

TECHNICAL MEMORANDUM

To: Nevada Environmental Response Trust

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

From: Dana Grady

Date: November 3, 2020

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

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this memorandum which summarizes Tetra Tech's progress from July through September 2020 toward successfully implementing the Seep Well Field (SWF) Area Bioremediation Treatability Study.

Task Progress Update: August – September 2020

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. For reference, Figure 1 provides a map of the injection and monitoring well locations. Well construction details and a summary of the groundwater analytical results for perchlorate, chlorate, nitrate, total organic carbon (TOC), and dissolved oxygen through August 2020 are provided in Tables 1 and 2, respectively.
 - O&M of SWF Area Bioremediation Treatability Study:
 - The sixth injection event was conducted from May 27 through June 19, 2020 via in-line mixing in accordance with the Field Guidance Document for In-Line Mixing and Injection approved by NDEP on March 24, 2020. Details of the sixth injection event, including a summary of injection rates, pressures, quantities, and specific gravity information, are included in Tables 3 through 7 as an attachment to this quarterly progress report. All other field details, such as field notes, EOS Certificate of Analysis, Cascade field reports, and photo logs, will be included in the 2020 Annual Results Report.
 - Overall system performance and resulting operation and maintenance requirements continue to be reasonable and no well maintenance activities are required at this time.
 - Performance of the SWF Area Bioremediation Treatability Study

- Results of the July 2020 and August 2020 groundwater sampling events (following the sixth injection event) were received during the third quarter 2020 and are summarized below.
 - Groundwater samples collected from the four monitoring wells located between the injection well transects observed an average percentage decrease in perchlorate concentrations of 84% in the August 2020 sampling event. This is the highest reduction witnessed since August 2019. Noteworthy findings are described below:
 - Groundwater perchlorate concentrations were not detected above the sample detection limit in samples collected from monitoring wells SWFTS-MW14 and SWFTS-MW16 following the sixth injection event in July 2020. Perchlorate concentrations in groundwater samples collected from monitoring well SWFTS-MW14 slightly increased to 210 µg/L in August 2020, which is still a decrease of greater than 99 percent when compared to baseline concentrations.
 - Of particular significance during this quarter is the large perchlorate concentration decrease observed in the July and August 2020 groundwater samples collected from SWFTS-MW15. The August 2020 groundwater sample collected from SWFTS-MW15 indicated that the perchlorate concentration was 4,400 µg/L, which represents the lowest concentration to date at this location and a 71 percent decrease from the baseline concentration of 15,000 µg/L.
 - Although perchlorate concentration reductions remain greater than 60 percent at SWFTS-MW02, groundwater samples collected from this well began showing increases in perchlorate concentrations following the fifth injection event. As noted in the previous quarterly report, groundwater perchlorate concentrations have significantly increased in monitoring well SWFTS-MW04, which is located generally upgradient of SWFTS-MW02. Even though groundwater perchlorate concentrations have decreased in samples collected from this upgradient monitoring well during this quarter compared to last quarter, the perchlorate concentrations remain higher than typical concentrations recorded throughout most of the treatability study timeframe.
 - Perchlorate concentrations in groundwater samples collected from the 16 downgradient monitoring wells also continue to show reductions, which averaged 55 percent when compared to baseline. Noteworthy findings are described below:
 - Perchlorate concentrations in groundwater samples collected from downgradient monitoring wells PC-91 and SWFTS-MW20 were observed to be at the lowest concentrations since the study began, with concentrations below the sample detection limit and at 89 µg/L, respectively.
 - Groundwater samples collected from 15 of the 16 downgradient monitoring wells indicated perchlorate concentration reductions when compared to baseline concentrations, with groundwater samples from 12 monitoring wells indicating perchlorate concentration reductions ranging from 50 to 100 percent. Perchlorate concentrations in groundwater samples collected from 4 of the 16 downgradient monitoring wells (namely, PC-92, SWFTS-MW09B, SWFTS-MW10A, and SWFTS-MW22) indicate a slower response to the recent injection event. This behavior could be partly due to increased upgradient perchlorate concentrations and/or paleochannels in the vicinity and will continue to be evaluated following further injection and monitoring events.
 - Chlorate concentrations in groundwater follow trends similar to perchlorate, with samples from 14 monitoring wells (located both between the injection well transects

and downgradient) exhibiting greater than 70% reduction in chlorate concentrations in groundwater samples collected during the July and/or August 2020 sampling events when compared to the baseline sampling event. Chlorate concentrations in groundwater were less than 100 µg/L at eight monitoring wells during the July and August 2020 sampling events.

- Nitrate concentrations in groundwater were also evaluated since it is often a competing electron acceptor and carbon substrate consumer. Nitrate concentrations in groundwater were generally greater than 10 milligrams per liter (mg/L) during the baseline sampling event. During the July and August 2020 sampling events, groundwater samples from 9 downgradient monitoring wells have nitrate concentrations at or less than 5 mg/L.
- As previously noted in recent quarterly reports, groundwater perchlorate concentrations in upgradient well SWFTS-MW12 continue to remain below sample detection limits. This well is located approximately 150 feet upgradient of the injection wells and is the well from which most of the distribution water was extracted during the fifth injection event. During the most recent sixth injection event in May – June 2020, the volume extracted from SWFTS-MW12 was decreased from previous injection events to potentially reduce the impact of groundwater extraction during injections on concentrations at SWFTS-MW12. Groundwater samples collected in July and August 2020 also indicated chlorate and nitrate concentrations less than the sample detection limit and TOC concentrations at approximately 10 mg/L. However, TOC concentrations were much less after the sixth injection event (13 and 9.3 mg/L in July and August 2020, respectively) than the high of 560 mg/L measured at the end of 2019 following the fifth injection event. As a result, it is expected that over time, perchlorate concentrations would gradually return to baseline levels at this upgradient location.
- Schedule and Progress Updates
 - This task remains on schedule.
 - The next groundwater sampling event is scheduled for the week of October 12, 2020.
- Health and Safety
 - There were no safety incidents related to Task M11 during the reporting period July through September 2020.

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: 11/3/2020

CERTIFICATION

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

Description of Services Provided: Prepared Seep Well Field Area Bioremediation Treatability Study Quarterly Progress Report.



Kyle Hansen, CEM
Field Operations Manager/Geologist
Tetra Tech, Inc.

November 3, 2020

Date

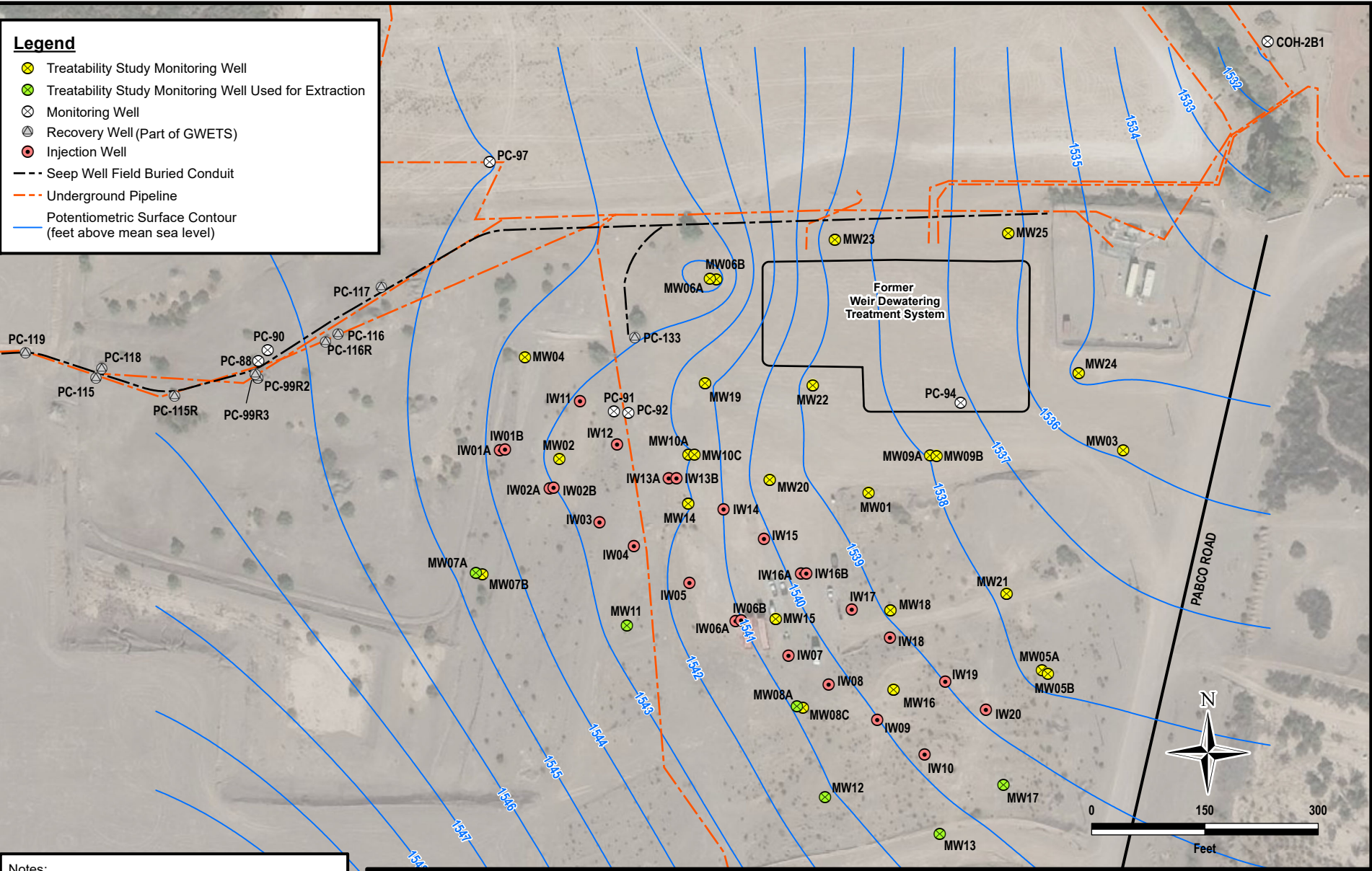
Nevada CEM Certificate Number: 2167
Nevada CEM Expiration Date: September 18, 2022

Figures

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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)



- 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 2019.
 4. Imagery Source: Esri World Map, May 2017.


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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.:	117-7502018
Date:	APRIL 13, 2020
Designed By:	ACC
Figure No.	1

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 ¹	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
Pre-Design Soil Boring and Monitoring Well Installation (February-March 2017)															
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
Injection and Monitoring Well Network Installation (May-July 2017)															
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
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

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 ¹	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-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	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	2.3	1.14
COH-2B1	9/22/2017	SWFTS-COH-2B1-EM01	N	EM01	1,700	1,600	0.53 J	2.7	1.19
COH-2B1	10/5/2017	SWFTS-COH-2B1-EM03	N	EM03	1,800	1,400	0.60	2.6	0.14
COH-2B1	10/12/2017	SWFTS-COH-2B1-EM04	N	EM04	1,800	1,600	0.58	2.3	7.92
COH-2B1	10/26/2017	SWFTS-COH-2B1-EM05	N	EM05	1,900	1,400	0.42 J	2.6	0.40
COH-2B1	12/14/2017	COH-2B1-EM07	N	EM07	1,700	5,000	0.40	2.6	-0.06 E
COH-2B1	2/22/2018	COH-2B1-EM08	N	EM08	1,500	1,400	0.57 J	2.9	0.34
COH-2B1	3/29/2018	COH-2B1-EM09	N	EM09	1,800	1,200	<0.55	2.3	0.41
COH-2B1	5/2/2018	COH-2B1-EM10	N	EM10	1,700	1,200	0.45	11	0.00
COH-2B1	7/10/2018	COH-2B1-EM11	N	EM11	3,000	2,400	1.4	1.9	0.47
COH-2B1	8/16/2018	COH-2B1-EM13	N	EM13	1,500	980	0.53 J	2.6	0.50
COH-2B1	9/11/2018	COH-2B1-EM14	N	EM14	2,800	3,800	1.5	1.9	2.18
COH-2B1	10/11/2018	COH-2B1-EM15	N	EM15	1,700	1,000	0.54 J	2.7	2.79
COH-2B1	1/3/2019	COH-2B1-EM16	N	EM16	3,200	3,800	2.5	2.0	0.97
COH-2B1	2/25/2019	COH-2B1-EM17	N	EM17	3,300	4,100	2.1	2.2	0.00
COH-2B1	4/9/2019	COH-2B1-EM18	N	EM18	1,800	570	0.65 J-	2.5	0.56
COH-2B1	5/22/2019	COH-2B1-EM19	N	EM19	1,700	520	0.57	2.4	0.12
COH-2B1	7/1/2019	COH-2B1-EM20	N	EM20	1,800	680	0.59	2.7	0.37
COH-2B1	8/15/2019	COH-2B1-EM21	N	EM21	1,900	660	0.68	2.7	0.43
COH-2B1	11/4/2019	COH-2B1-EM22	N	EM22	2,600	3,200	1.6	1.9	0.61
COH-2B1	12/18/2019	COH-2B1-EM23	N	EM23	1,800	610 J-	0.45	2.2	0.91
COH-2B1	1/28/2020	COH-2B1-EM24	N	EM24	3,200	9,200	4.4	2.2	5.11
COH-2B1	3/9/2020	COH-2B1-EM25	N	EM25	5,500	11,000	2.4	2.1 J+	2.35
COH-2B1	4/27/2020	COH-2B1-EM26	N	EM26	2,000	810	0.68	2.1	3.28
COH-2B1	7/7/2020	COH-2B1-EM27	N	EM27	2,100	900	0.79	3.0	1.01
LVWPS-MW101A	7/12/2018	LVWPS-MW101A-EM11	N	EM11	6,300	25,000	15	0.82 J	2.10
LVWPS-MW104	7/12/2018	LVWPS-MW104-EM11	N	EM11	4,900	35,000	10	1.1	1.92
LVWPS-MW104	8/15/2018	LVWPS-MW104-EM13	N	EM13	4,600	36,000	10	1.5	3.79
LVWPS-MW104	9/13/2018	LVWPS-MW104-EM14	N	EM14	4,200	36,000	11	1.4	2.84
LVWPS-MW104	10/10/2018	LVWPS-MW104-EM15	N	EM15	4,800	37,000	11	1.8	4.3
LVWPS-MW107A	7/12/2018	LVWPS-MW107A-EM11	N	EM11	4,700	9,000	6.1	0.90 J	4.00
LVWPS-MW108A	7/12/2018	LVWPS-MW108A-EM11	N	EM11	7,200	17,000	7.2	1.3	3.86
LVWPS-MW108A	7/12/2018	LVWPS-MW108A-EM11-FD	FD	EM11	7,300	17,000	7.2	1.3	--
LVWPS-MW108A	8/15/2018	LVWPS-MW108A-EM13	N	EM13	5,700	11,000	6.2	1.9	2.73
LVWPS-MW108A	9/13/2018	LVWPS-MW108A-EM14	N	EM14	4,800	9,200	6.1 J+	1.6	3.08
LVWPS-MW108A	10/10/2018	LVWPS-MW108A-EM15	N	EM15	5,300	9,800	5.5	1.9	2.96
LVWPS-MW109	7/12/2018	LVWPS-MW109-EM11	N	EM11	6,100	25,000	8.9	1.2	0.40
LVWPS-MW109	8/15/2018	LVWPS-MW109-EM13	N	EM13	4,800	16,000	7.9	1.9	2.30
LVWPS-MW109	9/13/2018	LVWPS-MW109-EM14	N	EM14	4,500	9,200	6.7 J+	1.3	0.59
LVWPS-MW109	10/10/2018	LVWPS-MW109-EM15	N	EM15	4,400	7,300	6.9	1.9	2.71
LVWPS-MW111A	7/12/2018	LVWPS-MW111A-EM11	N	EM11	9,100	28,000	7.2	1.8	3.34
LVWPS-MW111A	8/15/2018	LVWPS-MW111A-EM13	N	EM13	7,800	30,000	7.9	2.0	2.23

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
LVWPS-MW111A	9/13/2018	LVWPS-MW111A-EM14	N	EM14	6,500	30,000	8.1 J+	1.4	0.35
LVWPS-MW111A	10/10/2018	LVWPS-MW111A-EM15	N	EM15	7,100	28,000	8.4	1.8	0.95
LVWPS-MW112A	7/12/2018	LVWPS-MW112A-EM11	N	EM11	5,200	28,000	10	1.5	0.89
LVWPS-MW112A	10/10/2018	LVWPS-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	3.4	0.15
PC-58	7/13/2017	PC-58-BL02	N	BL02	2,600	17,000	9.5	2.8	0.00
PC-58	10/11/2017	SWFTS-PC-58-EM04	N	EM04	1,800	11,000	9.0	3.2	3.40
PC-58	11/16/2017	SWFTS-PC-58-EM06	N	EM06	2,100	16,000	10	2.9	0.65
PC-58	12/14/2017	PC-58-EM07	N	EM07	3,100	24,000	12	2.9	0.29
PC-58	2/21/2018	PC-58-EM08	N	EM08	3,700	35,000	12	5.4	2.49
PC-58	3/28/2018	PC-58-EM09-EM09	N	EM09	1,400	12,000	9.8	2.7	4.31
PC-58	5/2/2018	PC58-EM10	N	EM10	1,200	10,000	9.9	2.7	0.71
PC-58	7/11/2018	PC-58-EM11	N	EM11	1,100	9,800	10	2.6	1.17
PC-58	8/15/2018	PC-58-EM13	N	EM13	1,300	13,000	10	3.1	0.38
PC-58	9/13/2018	PC-58-EM14	N	EM14	1,500	22,000	14	2.5	2.74
PC-58	10/11/2018	PC-58-EM15	N	EM15	1,300	13,000	12	3.5	0
PC-58	1/3/2019	PC-58-EM16	N	EM16	980	8,000	10	3.5	0.83
PC-58	3/1/2019	PC-58-EM17	N	EM17	1,700 J+	13,000	12	2.8	0.41
PC-58	4/9/2019	PC-58-EM18	N	EM18	1,400	11,000	9.1 J-	2.6	3.68
PC-58	5/22/2019	PC-58-EM19	N	EM19	1,600	12,000	11	2.9	1.68
PC-58	7/5/2019	PC-58-EM20	N	EM20	1,600	13,000	11	3.9	0.43
PC-58	8/15/2019	PC-58-EM21	N	EM21	1,500	10,000	12	3.7	0.47
PC-58	11/7/2019	PC-58-EM22	N	EM22	1,000	8,700	10	3.1	0.64
PC-58	12/20/2019	PC-58-EM23	N	EM23	4,000	30,000	13	2.4	1.00
PC-58	1/30/2020	PC-58-EM24	N	EM24	3,200	36,000	14	2.7	2.79
PC-58	3/11/2020	PC-58-EM25	N	EM25	2,800	33,000	12	2.7	1.69
PC-58	5/1/2020	PC-58-EM26	N	EM26	840	8,500	7.7	2.3	3.13
PC-58	7/9/2020	PC-58-EM27	N	EM27	850	6,400	9.1	2.5	1.08
PC-58	8/19/2020	PC-58-EM28	N	EM28	830	10,000	8.8	3.7	0.64
PC-88	9/22/2017	SWFTS-PC-88-EM01	N	EM01	15,000	6,900	4.8	2.7	4.15
PC-88	9/28/2017	SWFTS-PC-88-EM02	N	EM02	14,000 J+	6,300	5.8	2.8	1.13
PC-88	10/4/2017	SWFTS-PC-88-EM03	N	EM03	15,000	6,100	5.1	2.6	0.21
PC-88	10/11/2017	SWFTS-PC-88-EM04	N	EM04	15,000	6,200	4.6	2.5	0.37
PC-88	10/11/2017	SWFTS-PC-88-EM04-FD	FD	EM04	15,000	6,000	4.6	2.6	--
PC-88	10/25/2017	SWFTS-PC-88-EM05	N	EM05	15,000	5,400	5.0	2.8	0.37
PC-88	11/15/2017	PC-88-EM06	N	EM06	15,000	5,700	4.5	2.8	0.46
PC-88	11/15/2017	PC-88-EM06-FD	FD	EM06	16,000	5,700	4.6	2.9	--
PC-88	12/14/2017	PC-88-EM07	N	EM07	19,000	20,000	9.9	2.7	0.68
PC-88	2/22/2018	PC-88-EM08	N	EM08	6,700	14,000	12	3.0	0.29
PC-88	3/29/2018	PC-88-EM09	N	EM09	9,100	20,000	13	2.2	0.45
PC-88	5/2/2018	PC88-EM10	N	EM10	7,100	11,000	11	2.3	0.50
PC-88	5/2/2018	PC88-EM10-FD	FD	EM10	6,600	11,000	12	2.5	--

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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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
PC-88	7/12/2018	PC-88-EM11	N	EM11	16,000	12,000	7.8	2.4	0.89
PC-88	7/12/2018	PC-88-EM11-FD	FD	EM11	16,000	12,000	7.6	2.3	--
PC-88	8/16/2018	PC-88-EM13	N	EM13	10,000	6,700	6.0	2.9	3.31
PC-88	8/16/2018	PC-88-EM13-FD	FD	EM13	11,000	6,800	6.0	2.9	--
PC-88	9/12/2018	PC-88-EM14	N	EM14	19,000	13,000	6.7	2.6	2.28
PC-88	9/12/2018	PC-88-EM14-FD	FD	EM14	19,000	13,000	6.7	2.4	--
PC-88	10/11/2018	PC-88-EM15	N	EM15	15,000	15,000	6.3 J-	2.7	0
PC-88	10/11/2018	PC-88-EM15-FD	FD	EM15	15,000	15,000	7.5	2.7	--
PC-88	1/3/2019	PC-88-EM16	N	EM16	12,000	9,900	7.5	2.7	0.93
PC-88	1/3/2019	PC-88-EM16-FD	FD	EM16	12,000	9,900	7.5	2.8	--
PC-88	2/28/2019	PC-88-EM17	N	EM17	9,300	5,700	4.4	2.9	0.35
PC-88	2/28/2019	PC-88-EM17-FD	FD	EM17	9,100	5,700	4.4	3.1	--
PC-88	4/9/2019	PC-88-EM18	N	EM18	12,000	11,000	5.1 J-	2.6	0.54
PC-88	4/9/2019	PC-88-EM18-FD	FD	EM18	13,000	10,000	5.0 J-	2.7	--
PC-88	5/22/2019	PC-88-EM19	N	EM19	10,000	6,200	4.9	2.6	0.05
PC-88	5/22/2019	PC-88-EM19-FD	FD	EM19	10,000	6,400	5.0	2.5	--
PC-88	7/5/2019	PC-88-EM20	N	EM20	8,800	5,100	3.4	3.2	0.39
PC-88	7/5/2019	PC-88-EM20-FD	FD	EM20	10,000	5,000	3.4	3.2	--
PC-88	8/15/2019	PC-88-EM21	N	EM21	9,700	3,300	2.8	3.0	0.39
PC-88	8/15/2019	PC-88-EM21-FD	FD	EM21	9,900	3,300	3.1	3.0	--
PC-88	11/7/2019	PC-88-EM22	N	EM22	11,000	14,000	5.6	2.5	0.64
PC-88	11/7/2019	PC-88-EM22-FD	FD	EM22	11,000	15,000	5.5	2.4	--
PC-88	12/20/2019	PC-88-EM23	N	EM23	11,000	9,200	5.4	2.2	0.83
PC-88	12/20/2019	PC-88-EM23-FD	FD	EM23	12,000	9,100	5.1	2.2	--
PC-88	1/30/2020	PC-88-EM24	N	EM24	9,900	13,000	7.9	2.7	2.65
PC-88	1/30/2020	PC-88-EM24-FD	FD	EM24	9,900	13,000	7.9	2.7	--
PC-88	3/12/2020	PC-88-EM25	N	EM25	7,900	7,000	5.3	2.5	1.6
PC-88	3/12/2020	PC-88-EM25-FD	FD	EM25	7,700	6,900	5.5	2.4	--
PC-88	5/1/2020	PC-88-EM26	N	EM26	15,000	16,000	8.2	2.1	0.26
PC-88	5/1/2020	PC-88-EM26-FD	FD	EM26	15,000	16,000	8.7	2.1	--
PC-88	7/9/2020	PC-88-EM27	N	EM27	14,000	8,400	7.6	2.7 J-	0.74
PC-88	7/9/2020	PC-88-EM27-FD	N	EM27	13,000	8,600	7.3	3.0	--
PC-88	8/19/2020	PC-88-EM28	N	EM28	11,000	6,000	4.8	2.9	0.63
PC-88	8/19/2020	PC-88-EM28-FD	FD	EM28	12,000	5,800	4.7	2.7	--
PC-91	3/29/2017	PC-91-BL01	N	BL01	2,400	1,700	1.4	2.7	0.25
PC-91	7/12/2017	PC-91-BL02	N	BL02	2,500	1,600	1.2	2.4	0.31
PC-91	7/12/2017	PC-91-BL02-FD	FD	BL02	2,400	1,500	1.1	2.3	--
PC-91	9/21/2017	SWFTS-PC-91-EM01	N	EM01	1,600	820	0.50 J	2.3	0.47
PC-91	9/27/2017	SWFTS-PC-91-EM02	N	EM02	1,700	810	0.57	2.8	0.72
PC-91	10/4/2017	SWFTS-PC-91-EM03	N	EM03	1,300	590	0.58	2.9	0.19
PC-91	10/12/2017	SWFTS-PC-91-EM04	N	EM04	960	440	0.35	2.5	0.38 E
PC-91	10/25/2017	SWFTS-PC-91-EM05	N	EM05	750	370	0.62	2.7	0.55

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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 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
PC-91	11/16/2017	SWFTS-PC-91-EM06	N	EM06	700	610	0.65 J-	2.8	0.82
PC-91	12/13/2017	PC-91-EM07	N	EM07	770	520	0.38	2.5	0.37
PC-91	2/20/2018	PC-91-EM08	N	EM08	900	1,100	0.88 J	2.8	0.82
PC-91	3/26/2018	PC-91-EM09	N	EM09	930	1,200	0.78	2.5	1.02
PC-91	5/1/2018	PC-91-EM10	N	EM10	860	260	0.56	2.4	0.64
PC-91	7/11/2018	PC-91-EM11	N	EM11	190	<5.0	<0.28	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
PC-91	9/12/2018	PC-91-EM14	N	EM14	440	21	<0.28	2.6	3.12
PC-91	10/10/2018	PC-91-EM15	N	EM15	460	80	<0.55	3.1	0
PC-91	12/20/2018	PC-91-EM16	N	EM16	220	47 J	<0.11	3.2	0.68
PC-91	2/26/2019	PC-91-EM17	N	EM17	67	<10	<0.55	3.8	0.47
PC-91	4/10/2019	PC-91-EM18	N	EM18	190	38 J	<0.55	4.5	1.41
PC-91	5/21/2019	PC-91-EM19	N	EM19	120	56	0.81	3.6	0.05
PC-91	7/1/2019	PC-91-EM20	N	EM20	120	52	<0.28	3.8	0.42
PC-91	8/12/2019	PC-91-EM21	N	EM21	39 J+	14 J	<0.28	3.6	0.44
PC-91	11/6/2019	PC-91-EM22	N	EM22	1.5 J	<10	<0.55	5.9	0.56
PC-91	12/17/2019	PC-91-EM23	N	EM23	6.9	<10	<0.55	4.3	8.61
PC-91	1/28/2020	PC-91-EM24	N	EM24	230	100	<0.28	4.2	5.81
PC-91	3/12/2020	PC-91-EM25	N	EM25	310	170	<0.28	3.6	1.49
PC-91	4/30/2020	PC-91-EM26	N	EM26	460	500	<0.28	3.9	0.37
PC-91	7/7/2020	PC-91-EM27	N	EM27	<0.95	<10	<0.28	12	0.65
PC-91	8/17/2020	PC-91-EM28	N	EM28	<0.95	750	<0.55	8.2	0.52
PC-92	3/29/2017	PC-92-BL01	N	BL01	9,600	17,000	4.2	2.8	0.35
PC-92	7/12/2017	PC-92-BL02	N	BL02	4,400	10,000	2.6	2.8	0.31
PC-92	9/21/2017	SWFTS-PC-92-EM01	N	EM01	3,100	7,700	1.7	2.6	0.41
PC-92	9/27/2017	SWFTS-PC-92-EM02	N	EM02	3,500	6,800	1.7	2.8	0.45
PC-92	10/4/2017	SWFTS-PC-92-EM03	N	EM03	3,700	7,100	2.6	2.8	0.12
PC-92	10/12/2017	SWFTS-PC-92-EM04	N	EM04	3,700	7,300	2.1	2.8	9.88 E
PC-92	10/12/2017	SWFTS-PC-92-EM04-FD	FD	EM04	3,700	6,700	2.0	2.6	--
PC-92	10/25/2017	SWFTS-PC-92-EM05	N	EM05	4,000	6,900	2.3	2.9	0.30
PC-92	11/16/2017	SWFTS-PC-92-EM06	N	EM06	2,100	1,300	1.6	3.2	0.42
PC-92	11/16/2017	SWFTS-PC-92-EM06-FD	FD	EM06	2,100	1,300	1.1	3.3	--
PC-92	12/14/2017	PC-92-EM07	N	EM07	3,300	4,600	2.1	3.0	3.78
PC-92	12/14/2017	PC-92-EM07-FD	FD	EM07	3,300	4,800	1.8	3.0	--
PC-92	2/20/2018	PC-92-EM08	N	EM08	4,900	7,700	2.7	3.2	4.60
PC-92	2/20/2018	PC-92-EM08-FD	FD	EM08	5,000	7,400	2.7	3.2	--
PC-92	3/26/2018	PC-92-EM09	N	EM09	7,900	19,000	4.5	2.5	0.51
PC-92	3/26/2018	PC-92-EM09-FD	FD	EM09	8,000	18,000	4.5	2.5	--
PC-92	5/1/2018	PC-92-EM10	N	EM10	9,200	22,000	5.6	2.4	0.70
PC-92	7/11/2018	PC-92-EM11	N	EM11	7,300	17,000	4.2	2.3	1.47
PC-92	7/27/2018	SWFTS-PC-92-EM12	N	EM12	5,200	15,000	--	--	0.28

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PC-92	8/15/2018	PC-92-EM13	N	EM13	4,700	13,000	3.1	3.0	0.98
PC-92	9/12/2018	PC-92-EM14	N	EM14	4,100	12,000	2.6	2.6	2.95
PC-92	10/11/2018	PC-92-EM15	N	EM15	4,200	12,000	3.4	2.9	0
PC-92	12/20/2018	PC-92-EM16	N	EM16	3,500	13,000	2.6	3.1	0.72
PC-92	2/26/2019	PC-92-EM17	N	EM17	2,700	13,000	1.5	2.7	0.56
PC-92	4/10/2019	PC-92-EM18	N	EM18	3,100	8,200	2.2	2.7	0.84
PC-92	5/21/2019	PC-92-EM19	N	EM19	2,500	6,000	1.5	2.3	0.09
PC-92	7/1/2019	PC-92-EM20	N	EM20	3,100	7,000	1.8	3.4	0.42
PC-92	8/12/2019	PC-92-EM21	N	EM21	2,800	3,500	1.1	3.3	0.41
PC-92	11/6/2019	PC-92-EM22	N	EM22	4,000	11,000	2.0	2.8	0.56
PC-92	12/17/2019	PC-92-EM23	N	EM23	3,100	7,700	2.0	2.8	0.67
PC-92	1/28/2020	PC-92-EM24	N	EM24	6,700	20,000	4.7	3.0	4.93
PC-92	3/12/2020	PC-92-EM25	N	EM25	8,800	26,000	6.4	2.5	1.63
PC-92	4/30/2020	PC-92-EM26	N	EM26	3,400	5,300	1.8	4.0	5.37
PC-92	7/7/2020	PC-92-EM27	N	EM27	8,600	23,000	5.9	3.5	0.72
PC-92	8/17/2020	PC-92-EM28	N	EM28	6,500	20,000	5.0	2.9	0.64
PC-94	3/28/2017	PC-94-BL01	N	BL01	13,000	51,000	12	1.7	0.33
PC-94	7/13/2017	PC-94-BL02	N	BL02	14,000	47,000	12	1.3	0.41
PC-94	9/20/2017	SWFTS-PC-94-EM01	N	EM01	2,300	3,800	0.58 J	34	0.15
PC-94	9/26/2017	SWFTS-PC-94-EM02	N	EM02	2,000	3,700	<1.1	37	0.19
PC-94	10/5/2017	SWFTS-PC-94-EM03	N	EM03	1,700	3,600	1.3 J	5.2	0.13
PC-94	10/11/2017	SWFTS-PC-94-EM04	N	EM04	970	2,900	0.78 J	3.9	0.55
PC-94	10/26/2017	SWFTS-PC-94-EM05	N	EM05	540	1,300	1.4	3.1	3.80
PC-94	11/16/2017	PC-94-EM06	N	EM06	1,500	1,300	0.57 J	2.2	0.50
PC-94	12/12/2017	PC-94-EM07	N	EM07	4,300	9,300	0.68	2.1	0.19
PC-94	2/21/2018	PC-94-EM08	N	EM08	7,200	19,000	4.9	2.1	3.75
PC-94	3/27/2018	PC-94-EM09	N	EM09	6,400	16,000	4.8	1.9	2.07
PC-94	5/1/2018	PC-94-EM10	N	EM10	6,700	18,000	6.3	1.5	0.00
PC-94	7/10/2018	PC-94-EM11	N	EM11	4,200	7,200	5.6	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	2.2	1.53
PC-94	9/11/2018	PC-94-EM14	N	EM14	3,500	6,200	5.2	1.7	1.67
PC-94	10/11/2018	PC-94-EM15	N	EM15	3,900	10,000	8.2	1.9	0
PC-94	12/28/2018	PC-94-EM16	N	EM16	3,200	9,000	8.3	1.7	4.54
PC-94	2/27/2019	PC-94-EM17	N	EM17	3,100	6,700	6.4	1.8	0.74
PC-94	4/11/2019	PC-94-EM18	N	EM18	3,000	5,600	5.2	1.8	1.43
PC-94	5/22/2019	PC-94-EM19	N	EM19	3,600	11,000	7.6	1.7	0.05
PC-94	7/5/2019	PC-94-EM20	N	EM20	4,100	16,000	8.2	2.9	4.35
PC-94	8/12/2019	PC-94-EM21	N	EM21	4,600	16,000	7.8	2.0	1.19
PC-94	11/6/2019	PC-94-EM22	N	EM22	4,200	16,000	7.8	1.6	3.82
PC-94	12/19/2019	PC-94-EM23	N	EM23	4,000	16,000	6.3	1.7	1.78
PC-94	1/30/2020	PC-94-EM24	N	EM24	5,600	44,000	7.8	1.8	4.11

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
PC-94	3/10/2020	PC-94-EM25	N	EM25	7,100	27,000	8.5 J-	1.8	2.62
PC-94	4/28/2020	PC-94-EM26	N	EM26	7,400	28,000	8.2	1.5	0.31
PC-94	7/6/2020	PC-94-EM27	N	EM27	5,100	14,000	6.7	2.5	1.04
PC-94	8/18/2020	PC-94-EM28	N	EM28	5,400	18,000	5.1	2.4	0.71
PC-97	7/13/2017	PC-97-BL02	N	BL02	1,900	180	0.84	3.0	0.27
PC-97	9/22/2017	SWFTS-PC-97-EM01	N	EM01	2,900	360	2.1	3.0	0.39
PC-97	9/22/2017	SWFTS-PC-97-EM01-FD	FD	EM01	2,900	340	2.2	3.0	--
PC-97	9/28/2017	SWFTS-PC-97-EM02	N	EM02	2,600	370	2.1	3.6	4.28
PC-97	9/28/2017	SWFTS-PC-97-EM02-FD	FD	EM02	2,700	380	2.0	3.6	--
PC-97	10/4/2017	SWFTS-PC-97-EM03	N	EM03	2,900	460	2.6	2.7	0.19
PC-97	10/4/2017	SWFTS-PC-97-EM03-FD	FD	EM03	2,900	410	2.3	2.8	--
PC-97	10/11/2017	SWFTS-PC-97-EM04	N	EM04	2,500	400	2.5	2.7	0.48
PC-97	10/11/2017	SWFTS-PC-97-EM04-FD	FD	EM04	2,700	390	2.3	2.8	--
PC-97	10/25/2017	SWFTS-PC-97-EM05	N	EM05	3,400	390	2.9	2.8	0.39
PC-97	10/25/2017	SWFTS-PC-97-EM05-FD	FD	EM05	3,300	410	2.9	2.9	--
PC-97	11/16/2017	SWFTS-PC-97-EM06	N	EM06	1,600	190	1.8	3.2	0.48
PC-97	12/13/2017	PC-97-EM07	N	EM07	2,600	320	1.6	3.0	0.79
PC-97	12/13/2017	PC-97-EM07-FD	FD	EM07	3,000	320	1.9	3.0	--
PC-97	2/21/2018	PC-97-EM08	N	EM08	1,500	77	0.56	3.3	2.47
PC-97	3/27/2018	PC-97-EM09	N	EM09	900	<10	0.19	3.3	1.68
PC-97	5/1/2018	PC-97-EM10	N	EM10	820	<5.0	0.088 J	3.2	2.10
PC-97	7/10/2018	PC-97-EM11	N	EM11	1,700	91	0.32	3.0	3.45
PC-97	8/16/2018	PC-97-EM13	N	EM13	1,100	85	0.38 J+	3.4	2.94
PC-97	9/12/2018	PC-97-EM14	N	EM14	2,400	210	0.82	3.0	1.74
PC-97	10/11/2018	PC-97-EM15	N	EM15	1,700	160	0.71	3.4	0.71
PC-97	1/3/2019	PC-97-EM16	N	EM16	1,500	64	0.33	3.2	1.07
PC-97	2/28/2019	PC-97-EM17	N	EM17	1,300	80	0.71	3.5	0.44
PC-97	4/9/2019	PC-97-EM18	N	EM18	1,600	150	0.71 J-	3.0	0.53
PC-97	5/22/2019	PC-97-EM19	N	EM19	2,300	280	1.8	3.1	0.07
PC-97	7/5/2019	PC-97-EM20	N	EM20	2,800	360	1.9	3.7	0.41
PC-97	8/14/2019	PC-97-EM21	N	EM21	3,100	330	1.7	3.3	0.39
PC-97	11/6/2019	PC-97-EM22	N	EM22	1,800	30	1.3	2.8	0.56
PC-97	12/20/2019	PC-97-EM23	N	EM23	1,100	48 J	0.29	3.1	0.81
PC-97	1/30/2020	PC-97-EM24	N	EM24	640	<4.0	0.12 J	3.4	4.31
PC-97	3/12/2020	PC-97-EM25	N	EM25	400	<2.0	<0.11	3.2	1.65
PC-97	4/30/2020	PC-97-EM26	N	EM26	390	<10	<0.11	3.2	4.82
PC-97	7/9/2020	PC-97-EM27	N	EM27	1,600	45 J	0.36	3.6	0.95
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-	--

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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	2.0	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	2.8	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	1.7	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
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	1.7	0.47
SWFTS-IW09	7/12/2017	SWFTS-IW09-BL02-FD	FD	BL02	11,000	47,000	12	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	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	1.9	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-	--

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
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	1.4	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	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	1.6	1.07
SWFTS-MW01	9/19/2017	SWFTS-MW01-EM01	N	EM01	2,100	39,000	<0.55	11	1.38
SWFTS-MW01	9/26/2017	SWFTS-MW01-EM02	N	EM02	4,300	10,000	1.4 J	4.3	0.23
SWFTS-MW01	10/4/2017	SWFTS-MW01-EM03	N	EM03	5,000	13,000	3.3	2.5	0.20
SWFTS-MW01	10/10/2017	SWFTS-MW01-EM04	N	EM04	5,600	15,000	3.3	2.2	0.47
SWFTS-MW01	10/25/2017	SWFTS-MW01-EM05	N	EM05	15,000	18,000	5.1	2.1	0.89
SWFTS-MW01	11/15/2017	SWFTS-MW01-EM06	N	EM06	7,900	22,000	4.9	1.9	0.81
SWFTS-MW01	12/14/2017	SWFTS-MW01-EM07	N	EM07	8,000	24,000	5.3	1.9	0.20
SWFTS-MW01	2/20/2018	SWFTS-MW01-EM08	N	EM08	3,900	12,000	3.4	2.7	2.85
SWFTS-MW01	3/27/2018	SWFTS-MW01-EM09	N	EM09	6,900	26,000	5.3	1.9	2.42
SWFTS-MW01	4/30/2018	SWFTS-MW01-EM10	N	EM10	9,400	36,000	8.9	1.4	0.15
SWFTS-MW01	7/10/2018	SWFTS-MW01-EM11	N	EM11	3,100	6,900	1.4	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	2.0	0.80
SWFTS-MW01	9/10/2018	SWFTS-MW01-EM14	N	EM14	6,300	34,000	8.4	1.9	6.07
SWFTS-MW01	10/9/2018	SWFTS-MW01-EM15	N	EM15	4,700 J	24,000	7.1	2.1	0.09
SWFTS-MW01	12/27/2018	SWFTS-MW01-EM16	N	EM16	4,300	7,400	9.9	1.8	0.51
SWFTS-MW01	2/26/2019	SWFTS-MW01-EM17	N	EM17	1,300	<10	1.7	2.6	0.50
SWFTS-MW01	4/10/2019	SWFTS-MW01-EM18	N	EM18	3,800	<10	5.2	1.9	0.59
SWFTS-MW01	5/21/2019	SWFTS-MW01-EM19	N	EM19	4,100	<10	6.4	1.6	0.75
SWFTS-MW01	7/1/2019	SWFTS-MW01-EM20	N	EM20	4,100	<10	5.4	2.1	0.29
SWFTS-MW01	8/12/2019	SWFTS-MW01-EM21	N	EM21	3,800	<10	3.9	1.9	0.36
SWFTS-MW01	11/5/2019	SWFTS-MW01-EM22	N	EM22	54	<10	<0.55	2.7	0.49
SWFTS-MW01	12/18/2019	SWFTS-MW01-EM23	N	EM23	3,600	<10	3.7	1.7	0.89
SWFTS-MW01	1/29/2020	SWFTS-MW01-EM24	N	EM24	4,500	<10	5.0	2.4	4.25
SWFTS-MW01	3/11/2020	SWFTS-MW01-EM25	N	EM25	6,400	<20	4.9	2.2	2.34
SWFTS-MW01	4/28/2020	SWFTS-MW01-EM26	N	EM26	7,500	110	6.2	1.8	0.5
SWFTS-MW01	7/8/2020	SWFTS-MW01-EM27	N	EM27	5,300	1,800	2.9	1.9	2.49

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SWFTS-MW01	8/18/2020	SWFTS-MW01-EM28	N	EM28	5,500	16 J	3.9	2.4	0.61
SWFTS-MW02	3/29/2017	SWFTS-MW02-BL01	N	BL01	25,000	58,000	11	2.2	0.33
SWFTS-MW02	9/21/2017	SWFTS-MW02-EM01	N	EM01	23,000	52,000	8.5	2.1	0.16
SWFTS-MW02	9/27/2017	SWFTS-MW02-EM02	N	EM02	23,000	47,000	9.4	2.2	0.14
SWFTS-MW02	10/4/2017	SWFTS-MW02-EM03	N	EM03	22,000	45,000	8.7	2.0	1.76
SWFTS-MW02	10/12/2017	SWFTS-MW02-EM04	N	EM04	20,000	23,000	6.2	2.3	0.25
SWFTS-MW02	10/26/2017	SWFTS-MW02-EM05	N	EM05	21,000	34,000	4.6 J-	2.5	2.11
SWFTS-MW02	11/14/2017	SWFTS-MW02-EM06	N	EM06	17,000	32,000	6.5	2.5	0.90
SWFTS-MW02	12/13/2017	SWFTS-MW02-EM07	N	EM07	19,000	38,000	6.7	2.1	0.01
SWFTS-MW02	2/19/2018	SWFTS-MW02-EM08	N	EM08	14,000	28,000	4.7	2.5	2.59
SWFTS-MW02	3/27/2018	SWFTS-MW02-EM09	N	EM09	4,400	7,400	0.80	2.5	1.76
SWFTS-MW02	4/30/2018	SWFTS-MW02-EM10	N	EM10	4,600	6,100	0.95 J	2.3	1.59
SWFTS-MW02	7/11/2018	SWFTS-MW02-EM11	N	EM11	3,700	5,100	1.7	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	2.5	2.35
SWFTS-MW02	9/10/2018	SWFTS-MW02-EM14	N	EM14	1,300	2,500	<0.55	2.5	5.31
SWFTS-MW02	10/10/2018	SWFTS-MW02-EM15	N	EM15	1,400	950	<1.1	3.0	0
SWFTS-MW02	12/20/2018	SWFTS-MW02-EM16	N	EM16	620	77 J	<0.55	2.4	2.95
SWFTS-MW02	2/25/2019	SWFTS-MW02-EM17	N	EM17	740	32 J	<1.1	2.5	0.33
SWFTS-MW02	4/9/2019	SWFTS-MW02-EM18	N	EM18	1,300	82 J	<1.1 UJ	2.1	0.40
SWFTS-MW02	5/21/2019	SWFTS-MW02-EM19	N	EM19	3,200	50 J	<1.1	2.3	6.97
SWFTS-MW02	7/2/2019	SWFTS-MW02-EM20	N	EM20	4,200	<4.0	<0.55	2.5	0.34
SWFTS-MW02	8/14/2019	SWFTS-MW02-EM21	N	EM21	3,900	<20	<0.28	2.4	0.36
SWFTS-MW02	11/7/2019	SWFTS-MW02-EM22	N	EM22	2,700	<10	<0.28	2.2	0.49
SWFTS-MW02	12/17/2019	SWFTS-MW02-EM23	N	EM23	6,800	2,700	2.6	1.9	0.60
SWFTS-MW02	1/28/2020	SWFTS-MW02-EM24	N	EM24	6,600	11,000	4.3	2.9	4.00
SWFTS-MW02	3/12/2020	SWFTS-MW02-EM25	N	EM25	7,500	13,000	5.6	3.2	1.4
SWFTS-MW02	4/30/2020	SWFTS-MW02-EM26	N	EM26	9,500	17,000	7.1	2.1	0.49
SWFTS-MW02	7/8/2020	SWFTS-MW02-EM27	N	EM27	7,000	7,700	5.1	3.1	0.86
SWFTS-MW02	8/17/2020	SWFTS-MW02-EM28	N	EM28	8,800	16,000	7.2	2.2	0.6
SWFTS-MW03	3/30/2017	SWFTS-MW03-BL01	N	BL01	9,900	47,000	13	1.6	1.64
SWFTS-MW03	3/30/2017	SWFTS-MW03-BL01-FD	FD	BL01	9,200	47,000	13	1.7	--
SWFTS-MW03	9/21/2017	SWFTS-MW03-EM01	N	EM01	<4.8	<100	<0.55	4.2	0.19
SWFTS-MW03	9/27/2017	SWFTS-MW03-EM02	N	EM02	4.8	<100	<0.55	3.0	0.11
SWFTS-MW03	10/4/2017	SWFTS-MW03-EM03	N	EM03	<0.95	<50	<0.55	2.3	1.02
SWFTS-MW03	10/12/2017	SWFTS-MW03-EM04	N	EM04	21	<100	<0.55	2.0	0.14
SWFTS-MW03	10/26/2017	SWFTS-MW03-EM05	N	EM05	990	3,200	0.73 J	2.1	1.59
SWFTS-MW03	11/16/2017	SWFTS-MW03-EM06	N	EM06	3,200	15,000	3.2	1.7	0.64
SWFTS-MW03	12/12/2017	SWFTS-MW03-EM07	N	EM07	3,700	22,000	4.3	1.8	2.21
SWFTS-MW03	2/21/2018	SWFTS-MW03-EM08	N	EM08	3,400	33,000	4.2	1.7	0.30
SWFTS-MW03	3/27/2018	SWFTS-MW03-EM09	N	EM09	4,200	27,000	6.4	1.5	0.62
SWFTS-MW03	5/2/2018	SWFTS-MW03-EM10	N	EM10	4,300	30,000	7.9	1.4	0.45

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW03	7/10/2018	SWFTS-MW03-EM11	N	EM11	1,300	3,000	1.3	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	1.9	0.48
SWFTS-MW03	9/11/2018	SWFTS-MW03-EM14	N	EM14	2,200	<10	4.9	1.5	1.84
SWFTS-MW03	10/9/2018	SWFTS-MW03-EM15	N	EM15	2,200	<20	5.9	2.0	0
SWFTS-MW03	1/2/2019	SWFTS-MW03-EM16	N	EM16	2,500	<10	7.7	1.8	0.8
SWFTS-MW03	2/27/2019	SWFTS-MW03-EM17	N	EM17	2,700	27 J	10	1.5	0.95
SWFTS-MW03	4/10/2019	SWFTS-MW03-EM18	N	EM18	2,700	130	8.4	1.4	0.95
SWFTS-MW03	5/21/2019	SWFTS-MW03-EM19	N	EM19	2,800	150	7.7	1.4	0.57
SWFTS-MW03	7/1/2019	SWFTS-MW03-EM20	N	EM20	2,800	550	8.2	1.9	0.34
SWFTS-MW03	8/14/2019	SWFTS-MW03-EM21	N	EM21	3,000	2,700	8.5	1.8	0.40
SWFTS-MW03	11/4/2019	SWFTS-MW03-EM22	N	EM22	2,100	1,000	6.8	1.6	0.52
SWFTS-MW03	12/19/2019	SWFTS-MW03-EM23	N	EM23	2,600	770	7.7	1.5	0.95
SWFTS-MW03	1/30/2020	SWFTS-MW03-EM24	N	EM24	3,100	1,800	8.0	1.6	2.58
SWFTS-MW03	3/9/2020	SWFTS-MW03-EM25	N	EM25	3,800	4,200	7.6	1.8	2.24
SWFTS-MW03	4/28/2020	SWFTS-MW03-EM26	N	EM26	3,400	5,400	7.1	1.7	0.58
SWFTS-MW03	7/6/2020	SWFTS-MW03-EM27	N	EM27	2,600	610	6.5	1.9	0.84
SWFTS-MW03	8/18/2020	SWFTS-MW03-EM28	N	EM28	2,300	<10	6.7	2.1	0.66
SWFTS-MW04	3/31/2017	SWFTS-MW04-BL01	N	BL01	14,000	26,000	5.5	2.3	7.02
SWFTS-MW04	9/20/2017	SWFTS-MW04-EM01	N	EM01	3,600	4,900	1.3	2.6	0.85
SWFTS-MW04	9/20/2017	SWFTS-MW04-EM01-FD	FD	EM01	3,600	4,800	1.3	2.6	--
SWFTS-MW04	9/27/2017	SWFTS-MW04-EM02	N	EM02	3,600	5,400	1.5	3.1	2.73
SWFTS-MW04	9/27/2017	SWFTS-MW04-EM02-FD	FD	EM02	3,500	5,400	1.5	3.1	--
SWFTS-MW04	10/4/2017	SWFTS-MW04-EM03	N	EM03	4,000	4,700	1.5	2.7	0.11
SWFTS-MW04	10/4/2017	SWFTS-MW04-EM03-FD	FD	EM03	3,900	4,700	1.9	2.6	--
SWFTS-MW04	10/11/2017	SWFTS-MW04-EM04	N	EM04	2,900	3,900	1.3	2.7	1.39
SWFTS-MW04	10/24/2017	SWFTS-MW04-EM05	N	EM05	3,600	4,200	1.4	2.9	0.28
SWFTS-MW04	10/24/2017	SWFTS-MW04-EM05-FD	FD	EM05	3,500	4,200	1.5	3.0	--
SWFTS-MW04	11/15/2017	SWFTS-MW04-EM06	N	EM06	3,500	3,400	1.6	3.0	0.89
SWFTS-MW04	12/14/2017	SWFTS-MW04-EM07	N	EM07	4,000	4,700	1.8	2.9	0.45
SWFTS-MW04	2/21/2018	SWFTS-MW04-EM08	N	EM08	5,200	8,000	2.4	2.7	0.37
SWFTS-MW04	3/27/2018	SWFTS-MW04-EM09	N	EM09	6,100	14,000	3.5	2.5	0.43
SWFTS-MW04	5/1/2018	SWFTS-MW04-EM10	N	EM10	4,100	3,700	1.4	2.8	2.80
SWFTS-MW04	7/10/2018	SWFTS-MW04-EM11	N	EM11	6,400	15,000	4.5	2.5	0.00
SWFTS-MW04	8/16/2018	SWFTS-MW04-EM13	N	EM13	3,100	8,700	1.9 J+	2.9	0.91
SWFTS-MW04	9/12/2018	SWFTS-MW04-EM14	N	EM14	4,000	9,100	2.6	2.9	2.64
SWFTS-MW04	10/11/2018	SWFTS-MW04-EM15	N	EM15	3,400	8,300	2.0	3.0	0.84
SWFTS-MW04	1/3/2019	SWFTS-MW04-EM16	N	EM16	3,500	6,900	1.6	3.1	1.11
SWFTS-MW04	3/1/2019	SWFTS-MW04-EM17	N	EM17	3,500 J+	8,900	2.6	2.9	0.55
SWFTS-MW04	4/9/2019	SWFTS-MW04-EM18	N	EM18	3,100	7,500	2.3 J-	2.8	0.70
SWFTS-MW04	5/21/2019	SWFTS-MW04-EM19	N	EM19	2,400	5,300	1.2	3.0	0.05
SWFTS-MW04	7/5/2019	SWFTS-MW04-EM20	N	EM20	2,100	4,000	1.2	3.7	0.40

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW04	8/14/2019	SWFTS-MW04-EM21	N	EM21	3,300	5,400	1.7	3.4	0.39
SWFTS-MW04	11/7/2019	SWFTS-MW04-EM22	N	EM22	2,600	4,900	1.9	2.9	0.36
SWFTS-MW04	12/19/2019	SWFTS-MW04-EM23	N	EM23	4,200	9,600	2.3	2.8	0.89
SWFTS-MW04	1/29/2020	SWFTS-MW04-EM24	N	EM24	9,400	26,000	7.1	2.7	2.89
SWFTS-MW04	3/12/2020	SWFTS-MW04-EM25	N	EM25	9,100	24,000	6.6	2.5	1.64
SWFTS-MW04	5/1/2020	SWFTS-MW04-EM26	N	EM26	12,000	29,000	7.1	2.2	0.11
SWFTS-MW04	7/7/2020	SWFTS-MW04-EM27	N	EM27	7,100	17,000	4.4	2.9	0.85
SWFTS-MW04	8/18/2020	SWFTS-MW04-EM28	N	EM28	6,000	15,000	3.5	3.0	0.63
SWFTS-MW05A	3/30/2017	SWFTS-MW05A-BL01	N	BL01	7,400	67,000	18	1.4	4.28
SWFTS-MW05A	9/20/2017	SWFTS-MW05A-EM01	N	EM01	5,700	51,000	17	1.1	4.18
SWFTS-MW05A	9/27/2017	SWFTS-MW05A-EM02	N	EM02	5,600	44,000	18	1.2	3.30
SWFTS-MW05A	10/3/2017	SWFTS-MW05A-EM03	N	EM03	5,800	46,000	16	0.80 J	5.46
SWFTS-MW05A	10/10/2017	SWFTS-MW05A-EM04	N	EM04	5,600	44,000	16	1.3	3.41
SWFTS-MW05A	10/23/2017	SWFTS-MW05A-EM05	N	EM05	4,700	43,000	15	1.3	2.96
SWFTS-MW05A	11/14/2017	SWFTS-MW05A-EM06	N	EM06	5,500	38,000	16	1.4	2.27
SWFTS-MW05A	12/13/2017	SWFTS-MW05A-EM07	N	EM07	5,300	43,000	17	1.3	2.10
SWFTS-MW05A	2/20/2018	SWFTS-MW05A-EM08	N	EM08	6,400	53,000	18	1.4	2.78
SWFTS-MW05A	3/26/2018	SWFTS-MW05A-EM09	N	EM09	6,600	58,000	16	1.1	0.99
SWFTS-MW05A	4/30/2018	SWFTS-MW05A-EM10	N	EM10	6,400 J	55,000	17	1.0	2.16
SWFTS-MW05A	7/11/2018	SWFTS-MW05A-EM11	N	EM11	5,200	46,000	15	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	1.2	2.59
SWFTS-MW05A	10/10/2018	SWFTS-MW05A-EM15	N	EM15	4,200	34,000	12	1.3	2.08
SWFTS-MW05A	12/20/2018	SWFTS-MW05A-EM16	N	EM16	5,000	21,000	16	1.3	0.68
SWFTS-MW05A	2/27/2019	SWFTS-MW05A-EM17	N	EM17	4,300	10,000	17	1.5	0.51
SWFTS-MW05A	4/10/2019	SWFTS-MW05A-EM18	N	EM18	3,100	56 J	13	1.5	0.70
SWFTS-MW05A	5/21/2019	SWFTS-MW05A-EM19	N	EM19	2,600	17 J	13	1.6	0.65
SWFTS-MW05A	7/1/2019	SWFTS-MW05A-EM20	N	EM20	2,700	<20	14	1.7	0.44
SWFTS-MW05A	8/13/2019	SWFTS-MW05A-EM21	N	EM21	3,100	33 J	13	1.9	0.3
SWFTS-MW05A	11/5/2019	SWFTS-MW05A-EM22	N	EM22	3,600 J+	30 J	14	1.8	0.60
SWFTS-MW05A	12/18/2019	SWFTS-MW05A-EM23	N	EM23	3,400	<10	12	1.3	0.83
SWFTS-MW05A	1/29/2020	SWFTS-MW05A-EM24	N	EM24	3,800	110	14	1.4	2.55
SWFTS-MW05A	3/11/2020	SWFTS-MW05A-EM25	N	EM25	3,900	28 J	13 J-	1.8	2.24
SWFTS-MW05A	4/29/2020	SWFTS-MW05A-EM26	N	EM26	3,700	<20	13	1.4	0.57
SWFTS-MW05A	7/8/2020	SWFTS-MW05A-EM27	N	EM27	3,800	49 J	14	1.8 J-	0.79
SWFTS-MW05A	8/18/2020	SWFTS-MW05A-EM28	N	EM28	2,900	<10	11	2.9	0.64
SWFTS-MW05B	3/30/2017	SWFTS-MW05B-BL01	N	BL01	7,200	48,000	13	1.5	0.70
SWFTS-MW05B	9/22/2017	SWFTS-MW05B-EM01	N	EM01	190	300	<0.55	39	0.24
SWFTS-MW05B	9/27/2017	SWFTS-MW05B-EM02	N	EM02	<0.95	<50	<0.55	57	0.10
SWFTS-MW05B	10/3/2017	SWFTS-MW05B-EM03	N	EM03	8.3	<50	<0.55	90	0.10
SWFTS-MW05B	10/10/2017	SWFTS-MW05B-EM04	N	EM04	<0.95	<100	<0.55	100	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 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW05B	10/23/2017	SWFTS-MW05B-EM05	N	EM05	<0.95	<100	<0.55	68	0.34
SWFTS-MW05B	11/14/2017	SWFTS-MW05B-EM06	N	EM06	<0.95	16 J	<0.55	3.2	0.46
SWFTS-MW05B	12/13/2017	SWFTS-MW05B-EM07	N	EM07	990	5,300	0.36 J	2.3	0.30
SWFTS-MW05B	2/20/2018	SWFTS-MW05B-EM08	N	EM08	2,000	11,000	4.2	2.2	0.34
SWFTS-MW05B	3/26/2018	SWFTS-MW05B-EM09	N	EM09	2,600	18,000	4.6	1.7	0.49
SWFTS-MW05B	4/30/2018	SWFTS-MW05B-EM10	N	EM10	2,600	18,000	5.4	1.9	0.00
SWFTS-MW05B	7/10/2018	SWFTS-MW05B-EM11	N	EM11	190	1,500	0.66 J-	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	1.9	2.37
SWFTS-MW05B	10/9/2018	SWFTS-MW05B-EM15	N	EM15	1,400	8,700	2.5	2.3	0
SWFTS-MW05B	12/20/2018	SWFTS-MW05B-EM16	N	EM16	2,100	8,000	4.7	2.1	0.62
SWFTS-MW05B	2/27/2019	SWFTS-MW05B-EM17	N	EM17	910	240	3.8	2.1	0.61
SWFTS-MW05B	4/10/2019	SWFTS-MW05B-EM18	N	EM18	1,200	19 J	3.3	2.0	0.63
SWFTS-MW05B	5/21/2019	SWFTS-MW05B-EM19	N	EM19	1,200	<4.0	4.3	1.9	0.81
SWFTS-MW05B	7/1/2019	SWFTS-MW05B-EM20	N	EM20	1,400	<10	4.8	2.4	0.21
SWFTS-MW05B	8/13/2019	SWFTS-MW05B-EM21	N	EM21	1,600	<10	4.8	2.3	0.38
SWFTS-MW05B	11/5/2019	SWFTS-MW05B-EM22	N	EM22	790	13 J	1.6 J	2.3	0.48
SWFTS-MW05B	12/18/2019	SWFTS-MW05B-EM23	N	EM23	1,200	<10	3.4	1.9	0.72
SWFTS-MW05B	1/29/2020	SWFTS-MW05B-EM24	N	EM24	1,900	37 J	5.0	2.0	2.43
SWFTS-MW05B	3/11/2020	SWFTS-MW05B-EM25	N	EM25	1,800	<20	4.9 J-	1.7	2.15
SWFTS-MW05B	4/29/2020	SWFTS-MW05B-EM26	N	EM26	1,800	<10	6.1	2.0	0.65
SWFTS-MW05B	7/8/2020	SWFTS-MW05B-EM27	N	EM27	1,100	<10	2.1	2.5	0.93
SWFTS-MW05B	8/18/2020	SWFTS-MW05B-EM28	N	EM28	1,100	32 J	4.0	3.0	0.91
SWFTS-MW06A	3/30/2017	SWFTS-MW06A-BL01	N	BL01	170	<10	<0.11	3.6	0.38
SWFTS-MW06A	9/21/2017	SWFTS-MW06A-EM01	N	EM01	2,400	220	1.5	3.0	0.16
SWFTS-MW06A	9/27/2017	SWFTS-MW06A-EM02	N	EM02	2,600	320	1.7	3.3	0.30
SWFTS-MW06A	10/3/2017	SWFTS-MW06A-EM03	N	EM03	2,700	300	2.0 J-	2.8	0.12
SWFTS-MW06A	10/11/2017	SWFTS-MW06A-EM04	N	EM04	5,500	1,100	1.9	3.0	0.37
SWFTS-MW06A	10/23/2017	SWFTS-MW06A-EM05	N	EM05	2,300	350	1.9	3.3	2.52
SWFTS-MW06A	11/16/2017	SWFTS-MW06A-EM06	N	EM06	3,300	380	2.5	2.8	0.42
SWFTS-MW06A	12/13/2017	SWFTS-MW06A-EM07	N	EM07	3,600	520	2.6	2.7	0.17
SWFTS-MW06A	2/22/2018	SWFTS-MW06A-EM08	N	EM08	1,800	200	0.88	3.4	0.37
SWFTS-MW06A	3/28/2018	SWFTS-MW06A-EM09	N	EM09	1,500	77	0.36	3.1	0.44
SWFTS-MW06A	5/1/2018	SWFTS-MW06A-EM10	N	EM10	760 J	10 J	0.11	3.1	0.27
SWFTS-MW06A	5/1/2018	SWFTS-MW06A-EM10-FD	FD	EM10	880	13 J	0.11	3.1	--
SWFTS-MW06A	7/11/2018	SWFTS-MW06A-EM11	N	EM11	830	21	0.11 J	2.9	2.40
SWFTS-MW06A	7/11/2018	SWFTS-MW06A-EM11-FD	FD	EM11	840	20	<0.11	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	3.4	0.49
SWFTS-MW06A	9/11/2018	SWFTS-MW06A-EM14-FD	FD	EM14	1,600	140	0.43	3.3	--

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW06A	10/10/2018	SWFTS-MW06A-EM15	N	EM15	2,400	210	0.84	3.5	0.2
SWFTS-MW06A	10/10/2018	SWFTS-MW06A-EM15-FD	FD	EM15	2,100	210	0.79	3.6	--
SWFTS-MW06A	12/28/2018	SWFTS-MW06A-EM16	N	EM16	1,700	760	0.41	3.6	0.98
SWFTS-MW06A	12/28/2018	SWFTS-MW06A-EM16-FD	FD	EM16	1,600	760	0.42	3.5	--
SWFTS-MW06A	2/27/2019	SWFTS-MW06A-EM17	N	EM17	1,600	93	0.42	3.1	0.05
SWFTS-MW06A	2/27/2019	SWFTS-MW06A-EM17-FD	FD	EM17	1,500	95	0.43	3.1	--
SWFTS-MW06A	4/10/2019	SWFTS-MW06A-EM18	N	EM18	1,500	120	0.60	3.4	0.61
SWFTS-MW06A	4/10/2019	SWFTS-MW06A-EM18-FD	FD	EM18	1,500	120	0.59	3.3	--
SWFTS-MW06A	5/20/2019	SWFTS-MW06A-EM19	N	EM19	1,800	170	1.0	3.0	0.09
SWFTS-MW06A	5/20/2019	SWFTS-MW06A-EM19-FD	FD	EM19	1,800	160	0.86	3.2	--
SWFTS-MW06A	7/1/2019	SWFTS-MW06A-EM20	N	EM20	2,500	350 J	1.3	3.6	0.40
SWFTS-MW06A	7/1/2019	SWFTS-MW06A-EM20-FD	FD	EM20	2,800	310 J	1.2	3.7	--
SWFTS-MW06A	8/14/2019	SWFTS-MW06A-EM21	N	EM21	3,200	390	1.7	3.7	0.37
SWFTS-MW06A	8/14/2019	SWFTS-MW06A-EM21-FD	FD	EM21	3,300	380	1.7	3.2	--
SWFTS-MW06A	11/6/2019	SWFTS-MW06A-EM22	N	EM22	2,500	330	1.3	3.3	0.62
SWFTS-MW06A	11/6/2019	SWFTS-MW06A-EM22-FD	FD	EM22	2,600	320	1.3	3.2	--
SWFTS-MW06A	12/19/2019	SWFTS-MW06A-EM23	N	EM23	1,900	180	0.77	3.0	0.80
SWFTS-MW06A	12/19/2019	SWFTS-MW06A-EM23-FD	FD	EM23	1,900	190	0.77	2.8	--
SWFTS-MW06A	1/29/2020	SWFTS-MW06A-EM24	N	EM24	1,100	51 J	0.26	3.2	4.31
SWFTS-MW06A	1/29/2020	SWFTS-MW06A-EM24-FD	FD	EM24	1,100	53 J	0.26	3.2	--
SWFTS-MW06A	3/11/2020	SWFTS-MW06A-EM25	N	EM25	580	<4.0	<0.11	3.3	2.6
SWFTS-MW06A	3/11/2020	SWFTS-MW06A-EM25-FD	FD	EM25	600	<4.0	<0.11	3.3	--
SWFTS-MW06A	4/29/2020	SWFTS-MW06A-EM26	N	EM26	350	<10	<0.11	3.1	0.84
SWFTS-MW06A	4/29/2020	SWFTS-MW06A-EM26-FD	FD	EM26	360	<10	<0.11	3.2	--
SWFTS-MW06A	7/7/2020	SWFTS-MW06A-EM27	N	EM27	840	<2.0	<0.11	3.5	0.99
SWFTS-MW06A	7/7/2020	SWFTS-MW06A-EM27-FD	FD	EM27	850	<2.0	<0.11	3.4	--
SWFTS-MW06A	8/19/2020	SWFTS-MW06A-EM28	N	EM28	1,400	63 J	0.48	4.3	0.6
SWFTS-MW06A	8/19/2020	SWFTS-MW06A-EM28-FD	FD	EM28	1,400	70 J	0.57	4.6	--
SWFTS-MW06B	3/30/2017	SWFTS-MW06B-BL01	N	BL01	1,000	490	0.13 J	3.5	0.06
SWFTS-MW06B	9/21/2017	SWFTS-MW06B-EM01	N	EM01	2,000	350	0.70	2.8	0.18
SWFTS-MW06B	9/27/2017	SWFTS-MW06B-EM02	N	EM02	2,000	360	0.76	3.3	0.78
SWFTS-MW06B	10/3/2017	SWFTS-MW06B-EM03	N	EM03	2,500	340	1.0	2.8	0.11
SWFTS-MW06B	10/11/2017	SWFTS-MW6B-EM04	N	EM04	4,400	380	1.1	3.1	0.45
SWFTS-MW06B	10/23/2017	SWFTS-MW06B-EM05	N	EM05	2,000	390	1.3	3.1	1.14
SWFTS-MW06B	11/16/2017	SWFTS-MW06B-EM06	N	EM06	2,800	400	1.8	2.9	0.44
SWFTS-MW06B	12/13/2017	SWFTS-MW06B-EM07	N	EM07	3,200	590	2.2	2.9	0.91
SWFTS-MW06B	2/22/2018	SWFTS-MW06B-EM08	N	EM08	2,900	480	1.9	3.1	0.47
SWFTS-MW06B	3/28/2018	SWFTS-MW06B-EM09	N	EM09	2,500	370	1.1	2.8	0.59
SWFTS-MW06B	5/1/2018	SWFTS-MW06B-EM10	N	EM10	1,800	270	0.56	2.9	1.31
SWFTS-MW06B	7/11/2018	SWFTS-MW06B-EM11	N	EM11	880	140	0.18 J	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	3.3	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 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW06B	10/10/2018	SWFTS-MW06B-EM15	N	EM15	1,700	260	0.36 J	4.1	0.17
SWFTS-MW06B	12/28/2018	SWFTS-MW06B-EM16	N	EM16	1,900	270	0.66	3.1	0.7
SWFTS-MW06B	2/28/2019	SWFTS-MW06B-EM17	N	EM17	1,600	230	0.53	3.2	0.45
SWFTS-MW06B	4/10/2019	SWFTS-MW06B-EM18	N	EM18	1,600	210	1.2	3.4	0.54
SWFTS-MW06B	5/21/2019	SWFTS-MW06B-EM19	N	EM19	1,700	220	0.43	3.7	0.09
SWFTS-MW06B	7/1/2019	SWFTS-MW06B-EM20	N	EM20	2,100	340	0.73	3.6	0.43
SWFTS-MW06B	8/14/2019	SWFTS-MW06B-EM21	N	EM21	2,900	420	1.4	3.2	0.39
SWFTS-MW06B	11/6/2019	SWFTS-MW06B-EM22	N	EM22	3,000	530	1.6	<0.65	0.59
SWFTS-MW06B	12/19/2019	SWFTS-MW06B-EM23	N	EM23	2,500	410	1.0	2.9	0.82
SWFTS-MW06B	1/29/2020	SWFTS-MW06B-EM24	N	EM24	1,900	290	0.72	3.4	3.56
SWFTS-MW06B	3/11/2020	SWFTS-MW06B-EM25	N	EM25	1,300	150	0.32	2.8	1.54
SWFTS-MW06B	4/29/2020	SWFTS-MW06B-EM26	N	EM26	690	70	<0.11	3.0	0.73
SWFTS-MW06B	7/7/2020	SWFTS-MW06B-EM27	N	EM27	600	29 J	<0.11	3.3	0.79
SWFTS-MW06B	8/19/2020	SWFTS-MW06B-EM28	N	EM28	890	61 J	<0.11	3.9	0.58
SWFTS-MW07A	3/30/2017	SWFTS-MW07A-BL01	N	BL01	14,000	44,000	11	2.1	0.16
SWFTS-MW07A	9/20/2017	SWFTS-MW07A-EM01	N	EM01	14,000	41,000	11	2.0	0.20
SWFTS-MW07A	9/26/2017	SWFTS-MW07A-EM02	N	EM02	15,000	36,000	11	2.3	0.49
SWFTS-MW07A	10/3/2017	SWFTS-MW07A-EM03	N	EM03	16,000	37,000	10	2.1	0.22
SWFTS-MW07A	10/11/2017	SWFTS-MW07A-EM04	N	EM04	12,000	39,000	12	2.0	0.11
SWFTS-MW07A	10/24/2017	SWFTS-MW07A-EM05	N	EM05	14,000	38,000	10	2.3	0.43
SWFTS-MW07A	11/15/2017	SWFTS-MW07A-EM06	N	EM06	16,000	40,000	12	2.1	0.35
SWFTS-MW07A	12/14/2017	SWFTS-MW07A-EM07	N	EM07	14,000	35,000	11	2.1	-0.02 E
SWFTS-MW07A	2/19/2018	SWFTS-MW07A-EM08	N	EM08	12,000	36,000	12	2.2	0.72
SWFTS-MW07A	3/28/2018	SWFTS-MW07A-EM09	N	EM09	11,000	36,000	12	1.8	3.29
SWFTS-MW07A	5/2/2018	SWFTS-MW07A-EM10	N	EM10	11,000	40,000	13	1.7	1.02
SWFTS-MW07A	7/11/2018	SWFTS-MW07A-EM11	N	EM11	11,000	44,000	14	1.6	1.42
SWFTS-MW07A	8/16/2018	SWFTS-MW07A-EM13	N	EM13	8,600	76,000	15	2.0	0.58
SWFTS-MW07A	9/12/2018	SWFTS-MW07A-EM14	N	EM14	9,500	42,000	17	1.8	1.30
SWFTS-MW07A	10/10/2018	SWFTS-MW07A-EM15	N	EM15	9,300	40,000	17	2.1	0.08
SWFTS-MW07A	1/2/2019	SWFTS-MW07A-EM16	N	EM16	8,100	35,000	15	1.8	0.99
SWFTS-MW07A	2/28/2019	SWFTS-MW07A-EM17	N	EM17	7,300	34,000	15	2.5	0.62
SWFTS-MW07A	4/12/2019	SWFTS-MW07A-EM18	N	EM18	7,600	36,000	16	1.7	0.72
SWFTS-MW07A	5/22/2019	SWFTS-MW07A-EM19	N	EM19	6,800	35,000	15	1.9	1.03
SWFTS-MW07A	7/3/2019	SWFTS-MW07A-EM20	N	EM20	7,800	36,000	14	2.2	0.41
SWFTS-MW07A	8/15/2019	SWFTS-MW07A-EM21	N	EM21	8,500	38,000	15	2.1	0.43
SWFTS-MW07A	11/7/2019	SWFTS-MW07A-EM22	N	EM22	7,900	35,000	13	1.8	0.62
SWFTS-MW07A	12/20/2019	SWFTS-MW07A-EM23	N	EM23	8,900	35,000	13	1.8	0.73
SWFTS-MW07A	1/28/2020	SWFTS-MW07A-EM24	N	EM24	9,000	39,000	14 J-	1.8	0.59
SWFTS-MW07A	3/12/2020	SWFTS-MW07A-EM25	N	EM25	12,000	44,000	13 J-	2.0	2.25
SWFTS-MW07A	4/30/2020	SWFTS-MW07A-EM26	N	EM26	12,000	35,000	13	1.9	0.3
SWFTS-MW07A	7/9/2020	SWFTS-MW07A-EM27	N	EM27	5,300	42,000	15	2.1 J-	0.75
SWFTS-MW07A	8/19/2020	SWFTS-MW07A-EM28	N	EM28	9,300	37,000	12	2.2	0.61

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW07B	3/30/2017	SWFTS-MW07B-BL01	N	BL01	13,000	40,000	11	2.0	1.29
SWFTS-MW07B	9/20/2017	SWFTS-MW07B-EM01	N	EM01	10,000	33,000	9.0	1.8	0.35
SWFTS-MW07B	9/26/2017	SWFTS-MW07B-EM02	N	EM02	11,000	29,000	10	2.2	0.60
SWFTS-MW07B	10/3/2017	SWFTS-MW07B-EM03	N	EM03	9,400	28,000	9.9	1.6	1.38
SWFTS-MW07B	10/11/2017	SWFTS-MW07B-EM04	N	EM04	8,400	28,000	11	1.7	0.13
SWFTS-MW07B	10/24/2017	SWFTS-MW07B-EM05	N	EM05	9,300	29,000	11	1.2	0.33
SWFTS-MW07B	11/15/2017	SWFTS-MW07B-EM06	N	EM06	9,700	29,000	12	2.0	0.42
SWFTS-MW07B	12/14/2017	SWFTS-MW07B-EM07	N	EM07	9,400	30,000	12	1.9	-0.09 E
SWFTS-MW07B	2/19/2018	SWFTS-MW07B-EM08	N	EM08	9,700	37,000	14	2.2	1.23
SWFTS-MW07B	3/28/2018	SWFTS-MW07B-EM09	N	EM09	11,000	47,000	16	1.7	0.30
SWFTS-MW07B	5/2/2018	SWFTS-MW07B-EM10	N	EM10	9,100	34,000	13	1.9	4.67
SWFTS-MW07B	7/11/2018	SWFTS-MW07B-EM11	N	EM11	8,300	43,000	16	1.7	1.60
SWFTS-MW07B	8/16/2018	SWFTS-MW07B-EM13	N	EM13	6,500	44,000	17	2.0	0.49
SWFTS-MW07B	9/12/2018	SWFTS-MW07B-EM14	N	EM14	6,200	31,000	17	1.8	1.69
SWFTS-MW07B	10/10/2018	SWFTS-MW07B-EM15	N	EM15	5,700	28,000	16	1.8	0.09
SWFTS-MW07B	1/3/2019	SWFTS-MW07B-EM16	N	EM16	6,100	32,000	13	1.6	1.35
SWFTS-MW07B	2/28/2019	SWFTS-MW07B-EM17	N	EM17	6,700	40,000	15	2.3	0.40
SWFTS-MW07B	4/12/2019	SWFTS-MW07B-EM18	N	EM18	7,500	39,000	14	1.6	0.52
SWFTS-MW07B	5/22/2019	SWFTS-MW07B-EM19	N	EM19	7,600	37,000	14	1.4	0.87
SWFTS-MW07B	7/3/2019	SWFTS-MW07B-EM20	N	EM20	6,500	30,000	13	2.1	0.47
SWFTS-MW07B	8/15/2019	SWFTS-MW07B-EM21	N	EM21	7,200	33,000	13	2.0	0.42
SWFTS-MW07B	11/7/2019	SWFTS-MW07B-EM22	N	EM22	6,400	33,000	12	1.6	0.59
SWFTS-MW07B	12/20/2019	SWFTS-MW07B-EM23	N	EM23	9,800	38,000	13	1.4	0.81
SWFTS-MW07B	1/28/2020	SWFTS-MW07B-EM24	N	EM24	12,000	47,000	14	2.1	0.55
SWFTS-MW07B	3/12/2020	SWFTS-MW07B-EM25	N	EM25	14,000	46,000	13 J-	2.0	2.3
SWFTS-MW07B	4/30/2020	SWFTS-MW07B-EM26	N	EM26	10,000	41,000	12	1.7	0.49
SWFTS-MW07B	7/9/2020	SWFTS-MW07B-EM27	N	EM27	8,900	30,000	14	2.3 J-	0.79
SWFTS-MW07B	8/19/2020	SWFTS-MW07B-EM28	N	EM28	7,300	27,000	11	2.1	0.65
SWFTS-MW08A	3/30/2017	SWFTS-MW08A-BL01	N	BL01	14,000	20,000	11	1.5	0.25
SWFTS-MW08A	9/20/2017	SWFTS-MW08A-EM01	N	EM01	10,000	47,000	12	1.4	0.41
SWFTS-MW08A	9/20/2017	SWFTS-MW08A-EM01-FD	FD	EM01	10,000	46,000	13	1.4	--
SWFTS-MW08A	9/26/2017	SWFTS-MW08A-EM02	N	EM02	9,800	40,000	12	1.7	0.27
SWFTS-MW08A	9/26/2017	SWFTS-MW08A-EM02-FD	FD	EM02	10,000	42,000	12	1.8	--
SWFTS-MW08A	10/5/2017	SWFTS-MW08A-EM03	N	EM03	7,800	42,000	14	1.6	4.16
SWFTS-MW08A	10/5/2017	SWFTS-MW08A-EM03-FD	FD	EM03	9,800	49,000	12	2.0	--
SWFTS-MW08A	10/10/2017	SWFTS-MW08A-EM04	N	EM04	9,500	43,000	12	1.6	44.01 E
SWFTS-MW08A	10/23/2017	SWFTS-MW08A-EM05	N	EM05	8,100	41,000	14	1.8	1.49
SWFTS-MW08A	10/23/2017	SWFTS-MW08A-EM05-FD	FD	EM05	8,100	40,000	12	1.8	--
SWFTS-MW08A	11/15/2017	SWFTS-MW08A-EM06	N	EM06	9,000	43,000	14	1.6	0.60
SWFTS-MW08A	12/14/2017	SWFTS-MW08A-EM07	N	EM07	8,900	45,000	14	1.6	0.11
SWFTS-MW08A	2/22/2018	SWFTS-MW08A-EM08	N	EM08	9,500	54,000	14	1.9	5.05
SWFTS-MW08A	3/29/2018	SWFTS-MW08A-EM09	N	EM09	9,100	59,000	15	1.5	2.61

Table 2
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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 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW08A	5/3/2018	SWFTS-MW08A-EM10	N	EM10	9,100	55,000	17	1.5	0.37
SWFTS-MW08A	7/11/2018	SWFTS-MW08A-EM11	N	EM11	7,500	63,000	15	1.3	1.54
SWFTS-MW08A	8/16/2018	SWFTS-MW08A-EM13	N	EM13	5,500	47,000	15	1.8	0.63
SWFTS-MW08A	9/12/2018	SWFTS-MW08A-EM14	N	EM14	5,600	43,000	15	1.6	0.77
SWFTS-MW08A	10/10/2018	SWFTS-MW08A-EM15	N	EM15	5,500	42,000	15	1.8	0.09
SWFTS-MW08A	1/2/2019	SWFTS-MW08A-EM16	N	EM16	7,200	45,000	15	2.0	1.23
SWFTS-MW08A	2/28/2019	SWFTS-MW08A-EM17	N	EM17	7,500	53,000	16	1.7	0.40
SWFTS-MW08A	4/12/2019	SWFTS-MW08A-EM18	N	EM18	7,100	50,000	15	1.4	0.74
SWFTS-MW08A	5/22/2019	SWFTS-MW08A-EM19	N	EM19	7,600	46,000	14	1.5	1.30
SWFTS-MW08A	7/1/2019	SWFTS-MW08A-EM20	N	EM20	6,700	44,000	14	1.9	0.55
SWFTS-MW08A	8/15/2019	SWFTS-MW08A-EM21	N	EM21	6,500	41,000	12	1.9	0.45
SWFTS-MW08A	11/7/2019	SWFTS-MW08A-EM22	N	EM22	6,400	17,000	13	1.5	0.76
SWFTS-MW08A	12/19/2019	SWFTS-MW08A-EM23	N	EM23	9,100	49,000	13	1.3	1.09
SWFTS-MW08A	1/28/2020	SWFTS-MW08A-EM24	N	EM24	11,000	57,000	15 J-	1.6	0.76
SWFTS-MW08A	3/12/2020	SWFTS-MW08A-EM25	N	EM25	14,000	58,000	14 J-	1.5	2.52
SWFTS-MW08A	4/29/2020	SWFTS-MW08A-EM26	N	EM26	12,000	51,000	14	1.4	0.73
SWFTS-MW08A	7/8/2020	SWFTS-MW08A-EM27	N	EM27	9,800	47,000	15	1.2	0.93
SWFTS-MW08A	8/17/2020	SWFTS-MW08A-EM28	N	EM28	8,500	21,000	12	1.8	0.63
SWFTS-MW08C	3/28/2017	SWFTS-MW08C-BL01	N	BL01	7,800	55,000	13	1.3	0.08
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	1.6	0.33
SWFTS-MW09A	9/21/2017	SWFTS-MW09A-EM01	N	EM01	3,400	1,200	<0.55	51	0.57
SWFTS-MW09A	9/28/2017	SWFTS-MW09A-EM02	N	EM02	54	<100	<0.55	40	0.26
SWFTS-MW09A	10/4/2017	SWFTS-MW09A-EM03	N	EM03	420	200	<0.55	22	4.54
SWFTS-MW09A	10/11/2017	SWFTS-MW09A-EM04	N	EM04	8.4 J+	55	<0.55	7.5	0.12
SWFTS-MW09A	10/25/2017	SWFTS-MW09A-EM05	N	EM05	1,300	1,700	<0.55	2.9	0.31
SWFTS-MW09A	11/16/2017	SWFTS-MW09A-EM06	N	EM06	3,400	8,400	1.2	2.1	1.88
SWFTS-MW09A	12/12/2017	SWFTS-MW09A-EM07	N	EM07	5,400	16,000	2.7	2.1	0.29
SWFTS-MW09A	2/20/2018	SWFTS-MW09A-EM08	N	EM08	6,800	16,000	5.3	2.1	4.16
SWFTS-MW09A	3/27/2018	SWFTS-MW09A-EM09	N	EM09	6,700	18,000	6.4	1.8	2.12
SWFTS-MW09A	5/1/2018	SWFTS-MW09A-EM10	N	EM10	7,300	19,000	8.0	1.6	0.00
SWFTS-MW09A	7/12/2018	SWFTS-MW09A-EM11	N	EM11	2,800	2,700	3.1	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	2.2	2.83
SWFTS-MW09A	9/11/2018	SWFTS-MW09A-EM14	N	EM14	4,000	13,000	6.5	1.7	1.72
SWFTS-MW09A	10/9/2018	SWFTS-MW09A-EM15	N	EM15	4,600	15,000	7.7	2.0	1.3
SWFTS-MW09A	12/27/2018	SWFTS-MW09A-EM16	N	EM16	3,600	14,000	9.1	1.8	0.83
SWFTS-MW09A	2/26/2019	SWFTS-MW09A-EM17	N	EM17	2,400	5,600	3.8	2.1	0.43
SWFTS-MW09A	4/10/2019	SWFTS-MW09A-EM18	N	EM18	3,500	12,000	6.0	1.8	0.72
SWFTS-MW09A	5/22/2019	SWFTS-MW09A-EM19	N	EM19	2,900	6,000	6.6	1.8	0.47
SWFTS-MW09A	7/2/2019	SWFTS-MW09A-EM20	N	EM20	3,500	13,000	6.5	2.2	0.45

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW09A	8/12/2019	SWFTS-MW09A-EM21	N	EM21	4,800	20,000	8.0	1.8	0.44
SWFTS-MW09A	11/5/2019	SWFTS-MW09A-EM22	N	EM22	2,500	8,400	3.6	2.0	0.70
SWFTS-MW09A	12/18/2019	SWFTS-MW09A-EM23	N	EM23	5,400	20,000	6.9 J+	1.7	0.76
SWFTS-MW09A	1/28/2020	SWFTS-MW09A-EM24	N	EM24	5,700	25,000	7.6 J-	1.8	0.84
SWFTS-MW09A	3/10/2020	SWFTS-MW09A-EM25	N	EM25	7,100	27,000	7.5 J-	1.7	2.34
SWFTS-MW09A	4/28/2020	SWFTS-MW09A-EM26	N	EM26	7,500	28,000	8.2	1.6	0.36
SWFTS-MW09A	7/6/2020	SWFTS-MW09A-EM27	N	EM27	3,000	5,600	3.3	2.2	0.7
SWFTS-MW09A	8/18/2020	SWFTS-MW09A-EM28	N	EM28	5,500	17,000	5.7	2.3	0.84
SWFTS-MW09B	3/29/2017	SWFTS-MW09B-BL01	N	BL01	13,000	46,000	12	1.8	0.31
SWFTS-MW09B	3/29/2017	SWFTS-MW09B-BL01-FD	FD	BL01	15,000	46,000	12	1.8	--
SWFTS-MW09B	9/21/2017	SWFTS-MW09B-EM01	N	EM01	220	390	<0.55	30	1.81
SWFTS-MW09B	9/28/2017	SWFTS-MW09B-EM02	N	EM02	990	2,500	<0.55	25	0.38
SWFTS-MW09B	10/4/2017	SWFTS-MW09B-EM03	N	EM03	430	1,000	<1.1	29	3.71
SWFTS-MW09B	10/11/2017	SWFTS-MW09B-EM04	N	EM04	1,400	3,000	1.1	18	0.12
SWFTS-MW09B	10/25/2017	SWFTS-MW09B-EM05	N	EM05	2,700	7,700	1.7	2.4	0.38
SWFTS-MW09B	11/16/2017	SWFTS-MW09B-EM06	N	EM06	2,400	8,600	2.1	2.1	0.77
SWFTS-MW09B	12/12/2017	SWFTS-MW09B-EM07	N	EM07	3,500	13,000	3.4	2.1	0.07
SWFTS-MW09B	2/20/2018	SWFTS-MW09B-EM08	N	EM08	800	1,400	<1.1	2.5	5.47
SWFTS-MW09B	3/27/2018	SWFTS-MW09B-EM09	N	EM09	7,700	28,000	5.9	1.8	2.09
SWFTS-MW09B	4/30/2018	SWFTS-MW09B-EM10	N	EM10	7,400	23,000	7.9	1.8	0.00
SWFTS-MW09B	7/12/2018	SWFTS-MW09B-EM11	N	EM11	6,500	15,000	7.0	1.9	1.58
SWFTS-MW09B	7/26/2018	SWFTS-MW09B-EM12	N	EM12	6,600	20,000	--	--	1.16
SWFTS-MW09B	8/14/2018	SWFTS-MW09B-EM13	N	EM13	6,400	24,000	9.7	2.1	2.99
SWFTS-MW09B	9/11/2018	SWFTS-MW09B-EM14	N	EM14	6,600	28,000	11	1.6	1.12
SWFTS-MW09B	10/9/2018	SWFTS-MW09B-EM15	N	EM15	6,500	24,000	10	2.0	0.58
SWFTS-MW09B	12/28/2018	SWFTS-MW09B-EM16	N	EM16	5,500	21,000	11	1.7	1.3
SWFTS-MW09B	2/28/2019	SWFTS-MW09B-EM17	N	EM17	5,800	25,000	16 J-	1.9	0.50
SWFTS-MW09B	4/10/2019	SWFTS-MW09B-EM18	N	EM18	8,300	32,000	11	1.6	2.69
SWFTS-MW09B	5/22/2019	SWFTS-MW09B-EM19	N	EM19	7,300	30,000	10	1.6	0.70
SWFTS-MW09B	7/2/2019	SWFTS-MW09B-EM20	N	EM20	6,900	30,000	11	1.9	0.70
SWFTS-MW09B	8/12/2019	SWFTS-MW09B-EM21	N	EM21	7,200	28,000	11	1.9	0.53
SWFTS-MW09B	11/5/2019	SWFTS-MW09B-EM22	N	EM22	7,400	26,000	9.4	1.7	1.48
SWFTS-MW09B	12/18/2019	SWFTS-MW09B-EM23	N	EM23	8,300	28,000	11	1.5	0.87
SWFTS-MW09B	1/28/2020	SWFTS-MW09B-EM24	N	EM24	9,800	35,000	11 J-	1.7	0.54
SWFTS-MW09B	3/10/2020	SWFTS-MW09B-EM25	N	EM25	11,000	36,000	11 J-	1.7	2.33
SWFTS-MW09B	4/28/2020	SWFTS-MW09B-EM26	N	EM26	12,000	39,000	11	1.6	0.85
SWFTS-MW09B	7/7/2020	SWFTS-MW09B-EM27	N	EM27	11,000	30,000	9.9	1.8	0.7
SWFTS-MW09B	8/18/2020	SWFTS-MW09B-EM28	N	EM28	11,000	31,000	11	2.0	0.71
SWFTS-MW10A	3/31/2017	SWFTS-MW10A-BL01	N	BL01	13,000	27,000	5.1	2.8	2.70
SWFTS-MW10A	9/21/2017	SWFTS-MW10A-EM01	N	EM01	1.9 J	<50	<0.55	23	0.42
SWFTS-MW10A	9/27/2017	SWFTS-MW10A-EM02	N	EM02	100	<100	0.66 J	12	5.10
SWFTS-MW10A	10/4/2017	SWFTS-MW10A-EM03	N	EM03	14	<100	<0.28	10	4.56

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW10A	10/12/2017	SWFTS-MW10A-EM04	N	EM04	<0.95	13 J	<0.11	13	0.15
SWFTS-MW10A	10/24/2017	SWFTS-MW10A-EM05	N	EM05	14	630	<0.28	6.3	1.38
SWFTS-MW10A	11/16/2017	SWFTS-MW10A-EM06	N	EM06	11	<50	<0.28	4.2	0.60
SWFTS-MW10A	11/16/2017	SWFTS-MW10A-EM06-FD	FD	EM06	15	<50	<0.28	4.0	--
SWFTS-MW10A	12/12/2017	SWFTS-MW10A-EM07	N	EM07	160	190	<0.28	3.2	0.53
SWFTS-MW10A	12/12/2017	SWFTS-MW10A-EM07-FD	FD	EM07	170	180	<0.28	3.4	--
SWFTS-MW10A	2/20/2018	SWFTS-MW10A-EM08	N	EM08	990	1,400	<1.1	3.2	0.44
SWFTS-MW10A	2/20/2018	SWFTS-MW10A-EM08-FD	FD	EM08	1,000	1,300	1.3 J	3.3	--
SWFTS-MW10A	3/26/2018	SWFTS-MW10A-EM09	N	EM09	2,300	4,000	0.37 J	2.8	1.15
SWFTS-MW10A	3/26/2018	SWFTS-MW10A-EM09-FD	FD	EM09	2,200	4,000	0.36 J	2.8 J-	--
SWFTS-MW10A	5/1/2018	SWFTS-MW10A-EM10	N	EM10	4,300	4,800	0.96 J	2.5	0.83
SWFTS-MW10A	7/11/2018	SWFTS-MW10A-EM11	N	EM11	3,000 J-	40 J	0.89 J	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	3.0	2.59
SWFTS-MW10A	9/10/2018	SWFTS-MW10A-EM14	N	EM14	1,500	<10	<0.55	2.9	0.37
SWFTS-MW10A	10/9/2018	SWFTS-MW10A-EM15	N	EM15	2,300	<20	<0.55	2.8	0.86
SWFTS-MW10A	12/20/2018	SWFTS-MW10A-EM16	N	EM16	3,000	83	1.3	3.4	0.7
SWFTS-MW10A	2/26/2019	SWFTS-MW10A-EM17	N	EM17	3,900	1,200	2.1 J	2.6	0.37
SWFTS-MW10A	4/10/2019	SWFTS-MW10A-EM18	N	EM18	2,800	1,400	1.7	2.8	0.61
SWFTS-MW10A	5/21/2019	SWFTS-MW10A-EM19	N	EM19	1,500	34 J	1.2	3.3	0.46
SWFTS-MW10A	7/1/2019	SWFTS-MW10A-EM20	N	EM20	1,500	<10	0.84 J	3.4	5.15
SWFTS-MW10A	8/12/2019	SWFTS-MW10A-EM21	N	EM21	870	<10	<0.55	3.1	0.38
SWFTS-MW10A	11/6/2019	SWFTS-MW10A-EM22	N	EM22	2,600	310	1.4	3.6 J-	0.49
SWFTS-MW10A	12/17/2019	SWFTS-MW10A-EM23	N	EM23	4,000 J+	3,600	2.1	4.4	0.69
SWFTS-MW10A	1/28/2020	SWFTS-MW10A-EM24	N	EM24	7,900	19,000	6.5	2.3	0.55
SWFTS-MW10A	3/13/2020	SWFTS-MW10A-EM25	N	EM25	9,900	26,000	8.7	2.1 J+	1.55
SWFTS-MW10A	4/29/2020	SWFTS-MW10A-EM26	N	EM26	10,000	28,000	8.1	2.3	2.04
SWFTS-MW10A	7/7/2020	SWFTS-MW10A-EM27	N	EM27	9,600	24,000	7.9	2.8	0.7
SWFTS-MW10A	8/18/2020	SWFTS-MW10A-EM28	N	EM28	10,000	24,000	7.7	3.0	0.56
SWFTS-MW10C	3/28/2017	SWFTS-MW10C-BL01	N	BL01	8,300	39,000	7.6	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	1.8	4.30
SWFTS-MW11	9/20/2017	SWFTS-MW11-EM01	N	EM01	13,000	40,000	11	1.7	1.86
SWFTS-MW11	9/26/2017	SWFTS-MW11-EM02	N	EM02	14,000	37,000	12	2.1	1.47
SWFTS-MW11	10/3/2017	SWFTS-MW11-EM03	N	EM03	13,000	36,000	12	1.8	0.93
SWFTS-MW11	10/11/2017	SWFTS-MW11-EM04	N	EM04	16,000	38,000	11	1.6	1.15
SWFTS-MW11	10/24/2017	SWFTS-MW11-EM05	N	EM05	13,000	36,000	12	5.7	2.32
SWFTS-MW11	11/16/2017	SWFTS-MW11-EM06	N	EM06	14,000	37,000	12	1.7	0.95
SWFTS-MW11	12/14/2017	SWFTS-MW11-EM07	N	EM07	12,000	40,000	11	2.0	1.78
SWFTS-MW11	2/21/2018	SWFTS-MW11-EM08	N	EM08	12,000	45,000	14	1.7	7.35
SWFTS-MW11	2/21/2018	SWFTS-MW11-EM08-FD	FD	EM08	12,000	46,000	13	1.9	--

Table 2
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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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW11	3/28/2018	SWFTS-MW11-EM09	N	EM09	13,000	49,000	14	1.5	4.05
SWFTS-MW11	3/28/2018	SWFTS-MW11-EM09-FD	FD	EM09	13,000	49,000	14	1.5	--
SWFTS-MW11	5/1/2018	SWFTS-MW11-EM10	N	EM10	13,000	52,000	14	1.5	5.35
SWFTS-MW11	5/1/2018	SWFTS-MW11-EM10-FD	FD	EM10	12,000	48,000	14	1.4	--
SWFTS-MW11	7/12/2018	SWFTS-MW11-EM11	N	EM11	11,000	52,000	16	1.2	5.48
SWFTS-MW11	7/12/2018	SWFTS-MW11-EM11-FD	FD	EM11	11,000	52,000	16	1.2	--
SWFTS-MW11	8/16/2018	SWFTS-MW11-EM13	N	EM13	9,400	53,000	16	1.7	2.83
SWFTS-MW11	8/16/2018	SWFTS-MW11-EM13-FD	FD	EM13	9,600	52,000	16	1.8	--
SWFTS-MW11	9/12/2018	SWFTS-MW11-EM14	N	EM14	11,000	52,000	16	1.5	4.18
SWFTS-MW11	9/12/2018	SWFTS-MW11-EM14-FD	FD	EM14	11,000	52,000	16	1.4	--
SWFTS-MW11	10/11/2018	SWFTS-MW11-EM15	N	EM15	10,000	54,000	17	1.6	3.59
SWFTS-MW11	10/11/2018	SWFTS-MW11-EM15-FD	FD	EM15	11,000	52,000	17	1.7	--
SWFTS-MW11	1/2/2019	SWFTS-MW11-EM16	N	EM16	8,600	44,000	16	1.5	7.08
SWFTS-MW11	1/2/2019	SWFTS-MW11-EM16-FD	FD	EM16	8,400	45,000	16	1.5	--
SWFTS-MW11	3/1/2019	SWFTS-MW11-EM17	N	EM17	7,900 J+	42,000	17	1.5	5.23
SWFTS-MW11	3/1/2019	SWFTS-MW11-EM17-FD	FD	EM17	7,700 J+	41,000	17	1.6	--
SWFTS-MW11	4/12/2019	SWFTS-MW11-EM18	N	EM18	7,700	41,000	15	1.9	5.50
SWFTS-MW11	4/12/2019	SWFTS-MW11-EM18-FD	FD	EM18	7,800	42,000	17	1.4	--
SWFTS-MW11	5/22/2019	SWFTS-MW11-EM19	N	EM19	8,000	44,000	14	1.7	5.09
SWFTS-MW11	5/22/2019	SWFTS-MW11-EM19-FD	FD	EM19	7,800	44,000	16	1.8	--
SWFTS-MW11	7/3/2019	SWFTS-MW11-EM20	N	EM20	7,100	43,000	16	1.9	5.03
SWFTS-MW11	7/3/2019	SWFTS-MW11-EM20-FD	FD	EM20	7,500	43,000	17	1.9	--
SWFTS-MW11	8/15/2019	SWFTS-MW11-EM21	N	EM21	9,200	43,000	16	1.8	4.95
SWFTS-MW11	8/15/2019	SWFTS-MW11-EM21-FD	FD	EM21	8,900	43,000	16	1.8	--
SWFTS-MW11	11/7/2019	SWFTS-MW11-EM22	N	EM22	7,600	42,000	14	1.5	5.79
SWFTS-MW11	11/7/2019	SWFTS-MW11-EM22-FD	FD	EM22	7,400	43,000	14	1.5	--
SWFTS-MW11	12/17/2019	SWFTS-MW11-EM23	N	EM23	8,200	21,000	14	1.6	5.91
SWFTS-MW11	12/17/2019	SWFTS-MW11-EM23-FD	FD	EM23	8,300	20,000	14	1.4	--
SWFTS-MW11	1/28/2020	SWFTS-MW11-EM24	N	EM24	10,000	47,000	15	1.6	6.54
SWFTS-MW11	1/28/2020	SWFTS-MW11-EM24-FD	FD	EM24	10,000	47,000	15	1.5	--
SWFTS-MW11	3/13/2020	SWFTS-MW11-EM25	N	EM25	12,000	51,000	15	2.0	6.44
SWFTS-MW11	3/13/2020	SWFTS-MW11-EM25-FD	FD	EM25	12,000	51,000	14	2.2	--
SWFTS-MW11	4/30/2020	SWFTS-MW11-EM26	N	EM26	11,000	52,000	14	1.6	5.03
SWFTS-MW11	4/30/2020	SWFTS-MW11-EM26-FD	FD	EM26	12,000	51,000	15	1.5	--
SWFTS-MW11	7/7/2020	SWFTS-MW11-EM27	N	EM27	11,000	41,000	13	1.7	4.6
SWFTS-MW11	7/7/2020	SWFTS-MW11-EM27-FD	FD	EM27	11,000	41,000	13	1.9	--
SWFTS-MW11	8/18/2020	SWFTS-MW11-EM28	N	EM28	10,000	42,000	13	2.0	4.38
SWFTS-MW11	8/18/2020	SWFTS-MW11-EM28-FD	FD	EM28	11,000	41,000	12	2.0	--
SWFTS-MW12	7/13/2017	SWFTS-MW12-BL02	N	BL02	5,100	37,000	16	0.88 J	7.81
SWFTS-MW12	9/19/2017	SWFTS-MW12-EM01	N	EM01	5,100	36,000	14	1.1	4.36
SWFTS-MW12	9/26/2017	SWFTS-MW12-EM02	N	EM02	4,900	34,000	14	1.6	2.98
SWFTS-MW12	10/3/2017	SWFTS-MW12-EM03	N	EM03	5,400	34,000	14 J-	0.78 J	2.77

Table 2
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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 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW12	10/11/2017	SWFTS-MW12-EM04	N	EM04	4,800	35,000	13	0.93 J	1.59
SWFTS-MW12	10/24/2017	SWFTS-MW12-EM05	N	EM05	5,000	37,000	14	1.2	5.09
SWFTS-MW12	11/14/2017	SWFTS-MW12-EM06	N	EM06	4,700	33,000	14	0.99 J	2.52
SWFTS-MW12	12/14/2017	SWFTS-MW12-EM07	N	EM07	4,900	30,000	13	1.5	4.37
SWFTS-MW12	2/22/2018	SWFTS-MW12-EM08	N	EM08	4,500	26,000	12	1.6	5.95
SWFTS-MW12	3/28/2018	SWFTS-MW12-EM09	N	EM09	6,400	39,000	14	1.3	4.30
SWFTS-MW12	5/3/2018	SWFTS-MW12-EM10	N	EM10	4,200	28,000	13	0.89 J	2.24
SWFTS-MW12	7/12/2018	SWFTS-MW12-EM11	N	EM11	4,600	35,000	13	0.69 J	5.35
SWFTS-MW12	8/16/2018	SWFTS-MW12-EM13	N	EM13	4,000	34,000	14	1.2	2.75
SWFTS-MW12	9/12/2018	SWFTS-MW12-EM14	N	EM14	4,800	36,000	14	1.1	3.46
SWFTS-MW12	10/11/2018	SWFTS-MW12-EM15	N	EM15	4,200	28,000	14	1.3	5.11
SWFTS-MW12	1/2/2019	SWFTS-MW12-EM16	N	EM16	5,800	55,000	17	1.2	4.35
SWFTS-MW12	2/28/2019	SWFTS-MW12-EM17	N	EM17	3,700	29,000	14	1.1	3.64
SWFTS-MW12	4/12/2019	SWFTS-MW12-EM18	N	EM18	4,500	31,000	14	1.2	3.50
SWFTS-MW12	5/22/2019	SWFTS-MW12-EM19	N	EM19	4,400	32,000	12	0.87 J	3.81
SWFTS-MW12	7/5/2019	SWFTS-MW12-EM20	N	EM20	4,300	33,000	13 J+	1.2	3.56
SWFTS-MW12	8/16/2019	SWFTS-MW12-EM21	N	EM21	4,200	31,000	13	1.2	3.35
SWFTS-MW12	11/7/2019	SWFTS-MW12-EM22	N	EM22	<4.8	88 J	<0.55	560	0.29
SWFTS-MW12	11/26/2019	SWFTS-MW12-EM22-R	N	EM22	<4.8	<20	<0.55	610 J-	--
SWFTS-MW12	11/26/2019	SWFTS-MW12-EM22-R-FD	FD	EM22	<4.8	<20	<0.55	610 J-	--
SWFTS-MW12	12/20/2019	SWFTS-MW12-EM23	N	EM23	<4.8	<10	<0.55	230	0.84
SWFTS-MW12	1/29/2020	SWFTS-MW12-EM24	N	EM24	22	60 J	<0.55	14 J-	0.46
SWFTS-MW12	3/12/2020	SWFTS-MW12-EM25	N	EM25	170	<10	0.55 R	9.3	2.19
SWFTS-MW12	4/30/2020	SWFTS-MW12-EM26	N	EM26	<4.8	<10	<0.55	8.2	1.83
SWFTS-MW12	7/7/2020	SWFTS-MW12-EM27	N	EM27	<0.95	<10	<0.55	13	0.4
SWFTS-MW12	8/18/2020	SWFTS-MW12-EM28	N	EM28	<0.95	<10	<0.55	9.3	0.43
SWFTS-MW13	7/12/2017	SWFTS-MW13-BL02	N	BL02	4,600	40,000	12	1.6	4.72
SWFTS-MW13	9/20/2017	SWFTS-MW13-EM01	N	EM01	10,000	52,000	17	1.1	5.20
SWFTS-MW13	9/26/2017	SWFTS-MW13-EM02	N	EM02	6,200	53,000	18	1.4	3.17
SWFTS-MW13	10/3/2017	SWFTS-MW13-EM03	N	EM03	6,900	100	17 J-	1.1	5.57
SWFTS-MW13	10/10/2017	SWFTS-MW13-EM04	N	EM04	6,300	51,000	16	0.98 J	2.40
SWFTS-MW13	10/24/2017	SWFTS-MW13-EM05	N	EM05	6,100	52,000	19	1.3	6.62
SWFTS-MW13	11/15/2017	SWFTS-MW13-EM06	N	EM06	5,900	49,000	16	0.93 J	3.22
SWFTS-MW13	12/14/2017	SWFTS-MW13-EM07	N	EM07	6,200	49,000	16	1.2	3.79
SWFTS-MW13	2/22/2018	SWFTS-MW13-EM08	N	EM08	5,800	50,000	15	1.5	4.95
SWFTS-MW13	3/26/2018	SWFTS-MW13-EM09	N	EM09	6,400	52,000	16 J+	1.2	2.98
SWFTS-MW13	5/3/2018	SWFTS-MW13-EM10	N	EM10	6,000	49,000	18	1.1	8.17 E
SWFTS-MW13	7/12/2018	SWFTS-MW13-EM11	N	EM11	6,300	49,000	16	0.80 J	6.45
SWFTS-MW13	8/16/2018	SWFTS-MW13-EM13	N	EM13	5,200	54,000	17	1.3	2.95
SWFTS-MW13	9/13/2018	SWFTS-MW13-EM14	N	EM14	5,000	48,000	16	1.2	3.44
SWFTS-MW13	10/11/2018	SWFTS-MW13-EM15	N	EM15	5,800	55,000	17	1.2	3.49
SWFTS-MW13	1/2/2019	SWFTS-MW13-EM16	N	EM16	3,900	28,000	13	1.1	6.89

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW13	2/28/2019	SWFTS-MW13-EM17	N	EM17	5,500	53,000	18	1.1	4.02
SWFTS-MW13	4/12/2019	SWFTS-MW13-EM18	N	EM18	5,300	45,000	18	1.2	5.30
SWFTS-MW13	5/22/2019	SWFTS-MW13-EM19	N	EM19	5,300	45,000	17	0.94 J	5.32
SWFTS-MW13	7/5/2019	SWFTS-MW13-EM20	N	EM20	5,600	48,000	17	1.3	5.15
SWFTS-MW13	8/16/2019	SWFTS-MW13-EM21	N	EM21	5,200	51,000	18	1.3	4.55
SWFTS-MW13	11/6/2019	SWFTS-MW13-EM22	N	EM22	6,200	50,000	16	1.2	3.81
SWFTS-MW13	12/20/2019	SWFTS-MW13-EM23	N	EM23	5,300	43,000	14	0.84 J	4.20
SWFTS-MW13	1/29/2020	SWFTS-MW13-EM24	N	EM24	5,400	48,000	16	1.1	3.83
SWFTS-MW13	3/12/2020	SWFTS-MW13-EM25	N	EM25	5,100	46,000	15 J-	0.89 J	5.14
SWFTS-MW13	4/30/2020	SWFTS-MW13-EM26	N	EM26	4,900	48,000	18	0.79 J	4.78
SWFTS-MW13	7/10/2020	SWFTS-MW13-EM27	N	EM27	5,700	51,000	17	1.1	4.2
SWFTS-MW13	8/18/2020	SWFTS-MW13-EM28	N	EM28	5,600	49,000	16	1.2	4.25
SWFTS-MW14	7/12/2017	SWFTS-MW14-BL02	N	BL02	23,000	54,000	12	2.6	0.65
SWFTS-MW14	7/12/2017	SWFTS-MW14-BL02-FD	FD	BL02	22,000	52,000	12	2.3	--
SWFTS-MW14	9/20/2017	SWFTS-MW14-EM01	N	EM01	<9.5	<100	<0.55	100	0.39
SWFTS-MW14	9/26/2017	SWFTS-MW14-EM02	N	EM02	<4.8	2,400	<1.1	81	0.17
SWFTS-MW14	10/3/2017	SWFTS-MW14-EM03	N	EM03	4.8	<100	<0.55 UJ	36	0.19
SWFTS-MW14	10/11/2017	SWFTS-MW14-EM04	N	EM04	<9.5	<50	<0.55	4.1	0.39
SWFTS-MW14	10/27/2017	SWFTS-MW14-EM05	N	EM05	26	<50	<0.28	3.5	0.60
SWFTS-MW14	11/15/2017	SWFTS-MW14-EM06	N	EM06	20 J+	<50	<0.55	3.1	0.83
SWFTS-MW14	12/12/2017	SWFTS-MW14-EM07	N	EM07	1,600	2,400	<0.55	2.6	6.49
SWFTS-MW14	2/20/2018	SWFTS-MW14-EM08	N	EM08	2,200	<100	<1.1	670	3.12
SWFTS-MW14	3/26/2018	SWFTS-MW14-EM09	N	EM09	5,500	<50	<0.28	220	4.03
SWFTS-MW14	4/30/2018	SWFTS-MW14-EM10	N	EM10	4,300	26 J	<0.55	91	0.45
SWFTS-MW14	7/10/2018	SWFTS-MW14-EM11	N	EM11	6.5	<25	<0.55	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	130	0.47
SWFTS-MW14	9/11/2018	SWFTS-MW14-EM14	N	EM14	6.4 J	<10	<0.55	91	0.25
SWFTS-MW14	10/9/2018	SWFTS-MW14-EM15	N	EM15	<0.95	<20	<1.1	80	0.81
SWFTS-MW14	12/20/2018	SWFTS-MW14-EM16	N	EM16	<0.95	<10	<0.28	16	0.46
SWFTS-MW14	2/26/2019	SWFTS-MW14-EM17	N	EM17	<0.95	<10	<0.55	6.2	0.67
SWFTS-MW14	4/9/2019	SWFTS-MW14-EM18	N	EM18	38	150	<0.55 UJ	5.3	0.65
SWFTS-MW14	5/21/2019	SWFTS-MW14-EM19	N	EM19	<0.95	<20	<0.55	6.3	0.35
SWFTS-MW14	7/2/2019	SWFTS-MW14-EM20	N	EM20	2.8 J	<4.0	<0.11	6.5	0.35
SWFTS-MW14	8/13/2019	SWFTS-MW14-EM21	N	EM21	<0.50	<10	<0.55	6.7	0.22
SWFTS-MW14	11/6/2019	SWFTS-MW14-EM22	N	EM22	<0.95	28 J	<0.55	5.6	0.21
SWFTS-MW14	12/17/2019	SWFTS-MW14-EM23	N	EM23	<4.8	<10	<0.55	4.0	0.47
SWFTS-MW14	1/29/2020	SWFTS-MW14-EM24	N	EM24	<0.95	<10	<0.55	3.9	0.55
SWFTS-MW14	3/13/2020	SWFTS-MW14-EM25	N	EM25	<0.95	<20	<0.28	4.2 J+	1.25
SWFTS-MW14	5/1/2020	SWFTS-MW14-EM26	N	EM26	97	<20	<0.55	3.8	1.94
SWFTS-MW14	7/7/2020	SWFTS-MW14-EM27	N	EM27	<0.95	<10	<0.55	4.0	0.3
SWFTS-MW14	8/19/2020	SWFTS-MW14-EM28	N	EM28	210	<10	<0.55	4.7	0.58

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW15	7/13/2017	SWFTS-MW15-BL02	N	BL02	15,000	43,000	10	1.6	0.47
SWFTS-MW15	9/20/2017	SWFTS-MW15-EM01	N	EM01	11,000	40,000	10	1.6	0.27
SWFTS-MW15	9/26/2017	SWFTS-MW15-EM02	N	EM02	12,000	41,000	11	1.5	0.30
SWFTS-MW15	10/4/2017	SWFTS-MW-15-EM03	N	EM03	11,000	39,000	12	1.4	0.38
SWFTS-MW15	10/10/2017	SWFTS-MW15-EM04	N	EM04	18,000	40,000	11	1.6	0.21
SWFTS-MW15	10/27/2017	SWFTS-MW15-EM05	N	EM05	13,000	38,000	13	1.8	0.78
SWFTS-MW15	11/14/2017	SWFTS-MW15-EM06	N	EM06	9,900	38,000	12	1.8	1.08
SWFTS-MW15	12/13/2017	SWFTS-MW15-EM07	N	EM07	13,000	38,000	12	1.6	3.83
SWFTS-MW15	2/19/2018	SWFTS-MW15-EM08	N	EM08	12,000	47,000	11	1.6	3.24
SWFTS-MW15	3/26/2018	SWFTS-MW15-EM09	N	EM09	12,000	52,000	12	1.7	5.95
SWFTS-MW15	5/2/2018	SWFTS-MW15-EM10	N	EM10	13,000	59,000	14	1.4	1.09
SWFTS-MW15	7/11/2018	SWFTS-MW15-EM11	N	EM11	9,300	45,000	12 J-	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	1.9	0.97
SWFTS-MW15	9/11/2018	SWFTS-MW15-EM14	N	EM14	7,800	48,000	16	1.4	0.73
SWFTS-MW15	10/9/2018	SWFTS-MW15-EM15	N	EM15	6,400	28,000	7.5	3.3	1.09
SWFTS-MW15	12/20/2018	SWFTS-MW15-EM16	N	EM16	5,300	33,000	9.4	1.8	0.91
SWFTS-MW15	2/25/2019	SWFTS-MW15-EM17	N	EM17	6,200	31,000	9.2	3.0	0.00
SWFTS-MW15	4/9/2019	SWFTS-MW15-EM18	N	EM18	9,700	53,000	14 J-	1.4	1.14
SWFTS-MW15	5/20/2019	SWFTS-MW15-EM19	N	EM19	9,200	48,000	15	1.6	0.65
SWFTS-MW15	7/2/2019	SWFTS-MW15-EM20	N	EM20	8,800	49,000	13	2.0	0.59
SWFTS-MW15	8/13/2019	SWFTS-MW15-EM21	N	EM21	6,400	50,000	14	1.7	0.56
SWFTS-MW15	11/6/2019	SWFTS-MW15-EM22	N	EM22	9,900	46,000	13	1.4	1.99
SWFTS-MW15	12/17/2019	SWFTS-MW15-EM23	N	EM23	9,700	46,000	13	1.3	0.80
SWFTS-MW15	1/29/2020	SWFTS-MW15-EM24	N	EM24	12,000	49,000	15	1.6	0.70
SWFTS-MW15	3/13/2020	SWFTS-MW15-EM25	N	EM25	14,000	44,000	13	1.8 J+	1.7
SWFTS-MW15	4/29/2020	SWFTS-MW15-EM26	N	EM26	13,000	46,000	13	1.5	5.51
SWFTS-MW15	7/7/2020	SWFTS-MW15-EM27	N	EM27	9,700	24,000	4.6	34	0.3
SWFTS-MW15	8/19/2020	SWFTS-MW15-EM28	N	EM28	4,400	14,000	3.8	11	0.33
SWFTS-MW16	7/13/2017	SWFTS-MW16-BL02	N	BL02	8,400	38,000	12	1.6	0.93
SWFTS-MW16	9/22/2017	SWFTS-MW16-EM01	N	EM01	1,700	8,700	3.3	120	0.71
SWFTS-MW16	9/26/2017	SWFTS-MW16-EM02	N	EM02	1,300	8,800	3.8	68	1.54
SWFTS-MW16	10/3/2017	SWFTS-MW16-EM03	N	EM03	1,600	6,300	2.7	92	1.30
SWFTS-MW16	10/12/2017	SWFTS-MW16-EM04	N	EM04	1,100	5,800	2.1	180	1.32
SWFTS-MW16	10/24/2017	SWFTS-MW16-EM05	N	EM05	830	4,700	1.5	180	1.03
SWFTS-MW16	11/16/2017	SWFTS-MW16-EM06	N	EM06	<0.95	4,000	1.2	110	0.49
SWFTS-MW16	12/12/2017	SWFTS-MW16-EM07	N	EM07	490	3,100	1.1	5.9	0.56
SWFTS-MW16	2/21/2018	SWFTS-MW16-EM08	N	EM08	620	2,800	<1.1	7.7	0.49
SWFTS-MW16	3/27/2018	SWFTS-MW16-EM09	N	EM09	9,000	46,000	12	1.5	0.49
SWFTS-MW16	5/2/2018	SWFTS-MW16-EM10	N	EM10	1,500 J	11,000	3.5	2.3	0.15
SWFTS-MW16	7/11/2018	SWFTS-MW16-EM11	N	EM11	<4.8	<5.0	<0.55	7.9	5.38
SWFTS-MW16	7/26/2018	SWFTS-MW16-EM12	N	EM12	<0.95	<4.0	--	--	1.99

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW16	8/15/2018	SWFTS-MW16-EM13	N	EM13	12	67	<0.28	3.2	0.98
SWFTS-MW16	9/10/2018	SWFTS-MW16-EM14	N	EM14	200	1,400	0.42 J	2.9	0.78
SWFTS-MW16	10/11/2018	SWFTS-MW16-EM15	N	EM15	340	2,200	0.76 J	2.8	3.73
SWFTS-MW16	12/19/2018	SWFTS-MW16-EM16	N	EM16	270	2,300	1.0 J	2.5	0.4
SWFTS-MW16	2/26/2019	SWFTS-MW16-EM17	N	EM17	<0.95	<10	<0.55	5.6	0.00
SWFTS-MW16	4/9/2019	SWFTS-MW16-EM18	N	EM18	<0.95	<10	<0.55 UJ	2.9	0.47
SWFTS-MW16	5/20/2019	SWFTS-MW16-EM19	N	EM19	<0.95 UJ	<10	<0.55	3.5	0.53
SWFTS-MW16	7/1/2019	SWFTS-MW16-EM20	N	EM20	<0.95	<10	<0.55	4.0	0.20
SWFTS-MW16	8/13/2019	SWFTS-MW16-EM21	N	EM21	19	100	<0.55	3.6	0.35
SWFTS-MW16	11/6/2019	SWFTS-MW16-EM22	N	EM22	<0.95	<40	<0.55	3.2	0.21
SWFTS-MW16	12/17/2019	SWFTS-MW16-EM23	N	EM23	<4.8	<10	<0.55	2.3	2.00
SWFTS-MW16	1/29/2020	SWFTS-MW16-EM24	N	EM24	<0.95	<100	<0.55	2.7	0.53
SWFTS-MW16	3/13/2020	SWFTS-MW16-EM25	N	EM25	<0.95	<10	<0.55	3.6	2.24
SWFTS-MW16	4/30/2020	SWFTS-MW16-EM26	N	EM26	<4.8	<10	<0.55	5.7	2.25
SWFTS-MW16	7/9/2020	SWFTS-MW16-EM27	N	EM27	<0.95	16 J	<0.55	4.9	1.2
SWFTS-MW16	8/19/2020	SWFTS-MW16-EM28	N	EM28	<4.8	<10	<0.55	4.9	0.46
SWFTS-MW17	7/12/2017	SWFTS-MW17-BL02	N	BL02	3,200	--	16	1.1	4.30
SWFTS-MW17	9/19/2017	SWFTS-MW17-EM01	N	EM01	2,600	18,000	16	1.2	5.07
SWFTS-MW17	9/19/2017	SWFTS-MW17-EM01-FD	FD	EM01	2,600	18,000	16	1.3	--
SWFTS-MW17	9/26/2017	SWFTS-MW17-EM02	N	EM02	2,800	17,000	17	1.5	4.04
SWFTS-MW17	9/26/2017	SWFTS-MW17-EM02-FD	FD	EM02	2,800	17,000	17	1.5	--
SWFTS-MW17	10/3/2017	SWFTS-MW17-EM03	N	EM03	3,300	19,000	15	1.1	6.87
SWFTS-MW17	10/3/2017	SWFTS-MW17-EM03-FD	FD	EM03	3,300	19,000	16	1.0	--
SWFTS-MW17	10/10/2017	SWFTS-MW17-EM04	N	EM04	2,800	16,000	16	1.3	3.90
SWFTS-MW17	10/24/2017	SWFTS-MW17-EM05	N	EM05	2,700	15,000	17	1.2	5.28
SWFTS-MW17	10/24/2017	SWFTS-MW17-EM05-FD	FD	EM05	2,700	15,000	16	2.2	--
SWFTS-MW17	11/15/2017	SWFTS-MW17-EM06	N	EM06	2,300	16,000	17	1.3	4.91
SWFTS-MW17	11/15/2017	SWFTS-MW17-EM06-FD	FD	EM06	2,200	15,000	17	1.2	--
SWFTS-MW17	12/13/2017	SWFTS-MW17-EM07	N	EM07	2,200	14,000	16	1.2	5.54
SWFTS-MW17	12/13/2017	SWFTS-MW17-EM07-FD	FD	EM07	2,300	13,000	16	1.2	--
SWFTS-MW17	2/22/2018	SWFTS-MW17-EM08	N	EM08	2,000	15,000	16	2.1	3.65
SWFTS-MW17	3/28/2018	SWFTS-MW17-EM09	N	EM09	2,000	14,000	15	1.2	3.49
SWFTS-MW17	5/3/2018	SWFTS-MW17-EM10	N	EM10	1,900 J-	11,000	15	1.1	4.08
SWFTS-MW17	7/11/2018	SWFTS-MW17-EM11	N	EM11	1,300	11,000	15	1.1	4.35
SWFTS-MW17	8/16/2018	SWFTS-MW17-EM13	N	EM13	1,600	12,000	16	1.4	4.56
SWFTS-MW17	9/12/2018	SWFTS-MW17-EM14	N	EM14	1,900	13,000	15	1.0	3.49
SWFTS-MW17	10/11/2018	SWFTS-MW17-EM15	N	EM15	2,100	15,000	16	1.6	3.33
SWFTS-MW17	1/2/2019	SWFTS-MW17-EM16	N	EM16	1,700	11,000	15	1.2	6.18
SWFTS-MW17	2/28/2019	SWFTS-MW17-EM17	N	EM17	1,700	13,000	15	1.3	4.83
SWFTS-MW17	4/11/2019	SWFTS-MW17-EM18	N	EM18	1,700	12,000	14	1.3	4.74
SWFTS-MW17	5/22/2019	SWFTS-MW17-EM19	N	EM19	1,900	13,000	14	1.1	4.85
SWFTS-MW17	7/5/2019	SWFTS-MW17-EM20	N	EM20	1,800	13,000	16	1.3	4.91

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW17	8/16/2019	SWFTS-MW17-EM21	N	EM21	2,200	13,000	16	1.4	5.02
SWFTS-MW17	11/7/2019	SWFTS-MW17-EM22	N	EM22	2,100	15,000	12	1.3	5.25
SWFTS-MW17	12/20/2019	SWFTS-MW17-EM23	N	EM23	2,100	16,000	14	1.2	5.71
SWFTS-MW17	1/30/2020	SWFTS-MW17-EM24	N	EM24	2,200	18,000	14	1.1	4.77
SWFTS-MW17	3/13/2020	SWFTS-MW17-EM25	N	EM25	2,100	17,000	14	1.6	6.02
SWFTS-MW17	4/30/2020	SWFTS-MW17-EM26	N	EM26	2,000	17,000	13	1.0	5.11
SWFTS-MW17	7/9/2020	SWFTS-MW17-EM27	N	EM27	2,000	16,000	14	0.93 J	3.9
SWFTS-MW17	8/19/2020	SWFTS-MW17-EM28	N	EM28	1,900	15,000	15	1.7	4.39
SWFTS-MW18	7/11/2017	SWFTS-MW18-BL02	N	BL02	13,000	52,000	12	1.5	2.68
SWFTS-MW18	9/21/2017	SWFTS-MW18-EM01	N	EM01	9,700	34,000	8.9	2.0	0.59
SWFTS-MW18	9/27/2017	SWFTS-MW18-EM02	N	EM02	11,000	36,000	12	2.2	0.40
SWFTS-MW18	10/3/2017	SWFTS-MW18-EM03	N	EM03	8,100	30,000	8.6	1.5	2.22
SWFTS-MW18	10/10/2017	SWFTS-MW18-EM04	N	EM04	9,700	40,000	12	1.7	0.31
SWFTS-MW18	10/23/2017	SWFTS-MW18-EM05	N	EM05	8,200	38,000	12	1.7	0.98
SWFTS-MW18	11/15/2017	SWFTS-MW18-EM06	N	EM06	11,000	37,000	11	1.8	1.37
SWFTS-MW18	12/13/2017	SWFTS-MW18-EM07	N	EM07	9,100	39,000	12	1.6	0.40
SWFTS-MW18	2/22/2018	SWFTS-MW18-EM08	N	EM08	8,900	45,000	12	2.3	0.51
SWFTS-MW18	3/27/2018	SWFTS-MW18-EM09	N	EM09	2,000	11,000	3.9	2.5	0.25
SWFTS-MW18	3/27/2018	SWFTS-MW18-EM09-FD	FD	EM09	2,100	11,000	3.5	2.4	--
SWFTS-MW18	5/1/2018	SWFTS-MW18-EM10	N	EM10	9,200	50,000	13	1.5	0.43
SWFTS-MW18	7/11/2018	SWFTS-MW18-EM11	N	EM11	6,900	41,000	11	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	2.0	0.58
SWFTS-MW18	9/11/2018	SWFTS-MW18-EM14	N	EM14	5,600	41,000	13	1.6	0.79
SWFTS-MW18	10/11/2018	SWFTS-MW18-EM15	N	EM15	5,300	41,000	13	2.1	1.88
SWFTS-MW18	12/20/2018	SWFTS-MW18-EM16	N	EM16	5,000	38,000	15	1.8	0.67
SWFTS-MW18	2/26/2019	SWFTS-MW18-EM17	N	EM17	4,600	28,000	11	1.9	0.00
SWFTS-MW18	4/9/2019	SWFTS-MW18-EM18	N	EM18	4,800	26,000	11 J-	1.6	0.48
SWFTS-MW18	5/21/2019	SWFTS-MW18-EM19	N	EM19	4,600	25,000	12	1.5	0.65
SWFTS-MW18	7/1/2019	SWFTS-MW18-EM20	N	EM20	4,300	29,000	12	1.9	0.41
SWFTS-MW18	8/13/2019	SWFTS-MW18-EM21	N	EM21	4,600	25,000	12	1.8	0.39
SWFTS-MW18	11/6/2019	SWFTS-MW18-EM22	N	EM22	2,600	6,600	2.8	2.0	0.30
SWFTS-MW18	12/17/2019	SWFTS-MW18-EM23	N	EM23	4,200	19,000	8.8	1.9	0.64
SWFTS-MW18	1/29/2020	SWFTS-MW18-EM24	N	EM24	5,800	23,000	10	2.0	0.53
SWFTS-MW18	3/11/2020	SWFTS-MW18-EM25	N	EM25	7,100	30,000	9.4	1.7	2.18
SWFTS-MW18	4/29/2020	SWFTS-MW18-EM26	N	EM26	6,700	31,000	10	1.9	2.07
SWFTS-MW18	7/9/2020	SWFTS-MW18-EM27	N	EM27	4,400	12,000	6.0	1.8	0.7
SWFTS-MW18	8/19/2020	SWFTS-MW18-EM28	N	EM28	3,900	13,000	9.5	3.0	0.64
SWFTS-MW19	7/12/2017	SWFTS-MW19-BL02	N	BL02	840	130	0.33	2.6	0.77
SWFTS-MW19	9/21/2017	SWFTS-MW19-EM01	N	EM01	1,400	220	0.51	2.3	0.43
SWFTS-MW19	9/28/2017	SWFTS-MW19-EM02	N	EM02	1,400	260	0.74	2.8	6.39
SWFTS-MW19	10/5/2017	SWFTS-MW19-EM03	N	EM03	1,400	220	0.63	2.6	5.16

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW19	10/12/2017	SWFTS-MW19-EM04	N	EM04	1,400	220 J+	0.70	2.2	0.28
SWFTS-MW19	10/27/2017	SWFTS-MW19-EM05	N	EM05	1,900	250	0.77	2.6	0.38
SWFTS-MW19	11/16/2017	SWFTS-MW-19-EM06	N	EM06	1,500	270	0.97	2.3	0.73
SWFTS-MW19	12/12/2017	SWFTS-MW19-EM07	N	EM07	2,000	410	1.2	2.4	0.92
SWFTS-MW19	2/20/2018	SWFTS-MW19-EM08	N	EM08	1,900	610	0.73	2.6	1.25
SWFTS-MW19	3/27/2018	SWFTS-MW19-EM09	N	EM09	1,800	650	0.71	2.2	1.09
SWFTS-MW19	4/30/2018	SWFTS-MW19-EM10	N	EM10	1,800	820	0.70	2.2	0.56
SWFTS-MW19	4/30/2018	SWFTS-MW19-EM10-FD	FD	EM10	1,700	760	0.67	2.2	--
SWFTS-MW19	7/10/2018	SWFTS-MW19-EM11	N	EM11	2,000	1,100	0.52	1.9	2.80
SWFTS-MW19	7/10/2018	SWFTS-MW19-EM11-FD	FD	EM11	2,000	1,000	0.52	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	2.4	0.95
SWFTS-MW19	9/11/2018	SWFTS-MW19-EM14	N	EM14	1,500	850	0.37	2.0	1.06
SWFTS-MW19	10/9/2018	SWFTS-MW19-EM15	N	EM15	2,000	870	0.41 J	2.4	1.43
SWFTS-MW19	10/9/2018	SWFTS-MW19-EM15-FD	FD	EM15	1,700	870	0.40 J	2.4	--
SWFTS-MW19	12/27/2018	SWFTS-MW19-EM16	N	EM16	1,400	760	0.36	2.4	1.43
SWFTS-MW19	12/27/2018	SWFTS-MW19-EM16-FD	FD	EM16	1,300	760	0.36	2.1	--
SWFTS-MW19	2/27/2019	SWFTS-MW19-EM17	N	EM17	1,300	590	0.35	2.1	0.14
SWFTS-MW19	2/27/2019	SWFTS-MW19-EM17-FD	FD	EM17	1,300	560	0.38 J	2.1	--
SWFTS-MW19	4/10/2019	SWFTS-MW19-EM18	N	EM18	1,500	530	0.33 J	2.2	1.27
SWFTS-MW19	4/10/2019	SWFTS-MW19-EM18-FD	FD	EM18	1,300	510	0.37 J	2.1	--
SWFTS-MW19	5/21/2019	SWFTS-MW19-EM19	N	EM19	1,200	420	0.18 J	3.3	1.22
SWFTS-MW19	5/21/2019	SWFTS-MW19-EM19-FD	FD	EM19	1,200	400	0.24	3.2	--
SWFTS-MW19	7/2/2019	SWFTS-MW19-EM20	N	EM20	1,100	340	0.11	2.9	1.54
SWFTS-MW19	7/2/2019	SWFTS-MW19-EM20-FD	FD	EM20	1,100	340	0.11	3.1	--
SWFTS-MW19	8/15/2019	SWFTS-MW19-EM21	N	EM21	1,200	260	<0.28	2.6	1.6
SWFTS-MW19	8/15/2019	SWFTS-MW19-EM21-FD	FD	EM21	1,200	260	<0.28	2.6	--
SWFTS-MW19	11/5/2019	SWFTS-MW19-EM22	N	EM22	1,300	270	0.36 J	2.3	1.28
SWFTS-MW19	11/5/2019	SWFTS-MW19-EM22-FD	FD	EM22	1,300	270	0.37 J	2.3	--
SWFTS-MW19	12/19/2019	SWFTS-MW19-EM23	N	EM23	1,200	420	0.31 J	2.0	2.03
SWFTS-MW19	12/19/2019	SWFTS-MW19-EM23-FD	FD	EM23	1,300	370	0.32 J	2.1	--
SWFTS-MW19	1/29/2020	SWFTS-MW19-EM24	N	EM24	1,400	550	0.61	2.3	1.01
SWFTS-MW19	1/29/2020	SWFTS-MW19-EM24-FD	FD	EM24	1,300	570	0.62	2.2	--
SWFTS-MW19	3/11/2020	SWFTS-MW19-EM25	N	EM25	1,300	780	0.70 J	2.3	1.69
SWFTS-MW19	3/11/2020	SWFTS-MW19-EM25-FD	FD	EM25	1,300	740	0.72 J	2.3	--
SWFTS-MW19	4/28/2020	SWFTS-MW19-EM26	N	EM26	1,200	1,100	<0.55	2.5	2.1
SWFTS-MW19	4/28/2020	SWFTS-MW19-EM26-FD	FD	EM26	1,200	1,100	0.56 J	2.6	--
SWFTS-MW19	7/9/2020	SWFTS-MW19-EM27	N	EM27	1,300	1,400	0.47 J	2.3	0.8
SWFTS-MW19	7/9/2020	SWFTS-MW19-EM27-FD	N	EM27	1,400	1,300	0.61	2.1	--
SWFTS-MW19	8/19/2020	SWFTS-MW19-EM28	N	EM28	1,300	1,300	0.43	2.4	0.87
SWFTS-MW19	8/19/2020	SWFTS-MW19-EM28-FD	FD	EM28	1,300	1,300	0.44	2.6	--

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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 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW20	7/12/2017	SWFTS-MW20-BL02	N	BL02	20,000	51,000	13	1.7	6.05
SWFTS-MW20	9/21/2017	SWFTS-MW20-EM01	N	EM01	17,000	30,000	7.3	2.5	3.72
SWFTS-MW20	9/26/2017	SWFTS-MW20-EM02	N	EM02	16,000	33,000	7.6	3.0	0.49
SWFTS-MW20	10/4/2017	SWFTS-MW20-EM03	N	EM03	19,000	38,000	9.6	2.6	0.22
SWFTS-MW20	10/12/2017	SWFTS-MW20-EM04	N	EM04	14,000	42,000	8.5	2.2	0.23
SWFTS-MW20	10/12/2017	SWFTS-MW20-EM04-FD	FD	EM04	14,000	40,000	9.1	2.2	--
SWFTS-MW20	10/25/2017	SWFTS-MW20-EM05	N	EM05	17,000	40,000	11	2.6	0.45
SWFTS-MW20	11/16/2017	SWFTS-MW20-EM06	N	EM06	7,900	16,000	4.0	3.0	0.74
SWFTS-MW20	12/12/2017	SWFTS-MW20-EM07	N	EM07	16,000	43,000	8.5	2.2	0.20
SWFTS-MW20	2/19/2018	SWFTS-MW20-EM08	N	EM08	6,600	16,000	3.2	2.5	2.54
SWFTS-MW20	3/27/2018	SWFTS-MW20-EM09	N	EM09	11,000	24,000	5.2	2.2	3.64
SWFTS-MW20	4/30/2018	SWFTS-MW20-EM10	N	EM10	6,700	14,000	3.3	2.3	0.19
SWFTS-MW20	7/11/2018	SWFTS-MW20-EM11	N	EM11	6,700	16,000	3.2	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	2.8	0.81
SWFTS-MW20	8/15/2018	SWFTS-MW20-EM13-FD	FD	EM13	4,300	5,700	2.7	2.8	--
SWFTS-MW20	9/11/2018	SWFTS-MW20-EM14	N	EM14	3,400	8,500	2.3 J	2.6	0.51
SWFTS-MW20	9/11/2018	SWFTS-MW20-EM14-FD	FD	EM14	3,900	9,500	6.9 J	2.6	--
SWFTS-MW20	10/9/2018	SWFTS-MW20-EM15	N	EM15	4,000	5,900	2.2	3.0	1.96
SWFTS-MW20	12/20/2018	SWFTS-MW20-EM16	N	EM16	2,800	830	2.1	2.8	0.97
SWFTS-MW20	2/26/2019	SWFTS-MW20-EM17	N	EM17	1,500	170	1.5 J	3.2	0.36
SWFTS-MW20	4/9/2019	SWFTS-MW20-EM18	N	EM18	1,400	300	1.7 J	2.9	0.64
SWFTS-MW20	5/21/2019	SWFTS-MW20-EM19	N	EM19	1,000	69 J	1.3 J	2.8	0.41
SWFTS-MW20	7/2/2019	SWFTS-MW20-EM20	N	EM20	870	37 J	0.70 J	4.0	0.43
SWFTS-MW20	8/13/2019	SWFTS-MW20-EM21	N	EM21	390	23 J	0.41 J	3.4	0.42
SWFTS-MW20	11/5/2019	SWFTS-MW20-EM22	N	EM22	430	26 J	<1.1	3.4	0.49
SWFTS-MW20	12/17/2019	SWFTS-MW20-EM23	N	EM23	290	30 J	<1.1	2.8	0.65
SWFTS-MW20	1/29/2020	SWFTS-MW20-EM24	N	EM24	340	32 J	0.49 J	3.0	0.52
SWFTS-MW20	3/12/2020	SWFTS-MW20-EM25	N	EM25	220	370	0.55 R	4.8	2.25
SWFTS-MW20	4/29/2020	SWFTS-MW20-EM26	N	EM26	180	38 J	<0.28	4.3	2
SWFTS-MW20	7/9/2020	SWFTS-MW20-EM27	N	EM27	170	<10	<0.55	3.0	0.7
SWFTS-MW20	8/20/2020	SWFTS-MW20-EM28	N	EM28	89	27 J	<0.55	4.6	0.5
SWFTS-MW21	7/13/2017	SWFTS-MW21-BL02	N	BL02	5,800	49,000	15	0.94 J	6.15
SWFTS-MW21	9/21/2017	SWFTS-MW21-EM01	N	EM01	5,200	15,000	3.9	7.5	4.90
SWFTS-MW21	9/27/2017	SWFTS-MW21-EM02	N	EM02	950	4,700	1.8 J	19	0.28
SWFTS-MW21	10/5/2017	SWFTS-MW21-EM03	N	EM03	1,100	7,700	3.2	24	4.40
SWFTS-MW21	10/11/2017	SWFTS-MW21-EM04	N	EM04	820	4,200	1.8	25	0.28
SWFTS-MW21	10/27/2017	SWFTS-MW21-EM05	N	EM05	890	5,000	2.0	2.8	0.45
SWFTS-MW21	11/15/2017	SWFTS-MW21-EM06	N	EM06	2,300	13,000	3.7	2.1	3.07
SWFTS-MW21	12/13/2017	SWFTS-MW21-EM07	N	EM07	3,500	26,000	4.7	1.6	0.68
SWFTS-MW21	2/20/2018	SWFTS-MW21-EM08	N	EM08	4,800	34,000	11	1.6	0.24
SWFTS-MW21	2/20/2018	SWFTS-MW21-EM08-FD	FD	EM08	4,900	33,000	11	1.6	--

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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 µg/L	Chlorate by USEPA Method 300.1B µg/L	Nitrate (as N) by USEPA Method 300.0 mg/L	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW21	3/27/2018	SWFTS-MW21-EM09	N	EM09	4,600	32,000	10	1.1	0.37
SWFTS-MW21	4/30/2018	SWFTS-MW21-EM10	N	EM10	4,400	27,000	10	1.3	0.00
SWFTS-MW21	7/12/2018	SWFTS-MW21-EM11	N	EM11	1,300	7,900	2.8	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	2.7	0.68
SWFTS-MW21	9/12/2018	SWFTS-MW21-EM14	N	EM14	2,000	2,600	1.3	2.2	0.35
SWFTS-MW21	10/9/2018	SWFTS-MW21-EM15	N	EM15	2,700	2,600	2.9	1.9	0.59
SWFTS-MW21	12/20/2018	SWFTS-MW21-EM16	N	EM16	3,000	5,200	7.5	1.6	1.11
SWFTS-MW21	2/26/2019	SWFTS-MW21-EM17	N	EM17	2,800	2,500	9.3	1.4	0.00
SWFTS-MW21	4/10/2019	SWFTS-MW21-EM18	N	EM18	2,400	200	7.1	1.3	3.78
SWFTS-MW21	5/22/2019	SWFTS-MW21-EM19	N	EM19	3,100	530	9.6	1.3	0.57
SWFTS-MW21	7/1/2019	SWFTS-MW21-EM20	N	EM20	3,400	4,500	11	1.8	0.25
SWFTS-MW21	8/13/2019	SWFTS-MW21-EM21	N	EM21	4,000	5,400	11	1.5	0.38
SWFTS-MW21	11/4/2019	SWFTS-MW21-EM22	N	EM22	690	1,200	1.9	5.2	0.30
SWFTS-MW21	12/18/2019	SWFTS-MW21-EM23	N	EM23	810	230	2.0	1.5	0.82
SWFTS-MW21	1/30/2020	SWFTS-MW21-EM24	N	EM24	2,300	2,500	3.7	1.4	0.63
SWFTS-MW21	3/11/2020	SWFTS-MW21-EM25	N	EM25	2,600	2,700	7.2 J-	1.4	2.27
SWFTS-MW21	4/29/2020	SWFTS-MW21-EM26	N	EM26	4,200	17,000	9.7	1.5	3.29
SWFTS-MW21	7/10/2020	SWFTS-MW21-EM27	N	EM27	1,500	690	3.6	3.1	1.0
SWFTS-MW21	8/20/2020	SWFTS-MW21-EM28	N	EM28	1,700	110	3.1	2.4	0.49
SWFTS-MW22	7/13/2017	SWFTS-MW22-BL02	N	BL02	5,000	7,900	2.2	2.2	2.09
SWFTS-MW22	9/20/2017	SWFTS-MW22-EM01	N	EM01	4,000	6,700	1.7	2.2	0.32
SWFTS-MW22	9/27/2017	SWFTS-MW22-EM02	N	EM02	3,800	6,300	1.7	2.6	0.12
SWFTS-MW22	10/5/2017	SWFTS-MW22-EM03	N	EM03	3,500	6,000	1.7	2.7	0.41
SWFTS-MW22	10/12/2017	SWFTS-MW22-EM04	N	EM04	2,600	5,700	1.4	2.3	2.72
SWFTS-MW22	10/26/2017	SWFTS-MW22-EM05	N	EM05	3,700	5,500	1.6	2.6	0.29
SWFTS-MW22	11/16/2017	SWFTS-MW22-EM06	N	EM06	3,000	4,400	1.3	2.5	0.45
SWFTS-MW22	12/14/2017	SWFTS-MW22-EM07	N	EM07	2,500	4,900	1.4	2.6	1.31
SWFTS-MW22	2/21/2018	SWFTS-MW22-EM08	N	EM08	2,000	2,400	0.89 J	2.4	0.43
SWFTS-MW22	3/28/2018	SWFTS-MW22-EM09	N	EM09	2,000	2,600	0.83	2.4	0.65
SWFTS-MW22	4/30/2018	SWFTS-MW22-EM10	N	EM10	1,900	1,800	<0.055	2.2	0.26
SWFTS-MW22	7/10/2018	SWFTS-MW22-EM11	N	EM11	2,900	840	0.81	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+	2.4	2.29
SWFTS-MW22	9/11/2018	SWFTS-MW22-EM14	N	EM14	2,800	1,600 J+	1.2	2.2	0.47
SWFTS-MW22	10/9/2018	SWFTS-MW22-EM15	N	EM15	3,100	1,600	1.2	2.7	0.28
SWFTS-MW22	12/27/2018	SWFTS-MW22-EM16	N	EM16	2,400	1,700	1.3	2.4	0.6
SWFTS-MW22	2/27/2019	SWFTS-MW22-EM17	N	EM17	2,500	2,100	1.5	2.4	0.07
SWFTS-MW22	4/11/2019	SWFTS-MW22-EM18	N	EM18	2,500	2,700	1.7	2.4	0.57
SWFTS-MW22	5/21/2019	SWFTS-MW22-EM19	N	EM19	2,500	2,500	1.6	3.4	0.49
SWFTS-MW22	7/2/2019	SWFTS-MW22-EM20	N	EM20	2,300	2,200	1.5	2.7	0.43
SWFTS-MW22	8/12/2019	SWFTS-MW22-EM21	N	EM21	2,300	2,300	1.3	2.6	0.4

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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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW22	11/5/2019	SWFTS-MW22-EM22	N	EM22	2,000	2,300	1.2	2.4	0.39
SWFTS-MW22	12/19/2019	SWFTS-MW22-EM23	N	EM23	1,600	2,200	0.92	2.2	0.80
SWFTS-MW22	1/30/2020	SWFTS-MW22-EM24	N	EM24	1,700	2,100	1.0	2.2	0.62
SWFTS-MW22	3/11/2020	SWFTS-MW22-EM25	N	EM25	1,900	3,100	1.3	2.3	1.55
SWFTS-MW22	4/28/2020	SWFTS-MW22-EM26	N	EM26	3,000	4,700	1.9	2.3	1.99
SWFTS-MW22	7/10/2020	SWFTS-MW22-EM27	N	EM27	2,700	4,700	2.0	2.7	0.6
SWFTS-MW22	8/20/2020	SWFTS-MW22-EM28	N	EM28	4,400	9,600	2.8	3.0	0.45
SWFTS-MW23	7/13/2017	SWFTS-MW23-BL02	N	BL02	930	20	0.14 J	2.9	0.36
SWFTS-MW23	9/22/2017	SWFTS-MW23-EM01	N	EM01	1,700	160 J	0.64	3.1	0.55
SWFTS-MW23	9/28/2017	SWFTS-MW23-EM02	N	EM02	1,700	120	0.67	3.3	0.16
SWFTS-MW23	10/5/2017	SWFTS-MW23-EM03	N	EM03	1,900	<2,000	0.79	3.2	0.79
SWFTS-MW23	10/11/2017	SWFTS-MW23-EM04	N	EM04	4,000	220	0.88	2.9	1.87
SWFTS-MW23	10/26/2017	SWFTS-MW23-EM05	N	EM05	2,400	270	1.2	2.8	0.38
SWFTS-MW23	11/15/2017	SWFTS-MW23-EM06	N	EM06	2,400	270	1.4	3.0	0.49
SWFTS-MW23	12/12/2017	SWFTS-MW23-EM07	N	EM07	2,800	370	1.5	2.7	0.23
SWFTS-MW23	2/21/2018	SWFTS-MW23-EM08	N	EM08	2,800	300 J-	1.6	3.1	5.42
SWFTS-MW23	3/28/2018	SWFTS-MW23-EM09	N	EM09	2,100	180	0.83	2.8	2.59
SWFTS-MW23	5/2/2018	SWFTS-MW23-EM10	N	EM10	1,400	120	0.43	2.8	0.30
SWFTS-MW23	7/10/2018	SWFTS-MW23-EM11	N	EM11	1,000	18 J	0.11	2.7	0.44
SWFTS-MW23	8/16/2018	SWFTS-MW23-EM13	N	EM13	870	28	0.055 J	3.2	2.48
SWFTS-MW23	9/12/2018	SWFTS-MW23-EM14	N	EM14	1,300	52	0.11	2.7	0.64
SWFTS-MW23	10/11/2018	SWFTS-MW23-EM15	N	EM15	1,500	95 J	<0.28	3.2	1.68
SWFTS-MW23	12/28/2018	SWFTS-MW23-EM16	N	EM16	1,700	110	0.46	2.9	0.97
SWFTS-MW23	2/27/2019	SWFTS-MW23-EM17	N	EM17	1,400	66	0.30	2.9	0.05
SWFTS-MW23	4/11/2019	SWFTS-MW23-EM18	N	EM18	1,400	76	0.26	3.3	0.57
SWFTS-MW23	5/22/2019	SWFTS-MW23-EM19	N	EM19	1,400	100	0.35	2.9	0.08
SWFTS-MW23	7/3/2019	SWFTS-MW23-EM20	N	EM20	1,800	160	0.73	3.4	0.50
SWFTS-MW23	8/14/2019	SWFTS-MW23-EM21	N	EM21	2,500	250	1.2	3.1	0.42
SWFTS-MW23	11/5/2019	SWFTS-MW23-EM22	N	EM22	3,000	310	1.4	2.7	0.64
SWFTS-MW23	12/19/2019	SWFTS-MW23-EM23	N	EM23	2,300	290	0.94	2.6	1.41
SWFTS-MW23	1/30/2020	SWFTS-MW23-EM24	N	EM24	1,700	140	0.66	2.7	0.61
SWFTS-MW23	3/10/2020	SWFTS-MW23-EM25	N	EM25	1,200	50	0.24 J-	3.0	2.44
SWFTS-MW23	4/28/2020	SWFTS-MW23-EM26	N	EM26	670	8.8 J	<0.11	2.9	2.12
SWFTS-MW23	7/10/2020	SWFTS-MW23-EM27	N	EM27	470	<10	<0.11	3.3	0.71
SWFTS-MW23	8/20/2020	SWFTS-MW23-EM28	N	EM28	740	<10	<0.11	3.4	0.51
SWFTS-MW24	7/13/2017	SWFTS-MW24-BL02	N	BL02	13,000	47,000	13	1.3	3.04
SWFTS-MW24	9/22/2017	SWFTS-MW24-EM01	N	EM01	9,400	32,000	9.0	1.7	1.31
SWFTS-MW24	9/28/2017	SWFTS-MW24-EM02	N	EM02	5,200	12,000	4.5	4.3	0.48
SWFTS-MW24	10/5/2017	SWFTS-MW24-EM03	N	EM03	7,800	34,000	9.4	2.0	0.76
SWFTS-MW24	10/11/2017	SWFTS-MW24-EM04	N	EM04	4,400	17,000	4.7	1.9	3.88
SWFTS-MW24	10/26/2017	SWFTS-MW24-EM05	N	EM05	7,000	24,000	7.9	2.0 J-	3.06
SWFTS-MW24	11/15/2017	SWFTS-MW24-EM06	N	EM06	4,100	14,000	3.9	1.9	1.39

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW24	12/12/2017	SWFTS-MW24-EM07	N	EM07	6,600	26,000	6.1	1.5	1.11
SWFTS-MW24	2/21/2018	SWFTS-MW24-EM08	N	EM08	6,100	22,000	6.9	2.0	0.95
SWFTS-MW24	3/28/2018	SWFTS-MW24-EM09	N	EM09	4,800	15,000	5.4	1.6	0.55
SWFTS-MW24	5/2/2018	SWFTS-MW24-EM10	N	EM10	4,800	12,000	6.6	1.5	0.00
SWFTS-MW24	7/12/2018	SWFTS-MW24-EM11	N	EM11	5,000	6,100	7.3	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	1.9	1.83
SWFTS-MW24	9/12/2018	SWFTS-MW24-EM14	N	EM14	3,700	3,500	6.1	1.6	0.75
SWFTS-MW24	10/10/2018	SWFTS-MW24-EM15	N	EM15	3,500	2,700	6.5	2.0	2.95
SWFTS-MW24	1/2/2019	SWFTS-MW24-EM16	N	EM16	3,500	2,000	7.7	1.7	1.55
SWFTS-MW24	2/27/2019	SWFTS-MW24-EM17	N	EM17	3,400	2,100	7.8	1.5	1.29
SWFTS-MW24	4/10/2019	SWFTS-MW24-EM18	N	EM18	2,700	1,100	6.1	1.5	1.24
SWFTS-MW24	5/22/2019	SWFTS-MW24-EM19	N	EM19	2,700	1,900	5.8	1.6	1.18
SWFTS-MW24	7/1/2019	SWFTS-MW24-EM20	N	EM20	2,800	1,900	5.1	2.0	0.65
SWFTS-MW24	8/14/2019	SWFTS-MW24-EM21	N	EM21	3,400	5,500	6.9	1.9	0.63
SWFTS-MW24	11/5/2019	SWFTS-MW24-EM22	N	EM22	3,500	6,900	6.9	1.6	1.34
SWFTS-MW24	12/19/2019	SWFTS-MW24-EM23	N	EM23	2,400	2,400	5.4	1.4	1.47
SWFTS-MW24	1/30/2020	SWFTS-MW24-EM24	N	EM24	2,500	2,900	4.8	1.6	1.16
SWFTS-MW24	3/10/2020	SWFTS-MW24-EM25	N	EM25	3,400	6,000	4.9 J-	1.5	2.8
SWFTS-MW24	4/28/2020	SWFTS-MW24-EM26	N	EM26	5,800	15,000	6.9	1.4	2.6
SWFTS-MW24	7/10/2020	SWFTS-MW24-EM27	N	EM27	4,800	12,000	6.7	2.1	1.2
SWFTS-MW24	8/18/2020	SWFTS-MW24-EM28	N	EM28	3,900	7,700	5.3	2.3	0.77
SWFTS-MW25	7/13/2017	SWFTS-MW25-BL02	N	BL02	17,000	43,000	10	1.8	3.03
SWFTS-MW25	9/22/2017	SWFTS-MW25-EM01	N	EM01	280	<200	<0.55	13	0.50
SWFTS-MW25	9/28/2017	SWFTS-MW25-EM02	N	EM02	370	130	<0.55	4.8	0.14
SWFTS-MW25	10/5/2017	SWFTS-MW25-EM03	N	EM03	230	<500	<0.55	3.3	0.96
SWFTS-MW25	10/11/2017	SWFTS-MW25-EM04	N	EM04	140	160	<0.55	2.7	0.26
SWFTS-MW25	10/26/2017	SWFTS-MW25-EM05	N	EM05	420	170	<0.28	2.6	0.98
SWFTS-MW25	11/15/2017	SWFTS-MW25-EM06	N	EM06	440	630	<0.55	2.5	1.11
SWFTS-MW25	12/12/2017	SWFTS-MW25-EM07	N	EM07	2,300	1,700	<0.55	2.3	0.63
SWFTS-MW25	2/21/2018	SWFTS-MW25-EM08	N	EM08	2,800	4,700	<1.1	2.4	0.32
SWFTS-MW25	3/28/2018	SWFTS-MW25-EM09	N	EM09	4,600	11,000	2.8	2.0	0.20
SWFTS-MW25	5/3/2018	SWFTS-MW25-EM10	N	EM10	5,700	3,600	4.2	1.9	0.00
SWFTS-MW25	7/10/2018	SWFTS-MW25-EM11	N	EM11	4,300	2,100	3.6	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	2.3	1.91
SWFTS-MW25	9/12/2018	SWFTS-MW25-EM14	N	EM14	5,200	6,800	6.9	1.9	0.47
SWFTS-MW25	10/11/2018	SWFTS-MW25-EM15	N	EM15	5,000	7,600	7.9	2.0	1.25
SWFTS-MW25	1/2/2019	SWFTS-MW25-EM16	N	EM16	6,300	11,000	8.7	2.0	0.97
SWFTS-MW25	2/27/2019	SWFTS-MW25-EM17	N	EM17	4,000	6,400	4.9	2.0	0.05
SWFTS-MW25	4/11/2019	SWFTS-MW25-EM18	N	EM18	5,300	13,000	7.4	2.1	0.81
SWFTS-MW25	5/22/2019	SWFTS-MW25-EM19	N	EM19	5,700	15,000	9.2	1.9	0.12

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	Total Organic Carbon by SM 5310B mg/L	Dissolved Oxygen Field Measurement mg/L
SWFTS-MW25	7/3/2019	SWFTS-MW25-EM20	N	EM20	5,600	15,000	8.1	2.2	0.47
SWFTS-MW25	8/14/2019	SWFTS-MW25-EM21	N	EM21	6,600	19,000	8.2	2.5	0.39
SWFTS-MW25	11/5/2019	SWFTS-MW25-EM22	N	EM22	6,100	14,000	7.7	1.8	0.54
SWFTS-MW25	12/19/2019	SWFTS-MW25-EM23	N	EM23	6,000	15,000	7.4	1.7	0.74
SWFTS-MW25	1/30/2020	SWFTS-MW25-EM24	N	EM24	7,500	21,000	8.7	1.9	0.55
SWFTS-MW25	3/10/2020	SWFTS-MW25-EM25	N	EM25	8,300	22,000	8.6 J-	2.0	2.45
SWFTS-MW25	4/28/2020	SWFTS-MW25-EM26	N	EM26	8,400	23,000	9.5	1.8	2
SWFTS-MW25	7/10/2020	SWFTS-MW25-EM27	N	EM27	7,600	17,000	7.1	2.3	0.67
SWFTS-MW25	8/19/2020	SWFTS-MW25-EM28	N	EM28	7,600	19,000	8.5	2.8	0.8

Notes:

mg/L - milligrams per liter

ug/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

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Table 3
Summary of Injection Activities
Injection Event 6 - May/June 2020
Seep Well Field Area Bioremediation Treatability Study

Injection Date	Injection Well ID	Injection Start Time	Injection Stop Time	Injection Duration ⁽¹⁾	Average Flow Rate	Sustained Pressure	Volume of Injectate Solution Injected	Volume of Distribution Water Injected
				min	gpm	psi	gal	gal
5/29/2020	SWFTS-IW01A	12:50 PM	4:45 PM	235	4.8	8	1,133	0
	SWFTS-IW02A	12:50 PM	4:45 PM	235	5.0	8	1,165	0
	SWFTS-IW03	12:50 PM	4:45 PM	235	5.7	11	1,339	0
	SWFTS-IW04	12:50 PM	4:45 PM	235	5.5	10	1,290	0
	SWFTS-IW05	12:50 PM	4:45 PM	235	4.9	10	1,146	0
	SWFTS-IW06A	12:50 PM	4:45 PM	235	4.3	15	1,022	0
	SWFTS-IW07	12:50 PM	4:45 PM	235	5.3	15	1,238	0
	SWFTS-IW08	12:50 PM	4:45 PM	235	7.3	25	1,715	0
	SWFTS-IW09	12:50 PM	4:45 PM	235	5.7	27	1,330	0
	SWFTS-IW10	12:50 PM	4:45 PM	235	6.8	17	1,594	0
Daily Summary							12,972	0
5/30/2020	SWFTS-IW01A	9:00 AM	4:58 PM	273	5.1	8	1,383	0
	SWFTS-IW02A	9:00 AM	3:15 PM	170	5.0	7	847	0
	SWFTS-IW02B	3:25 PM	5:45 PM	140	4.8	10	675	0
	SWFTS-IW03	9:00 AM	5:45 PM	320	5.0	11	1,605	0
	SWFTS-IW04	9:00 AM	5:45 PM	320	4.9	10	1,563	0
	SWFTS-IW05	9:00 AM	5:45 PM	320	5.7	7	1,813	0
	SWFTS-IW06A	9:00 AM	4:10 PM	225	4.4	17	991	0
	SWFTS-IW06B	4:17 PM	5:45 PM	88	4.5	30	399	0
	SWFTS-IW07	9:00 AM	5:45 PM	320	5.8	15	1,856	0
	SWFTS-IW08	9:00 AM	5:45 PM	320	5.6	17	1,779	0
	SWFTS-IW09	9:00 AM	5:45 PM	320	5.6	27	1,781	0
SWFTS-IW10	9:00 AM	5:29 PM	304	8.0	22	2,430	0	
Daily Summary							17,122	0
5/31/2020	SWFTS-IW01B	8:05 AM	5:27 PM	460	3.6	11	1,642	0
	SWFTS-IW02B	8:05 AM	4:17 PM	390	3.4	12	1,337	0
	SWFTS-IW03	8:05 AM	2:38 PM	291	3.7	11	1,080	0
	SWFTS-IW04	8:05 AM	11:11 AM	84	2.0	10	165	0
	SWFTS-IW05	8:05 AM	3:03 PM	316	3.4	8	1065	0
	SWFTS-IW06B	8:05 AM	1:06 PM	199	3.1	35	607	0
	SWFTS-IW07	8:05 AM	12:24 PM	157	5.9	15	930	0
	SWFTS-IW08	8:05 AM	11:52 AM	125	4.2	18	530	0
	SWFTS-IW09	8:05 AM	2:06 PM	259	3.5	25	913	0
	SWFTS-IW11	4:40 PM	5:27 PM	47	3.7	5	172	0
	SWFTS-IW12	3:48 PM	5:27 PM	99	4.8	11	472	0
	SWFTS-IW13A	3:48 PM	5:27 PM	99	3.1	9	306	0
	SWFTS-IW14	11:30 AM	5:27 PM	357	3.0	13	1,068	0
	SWFTS-IW15	1:21 PM	5:27 PM	246	3.6	20	887	0
	SWFTS-IW17	12:32 PM	5:27 PM	295	5.7	22	1,694	0
	SWFTS-IW18	12:00 PM	5:27 PM	327	5.7	20	1,860	0
	SWFTS-IW19	2:20 PM	5:27 PM	187	2.8	30	525	0
SWFTS-IW20	8:05 AM	5:27 PM	430	6.4	19	2,737	0	
Daily Summary							17,990	0
May Total							48,084	0

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Table 3
Summary of Injection Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Injection Date	Injection Well ID	Injection Start Time	Injection Stop Time	Injection Duration ⁽¹⁾	Average Flow Rate	Sustained Pressure	Volume of Injectate Solution Injected	Volume of Distribution Water Injected
				min	gpm	psi	gal	gal
6/1/2020	SWFTS-IW11	10:25 AM	5:30 PM	350	4.8	8	1,682	0
	SWFTS-IW12	10:25 AM	5:30 PM	350	4.4	21	1,528	0
	SWFTS-IW13B	10:25 AM	5:30 PM	350	2.1	35	732	0
	SWFTS-IW14	10:25 AM	5:30 PM	275	4.6	15	1,273	0
	SWFTS-IW15	10:25 AM	5:30 PM	350	2.8	29	995	0
	SWFTS-IW16A	10:25 AM	5:30 PM	286	5.0	18	1427	0
	SWFTS-IW16B	12:26 PM	5:30 PM	199	7.2	23	1428	0
	SWFTS-IW17	10:25 AM	11:36 AM	71	4.8	30	340	0
	SWFTS-IW18	10:25 AM	5:30 PM	202	5.4	28	1100	0
	SWFTS-IW19	10:25 AM	5:30 PM	350	2.1	33	725	0
	SWFTS-IW20	4:14 PM	5:30 PM	76	6.0	22	454	0
Daily Summary							11,684	0
6/2/2020	SWFTS-IW01B	10:12 AM	12:17 PM	125	7.9	34	987	0
	SWFTS-IW11	8:40 AM	5:34 PM	274	6.7	28	1,846	0
	SWFTS-IW12	8:40 AM	5:34 PM	414	4.3	30	1,768	0
	SWFTS-IW13A	9:38 AM	5:34 PM	316	5.4	34	1,706	0
	SWFTS-IW13B	8:40 AM	9:00 AM	20	1.0	35	19	0
	SWFTS-IW14	8:40 AM	5:34 PM	224	6.3	34	1,409	0
	SWFTS-IW15	8:40 AM	9:00 AM	20	0.8	35	15	0
	SWFTS-IW16A	8:40 AM	5:34 PM	102	3.9	20	396	0
	SWFTS-IW16B	8:40 AM	5:21 PM	92	6.3	25	584	0
	SWFTS-IW17	9:20 AM	2:38 PM	228	6.8	34	1,548	0
	SWFTS-IW18	8:40 AM	2:14 PM	287	5.6	31	1,573	0
	SWFTS-IW19	8:40 AM	9:06 AM	26	1.3	35	34	0
SWFTS-IW20	8:40 AM	4:52 PM	56	6.2	30	346	0	
Daily Summary							12,231	0
6/3/2020	SWFTS-IW11	8:30 AM	4:30 PM	185	7.1	34	1,315	0
	SWFTS-IW12	8:30 AM	4:30 PM	185	2.9	33	539	0
	SWFTS-IW13A	10:28 AM	4:30 PM	152	2.5	33	385	0
	SWFTS-IW14	8:30 AM	3:00 PM	95	2.9	35	274	0
	SWFTS-IW16A	8:30 AM	10:50 AM	55	5.9	35	323	0
	SWFTS-IW16B	2:25 PM	4:30 PM	125	3.0	24	369	0
	SWFTS-IW17	8:30 AM	2:47 PM	82	5.5	30	448	0
	SWFTS-IW20	10:45 AM	4:30 PM	135	6.2	29	841	0
Daily Summary							4,494	0
6/4/2020 ⁽²⁾	SWFTS-IW01A	7:10 AM	4:31 PM	531	6.4	10	0	3,377
	SWFTS-IW02A	7:10 AM	4:31 PM	531	6.1	8	0	3,256
	SWFTS-IW03	7:10 AM	4:31 PM	531	6.1	9	0	3,229
	SWFTS-IW04	7:10 AM	4:31 PM	531	6.6	11	0	3,509
	SWFTS-IW05	7:10 AM	4:31 PM	531	5.8	11	0	3,087
	SWFTS-IW06A	7:10 AM	4:31 PM	531	5.5	16	0	2,898
	SWFTS-IW07	7:10 AM	4:31 PM	531	9.0	11	0	4,759
	SWFTS-IW08	7:10 AM	4:31 PM	531	9.3	10	0	4,940
	SWFTS-IW09	7:10 AM	4:31 PM	531	8.3	18	0	4,389
	SWFTS-IW10	7:10 AM	4:31 PM	531	6.2	14	0	3,273
Daily Summary							0	36,717

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Table 3
Summary of Injection Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Injection Date	Injection Well ID	Injection Start Time	Injection Stop Time	Injection Duration ⁽¹⁾	Average Flow Rate	Sustained Pressure	Volume of Injectate Solution Injected	Volume of Distribution Water Injected
				min	gpm	psi	gal	gal
6/5/2020	SWFTS-IW01B	7:59 AM	1:00 PM	146	5.4	6	0	793
	SWFTS-IW02B	7:59 AM	1:00 PM	146	5.2	15	0	759
	SWFTS-IW03	7:59 AM	1:00 PM	146	6.5	9	0	949
	SWFTS-IW04	7:59 AM	1:00 PM	146	6.5	10	0	946
	SWFTS-IW05	7:59 AM	1:00 PM	146	7.3	11	0	1065
	SWFTS-IW06B	7:59 AM	1:00 PM	146	1.3	23	0	185
	SWFTS-IW07	7:59 AM	1:00 PM	146	9.9	12	0	1449
	SWFTS-IW08	7:59 AM	1:00 PM	146	9.1	16	0	1329
	SWFTS-IW09	7:59 AM	1:00 PM	146	6.5	20	0	949
	SWFTS-IW10	7:59 AM	1:00 PM	146	6.0	13	0	874
Daily Summary							0	9,298
6/10/2020	SWFTS-IW01A	9:35 AM	4:31 PM	405	5.2	10	0	2,124
	SWFTS-IW02A	9:35 AM	4:31 PM	405	5.2	10	0	2,090
	SWFTS-IW03	9:35 AM	4:31 PM	405	5.1	8	0	2,066
	SWFTS-IW04	9:35 AM	4:31 PM	405	5.1	10	0	2,083
	SWFTS-IW05	9:35 AM	4:31 PM	405	5.2	11	0	2,105
	SWFTS-IW06A	9:35 AM	4:31 PM	405	5.2	15	0	2,098
	SWFTS-IW07	9:35 AM	4:31 PM	405	11.6	10	0	4,679
	SWFTS-IW08	9:35 AM	4:31 PM	405	11.6	17	0	4,703
	SWFTS-IW09	9:35 AM	4:31 PM	405	9.6	20	0	3,899
	SWFTS-IW10	9:35 AM	4:31 PM	405	7.7	15	0	3,114
Daily Summary							0	28,961
6/11/2020	SWFTS-IW01A	7:33 AM	4:31 PM	511	5.1	10	0	2,610
	SWFTS-IW02A	7:33 AM	4:31 PM	511	5.3	9	0	2,706
	SWFTS-IW03	7:33 AM	4:31 PM	511	5.1	8	0	2,625
	SWFTS-IW04	7:33 AM	4:31 PM	511	5.2	10	0	2,636
	SWFTS-IW05	7:33 AM	4:31 PM	511	5.1	11	0	2,603
	SWFTS-IW06A	7:33 AM	4:31 PM	511	5.1	15	0	2,602
	SWFTS-IW07	7:33 AM	4:31 PM	511	11.7	10	0	5,993
	SWFTS-IW08	7:33 AM	4:31 PM	511	12.5	17	0	6,387
	SWFTS-IW09	7:33 AM	4:31 PM	511	9.8	19	0	5,012
	SWFTS-IW10	7:33 AM	4:31 PM	511	9.7	17	0	4,982
Daily Summary							0	38,156

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Table 3
Summary of Injection Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Injection Date	Injection Well ID	Injection Start Time	Injection Stop Time	Injection Duration ⁽¹⁾	Average Flow Rate	Sustained Pressure	Volume of Injectate Solution Injected	Volume of Distribution Water Injected
				min	gpm	psi	gal	gal
6/12/2020	SWFTS-IW01A	7:25 AM	7:57 AM	32	4.4	10	0	141
	SWFTS-IW01B	9:55 AM	4:32 PM	373	7.1	12	0	2,666
	SWFTS-IW02A	7:25 AM	11:15 AM	115	6.1	11	0	699
	SWFTS-IW02B	11:25 AM	4:32 PM	293	7.6	16	0	2,214
	SWFTS-IW03	7:25 AM	4:32 PM	418	7.8	11	0	3,255
	SWFTS-IW04	7:25 AM	4:32 PM	418	7.7	14	0	3,227
	SWFTS-IW05	7:25 AM	4:32 PM	418	7.9	13	0	3,298
	SWFTS-IW06A	7:25 AM	12:20 PM	180	6.4	18	0	1,152
	SWFTS-IW06B	12:22 PM	4:32 PM	236	2.5	28	0	597
	SWFTS-IW07	7:25 AM	8:08 AM	43	14.4	10	0	620
	SWFTS-IW08	7:25 AM	7:36 AM	11	12.8	23	0	141
	SWFTS-IW09	7:25 AM	4:00 PM	386	8.4	27	0	3,250
	SWFTS-IW10	7:25 AM	4:32 PM	418	6.9	23	0	2,890
	SWFTS-IW17	7:48 AM	4:32 PM	395	8.8	26	0	3,486
SWFTS-IW18	9:55 AM	4:32 PM	387	8.4	23	0	3,252	
Daily Summary							0	30,888
6/13/2020	SWFTS-IW01B	7:27 AM	4:07 PM	492	8.9	16	0	4,373
	SWFTS-IW02B	7:27 AM	4:07 PM	492	7.6	16	0	3,733
	SWFTS-IW03	7:27 AM	4:07 PM	492	8.9	11	0	4,397
	SWFTS-IW04	7:27 AM	9:20 AM	82	8.8	12	0	722
	SWFTS-IW05	7:27 AM	4:07 PM	492	8.8	13	0	4,347
	SWFTS-IW06B	7:27 AM	4:07 PM	492	2.5	21	0	1,215
	SWFTS-IW10	7:27 AM	1:14 PM	319	7.4	20	0	2,372
	SWFTS-IW13A	9:26 AM	4:07 PM	384	9.6	17	0	3,670
	SWFTS-IW16A	1:40 PM	4:07 PM	147	8.6	20	0	1,257
	SWFTS-IW17	7:27 AM	4:07 PM	492	8.0	23	0	3,921
	SWFTS-IW18	7:27 AM	4:07 PM	492	8.1	17	0	4,004
SWFTS-IW19	7:27 AM	4:07 PM	492	5.1	29	0	2,486	
Daily Summary							0	36,497
6/14/2020	SWFTS-IW01B	7:29 AM	8:12 AM	43	9.7	15	0	418
	SWFTS-IW02B	7:29 AM	12:45 PM	305	6.7	17	0	2,044
	SWFTS-IW03	7:29 AM	9:25 AM	116	8.4	11	0	980
	SWFTS-IW05	7:29 AM	9:25 AM	116	8.6	13	0	995
	SWFTS-IW06B	7:29 AM	4:40 PM	529	1.9	28	0	991
	SWFTS-IW11	8:18 AM	4:40 PM	480	9.6	12	0	4,601
	SWFTS-IW12	9:43 AM	4:40 PM	395	9.5	19	0	3,755
	SWFTS-IW13A	7:29 AM	4:40 PM	529	8.9	17	0	4,730
	SWFTS-IW14	9:43 AM	4:40 PM	395	8.4	24	0	3,323
	SWFTS-IW15	12:57 PM	4:40 PM	212	7.5	15	0	1,599
	SWFTS-IW16A	7:29 AM	4:40 PM	529	8.9	19	0	4,720
	SWFTS-IW17	7:29 AM	4:40 PM	529	8.8	20	0	4,637
	SWFTS-IW18	7:29 AM	4:40 PM	529	7.5	16	0	3,991
SWFTS-IW19	7:29 AM	4:40 PM	529	5.7	30	0	3,020	
Daily Summary							0	39,804

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Table 3
Summary of Injection Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Injection Date	Injection Well ID	Injection Start Time	Injection Stop Time	Injection Duration ⁽¹⁾	Average Flow Rate	Sustained Pressure	Volume of Injectate Solution Injected	Volume of Distribution Water Injected
				min	gpm	psi	gal	gal
6/15/2020	SWFTS-IW06B	7:44 AM	4:23 PM	433	3.2	21	0	1,387
	SWFTS-IW11	7:44 AM	4:40 PM	450	9.2	9	0	4,150
	SWFTS-IW12	7:44 AM	4:40 PM	450	8.3	15	0	3,757
	SWFTS-IW13A	7:44 AM	8:32 AM	48	9.6	13	0	461
	SWFTS-IW13B	10:07 AM	4:40 PM	325	4.8	27	0	1,571
	SWFTS-IW14	7:44 AM	4:40 PM	450	8.9	12	0	4,019
	SWFTS-IW15	7:44 AM	4:40 PM	450	8.4	13	0	3,778
	SWFTS-IW16A	7:44 AM	12:27 PM	265	9.9	17	0	2,626
	SWFTS-IW16B	12:30 PM	4:40 PM	182	7.7	25	0	1,404
	SWFTS-IW17	7:44 AM	4:40 PM	450	10.1	20	0	4,553
	SWFTS-IW18	7:44 AM	2:25 PM	370	8.9	15	0	3,289
	SWFTS-IW19	7:44 AM	4:40 PM	450	7.0	28	0	3,170
SWFTS-IW20	2:36 PM	4:40 PM	69	8.1	27	0	562	
Daily Summary							0	34,727
6/16/2020	SWFTS-IW11	7:30 AM	4:45 PM	535	9.7	9	0	5,208
	SWFTS-IW12	7:30 AM	4:45 PM	535	10.1	16	0	5,393
	SWFTS-IW13B	7:30 AM	4:45 PM	535	5.2	29	0	2,801
	SWFTS-IW14	7:30 AM	4:45 PM	535	9.4	12	0	5,032
	SWFTS-IW15	7:30 AM	4:45 PM	535	9.8	15	0	5,253
	SWFTS-IW16B	7:30 AM	4:45 PM	535	11.8	25	0	6,294
	SWFTS-IW17	7:30 AM	9:02 AM	92	9.6	18	0	885
	SWFTS-IW19	7:30 AM	4:45 PM	535	8.0	29	0	4,286
SWFTS-IW20	7:30 AM	4:45 PM	535	11.7	17	0	6,254	
Daily Summary							0	41,406
6/17/2020	SWFTS-IW11	7:34	11:47	246	10.3	12	0	2,526
	SWFTS-IW12	7:34	16:40	530	12.6	18	0	6,664
	SWFTS-IW13A	14:12	16:40	148	8.8	17	0	1,296
	SWFTS-IW13B	7:34	14:03	382	6.1	35	0	2,312
	SWFTS-IW14	7:34	16:08	498	10.2	13	0	5,102
	SWFTS-IW15	7:34	16:40	530	11.0	16	0	5,827
	SWFTS-IW16B	7:34	8:35	61	11.0	23	0	673
	SWFTS-IW19	7:34	16:40	530	8.0	29	0	4,248
SWFTS-IW20	7:34	16:40	530	12.6	21	0	6,663	
Daily Summary							0	35,311
6/18/2020	SWFTS-IW12	7:40	11:14	214	14.0	27	0	2,999
	SWFTS-IW13A	7:40	9:27	107	11.2	15	0	1,201
	SWFTS-IW15	7:40	12:27	287	11.0	17	0	3,153
	SWFTS-IW19	7:40	14:17	397	7.6	28	0	3,006
	SWFTS-IW20	7:40	11:08	208	11.2	23	0	2,325
Daily Summary							0	12,684
June Summary							28,409	344,449
Injection Event Summary							76,493	344,449

Notes:

gpm gallons per minute
min minutesgal gallons
psi pounds per square inch

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

²Chemical amendments consisting of 60 pounds of sodium sulfite, 60 gallons of glycerin, and 23 gallons of AquaPure phosphate solution were mixed with the first 15,259 gallons of distribution water injected on June 4, 2020. Carbon substrate injections concluded on June 3, 2020.

Table 4
Summary of Groundwater Extraction Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Date	Extraction Well	Start Time	Stop Time	Average Flow Rate	Volume Extracted	Cumulative Volume Extracted
				gpm	gal	gal
5/27/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	18:21	18:30	2.1	18.8	18.8
	SWFTS-MW11	-	-	-	-	-
	SWFTS-MW12	-	-	-	-	-
	SWFTS-MW13	18:10	18:30	9.6	192.8	192.8
	SWFTS-MW17	17:55	18:30	3.4	119.4	119.4
5/28/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	8:10	11:25	1.6	318.0	336.8
	SWFTS-MW11	8:10	11:25	16.1	3,135.8	3,135.8
	SWFTS-MW12	-	-	-	-	-
	SWFTS-MW13	8:05	11:25	13.4	2,672.3	2,865.1
	SWFTS-MW17	8:05	11:25	21.9	4,382.1	4,501.5
5/28/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	-	-	-	-	336.8
	SWFTS-MW11	-	-	-	-	3,135.8
	SWFTS-MW12	-	-	-	-	-
	SWFTS-MW13	-	-	-	-	2,865.1
	SWFTS-MW17	11:30	12:50	7.4	589.9	5,091.4
5/28/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	12:30	17:10	1.7	463.5	800.3
	SWFTS-MW11	12:35	17:10	16.0	4,398.0	7,533.8
	SWFTS-MW12	14:36	17:10	11.9	1,835.9	1,835.9
	SWFTS-MW13	12:43	17:10	13.2	3,525.0	6,390.1
	SWFTS-MW17	14:26	17:10	22.6	3,699.6	8,791.0
5/30/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	11:55	14:35	1.7	270.8	1,071.1
	SWFTS-MW11	11:55	14:35	15.8	2,529.0	10,062.8
	SWFTS-MW12	11:55	14:35	12.1	1,940.4	3,776.3
	SWFTS-MW13	12:10	14:35	13.2	1,919.3	8,309.4
	SWFTS-MW17	12:10	14:35	22.7	3,287.1	12,078.1
5/31/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	-	-	-	-	1,071.1
	SWFTS-MW11	-	-	-	-	10,062.8
	SWFTS-MW12	11:29	11:55	11.4	297.5	4,073.8
	SWFTS-MW13	-	-	-	-	8,309.4
	SWFTS-MW17	11:29	11:55	22.5	584.0	12,662.1

Table 4
Summary of Groundwater Extraction Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Date	Extraction Well	Start Time	Stop Time	Average Flow Rate	Volume Extracted	Cumulative Volume Extracted
				gpm	gal	gal
5/31/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	14:10	16:55	1.7	283.5	1,354.6
	SWFTS-MW11	14:11	16:55	15.4	2,528.3	12,591.1
	SWFTS-MW12	14:10	16:55	11.8	1,951.9	6,025.7
	SWFTS-MW13	14:10	16:55	13.0	2,143.5	10,452.9
	SWFTS-MW17	14:10	16:55	20.4	3,374.0	16,036.1
6/2/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	9:50	12:50	2.1	369.8	1,724.4
	SWFTS-MW11	9:50	12:50	16.9	3,047.3	15,638.4
	SWFTS-MW12	9:50	12:50	12.8	2,311.8	8,337.5
	SWFTS-MW13	9:56	12:50	14.6	2,544.8	12,997.7
	SWFTS-MW17	10:05	12:50	22.3	3,672.0	19,708.1
6/3/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	15:27	17:25	1.9	225.0	1,949.4
	SWFTS-MW11	15:27	17:25	15.5	1,827.8	17,466.2
	SWFTS-MW12	15:27	17:25	11.3	1,335.0	9,672.5
	SWFTS-MW13	15:30	17:50	9.8	1,367.3	14,365.0
	SWFTS-MW17	15:30	17:15	22.2	2,333.8	22,041.9
6/4/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	7:44	10:25	1.9	305.3	2,254.7
	SWFTS-MW11	7:44	10:24	11.7	1,865.3	19,331.5
	SWFTS-MW12	7:44	10:25	11.5	1,852.2	11,524.7
	SWFTS-MW13	7:50	10:25	13.2	2,042.3	16,407.3
	SWFTS-MW17	7:50	10:25	22.6	3,504.7	25,546.6
6/4/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	10:33	13:18	1.8	301.5	2,556.2
	SWFTS-MW11	10:35	13:18	15.1	2,457.8	21,789.3
	SWFTS-MW12	10:33	13:18	12.0	1,977.1	13,501.8
	SWFTS-MW13	10:33	13:20	12.9	2,159.3	18,566.6
	SWFTS-MW17	10:33	13:20	22.1	3,693.7	29,240.3
6/4/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	13:34	16:51	1.8	354.8	2,911.0
	SWFTS-MW11	13:35	16:51	14.8	2,893.5	24,682.8
	SWFTS-MW12	13:34	16:51	12.0	2,366.0	15,867.8
	SWFTS-MW13	13:34	16:54	12.9	2,588.3	21,154.9
	SWFTS-MW17	13:34	16:54	22.1	4,417.2	33,657.5

Table 4
Summary of Groundwater Extraction Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Date	Extraction Well	Start Time	Stop Time	Average Flow Rate	Volume Extracted	Cumulative Volume Extracted
				gpm	gal	gal
6/5/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	7:27	11:24	1.8	426.0	3,337.0
	SWFTS-MW11	7:23	11:24	14.2	3,433.5	28,116.3
	SWFTS-MW12	7:27	11:24	11.8	2,792.5	18,660.3
	SWFTS-MW13	7:29	11:26	13.0	3,082.5	24,237.4
	SWFTS-MW17	7:51	11:26	21.5	4,618.2	38,275.7
6/5/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	13:50	16:30	1.5	241.5	3,578.5
	SWFTS-MW11	13:50	16:30	13.0	2,077.5	30,193.8
	SWFTS-MW12	13:50	16:30	11.8	1,885.7	20,546.0
	SWFTS-MW13	13:50	16:30	12.3	1,962.0	26,199.4
	SWFTS-MW17	13:50	16:30	21.7	3,470.5	41,746.2
6/10/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	13:38	16:53	1.9	364.5	3,943.0
	SWFTS-MW11	13:38	16:53	13.6	2,648.3	32,842.1
	SWFTS-MW12	13:38	16:53	11.7	2,277.9	22,823.9
	SWFTS-MW13	13:35	16:50	13.0	2,536.5	28,735.9
	SWFTS-MW17	13:35	16:50	22.8	4,437.0	46,183.2
6/11/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	6:38	7:15	2.1	77.3	4,020.3
	SWFTS-MW11	6:38	7:15	14.0	516.8	33,358.9
	SWFTS-MW12	6:38	7:15	11.1	412.0	23,235.9
	SWFTS-MW13	6:27	7:13	12.9	594.0	29,329.9
	SWFTS-MW17	6:27	7:13	17.9	823.0	47,006.2
6/11/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	7:18	11:02	1.8	414.0	4,434.3
	SWFTS-MW11	7:18	11:02	12.7	2,838.8	36,197.7
	SWFTS-MW12	7:18	11:02	12.1	2,715.0	25,950.9
	SWFTS-MW13	7:23	11:00	13.0	2,825.3	32,155.2
	SWFTS-MW17	7:23	11:00	22.9	4,978.2	51,984.4
6/11/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	11:28	14:53	1.9	392.3	4,826.6
	SWFTS-MW11	11:28	14:53	12.5	2,557.5	38,755.2
	SWFTS-MW12	11:28	14:53	13.2	2,714.7	28,665.6
	SWFTS-MW13	11:28	14:53	13.1	2,676.0	34,831.2
	SWFTS-MW17	11:28	14:53	22.9	4,686.4	56,670.8

Table 4
Summary of Groundwater Extraction Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Date	Extraction Well	Start Time	Stop Time	Average Flow Rate	Volume Extracted	Cumulative Volume Extracted
				gpm	gal	gal
6/11/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	15:05	16:45	1.9	189.0	5,015.6
	SWFTS-MW11	15:05	16:45	12.9	1,285.5	40,040.7
	SWFTS-MW12	15:05	16:45	12.2	1,221.3	29,886.9
	SWFTS-MW13	15:07	16:50	13.2	1,359.0	36,190.2
	SWFTS-MW17	15:07	16:50	22.0	2,270.4	58,941.2
6/12/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	6:43	9:25	1.7	275.3	5,290.9
	SWFTS-MW11	6:43	9:25	11.6	1,879.5	41,920.2
	SWFTS-MW12	6:43	9:25	12.4	2,013.3	31,900.2
	SWFTS-MW13	6:26	8:48	12.2	1,739.3	37,929.5
	SWFTS-MW17	6:26	8:48	21.6	3,064.5	62,005.7
6/12/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	11:06	14:33	1.9	385.5	5,676.4
	SWFTS-MW11	11:06	14:33	12.0	2,491.5	44,411.7
	SWFTS-MW12	11:06	14:33	13.2	2,725.2	34,625.4
	SWFTS-MW13	11:09	14:35	13.0	2,669.3	40,598.8
	SWFTS-MW17	11:09	14:35	22.2	4,571.4	66,577.1
6/12/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	14:46	17:15	1.9	277.5	5,953.9
	SWFTS-MW11	14:46	17:15	11.9	1,769.3	46,181.0
	SWFTS-MW12	14:46	17:15	12.8	1,912.5	36,537.9
	SWFTS-MW13	14:46	17:11	13.0	1,887.0	42,485.8
	SWFTS-MW17	14:46	17:11	22.3	3,228.1	69,805.2
6/13/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	6:40	8:02	1.9	153.8	6,107.7
	SWFTS-MW11	6:40	8:02	12.2	1,002.8	47,183.8
	SWFTS-MW12	6:40	8:02	13.3	1,091.0	37,628.9
	SWFTS-MW13	6:25	8:05	12.9	1,286.3	43,772.1
	SWFTS-MW17	6:25	8:05	18.8	1,876.8	71,682.0
6/13/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	9:04	12:47	1.8	399.0	6,506.7
	SWFTS-MW11	9:04	12:47	11.6	2,596.5	49,780.3
	SWFTS-MW12	9:04	12:47	13.3	2,969.4	40,598.3
	SWFTS-MW13	9:05	12:47	13.0	2,880.0	46,652.1
	SWFTS-MW17	9:05	12:47	22.0	4,877.4	76,559.4

Table 4
Summary of Groundwater Extraction Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Date	Extraction Well	Start Time	Stop Time	Average Flow Rate	Volume Extracted	Cumulative Volume Extracted
				gpm	gal	gal
6/13/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	12:59	16:50	1.6	363.8	6,870.5
	SWFTS-MW11	12:59	16:50	11.5	2,657.3	52,437.6
	SWFTS-MW12	12:59	16:50	12.8	2,945.3	43,543.6
	SWFTS-MW13	12:59	16:55	12.9	3,039.0	49,691.1
	SWFTS-MW17	12:59	16:55	22.7	5,347.2	81,906.6
6/14/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	6:36	10:43	1.6	391.5	7,262.0
	SWFTS-MW11	6:36	10:43	11.5	2,834.3	55,271.9
	SWFTS-MW12	6:36	10:43	12.4	3,069.4	46,613.0
	SWFTS-MW13	6:25	10:30	12.9	3,168.8	52,859.9
	SWFTS-MW17	6:25	10:30	22.4	5,482.5	87,389.1
6/14/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	11:13	14:44	1.6	332.3	7,594.3
	SWFTS-MW11	11:13	14:44	11.4	2,403.0	57,674.9
	SWFTS-MW12	11:13	14:44	12.4	2,624.2	49,237.2
	SWFTS-MW13	11:14	14:45	13.0	2,750.3	55,610.2
	SWFTS-MW17	11:14	14:45	22.6	4,758.3	92,147.4
6/14/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	14:59	16:41	1.6	168.0	7,762.3
	SWFTS-MW11	14:59	16:41	11.3	1,152.0	58,826.9
	SWFTS-MW12	14:59	16:41	12.5	1,276.4	50,513.6
	SWFTS-MW13	14:58	16:42	13.0	1,348.5	56,958.7
	SWFTS-MW17	14:58	16:42	22.2	2,307.2	94,454.6
6/15/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	7:00	9:10	1.8	229.5	7,991.8
	SWFTS-MW11	7:00	9:10	12.5	1,625.3	60,452.2
	SWFTS-MW12	7:00	9:10	12.8	1,668.9	52,182.5
	SWFTS-MW13	6:40	9:10	12.5	1,873.5	58,832.2
	SWFTS-MW17	6:40	9:10	21.7	3,249.1	97,703.7
6/15/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	9:19	12:50	1.6	331.5	8,323.3
	SWFTS-MW11	9:19	12:50	11.0	2,314.5	62,766.7
	SWFTS-MW12	9:19	12:50	12.1	2,557.3	54,739.8
	SWFTS-MW13	9:19	12:50	12.9	2,732.3	61,564.5
	SWFTS-MW17	9:19	12:50	22.5	4,738.9	102,442.6

Table 4
Summary of Groundwater Extraction Activities
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 Seep Well Field Area Bioremediation Treatability Study

Date	Extraction Well	Start Time	Stop Time	Average Flow Rate	Volume Extracted	Cumulative Volume Extracted
				gpm	gal	gal
6/15/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	13:01	14:59	1.6	189.8	8,513.1
	SWFTS-MW11	13:01	15:20	11.0	1,527.0	64,293.7
	SWFTS-MW12	13:01	14:59	12.1	1,425.8	56,165.6
	SWFTS-MW13	13:02	16:44	12.9	2,870.3	64,434.8
	SWFTS-MW17	13:02	16:44	22.3	4,952.0	107,394.6
6/15/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	16:01	16:42	2.1	87.0	8,600.1
	SWFTS-MW11	16:01	16:42	9.3	381.0	64,674.7
	SWFTS-MW12	16:01	16:42	11.9	488.1	56,653.7
	SWFTS-MW13	-	-	-	-	64,434.8
	SWFTS-MW17	-	-	-	-	107,394.6
6/16/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	6:37	7:27	1.7	84.8	8,684.9
	SWFTS-MW11	6:37	7:27	10.8	540.0	65,214.7
	SWFTS-MW12	6:37	7:27	11.0	550.8	57,204.5
	SWFTS-MW13	6:30	7:28	13.1	757.5	65,192.3
	SWFTS-MW17	6:30	7:28	23.0	1,334.2	108,728.8
6/16/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	7:39	11:15	1.5	326.3	9,011.2
	SWFTS-MW11	7:39	11:15	10.6	2,293.5	67,508.2
	SWFTS-MW12	7:39	11:15	11.8	2,545.5	59,750.0
	SWFTS-MW13	7:39	11:15	13.0	2,806.5	67,998.8
	SWFTS-MW17	7:39	11:15	22.6	4,878.0	113,606.8
6/16/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	11:23	14:37	1.6	301.5	9,312.7
	SWFTS-MW11	11:23	14:37	10.3	2,007.0	69,515.2
	SWFTS-MW12	11:23	14:37	11.9	2,308.8	62,058.8
	SWFTS-MW13	11:23	14:37	12.9	2,511.0	70,509.8
	SWFTS-MW17	11:23	14:37	22.3	4,326.5	117,933.3
6/16/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	14:47	16:47	1.6	192.8	9,505.5
	SWFTS-MW11	14:47	16:47	10.4	1,248.0	70,763.2
	SWFTS-MW12	14:47	16:47	11.8	1,419.8	63,478.6
	SWFTS-MW13	14:47	16:47	13.0	1,557.0	72,066.8
	SWFTS-MW17	14:47	16:47	22.4	2,685.0	120,618.3

Table 4
Summary of Groundwater Extraction Activities
Injection Event 6 - May/June 2020
 Seep Well Field Area Bioremediation Treatability Study

Date	Extraction Well	Start Time	Stop Time	Average Flow Rate	Volume Extracted	Cumulative Volume Extracted
				gpm	gal	gal
6/17/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	6:28	7:32	1.7	109.5	9,615.0
	SWFTS-MW11	6:28	7:32	10.5	673.5	71,436.7
	SWFTS-MW12	6:28	7:32	11.2	719.9	64,198.5
	SWFTS-MW13	6:23	7:32	12.8	886.5	72,953.3
	SWFTS-MW17	6:23	7:32	22.5	1,555.8	122,174.1
6/17/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	7:43	10:34	1.6	266.3	9,881.3
	SWFTS-MW11	7:43	10:34	10.3	1,766.3	73,203.0
	SWFTS-MW12	7:43	10:34	11.6	1,975.7	66,174.2
	SWFTS-MW13	7:43	10:31	13.0	2,182.5	75,135.8
	SWFTS-MW17	7:43	10:31	22.5	3,774.5	125,948.6
6/17/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	10:45	14:07	1.5	307.5	10,188.8
	SWFTS-MW11	10:45	14:07	10.3	2,088.0	75,291.0
	SWFTS-MW12	10:45	14:07	11.5	2,323.3	68,497.5
	SWFTS-MW13	10:48	14:07	13.0	2,594.3	77,730.1
	SWFTS-MW17	10:48	14:07	22.6	4,492.7	130,441.3
6/17/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	14:24	16:09	1.6	167.3	10,356.1
	SWFTS-MW11	14:24	16:09	10.5	1,105.5	76,396.5
	SWFTS-MW12	14:24	16:09	11.5	1,210.1	69,707.6
	SWFTS-MW13	14:24	16:07	13.0	1,337.3	79,067.4
	SWFTS-MW17	14:24	16:07	22.3	2,297.0	132,738.3
6/18/2020	SWFTS-MW07A	-	-	-	-	-
	SWFTS-MW08A	8:03	8:54	1.6	82.5	10,438.6
	SWFTS-MW11	8:03	8:54	10.7	546.0	76,942.5
	SWFTS-MW12	8:03	8:54	10.6	539.6	70,247.2
	SWFTS-MW13	8:05	8:54	12.6	616.5	79,683.9
	SWFTS-MW17	8:05	8:54	21.7	1,063.7	133,802.0
EVENT TOTAL						371,114

Notes:

gpm gallons per minute
 gal gallons

Table 5
Batch Injection Quantities
Injection Event 6 - May/June 2020
Seep Well Field Area Bioremediation Treatability Study

Components	Batch						
	1	2	3	4	5	6	7
EVO (gallons) ⁽¹⁾	17084						
Glycerin (gallons)	64	80	64	64	20	15	60
AquaPure (gallons)	20	26	20	20	6	5	23
Sodium Sulfite (pounds)	50	62	50	50	16	12	60
Water (gallons)	11506	15799	10440	11181	3562	2620	15259
Total Injectate Solution (gallons)	11590	15905	10524	11265	3588	2640	15342

(1) Emulsified vegetable oil (EVO) was injected via in-line mixing with batches of water amended with glycerin, AquaPure phosphate solution, and sodium sulfite. Due to the inability to precisely control the ratio of EVO to amended groundwater injected during injection via in-line mixing, the entire targeted EVO volume was injected prior to injection of the final seventh batch of amended water.

Table 6
Specific Gravity Calibration Measurements
Injection Event 6 - May to June 2020
 Seep Well Field Area Bioremediation Treatability Study

Standard Dilution Parts EOS _{PRO} and Amendments ⁽¹⁾ to Parts Extracted Groundwater	EOS _{PRO} and Amendments ⁽¹⁾ % by weight	Emulsified Vegetable Oil Concentration % by weight	Hydrometer Readings					Sample Temperature (°F)					Temperature Corrected Specific Gravity						
			Dup-1	Dup-2	Dup-3	Dup-4	Dup-5	Dup-1	Dup-2	Dup-3	Dup-4	Dup-5	Dup-1	Dup-2	Dup-3	Dup-4	Dup-5	Average	SD
1:0 - EOS _{PRO} and Amendments Only ⁽²⁾	100.0%	57.7%	0.960	0.965	0.965	0.963	0.965	78.9	76.2	77.3	77.5	77.2	0.962	0.967	0.967	0.965	0.967	0.965	0.002
1:4 - EOS _{PRO} Tank 1 standard	20.2%	11.6%	0.989	0.989	0.990	0.987	0.989	71	69	69	69	69	0.990	0.990	0.991	0.988	0.990	0.990	0.001
1:4 - EOS _{PRO} Tank 2 standard	20.2%	11.6%	0.992	0.992	0.992	0.992	0.993	66	65	64	64	65	0.993	0.992	0.992	0.992	0.993	0.992	0.001
1:4 - EOS _{PRO} Tank 3 standard	20.2%	11.6%	0.989	0.990	0.990	0.990	0.990	80	78	77	76	74	0.991	0.992	0.992	0.992	0.991	0.992	0.001
1:4 - EOS _{PRO} Tank 4 standard	20.2%	11.6%	0.992	0.992	0.991	0.992	0.992	68	65	66	64	64	0.993	0.992	0.992	0.992	0.992	0.992	0.000
0:1 - Extracted Groundwater Only	0.0%	0.0%	1.004	1.004	1.004	1.003	1.003	60	59	58	59	59	1.004	1.004	1.004	1.003	1.003	1.004	0.001

Notes:

Dup - sample duplicate

SD - standard deviation

1. Injectate solution includes emulsified vegetable oil (EOS_{PRO}), phosphate solution (Aquapure 3601 NSF), glycerin, and sodium sulfite mixed into extracted groundwater. A 1:4 injectate stock solution standard was prepared for each tank of EOS_{PRO}.

2. Due to high viscosity of the EOS_{PRO}, a new measurement of specific gravity of pure EOS_{PRO} with amendments was not able to be collected. Reported specific gravity measurements for pure EOS_{PRO} with amendments were collected in October 2019 during the fifth injection event.

Table 7
Specific Gravity Measurements
Injection Event 6 - May to June 2020
 Seep Well Field Area Bioremediation Treatability Study

EOS _{PRO} Tank Number	Date	Time	Hydrometer Readings (Calibrated for 60°F)	Sample Temperature (°F)	Corrected Specific Gravity	Calculated Percent Oil	Within Acceptable Range ⁽¹⁾	Comments
1	5/29/2020	13:25	0.985	69.6	0.986	23.5%	YES	Sampled after 363 gallons of EOS _{PRO} from tank 1 were injected.
1	5/29/2020	14:40	0.987	69.0	0.988	20.3%	YES	Sampled after 1,337 gallons of EOS _{PRO} from tank 1 were injected.
1	5/29/2020	15:45	0.987	69.4	0.988	20.3%	YES	Sampled after 2,089 gallons of EOS _{PRO} from tank 1 were injected.
2	5/30/2020	14:15	0.987	67.2	0.988	21.8%	YES	Sampled after 344 gallons of EOS _{PRO} from tank 2 were injected.
2	5/30/2020	15:25	0.982	66.2	0.983	29.6%	NO	Sampled after 1,321 gallons of EOS _{PRO} from tank 2 were injected. Reduced
2	5/30/2020	16:30	0.987	67.2	0.988	21.8%	YES	Sampled after 2,011 gallons of EOS _{PRO} from tank 2 were injected.
2	5/30/2020	18:00	0.989	66.2	0.990	18.7%	YES	Sampled after 4,089 gallons of EOS _{PRO} from tank 2 were injected.
2	5/31/2020	10:00	1.000	69.0	1.001	1.4%	NO	Sampled after 4,196 gallons of EOS _{PRO} from tank 2 were injected, reflects
3	5/31/2020	11:15	0.990	65.6	0.990	18.7%	YES	Sampled after 182 gallons of EOS _{PRO} from tank 3 were injected.
3	5/31/2020	13:00	0.988	67.0	0.988	21.8%	YES	Sampled after 728 gallons of EOS _{PRO} from tank 3 were injected.
3	5/31/2020	16:45	0.988	66.8	0.988	21.8%	YES	Sampled after 2,440 gallons of EOS _{PRO} from tank 3 were injected.
4	6/1/2020	10:45	0.995	64.6	0.995	10.8%	YES	Sampled after 78 gallons of EOS _{PRO} from tank 4 were injected.
4	6/1/2020	11:30	0.994	65.0	0.994	12.4%	YES	Sampled after 145 gallons of EOS _{PRO} from tank 4 were injected.
4	6/1/2020	12:55	0.995	65.2	0.995	10.8%	YES	Sampled after 310 gallons of EOS _{PRO} from tank 4 were injected.
4	6/1/2020	15:15	0.987	73.2	0.988	21.8%	YES	Sampled after 593 gallons of EOS _{PRO} from tank 4 were injected.
4	6/1/2020	16:30	0.994	64.4	0.994	12.4%	YES	Sampled after 706 gallons of EOS _{PRO} from tank 4 were injected.
4	6/2/2020	9:35	0.995	64.0	0.995	10.8%	YES	Sampled after 1,875 gallons of EOS _{PRO} from tank 4 were injected.
4	6/2/2020	11:50	0.995	66.2	0.995	10.8%	YES	Sampled after 2,463 gallons of EOS _{PRO} from tank 4 were injected.
4	6/2/2020	16:50	0.995	64.0	0.995	10.8%	YES	Sampled after 3,387 gallons of EOS _{PRO} from tank 4 were injected.

Notes:

1. The acceptable range of specific gravity measurements was determined to be 0.986 to 0.994 for EOS_{PRO} Tank 1 and 0.988 to 0.996 for EOS_{PRO} tank 2, tank 3 and tank 4. This was determined by taking +/- 10% of the difference between the pure EOS_{PRO} with amendments solution and the pure extracted groundwater (equivalent to 0.004) and then adding and subtracting that value with the specific gravity of the 1:4 standard for each tank (shown in Table 6).