

**MONTHLY PROGRESS REPORT #320
FOR NOVEMBER 2023**

EPA REGION I ADMINISTRATIVE ORDERS SDWA 1-97-1019 and 1-2000-0014

**JOINT BASE CAPE COD (JBCC)
TRAINING RANGE AND IMPACT AREA**

The following summary of progress is for the period from 01 to 30 November 2023.

1. SUMMARY OF REMEDIATION ACTIONS

Remediation Actions (RA) Underway at Camp Edwards as of 24 November 2023:

Demolition Area 1 Comprehensive Groundwater RA

The Demolition Area 1 Comprehensive Groundwater RA consists of the removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. Extraction, treatment, and recharge (ETR) systems at Frank Perkins Road, Base Boundary, and the Leading Edge include extraction wells, an ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and injection wells to return treated water to the aquifer.

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility continues to operate at a flow rate of 175 gallons per minute (gpm), with over 3.048 billion gallons of water treated and re-injected as of 24 November 2023. The following Frank Perkins Road Treatment Facility shutdowns occurred in November:

- 1045 on 02 November 2023 due to a power outage and was restarted on 1210 on 02 November 2023.

The Base Boundary Mobile Treatment Unit (MTU) continues to operate at a flow rate of 65 gpm. As of 24 November 2023, over 384.1 million gallons of water were treated and re-injected. No Base Boundary MTU shutdowns occurred in November.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 24 November 2023, over 380.1 million gallons of water were treated and re-injected. The following Leading Edge system shutdowns occurred in November:

- 1646 on 07 November 2023 due to a power interruption and was restarted at 0747 on 08 November 2023.

The Pew Road MTU was turned off with regulatory approval on 08 March 2021 (formerly operated at a flow rate of 65 gpm). Over 672.9 million gallons of water were treated and re-injected during the RA.

J-2 Range Groundwater RA

Northern Plant

The J-2 Range Northern Treatment facility consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The Extraction, Treatment, and Re-infiltration system includes three extraction wells, an ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration basin to return treated water to the aquifer.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 24 November 2023, over 2.146 billion gallons of water have been treated and re-injected. No MTU E and F shutdowns occurred in November.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 24 November 2023, over 1.651 billion gallons of water have been treated and re-injected. No MTU G shutdowns occurred in November.

Eastern Plant

The J-2 Range Eastern Treatment facility consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETI system includes the following components: three extraction wells in an axial array, an ex-situ treatment process consisting of an ion exchange (IX) resin and granular activated carbon (GAC) media to treat perchlorate and explosives compounds, and three infiltration trenches located along the lateral boundaries of the plume where treated water enters the vadose zone and infiltrates into the aquifer. The J-2 Range Eastern system is running at a combined total flow rate of 495 gpm.

The MTUs H and I continue to operate at a flow rate of 250 gpm. As of 24 November 2023, over 1.786 billion gallons of water have been treated and re-injected. No MTU H and I shutdowns occurred in November:

MTU J continues to operate at a flow rate of 120 gpm. As of 24 November 2023, over 837.2 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred in November.

MTU K continues to operate at a flow rate of 125 gpm. As of 24 November 2023, over 961.7 million gallons of water have been treated and re-injected. No MTU K shutdowns occurred in November.

J-3 Range Groundwater RA

The J-3 Range Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The ETR system includes four extraction wells, an ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater and utilizes the existing Fuel Spill-12 (FS-12) infiltration gallery to return treated water to the aquifer.

The J-3 system is currently operating at a flow rate of 255 gpm. As of 24 November 2023, over 1.769 billion gallons of water have been treated and re-injected. No J3 system shutdowns occurred in November.

J-1 Range Groundwater RA

Southern Plant

The J-1 Range Southern Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds. The ETR system includes

two extraction wells, an ex-situ treatment process to remove explosives compounds from the groundwater, and an infiltration trench to return treated water to the aquifer.

The Southern MTU continues to operate at a flow rate of 125 gpm. As of 24 November 2023, over 772.9 million gallons of water have been treated and re-injected. The following J-1 Range Southern MTU shutdowns occurred in November:

- 0850 on 09 November 2023 for sampling of EW0001 and was restarted at 0932 on 09 November 2023.

Northern Plant

The J-1 Range Northern Groundwater RA consists of removal and treatment of contaminated groundwater to control further migration of explosives compounds and perchlorate. The ETR system includes two extraction wells, an ex-situ treatment process to remove explosives compounds and perchlorate from the groundwater, and an infiltration trench to return treated water to the aquifer.

The Northern MTU continues to operate at a total system flow rate of 250 gpm. As of 24 November 2023, over 1.292 billion gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shutdowns occurred in November:

- 1000 on 08 November 2023 to replace a leaking flange on the GAC #5 effluent valve and was restarted at 1045 on 08 November 2023.

Central Impact Area RA

The Central Impact Area (CIA) Groundwater treatment facility consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETR system includes the following components: three extraction wells, an ex-situ treatment process consisting of an ion exchange resin and granular activated carbon media to treat explosives compounds, and three infiltration galleries to return treated water to the aquifer. The CIA systems 1, 2, and 3 continue to run at a combined total flow rate of 750 gpm. As of 24 November 2023, over 3.366 billion gallons of water have been treated and re-injected. The following CIA system shutdowns occurred in November:

- 1045 on 02 November 2023 at CIA-1 due to a power outage and was restarted at 1150 on 02 November 2023.
- 1045 on 02 November 2023 at CIA-2 due to a power outage and was restarted at 1150 on 02 November 2023.
- 0750 on 14 November 2023 at CIA-3 to perform a carbon exchange on GAC vessels #3 and #6 and was restarted at 0740 on 17 November 2023

2. SUMMARY OF ACTIONS TAKEN

Operable Unit (OU) Activity as of 24 November 2023:

CIA

- Source Area investigations
 - Completed intrusive investigations in P4A3 for the 2023 field season
 - Completed demo operations for the 2023 field season

- Transport and disposal of 85 cy of soil from blow in place (BIP) and cracked item locations
- Conducted annual sampling of the consolidated shot structure (CSS) soils
- Routine visual check of CSS soil cover and surface area around the perimeter of the CSS
- Complete demobilization of personnel and equipment

Demolition Area 1

- No activity

Demolition Area 2

- No activity

J-1 Range

- Hydraulic groundwater monitoring event within the J1 South SPM Program
- Groundwater sampling within J-1 Range South SPM Program
- Groundwater sampling within J-1 Range North SPM Program
- Bag filters changed at J-1 Range North

J-2 Range

- No activity

J-3 Range

- Bag filters changed

L Range

- No activity

Small Arms Ranges

- No activity

Northwest Corner

- No activity

Training Areas

- No activity

Impact Area Roads

- No activity

Other

- Collected process water samples from Central Impact Area, Demolition Area 1, J-1 Range Northern, J-1 Range Southern, J-2 Range Eastern, J-2 Range Northern, and J-3 Range treatment systems.

JBCC Impact Area Groundwater Study Program (IAGWSP) Tech Update Meeting Minutes for 16 November 2023

The November 2023 tech meeting consisted of project updates sent electronically.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) will be held virtually on Wednesday, 13 December 2023 (previous meeting was 30 August 2023). Meeting details and presentation materials can be found on the IAGWSP web site at <http://jbcc-iagwsp.org/community/impact/presentations/>. The Cleanup Team meeting discusses late breaking news and responses to action items, as well as updates from the IAGWSP and the Installation Restoration Program (IRP). The JBCCCT meetings provide a forum for community input regarding issues related to both the IRP and the IAGWSP.

3. SUMMARY OF DATA RECEIVED

Table 1 summarizes sampling for all media from 01 to 30 November 2023. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 01 to 30 November 2023. These results are compared to the Maximum Contaminant Levels/Health Advisory (MCL/HA) values for respective analytes. Explosives and perchlorate are the primary contaminants of concern (COC) at Camp Edwards. Table 3 summarizes the validated detections of per- and polyfluoroalkyl substances (PFAS) for influent and groundwater results analyzed by EPA draft Method 1633 and received from 01 to 30 November 2023. Table 3 PFAS results are compared to the Regional Screening Levels (RSLs) published by EPA in November 2023. No PFAS data validation was completed during November, therefore Table 3 is not included.

The operable units (OUs) under investigation and cleanup at Camp Edwards are the Central Impact Area, Demolition Area 1, Demolition Area 2, J-1 Range, J-2 Range, J-3 Range, L Range, Northwest Corner, Small Arms Ranges, and Training Areas. Environmental monitoring reports for each OU are generated each year to evaluate the current year groundwater results. These reports are available on the site Environmental Data Management System (EDMS) and at the project document repositories (IAGWSP office and Jonathan Bourne Library).

4. SUBMITTED DELIVERABLES

Deliverables submitted during the reporting period include the following:

- Monthly Progress Report No. 319 for October 2023 14 November 2023
- Draft J-3 Range Environmental Monitoring Report for September 2021 through August 2022 29 November 2023

5. SCHEDULED ACTIONS

The following actions and/or documents are being prepared in December 2023.

- Response to Comments on the Draft Five Year Review Report
- IAGWSP Comprehensive PFAS Groundwater Sampling Summary Report
- Response to Comments on J-1 Range North 2022 Environmental Monitoring Report
- Response to Comments on J-1 Range South 2022 Environmental Monitoring Report
- Draft Central Impact Area Environmental Monitoring Report for July 2022 through June 2023
- Draft Demo 1 Environmental Monitoring Report for July 2022 through June 2023
- Final J-2 Range North Environmental Monitoring Report for November 2021 through October 2022
- Memorandum of Resolution for the Northwest Corner Demonstration of Compliance Report (on hold pending resolution of PFAS issues)

TABLE 1
Sampling Progress: 01 to 30 November 2023

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Northern	MW-566M1	MW-566M1_F23	N	11/28/2023	Ground Water	232	242
J1 Range Northern	MW-656M2	MW-656M2_F23	N	11/28/2023	Ground Water	222.1	232.1
J1 Range Northern	MW-656M1	MW-656M1_F23	N	11/28/2023	Ground Water	244.1	254.1
J1 Range Northern	MW-547M2	MW-547M2_F23	N	11/28/2023	Ground Water	178	188
J1 Range Northern	MW-547M1	MW-547M1_F23	N	11/28/2023	Ground Water	237	247
J1 Range Northern	MW-479M1	MW-479M1_F23	N	11/27/2023	Ground Water	239.59	249.59
J1 Range Northern	MW-689M2	MW-689M2_F23	N	11/27/2023	Ground Water	231.4	241.4
J1 Range Northern	MW-689M1	MW-689M1_F23	N	11/27/2023	Ground Water	253.5	263.5
J1 Range Northern	MW-688M2	MW-688M2_F23	MS	11/27/2023	Ground Water	227.8	237.8
J1 Range Northern	MW-688M2	MW-688M2_F23	N	11/27/2023	Ground Water	227.8	237.8
J1 Range Northern	MW-688M2	MW-688M2_F23	SD	11/27/2023	Ground Water	227.8	237.8
J1 Range Northern	MW-688M1	MW-688M1_F23	N	11/27/2023	Ground Water	255.2	265.2
J1 Range Northern	MW-166M3	MW-166M3_F23	N	11/21/2023	Ground Water	125	135
J1 Range Northern	MW-166M3	MW-166M3_F23D	FD	11/21/2023	Ground Water	125	135
J1 Range Northern	MW-166M2	MW-166M2_F23	N	11/21/2023	Ground Water	150	160
J1 Range Northern	MW-166M1	MW-166M1_F23	N	11/21/2023	Ground Water	218	223
J1 Range Northern	MW-303M2	MW-303M2_F23	N	11/20/2023	Ground Water	235.09	245.1
J1 Range Northern	MW-303M2	MW-303M2_F23D	FD	11/20/2023	Ground Water	235.09	245.1
J1 Range Northern	MW-303M1	MW-303M1_F23	N	11/20/2023	Ground Water	299.07	309.07
J1 Range Northern	MW-369M1	MW-369M1_F23	N	11/20/2023	Ground Water	254.07	264.07
J1 Range Northern	MW-164M2	MW-164M2_F23	N	11/20/2023	Ground Water	157	167
J1 Range Northern	MW-164M1	MW-164M1_F23	N	11/20/2023	Ground Water	227	237
J2 Range Eastern	MW-164M1	MW-164M1_F23	N	11/20/2023	Ground Water	227	237
J2 Range Northern	MW-164M1	MW-164M1_F23	N	11/20/2023	Ground Water	227	237
J1 Range Southern	MW-360M2	MW-360M2_F23	N	11/20/2023	Ground Water	102	112
J1 Range Southern	MW-360M2	MW-360M2_F23D	FD	11/20/2023	Ground Water	102	112
J1 Range Southern	MW-303M3	MW-303M3_F23	N	11/20/2023	Ground Water	139.74	149.69
J1 Range Southern	MW-480M2	MW-480M2_F23	N	11/16/2023	Ground Water	143.57	153.57
J1 Range Southern	MW-482M3	MW-482M3_F23	N	11/16/2023	Ground Water	98.18	108.18
J1 Range Southern	MW-482M2	MW-482M2_F23	N	11/16/2023	Ground Water	172.64	182.64
J1 Range Southern	MW-482M2	MW-482M2_F23D	FD	11/16/2023	Ground Water	172.64	182.64
J1 Range Southern	DP-389	DP-389_F23	N	11/16/2023	Ground Water	158	163
J1 Range Southern	MW-722M2	MW-722M2_F23	N	11/14/2023	Ground Water	93.9	103.9
J1 Range Southern	MW-722M1	MW-722M1_F23	N	11/14/2023	Ground Water	114.2	124.2
J1 Range Southern	MW-722M1	MW-722M1_F23D	FD	11/14/2023	Ground Water	114.2	124.2
J1 Range Southern	MW-528M1	MW-528M1_F23	N	11/14/2023	Ground Water	117	127
J1 Range Southern	MW-645M2	MW-645M2_F23	N	11/13/2023	Ground Water	143.5	153.5
J1 Range Southern	MW-645M1	MW-645M1_F23	N	11/13/2023	Ground Water	183.5	193.5
J1 Range Southern	MW-646M2	MW-646M2_F23	N	11/13/2023	Ground Water	168	178
J1 Range Southern	MW-646M1	MW-646M1_F23	N	11/13/2023	Ground Water	198	208
J1 Range Southern	MW-647M2	MW-647M2_F23	N	11/13/2023	Ground Water	189.3	199.3
J1 Range Southern	MW-647M1	MW-647M1_F23	N	11/13/2023	Ground Water	211.3	221.3
J1 Range Southern	MW-483M1	MW-483M1_F23	N	11/09/2023	Ground Water	139.52	149.52
J1 Range Southern	MW-398M2	MW-398M2_F23	N	11/09/2023	Ground Water	131.53	141.53
J1 Range Southern	MW-398M1	MW-398M1_F23	N	11/09/2023	Ground Water	172.15	182.15
J1 Range Southern	J1S-EW1-INF	J1S-EW1-INF_F23	N	11/09/2023	Process Water	118	158
J1 Range Southern	J1S-EW2-INF	J1S-EW2-INF_F23	N	11/09/2023	Process Water	156	206
J1 Range Southern	MW-488PZ	MW-488PZ_F23	N	11/08/2023	Ground Water	119.28	129.28
J1 Range Southern	MW-488M1	MW-488M1_F23	N	11/08/2023	Ground Water	149.62	159.62
J1 Range Southern	DP-379	DP-379_F23	N	11/08/2023	Ground Water	184	189
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-182A	N	11/07/2023	Process Water	0	0
J1 Range Southern	MW-523M1	MW-523M1_F23	N	11/07/2023	Ground Water	158	168
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-182A	N	11/07/2023	Process Water	0	0
J1 Range Southern	MW-522M2	MW-522M2_F23	MS	11/07/2023	Ground Water	165	175

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 30 November 2023

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Southern	MW-522M2	MW-522M2_F23	N	11/07/2023	Ground Water	165	175
J1 Range Southern	MW-522M2	MW-522M2_F23	SD	11/07/2023	Ground Water	165	175
J1 Range Southern	MW-522M1	MW-522M1_F23	N	11/07/2023	Ground Water	198	208
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-182A	N	11/07/2023	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-182A	N	11/07/2023	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-192A	N	11/06/2023	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-192A	N	11/06/2023	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-192A	N	11/06/2023	Process Water	0	0
J1 Range Southern	MW-526M1	MW-526M1_F23	N	11/06/2023	Ground Water	164	174
J1 Range Southern	MW-527M1	MW-527M1_F23	N	11/06/2023	Ground Water	165	175
Central Impact Area	SSCIACSL03	JBCC-CLL-02	N	11/06/2023	Soil	0	0
J3 Range	J3-EFF	J3-EFF-206A	N	11/06/2023	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-206A	N	11/06/2023	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-206A	N	11/06/2023	Process Water	0	0
J3 Range	J3-INF	J3-INF-206A	N	11/06/2023	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-212A	N	11/06/2023	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-212A	N	11/06/2023	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-212A	N	11/06/2023	Process Water	0	0
Central Impact Area	SSCIACSL03	JBCC-CVR-02	LR	11/06/2023	Soil	0	0
Central Impact Area	SSCIACSL03	JBCC-CVR-02	LT	11/06/2023	Soil	0	0
Central Impact Area	SSCIACSL03	JBCC-CVR-02	MS	11/06/2023	Soil	0	0
Central Impact Area	SSCIACSL03	JBCC-CVR-02	N	11/06/2023	Soil	0	0
Central Impact Area	SSCIACSL03	JBCC-CVR-02	SD	11/06/2023	Soil	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-212A	N	11/06/2023	Process Water	0	0
J1 Range Southern	MW-525M2	MW-525M2_F23	N	11/06/2023	Ground Water	148	158
Demolition Area 1	D1LE-EFF	D1LE-EFF-88A	N	11/06/2023	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-88A	N	11/06/2023	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-88A	N	11/06/2023	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-88A	N	11/06/2023	Process Water	0	0
J1 Range Southern	MW-525M1	MW-525M1_F23	N	11/06/2023	Ground Water	172	182
Demolition Area 1	D1-EFF	D1-EFF-160A	N	11/06/2023	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-160A	N	11/06/2023	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-160A	N	11/06/2023	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-160A	N	11/06/2023	Process Water	0	0
Central Impact Area	CIA2-EFF	CIA2-EFF-118A	N	11/02/2023	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-118A	N	11/02/2023	Process Water	0	0
J1 Range Southern	MW-521M1	MW-521M1_F23	N	11/02/2023	Ground Water	158	168
Central Impact Area	CIA2-MID1	CIA2-MID1-118A	N	11/02/2023	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-118A	N	11/02/2023	Process Water	0	0
J1 Range Southern	MW-670M2	MW-670M2_F23	N	11/02/2023	Ground Water	198.5	208.5
J1 Range Southern	MW-670M1	MW-670M1_F23	N	11/02/2023	Ground Water	220.5	230.5
Central Impact Area	CIA1-EFF	CIA1-EFF-118A	N	11/02/2023	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-118A	N	11/02/2023	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-118A	N	11/02/2023	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-118A	N	11/02/2023	Process Water	0	0
J1 Range Southern	MW-402M2	MW-402M2_F23	N	11/02/2023	Ground Water	155.24	165.27
Central Impact Area	CIA3-EFF	CIA3-EFF-89A	N	11/02/2023	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-89A	N	11/02/2023	Process Water	0	0
J1 Range Southern	MW-402M1	MW-402M1_F23	N	11/02/2023	Ground Water	190.14	200.13
Central Impact Area	CIA3-MID1	CIA3-MID1-89A	N	11/02/2023	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-89A	N	11/02/2023	Process Water	0	0
J1 Range Southern	MW-592M2	MW-592M2_F23	N	11/01/2023	Ground Water	158	168
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-206A	N	11/01/2023	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-206A	N	11/01/2023	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-206A	N	11/01/2023	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-206A	N	11/01/2023	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 30 November 2023

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Southern	MW-592M1	MW-592M1_F23	N	11/01/2023	Ground Water	201	211
J1 Range Southern	MW-591M2	MW-591M2_F23	MS	11/01/2023	Ground Water	165	175
J1 Range Southern	MW-591M2	MW-591M2_F23	N	11/01/2023	Ground Water	165	175
J1 Range Southern	MW-591M2	MW-591M2_F23	SD	11/01/2023	Ground Water	165	175
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-206A	N	11/01/2023	Process Water	0	0
J1 Range Southern	MW-591M1	MW-591M1_F23	N	11/01/2023	Ground Water	200	210
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-206A	N	11/01/2023	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-206A	N	11/01/2023	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-206A	N	11/01/2023	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-206A	N	11/01/2023	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-206A	N	11/01/2023	Process Water	0	0
J1 Range Southern	MW-481M2	MW-481M2_F23	N	11/01/2023	Ground Water	146.28	156.28
J1 Range Northern	J1N-EFF	J1N-EFF-121A	N	11/01/2023	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-121A	N	11/01/2023	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-121A	N	11/01/2023	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-121A	N	11/01/2023	Process Water	0	0
J1 Range Southern	MW-481M1	MW-481M1_F23	N	11/01/2023	Ground Water	189.74	199.74

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received November 2023

Area of Concern	Location ID	Field Sample ID	Top Depth (ft bgs)	Bottom Depth (ft bgs)	Date Sampled	Test Method	Analyte	Result Value	Qualifier	Units	MCL/HA	> MCL/HA	MDL	RL
J1 Range Southern	MW-733M1	MW-733M1_F23	212	222	10/31/2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.33	J	µg/L	0.60		0.043	0.20
J2 Range Northern	MW-736M2	MW-736M2_F23	240	250	10/30/2023	SW6850	Perchlorate	0.039	J	µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW0002	J2EW0002_F23	198	233	10/23/2023	SW6850	Perchlorate	3.1		µg/L	2.0	X	0.039	0.20
J2 Range Northern	J2EW0002	J2EW0002_F23D	198	233	10/23/2023	SW6850	Perchlorate	3.1		µg/L	2.0	X	0.039	0.20
J2 Range Northern	MW-330M1	MW-330M1_F23	313.1	323.13	10/19/2023	SW6850	Perchlorate	0.83		µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW2-MW2-C	J2EW2-MW2-C_F23	243.83	253.81	10/18/2023	SW6850	Perchlorate	0.043	J	µg/L	2.0		0.039	0.20
J2 Range Northern	MW-337M1	MW-337M1_F23	243.71	253.71	10/17/2023	SW6850	Perchlorate	0.12	J	µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW0003	J2EW0003_F23	202	232	10/16/2023	SW6850	Perchlorate	0.18	J	µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW0001	J2EW0001_F23	179	234	10/16/2023	SW6850	Perchlorate	0.47		µg/L	2.0		0.039	0.20
J2 Range Northern	MW-230M1	MW-230M1_F23	130	140	10/12/2023	SW6850	Perchlorate	0.14	J	µg/L	2.0		0.039	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW6850	Perchlorate	0.048	J	µg/L	2.0		0.039	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW8330	1,3,5-Trinitrobenzene	0.14	J	µg/L	1090		0.11	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW8330	1,3-Dinitrobenzene	0.048	J	µg/L	1.0		0.039	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW8330	2,4,6-Trinitrotoluene	2.6		µg/L	2.0	X	0.096	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW8330	2,4-Dinitrotoluene	0.18	J	µg/L	5.0		0.045	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW8330	2-Amino-4,6-dinitrotoluene	2.6		µg/L	7.3		0.038	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW8330	4-Amino-2,6-dinitrotoluene	2.0		µg/L	7.3		0.075	0.20
J2 Range Northern	MW-234M2	MW-234M2_F23	110	120	10/12/2023	SW8330	Picric acid	0.080	J	µg/L	365		0.060	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23	130	140	10/12/2023	SW6850	Perchlorate	0.095	J	µg/L	2.0		0.039	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23	130	140	10/12/2023	SW8330	2,4,6-Trinitrotoluene	0.62		µg/L	2.0		0.096	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23	130	140	10/12/2023	SW8330	2,4-Dinitrotoluene	0.093	J	µg/L	5.0		0.045	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23	130	140	10/12/2023	SW8330	2-Amino-4,6-dinitrotoluene	0.30		µg/L	7.3		0.038	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23	130	140	10/12/2023	SW8330	4-Amino-2,6-dinitrotoluene	0.32		µg/L	7.3		0.075	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23D	130	140	10/12/2023	SW6850	Perchlorate	0.095	J	µg/L	2.0		0.039	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23D	130	140	10/12/2023	SW8330	2,4,6-Trinitrotoluene	0.56		µg/L	2.0		0.096	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23D	130	140	10/12/2023	SW8330	2,4-Dinitrotoluene	0.089	J	µg/L	5.0		0.045	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23D	130	140	10/12/2023	SW8330	2-Amino-4,6-dinitrotoluene	0.27		µg/L	7.3		0.038	0.20
J2 Range Northern	MW-234M1	MW-234M1_F23D	130	140	10/12/2023	SW8330	4-Amino-2,6-dinitrotoluene	0.30		µg/L	7.3		0.075	0.20
J2 Range Northern	MW-348M2	MW-348M2_F23	206.54	216.54	10/11/2023	SW6850	Perchlorate	2.9		µg/L	2.0	X	0.039	0.20
J2 Range Northern	MW-293M2	MW-293M2_F23	0	0	10/11/2023	SW6850	Perchlorate	0.068	J	µg/L	2.0		0.039	0.20
J2 Range Northern	MW-300M2	MW-300M2_F23	197.23	207.23	10/11/2023	SW6850	Perchlorate	0.11	J	µg/L	2.0		0.039	0.20
J2 Range Northern	MW-620M1	MW-620M1_F23	268.6	278.6	10/10/2023	SW6850	Perchlorate	0.066	J	µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW3-MW1-C	J2EW3-MW1-C_F23	245.66	255.66	10/10/2023	SW6850	Perchlorate	0.072	J	µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW1-MW1-B	J2EW1-MW1-B_F23	205.82	215.82	10/10/2023	SW6850	Perchlorate	0.091	J	µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW1-MW1-C	J2EW1-MW1-C_F23	240.8	250.8	10/10/2023	SW6850	Perchlorate	1.6		µg/L	2.0		0.039	0.20
J2 Range Northern	J2EW1-MW1-C	J2EW1-MW1-C_F23D	240.8	250.8	10/10/2023	SW6850	Perchlorate	1.5		µg/L	2.0		0.039	0.20

J = Estimated Result
MDL = Method Detection Limit
RL = Reporting Limit
ND = Non-Detect