4,300	<24	13	2,600	1.1 J+	0.59
SWFTS-MW05A	3/30/2021	SWFTS-MW05A-EM32	N	EM32	4,000	<49	14	2,800	1.0 J-	0.59
SWFTS-MW05A	6/3/2021	SWFTS-MW05A-EM33	N	EM33	4,300	<24	14	2,800	1.1	0.33
SWFTS-MW05A	7/20/2021	SWFTS-MW05A-EM34	N	EM34	4,000	<24	14 J-	2,700	1.1	0.38
SWFTS-MW05A	9/17/2021	SWFTS-MW05A-EM35	N	EM35	4,700	<24	13	2,800	1.0	0.38
SWFTS-MW05A	11/29/2021	SWFTS-MW05A-EM36	N	EM36	3,800	<24	13	3,000	1.2	1.08
SWFTS-MW05B	3/30/2017	SWFTS-MW05B-BL01	N	BL01	7,200	48,000	13	2,500	1.5	0.70
SWFTS-MW05B	9/22/2017	SWFTS-MW05B-EM01	N	EM01	190	300	<0.55	2,100	39	0.24
SWFTS-MW05B	9/27/2017	SWFTS-MW05B-EM02	N	EM02	<0.95	<50	<0.55	2,200	57	0.10
SWFTS-MW05B	10/3/2017	SWFTS-MW05B-EM03	N	EM03	8.3	<50	<0.55	1,900	90	0.10
SWFTS-MW05B	10/10/2017	SWFTS-MW05B-EM04	N	EM04	<0.95	<100	<0.55	2,000	100	0.08
SWFTS-MW05B	10/23/2017	SWFTS-MW05B-EM05	N	EM05	<0.95	<100	<0.55	1,800	68	0.34
SWFTS-MW05B	11/14/2017	SWFTS-MW05B-EM06	N	EM06	<0.95	16 J	<0.55	1,800	3.2	0.46
SWFTS-MW05B	12/13/2017	SWFTS-MW05B-EM07	N	EM07	990	5,300	0.36 J	2,000	2.3	0.30
SWFTS-MW05B	2/20/2018	SWFTS-MW05B-EM08	N	EM08	2,000	11,000	4.2	2,100	2.2	0.34
SWFTS-MW05B	3/26/2018	SWFTS-MW05B-EM09	N	EM09	2,600	18,000	4.6	1,900	1.7	0.49
SWFTS-MW05B	4/30/2018	SWFTS-MW05B-EM10	N	EM10	2,600	18,000	5.4	2,100	1.9	0.00
SWFTS-MW05B	7/10/2018	SWFTS-MW05B-EM11	N	EM11	190	1,500	0.66 J-	1,600	2.4	1.45
SWFTS-MW05B	7/27/2018	SWFTS-MW05B-EM12	N	EM12	240	1,600	--	--	--	4.21
SWFTS-MW05B	8/14/2018	SWFTS-MW05B-EM13	N	EM13	420	2,000	<0.55	--	2.5	0.80
SWFTS-MW05B	9/11/2018	SWFTS-MW05B-EM14	N	EM14	860	4,800	1.3	1,900	1.9	2.37
SWFTS-MW05B	10/9/2018	SWFTS-MW05B-EM15	N	EM15	1,400	8,700	2.5	1,800	2.3	0
SWFTS-MW05B	12/20/2018	SWFTS-MW05B-EM16	N	EM16	2,100	8,000	4.7	2,100	2.1	0.62
SWFTS-MW05B	2/27/2019	SWFTS-MW05B-EM17	N	EM17	910	240	3.8	1,900	2.1	0.61
SWFTS-MW05B	4/10/2019	SWFTS-MW05B-EM18	N	EM18	1,200	19 J	3.3	1,800	2.0	0.63
SWFTS-MW05B	5/21/2019	SWFTS-MW05B-EM19	N	EM19	1,200	<4.0	4.3	1,700	1.9	0.81
SWFTS-MW05B	7/1/2019	SWFTS-MW05B-EM20	N	EM20	1,400	<10	4.8	1,900	2.4	0.21
SWFTS-MW05B	8/13/2019	SWFTS-MW05B-EM21	N	EM21	1,600	<10	4.8	1,900	2.3	0.38
SWFTS-MW05B	11/5/2019	SWFTS-MW05B-EM22	N	EM22	790	13 J	1.6 J	1,700	2.3	0.48
SWFTS-MW05B	12/18/2019	SWFTS-MW05B-EM23	N	EM23	1,200	<10	3.4	2,300	1.9	0.72
SWFTS-MW05B	1/29/2020	SWFTS-MW05B-EM24	N	EM24	1,900	37 J	5.0	1,900 J+	2.0	2.43
SWFTS-MW05B	3/11/2020	SWFTS-MW05B-EM25	N	EM25	1,800	<20	4.9 J-	2,000	1.7	2.15
SWFTS-MW05B	4/29/2020	SWFTS-MW05B-EM26	N	EM26	1,800	<10	6.1	2,100	2.0	0.65
SWFTS-MW05B	7/8/2020	SWFTS-MW05B-EM27	N	EM27	1,100	<10	2.1	1,800	2.5	0.93
SWFTS-MW05B	8/18/2020	SWFTS-MW05B-EM28	N	EM28	1,100	32 J	4.0	1,800	3.0	0.91
SWFTS-MW05B	10/14/2020	SWFTS-MW05B-EM29	N	EM29	1,400	32 J	4.0	1,800	2.4	0.51
SWFTS-MW05B	12/8/2020	SWFTS-MW05B-EM30	N	EM30	1,300	<10	4.9	2,100	1.8	1.79
SWFTS-MW05B	2/2/2021	SWFTS-MW05B-EM31	N	EM31	1,500	<9.8	4.9	1,900	1.8 J+	0.46
SWFTS-MW05B	3/30/2021	SWFTS-MW05B-EM32	N	EM32	26	<9.8	0.093	1,700	2.4	0.46
SWFTS-MW05B	6/3/2021	SWFTS-MW05B-EM33	N	EM33	210	69	0.35	1,800	2.3	0.02
SWFTS-MW05B	7/21/2021	SWFTS-MW05B-EM34	N	EM34	520	75 J	0.31	1,900	2.2 J+	0.35
SWFTS-MW05B	9/16/2021	SWFTS-MW05B-EM35	N	EM35	1,200	90	1.5	2,100	1.9	0.38
SWFTS-MW05B	11/30/2021	SWFTS-MW05B-EM36	N	EM36	650	19 J	1.4	2,300	2.0 J+	1.15
SWFTS-MW06A	3/30/2017	SWFTS-MW06A-BL01	N	BL01	170	<10	<0.11	570	3.6	0.38



**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	9/21/2017	SWFTS-MW06A-EM01	N	EM01	2,400	220	1.5	890	3.0	0.16
SWFTS-MW06A	9/27/2017	SWFTS-MW06A-EM02	N	EM02	2,600	320	1.7	930	3.3	0.30
SWFTS-MW06A	10/3/2017	SWFTS-MW06A-EM03	N	EM03	2,700	300	2.0 J-	920	2.8	0.12
SWFTS-MW06A	10/11/2017	SWFTS-MW06A-EM04	N	EM04	5,500	1,100	1.9	970	3.0	0.37
SWFTS-MW06A	10/23/2017	SWFTS-MW06A-EM05	N	EM05	2,300	350	1.9	1,000	3.3	2.52
SWFTS-MW06A	11/16/2017	SWFTS-MW06A-EM06	N	EM06	3,300	380	2.5	1,500	2.8	0.42
SWFTS-MW06A	12/13/2017	SWFTS-MW06A-EM07	N	EM07	3,600	520	2.6	1,100	2.7	0.17
SWFTS-MW06A	2/22/2018	SWFTS-MW06A-EM08	N	EM08	1,800	200	0.88	890	3.4	0.37
SWFTS-MW06A	3/28/2018	SWFTS-MW06A-EM09	N	EM09	1,500	77	0.36	750	3.1	0.44
SWFTS-MW06A	5/1/2018	SWFTS-MW06A-EM10	N	EM10	760 J	10 J	0.11	650	3.1	0.27
SWFTS-MW06A	5/1/2018	SWFTS-MW06A-EM10-FD	FD	EM10	880	13 J	0.11	650	3.1	--
SWFTS-MW06A	7/11/2018	SWFTS-MW06A-EM11	N	EM11	830	21	0.11 J	640	2.9	2.40
SWFTS-MW06A	7/11/2018	SWFTS-MW06A-EM11-FD	FD	EM11	840	20	<0.11	650	2.9	--
SWFTS-MW06A	8/14/2018	SWFTS-MW06A-EM13	N	EM13	1,500	96	0.28	--	3.4	0.69
SWFTS-MW06A	8/14/2018	SWFTS-MW06A-EM13-FD	FD	EM13	1,500	95	0.29	--	3.3	--
SWFTS-MW06A	9/11/2018	SWFTS-MW06A-EM14	N	EM14	1,700	150	0.42	750	3.4	0.49
SWFTS-MW06A	9/11/2018	SWFTS-MW06A-EM14-FD	FD	EM14	1,600	140	0.43	810	3.3	--
SWFTS-MW06A	10/10/2018	SWFTS-MW06A-EM15	N	EM15	2,400	210	0.84	800	3.5	0.2
SWFTS-MW06A	10/10/2018	SWFTS-MW06A-EM15-FD	FD	EM15	2,100	210	0.79	780	3.6	--
SWFTS-MW06A	12/28/2018	SWFTS-MW06A-EM16	N	EM16	1,700	760	0.41	740	3.6	0.98
SWFTS-MW06A	12/28/2018	SWFTS-MW06A-EM16-FD	FD	EM16	1,600	760	0.42	730	3.5	--
SWFTS-MW06A	2/27/2019	SWFTS-MW06A-EM17	N	EM17	1,600	93	0.42	760	3.1	0.05
SWFTS-MW06A	2/27/2019	SWFTS-MW06A-EM17-FD	FD	EM17	1,500	95	0.43	830	3.1	--
SWFTS-MW06A	4/10/2019	SWFTS-MW06A-EM18	N	EM18	1,500	120	0.60	760	3.4	0.61
SWFTS-MW06A	4/10/2019	SWFTS-MW06A-EM18-FD	FD	EM18	1,500	120	0.59	760	3.3	--
SWFTS-MW06A	5/20/2019	SWFTS-MW06A-EM19	N	EM19	1,800	170	1.0	800	3.0	0.09
SWFTS-MW06A	5/20/2019	SWFTS-MW06A-EM19-FD	FD	EM19	1,800	160	0.86	800	3.2	--
SWFTS-MW06A	7/1/2019	SWFTS-MW06A-EM20	N	EM20	2,500	350 J	1.3	880	3.6	0.40
SWFTS-MW06A	7/1/2019	SWFTS-MW06A-EM20-FD	FD	EM20	2,800	310 J	1.2	890	3.7	--
SWFTS-MW06A	8/14/2019	SWFTS-MW06A-EM21	N	EM21	3,200	390	1.7	950	3.7	0.37
SWFTS-MW06A	8/14/2019	SWFTS-MW06A-EM21-FD	FD	EM21	3,300	380	1.7	970	3.2	--
SWFTS-MW06A	11/6/2019	SWFTS-MW06A-EM22	N	EM22	2,500	330	1.3	910	3.3	0.62
SWFTS-MW06A	11/6/2019	SWFTS-MW06A-EM22-FD	FD	EM22	2,600	320	1.3	910	3.2	--
SWFTS-MW06A	12/19/2019	SWFTS-MW06A-EM23	N	EM23	1,900	180	0.77	810	3.0	0.80
SWFTS-MW06A	12/19/2019	SWFTS-MW06A-EM23-FD	FD	EM23	1,900	190	0.77	780	2.8	--
SWFTS-MW06A	1/29/2020	SWFTS-MW06A-EM24	N	EM24	1,100	51 J	0.26	710 J+	3.2	4.31
SWFTS-MW06A	1/29/2020	SWFTS-MW06A-EM24-FD	FD	EM24	1,100	53 J	0.26	710 J+	3.2	--
SWFTS-MW06A	3/11/2020	SWFTS-MW06A-EM25	N	EM25	580	<4.0	<0.11	600	3.3	2.6
SWFTS-MW06A	3/11/2020	SWFTS-MW06A-EM25-FD	FD	EM25	600	<4.0	<0.11	600	3.3	--
SWFTS-MW06A	4/29/2020	SWFTS-MW06A-EM26	N	EM26	350	<10	<0.11	550	3.1	0.84
SWFTS-MW06A	4/29/2020	SWFTS-MW06A-EM26-FD	FD	EM26	360	<10	<0.11	560	3.2	--
SWFTS-MW06A	7/7/2020	SWFTS-MW06A-EM27	N	EM27	840	<2.0	<0.11	600	3.5	0.99
SWFTS-MW06A	7/7/2020	SWFTS-MW06A-EM27-FD	FD	EM27	850	<2.0	<0.11	610	3.4	--
SWFTS-MW06A	8/19/2020	SWFTS-MW06A-EM28	N	EM28	1,400	63 J	0.48	680	4.3	0.6
SWFTS-MW06A	8/19/2020	SWFTS-MW06A-EM28-FD	FD	EM28	1,400	70 J	0.57	670	4.6	--
SWFTS-MW06A	10/13/2020	SWFTS-MW06A-EM29	N	EM29	2,100	150	0.54 J	750	3.4	0.46
SWFTS-MW06A	10/13/2020	SWFTS-MW06A-EM29-FD	FD	EM29	2,100	140	0.54 J	740	3.3	--
SWFTS-MW06A	12/8/2020	SWFTS-MW06A-EM30	N	EM30	2,000 J	140	0.53 J+	810	2.9	1.9
SWFTS-MW06A	12/8/2020	SWFTS-MW06A-EM30-FD	FD	EM30	2,200 J	140	0.54 J+	810	2.9	--
SWFTS-MW06A	2/3/2021	SWFTS-MW06A-EM31	N	EM31	2,200	71 J	0.36	780	2.9	0.55
SWFTS-MW06A	2/3/2021	SWFTS-MW06A-EM31-FD	FD	EM31	2,200	78 J	0.37	790	2.9	--
SWFTS-MW06A	3/31/2021	SWFTS-MW06A-EM32	N	EM32	1,700	83 J	0.36	740	3.0	0.55
SWFTS-MW06A	3/31/2021	SWFTS-MW06A-EM32-FD	FD	EM32	1,800	82 J	0.35	740	3.0	--
SWFTS-MW06A	6/4/2021	SWFTS-MW06A-EM33	N	EM33	1,800	86 J	0.46	760	2.9 J+	0.03
SWFTS-MW06A	6/4/2021	SWFTS-MW06A-EM33-FD	FD	EM33	1,800	85 J	0.46	760	2.9 J+	--

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW06A	7/19/2021	SWFTS-MW06A-EM34	N	EM34	1,900	170	0.52	770	3.0	0.18
SWFTS-MW06A	7/19/2021	SWFTS-MW06A-EM34-FD	FD	EM34	1,900	180	0.51	760	3.3	--
SWFTS-MW06A	9/16/2021	SWFTS-MW06A-EM35	N	EM35	1,300	52 J	0.30	720	3.1	0.45
SWFTS-MW06A	9/16/2021	SWFTS-MW06A-EM35-FD	FD	EM35	1,300	51 J	0.30	720	3.1	--
SWFTS-MW06A	12/1/2021	SWFTS-MW06A-EM36	N	EM36	1,200	<24	0.20	760	3.1	1.38
SWFTS-MW06A	12/1/2021	SWFTS-MW06A-EM36-FD	FD	EM36	1,200	<24	0.21	760	3.2	--
SWFTS-MW06A	3/7/2022	SWFTS-MW06A-EM37	N	EM37	590	<24	0.089	590	3.1	0.60
SWFTS-MW06A	3/7/2022	SWFTS-MW06A-EM37-FD	FD	EM37	530	<24	0.081	590	3.1	--
SWFTS-MW06A	6/22/2022	SWFTS-MW06A-EM38	N	EM38	750	150	3.9	550	3.7 J+	0.70
SWFTS-MW06A	6/22/2022	SWFTS-MW06A-EM38-FD	FD	EM38	700	140	3.8	550	3.8 J+	--
SWFTS-MW06B	3/30/2017	SWFTS-MW06B-BL01	N	BL01	1,000	490	0.13 J	620	3.5	0.06
SWFTS-MW06B	9/21/2017	SWFTS-MW06B-EM01	N	EM01	2,000	350	0.70	770	2.8	0.18
SWFTS-MW06B	9/27/2017	SWFTS-MW06B-EM02	N	EM02	2,000	360	0.76	780	3.3	0.78
SWFTS-MW06B	10/3/2017	SWFTS-MW06B-EM03	N	EM03	2,500	340	1.0	790	2.8	0.11
SWFTS-MW06B	10/11/2017	SWFTS-MW06B-EM04	N	EM04	4,400	380	1.1	820	3.1	0.45
SWFTS-MW06B	10/23/2017	SWFTS-MW06B-EM05	N	EM05	2,000	390	1.3	890	3.1	1.14
SWFTS-MW06B	11/16/2017	SWFTS-MW06B-EM06	N	EM06	2,800	400	1.8	970	2.9	0.44
SWFTS-MW06B	12/13/2017	SWFTS-MW06B-EM07	N	EM07	3,200	590	2.2	990	2.9	0.91
SWFTS-MW06B	2/22/2018	SWFTS-MW06B-EM08	N	EM08	2,900	480	1.9	1,100	3.1	0.47
SWFTS-MW06B	3/28/2018	SWFTS-MW06B-EM09	N	EM09	2,500	370	1.1	900	2.8	0.59
SWFTS-MW06B	5/1/2018	SWFTS-MW06B-EM10	N	EM10	1,800	270	0.56	780	2.9	1.31
SWFTS-MW06B	7/11/2018	SWFTS-MW06B-EM11	N	EM11	880	140	0.18 J	660	2.9	2.05
SWFTS-MW06B	8/14/2018	SWFTS-MW06B-EM13	N	EM13	1,200	170	0.14	--	3.8	0.57
SWFTS-MW06B	9/11/2018	SWFTS-MW06B-EM14	N	EM14	1,700	230	0.23	720	3.3	0.71
SWFTS-MW06B	10/10/2018	SWFTS-MW06B-EM15	N	EM15	1,700	260	0.36 J	720	4.1	0.17
SWFTS-MW06B	12/28/2018	SWFTS-MW06B-EM16	N	EM16	1,900	270	0.66	770	3.1	0.7
SWFTS-MW06B	2/28/2019	SWFTS-MW06B-EM17	N	EM17	1,600	230	0.53	760	3.2	0.45
SWFTS-MW06B	4/10/2019	SWFTS-MW06B-EM18	N	EM18	1,600	210	1.2	740	3.4	0.54
SWFTS-MW06B	5/21/2019	SWFTS-MW06B-EM19	N	EM19	1,700	220	0.43	750	3.7	0.09
SWFTS-MW06B	7/1/2019	SWFTS-MW06B-EM20	N	EM20	2,100	340	0.73	780	3.6	0.43
SWFTS-MW06B	8/14/2019	SWFTS-MW06B-EM21	N	EM21	2,900	420	1.4	840	3.2	0.39
SWFTS-MW06B	11/6/2019	SWFTS-MW06B-EM22	N	EM22	3,000	530	1.6	930	<0.65	0.59
SWFTS-MW06B	12/19/2019	SWFTS-MW06B-EM23	N	EM23	2,500	410	1.0	820	2.9	0.82
SWFTS-MW06B	1/29/2020	SWFTS-MW06B-EM24	N	EM24	1,900	290	0.72	820 J+	3.4	3.56
SWFTS-MW06B	3/11/2020	SWFTS-MW06B-EM25	N	EM25	1,300	150	0.32	700	2.8	1.54
SWFTS-MW06B	4/29/2020	SWFTS-MW06B-EM26	N	EM26	690	70	<0.11	600	3.0	0.73
SWFTS-MW06B	7/7/2020	SWFTS-MW06B-EM27	N	EM27	600	29 J	<0.11	600	3.3	0.79
SWFTS-MW06B	8/19/2020	SWFTS-MW06B-EM28	N	EM28	890	61 J	<0.11	610	3.9	0.58
SWFTS-MW06B	10/13/2020	SWFTS-MW06B-EM29	N	EM29	1,800	170	0.35	700	3.4	0.48
SWFTS-MW06B	12/8/2020	SWFTS-MW06B-EM30	N	EM30	2,100	230	0.44 J+	750	2.8	6.39
SWFTS-MW06B	2/3/2021	SWFTS-MW06B-EM31	N	EM31	2,400	180	0.37	790	2.9	0.68
SWFTS-MW06B	3/31/2021	SWFTS-MW06B-EM32	N	EM32	1,900	180	0.25	740	3.1	0.68
SWFTS-MW06B	6/4/2021	SWFTS-MW06B-EM33	N	EM33	1,800	170	0.36	750	2.8 J+	0.20
SWFTS-MW06B	7/19/2021	SWFTS-MW06B-EM34	N	EM34	1,900	560	0.34	750	3.6	0.35
SWFTS-MW06B	9/16/2021	SWFTS-MW06B-EM35	N	EM35	1,900	170	0.46	760	3.1	0.43
SWFTS-MW06B	12/1/2021	SWFTS-MW06B-EM36	N	EM36	1,300	84 J	0.14	760	3.1	1.39
SWFTS-MW06B	3/7/2022	SWFTS-MW06B-EM37	N	EM37	1,000	100	0.11	660	3.5	0.53
SWFTS-MW06B	6/22/2022	SWFTS-MW06B-EM38	N	EM38	2,600	2,700	12	710	4.6 J+	0.41
SWFTS-MW07A	3/30/2017	SWFTS-MW07A-BL01	N	BL01	14,000	44,000	11	1,600	2.1	0.16
SWFTS-MW07A	9/20/2017	SWFTS-MW07A-EM01	N	EM01	14,000	41,000	11	1,700	2.0	0.20
SWFTS-MW07A	9/26/2017	SWFTS-MW07A-EM02	N	EM02	15,000	36,000	11	1,600	2.3	0.49
SWFTS-MW07A	10/3/2017	SWFTS-MW07A-EM03	N	EM03	16,000	37,000	10	1,600	2.1	0.22
SWFTS-MW07A	10/11/2017	SWFTS-MW07A-EM04	N	EM04	12,000	39,000	12	1,600	2.0	0.11
SWFTS-MW07A	10/24/2017	SWFTS-MW07A-EM05	N	EM05	14,000	38,000	10	1,700	2.3	0.43
SWFTS-MW07A	11/15/2017	SWFTS-MW07A-EM06	N	EM06	16,000	40,000	12	1,600	2.1	0.35

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 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW07A	12/14/2017	SWFTS-MW07A-EM07	N	EM07	14,000	35,000	11	1,600	2.1	-0.02 E
SWFTS-MW07A	2/19/2018	SWFTS-MW07A-EM08	N	EM08	12,000	36,000	12	1,600	2.2	0.72
SWFTS-MW07A	3/28/2018	SWFTS-MW07A-EM09	N	EM09	11,000	36,000	12	1,300	1.8	3.29
SWFTS-MW07A	5/2/2018	SWFTS-MW07A-EM10	N	EM10	11,000	40,000	13	1,400	1.7	1.02
SWFTS-MW07A	7/11/2018	SWFTS-MW07A-EM11	N	EM11	11,000	44,000	14	1,300	1.6	1.42
SWFTS-MW07A	8/16/2018	SWFTS-MW07A-EM13	N	EM13	8,600	76,000	15	1,300	2.0	0.58
SWFTS-MW07A	9/12/2018	SWFTS-MW07A-EM14	N	EM14	9,500	42,000	17	1,400	1.8	1.30
SWFTS-MW07A	10/10/2018	SWFTS-MW07A-EM15	N	EM15	9,300	40,000	17	1,300	2.1	0.08
SWFTS-MW07A	1/2/2019	SWFTS-MW07A-EM16	N	EM16	8,100	35,000	15	1,300	1.8	0.99
SWFTS-MW07A	2/28/2019	SWFTS-MW07A-EM17	N	EM17	7,300	34,000	15	1,200	2.5	0.62
SWFTS-MW07A	4/12/2019	SWFTS-MW07A-EM18	N	EM18	7,600	36,000	16	1,200	1.7	0.72
SWFTS-MW07A	5/22/2019	SWFTS-MW07A-EM19	N	EM19	6,800	35,000	15	1,200	1.9	1.03
SWFTS-MW07A	7/3/2019	SWFTS-MW07A-EM20	N	EM20	7,800	36,000	14	1,200	2.2	0.41
SWFTS-MW07A	8/15/2019	SWFTS-MW07A-EM21	N	EM21	8,500	38,000	15	1,100	2.1	0.43
SWFTS-MW07A	11/7/2019	SWFTS-MW07A-EM22	N	EM22	7,900	35,000	13	1,100	1.8	0.62
SWFTS-MW07A	12/20/2019	SWFTS-MW07A-EM23	N	EM23	8,900	35,000	13	1,000	1.8	0.73
SWFTS-MW07A	1/28/2020	SWFTS-MW07A-EM24	N	EM24	9,000	39,000	14 J-	1,000 J+	1.8	0.59
SWFTS-MW07A	3/12/2020	SWFTS-MW07A-EM25	N	EM25	12,000	44,000	13 J-	1,100	2.0	2.25
SWFTS-MW07A	4/30/2020	SWFTS-MW07A-EM26	N	EM26	12,000	35,000	13	1,400	1.9	0.3
SWFTS-MW07A	7/9/2020	SWFTS-MW07A-EM27	N	EM27	5,300	42,000	15	1,400	2.1 J-	0.75
SWFTS-MW07A	8/19/2020	SWFTS-MW07A-EM28	N	EM28	9,300	37,000	12	1,400	2.2	0.61
SWFTS-MW07A	10/16/2020	SWFTS-MW07A-EM29	N	EM29	9,800	33,000	12	1,300	1.9	0.6
SWFTS-MW07A	12/9/2020	SWFTS-MW07A-EM30	N	EM30	8,600	32,000	13	1,300	1.7	2.09
SWFTS-MW07A	2/3/2021	SWFTS-MW07A-EM31	N	EM31	9,100	31,000	12	1,200	1.5	1
SWFTS-MW07A	3/31/2021	SWFTS-MW07A-EM32	N	EM32	8,500	23,000 J+	11	1,100	1.5	1.00
SWFTS-MW07A	6/4/2021	SWFTS-MW07A-EM33	N	EM33	10,000	35,000	12	1,100	1.4 J+	1.00
SWFTS-MW07A	7/22/2021	SWFTS-MW07A-EM34	N	EM34	14,000	30,000	12	520	1.7	0.90
SWFTS-MW07A	9/16/2021	SWFTS-MW07A-EM35	N	EM35	17,000	39,000	13	1,200	1.6	0.93
SWFTS-MW07A	12/3/2021	SWFTS-MW07A-EM36	N	EM36	21,000	37,000	13	1,600	1.9	2.83
SWFTS-MW07A	3/8/2022	SWFTS-MW07A-EM37	N	EM37	21,000	35,000	13	1,300	1.8 J+	0.76
SWFTS-MW07A	6/23/2022	SWFTS-MW07A-EM38	N	EM38	19,000	38,000	16	1,700	2.1	1.53
SWFTS-MW07B	3/30/2017	SWFTS-MW07B-BL01	N	BL01	13,000	40,000	11	1,800	2.0	1.29
SWFTS-MW07B	9/20/2017	SWFTS-MW07B-EM01	N	EM01	10,000	33,000	9.0	1,300	1.8	0.35
SWFTS-MW07B	9/26/2017	SWFTS-MW07B-EM02	N	EM02	11,000	29,000	10	1,500	2.2	0.60
SWFTS-MW07B	10/3/2017	SWFTS-MW07B-EM03	N	EM03	9,400	28,000	9.9	1,400	1.6	1.38
SWFTS-MW07B	10/11/2017	SWFTS-MW07B-EM04	N	EM04	8,400	28,000	11	1,400	1.7	0.13
SWFTS-MW07B	10/24/2017	SWFTS-MW07B-EM05	N	EM05	9,300	29,000	11	1,400	1.2	0.33
SWFTS-MW07B	11/15/2017	SWFTS-MW07B-EM06	N	EM06	9,700	29,000	12	1,300	2.0	0.42
SWFTS-MW07B	12/14/2017	SWFTS-MW07B-EM07	N	EM07	9,400	30,000	12	1,300	1.9	-0.09 E
SWFTS-MW07B	2/19/2018	SWFTS-MW07B-EM08	N	EM08	9,700	37,000	14	1,300	2.2	1.23
SWFTS-MW07B	3/28/2018	SWFTS-MW07B-EM09	N	EM09	11,000	47,000	16	1,300	1.7	0.30
SWFTS-MW07B	5/2/2018	SWFTS-MW07B-EM10	N	EM10	9,100	34,000	13	1,200	1.9	4.67
SWFTS-MW07B	7/11/2018	SWFTS-MW07B-EM11	N	EM11	8,300	43,000	16	1,300	1.7	1.60
SWFTS-MW07B	8/16/2018	SWFTS-MW07B-EM13	N	EM13	6,500	44,000	17	1,200	2.0	0.49
SWFTS-MW07B	9/12/2018	SWFTS-MW07B-EM14	N	EM14	6,200	31,000	17	1,200	1.8	1.69
SWFTS-MW07B	10/10/2018	SWFTS-MW07B-EM15	N	EM15	5,700	28,000	16	1,100	1.8	0.09
SWFTS-MW07B	1/3/2019	SWFTS-MW07B-EM16	N	EM16	6,100	32,000	13	900	1.6	1.35
SWFTS-MW07B	2/28/2019	SWFTS-MW07B-EM17	N	EM17	6,700	40,000	15	1,000	2.3	0.40
SWFTS-MW07B	4/12/2019	SWFTS-MW07B-EM18	N	EM18	7,500	39,000	14	1,100	1.6	0.52
SWFTS-MW07B	5/22/2019	SWFTS-MW07B-EM19	N	EM19	7,600	37,000	14	1,100	1.4	0.87
SWFTS-MW07B	7/3/2019	SWFTS-MW07B-EM20	N	EM20	6,500	30,000	13	1,000	2.1	0.47
SWFTS-MW07B	8/15/2019	SWFTS-MW07B-EM21	N	EM21	7,200	33,000	13	940	2.0	0.42
SWFTS-MW07B	11/7/2019	SWFTS-MW07B-EM22	N	EM22	6,400	33,000	12	890	1.6	0.59
SWFTS-MW07B	12/20/2019	SWFTS-MW07B-EM23	N	EM23	9,800	38,000	13	950	1.4	0.81
SWFTS-MW07B	1/28/2020	SWFTS-MW07B-EM24	N	EM24	12,000	47,000	14	1,100 J+	2.1	0.55

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW07B	3/12/2020	SWFTS-MW07B-EM25	N	EM25	14,000	46,000	13 J-	1,300	2.0	2.3
SWFTS-MW07B	4/30/2020	SWFTS-MW07B-EM26	N	EM26	10,000	41,000	12	1,400	1.7	0.49
SWFTS-MW07B	7/9/2020	SWFTS-MW07B-EM27	N	EM27	8,900	30,000	14	1,400	2.3 J-	0.79
SWFTS-MW07B	8/19/2020	SWFTS-MW07B-EM28	N	EM28	7,300	27,000	11	1,100	2.1	0.65
SWFTS-MW07B	10/16/2020	SWFTS-MW07B-EM29	N	EM29	6,500	21,000	11	920	2.1	0.55
SWFTS-MW07B	12/9/2020	SWFTS-MW07B-EM30	N	EM30	6,000	23,000	12	930	1.5	5.59
SWFTS-MW07B	2/3/2021	SWFTS-MW07B-EM31	N	EM31	8,500	37,000	12	990	1.5	0.89
SWFTS-MW07B	3/31/2021	SWFTS-MW07B-EM32	N	EM32	8,500	24,000	9.5	1,000	1.6	0.89
SWFTS-MW07B	6/4/2021	SWFTS-MW07B-EM33	N	EM33	15,000	44,000	12	1,100	1.5 J+	0.12
SWFTS-MW07B	7/22/2021	SWFTS-MW07B-EM34	N	EM34	25,000	28,000	13	580	2.0	0.21
SWFTS-MW07B	9/16/2021	SWFTS-MW07B-EM35	N	EM35	25,000	47,000	14	1,400	1.7	0.25
SWFTS-MW07B	12/3/2021	SWFTS-MW07B-EM36	N	EM36	26,000	51,000	14	2,300	1.7	1.00
SWFTS-MW07B	3/8/2022	SWFTS-MW07B-EM37	N	EM37	21,000	43,000	13	1,400	1.8 J+	0.54
SWFTS-MW07B	6/23/2022	SWFTS-MW07B-EM38	N	EM38	15,000	34,000	23	2,000	2.5	0.41
SWFTS-MW08A	3/30/2017	SWFTS-MW08A-BL01	N	BL01	14,000	20,000	11	1,700	1.5	0.25
SWFTS-MW08A	9/20/2017	SWFTS-MW08A-EM01	N	EM01	10,000	47,000	12	1,500	1.4	0.41
SWFTS-MW08A	9/20/2017	SWFTS-MW08A-EM01-FD	FD	EM01	10,000	46,000	13	1,500	1.4	--
SWFTS-MW08A	9/26/2017	SWFTS-MW08A-EM02	N	EM02	9,800	40,000	12	1,600	1.7	0.27
SWFTS-MW08A	9/26/2017	SWFTS-MW08A-EM02-FD	FD	EM02	10,000	42,000	12	1,600	1.8	--
SWFTS-MW08A	10/5/2017	SWFTS-MW08A-EM03	N	EM03	7,800	42,000	14	1,600	1.6	4.16
SWFTS-MW08A	10/5/2017	SWFTS-MW08A-EM03-FD	FD	EM03	9,800	49,000	12	1,500	2.0	--
SWFTS-MW08A	10/10/2017	SWFTS-MW08A-EM04	N	EM04	9,500	43,000	12	1,500	1.6	44.01 E
SWFTS-MW08A	10/23/2017	SWFTS-MW08A-EM05	N	EM05	8,100	41,000	14	1,500	1.8	1.49
SWFTS-MW08A	10/23/2017	SWFTS-MW08A-EM05-FD	FD	EM05	8,100	40,000	12	1,500	1.8	--
SWFTS-MW08A	11/15/2017	SWFTS-MW08A-EM06	N	EM06	9,000	43,000	14	1,500	1.6	0.60
SWFTS-MW08A	12/14/2017	SWFTS-MW08A-EM07	N	EM07	8,900	45,000	14	1,400	1.6	0.11
SWFTS-MW08A	2/22/2018	SWFTS-MW08A-EM08	N	EM08	9,500	54,000	14	1,600	1.9	5.05
SWFTS-MW08A	3/29/2018	SWFTS-MW08A-EM09	N	EM09	9,100	59,000	15	1,500	1.5	2.61
SWFTS-MW08A	5/3/2018	SWFTS-MW08A-EM10	N	EM10	9,100	55,000	17	1,700	1.5	0.37
SWFTS-MW08A	7/11/2018	SWFTS-MW08A-EM11	N	EM11	7,500	63,000	15	1,400	1.3	1.54
SWFTS-MW08A	8/16/2018	SWFTS-MW08A-EM13	N	EM13	5,500	47,000	15	1,300	1.8	0.63
SWFTS-MW08A	9/12/2018	SWFTS-MW08A-EM14	N	EM14	5,600	43,000	15	1,400	1.6	0.77
SWFTS-MW08A	10/10/2018	SWFTS-MW08A-EM15	N	EM15	5,500	42,000	15	1,400	1.8	0.09
SWFTS-MW08A	1/2/2019	SWFTS-MW08A-EM16	N	EM16	7,200	45,000	15	1,500	2.0	1.23
SWFTS-MW08A	2/28/2019	SWFTS-MW08A-EM17	N	EM17	7,500	53,000	16	1,300	1.7	0.40
SWFTS-MW08A	4/12/2019	SWFTS-MW08A-EM18	N	EM18	7,100	50,000	15	1,300	1.4	0.74
SWFTS-MW08A	5/22/2019	SWFTS-MW08A-EM19	N	EM19	7,600	46,000	14	1,300	1.5	1.30
SWFTS-MW08A	7/1/2019	SWFTS-MW08A-EM20	N	EM20	6,700	44,000	14	1,200	1.9	0.55
SWFTS-MW08A	8/15/2019	SWFTS-MW08A-EM21	N	EM21	6,500	41,000	12	1,300	1.9	0.45
SWFTS-MW08A	11/7/2019	SWFTS-MW08A-EM22	N	EM22	6,400	17,000	13	1,100	1.5	0.76
SWFTS-MW08A	12/19/2019	SWFTS-MW08A-EM23	N	EM23	9,100	49,000	13	1,300	1.3	1.09
SWFTS-MW08A	1/28/2020	SWFTS-MW08A-EM24	N	EM24	11,000	57,000	15 J-	1,300 J+	1.6	0.76
SWFTS-MW08A	3/12/2020	SWFTS-MW08A-EM25	N	EM25	14,000	58,000	14 J-	1,400	1.5	2.52
SWFTS-MW08A	4/29/2020	SWFTS-MW08A-EM26	N	EM26	12,000	51,000	14	1,400	1.4	0.73
SWFTS-MW08A	7/8/2020	SWFTS-MW08A-EM27	N	EM27	9,800	47,000	15	1,400	1.2	0.93
SWFTS-MW08A	8/17/2020	SWFTS-MW08A-EM28	N	EM28	8,500	21,000	12	1,200	1.8	0.63
SWFTS-MW08A	10/16/2020	SWFTS-MW08A-EM29	N	EM29	7,400	36,000	13	1,100	1.4	1.35
SWFTS-MW08A	12/9/2020	SWFTS-MW08A-EM30	N	EM30	9,000	38,000	13	1,300	1.4	1.99
SWFTS-MW08A	2/3/2021	SWFTS-MW08A-EM31	N	EM31	8,700	36,000	13	1,200	1.4	1
SWFTS-MW08A	3/31/2021	SWFTS-MW08A-EM32	N	EM32	9,100	38,000	12	1,200	1.3	1.00
SWFTS-MW08A	6/4/2021	SWFTS-MW08A-EM33	N	EM33	12,000	54,000	14	1,300	1.3 J+	0.56
SWFTS-MW08A	7/22/2021	SWFTS-MW08A-EM34	N	EM34	17,000	35,000	14	1,400	1.5	0.54
SWFTS-MW08A	9/16/2021	SWFTS-MW08A-EM35	N	EM35	19,000	68,000	15	1,500	1.3	0.58
SWFTS-MW08A	12/2/2021	SWFTS-MW08A-EM36	N	EM36	21,000	73,000	15	1,700	1.4 J+	0.93
SWFTS-MW08C	3/28/2017	SWFTS-MW08C-BL01	N	BL01	7,800	55,000	13	2,800	1.3	0.08

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW08C	12/14/2017	SWFTS-MW08C-EM07	N	EM07	9,300	50,000	13	--	1.1	-0.06 E
SWFTS-MW08C	4/29/2020	SWFTS-MW08C-EM26	N	EM26	8,800	52,000	--	--	--	2.1
SWFTS-MW09A	3/29/2017	SWFTS-MW09A-BL01	N	BL01	14,000	50,000	13	1,700	1.6	0.33
SWFTS-MW09A	9/21/2017	SWFTS-MW09A-EM01	N	EM01	3,400	1,200	<0.55	1,700	51	0.57
SWFTS-MW09A	9/28/2017	SWFTS-MW09A-EM02	N	EM02	54	<100	<0.55	1,700	40	0.26
SWFTS-MW09A	10/4/2017	SWFTS-MW09A-EM03	N	EM03	420	200	<0.55	1,800	22	4.54
SWFTS-MW09A	10/11/2017	SWFTS-MW09A-EM04	N	EM04	8.4 J+	55	<0.55	1,600	7.5	0.12
SWFTS-MW09A	10/25/2017	SWFTS-MW09A-EM05	N	EM05	1,300	1,700	<0.55	1,600	2.9	0.31
SWFTS-MW09A	11/16/2017	SWFTS-MW09A-EM06	N	EM06	3,400	8,400	1.2	1,500	2.1	1.88
SWFTS-MW09A	12/12/2017	SWFTS-MW09A-EM07	N	EM07	5,400	16,000	2.7	1,500	2.1	0.29
SWFTS-MW09A	2/20/2018	SWFTS-MW09A-EM08	N	EM08	6,800	16,000	5.3	1,500	2.1	4.16
SWFTS-MW09A	3/27/2018	SWFTS-MW09A-EM09	N	EM09	6,700	18,000	6.4	1,500	1.8	2.12
SWFTS-MW09A	5/1/2018	SWFTS-MW09A-EM10	N	EM10	7,300	19,000	8.0	1,400	1.6	0.00
SWFTS-MW09A	7/12/2018	SWFTS-MW09A-EM11	N	EM11	2,800	2,700	3.1	1,400	2.0	1.86
SWFTS-MW09A	7/27/2018	SWFTS-MW09A-EM12	N	EM12	1,900	1,600	--	--	--	5.97
SWFTS-MW09A	8/14/2018	SWFTS-MW09A-EM13	N	EM13	7,200	7,600	4.5	1,400	2.2	2.83
SWFTS-MW09A	9/11/2018	SWFTS-MW09A-EM14	N	EM14	4,000	13,000	6.5	1,500	1.7	1.72
SWFTS-MW09A	10/9/2018	SWFTS-MW09A-EM15	N	EM15	4,600	15,000	7.7	1,400	2.0	1.3
SWFTS-MW09A	12/27/2018	SWFTS-MW09A-EM16	N	EM16	3,600	14,000	9.1	1,400	1.8	0.83
SWFTS-MW09A	2/26/2019	SWFTS-MW09A-EM17	N	EM17	2,400	5,600	3.8	1,200	2.1	0.43
SWFTS-MW09A	4/10/2019	SWFTS-MW09A-EM18	N	EM18	3,500	12,000	6.0	1,400	1.8	0.72
SWFTS-MW09A	5/22/2019	SWFTS-MW09A-EM19	N	EM19	2,900	6,000	6.6	1,400	1.8	0.47
SWFTS-MW09A	7/2/2019	SWFTS-MW09A-EM20	N	EM20	3,500	13,000	6.5	1,400	2.2	0.45
SWFTS-MW09A	8/12/2019	SWFTS-MW09A-EM21	N	EM21	4,800	20,000	8.0	1,200	1.8	0.44
SWFTS-MW09A	11/5/2019	SWFTS-MW09A-EM22	N	EM22	2,500	8,400	3.6	1,200	2.0	0.70
SWFTS-MW09A	12/18/2019	SWFTS-MW09A-EM23	N	EM23	5,400	20,000	6.9 J+	1,000	1.7	0.76
SWFTS-MW09A	1/28/2020	SWFTS-MW09A-EM24	N	EM24	5,700	25,000	7.6 J-	1,200 J+	1.8	0.84
SWFTS-MW09A	3/10/2020	SWFTS-MW09A-EM25	N	EM25	7,100	27,000	7.5 J-	1,300	1.7	2.34
SWFTS-MW09A	4/28/2020	SWFTS-MW09A-EM26	N	EM26	7,500	28,000	8.2	1,300	1.6	0.36
SWFTS-MW09A	7/6/2020	SWFTS-MW09A-EM27	N	EM27	3,000	5,600	3.3	1,300	2.2	0.7
SWFTS-MW09A	8/18/2020	SWFTS-MW09A-EM28	N	EM28	5,500	17,000	5.7	1,200	2.3	0.84
SWFTS-MW09A	10/13/2020	SWFTS-MW09A-EM29	N	EM29	5,700	20,000	7.1	1,300	1.7	0.28
SWFTS-MW09A	12/9/2020	SWFTS-MW09A-EM30	N	EM30	4,800	17,000	8.0	1,400	1.6	1.96
SWFTS-MW09A	2/3/2021	SWFTS-MW09A-EM31	N	EM31	6,400	24,000	8.6	1,300	1.5	0.65
SWFTS-MW09A	4/1/2021	SWFTS-MW09A-EM32	N	EM32	3,400	6,600	4.3	1,200	1.8	0.65
SWFTS-MW09A	6/1/2021	SWFTS-MW09A-EM33	N	EM33	4,900	14,000	6.2	1,300	1.5	1.05
SWFTS-MW09A	7/20/2021	SWFTS-MW09A-EM34	N	EM34	8,400	23,000	8.7	1,300	1.6	0.39
SWFTS-MW09A	9/15/2021	SWFTS-MW09A-EM35	N	EM35	11,000	25,000	9.0	1,500	1.5	0.29
SWFTS-MW09A	12/2/2021	SWFTS-MW09A-EM36	N	EM36	8,800	19,000	5.4	1,600	2.0 J+	1.54
SWFTS-MW09A	3/8/2022	SWFTS-MW09A-EM37	N	EM37	14,000	20,000	8.6	1,600	1.8 J+	0.51
SWFTS-MW09A	6/23/2022	SWFTS-MW09A-EM38	N	EM38	11,000	19,000	9.5	1,800	1.9	0.84
SWFTS-MW09B	3/29/2017	SWFTS-MW09B-BL01	N	BL01	13,000	46,000	12	1,900	1.8	0.31
SWFTS-MW09B	3/29/2017	SWFTS-MW09B-BL01-FD	FD	BL01	15,000	46,000	12	1,800	1.8	--
SWFTS-MW09B	9/21/2017	SWFTS-MW09B-EM01	N	EM01	220	390	<0.55	1,700	30	1.81
SWFTS-MW09B	9/28/2017	SWFTS-MW09B-EM02	N	EM02	990	2,500	<0.55	1,700	25	0.38
SWFTS-MW09B	10/4/2017	SWFTS-MW09B-EM03	N	EM03	430	1,000	<1.1	1,500	29	3.71
SWFTS-MW09B	10/11/2017	SWFTS-MW09B-EM04	N	EM04	1,400	3,000	1.1	1,500	18	0.12
SWFTS-MW09B	10/25/2017	SWFTS-MW09B-EM05	N	EM05	2,700	7,700	1.7	1,400	2.4	0.38
SWFTS-MW09B	11/16/2017	SWFTS-MW09B-EM06	N	EM06	2,400	8,600	2.1	1,200	2.1	0.77
SWFTS-MW09B	12/12/2017	SWFTS-MW09B-EM07	N	EM07	3,500	13,000	3.4	1,300	2.1	0.07
SWFTS-MW09B	2/20/2018	SWFTS-MW09B-EM08	N	EM08	800	1,400	<1.1	1,200	2.5	5.47
SWFTS-MW09B	3/27/2018	SWFTS-MW09B-EM09	N	EM09	7,700	28,000	5.9	1,600	1.8	2.09
SWFTS-MW09B	4/30/2018	SWFTS-MW09B-EM10	N	EM10	7,400	23,000	7.9	1,600	1.8	0.00
SWFTS-MW09B	7/12/2018	SWFTS-MW09B-EM11	N	EM11	6,500	15,000	7.0	1,500	1.9	1.58
SWFTS-MW09B	7/26/2018	SWFTS-MW09B-EM12	N	EM12	6,600	20,000	--	--	--	1.16



**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW09B	8/14/2018	SWFTS-MW09B-EM13	N	EM13	6,400	24,000	9.7	1,500	2.1	2.99
SWFTS-MW09B	9/11/2018	SWFTS-MW09B-EM14	N	EM14	6,600	28,000	11	1,500	1.6	1.12
SWFTS-MW09B	10/9/2018	SWFTS-MW09B-EM15	N	EM15	6,500	24,000	10	1,400	2.0	0.58
SWFTS-MW09B	12/28/2018	SWFTS-MW09B-EM16	N	EM16	5,500	21,000	11	1,300	1.7	1.3
SWFTS-MW09B	2/28/2019	SWFTS-MW09B-EM17	N	EM17	5,800	25,000	16 J-	1,400	1.9	0.50
SWFTS-MW09B	4/10/2019	SWFTS-MW09B-EM18	N	EM18	8,300	32,000	11	1,400	1.6	2.69
SWFTS-MW09B	5/22/2019	SWFTS-MW09B-EM19	N	EM19	7,300	30,000	10	1,300	1.6	0.70
SWFTS-MW09B	7/2/2019	SWFTS-MW09B-EM20	N	EM20	6,900	30,000	11	1,300	1.9	0.70
SWFTS-MW09B	8/12/2019	SWFTS-MW09B-EM21	N	EM21	7,200	28,000	11	1,100	1.9	0.53
SWFTS-MW09B	11/5/2019	SWFTS-MW09B-EM22	N	EM22	7,400	26,000	9.4	1,100	1.7	1.48
SWFTS-MW09B	12/18/2019	SWFTS-MW09B-EM23	N	EM23	8,300	28,000	11	1,100	1.5	0.87
SWFTS-MW09B	1/28/2020	SWFTS-MW09B-EM24	N	EM24	9,800	35,000	11 J-	1,300 J+	1.7	0.54
SWFTS-MW09B	3/10/2020	SWFTS-MW09B-EM25	N	EM25	11,000	36,000	11 J-	1,200	1.7	2.33
SWFTS-MW09B	4/28/2020	SWFTS-MW09B-EM26	N	EM26	12,000	39,000	11	1,400	1.6	0.85
SWFTS-MW09B	7/7/2020	SWFTS-MW09B-EM27	N	EM27	11,000	30,000	9.9	1,500	1.8	0.7
SWFTS-MW09B	8/18/2020	SWFTS-MW09B-EM28	N	EM28	11,000	31,000	11	1,400	2.0	0.71
SWFTS-MW09B	10/13/2020	SWFTS-MW09B-EM29	N	EM29	8,700	26,000	9.4	1,200	<0.65	0.71
SWFTS-MW09B	12/8/2020	SWFTS-MW09B-EM30	N	EM30	11,000	29,000	12	1,300	1.4	0.34
SWFTS-MW09B	2/1/2021	SWFTS-MW09B-EM31	N	EM31	10,000	21,000 J+	11	1,300	1.4	0.55
SWFTS-MW09B	4/1/2021	SWFTS-MW09B-EM32	N	EM32	9,000	20,000	12	1,200	1.5	0.55
SWFTS-MW09B	6/2/2021	SWFTS-MW09B-EM33	N	EM33	12,000	34,000	12	1,300	1.4	0.77
SWFTS-MW09B	7/20/2021	SWFTS-MW09B-EM34	N	EM34	15,000	34,000	12	1,300	1.5	0.46
SWFTS-MW09B	9/15/2021	SWFTS-MW09B-EM35	N	EM35	15,000	37,000	13	1,600	1.4	0.25
SWFTS-MW09B	12/2/2021	SWFTS-MW09B-EM36	N	EM36	20,000	46,000	13	1,700	1.7 J+	1.84
SWFTS-MW09B	3/8/2022	SWFTS-MW09B-EM37	N	EM37	18,000	37,000	14	1,700	1.8 J+	0.55
SWFTS-MW09B	6/23/2022	SWFTS-MW09B-EM38	N	EM38	16,000	36,000 J+	16	1,900	1.7	0.99
SWFTS-MW09B	6/23/2022	SWFTS-MW09B-EM38-FD	FD	EM38	17,000	33,000 J+	16	2,000	2.0	--
SWFTS-MW10A	3/31/2017	SWFTS-MW10A-BL01	N	BL01	13,000	27,000	5.1	1,400	2.8	2.70
SWFTS-MW10A	9/21/2017	SWFTS-MW10A-EM01	N	EM01	1.9 J	<50	<0.55	960	23	0.42
SWFTS-MW10A	9/27/2017	SWFTS-MW10A-EM02	N	EM02	100	<100	0.66 J	990	12	5.10
SWFTS-MW10A	10/4/2017	SWFTS-MW10A-EM03	N	EM03	14	<100	<0.28	920	10	4.56
SWFTS-MW10A	10/12/2017	SWFTS-MW10A-EM04	N	EM04	<0.95	13 J	<0.11	920	13	0.15
SWFTS-MW10A	10/24/2017	SWFTS-MW10A-EM05	N	EM05	14	630	<0.28	730	6.3	1.38
SWFTS-MW10A	11/16/2017	SWFTS-MW10A-EM06	N	EM06	11	<50	<0.28	690	4.2	0.60
SWFTS-MW10A	11/16/2017	SWFTS-MW10A-EM06-FD	FD	EM06	15	<50	<0.28	670	4.0	--
SWFTS-MW10A	12/12/2017	SWFTS-MW10A-EM07	N	EM07	160	190	<0.28	790	3.2	0.53
SWFTS-MW10A	12/12/2017	SWFTS-MW10A-EM07-FD	FD	EM07	170	180	<0.28	770	3.4	--
SWFTS-MW10A	2/20/2018	SWFTS-MW10A-EM08	N	EM08	990	1,400	<1.1	1,100	3.2	0.44
SWFTS-MW10A	2/20/2018	SWFTS-MW10A-EM08-FD	FD	EM08	1,000	1,300	1.3 J	1,200	3.3	--
SWFTS-MW10A	3/26/2018	SWFTS-MW10A-EM09	N	EM09	2,300	4,000	0.37 J	1,300	2.8	1.15
SWFTS-MW10A	3/26/2018	SWFTS-MW10A-EM09-FD	FD	EM09	2,200	4,000	0.36 J	1,300	2.8 J-	--
SWFTS-MW10A	5/1/2018	SWFTS-MW10A-EM10	N	EM10	4,300	4,800	0.96 J	1,300	2.5	0.83
SWFTS-MW10A	7/11/2018	SWFTS-MW10A-EM11	N	EM11	3,000 J-	40 J	0.89 J	1,300	2.2	2.42
SWFTS-MW10A	7/26/2018	SWFTS-MW10A-EM12	N	EM12	1,300	<10	--	--	--	0.55
SWFTS-MW10A	8/14/2018	SWFTS-MW10A-EM13	N	EM13	1,500	<10	<0.55	1,300	3.0	2.59
SWFTS-MW10A	9/10/2018	SWFTS-MW10A-EM14	N	EM14	1,500	<10	<0.55	1,200	2.9	0.37
SWFTS-MW10A	10/9/2018	SWFTS-MW10A-EM15	N	EM15	2,300	<20	<0.55	1,200	2.8	0.86
SWFTS-MW10A	12/20/2018	SWFTS-MW10A-EM16	N	EM16	3,000	83	1.3	1,300	3.4	0.7
SWFTS-MW10A	2/26/2019	SWFTS-MW10A-EM17	N	EM17	3,900	1,200	2.1 J	1,400	2.6	0.37
SWFTS-MW10A	4/10/2019	SWFTS-MW10A-EM18	N	EM18	2,800	1,400	1.7	1,400	2.8	0.61
SWFTS-MW10A	5/21/2019	SWFTS-MW10A-EM19	N	EM19	1,500	34 J	1.2	1,200	3.3	0.46
SWFTS-MW10A	7/1/2019	SWFTS-MW10A-EM20	N	EM20	1,500	<10	0.84 J	1,000	3.4	5.15
SWFTS-MW10A	8/12/2019	SWFTS-MW10A-EM21	N	EM21	870	<10	<0.55	930	3.1	0.38
SWFTS-MW10A	11/6/2019	SWFTS-MW10A-EM22	N	EM22	2,600	310	1.4	1,100	3.6 J-	0.49
SWFTS-MW10A	12/17/2019	SWFTS-MW10A-EM23	N	EM23	4,000 J+	3,600	2.1	1,200	4.4	0.69

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW10A	1/28/2020	SWFTS-MW10A-EM24	N	EM24	7,900	19,000	6.5	1,300 J+	2.3	0.55
SWFTS-MW10A	3/13/2020	SWFTS-MW10A-EM25	N	EM25	9,900	26,000	8.7	1,400	2.1 J+	1.55
SWFTS-MW10A	4/29/2020	SWFTS-MW10A-EM26	N	EM26	10,000	28,000	8.1	1,500	2.3	2.04
SWFTS-MW10A	7/7/2020	SWFTS-MW10A-EM27	N	EM27	9,600	24,000	7.9	1,500	2.8	0.7
SWFTS-MW10A	8/18/2020	SWFTS-MW10A-EM28	N	EM28	10,000	24,000	7.7	1,400	3.0	0.56
SWFTS-MW10A	10/14/2020	SWFTS-MW10A-EM29	N	EM29	9,100	27,000	8.3	1,500	3.1	0.36
SWFTS-MW10A	12/8/2020	SWFTS-MW10A-EM30	N	EM30	8,800	19,000	7.9	1,500	2.6 J-	0.36
SWFTS-MW10A	2/1/2021	SWFTS-MW10A-EM31	N	EM31	12,000	20,000 J+	8.6 J-	1,500 J-	2.0	0.57
SWFTS-MW10A	4/1/2021	SWFTS-MW10A-EM32	N	EM32	14,000 J-	19,000 J-	10 J	1,500	1.8 J-	0.57
SWFTS-MW10A	6/4/2021	SWFTS-MW10A-EM33	N	EM33	9,600	32,000	11	1,500	1.7 J	0.73
SWFTS-MW10A	7/20/2021	SWFTS-MW10A-EM34	N	EM34	12,000	17,000 J+	9.5	1,400	1.8	0.16
SWFTS-MW10A	9/15/2021	SWFTS-MW10A-EM35	N	EM35	12,000	24,000 J+	12	1,700	1.6	0.18
SWFTS-MW10A	11/30/2021	SWFTS-MW10A-EM36	N	EM36	12,000	25,000	7.8	1,600	1.9 J+	1.10
SWFTS-MW10A	3/7/2022	SWFTS-MW10A-EM37	N	EM37	15,000	25,000 J+	11	1,500	1.8 J-	0.62
SWFTS-MW10A	6/23/2022	SWFTS-MW10A-EM38	N	EM38	16,000	18,000 J+	16	2,000	2.1	0.79
SWFTS-MW10C	3/28/2017	SWFTS-MW10C-BL01	N	BL01	8,300	39,000	7.6	2,400	1.5	0.09
SWFTS-MW10C	12/12/2017	SWFTS-MW10C-EM07	N	EM07	9,200	38,000	8.4	--	1.3	0.51
SWFTS-MW10C	5/1/2020	SWFTS-MW10C-EM26	N	EM26	9,900	51,000	--	--	--	2.11
SWFTS-MW11	7/12/2017	SWFTS-MW11-BL02	N	BL02	13,000 J+	41,000	12	1,900	1.8	4.30
SWFTS-MW11	9/20/2017	SWFTS-MW11-EM01	N	EM01	13,000	40,000	11	1,700	1.7	1.86
SWFTS-MW11	9/26/2017	SWFTS-MW11-EM02	N	EM02	14,000	37,000	12	1,800	2.1	1.47
SWFTS-MW11	10/3/2017	SWFTS-MW11-EM03	N	EM03	13,000	36,000	12	1,800	1.8	0.93
SWFTS-MW11	10/11/2017	SWFTS-MW11-EM04	N	EM04	16,000	38,000	11	1,800	1.6	1.15
SWFTS-MW11	10/24/2017	SWFTS-MW11-EM05	N	EM05	13,000	36,000	12	1,800	5.7	2.32
SWFTS-MW11	11/16/2017	SWFTS-MW11-EM06	N	EM06	14,000	37,000	12	1,800	1.7	0.95
SWFTS-MW11	12/14/2017	SWFTS-MW11-EM07	N	EM07	12,000	40,000	11	1,800	2.0	1.78
SWFTS-MW11	2/21/2018	SWFTS-MW11-EM08	N	EM08	12,000	45,000	14	1,900	1.7	7.35
SWFTS-MW11	2/21/2018	SWFTS-MW11-EM08-FD	FD	EM08	12,000	46,000	13	2,000	1.9	--
SWFTS-MW11	3/28/2018	SWFTS-MW11-EM09	N	EM09	13,000	49,000	14	1,900	1.5	4.05
SWFTS-MW11	3/28/2018	SWFTS-MW11-EM09-FD	FD	EM09	13,000	49,000	14	2,100	1.5	--
SWFTS-MW11	5/1/2018	SWFTS-MW11-EM10	N	EM10	13,000	52,000	14	1,900	1.5	5.35
SWFTS-MW11	5/1/2018	SWFTS-MW11-EM10-FD	FD	EM10	12,000	48,000	14	1,900	1.4	--
SWFTS-MW11	7/12/2018	SWFTS-MW11-EM11	N	EM11	11,000	52,000	16	1,900	1.2	5.48
SWFTS-MW11	7/12/2018	SWFTS-MW11-EM11-FD	FD	EM11	11,000	52,000	16	1,900	1.2	--
SWFTS-MW11	8/16/2018	SWFTS-MW11-EM13	N	EM13	9,400	53,000	16	1,900	1.7	2.83
SWFTS-MW11	8/16/2018	SWFTS-MW11-EM13-FD	FD	EM13	9,600	52,000	16	1,900	1.8	--
SWFTS-MW11	9/12/2018	SWFTS-MW11-EM14	N	EM14	11,000	52,000	16	1,800	1.5	4.18
SWFTS-MW11	9/12/2018	SWFTS-MW11-EM14-FD	FD	EM14	11,000	52,000	16	1,800	1.4	--
SWFTS-MW11	10/11/2018	SWFTS-MW11-EM15	N	EM15	10,000	54,000	17	1,900	1.6	3.59
SWFTS-MW11	10/11/2018	SWFTS-MW11-EM15-FD	FD	EM15	11,000	52,000	17	1,900	1.7	--
SWFTS-MW11	1/2/2019	SWFTS-MW11-EM16	N	EM16	8,600	44,000	16	1,700	1.5	7.08
SWFTS-MW11	1/2/2019	SWFTS-MW11-EM16-FD	FD	EM16	8,400	45,000	16	1,700	1.5	--
SWFTS-MW11	3/1/2019	SWFTS-MW11-EM17	N	EM17	7,900 J+	42,000	17	1,700	1.5	5.23
SWFTS-MW11	3/1/2019	SWFTS-MW11-EM17-FD	FD	EM17	7,700 J+	41,000	17	1,700	1.6	--
SWFTS-MW11	4/12/2019	SWFTS-MW11-EM18	N	EM18	7,700	41,000	15	1,600	1.9	5.50
SWFTS-MW11	4/12/2019	SWFTS-MW11-EM18-FD	FD	EM18	7,800	42,000	17	1,600	1.4	--
SWFTS-MW11	5/22/2019	SWFTS-MW11-EM19	N	EM19	8,000	44,000	14	1,500	1.7	5.09
SWFTS-MW11	5/22/2019	SWFTS-MW11-EM19-FD	FD	EM19	7,800	44,000	16	1,600	1.8	--
SWFTS-MW11	7/3/2019	SWFTS-MW11-EM20	N	EM20	7,100	43,000	16	1,500	1.9	5.03
SWFTS-MW11	7/3/2019	SWFTS-MW11-EM20-FD	FD	EM20	7,500	43,000	17	1,500	1.9	--
SWFTS-MW11	8/15/2019	SWFTS-MW11-EM21	N	EM21	9,200	43,000	16	1,400	1.8	4.95
SWFTS-MW11	8/15/2019	SWFTS-MW11-EM21-FD	FD	EM21	8,900	43,000	16	1,400	1.8	--
SWFTS-MW11	11/7/2019	SWFTS-MW11-EM22	N	EM22	7,600	42,000	14	1,300	1.5	5.79
SWFTS-MW11	11/7/2019	SWFTS-MW11-EM22-FD	FD	EM22	7,400	43,000	14	1,300	1.5	--
SWFTS-MW11	12/17/2019	SWFTS-MW11-EM23	N	EM23	8,200	21,000	14	1,600	1.6	5.91

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW11	12/17/2019	SWFTS-MW11-EM23-FD	FD	EM23	8,300	20,000	14	1,600	1.4	--
SWFTS-MW11	1/28/2020	SWFTS-MW11-EM24	N	EM24	10,000	47,000	15	1,500 J+	1.6	6.54
SWFTS-MW11	1/28/2020	SWFTS-MW11-EM24-FD	FD	EM24	10,000	47,000	15	1,700 J+	1.5	--
SWFTS-MW11	3/13/2020	SWFTS-MW11-EM25	N	EM25	12,000	51,000	15	1,700	2.0	6.44
SWFTS-MW11	3/13/2020	SWFTS-MW11-EM25-FD	FD	EM25	12,000	51,000	14	1,800	2.2	--
SWFTS-MW11	4/30/2020	SWFTS-MW11-EM26	N	EM26	11,000	52,000	14	1,800	1.6	5.03
SWFTS-MW11	4/30/2020	SWFTS-MW11-EM26-FD	FD	EM26	12,000	51,000	15	1,800	1.5	--
SWFTS-MW11	7/7/2020	SWFTS-MW11-EM27	N	EM27	11,000	41,000	13	2,000	1.7	4.6
SWFTS-MW11	7/7/2020	SWFTS-MW11-EM27-FD	FD	EM27	11,000	41,000	13	2,000	1.9	--
SWFTS-MW11	8/18/2020	SWFTS-MW11-EM28	N	EM28	10,000	42,000	13	1,900	2.0	4.38
SWFTS-MW11	8/18/2020	SWFTS-MW11-EM28-FD	FD	EM28	11,000	41,000	12	1,900	2.0	--
SWFTS-MW11	10/16/2020	SWFTS-MW11-EM29	N	EM29	9,500	34,000	11 J+	1,700	1.7	5.04
SWFTS-MW11	10/16/2020	SWFTS-MW11-EM29-FD	FD	EM29	9,500	35,000	11 J+	1,700	2.2	--
SWFTS-MW11	12/8/2020	SWFTS-MW11-EM30	N	EM30	8,100	32,000	13	1,800	1.3	5.1
SWFTS-MW11	12/8/2020	SWFTS-MW11-EM30-FD	FD	EM30	8,200	32,000	13	1,800	1.4	--
SWFTS-MW11	2/1/2021	SWFTS-MW11-EM31	N	EM31	8,700	29,000	13	1,700	1.2	5.84
SWFTS-MW11	2/1/2021	SWFTS-MW11-EM31-FD	FD	EM31	8,600	27,000 J+	13	1,700	1.4	--
SWFTS-MW11	4/1/2021	SWFTS-MW11-EM32	N	EM32	8,600	22,000	13 J	1,700	1.4	5.84
SWFTS-MW11	4/1/2021	SWFTS-MW11-EM32-FD	FD	EM32	8,800	19,000	13 J	1,700	1.5	--
SWFTS-MW11	6/4/2021	SWFTS-MW11-EM33	N	EM33	9,300	37,000	13	1,600	1.3 J+	5.26
SWFTS-MW11	6/4/2021	SWFTS-MW11-EM33-FD	FD	EM33	9,400	33,000	13	1,600	1.3 J+	--
SWFTS-MW11	7/22/2021	SWFTS-MW11-EM34	N	EM34	13,000	29,000	13	1,500 J	1.5	5.55
SWFTS-MW11	7/22/2021	SWFTS-MW11-EM34-FD	FD	EM34	13,000	28,000	13	700 J	1.4	--
SWFTS-MW11	9/16/2021	SWFTS-MW11-EM35	N	EM35	16,000	33,000 J+	14	1,600	1.4	5.26
SWFTS-MW11	9/16/2021	SWFTS-MW11-EM35-FD	FD	EM35	17,000	36,000	14	1,600	1.4	--
SWFTS-MW11	12/3/2021	SWFTS-MW11-EM36	N	EM36	20,000	53,000	14	2,400	1.5	5.81
SWFTS-MW11	12/3/2021	SWFTS-MW11-EM36-FD	FD	EM36	20,000	53,000	14	2,000	1.4	--
SWFTS-MW11	3/7/2022	SWFTS-MW11-EM37	N	EM37	17,000	33,000	25	3,000	2.2	7.16
SWFTS-MW11	3/7/2022	SWFTS-MW11-EM37-FD	FD	EM37	16,000	32,000	24	2,900	2.2	--
SWFTS-MW12	7/13/2017	SWFTS-MW12-BL02	N	BL02	5,100	37,000	16	2,600	0.88 J	7.81
SWFTS-MW12	9/19/2017	SWFTS-MW12-EM01	N	EM01	5,100	36,000	14	2,700	1.1	4.36
SWFTS-MW12	9/26/2017	SWFTS-MW12-EM02	N	EM02	4,900	34,000	14	2,600	1.6	2.98
SWFTS-MW12	10/3/2017	SWFTS-MW12-EM03	N	EM03	5,400	34,000	14 J-	2,500	0.78 J	2.77
SWFTS-MW12	10/11/2017	SWFTS-MW12-EM04	N	EM04	4,800	35,000	13	2,600	0.93 J	1.59
SWFTS-MW12	10/24/2017	SWFTS-MW12-EM05	N	EM05	5,000	37,000	14	2,600	1.2	5.09
SWFTS-MW12	11/14/2017	SWFTS-MW12-EM06	N	EM06	4,700	33,000	14	2,700	0.99 J	2.52
SWFTS-MW12	12/14/2017	SWFTS-MW12-EM07	N	EM07	4,900	30,000	13	2,800	1.5	4.37
SWFTS-MW12	2/22/2018	SWFTS-MW12-EM08	N	EM08	4,500	26,000	12	2,300	1.6	5.95
SWFTS-MW12	3/28/2018	SWFTS-MW12-EM09	N	EM09	6,400	39,000	14	2,300	1.3	4.30
SWFTS-MW12	5/3/2018	SWFTS-MW12-EM10	N	EM10	4,200	28,000	13	2,700	0.89 J	2.24
SWFTS-MW12	7/12/2018	SWFTS-MW12-EM11	N	EM11	4,600	35,000	13	2,500	0.69 J	5.35
SWFTS-MW12	8/16/2018	SWFTS-MW12-EM13	N	EM13	4,000	34,000	14	2,800	1.2	2.75
SWFTS-MW12	9/12/2018	SWFTS-MW12-EM14	N	EM14	4,800	36,000	14	2,400	1.1	3.46
SWFTS-MW12	10/11/2018	SWFTS-MW12-EM15	N	EM15	4,200	28,000	14	2,400	1.3	5.11
SWFTS-MW12	1/2/2019	SWFTS-MW12-EM16	N	EM16	5,800	55,000	17	2,500	1.2	4.35
SWFTS-MW12	2/28/2019	SWFTS-MW12-EM17	N	EM17	3,700	29,000	14	2,700	1.1	3.64
SWFTS-MW12	4/12/2019	SWFTS-MW12-EM18	N	EM18	4,500	31,000	14	2,500	1.2	3.50
SWFTS-MW12	5/22/2019	SWFTS-MW12-EM19	N	EM19	4,400	32,000	12	2,700	0.87 J	3.81
SWFTS-MW12	7/5/2019	SWFTS-MW12-EM20	N	EM20	4,300	33,000	13 J+	2,600	1.2	3.56
SWFTS-MW12	8/16/2019	SWFTS-MW12-EM21	N	EM21	4,200	31,000	13	2,800	1.2	3.35
SWFTS-MW12	11/7/2019	SWFTS-MW12-EM22	N	EM22	<4.8	88 J	<0.55	1,300	560	0.29
SWFTS-MW12	11/26/2019	SWFTS-MW12-EM22-R	N	EM22	<4.8	<20	<0.55	78	610 J-	--
SWFTS-MW12	11/26/2019	SWFTS-MW12-EM22-R-FD	FD	EM22	<4.8	<20	<0.55	84	610 J-	--
SWFTS-MW12	12/20/2019	SWFTS-MW12-EM23	N	EM23	<4.8	<10	<0.55	2.6 J	230	0.84
SWFTS-MW12	1/29/2020	SWFTS-MW12-EM24	N	EM24	22	60 J	<0.55	130 J+	14 J-	0.46



**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW12	3/12/2020	SWFTS-MW12-EM25	N	EM25	170	<10	0.55 R	1,100	9.3	2.19
SWFTS-MW12	4/30/2020	SWFTS-MW12-EM26	N	EM26	<4.8	<10	<0.55	780	8.2	1.83
SWFTS-MW12	7/7/2020	SWFTS-MW12-EM27	N	EM27	<0.95	<10	<0.55	990	13	0.4
SWFTS-MW12	8/18/2020	SWFTS-MW12-EM28	N	EM28	<0.95	<10	<0.55	1,100	9.3	0.43
SWFTS-MW12	10/16/2020	SWFTS-MW12-EM29	N	EM29	<0.95	<10	<0.55	1,500	4.8	0.31
SWFTS-MW12	12/8/2020	SWFTS-MW12-EM30	N	EM30	0.48 J	<20	<0.014	1,900	8.2	0.25
SWFTS-MW12	2/2/2021	SWFTS-MW12-EM31	N	EM31	<0.31	<9.8	<0.014	2,000	2.6 J+	0.51
SWFTS-MW12	4/1/2021	SWFTS-MW12-EM32	N	EM32	0.97 J	<49	<0.014 UJ	1,800	5.5	0.51
SWFTS-MW12	6/4/2021	SWFTS-MW12-EM33	N	EM33	540	83	1.9	2,200	2.2 J+	0.67
SWFTS-MW12	7/22/2021	SWFTS-MW12-EM34	N	EM34	840	430	2.8	2,300	6.1	0.35
SWFTS-MW12	9/15/2021	SWFTS-MW12-EM35	N	EM35	390	950	1.5	2,000	3.2	0.55
SWFTS-MW12	12/2/2021	SWFTS-MW12-EM36	N	EM36	1,500	4,400	4.6	2,600	2.2 J+	1.44
SWFTS-MW12	3/8/2022	SWFTS-MW12-EM37	N	EM37	940	1,200	0.44	1,600	7.8	0.57
SWFTS-MW12	6/23/2022	SWFTS-MW12-EM38	N	EM38	2,500	1,500	6.6	1,600	3.0	0.86
SWFTS-MW13	7/12/2017	SWFTS-MW13-BL02	N	BL02	4,600	40,000	12	2,100	1.6	4.72
SWFTS-MW13	9/20/2017	SWFTS-MW13-EM01	N	EM01	10,000	52,000	17	2,500	1.1	5.20
SWFTS-MW13	9/26/2017	SWFTS-MW13-EM02	N	EM02	6,200	53,000	18	2,500	1.4	3.17
SWFTS-MW13	10/3/2017	SWFTS-MW13-EM03	N	EM03	6,900	100	17 J-	2,600	1.1	5.57
SWFTS-MW13	10/10/2017	SWFTS-MW13-EM04	N	EM04	6,300	51,000	16	2,900	0.98 J	2.40
SWFTS-MW13	10/24/2017	SWFTS-MW13-EM05	N	EM05	6,100	52,000	19	2,800	1.3	6.62
SWFTS-MW13	11/15/2017	SWFTS-MW13-EM06	N	EM06	5,900	49,000	16	2,800	0.93 J	3.22
SWFTS-MW13	12/14/2017	SWFTS-MW13-EM07	N	EM07	6,200	49,000	16	2,800	1.2	3.79
SWFTS-MW13	2/22/2018	SWFTS-MW13-EM08	N	EM08	5,800	50,000	15	2,600	1.5	4.95
SWFTS-MW13	3/26/2018	SWFTS-MW13-EM09	N	EM09	6,400	52,000	16 J+	2,700	1.2	2.98
SWFTS-MW13	5/3/2018	SWFTS-MW13-EM10	N	EM10	6,000	49,000	18	2,700	1.1	8.17 E
SWFTS-MW13	7/12/2018	SWFTS-MW13-EM11	N	EM11	6,300	49,000	16	2,700	0.80 J	6.45
SWFTS-MW13	8/16/2018	SWFTS-MW13-EM13	N	EM13	5,200	54,000	17	2,600	1.3	2.95
SWFTS-MW13	9/13/2018	SWFTS-MW13-EM14	N	EM14	5,000	48,000	16	2,700	1.2	3.44
SWFTS-MW13	10/11/2018	SWFTS-MW13-EM15	N	EM15	5,800	55,000	17	2,600	1.2	3.49
SWFTS-MW13	1/2/2019	SWFTS-MW13-EM16	N	EM16	3,900	28,000	13	2,400	1.1	6.89
SWFTS-MW13	2/28/2019	SWFTS-MW13-EM17	N	EM17	5,500	53,000	18	2,900	1.1	4.02
SWFTS-MW13	4/12/2019	SWFTS-MW13-EM18	N	EM18	5,300	45,000	18	2,500	1.2	5.30
SWFTS-MW13	5/22/2019	SWFTS-MW13-EM19	N	EM19	5,300	45,000	17	2,600	0.94 J	5.32
SWFTS-MW13	7/5/2019	SWFTS-MW13-EM20	N	EM20	5,600	48,000	17	2,700	1.3	5.15
SWFTS-MW13	8/16/2019	SWFTS-MW13-EM21	N	EM21	5,200	51,000	18	2,600	1.3	4.55
SWFTS-MW13	11/6/2019	SWFTS-MW13-EM22	N	EM22	6,200	50,000	16	2,700	1.2	3.81
SWFTS-MW13	12/20/2019	SWFTS-MW13-EM23	N	EM23	5,300	43,000	14	2,400	0.84 J	4.20
SWFTS-MW13	1/29/2020	SWFTS-MW13-EM24	N	EM24	5,400	48,000	16	2,700 J+	1.1	3.83
SWFTS-MW13	3/12/2020	SWFTS-MW13-EM25	N	EM25	5,100	46,000	15 J-	2,700	0.89 J	5.14
SWFTS-MW13	4/30/2020	SWFTS-MW13-EM26	N	EM26	4,900	48,000	18	2,700	0.79 J	4.78
SWFTS-MW13	7/10/2020	SWFTS-MW13-EM27	N	EM27	5,700	51,000	17	2,900	1.1	4.2
SWFTS-MW13	8/18/2020	SWFTS-MW13-EM28	N	EM28	5,600	49,000	16	2,700	1.2	4.25
SWFTS-MW13	10/15/2020	SWFTS-MW13-EM29	N	EM29	5,300	57,000	18	2,700	0.82 J	4.43
SWFTS-MW13	12/8/2020	SWFTS-MW13-EM30	N	EM30	7,200	54,000	18	2,800	1.1	5.42
SWFTS-MW13	2/2/2021	SWFTS-MW13-EM31	N	EM31	6,900	28,000 J+	17	2,600	0.95 J+	5.53
SWFTS-MW13	3/31/2021	SWFTS-MW13-EM32	N	EM32	5,400	27,000 J+	18	2,800	1.1	5.53
SWFTS-MW13	6/4/2021	SWFTS-MW13-EM33	N	EM33	5,300	40,000	18	3,000	0.95 J+	5.04
SWFTS-MW13	7/22/2021	SWFTS-MW13-EM34	N	EM34	5,900	50,000	18	2,800	0.98	4.64
SWFTS-MW13	9/15/2021	SWFTS-MW13-EM35	N	EM35	5,900	53,000	19	3,900	0.91	5.27
SWFTS-MW13	12/2/2021	SWFTS-MW13-EM36	N	EM36	5,900	49,000	18	3,100	1.1 J+	5.70
SWFTS-MW13	3/9/2022	SWFTS-MW13-EM37	N	EM37	2,800	21,000	14	2,300	1.3	2.11
SWFTS-MW13	6/22/2022	SWFTS-MW13-EM38	N	EM38	5,400	35,000	18	2,900	0.95 J+	4.50
SWFTS-MW14	7/12/2017	SWFTS-MW14-BL02	N	BL02	23,000	54,000	12	2,000	2.6	0.65
SWFTS-MW14	7/12/2017	SWFTS-MW14-BL02-FD	FD	BL02	22,000	52,000	12	2,000	2.3	--
SWFTS-MW14	9/20/2017	SWFTS-MW14-EM01	N	EM01	<9.5	<100	<0.55	1,900	100	0.39

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**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW14	9/26/2017	SWFTS-MW14-EM02	N	EM02	<4.8	2,400	<1.1	1,800	81	0.17
SWFTS-MW14	10/3/2017	SWFTS-MW14-EM03	N	EM03	4.8	<100	<0.55 UJ	1,500	36	0.19
SWFTS-MW14	10/11/2017	SWFTS-MW14-EM04	N	EM04	<9.5	<50	<0.55	1,200	4.1	0.39
SWFTS-MW14	10/27/2017	SWFTS-MW14-EM05	N	EM05	26	<50	<0.28	1,100	3.5	0.60
SWFTS-MW14	11/15/2017	SWFTS-MW14-EM06	N	EM06	20 J+	<50	<0.55	1,100	3.1	0.83
SWFTS-MW14	12/12/2017	SWFTS-MW14-EM07	N	EM07	1,600	2,400	<0.55	1,200	2.6	6.49
SWFTS-MW14	2/20/2018	SWFTS-MW14-EM08	N	EM08	2,200	<100	<1.1	780	670	3.12
SWFTS-MW14	3/26/2018	SWFTS-MW14-EM09	N	EM09	5,500	<50	<0.28	410	220	4.03
SWFTS-MW14	4/30/2018	SWFTS-MW14-EM10	N	EM10	4,300	26 J	<0.55	160	91	0.45
SWFTS-MW14	7/10/2018	SWFTS-MW14-EM11	N	EM11	6.5	<25	<0.55	110	180	0.90
SWFTS-MW14	7/26/2018	SWFTS-MW14-EM12	N	EM12	<95	<10	--	--	--	2.26
SWFTS-MW14	8/14/2018	SWFTS-MW14-EM13	N	EM13	8.2 J	<10	<0.55	320	130	0.47
SWFTS-MW14	9/11/2018	SWFTS-MW14-EM14	N	EM14	6.4 J	<10	<0.55	440	91	0.25
SWFTS-MW14	10/9/2018	SWFTS-MW14-EM15	N	EM15	<0.95	<20	<1.1	610	80	0.81
SWFTS-MW14	12/20/2018	SWFTS-MW14-EM16	N	EM16	<0.95	<10	<0.28	720 J+	16	0.46
SWFTS-MW14	2/26/2019	SWFTS-MW14-EM17	N	EM17	<0.95	<10	<0.55	790	6.2	0.67
SWFTS-MW14	4/9/2019	SWFTS-MW14-EM18	N	EM18	38	150	<0.55 UJ	600	5.3	0.65
SWFTS-MW14	5/21/2019	SWFTS-MW14-EM19	N	EM19	<0.95	<20	<0.55	830	6.3	0.35
SWFTS-MW14	7/2/2019	SWFTS-MW14-EM20	N	EM20	2.8 J	<4.0	<0.11	860	6.5	0.35
SWFTS-MW14	8/13/2019	SWFTS-MW14-EM21	N	EM21	<0.50	<10	<0.55	870	6.7	0.22
SWFTS-MW14	11/6/2019	SWFTS-MW14-EM22	N	EM22	<0.95	28 J	<0.55	990	5.6	0.21
SWFTS-MW14	12/17/2019	SWFTS-MW14-EM23	N	EM23	<4.8	<10	<0.55	1,200	4.0	0.47
SWFTS-MW14	1/29/2020	SWFTS-MW14-EM24	N	EM24	<0.95	<10	<0.55	1,200 J+	3.9	0.55
SWFTS-MW14	3/13/2020	SWFTS-MW14-EM25	N	EM25	<0.95	<20	<0.28	1,300	4.2 J+	1.25
SWFTS-MW14	5/1/2020	SWFTS-MW14-EM26	N	EM26	97	<20	<0.55	1,400	3.8	1.94
SWFTS-MW14	7/7/2020	SWFTS-MW14-EM27	N	EM27	<0.95	<10	<0.55	1,500	4.0	0.3
SWFTS-MW14	8/19/2020	SWFTS-MW14-EM28	N	EM28	210	<10	<0.55	1,600	4.7	0.58
SWFTS-MW14	10/14/2020	SWFTS-MW14-EM29	N	EM29	460	21 J	<0.55	1,600	4.0	0.23
SWFTS-MW14	12/8/2020	SWFTS-MW14-EM30	N	EM30	2,900	<20	0.89 J+	1,600	2.2	0.39
SWFTS-MW14	2/2/2021	SWFTS-MW14-EM31	N	EM31	3,300	<49	1.4	1,500	2.2 J+	0.62
SWFTS-MW14	3/31/2021	SWFTS-MW14-EM32	N	EM32	760	<49	0.086	1,400	2.4	0.62
SWFTS-MW14	6/4/2021	SWFTS-MW14-EM33	N	EM33	3,400	73 J	0.99	1,400	2.2 J+	0.65
SWFTS-MW14	7/21/2021	SWFTS-MW14-EM34	N	EM34	2,700	2,300	0.91	1,300	4.5	0.11
SWFTS-MW14	9/16/2021	SWFTS-MW14-EM35	N	EM35	6,000	100	1.9	1,400	2.4	0.51
SWFTS-MW14	12/3/2021	SWFTS-MW14-EM36	N	EM36	670	59 J	0.16	2,000	2.9	1.10
SWFTS-MW14	3/8/2022	SWFTS-MW14-EM37	N	EM37	4,800	2,900	1.7	1,400	3.0 J+	0.56
SWFTS-MW14	6/22/2022	SWFTS-MW14-EM38	N	EM38	6,400	1,500	4.3	2,400	3.3 J+	0.74
SWFTS-MW15	7/13/2017	SWFTS-MW15-BL02	N	BL02	15,000	43,000	10	1,700	1.6	0.47
SWFTS-MW15	9/20/2017	SWFTS-MW15-EM01	N	EM01	11,000	40,000	10	1,600	1.6	0.27
SWFTS-MW15	9/26/2017	SWFTS-MW15-EM02	N	EM02	12,000	41,000	11	1,600	1.5	0.30
SWFTS-MW15	10/4/2017	SWFTS-MW15-EM03	N	EM03	11,000	39,000	12	1,500	1.4	0.38
SWFTS-MW15	10/10/2017	SWFTS-MW15-EM04	N	EM04	18,000	40,000	11	1,500	1.6	0.21
SWFTS-MW15	10/27/2017	SWFTS-MW15-EM05	N	EM05	13,000	38,000	13	1,600	1.8	0.78
SWFTS-MW15	11/14/2017	SWFTS-MW15-EM06	N	EM06	9,900	38,000	12	1,600	1.8	1.08
SWFTS-MW15	12/13/2017	SWFTS-MW15-EM07	N	EM07	13,000	38,000	12	1,700	1.6	3.83
SWFTS-MW15	2/19/2018	SWFTS-MW15-EM08	N	EM08	12,000	47,000	11	1,600	1.6	3.24
SWFTS-MW15	3/26/2018	SWFTS-MW15-EM09	N	EM09	12,000	52,000	12	1,600	1.7	5.95
SWFTS-MW15	5/2/2018	SWFTS-MW15-EM10	N	EM10	13,000	59,000	14	1,500	1.4	1.09
SWFTS-MW15	7/11/2018	SWFTS-MW15-EM11	N	EM11	9,300	45,000	12 J-	1,500	3.5	6.10
SWFTS-MW15	7/26/2018	SWFTS-MW15-EM12	N	EM12	6,800	39,000	--	--	--	2.73
SWFTS-MW15	8/15/2018	SWFTS-MW15-EM13	N	EM13	9,000	52,000	16	1,400	1.9	0.97
SWFTS-MW15	9/11/2018	SWFTS-MW15-EM14	N	EM14	7,800	48,000	16	1,500	1.4	0.73
SWFTS-MW15	10/9/2018	SWFTS-MW15-EM15	N	EM15	6,400	28,000	7.5	1,500	3.3	1.09
SWFTS-MW15	12/20/2018	SWFTS-MW15-EM16	N	EM16	5,300	33,000	9.4	1,400	1.8	0.91
SWFTS-MW15	2/25/2019	SWFTS-MW15-EM17	N	EM17	6,200	31,000	9.2	1,200	3.0	0.00

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Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW15	4/9/2019	SWFTS-MW15-EM18	N	EM18	9,700	53,000	14 J-	1,400	1.4	1.14
SWFTS-MW15	5/20/2019	SWFTS-MW15-EM19	N	EM19	9,200	48,000	15	1,300	1.6	0.65
SWFTS-MW15	7/2/2019	SWFTS-MW15-EM20	N	EM20	8,800	49,000	13	1,300	2.0	0.59
SWFTS-MW15	8/13/2019	SWFTS-MW15-EM21	N	EM21	6,400	50,000	14	1,200	1.7	0.56
SWFTS-MW15	11/6/2019	SWFTS-MW15-EM22	N	EM22	9,900	46,000	13	1,200	1.4	1.99
SWFTS-MW15	12/17/2019	SWFTS-MW15-EM23	N	EM23	9,700	46,000	13	1,200	1.3	0.80
SWFTS-MW15	1/29/2020	SWFTS-MW15-EM24	N	EM24	12,000	49,000	15	1,500 J+	1.6	0.70
SWFTS-MW15	3/13/2020	SWFTS-MW15-EM25	N	EM25	14,000	44,000	13	1,400	1.8 J+	1.7
SWFTS-MW15	4/29/2020	SWFTS-MW15-EM26	N	EM26	13,000	46,000	13	1,400	1.5	5.51
SWFTS-MW15	7/7/2020	SWFTS-MW15-EM27	N	EM27	9,700	24,000	4.6	1,400	34	0.3
SWFTS-MW15	8/19/2020	SWFTS-MW15-EM28	N	EM28	4,400	14,000	3.8	1,300	11	0.33
SWFTS-MW15	10/15/2020	SWFTS-MW15-EM29	N	EM29	4,800	16,000	5.7	1,300	3.5	0.33
SWFTS-MW15	12/8/2020	SWFTS-MW15-EM30	N	EM30	6,200	22,000	7.0	1,300	2.0	0.95
SWFTS-MW15	2/2/2021	SWFTS-MW15-EM31	N	EM31	7,700	31,000	7.7	1,300	1.5 J+	0.54
SWFTS-MW15	3/31/2021	SWFTS-MW15-EM32	N	EM32	7,900	23,000	6.0	1,200	3.8	0.54
SWFTS-MW15	6/3/2021	SWFTS-MW15-EM33	N	EM33	17,000	40,000	11	1,300	1.9	0.72
SWFTS-MW15	7/21/2021	SWFTS-MW15-EM34	N	EM34	11,000	24,000	8.0	1,200	2.5 J+	0.44
SWFTS-MW15	9/16/2021	SWFTS-MW15-EM35	N	EM35	18,000	30,000	12	1,500	1.8	0.71
SWFTS-MW15	11/30/2021	SWFTS-MW15-EM36	N	EM36	23,000	58,000	15	1,700	1.7 J+	1.82
SWFTS-MW15	3/8/2022	SWFTS-MW15-EM37	N	EM37	14,000	42 J	13	2,300	3.0 J+	0.58
SWFTS-MW15	6/22/2022	SWFTS-MW15-EM38	N	EM38	1,400	<24	2.2	1,200	3.6 J+	0.80
SWFTS-MW16	7/13/2017	SWFTS-MW16-BL02	N	BL02	8,400	38,000	12	2,100	1.6	0.93
SWFTS-MW16	9/22/2017	SWFTS-MW16-EM01	N	EM01	1,700	8,700	3.3	1,900	120	0.71
SWFTS-MW16	9/26/2017	SWFTS-MW16-EM02	N	EM02	1,300	8,800	3.8	2,000	68	1.54
SWFTS-MW16	10/3/2017	SWFTS-MW16-EM03	N	EM03	1,600	6,300	2.7	1,800	92	1.30
SWFTS-MW16	10/12/2017	SWFTS-MW16-EM04	N	EM04	1,100	5,800	2.1	1,500	180	1.32
SWFTS-MW16	10/24/2017	SWFTS-MW16-EM05	N	EM05	830	4,700	1.5	520	180	1.03
SWFTS-MW16	11/16/2017	SWFTS-MW16-EM06	N	EM06	<0.95	4,000	1.2	480	110	0.49
SWFTS-MW16	12/12/2017	SWFTS-MW16-EM07	N	EM07	490	3,100	1.1	550	5.9	0.56
SWFTS-MW16	2/21/2018	SWFTS-MW16-EM08	N	EM08	620	2,800	<1.1	1,000	7.7	0.49
SWFTS-MW16	3/27/2018	SWFTS-MW16-EM09	N	EM09	9,000	46,000	12	1,700	1.5	0.49
SWFTS-MW16	5/2/2018	SWFTS-MW16-EM10	N	EM10	1,500 J	11,000	3.5	1,600	2.3	0.15
SWFTS-MW16	7/11/2018	SWFTS-MW16-EM11	N	EM11	<4.8	<5.0	<0.55	690	7.9	5.38
SWFTS-MW16	7/26/2018	SWFTS-MW16-EM12	N	EM12	<0.95	<4.0	--	--	--	1.99
SWFTS-MW16	8/15/2018	SWFTS-MW16-EM13	N	EM13	12	67	<0.28	1,100	3.2	0.98
SWFTS-MW16	9/10/2018	SWFTS-MW16-EM14	N	EM14	200	1,400	0.42 J	1,300	2.9	0.78
SWFTS-MW16	10/11/2018	SWFTS-MW16-EM15	N	EM15	340	2,200	0.76 J	1,800	2.8	3.73
SWFTS-MW16	12/19/2018	SWFTS-MW16-EM16	N	EM16	270	2,300	1.0 J	1,600	2.5	0.4
SWFTS-MW16	2/26/2019	SWFTS-MW16-EM17	N	EM17	<0.95	<10	<0.55	970	5.6	0.00
SWFTS-MW16	4/9/2019	SWFTS-MW16-EM18	N	EM18	<0.95	<10	<0.55 UJ	970	2.9	0.47
SWFTS-MW16	5/20/2019	SWFTS-MW16-EM19	N	EM19	<0.95 UJ	<10	<0.55	1,100	3.5	0.53
SWFTS-MW16	7/1/2019	SWFTS-MW16-EM20	N	EM20	<0.95	<10	<0.55	1,100	4.0	0.20
SWFTS-MW16	8/13/2019	SWFTS-MW16-EM21	N	EM21	19	100	<0.55	1,300	3.6	0.35
SWFTS-MW16	11/6/2019	SWFTS-MW16-EM22	N	EM22	<0.95	<40	<0.55	820	3.2	0.21
SWFTS-MW16	12/17/2019	SWFTS-MW16-EM23	N	EM23	<4.8	<10	<0.55	990	2.3	2.00
SWFTS-MW16	1/29/2020	SWFTS-MW16-EM24	N	EM24	<0.95	<100	<0.55	1,200 J+	2.7	0.53
SWFTS-MW16	3/13/2020	SWFTS-MW16-EM25	N	EM25	<0.95	<10	<0.55	1,300	3.6	2.24
SWFTS-MW16	4/30/2020	SWFTS-MW16-EM26	N	EM26	<4.8	<10	<0.55	1,300	5.7	2.25
SWFTS-MW16	7/9/2020	SWFTS-MW16-EM27	N	EM27	<0.95	16 J	<0.55	950	4.9	1.2
SWFTS-MW16	8/19/2020	SWFTS-MW16-EM28	N	EM28	<4.8	<10	<0.55	1,100	4.9	0.46
SWFTS-MW16	10/15/2020	SWFTS-MW16-EM29	N	EM29	<0.95	16 J	<0.014	1,100	3.6	0.38
SWFTS-MW16	12/8/2020	SWFTS-MW16-EM30	N	EM30	<0.31	<20	<0.014	1,100	2.7	0.27
SWFTS-MW16	2/2/2021	SWFTS-MW16-EM31	N	EM31	<0.31	<49	<0.014	1,200	2.8 J+	0.63
SWFTS-MW16	3/31/2021	SWFTS-MW16-EM32	N	EM32	2.4	<9.8	0.051	1,200	2.8	0.63
SWFTS-MW16	6/3/2021	SWFTS-MW16-EM33	N	EM33	450	<9.8	0.096	1,300	1.9	0.65

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW16	7/21/2021	SWFTS-MW16-EM34	N	EM34	960	<24	0.20	1,300	2.3 J+	0.37
SWFTS-MW16	9/16/2021	SWFTS-MW16-EM35	N	EM35	1,100	33 J	0.20	1,400	2.9	2.88
SWFTS-MW16	11/30/2021	SWFTS-MW16-EM36	N	EM36	1,900	16 J	0.43	1,500	3.6 J+	1.42
SWFTS-MW16	3/9/2022	SWFTS-MW16-EM37	N	EM37	1,800	<9.8	0.14 J+	1,600	2.8	0.92
SWFTS-MW16	6/22/2022	SWFTS-MW16-EM38	N	EM38	740	11 J	0.085	1,700	3.0 J+	0.78
SWFTS-MW17	7/12/2017	SWFTS-MW17-BL02	N	BL02	3,200	--	16	2,200	1.1	4.30
SWFTS-MW17	9/19/2017	SWFTS-MW17-EM01	N	EM01	2,600	18,000	16	2,200	1.2	5.07
SWFTS-MW17	9/19/2017	SWFTS-MW17-EM01-FD	FD	EM01	2,600	18,000	16	2,300	1.3	--
SWFTS-MW17	9/26/2017	SWFTS-MW17-EM02	N	EM02	2,800	17,000	17	2,300	1.5	4.04
SWFTS-MW17	9/26/2017	SWFTS-MW17-EM02-FD	FD	EM02	2,800	17,000	17	2,300	1.5	--
SWFTS-MW17	10/3/2017	SWFTS-MW17-EM03	N	EM03	3,300	19,000	15	2,300	1.1	6.87
SWFTS-MW17	10/3/2017	SWFTS-MW17-EM03-FD	FD	EM03	3,300	19,000	16	2,300	1.0	--
SWFTS-MW17	10/10/2017	SWFTS-MW17-EM04	N	EM04	2,800	16,000	16	2,500	1.3	3.90
SWFTS-MW17	10/24/2017	SWFTS-MW17-EM05	N	EM05	2,700	15,000	17	2,200	1.2	5.28
SWFTS-MW17	10/24/2017	SWFTS-MW17-EM05-FD	FD	EM05	2,700	15,000	16	2,200	2.2	--
SWFTS-MW17	11/15/2017	SWFTS-MW17-EM06	N	EM06	2,300	16,000	17	2,200	1.3	4.91
SWFTS-MW17	11/15/2017	SWFTS-MW17-EM06-FD	FD	EM06	2,200	15,000	17	2,100	1.2	--
SWFTS-MW17	12/13/2017	SWFTS-MW17-EM07	N	EM07	2,200	14,000	16	2,100	1.2	5.54
SWFTS-MW17	12/13/2017	SWFTS-MW17-EM07-FD	FD	EM07	2,300	13,000	16	2,100	1.2	--
SWFTS-MW17	2/22/2018	SWFTS-MW17-EM08	N	EM08	2,000	15,000	16	2,100	2.1	3.65
SWFTS-MW17	3/28/2018	SWFTS-MW17-EM09	N	EM09	2,000	14,000	15	1,900	1.2	3.49
SWFTS-MW17	5/3/2018	SWFTS-MW17-EM10	N	EM10	1,900 J-	11,000	15	2,000	1.1	4.08
SWFTS-MW17	7/11/2018	SWFTS-MW17-EM11	N	EM11	1,300	11,000	15	1,900	1.1	4.35
SWFTS-MW17	8/16/2018	SWFTS-MW17-EM13	N	EM13	1,600	12,000	16	2,000	1.4	4.56
SWFTS-MW17	9/12/2018	SWFTS-MW17-EM14	N	EM14	1,900	13,000	15	1,900	1.0	3.49
SWFTS-MW17	10/11/2018	SWFTS-MW17-EM15	N	EM15	2,100	15,000	16	2,100	1.6	3.33
SWFTS-MW17	1/2/2019	SWFTS-MW17-EM16	N	EM16	1,700	11,000	15	1,900	1.2	6.18
SWFTS-MW17	2/28/2019	SWFTS-MW17-EM17	N	EM17	1,700	13,000	15	2,000	1.3	4.83
SWFTS-MW17	4/11/2019	SWFTS-MW17-EM18	N	EM18	1,700	12,000	14	2,000	1.3	4.74
SWFTS-MW17	5/22/2019	SWFTS-MW17-EM19	N	EM19	1,900	13,000	14	1,900	1.1	4.85
SWFTS-MW17	7/5/2019	SWFTS-MW17-EM20	N	EM20	1,800	13,000	16	2,000	1.3	4.91
SWFTS-MW17	8/16/2019	SWFTS-MW17-EM21	N	EM21	2,200	13,000	16	2,100	1.4	5.02
SWFTS-MW17	11/7/2019	SWFTS-MW17-EM22	N	EM22	2,100	15,000	12	1,600	1.3	5.25
SWFTS-MW17	12/20/2019	SWFTS-MW17-EM23	N	EM23	2,100	16,000	14	2,000	1.2	5.71
SWFTS-MW17	1/30/2020	SWFTS-MW17-EM24	N	EM24	2,200	18,000	14	2,100	1.1	4.77
SWFTS-MW17	3/13/2020	SWFTS-MW17-EM25	N	EM25	2,100	17,000	14	2,100	1.6	6.02
SWFTS-MW17	4/30/2020	SWFTS-MW17-EM26	N	EM26	2,000	17,000	13	2,000	1.0	5.11
SWFTS-MW17	7/9/2020	SWFTS-MW17-EM27	N	EM27	2,000	16,000	14	2,300	0.93 J	3.9
SWFTS-MW17	8/19/2020	SWFTS-MW17-EM28	N	EM28	1,900	15,000	15	2,200	1.7	4.39
SWFTS-MW17	10/15/2020	SWFTS-MW17-EM29	N	EM29	2,200	16,000	15	2,000	1.1	4.75
SWFTS-MW17	12/9/2020	SWFTS-MW17-EM30	N	EM30	2,100	15,000	15	2,000	1.3	4.66
SWFTS-MW17	2/2/2021	SWFTS-MW17-EM31	N	EM31	2,300	8,000 J+	15	2,000	1.1 J+	4.84
SWFTS-MW17	3/31/2021	SWFTS-MW17-EM32	N	EM32	2,100	7,400	13	2,000	1.1	4.84
SWFTS-MW17	6/3/2021	SWFTS-MW17-EM33	N	EM33	2,300	8,400	16	2,100	1.0	4.56
SWFTS-MW17	7/21/2021	SWFTS-MW17-EM34	N	EM34	2,100	12,000	15	2,000	1.2 J+	4.89
SWFTS-MW17	9/16/2021	SWFTS-MW17-EM35	N	EM35	2,000	7,900	17	2,100	1.2	4.93
SWFTS-MW17	12/2/2021	SWFTS-MW17-EM36	N	EM36	2,700	17,000	15	2,300	1.5 J+	5.23
SWFTS-MW17	3/9/2022	SWFTS-MW17-EM37	N	EM37	4,400	31,000	17	2,600	1.1	5.01
SWFTS-MW17	6/22/2022	SWFTS-MW17-EM38	N	EM38	2,300	16,000	16	2,100	1.3 J+	4.93
SWFTS-MW18	7/11/2017	SWFTS-MW18-BL02	N	BL02	13,000	52,000	12	1,600	1.5	2.68
SWFTS-MW18	9/21/2017	SWFTS-MW18-EM01	N	EM01	9,700	34,000	8.9	1,700	2.0	0.59
SWFTS-MW18	9/27/2017	SWFTS-MW18-EM02	N	EM02	11,000	36,000	12	1,700	2.2	0.40
SWFTS-MW18	10/3/2017	SWFTS-MW18-EM03	N	EM03	8,100	30,000	8.6	1,700	1.5	2.22
SWFTS-MW18	10/10/2017	SWFTS-MW18-EM04	N	EM04	9,700	40,000	12	1,800	1.7	0.31
SWFTS-MW18	10/23/2017	SWFTS-MW18-EM05	N	EM05	8,200	38,000	12	1,700	1.7	0.98

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW18	11/15/2017	SWFTS-MW18-EM06	N	EM06	11,000	37,000	11	1,800	1.8	1.37
SWFTS-MW18	12/13/2017	SWFTS-MW18-EM07	N	EM07	9,100	39,000	12	1,600	1.6	0.40
SWFTS-MW18	2/22/2018	SWFTS-MW18-EM08	N	EM08	8,900	45,000	12	1,600	2.3	0.51
SWFTS-MW18	3/27/2018	SWFTS-MW18-EM09	N	EM09	2,000	11,000	3.9	1,400	2.5	0.25
SWFTS-MW18	3/27/2018	SWFTS-MW18-EM09-FD	FD	EM09	2,100	11,000	3.5	1,500	2.4	--
SWFTS-MW18	5/1/2018	SWFTS-MW18-EM10	N	EM10	9,200	50,000	13	1,600	1.5	0.43
SWFTS-MW18	7/11/2018	SWFTS-MW18-EM11	N	EM11	6,900	41,000	11	1,700	1.6	0.01
SWFTS-MW18	7/26/2018	SWFTS-MW18-EM12	N	EM12	6,100	43,000	--	--	--	2.81
SWFTS-MW18	8/15/2018	SWFTS-MW18-EM13	N	EM13	5,900	41,000	13	1,700	2.0	0.58
SWFTS-MW18	9/11/2018	SWFTS-MW18-EM14	N	EM14	5,600	41,000	13	1,700	1.6	0.79
SWFTS-MW18	10/11/2018	SWFTS-MW18-EM15	N	EM15	5,300	41,000	13	1,400	2.1	1.88
SWFTS-MW18	12/20/2018	SWFTS-MW18-EM16	N	EM16	5,000	38,000	15	1,500	1.8	0.67
SWFTS-MW18	2/26/2019	SWFTS-MW18-EM17	N	EM17	4,600	28,000	11	1,600	1.9	0.00
SWFTS-MW18	4/9/2019	SWFTS-MW18-EM18	N	EM18	4,800	26,000	11 J-	1,700	1.6	0.48
SWFTS-MW18	5/21/2019	SWFTS-MW18-EM19	N	EM19	4,600	25,000	12	1,600	1.5	0.65
SWFTS-MW18	7/1/2019	SWFTS-MW18-EM20	N	EM20	4,300	29,000	12	1,600	1.9	0.41
SWFTS-MW18	8/13/2019	SWFTS-MW18-EM21	N	EM21	4,600	25,000	12	1,400	1.8	0.39
SWFTS-MW18	11/6/2019	SWFTS-MW18-EM22	N	EM22	2,600	6,600	2.8	1,400	2.0	0.30
SWFTS-MW18	12/17/2019	SWFTS-MW18-EM23	N	EM23	4,200	19,000	8.8	1,400	1.9	0.64
SWFTS-MW18	1/29/2020	SWFTS-MW18-EM24	N	EM24	5,800	23,000	10	1,500 J+	2.0	0.53
SWFTS-MW18	3/11/2020	SWFTS-MW18-EM25	N	EM25	7,100	30,000	9.4	1,300	1.7	2.18
SWFTS-MW18	4/29/2020	SWFTS-MW18-EM26	N	EM26	6,700	31,000	10	1,400	1.9	2.07
SWFTS-MW18	7/9/2020	SWFTS-MW18-EM27	N	EM27	4,400	12,000	6.0	1,600	1.8	0.7
SWFTS-MW18	8/19/2020	SWFTS-MW18-EM28	N	EM28	3,900	13,000	9.5	1,600	3.0	0.64
SWFTS-MW18	10/15/2020	SWFTS-MW18-EM29	N	EM29	3,600	12,000	10	1,500	2.2	0.4
SWFTS-MW18	12/9/2020	SWFTS-MW18-EM30	N	EM30	3,100	8,100	8.9	1,600	1.7	0.33
SWFTS-MW18	2/3/2021	SWFTS-MW18-EM31	N	EM31	4,100	12,000 J+	10	1,600	1.4	0.65
SWFTS-MW18	3/30/2021	SWFTS-MW18-EM32	N	EM32	1,400	1,100 J+	0.94	1,400	2.7	0.65
SWFTS-MW18	6/3/2021	SWFTS-MW18-EM33	N	EM33	4,200	6,100	7.8	1,600	1.7	0.68
SWFTS-MW18	7/21/2021	SWFTS-MW18-EM34	N	EM34	5,600	14,000 J+	10	1,600	1.7 J+	0.34
SWFTS-MW18	9/16/2021	SWFTS-MW18-EM35	N	EM35	6,700	1,000 J+	10	1,600	1.9	1.27
SWFTS-MW18	12/1/2021	SWFTS-MW18-EM36	N	EM36	760	330	0.76	1,500	4.1	1.19
SWFTS-MW18	3/8/2022	SWFTS-MW18-EM37	N	EM37	7,300	16,000	4.3	1,500	2.3 J	0.93
SWFTS-MW18	6/22/2022	SWFTS-MW18-EM38	N	EM38	4,700	13,000	8.8	1,800	2.8 J+	0.77
SWFTS-MW19	7/12/2017	SWFTS-MW19-BL02	N	BL02	840	130	0.33	660	2.6	0.77
SWFTS-MW19	9/21/2017	SWFTS-MW19-EM01	N	EM01	1,400	220	0.51	670	2.3	0.43
SWFTS-MW19	9/28/2017	SWFTS-MW19-EM02	N	EM02	1,400	260	0.74	680	2.8	6.39
SWFTS-MW19	10/5/2017	SWFTS-MW19-EM03	N	EM03	1,400	220	0.63	690	2.6	5.16
SWFTS-MW19	10/12/2017	SWFTS-MW19-EM04	N	EM04	1,400	220 J+	0.70	760	2.2	0.28
SWFTS-MW19	10/27/2017	SWFTS-MW19-EM05	N	EM05	1,900	250	0.77	720	2.6	0.38
SWFTS-MW19	11/16/2017	SWFTS-MW19-EM06	N	EM06	1,500	270	0.97	740	2.3	0.73
SWFTS-MW19	12/12/2017	SWFTS-MW19-EM07	N	EM07	2,000	410	1.2	780	2.4	0.92
SWFTS-MW19	2/20/2018	SWFTS-MW19-EM08	N	EM08	1,900	610	0.73	890	2.6	1.25
SWFTS-MW19	3/27/2018	SWFTS-MW19-EM09	N	EM09	1,800	650	0.71	860	2.2	1.09
SWFTS-MW19	4/30/2018	SWFTS-MW19-EM10	N	EM10	1,800	820	0.70	960	2.2	0.56
SWFTS-MW19	4/30/2018	SWFTS-MW19-EM10-FD	FD	EM10	1,700	760	0.67	910	2.2	--
SWFTS-MW19	7/10/2018	SWFTS-MW19-EM11	N	EM11	2,000	1,100	0.52	840	1.9	2.80
SWFTS-MW19	7/10/2018	SWFTS-MW19-EM11-FD	FD	EM11	2,000	1,000	0.52	850	1.9	--
SWFTS-MW19	7/26/2018	SWFTS-MW19-EM12	N	EM12	1,800	890	--	--	--	1.11
SWFTS-MW19	7/26/2018	SWFTS-MW19-EM12-FD	FD	EM12	1,700	890	--	--	--	--
SWFTS-MW19	8/15/2018	SWFTS-MW19-EM13	N	EM13	1,700	900	0.44	820	2.4	0.95
SWFTS-MW19	9/11/2018	SWFTS-MW19-EM14	N	EM14	1,500	850	0.37	790	2.0	1.06
SWFTS-MW19	10/9/2018	SWFTS-MW19-EM15	N	EM15	2,000	870	0.41 J	800	2.4	1.43
SWFTS-MW19	10/9/2018	SWFTS-MW19-EM15-FD	FD	EM15	1,700	870	0.40 J	800	2.4	--
SWFTS-MW19	12/27/2018	SWFTS-MW19-EM16	N	EM16	1,400	760	0.36	860	2.4	1.43

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Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW19	12/27/2018	SWFTS-MW19-EM16-FD	FD	EM16	1,300	760	0.36	860	2.1	--
SWFTS-MW19	2/27/2019	SWFTS-MW19-EM17	N	EM17	1,300	590	0.35	900	2.1	0.14
SWFTS-MW19	2/27/2019	SWFTS-MW19-EM17-FD	FD	EM17	1,300	560	0.38 J	940	2.1	--
SWFTS-MW19	4/10/2019	SWFTS-MW19-EM18	N	EM18	1,500	530	0.33 J	840	2.2	1.27
SWFTS-MW19	4/10/2019	SWFTS-MW19-EM18-FD	FD	EM18	1,300	510	0.37 J	880	2.1	--
SWFTS-MW19	5/21/2019	SWFTS-MW19-EM19	N	EM19	1,200	420	0.18 J	790	3.3	1.22
SWFTS-MW19	5/21/2019	SWFTS-MW19-EM19-FD	FD	EM19	1,200	400	0.24	830	3.2	--
SWFTS-MW19	7/2/2019	SWFTS-MW19-EM20	N	EM20	1,100	340	0.11	740	2.9	1.54
SWFTS-MW19	7/2/2019	SWFTS-MW19-EM20-FD	FD	EM20	1,100	340	0.11	740	3.1	--
SWFTS-MW19	8/15/2019	SWFTS-MW19-EM21	N	EM21	1,200	260	<0.28	680	2.6	1.6
SWFTS-MW19	8/15/2019	SWFTS-MW19-EM21-FD	FD	EM21	1,200	260	<0.28	690	2.6	--
SWFTS-MW19	11/5/2019	SWFTS-MW19-EM22	N	EM22	1,300	270	0.36 J	780	2.3	1.28
SWFTS-MW19	11/5/2019	SWFTS-MW19-EM22-FD	FD	EM22	1,300	270	0.37 J	800	2.3	--
SWFTS-MW19	12/19/2019	SWFTS-MW19-EM23	N	EM23	1,200	420	0.31 J	810	2.0	2.03
SWFTS-MW19	12/19/2019	SWFTS-MW19-EM23-FD	FD	EM23	1,300	370	0.32 J	820	2.1	--
SWFTS-MW19	1/29/2020	SWFTS-MW19-EM24	N	EM24	1,400	550	0.61	990 J+	2.3	1.01
SWFTS-MW19	1/29/2020	SWFTS-MW19-EM24-FD	FD	EM24	1,300	570	0.62	990 J+	2.2	--
SWFTS-MW19	3/11/2020	SWFTS-MW19-EM25	N	EM25	1,300	780	0.70 J	1,200	2.3	1.69
SWFTS-MW19	3/11/2020	SWFTS-MW19-EM25-FD	FD	EM25	1,300	740	0.72 J	1,200	2.3	--
SWFTS-MW19	4/28/2020	SWFTS-MW19-EM26	N	EM26	1,200	1,100	<0.55	1,300	2.5	2.1
SWFTS-MW19	4/28/2020	SWFTS-MW19-EM26-FD	FD	EM26	1,200	1,100	0.56 J	1,300	2.6	--
SWFTS-MW19	7/9/2020	SWFTS-MW19-EM27	N	EM27	1,300	1,400	0.47 J	1,100	2.3	0.8
SWFTS-MW19	7/9/2020	SWFTS-MW19-EM27-FD	FD	EM27	1,400	1,300	0.61	1,100	2.1	--
SWFTS-MW19	8/19/2020	SWFTS-MW19-EM28	N	EM28	1,300	1,300	0.43	930	2.4	0.87
SWFTS-MW19	8/19/2020	SWFTS-MW19-EM28-FD	FD	EM28	1,300	1,300	0.44	910	2.6	--
SWFTS-MW19	10/14/2020	SWFTS-MW19-EM29	N	EM29	1,500	1,300	0.43 J	910	2.3	0.72
SWFTS-MW19	10/14/2020	SWFTS-MW19-EM29-FD	FD	EM29	1,400	1,300	0.43 J	1,000	2.2	--
SWFTS-MW19	12/9/2020	SWFTS-MW19-EM30	N	EM30	1,500	990	0.36 J+	940	2.0	0.87
SWFTS-MW19	12/9/2020	SWFTS-MW19-EM30-FD	FD	EM30	1,500	1,000	0.33 J+	940	2.0	--
SWFTS-MW19	2/3/2021	SWFTS-MW19-EM31	N	EM31	1,600	920	0.26	950	2.0	1.23
SWFTS-MW19	2/3/2021	SWFTS-MW19-EM31-FD	FD	EM31	1,700	800	0.26	960	2.2	--
SWFTS-MW19	3/30/2021	SWFTS-MW19-EM32	N	EM32	1,300	730	0.20	1,000	2.3	1.23
SWFTS-MW19	3/30/2021	SWFTS-MW19-EM32-FD	FD	EM32	1,300	740	0.17	990	2.3	--
SWFTS-MW19	6/3/2021	SWFTS-MW19-EM33	N	EM33	1,100	580	0.16	970	2.1	1.47
SWFTS-MW19	6/3/2021	SWFTS-MW19-EM33-FD	FD	EM33	1,200	560	0.16	990	2.1	--
SWFTS-MW19	7/20/2021	SWFTS-MW19-EM34	N	EM34	1,100	420	0.14	880	2.1	0.65
SWFTS-MW19	7/20/2021	SWFTS-MW19-EM34-FD	FD	EM34	1,200	430	0.14	860	2.4	--
SWFTS-MW19	9/16/2021	SWFTS-MW19-EM35	N	EM35	1,200	580	0.19 J	970	2.5	0.52
SWFTS-MW19	9/16/2021	SWFTS-MW19-EM35-FD	FD	EM35	1,200	570	0.18 J	950	2.7	--
SWFTS-MW19	12/1/2021	SWFTS-MW19-EM36	N	EM36	1,100	800	0.21	1,000	2.6	1.52
SWFTS-MW19	12/1/2021	SWFTS-MW19-EM36-FD	FD	EM36	1,100	800	0.21	1,000	2.8	--
SWFTS-MW19	3/8/2022	SWFTS-MW19-EM37	N	EM37	7,100	5,300	6.7	2,200	7.5	0.90
SWFTS-MW19	3/8/2022	SWFTS-MW19-EM37-FD	FD	EM37	7,100	5,400	7.1	2,400	7.5	--
SWFTS-MW19	6/22/2022	SWFTS-MW19-EM38	N	EM38	3,900	110	1.7	1,900	4.8 J+	0.81
SWFTS-MW19	6/22/2022	SWFTS-MW19-EM38-FD	FD	EM38	4,000	110	1.7	1,900	4.8 J+	--
SWFTS-MW20	7/12/2017	SWFTS-MW20-BL02	N	BL02	20,000	51,000	13	2,200	1.7	6.05
SWFTS-MW20	9/21/2017	SWFTS-MW20-EM01	N	EM01	17,000	30,000	7.3	2,000	2.5	3.72
SWFTS-MW20	9/26/2017	SWFTS-MW20-EM02	N	EM02	16,000	33,000	7.6	2,100	3.0	0.49
SWFTS-MW20	10/4/2017	SWFTS-MW20-EM03	N	EM03	19,000	38,000	9.6	2,200	2.6	0.22
SWFTS-MW20	10/12/2017	SWFTS-MW20-EM04	N	EM04	14,000	42,000	8.5	2,000	2.2	0.23
SWFTS-MW20	10/12/2017	SWFTS-MW20-EM04-FD	FD	EM04	14,000	40,000	9.1	2,100	2.2	--
SWFTS-MW20	10/25/2017	SWFTS-MW20-EM05	N	EM05	17,000	40,000	11	2,100	2.6	0.45
SWFTS-MW20	11/16/2017	SWFTS-MW20-EM06	N	EM06	7,900	16,000	4.0	1,700	3.0	0.74
SWFTS-MW20	12/12/2017	SWFTS-MW20-EM07	N	EM07	16,000	43,000	8.5	2,200	2.2	0.20
SWFTS-MW20	2/19/2018	SWFTS-MW20-EM08	N	EM08	6,600	16,000	3.2	1,600	2.5	2.54



**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW20	3/27/2018	SWFTS-MW20-EM09	N	EM09	11,000	24,000	5.2	2,100	2.2	3.64
SWFTS-MW20	4/30/2018	SWFTS-MW20-EM10	N	EM10	6,700	14,000	3.3	1,600	2.3	0.19
SWFTS-MW20	7/11/2018	SWFTS-MW20-EM11	N	EM11	6,700	16,000	3.2	1,600	2.8	1.72
SWFTS-MW20	7/26/2018	SWFTS-MW20-EM12	N	EM12	7,500	19,000	--	--	--	1.88
SWFTS-MW20	8/15/2018	SWFTS-MW20-EM13	N	EM13	4,300	5,600	2.8	1,500	2.8	0.81
SWFTS-MW20	8/15/2018	SWFTS-MW20-EM13-FD	FD	EM13	4,300	5,700	2.7	1,400	2.8	--
SWFTS-MW20	9/11/2018	SWFTS-MW20-EM14	N	EM14	3,400	8,500	2.3 J	1,400	2.6	0.51
SWFTS-MW20	9/11/2018	SWFTS-MW20-EM14-FD	FD	EM14	3,900	9,500	6.9 J	1,500	2.6	--
SWFTS-MW20	10/9/2018	SWFTS-MW20-EM15	N	EM15	4,000	5,900	2.2	1,400	3.0	1.96
SWFTS-MW20	12/20/2018	SWFTS-MW20-EM16	N	EM16	2,800	830	2.1	1,500 J+	2.8	0.97
SWFTS-MW20	2/26/2019	SWFTS-MW20-EM17	N	EM17	1,500	170	1.5 J	1,100	3.2	0.36
SWFTS-MW20	4/9/2019	SWFTS-MW20-EM18	N	EM18	1,400	300	1.7 J	1,600	2.9	0.64
SWFTS-MW20	5/21/2019	SWFTS-MW20-EM19	N	EM19	1,000	69 J	1.3 J	1,600	2.8	0.41
SWFTS-MW20	7/2/2019	SWFTS-MW20-EM20	N	EM20	870	37 J	0.70 J	1,400	4.0	0.43
SWFTS-MW20	8/13/2019	SWFTS-MW20-EM21	N	EM21	390	23 J	0.41 J	1,400	3.4	0.42
SWFTS-MW20	11/5/2019	SWFTS-MW20-EM22	N	EM22	430	26 J	<1.1	1,400	3.4	0.49
SWFTS-MW20	12/17/2019	SWFTS-MW20-EM23	N	EM23	290	30 J	<1.1	1,400	2.8	0.65
SWFTS-MW20	1/29/2020	SWFTS-MW20-EM24	N	EM24	340	32 J	0.49 J	1,400 J+	3.0	0.52
SWFTS-MW20	3/12/2020	SWFTS-MW20-EM25	N	EM25	220	370	0.55 R	1,500	4.8	2.25
SWFTS-MW20	4/29/2020	SWFTS-MW20-EM26	N	EM26	180	38 J	<0.28	1,500	4.3	2
SWFTS-MW20	7/9/2020	SWFTS-MW20-EM27	N	EM27	170	<10	<0.55	2,000	3.0	0.7
SWFTS-MW20	8/20/2020	SWFTS-MW20-EM28	N	EM28	89	27 J	<0.55	1,500	4.6	0.5
SWFTS-MW20	10/14/2020	SWFTS-MW20-EM29	N	EM29	110	<10	<0.55	1,800	3.8	0.44
SWFTS-MW20	12/9/2020	SWFTS-MW20-EM30	N	EM30	140	27 J	0.18 J+	2,100	3.3	0.29
SWFTS-MW20	2/3/2021	SWFTS-MW20-EM31	N	EM31	79	<9.8	<0.014	1,800	3.1	0.74
SWFTS-MW20	3/30/2021	SWFTS-MW20-EM32	N	EM32	68	24 R	0.057	1,800	3.7	0.74
SWFTS-MW20	6/3/2021	SWFTS-MW20-EM33	N	EM33	44	<9.8	<0.014	1,500	3.7	0.61
SWFTS-MW20	7/20/2021	SWFTS-MW20-EM34	N	EM34	<31	83	0.037 J	1,600	4.6	0.18
SWFTS-MW20	9/16/2021	SWFTS-MW20-EM35	N	EM35	50	140	0.076 J	1,300	4.9	0.25
SWFTS-MW20	11/29/2021	SWFTS-MW20-EM36	N	EM36	3.3	76 J	0.054	1,600	4.6	3.05
SWFTS-MW20	3/8/2022	SWFTS-MW20-EM37	N	EM37	730	790	0.72	2,500	6.1	0.91
SWFTS-MW20	6/21/2022	SWFTS-MW20-EM38	N	EM38	<0.31	28 J	0.017 J	2,800	4.3	0.68
SWFTS-MW21	7/13/2017	SWFTS-MW21-BL02	N	BL02	5,800	49,000	15	2,600	0.94 J	6.15
SWFTS-MW21	9/21/2017	SWFTS-MW21-EM01	N	EM01	5,200	15,000	3.9	2,600	7.5	4.90
SWFTS-MW21	9/27/2017	SWFTS-MW21-EM02	N	EM02	950	4,700	1.8 J	2,800	19	0.28
SWFTS-MW21	10/5/2017	SWFTS-MW21-EM03	N	EM03	1,100	7,700	3.2	2,500	24	4.40
SWFTS-MW21	10/11/2017	SWFTS-MW21-EM04	N	EM04	820	4,200	1.8	2,500	25	0.28
SWFTS-MW21	10/27/2017	SWFTS-MW21-EM05	N	EM05	890	5,000	2.0	2,600	2.8	0.45
SWFTS-MW21	11/15/2017	SWFTS-MW21-EM06	N	EM06	2,300	13,000	3.7	2,500	2.1	3.07
SWFTS-MW21	12/13/2017	SWFTS-MW21-EM07	N	EM07	3,500	26,000	4.7	2,500 J-	1.6	0.68
SWFTS-MW21	2/20/2018	SWFTS-MW21-EM08	N	EM08	4,800	34,000	11	2,600	1.6	0.24
SWFTS-MW21	2/20/2018	SWFTS-MW21-EM08-FD	FD	EM08	4,900	33,000	11	2,600	1.6	--
SWFTS-MW21	3/27/2018	SWFTS-MW21-EM09	N	EM09	4,600	32,000	10	2,800	1.1	0.37
SWFTS-MW21	4/30/2018	SWFTS-MW21-EM10	N	EM10	4,400	27,000	10	2,700	1.3	0.00
SWFTS-MW21	7/12/2018	SWFTS-MW21-EM11	N	EM11	1,300	7,900	2.8	2,600	3.7	0.06
SWFTS-MW21	7/27/2018	SWFTS-MW21-EM12	N	EM12	1,000	9,000	--	--	--	8.98 E
SWFTS-MW21	8/15/2018	SWFTS-MW21-EM13	N	EM13	1,300	2,900	1.9	2,000	2.7	0.68
SWFTS-MW21	9/12/2018	SWFTS-MW21-EM14	N	EM14	2,000	2,600	1.3	1,900	2.2	0.35
SWFTS-MW21	10/9/2018	SWFTS-MW21-EM15	N	EM15	2,700	2,600	2.9	2,200	1.9	0.59
SWFTS-MW21	12/20/2018	SWFTS-MW21-EM16	N	EM16	3,000	5,200	7.5	2,500	1.6	1.11
SWFTS-MW21	2/26/2019	SWFTS-MW21-EM17	N	EM17	2,800	2,500	9.3	2,700	1.4	0.00
SWFTS-MW21	4/10/2019	SWFTS-MW21-EM18	N	EM18	2,400	200	7.1	2,500	1.3	3.78
SWFTS-MW21	5/22/2019	SWFTS-MW21-EM19	N	EM19	3,100	530	9.6	2,600	1.3	0.57
SWFTS-MW21	7/1/2019	SWFTS-MW21-EM20	N	EM20	3,400	4,500	11	2,400	1.8	0.25
SWFTS-MW21	8/13/2019	SWFTS-MW21-EM21	N	EM21	4,000	5,400	11	2,500	1.5	0.38

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW21	11/4/2019	SWFTS-MW21-EM22	N	EM22	690	1,200	1.9	2,500	5.2	0.30
SWFTS-MW21	12/18/2019	SWFTS-MW21-EM23	N	EM23	810	230	2.0	2,100	1.5	0.82
SWFTS-MW21	1/30/2020	SWFTS-MW21-EM24	N	EM24	2,300	2,500	3.7	2,400	1.4	0.63
SWFTS-MW21	3/11/2020	SWFTS-MW21-EM25	N	EM25	2,600	2,700	7.2 J-	2,200	1.4	2.27
SWFTS-MW21	4/29/2020	SWFTS-MW21-EM26	N	EM26	4,200	17,000	9.7	1,900	1.5	3.29
SWFTS-MW21	7/10/2020	SWFTS-MW21-EM27	N	EM27	1,500	690	3.6	2,200	3.1	1.0
SWFTS-MW21	8/20/2020	SWFTS-MW21-EM28	N	EM28	1,700	110	3.1	2,400	2.4	0.49
SWFTS-MW21	10/14/2020	SWFTS-MW21-EM29	N	EM29	2,900	62 J	6.0	2,500	1.5	0.43
SWFTS-MW21	12/9/2020	SWFTS-MW21-EM30	N	EM30	2,700	52 J	9.0	2,900	1.2	0.29
SWFTS-MW21	2/3/2021	SWFTS-MW21-EM31	N	EM31	3,400	<9.8	8.9	2,400	1.2	0.77
SWFTS-MW21	3/30/2021	SWFTS-MW21-EM32	N	EM32	1,100	24 R	2.3	2,400	1.6	0.77
SWFTS-MW21	6/2/2021	SWFTS-MW21-EM33	N	EM33	600 J-	<9.8 UJ	2.0 J-	2,200 J-	1.4 J-	0.63
SWFTS-MW21	7/20/2021	SWFTS-MW21-EM34	N	EM34	890	58 J	2.0	2,500	1.4	0.38
SWFTS-MW21	9/16/2021	SWFTS-MW21-EM35	N	EM35	1,200	<24	3.7 J	3,200	1.3	0.41
SWFTS-MW21	12/1/2021	SWFTS-MW21-EM36	N	EM36	720	<24	1.9	2,600	1.8	1.34
SWFTS-MW21	3/8/2022	SWFTS-MW21-EM37	N	EM37	4,100	15 J	7.6	2,000	1.7 J+	0.92
SWFTS-MW21	6/21/2022	SWFTS-MW21-EM38	N	EM38	2,600	42 J	2.7	2,100	1.6 J	0.81
SWFTS-MW22	7/13/2017	SWFTS-MW22-BL02	N	BL02	5,000	7,900	2.2	980	2.2	2.09
SWFTS-MW22	9/20/2017	SWFTS-MW22-EM01	N	EM01	4,000	6,700	1.7	930	2.2	0.32
SWFTS-MW22	9/27/2017	SWFTS-MW22-EM02	N	EM02	3,800	6,300	1.7	980	2.6	0.12
SWFTS-MW22	10/5/2017	SWFTS-MW22-EM03	N	EM03	3,500	6,000	1.7	920	2.7	0.41
SWFTS-MW22	10/12/2017	SWFTS-MW22-EM04	N	EM04	2,600	5,700	1.4	1,000	2.3	2.72
SWFTS-MW22	10/26/2017	SWFTS-MW22-EM05	N	EM05	3,700	5,500	1.6	930	2.6	0.29
SWFTS-MW22	11/16/2017	SWFTS-MW22-EM06	N	EM06	3,000	4,400	1.3	960	2.5	0.45
SWFTS-MW22	12/14/2017	SWFTS-MW22-EM07	N	EM07	2,500	4,900	1.4	1,000	2.6	1.31
SWFTS-MW22	2/21/2018	SWFTS-MW22-EM08	N	EM08	2,000	2,400	0.89 J	880	2.4	0.43
SWFTS-MW22	3/28/2018	SWFTS-MW22-EM09	N	EM09	2,000	2,600	0.83	900	2.4	0.65
SWFTS-MW22	4/30/2018	SWFTS-MW22-EM10	N	EM10	1,900	1,800	<0.055	19	2.2	0.26
SWFTS-MW22	7/10/2018	SWFTS-MW22-EM11	N	EM11	2,900	840	0.81	970	2.3	2.80
SWFTS-MW22	7/27/2018	SWFTS-MW22-EM12	N	EM12	2,200	3,600	--	--	--	4.13
SWFTS-MW22	8/16/2018	SWFTS-MW22-EM13	N	EM13	2,400	1,300	0.95 J+	980	2.4	2.29
SWFTS-MW22	9/11/2018	SWFTS-MW22-EM14	N	EM14	2,800	1,600 J+	1.2	1,000	2.2	0.47
SWFTS-MW22	10/9/2018	SWFTS-MW22-EM15	N	EM15	3,100	1,600	1.2	930	2.7	0.28
SWFTS-MW22	12/27/2018	SWFTS-MW22-EM16	N	EM16	2,400	1,700	1.3	910	2.4	0.6
SWFTS-MW22	2/27/2019	SWFTS-MW22-EM17	N	EM17	2,500	2,100	1.5	950	2.4	0.07
SWFTS-MW22	4/11/2019	SWFTS-MW22-EM18	N	EM18	2,500	2,700	1.7	1,000	2.4	0.57
SWFTS-MW22	5/21/2019	SWFTS-MW22-EM19	N	EM19	2,500	2,500	1.6	930	3.4	0.49
SWFTS-MW22	7/2/2019	SWFTS-MW22-EM20	N	EM20	2,300	2,200	1.5	920	2.7	0.43
SWFTS-MW22	8/12/2019	SWFTS-MW22-EM21	N	EM21	2,300	2,300	1.3	660	2.6	0.4
SWFTS-MW22	11/5/2019	SWFTS-MW22-EM22	N	EM22	2,000	2,300	1.2	820	2.4	0.39
SWFTS-MW22	12/19/2019	SWFTS-MW22-EM23	N	EM23	1,600	2,200	0.92	840	2.2	0.80
SWFTS-MW22	1/30/2020	SWFTS-MW22-EM24	N	EM24	1,700	2,100	1.0	800	2.2	0.62
SWFTS-MW22	3/11/2020	SWFTS-MW22-EM25	N	EM25	1,900	3,100	1.3	820	2.3	1.55
SWFTS-MW22	4/28/2020	SWFTS-MW22-EM26	N	EM26	3,000	4,700	1.9	870	2.3	1.99
SWFTS-MW22	7/10/2020	SWFTS-MW22-EM27	N	EM27	2,700	4,700	2.0	890	2.7	0.6
SWFTS-MW22	8/20/2020	SWFTS-MW22-EM28	N	EM28	4,400	9,600	2.8	980	3.0	0.45
SWFTS-MW22	10/14/2020	SWFTS-MW22-EM29	N	EM29	4,400	8,600	3.1	1,000	2.4	0.41
SWFTS-MW22	12/9/2020	SWFTS-MW22-EM30	N	EM30	3,500	7,300	2.8	1,000	2.2	0.27
SWFTS-MW22	2/3/2021	SWFTS-MW22-EM31	N	EM31	4,700	8,800	2.7	1,000	2.1 J-	0.77
SWFTS-MW22	3/30/2021	SWFTS-MW22-EM32	N	EM32	3,600	5,200 J+	2.2	950	2.5	0.77
SWFTS-MW22	6/2/2021	SWFTS-MW22-EM33	N	EM33	3,200 J-	6,300 J-	2.3 J-	940 J-	2.1 J-	1.16
SWFTS-MW22	9/16/2021	SWFTS-MW22-EM35	N	EM35	3,400	4,800	2.3 J	970	2.3	0.81
SWFTS-MW22	12/2/2021	SWFTS-MW22-EM36	N	EM36	3,500	5,700	2.1	1,000	2.7 J+	1.70
SWFTS-MW22	3/8/2022	SWFTS-MW22-EM37	N	EM37	3,700	4,800	2.2	920	3.9 J	0.87
SWFTS-MW22	6/21/2022	SWFTS-MW22-EM38	N	EM38	5,600	9,400	3.8	1,200	3.0 J	0.72



**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW23	7/13/2017	SWFTS-MW23-BL02	N	BL02	930	20	0.14 J	3,300	2.9	0.36
SWFTS-MW23	9/22/2017	SWFTS-MW23-EM01	N	EM01	1,700	160 J	0.64	760	3.1	0.55
SWFTS-MW23	9/28/2017	SWFTS-MW23-EM02	N	EM02	1,700	120	0.67	740	3.3	0.16
SWFTS-MW23	10/5/2017	SWFTS-MW23-EM03	N	EM03	1,900	<2,000	0.79	760	3.2	0.79
SWFTS-MW23	10/11/2017	SWFTS-MW23-EM04	N	EM04	4,000	220	0.88	780	2.9	1.87
SWFTS-MW23	10/26/2017	SWFTS-MW23-EM05	N	EM05	2,400	270	1.2	820	2.8	0.38
SWFTS-MW23	11/15/2017	SWFTS-MW23-EM06	N	EM06	2,400	270	1.4	900	3.0	0.49
SWFTS-MW23	12/12/2017	SWFTS-MW23-EM07	N	EM07	2,800	370	1.5	970	2.7	0.23
SWFTS-MW23	2/21/2018	SWFTS-MW23-EM08	N	EM08	2,800	300 J-	1.6	1,000	3.1	5.42
SWFTS-MW23	3/28/2018	SWFTS-MW23-EM09	N	EM09	2,100	180	0.83	910	2.8	2.59
SWFTS-MW23	5/2/2018	SWFTS-MW23-EM10	N	EM10	1,400	120	0.43	700	2.8	0.30
SWFTS-MW23	7/10/2018	SWFTS-MW23-EM11	N	EM11	1,000	18 J	0.11	710	2.7	0.44
SWFTS-MW23	8/16/2018	SWFTS-MW23-EM13	N	EM13	870	28	0.055 J	710	3.2	2.48
SWFTS-MW23	9/12/2018	SWFTS-MW23-EM14	N	EM14	1,300	52	0.11	720	2.7	0.64
SWFTS-MW23	10/11/2018	SWFTS-MW23-EM15	N	EM15	1,500	95 J	<0.28	740	3.2	1.68
SWFTS-MW23	12/28/2018	SWFTS-MW23-EM16	N	EM16	1,700	110	0.46	760	2.9	0.97
SWFTS-MW23	2/27/2019	SWFTS-MW23-EM17	N	EM17	1,400	66	0.30	780	2.9	0.05
SWFTS-MW23	4/11/2019	SWFTS-MW23-EM18	N	EM18	1,400	76	0.26	760	3.3	0.57
SWFTS-MW23	5/22/2019	SWFTS-MW23-EM19	N	EM19	1,400	100	0.35	790	2.9	0.08
SWFTS-MW23	7/3/2019	SWFTS-MW23-EM20	N	EM20	1,800	160	0.73	740	3.4	0.50
SWFTS-MW23	8/14/2019	SWFTS-MW23-EM21	N	EM21	2,500	250	1.2	880	3.1	0.42
SWFTS-MW23	11/5/2019	SWFTS-MW23-EM22	N	EM22	3,000	310	1.4	920	2.7	0.64
SWFTS-MW23	12/19/2019	SWFTS-MW23-EM23	N	EM23	2,300	290	0.94	930	2.6	1.41
SWFTS-MW23	1/30/2020	SWFTS-MW23-EM24	N	EM24	1,700	140	0.66	890	2.7	0.61
SWFTS-MW23	3/10/2020	SWFTS-MW23-EM25	N	EM25	1,200	50	0.24 J-	730	3.0	2.44
SWFTS-MW23	4/28/2020	SWFTS-MW23-EM26	N	EM26	670	8.8 J	<0.11	700	2.9	2.12
SWFTS-MW23	7/10/2020	SWFTS-MW23-EM27	N	EM27	470	<10	<0.11	630	3.3	0.71
SWFTS-MW23	8/20/2020	SWFTS-MW23-EM28	N	EM28	740	<10	<0.11	640	3.4	0.51
SWFTS-MW23	10/13/2020	SWFTS-MW23-EM29	N	EM29	1,500	39	0.92	650	3.0	0.49
SWFTS-MW23	12/9/2020	SWFTS-MW23-EM30	N	EM30	1,800	87	0.31 J+	780	2.7	0.33
SWFTS-MW23	2/3/2021	SWFTS-MW23-EM31	N	EM31	2,100	50	0.26	790	2.7	0.83
SWFTS-MW23	3/30/2021	SWFTS-MW23-EM32	N	EM32	1,700	50 J+	0.16	760	2.8	0.83
SWFTS-MW23	6/2/2021	SWFTS-MW23-EM33	N	EM33	1,500	44	0.25 J-	750	2.6	0.74
SWFTS-MW23	7/21/2021	SWFTS-MW23-EM34	N	EM34	1,800	46 J+	0.29	720	2.8 J+	0.13
SWFTS-MW23	9/16/2021	SWFTS-MW23-EM35	N	EM35	1,800	45	0.22 J	750	3.0	0.38
SWFTS-MW23	12/2/2021	SWFTS-MW23-EM36	N	EM36	1,100	<9.8	0.072	760	2.8 J+	1.13
SWFTS-MW23	3/7/2022	SWFTS-MW23-EM37	N	EM37	1,100	350	0.43	740	2.8	1.03
SWFTS-MW23	6/21/2022	SWFTS-MW23-EM38	N	EM38	1,700	1,600	10	750	3.4 J	1.04
SWFTS-MW24	7/13/2017	SWFTS-MW24-BL02	N	BL02	13,000	47,000	13	1,900	1.3	3.04
SWFTS-MW24	9/22/2017	SWFTS-MW24-EM01	N	EM01	9,400	32,000	9.0	1,900	1.7	1.31
SWFTS-MW24	9/28/2017	SWFTS-MW24-EM02	N	EM02	5,200	12,000	4.5	1,900	4.3	0.48
SWFTS-MW24	10/5/2017	SWFTS-MW24-EM03	N	EM03	7,800	34,000	9.4	3,900	2.0	0.76
SWFTS-MW24	10/11/2017	SWFTS-MW24-EM04	N	EM04	4,400	17,000	4.7	1,900	1.9	3.88
SWFTS-MW24	10/26/2017	SWFTS-MW24-EM05	N	EM05	7,000	24,000	7.9	1,900	2.0 J-	3.06
SWFTS-MW24	11/15/2017	SWFTS-MW24-EM06	N	EM06	4,100	14,000	3.9	1,900	1.9	1.39
SWFTS-MW24	12/12/2017	SWFTS-MW24-EM07	N	EM07	6,600	26,000	6.1	1,900	1.5	1.11
SWFTS-MW24	2/21/2018	SWFTS-MW24-EM08	N	EM08	6,100	22,000	6.9	1,800	2.0	0.95
SWFTS-MW24	3/28/2018	SWFTS-MW24-EM09	N	EM09	4,800	15,000	5.4	1,600 J	1.6	0.55
SWFTS-MW24	5/2/2018	SWFTS-MW24-EM10	N	EM10	4,800	12,000	6.6	2,000	1.5	0.00
SWFTS-MW24	7/12/2018	SWFTS-MW24-EM11	N	EM11	5,000	6,100	7.3	1,800	1.3	0.10
SWFTS-MW24	7/27/2018	SWFTS-MW24-EM12	N	EM12	4,000	7,100	--	--	--	5.09
SWFTS-MW24	8/15/2018	SWFTS-MW24-EM13	N	EM13	4,000	4,800	7.6	1,800	1.9	1.83
SWFTS-MW24	9/12/2018	SWFTS-MW24-EM14	N	EM14	3,700	3,500	6.1	1,800	1.6	0.75
SWFTS-MW24	10/10/2018	SWFTS-MW24-EM15	N	EM15	3,500	2,700	6.5	1,700	2.0	2.95
SWFTS-MW24	1/2/2019	SWFTS-MW24-EM16	N	EM16	3,500	2,000	7.7	1,800	1.7	1.55

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0	Chlorate by USEPA Method 300.1B	Nitrate (as N) by USEPA Method 300.0	Sulfate by USEPA Method 300.0	Total Organic Carbon by SM 5310B	Dissolved Oxygen Field Measurement
					µg/L	µg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW24	2/27/2019	SWFTS-MW24-EM17	N	EM17	3,400	2,100	7.8	1,700	1.5	1.29
SWFTS-MW24	4/10/2019	SWFTS-MW24-EM18	N	EM18	2,700	1,100	6.1	1,700	1.5	1.24
SWFTS-MW24	5/22/2019	SWFTS-MW24-EM19	N	EM19	2,700	1,900	5.8	1,700	1.6	1.18
SWFTS-MW24	7/1/2019	SWFTS-MW24-EM20	N	EM20	2,800	1,900	5.1	1,900	2.0	0.65
SWFTS-MW24	8/14/2019	SWFTS-MW24-EM21	N	EM21	3,400	5,500	6.9	1,700	1.9	0.63
SWFTS-MW24	11/5/2019	SWFTS-MW24-EM22	N	EM22	3,500	6,900	6.9	1,700	1.6	1.34
SWFTS-MW24	12/19/2019	SWFTS-MW24-EM23	N	EM23	2,400	2,400	5.4	1,600	1.4	1.47
SWFTS-MW24	1/30/2020	SWFTS-MW24-EM24	N	EM24	2,500	2,900	4.8	1,600	1.6	1.16
SWFTS-MW24	3/10/2020	SWFTS-MW24-EM25	N	EM25	3,400	6,000	4.9 J-	1,500	1.5	2.8
SWFTS-MW24	4/28/2020	SWFTS-MW24-EM26	N	EM26	5,800	15,000	6.9	1,500	1.4	2.6
SWFTS-MW24	7/10/2020	SWFTS-MW24-EM27	N	EM27	4,800	12,000	6.7	1,600	2.1	1.2
SWFTS-MW24	8/18/2020	SWFTS-MW24-EM28	N	EM28	3,900	7,700	5.3	1,400	2.3	0.77
SWFTS-MW24	10/12/2020	SWFTS-MW24-EM29	N	EM29	3,800	5,300	5.3	1,600	1.9	1.17
SWFTS-MW24	12/9/2020	SWFTS-MW24-EM30	N	EM30	3,600	6,800	5.5	1,600	1.4	0.49
SWFTS-MW24	2/3/2021	SWFTS-MW24-EM31	N	EM31	3,900	4,800 J+	5.9	1,600	1.5	4.05
SWFTS-MW24	3/30/2021	SWFTS-MW24-EM32	N	EM32	3,500	4,900 J+	5.4	1,600	1.4	4.05
SWFTS-MW24	6/2/2021	SWFTS-MW24-EM33	N	EM33	2,600	3,700	4.7	1,600	1.4	1.16
SWFTS-MW24	7/19/2021	SWFTS-MW24-EM34	N	EM34	3,100	4,000	3.9	1,500	1.6	0.97
SWFTS-MW24	9/16/2021	SWFTS-MW24-EM35	N	EM35	4,200	6,700	5.0 J	1,700	1.6	1.00
SWFTS-MW24	12/1/2021	SWFTS-MW24-EM36	N	EM36	5,100	11,000	6.1	1,900	1.5	1.48
SWFTS-MW24	3/8/2022	SWFTS-MW24-EM37	N	EM37	5,300	9,900	5.2	1,700	1.5 J+	2.04
SWFTS-MW24	6/21/2022	SWFTS-MW24-EM38	N	EM38	7,900	15,000	6.8	1,700	1.6 J	1.41
SWFTS-MW25	7/13/2017	SWFTS-MW25-BL02	N	BL02	17,000	43,000	10	1,700	1.8	3.03
SWFTS-MW25	9/22/2017	SWFTS-MW25-EM01	N	EM01	280	<200	<0.55	1,800	13	0.50
SWFTS-MW25	9/28/2017	SWFTS-MW25-EM02	N	EM02	370	130	<0.55	1,900	4.8	0.14
SWFTS-MW25	10/5/2017	SWFTS-MW25-EM03	N	EM03	230	<500	<0.55	1,600	3.3	0.96
SWFTS-MW25	10/11/2017	SWFTS-MW25-EM04	N	EM04	140	160	<0.55	1,600	2.7	0.26
SWFTS-MW25	10/26/2017	SWFTS-MW25-EM05	N	EM05	420	170	<0.28	830	2.6	0.98
SWFTS-MW25	11/15/2017	SWFTS-MW25-EM06	N	EM06	440	630	<0.55	1,400	2.5	1.11
SWFTS-MW25	12/12/2017	SWFTS-MW25-EM07	N	EM07	2,300	1,700	<0.55	1,300	2.3	0.63
SWFTS-MW25	2/21/2018	SWFTS-MW25-EM08	N	EM08	2,800	4,700	<1.1	1,500	2.4	0.32
SWFTS-MW25	3/28/2018	SWFTS-MW25-EM09	N	EM09	4,600	11,000	2.8	1,400	2.0	0.20
SWFTS-MW25	5/3/2018	SWFTS-MW25-EM10	N	EM10	5,700	3,600	4.2	1,600	1.9	0.00
SWFTS-MW25	7/10/2018	SWFTS-MW25-EM11	N	EM11	4,300	2,100	3.6	1,500	1.7	3.00
SWFTS-MW25	7/27/2018	SWFTS-MW25-EM12	N	EM12	3,500	2,300	--	--	--	2.49
SWFTS-MW25	8/15/2018	SWFTS-MW25-EM13	N	EM13	4,500	4,300	5.2	1,500	2.3	1.91
SWFTS-MW25	9/12/2018	SWFTS-MW25-EM14	N	EM14	5,200	6,800	6.9	1,400	1.9	0.47
SWFTS-MW25	10/11/2018	SWFTS-MW25-EM15	N	EM15	5,000	7,600	7.9	1,400	2.0	1.25
SWFTS-MW25	1/2/2019	SWFTS-MW25-EM16	N	EM16	6,300	11,000	8.7	1,500	2.0	0.97
SWFTS-MW25	2/27/2019	SWFTS-MW25-EM17	N	EM17	4,000	6,400	4.9	1,400	2.0	0.05
SWFTS-MW25	4/11/2019	SWFTS-MW25-EM18	N	EM18	5,300	13,000	7.4	1,400	2.1	0.81
SWFTS-MW25	5/22/2019	SWFTS-MW25-EM19	N	EM19	5,700	15,000	9.2	1,400	1.9	0.12
SWFTS-MW25	7/3/2019	SWFTS-MW25-EM20	N	EM20	5,600	15,000	8.1	1,200	2.2	0.47
SWFTS-MW25	8/14/2019	SWFTS-MW25-EM21	N	EM21	6,600	19,000	8.2	1,200	2.5	0.39
SWFTS-MW25	11/5/2019	SWFTS-MW25-EM22	N	EM22	6,100	14,000	7.7	1,200	1.8	0.54
SWFTS-MW25	12/19/2019	SWFTS-MW25-EM23	N	EM23	6,000	15,000	7.4	1,200	1.7	0.74
SWFTS-MW25	1/30/2020	SWFTS-MW25-EM24	N	EM24	7,500	21,000	8.7	1,300	1.9	0.55
SWFTS-MW25	3/10/2020	SWFTS-MW25-EM25	N	EM25	8,300	22,000	8.6 J-	1,300	2.0	2.45
SWFTS-MW25	4/28/2020	SWFTS-MW25-EM26	N	EM26	8,400	23,000	9.5	1,400	1.8	2
SWFTS-MW25	7/10/2020	SWFTS-MW25-EM27	N	EM27	7,600	17,000	7.1	1,500	2.3	0.67
SWFTS-MW25	8/19/2020	SWFTS-MW25-EM28	N	EM28	7,600	19,000	8.5	1,400	2.8	0.8
SWFTS-MW25	10/13/2020	SWFTS-MW25-EM29	N	EM29	7,600	19,000	9.5	1,400	1.9	0.35
SWFTS-MW25	12/9/2020	SWFTS-MW25-EM30	N	EM30	7,100	17,000	9.5	1,300	1.5	0.27
SWFTS-MW25	2/4/2021	SWFTS-MW25-EM31	N	EM31	8,800	9,200 J+	9.3	1,400 J-	2.0	0.77
SWFTS-MW25	3/30/2021	SWFTS-MW25-EM32	N	EM32	4,800	8,600	4.6	1,300	2.2	0.77

**Table 2**  
**Groundwater Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Well	Sample Date	Sample ID	QC Type	Event	Perchlorate by USEPA Method 314.0 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Sulfate by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW25	6/2/2021	SWFTS-MW25-EM33	N	EM33	7,000	14,000	7.1 J-	1,200	1.8 J	0.65
SWFTS-MW25	7/21/2021	SWFTS-MW25-EM34	N	EM34	10,000	15,000	8.2	1,200	2.1 J+	0.11
SWFTS-MW25	9/16/2021	SWFTS-MW25-EM35	N	EM35	13,000	9,700	9.1 J	1,300	2.4	1.13
SWFTS-MW25	12/1/2021	SWFTS-MW25-EM36	N	EM36	13,000	19,000	6.1	1,500	1.9	0.95
SWFTS-MW25	3/7/2022	SWFTS-MW25-EM37	N	EM37	13,000	240	9.3	1,600	1.8	0.82
SWFTS-MW25	6/21/2022	SWFTS-MW25-EM38	N	EM38	12,000	11,000	15	2,100	3.1 J	0.93

Notes:

mg/L - milligrams per liter

µg/L - micrograms per liter

-- not analyzed

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

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 high.

J- The result is an estimated quantity, but the result may be biased low.

UJ The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

E Instrument error during sampling

1. Monitoring well SWFTS-MW22 was not sampled during July 2021 (EM34) due to accessibility issues resulting from a storm event.

2. Monitoring wells SWFTS-MW05A, SWFTS-MW05B, and SWFTS-MW08A were obstructed and not sampled for the March 2022 (EM37) event.

3. Monitoring wells SWFTS-MW05A, SWFTS-MW05B, SWFTS-MW08A, and SWFTS-MW11 were obstructed and not sampled for the June 2022 (EM38) event.

**Table 3**  
**Soil Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Location	Start Depth (ft bgs)	End Depth (ft bgs)	QC Type	Lab SampleID	Calcium by SW6010B	Total Organic Carbon by SW9060	Volatile Fatty Acids, Ion Chromatography					
							Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SWFTS-BH11	15	15.2	N	550-188805-1	27,000	1.7	< 1.4	< 1.5	< 2.0	7.8	< 1.5	< 2.3
SWFTS-BH11	20	20.2	N	550-188805-2	31,000	1.5	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH11	30	30.2	N	550-188805-3	35,000	1.9	< 1.6	< 1.7	< 2.3	< 3.2	< 1.8	< 2.7
SWFTS-BH11	40	40.2	N	550-188805-4	140,000	2.1	< 1.6	< 1.7	< 2.4	< 3.3	< 1.8	< 2.7
SWFTS-BH11	45	45.2	N	550-188805-5	110,000	6.9	< 1.6	< 1.7	< 2.3	< 3.1	< 1.8	< 2.6
SWFTS-BH12	11	11.2	N	550-188805-28	9,300	< 0.90	< 1.4	< 1.5	< 2.1	< 2.8	< 1.6	< 2.3
SWFTS-BH12	16	16.2	N	550-188805-29	6,500	0.91	< 1.5	< 1.6	< 2.2	8.8	< 1.7	< 2.5
SWFTS-BH12	21	21.2	N	550-188805-30	4,300	0.90	< 1.5	< 1.6	< 2.2	3.6	< 1.7	< 2.5
SWFTS-BH12	27	27.2	N	550-188805-31	6,400	0.98	< 1.6	< 1.7	< 2.4	< 3.2	< 1.8	< 2.7
SWFTS-BH12	36	36.2	N	550-188805-32	99,000	< 0.90	< 1.6	< 1.7	< 2.3	< 3.1	< 1.8	< 2.6
SWFTS-BH13	11	11.2	N	550-188805-6	6,600	1.4	< 1.5	< 1.6	< 2.1	5.5	< 1.7	< 2.4
SWFTS-BH13	22	22.2	N	550-188805-7	3,900	1.9	< 1.5	< 1.6	2.5	< 3.0	< 1.7	< 2.5
SWFTS-BH13	32.6	32.8	N	550-188805-8	70,000	5.2	< 1.4	< 1.5	2.4	3.4	< 1.6	< 2.3
SWFTS-BH13	39	39.2	N	550-188805-9	89,000	4.8	6.4	< 1.7	7.6	< 3.2	< 1.8	< 2.6
SWFTS-BH13	41	41.2	N	550-188805-10	63,000	2.6	58	< 1.6	2.6	4.4	23	< 2.4
SWFTS-BH13	41	41.2	FD	550-188805-11	65,000	8.4	64	< 1.7	2.5	4.6	24	< 2.6
SWFTS-BH14	12.8	13	N	550-189011-1	19,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH14	15.5	15.7	N	550-189011-2	5,700	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH14	18	18.2	N	550-189011-3	4,900	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH14	25.3	25.5	N	550-189011-4	4,500	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH14	29	29.2	N	550-189011-5	7,700	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH15	18.5	18.7	N	550-188805-12	41,000	< 0.90	< 1.6	< 1.7	2.7	< 3.2	< 1.8	< 2.7
SWFTS-BH15	21	21.2	N	550-188805-13	5,600	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH15	34.5	34.7	N	550-188805-14	38,000	< 0.90	< 1.4	< 1.5	< 2.0	< 2.8	< 1.6	< 2.3
SWFTS-BH15	37.5	37.7	N	550-188805-15	56,000	1.1	< 1.6	< 1.7	< 2.4	< 3.2	< 1.8	< 2.7
SWFTS-BH15	41	41.2	N	550-188805-16	71,000	2.8	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH16	17.3	17.5	N	550-188805-17	6,100	0.91	< 1.4	< 1.5	2.3	< 2.8	< 1.6	< 2.3
SWFTS-BH16	21.5	21.7	N	550-188805-18	10,000	< 0.90	< 1.5	< 1.6	< 2.1	3.7	< 1.6	< 2.4
SWFTS-BH16	21.5	21.7	FD	550-188805-19	9,400	< 0.90	< 1.6	< 1.7	< 2.3	3.9	3.9	< 2.6
SWFTS-BH16	26.5	26.7	N	550-188805-20	8,900	< 0.90	< 1.4	< 1.5	< 2.1	3.8	< 1.6	< 2.4
SWFTS-BH16	31	31.2	N	550-188805-21	38,000	1.5	< 1.4	< 1.5	2.6	< 2.8	3.7	< 2.3
SWFTS-BH16	42.3	42.5	N	550-188805-22	100,000	2.9	< 1.6	< 1.7	< 2.4	< 3.2	< 1.8	< 2.7
SWFTS-BH17	13	13.2	N	550-189088-1	4,300	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH17	17	17.2	N	550-189088-2	12,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH17	17	17.2	FD	550-189088-3	15,000	1.1	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH17	23	23.2	N	550-189088-4	9,400	1.0	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH17	26	26.2	N	550-189088-5	5,300	1.0	< 1.4	< 1.5	< 2.1	< 2.8	< 1.6	< 2.3
SWFTS-BH17	40	40.2	N	550-189088-6	53,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH18	13	13.2	N	550-188805-23	6,400	< 0.90	< 1.4	< 1.5	< 2.0	4.8	< 1.6	< 2.3
SWFTS-BH18	20	20.2	N	550-188805-24	20,000	< 0.90	< 1.6	< 1.7	< 2.4	< 3.3	< 1.9	< 2.7
SWFTS-BH18	23	23.2	N	550-188805-25	4,600	< 0.90	< 1.4	< 1.5	< 2.0	< 2.8	< 1.6	< 2.3
SWFTS-BH18	27.5	27.7	N	550-188805-26	8,800	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH18	34.5	34.7	N	550-188805-27	51,000	< 0.90	< 1.5	< 1.5	< 2.1	3.1	< 1.6	< 2.4
SWFTS-BH19	11	11.2	N	550-189011-6	12,000	< 0.90	< 1.5	< 1.6	< 2.2	7.8	3.5	< 2.5
SWFTS-BH19	15.5	15.7	N	550-189011-7	7,100	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH19	20.5	20.7	N	550-189011-8	13,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH19	25	25.2	N	550-189011-9	68,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH19	28	29	N	550-189011-10	98,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH20	13.7	13.9	N	550-189013-1	8,600	1.3	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH20	13.7	13.9	FD	550-189013-2	4,900	1.3	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH20	24.2	24.4	N	550-189013-3	16,000	1.2	< 1.5	< 1.6	< 2.1	< 2.9	< 1.7	< 2.4
SWFTS-BH20	26	26.2	N	550-189013-4	7,800	0.98	< 1.4	< 1.5	< 2.1	< 2.9	< 1.6	< 2.4
SWFTS-BH20	31	31.2	N	550-189013-5	61,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH20	35.5	35.7	N	550-189013-6	44,000	4.2	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH21	16.5	16.7	N	550-189013-12	9,400	< 0.90	< 1.5	< 1.6	< 2.2	< 2.9	< 1.7	< 2.5
SWFTS-BH21	16.5	16.7	FD	550-189013-13	8,500	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH21	19.5	19.7	N	550-189013-14	9,400	1.1	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH21	23.2	23.4	N	550-189013-15	6,200	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH21	28	28.2	N	550-189013-16	5,100	0.95	< 1.5	< 1.6	< 2.2	< 2.9	< 1.7	< 2.4
SWFTS-BH21	32	32.2	N	550-189013-17	11,000	0.98	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH22	12.4	12.6	N	550-189013-7	7,100	1.2	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH22	20.5	20.7	N	550-189013-8	5,200	1.0	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH22	28.5	28.7	N	550-189013-9	4,300	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH22	36	36.2	N	550-189013-10	68,000	1.4	< 1.4	< 1.5	< 2.1	< 2.9	< 1.6	< 2.4

**Table 3**  
**Soil Analytical Results**  
 Seep Well Field Area Bioremediation Treatability Study

Location	Start Depth (ft bgs)	End Depth (ft bgs)	QC Type	Lab SampleID	Calcium by SW6010B mg/kg	Total Organic Carbon by SW9060 g/kg	Volatile Fatty Acids, Ion Chromatography					
							Acetic Acid mg/kg	Butyric Acid mg/kg	Formic Acid mg/kg	Lactic Acid mg/kg	Propionic Acid mg/kg	Pyruvic Acid mg/kg
SWFTS-BH22	49	49.2	N	550-189013-11	170,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH23	20.2	20.4	N	550-189011-17	13,000	< 0.90	< 1.5	< 1.6	< 2.2	< 2.9	< 1.7	< 2.5
SWFTS-BH23	24	24.2	N	550-189011-18	9,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH23	27	27.2	N	550-189011-19	24,000	1.3	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH23	31.3	31.5	N	550-189011-20	66,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH23	31.3	31.5	FD	550-189011-21	78,000	1.0	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH23	36.7	36.9	N	550-189011-22	56,000	1.1	< 1.5	< 1.6	< 2.1	< 2.9	< 1.7	< 2.4
SWFTS-BH24	19	19.2	N	550-189011-11	31,000	1.1	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH24	24.5	24.7	N	550-189011-12	7,300	3.1	< 1.5	< 1.6	3.4	< 3.0	< 1.7	< 2.5
SWFTS-BH24	27	27.2	N	550-189011-13	23,000	1.5	< 1.5	< 1.6	2.5	< 3.0	< 1.7	< 2.5
SWFTS-BH24	29.3	29.5	N	550-189011-14	43,000	1.6	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH24	44.5	44.7	N	550-189011-15	83,000	3.0	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH24	44.5	44.7	FD	550-189011-16	87,000	2.0	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH25	17	17.2	N	550-189011-23	39,000	0.91	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH25	19.8	20	N	550-189011-24	43,000	1.1	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH25	26.5	26.7	N	550-189011-25	13,000	< 0.90	< 1.5	< 1.6	< 2.1	< 2.9	< 1.7	< 2.4
SWFTS-BH25	29.2	29.4	N	550-189011-26	25,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH25	34.8	35	N	550-189011-27	51,000	1.0	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH26	16.3	16.5	N	550-189012-7	4,500	0.97	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH26	18.5	18.7	N	550-189012-8	5,700	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH26	22.3	22.5	N	550-189012-9	5,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH26	31	31.2	N	550-189012-10	47,000	< 0.90	< 1.5	< 1.5	< 2.1	< 2.9	< 1.6	< 2.4
SWFTS-BH26	48.5	48.7	N	550-189012-11	4,300	< 0.90	< 1.4	< 1.6	< 2.2	< 2.9	< 1.7	< 2.4
SWFTS-BH27	11.8	12	N	550-189012-1	6,200	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH27	16.5	16.7	N	550-189012-2	11,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH27	16.5	16.7	FD	550-189012-3	14,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH27	23	23.2	N	550-189012-4	6,900	0.99	< 1.5	< 1.6	< 2.2	< 2.9	< 1.7	< 2.5
SWFTS-BH27	28	28.2	N	550-189012-5	83,000	1.7	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH27	36.2	36.4	N	550-189012-6	60,000	1.8	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH28	17.3	17.5	N	550-189012-22	16,000	< 0.90	< 1.5	< 1.6	< 2.1	< 2.9	< 1.7	< 2.4
SWFTS-BH28	17.3	17.5	FD	550-189012-23	44,000	< 0.90	< 1.5	< 1.6	< 2.2	< 2.9	< 1.7	< 2.4
SWFTS-BH28	21	21.2	N	550-189012-24	18,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH28	26	26.2	N	550-189012-25	7,100	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH28	32.5	32.7	N	550-189012-26	22,000	< 0.90	< 1.4	< 1.5	< 2.1	< 2.9	< 1.6	< 2.4
SWFTS-BH28	41	41.2	N	550-189012-27	86,000	0.94	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH29	24.5	24.7	N	550-189012-17	10,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH29	28	28.2	N	550-189012-18	13,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH29	36.5	36.7	N	550-189012-19	11,000	< 0.90	< 1.5	< 1.6	< 2.1	< 2.9	< 1.7	< 2.4
SWFTS-BH29	40	40.2	N	550-189012-20	20,000	< 0.90	< 1.5	< 1.6	< 2.2	< 2.9	< 1.7	< 2.5
SWFTS-BH29	43.5	43.7	N	550-189012-21	110,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH30	18	18.2	N	550-189012-12	6,100	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH30	22.8	23	N	550-189012-13	36,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH30	24	24.2	N	550-189012-14	17,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH30	29	29.2	N	550-189012-15	29,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5
SWFTS-BH30	37	37.2	N	550-189012-16	24,000	< 0.90	< 1.4	< 1.5	< 2.0	< 2.8	< 1.6	< 2.3
SWFTS-BH30	37	37.2	FD	550-189012-28	23,000	< 0.90	< 1.5	< 1.6	< 2.2	< 3.0	< 1.7	< 2.5

Notes:  
 mg/kg - milligrams per kilogram  
 g/kg - grams per kilogram  
 -- not analyzed  
 < The analyte was analyzed for, but was not detected above the level of the reported detection limit.

**Table 4**  
**Soil Microbial Results Summary**  
 Seep Well Field Bioremediation Treatability

Location	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Lab SampleID	Microbial Census		Microbial Phospholipid Fatty Acid Analysis (PLFA)							
					Perchlorate reductase gene (pcrA)	Total Biomass	Firmicutes (TerBrSats)	Proteobacteria (Monos)	Anaerobic metal reducers (BrMonos)	SRB/Actinomycetes (MidBrSats)	General (Nsats)	Eukaryotes (polyenoics)	Slowed Growth	Decreased Permeability
					cells/g	cells/g	%	%	%	%	%	%	ratio cy/cis	ratio trans/cis
SWFTS-BH11	8/10/2022	20	20.2	052TH-1	2.0E+04	3.65E+05	11.71	56.96	< 0.00	< 0.00	31.34	< 0.00	2.20	< 0.00
SWFTS-BH12	8/12/2022	27	27.2	052TH-12	2.0E+04	2.94E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH13	8/11/2022	11	11	052TH-2	2.0E+04	3.74E+06	16.26	41.94	2.68	3.70	33.00	2.41	0.57	< 0.00
SWFTS-BH13	8/11/2022	22	22.2	052TH-3	1.0E+04	4.58E+06	10.83	32.56	18.28	1.63	18.89	17.82	0.50	0.26
SWFTS-BH13	8/11/2022	32.6	32.8	052TH-4	2.0E+04	3.43E+07	9.20	42.72	25.15	3.78	12.06	7.09	0.13	0.55
SWFTS-BH13	8/11/2022	39	39.2	052TH-5	1.0E+04	1.75E+08	7.00	21.93	4.87	1.54	62.17	2.51	0.18	0.71
SWFTS-BH14	8/15/2022	18	18.2	052TH-20	2.0E+04	4.03E+06	1.40	71.60	< 0.00	2.19	6.19	18.61	0.02	< 0.00
SWFTS-BH15	8/11/2022	34.5	34.7	052TH-6	2.0E+04	6.69E+06	11.65	70.03	1.75	4.59	8.73	3.25	0.37	0.29
SWFTS-BH16	8/11/2022	26.5	26.7	052TH-7	1.0E+04	1.33E+06	14.66	44.41	< 0.00	7.97	15.42	17.54	0.90	< 0.00
SWFTS-BH17	8/12/2022	13	13.2	052TH-9	2.0E+04	3.96E+06	8.33	41.58	0.67	5.76	23.36	20.31	0.82	0.42
SWFTS-BH17	8/12/2022	17	17.2	052TH-10	2.0E+04	4.34E+06	18.77	59.01	0.84	4.89	13.63	2.84	1.08	0.22
SWFTS-BH17	8/12/2022	23	23.2	052TH-13	2.0E+04	3.66E+05	< 0.00	63.03	< 0.00	< 0.00	25.02	11.95	0.14	0.29
SWFTS-BH17	8/12/2022	26	26.2	052TH-11	2.0E+04	1.34E+06	17.07	53.95	< 0.00	8.34	13.10	7.55	0.71	< 0.00
SWFTS-BH18	8/11/2022	20	20.2	052TH-8	2.0E+04	2.82E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH19	8/15/2022	15.5	15.7	052TH-21	1.0E+04	2.89E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH20	8/13/2022	31	31.2	052TH-14	2.0E+04	2.65E+06	17.88	55.62	1.98	5.86	8.89	9.76	0.58	< 0.00
SWFTS-BH21	8/13/2022	19.5	19.7	052TH-19	2.0E+04	1.41E+06	3.95	68.36	< 0.00	1.26	10.73	15.69	0.06	< 0.00
SWFTS-BH22	8/13/2022	12.4	12.6	052TH-15	1.0E+04	2.83E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH22	8/13/2022	20.5	20.7	052TH-16	2.0E+04	2.91E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH22	8/13/2022	28.5	28.7	052TH-17	2.0E+04	2.82E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH22	8/13/2022	36	36.2	052TH-18	1.0E+04	2.83E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH23	8/15/2022	24	24.2	052TH-26	1.0E+04	2.19E+07	7.78	65.66	1.04	0.35	10.77	14.42	0.34	0.13
SWFTS-BH24	8/15/2022	19	19.2	052TH-22	2.0E+04	4.92E+05	5.92	65.00	< 0.00	< 0.00	29.09	< 0.00	0.32	< 0.00
SWFTS-BH24	8/15/2022	24.5	24.7	052TH-23	1.0E+04	3.49E+07	10.65	31.23	3.96	11.55	37.96	4.64	0.18	0.20
SWFTS-BH24	8/15/2022	27	27.2	052TH-24	1.0E+04	1.72E+07	8.34	58.02	2.81	0.55	22.89	7.39	0.07	0.10
SWFTS-BH24	8/15/2022	29.3	29.5	052TH-25	1.0E+04	9.04E+05	8.93	78.34	< 0.00	7.34	5.38	< 0.00	0.68	0.10
SWFTS-BH25	8/15/2022	17	17.2	052TH-27	2.0E+04	4.38E+06	0.90	63.61	< 0.00	0.51	14.42	20.55	0.03	0.14
SWFTS-BH26	8/16/2022	16.3	16.5	052TH-29	1.0E+04	1.26E+07	6.28	65.88	2.12	0.74	18.96	6.04	0.29	0.67
SWFTS-BH26	8/16/2022	18.5	18.7	052TH-30	2.0E+04	2.15E+06	6.95	72.76	1.74	2.83	12.00	3.72	0.57	0.07
SWFTS-BH26	8/16/2022	22.3	22.5	052TH-31	1.0E+04	9.62E+05	9.53	62.60	7.01	5.50	15.38	< 0.00	0.91	< 0.00
SWFTS-BH26	8/16/2022	31	31.2	052TH-32	2.0E+04	1.19E+06	4.34	70.68	< 0.00	< 0.00	15.93	9.05	0.25	0.10
SWFTS-BH27	8/16/2022	11.8	12	052TH-28	2.0E+04	1.27E+07	10.05	69.35	5.33	1.27	7.07	6.93	0.40	0.21
SWFTS-BH28	8/16/2022	17.3	17.5	052TH-35	1.0E+04	4.87E+06	2.35	90.60	< 0.00	0.52	4.62	1.92	5.52	1.01
SWFTS-BH28	8/16/2022	21	21.2	052TH-36	1.0E+04	2.95E+05	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00	< 0.00
SWFTS-BH28	8/16/2022	26	26.2	052TH-37	1.0E+04	3.16E+07	4.62	78.74	0.40	6.17	7.08	3.00	0.42	0.07
SWFTS-BH28	8/16/2022	32.5	32.7	052TH-38	1.0E+04	2.25E+06	18.69	71.90	< 0.00	1.88	7.51	< 0.00	0.70	0.14
SWFTS-BH29	8/16/2022	40	40.2	052TH-34	1.0E+04	5.12E+07	10.88	45.15	2.88	9.87	26.88	4.33	0.11	0.62
SWFTS-BH30	8/16/2022	24	24.2	052TH-33	2.0E+04	1.11E+06	5.91	75.54	< 0.00	0.52	6.00	12.05	0.07	0.21

Notes  
 Monos Monoenoic  
 TerBrSats Terminally Branched Saturated  
 BrMonos Branched Monoenoic  
 MidBrSats Mid-Chain Branched Saturated  
 Nsats Normal Saturated  
 < Not detected