

**MONTHLY PROGRESS REPORT #260  
FOR NOVEMBER 2018**

**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 29 October 2018 to 30 November 2018.

**1. SUMMARY OF REMEDIATION ACTIONS**

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of November 2018.

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, Pew Road, Base Boundary, and the Leading Edge include extraction wells, ex-situ treatment processes 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 gpm, with over 2.607 billion gallons of water treated and re-injected as of 30 November 2018. No shut downs occurred in the November reporting period.

The Pew Road Mobile Treatment Unit (MTU) is operating at a flow rate of 100 gpm (increased from 65 gpm on 18 June 2018), with over 594.0 million gallons of water treated and re-injected as of 30 November 2018. The following Pew Road MTU shut downs occurred in the November reporting period:

- 0022 on 09 November 2018 due to a “Groundwater pump VFD fault” alarm, caused by a power supply interruption. The MTU was restarted at 0731 on 09 November 2018.

The Base Boundary MTU is operating at a flow rate of 65 gpm with over 216.7 million gallons of water treated and re-injected as of 30 November 2018. No Base Boundary MTU shut downs occurred in the November reporting period.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 30 November 2018, over 130.7 million gallons of water treated and re-injected. The following Leading Edge system shut downs occurred in the November reporting period.

- 0716 on 04 November 2018 due to a “Well pump motor fault” alarm, caused by a power supply interruption. The MTU was restarted at 0743 on 05 November 2018.

### 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, 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 Treatment Building continues to operate at a flow rate of 225 gpm. As of 30 November 2018, over 1.060 billion gallons of water have been treated and re-injected. No Northern Treatment Building shutdown occurred in the November reporting period.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 30 November 2018, over 1.567 billion gallons of water have been treated and re-injected. The following J-2 Range Northern MTU E or F shut downs occurred in the November reporting period:

- 0750 on 30 November 2018 to replace a leaking hose at MTU E between the IX resin and GAC vessels, and restarted at 0822 on 30 November 2018.

#### 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 will enter the vadose zone and infiltrate 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 30 November 2018, over 1.148 billion gallons of water have been treated and re-injected. No MTU H and I shutdowns occurred in the November reporting period.

MTU J continues to operate at a flow rate of 120 gpm. As of 30 November 2018, over 529.9 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred in the November reporting period.

MTU K continues to operate at a flow rate of 125 gpm. As of 30 November 2018, over 666.3 million gallons of water have been treated and re-injected. The following MTU K shutdowns occurred in the November reporting period.

- 1000 on 07 November 2018 to replace the ball valves, camlock fittings, and hoses at each of the vessels. The MTU was restarted at 1210 on 07 November 2018.

### 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, ex-situ treatment process to remove explosives compounds and perchlorate from the

groundwater and use of 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 (while J3EW0032 is running at 45 gpm instead of 65 gpm). As of 30 November 2018, over 1.177 billion gallons of water have been treated and re-injected. No J-3 Range system shut downs occurred in the November reporting period,

### 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, 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 30 November 2018, over 513.5 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut downs occurred in the November reporting period.

- J1SEW0002 was turned off at 1145 on 30 October 2018 to sample J1SEW0001, and was restarted at 1230 on 30 October 2018.

#### 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, 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 30 November 2018, over 613.3 million gallons of water have been treated and re-injected. No J-1 Range Northern MTU shut downs occurred in the November reporting period.

### 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 (IX) resin and granular activated carbon (GAC) 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 30 November 2018, over 1.566 billion gallons of water have been treated and re-injected. The following CIA treatment facility shut downs occurred in the November reporting period:

- System 3 was turned off at 1030 on 08 November 2018 due to a live, downed power line. Eversource replaced the line and damaged pole on 20 November 2018 and restored power. System 3 was restarted at 1107 on 20 November 2018.

## SUMMARY OF ACTIONS TAKEN

### CIA

- Performed routine inspections of BEM cover at the CIA to ensure cover is secure and intact, and demo operations.
- Completed MetalMapper recollects and conducted intrusive investigation in Phase 3 Area 1.
- Groundwater sampling within the Central Impact Area SPM program.

### Demolition Area 1 and 2

- Replaced road box at MW-642 due to Michael Road paving (Demo 1 offsite).
- Groundwater sampling within the Demo 2 LTM program.

### Small Arms Ranges

- Began T&D of C Range (10th lift) soil.
- Excavated 10th lift (1-ft) at Former B Range grid FB140QR
- Excavated 11th lift (0.5-ft) at C Range grid CRNGS
- Excavated 6th lift (1-ft) at D Range grid DR158EAST
- Collected post-excitation samples (with replicates) at Former B Range, C Range, and D Range excavation grids.
- Collected waste characterization samples from Former B Range, C and D Range excavated soils.

### J1 Range

- Groundwater sampling within the J1 North SPM program.
- Groundwater sampling within the J1 South SPM program.

### J2 Range

- No Activity.

### J3 Range

- No Activity.

### Training Areas

- No Activity.

### Other

- Process water samples were collected from the Central Impact Area, Demolition Area 1, J1 Range Northern, J2 Range Eastern, J2 Range Northern, and J3 Range.
- Groundwater samples were collected from Demolition Area 2, J1 Range Northern, J1 Range Southern, J2 Range Eastern, and J2 Range Northern.
- Soil samples were collected from C Range, D Range, and Former B Range.

## **JBCC IAGWSP Tech Update Meeting Minutes 08 November 2018**

### **Project and Fieldwork Update**

Currently there is no drilling. The Town of Bourne is repaving Michael Road, where IAGWSP has several monitoring wells. Contractors will need to raise the wells to be flush with the new pavement surface. Since dig safe is not required for paving projects, MassDEP suggested IAGWSP send a letter to the Department of Public Work offices in towns where wells are located to let them know where the wells are. Long term monitoring sampling is underway in J-1 South. All treatment systems are up and running.

In the CIA, Parsons has three dig teams working. Areas A, B and E are 100% complete. Area C is approximately 92% complete and Area D is approximately 90% complete; however, there are additional digs that will be provided to the dig team (analyst picks). Work on the second 100% grid is underway, they have completed the AGC digs and are about halfway through the EM61 digs. ISM sampling of grid 46-55 will take place on November 12. EPA requested the most up-to-date CDC inventory. MassDEP suggested EPA consider granting a waiver in order for IAGWSP to dispose of the items in the BEM.

In the Small Arms Range, KGS is scheduled to begin excavating additional lifts at C Range, D Range and Former B Range next week. They will also be transporting the stockpiled soil at C and D Range off-site to the Bourne Landfill. In the Training Ranges, samples were collected from the Former E Range on October 25, results are still pending. Twelve samples were collected.

Figures with proposed well locations for the J-1 South plume were displayed and discussed. IAGWSP has provided a project note with recommendations for well locations in response to results received during the drive-point program from earlier this year. It was noted the contract option for drilling wells included more than what was proposed for J-1 South so the team should think about other additional locations e.g. downgradient at Demolition Area 1, Former E Range and CIA source area. Regulator comments are pending on the J-1 South project note.

### **Action Items**

Action items were discussed and updated.

### **Northwest Corner Annual Environmental Monitoring Report – Presentation**

A brief presentation was provided on the Northwest Corner Environmental Monitoring Report. It was noted that the plume is no longer being detected. For the fourth consecutive year, no monitoring wells exceeded the 2 µg/L MMCL for perchlorate and the maximum reported concentration was 0.83 µg/L. A very small residual plume had been conservatively depicted between monitoring wells in the 2017 report. Following four reporting periods with no evidence of any concentrations above the 2 µg/L MMCL coupled with steadily decreasing maximum measured concentrations, the plume is no longer shown. The decision document predicted that the plume would be below 2 µg/L by 2012 and below background (0.35 µg/L) by 2019. However, the remaining perchlorate concentrations are unlikely to be entirely below background by 2019.

No changes to the sampling program recommended at this time. The data to be collected during July 2018 – June 2019 reporting period utilizing the current approved well network will provide additional results for confirmation of the trend of decreasing concentrations and help better inform estimate of when concentrations are likely to drop below the 0.35 µg/L background level. Regulator comments on the report are pending.

**CIA Phase II Workplan Discussion**

Discussion was held on next steps for the CIA Phase III Workplan. Tetra Tech will prepare a figure showing the proposed five acres south of Area C as well as ten acres of 25-foot wide transects. Additionally Tetra Tech will look at the capabilities of their GIS technology to allow users to turn layers and overlays on and off. They will also discuss with Jeremiah Walsh at E&RC how his Smart Board may be utilized to enhance the process of reviewing and marking up the figures. It was noted that the team should have agreement on next steps before the end of the calendar year in order to meet Parsons' mobilization schedule.

**JBCC Cleanup Team Meeting**

The next JBCC Cleanup Team (JBCCCT) meeting has yet to be scheduled (previous meeting was 29 August 2018). 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.

**SUMMARY OF DATA RECEIVED**

Table 1 summarizes sampling for all media from 1 November to 30 November 2018. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 November to 30 November 2018. The November treatment system influent summary is not included due to no validated perchlorate or explosives results available at report submittal time. 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.

Twelve operable units (OU) are under investigation and cleanup at Camp Edwards. The OUs include: Central Impact Area, Demolition Area 1, Demolition Area 2, Former A Range, J-1 Range, J-2 Range, J-3 Range, L Range, Northwest Corner, Small Arms Ranges, Training Areas, and Western Boundary. 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).

**2. DELIVERABLES SUBMITTED**

Deliverables submitted during the reporting period include the following:

- Monthly Progress Report No. 259 for October 2018 13 Nov 18
- Draft Northwest Corner 2018 Annual Environmental Monitoring Report 20 Nov 18

**3. SCHEDULED ACTIONS**

The following documents were being prepared or revised during November 2018:

Training Areas

- Final Training Areas Decision Document

Annual Reports/ Environmental Monitoring Reports/Work Plans

- Draft Demolition Area 1 Annual Monitoring Report
- Draft CIA draft Annual Monitoring Report

Central Impact Area

- 2019 Workplan

Miscellaneous

- Certificates of Compliance
- CIA and J-2 Range rocket disposal recommendations
- Five Year Review Draft report
- J-1 South project note for additional well locations
- J-2 Range geophysical completion of work report and recommended well locations
- J-3 Geophysical and Soil Technical Memorandum
- L Range groundwater model and project note for an active treatment alternative supporting the Decision Document addendum
- PFAS sampling project note

**TABLE 1**  
**Sampling Progress: 1 November to 30 November 2018**

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-547M2	MW-547M2_F18	N	11/29/2018	Ground Water	178	188
J1 Range Northern	MW-547M1	MW-547M1_F18	N	11/29/2018	Ground Water	237	247
Demolition Area 1	PR-EFF	PR-EFF-153A	N	11/29/2018	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-153A	N	11/29/2018	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-153A	N	11/29/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-153A	N	11/29/2018	Process Water	0	0
J1 Range Northern	MW-656M2	MW-656M2_F18	N	11/29/2018	Ground Water	222.1	232.1
J1 Range Northern	MW-656M1	MW-656M1_F18	N	11/29/2018	Ground Water	244.1	254.1
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-153A	N	11/29/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-153A	N	11/29/2018	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-153A	N	11/29/2018	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-153A	N	11/29/2018	Process Water	0	0
Demolition Area 2	MW-161S	MW-161S_F18	N	11/29/2018	Ground Water	145.5	155.5
Demolition Area 2	MW-161S	MW-161S_F18D	FD	11/29/2018	Ground Water	145.5	155.5
Demolition Area 1	D1LE-EFF	D1LE-EFF-29A	N	11/29/2018	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-29A	N	11/29/2018	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-29A	N	11/29/2018	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-29A	N	11/29/2018	Process Water	0	0
Demolition Area 2	MW-160S	MW-160S_F18	N	11/29/2018	Ground Water	137.5	147.5
Demolition Area 1	D1-EFF	D1-EFF-101A	N	11/29/2018	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-101A	N	11/29/2018	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-101A	N	11/29/2018	Process Water	0	0
Demolition Area 2	MW-572M1	MW-572M1_F18	N	11/29/2018	Ground Water	164.9	174.9
Demolition Area 1	D1-INF	D1-INF-101A	N	11/29/2018	Process Water	0	0
Demolition Area 2	MW-573M2	MW-573M2_F18	N	11/28/2018	Ground Water	155.4	165.4
Demolition Area 2	MW-573M1	MW-573M1_F18	N	11/28/2018	Ground Water	176.4	186.4
Demolition Area 2	MW-435M2	MW-435M2_F18	N	11/28/2018	Ground Water	149.57	159.93
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-147A	N	11/28/2018	Process Water	0	0
Demolition Area 2	MW-435M1	MW-435M1_F18	N	11/28/2018	Ground Water	169.94	179.95
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-147A	N	11/28/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-147A	N	11/28/2018	Process Water	0	0
Demolition Area 2	MW-654M1	MW-654M1_F18	N	11/28/2018	Ground Water	154	164
Demolition Area 2	MW-655M2	MW-655M2_F18	N	11/28/2018	Ground Water	156	166
J1 Range Northern	J1N-EFF	J1N-EFF-62A	N	11/28/2018	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-62A	N	11/28/2018	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-62A	N	11/28/2018	Process Water	0	0
Demolition Area 2	MW-655M1	MW-655M1_F18	N	11/28/2018	Ground Water	178	188
J1 Range Northern	J1N-INF2	J1N-INF2-62A	N	11/28/2018	Process Water	0	0
J1 Range Northern	MW-245M2	MW-245M2_F18	N	11/27/2018	Ground Water	204	214
J1 Range Northern	MW-245M2	MW-245M2_F18D	FD	11/27/2018	Ground Water	204	214
J1 Range Northern	MW-245M1	MW-245M1_F18	N	11/27/2018	Ground Water	244	254
J1 Range Northern	MW-346M4	MW-346M4_F18	N	11/27/2018	Ground Water	140	150
Central Impact Area	CIA2-EFF	CIA2-EFF-59A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-59A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-59A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-59A	N	11/27/2018	Process Water	0	0
J1 Range Northern	MW-346M3	MW-346M3_F18	N	11/27/2018	Ground Water	175	185
Central Impact Area	CIA1-EFF	CIA1-EFF-59A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-59A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-59A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-59A	N	11/27/2018	Process Water	0	0
J1 Range Northern	MW-346M2	MW-346M2_F18	N	11/27/2018	Ground Water	205.28	215.28

N = Normal Sample  
 FD = Field Duplicate



**TABLE 1**  
**Sampling Progress: 1 November to 30 November 2018**

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-346M2	MW-346M2_F18D	FD	11/27/2018	Ground Water	205.28	215.28
Central Impact Area	CIA3-EFF	CIA3-EFF-30A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-30A	N	11/27/2018	Process Water	0	0
J1 Range Northern	MW-346M1	MW-346M1_F18	N	11/27/2018	Ground Water	245	255
J1 Range Northern	MW-346M1	MW-346M1_F18D	FD	11/27/2018	Ground Water	245	255
Central Impact Area	CIA3-MID1	CIA3-MID1-30A	N	11/27/2018	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-30A	N	11/27/2018	Process Water	0	0
J1 Range Northern	MW-563M1	MW-563M1_F18	N	11/26/2018	Ground Water	215	225
J1 Range Northern	MW-549M2	MW-549M2_F18	N	11/26/2018	Ground Water	187.3	197.3
J1 Range Northern	MW-549M1	MW-549M1_F18	N	11/26/2018	Ground Water	227.4	237.4
J1 Range Northern	MW-657M2	MW-657M2_F18	N	11/26/2018	Ground Water	208.3	218.3
J1 Range Northern	MW-657M1	MW-657M1_F18	N	11/26/2018	Ground Water	240.3	250.3
J1 Range Southern	J1S-EFF	J1S-EFF-133A	N	11/26/2018	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-133A	N	11/26/2018	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-133A	N	11/26/2018	Process Water	0	0
J1 Range Northern	MW-220M1	MW-220M1_F18	N	11/26/2018	Ground Water	248	258
J3 Range	J3-EFF	J3-EFF-147A	N	11/26/2018	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-147A	N	11/26/2018	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-147A	N	11/26/2018	Process Water	0	0
J3 Range	J3-INF	J3-INF-147A	N	11/26/2018	Process Water	0	0
J1 Range Northern	MW-253M1	MW-253M1_F18	N	11/26/2018	Ground Water	265.4	275.4
J1 Range Northern	MW-369M1	MW-369M1_F18	N	11/26/2018	Ground Water	254.07	264.07
D Range	SSDR158	DR158E_BR2	FR	11/21/2018	Soil	0	0
D Range	SSDR158	DR158E_BR1	FR	11/21/2018	Soil	0	0
D Range	SSDR158	DR158E_B	N	11/21/2018	Soil	0	0
C Range	SSCRNGS	CRNGS_NR2	FR	11/20/2018	Soil	5.5	5.75
C Range	SSCRNGS	CRNGS_NR1	FR	11/20/2018	Soil	5.5	5.75
C Range	SSCRNGS	CRNGS_N	N	11/20/2018	Soil	5.5	5.75
Former B Range	FBR140QR	FBR140QR_MR2	FR	11/19/2018	Soil	8	8.25
Former B Range	FBR140QR	FBR140QR_MR1	FR	11/19/2018	Soil	8	8.25
Former B Range	FBR140QR	FBR140QR_M	N	11/19/2018	Soil	8	8.25
J1 Range Northern	MW-564M1	MW-564M1_F18	N	11/19/2018	Ground Water	227	237
J1 Range Northern	MW-564M1	MW-564M1_F18D	FD	11/19/2018	Ground Water	227	237
J1 Range Northern	MW-605M2	MW-605M2_F18	N	11/19/2018	Ground Water	182.2	192.2
J1 Range Northern	MW-605M1	MW-605M1_F18	N	11/19/2018	Ground Water	220.2	230.2
J1 Range Northern	MW-349M2	MW-349M2_F18	N	11/16/2018	Ground Water	195	205
J1 Range Northern	MW-349M1	MW-349M1_F18	N	11/16/2018	Ground Water	229	239
J1 Range Northern	MW-326M3	MW-326M3_F18	N	11/16/2018	Ground Water	165.24	175.26
J1 Range Northern	MW-326M2	MW-326M2_F18	N	11/16/2018	Ground Water	196.27	206.28
J1 Range Northern	MW-326M2	MW-326M2_F18D	FD	11/16/2018	Ground Water	196.27	206.28
J1 Range Northern	MW-326M1	MW-326M1_F18	N	11/16/2018	Ground Water	250.01	260.01
J1 Range Northern	MW-567M1	MW-567M1_F18	N	11/15/2018	Ground Water	215.5	225.5
J1 Range Northern	MW-286M2	MW-286M2_F18	N	11/15/2018	Ground Water	205	215
J1 Range Northern	MW-286M1	MW-286M1_F18	N	11/15/2018	Ground Water	259	269
J1 Range Northern	MW-164M2	MW-164M2_F18	N	11/15/2018	Ground Water	157	167
J1 Range Northern	MW-164M1	MW-164M1_F18	N	11/15/2018	Ground Water	227	237
J2 Range Eastern	MW-164M1	MW-164M1_F18	N	11/15/2018	Ground Water	227	237
J2 Range Northern	MW-164M1	MW-164M1_F18	N	11/15/2018	Ground Water	227	237
J1 Range Northern	MW-303M3	MW-303M3_F18	N	11/13/2018	Ground Water	139.74	149.69
J1 Range Northern	MW-303M2	MW-303M2_F18	N	11/13/2018	Ground Water	235.09	245.1
J1 Range Northern	MW-303M2	MW-303M2_F18D	FD	11/13/2018	Ground Water	235.09	245.1
J1 Range Northern	MW-303M1	MW-303M1_F18	N	11/13/2018	Ground Water	299.07	309.07
J1 Range Northern	MW-166M3	MW-166M3_F18	N	11/13/2018	Ground Water	125	135
J1 Range Northern	MW-166M3	MW-166M3_F18D	FD	11/13/2018	Ground Water	125	135
J1 Range Northern	MW-166M2	MW-166M2_F18	N	11/13/2018	Ground Water	150	160
J1 Range Northern	MW-166M1	MW-166M1_F18	N	11/13/2018	Ground Water	218	223
J1 Range Southern	MW-522M2	MW-522M2_F18	N	11/08/2018	Ground Water	165	175
J1 Range Southern	MW-522M1	MW-522M1_F18	N	11/08/2018	Ground Water	198	208
J1 Range Southern	MW-523M1	MW-523M1_F18	N	11/08/2018	Ground Water	158	168

N = Normal Sample  
 FD = Field Duplicate

**TABLE 1**  
**Sampling Progress: 1 November to 30 November 2018**

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-524M1	MW-524M1_F18	N	11/07/2018	Ground Water	148	158
J1 Range Southern	MW-524M1	MW-524M1_F18D	FD	11/07/2018	Ground Water	148	158
J1 Range Southern	MW-521M1	MW-521M1_F18	N	11/07/2018	Ground Water	158	168
J1 Range Southern	MW-526M1	MW-526M1_F18	N	11/07/2018	Ground Water	164	174
J1 Range Southern	MW-527M1	MW-527M1_F18	N	11/07/2018	Ground Water	165	175
J1 Range Southern	MW-525M2	MW-525M2_F18	N	11/07/2018	Ground Water	148	158
J1 Range Southern	MW-525M1	MW-525M1_F18	N	11/07/2018	Ground Water	172	182
J1 Range Southern	MW-403M2	MW-403M2_F18	N	11/06/2018	Ground Water	127.26	137.36
J1 Range Southern	MW-403M1	MW-403M1_F18	N	11/06/2018	Ground Water	159.9	169.89
J1 Range Southern	MW-669M2	MW-669M2_F18	N	11/06/2018	Ground Water	201.7	211.7
Demolition Area 1	PR-EFF	PR-EFF-152A	N	11/06/2018	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-152A	N	11/06/2018	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-152A	N	11/06/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-152A	N	11/06/2018	Process Water	0	0
J1 Range Southern	MW-669M1	MW-669M1_F18	N	11/06/2018	Ground Water	223.7	233.7
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-152A	N	11/06/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-152A	N	11/06/2018	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-152A	N	11/06/2018	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-152A	N	11/06/2018	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-28A	N	11/06/2018	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-28A	N	11/06/2018	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-28A	N	11/06/2018	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-28A	N	11/06/2018	Process Water	0	0
J1 Range Southern	MW-591M2	MW-591M2_F18	N	11/06/2018	Ground Water	165	175
Demolition Area 1	D1-EFF	D1-EFF-100A	N	11/06/2018	Process Water	0	0
J1 Range Southern	MW-591M1	MW-591M1_F18	N	11/06/2018	Ground Water	200	210
Demolition Area 1	D1-MID-2	D1-MID-2-100A	N	11/06/2018	Process Water	0	0
Demolition Area 1	D1-MID-1	D1-MID-1-100A	N	11/06/2018	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-100A	N	11/06/2018	Process Water	0	0
J1 Range Southern	MW-670M2	MW-670M2_F18	N	11/01/2018	Ground Water	198.5	208.5
J1 Range Southern	MW-670M1	MW-670M1_F18	N	11/01/2018	Ground Water	220.5	230.5
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-122A	N	11/01/2018	Process Water	0	0
J1 Range Southern	MW-402M2	MW-402M2_F18	N	11/01/2018	Ground Water	155.2	165.3
J1 Range Southern	MW-402M1	MW-402M1_F18	N	11/01/2018	Ground Water	190.1	200.1
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-122A	N	11/01/2018	Process Water	0	0
J1 Range Southern	MW-400M2	MW-400M2_F18	N	11/01/2018	Ground Water	138.9	148.9
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-122A	N	11/01/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-122A	N	11/01/2018	Process Water	0	0
J1 Range Southern	MW-400M1	MW-400M1_F18	N	11/01/2018	Ground Water	192.8	202.8

N = Normal Sample  
 FD = Field Duplicate

**TABLE 2  
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS  
Data Received November 2018**

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
J2 Range Eastern	MW-307M3	MW-307M3_F18	125.8	135.82	10/15/2018	SW6850	Perchlorate	1.4		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-307M3	MW-307M3_F18	125.8	135.82	10/15/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.061	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	MW-319M1	MW-319M1_F18	200.25	210.25	10/15/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.086	J	ug/L	400		0.025	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F18	203.74	214.74	10/15/2018	SW6850	Perchlorate	1.3		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F18	203.74	214.74	10/15/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.46		ug/L	400		0.025	0.20
J2 Range Eastern	MW-324M2	MW-324M2_F18	203.74	214.74	10/15/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.081	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	MW-324M1	MW-324M1_F18	234.85	244.85	10/15/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.61		ug/L	400		0.025	0.20
J2 Range Eastern	MW-324M1	MW-324M1_F18	234.85	244.85	10/15/2018	SW6850	Perchlorate	0.64		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-170M1	MW-170M1_F18	265	275	10/11/2018	SW6850	Perchlorate	0.22		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-321M2	MW-321M2_F18	155.67	165.67	10/11/2018	SW6850	Perchlorate	0.36		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-321M1	MW-321M1_F18	174.61	184.61	10/11/2018	SW6850	Perchlorate	0.31		ug/L	2.0		0.012	0.20
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F18	245	255	10/10/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.12	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F18	245	255	10/10/2018	SW6850	Perchlorate	2.3		ug/L	2.0	X	0.012	0.20
J2 Range Eastern	J2MW-02M2	J2MW-02M2_F18	236	246	10/10/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.39	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	J2MW-02M2	J2MW-02M2_F18	236	246	10/10/2018	SW6850	Perchlorate	3.3		ug/L	2.0	X	0.012	0.20
J2 Range Eastern	J2MW-02M2	J2MW-02M2_F18	236	246	10/10/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.78		ug/L	400		0.025	0.20
J2 Range Eastern	MW-357M1	MW-357M1_F18	274.51	284.51	10/09/2018	SW6850	Perchlorate	0.24		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-215M2	MW-215M2_F18	205	215	10/09/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.55		ug/L	0.60		0.036	0.20
J2 Range Eastern	MW-215M2	MW-215M2_F18	205	215	10/09/2018	SW6850	Perchlorate	2.1		ug/L	2.0	X	0.012	0.20
J2 Range Eastern	MW-215M2	MW-215M2_F18	205	215	10/09/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.18	J	ug/L	400		0.025	0.20
J2 Range Eastern	MW-215M1	MW-215M1_F18	240	250	10/09/2018	SW6850	Perchlorate	0.84		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-665M3	MW-665M3_F18	175.2	185.2	10/02/2018	SW6850	Perchlorate	3.6		ug/L	2.0	X	0.012	0.20
J2 Range Eastern	MW-665M3	MW-665M3_F18	175.2	185.2	10/02/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.13	J	ug/L	400		0.025	0.20
J2 Range Eastern	MW-665M3	MW-665M3_F18D	175.2	185.2	10/02/2018	SW6850	Perchlorate	3.6		ug/L	2.0	X	0.012	0.20
J2 Range Eastern	MW-665M2	MW-665M2_F18	205.2	215.2	10/02/2018	SW6850	Perchlorate	4.2		ug/L	2.0	X	0.012	0.20
J2 Range Eastern	MW-665M2	MW-665M2_F18	205.2	215.2	10/02/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.16	J	ug/L	400		0.025	0.20
J2 Range Eastern	MW-665M2	MW-665M2_F18	205.2	215.2	10/02/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.4		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-665M2	MW-665M2_F18D	205.2	215.2	10/02/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.5		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-665M2	MW-665M2_F18D	205.2	215.2	10/02/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	J	ug/L	400		0.025	0.20
J2 Range Eastern	MW-667M2	MW-667M2_F18	277.3	287.3	10/01/2018	SW6850	Perchlorate	0.69		ug/L	2.0		0.012	0.20
J2 Range Eastern	MW-667M2	MW-667M2_F18	277.3	287.3	10/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.84		ug/L	400		0.025	0.20
J2 Range Eastern	MW-667M2	MW-667M2_F18	277.3	287.3	10/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.1		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-667M2	MW-667M2_F18D	277.3	287.3	10/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.0		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-667M2	MW-667M2_F18D	277.3	287.3	10/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.76		ug/L	400		0.025	0.20
J2 Range Eastern	MW-667M1	MW-667M1_F18	302.3	312.3	10/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.1		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-667M1	MW-667M1_F18	302.3	312.3	10/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.43		ug/L	400		0.025	0.20
J2 Range Eastern	MW-667M1	MW-667M1_F18	302.3	312.3	10/01/2018	SW6850	Perchlorate	2.3		ug/L	2.0	X	0.012	0.20
J2 Range Eastern	MW-667M1	MW-667M1_F18D	302.3	312.3	10/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.1		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-667M1	MW-667M1_F18D	302.3	312.3	10/01/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.41		ug/L	400		0.025	0.20
J2 Range Eastern	MW-627M1	MW-627M1_F18	269.5	279.5	09/27/2018	SW6850	Perchlorate	0.10	J	ug/L	2.0		0.082	0.50
J2 Range Eastern	MW-57D	MW-57D_F18	213	223	09/27/2018	SW6850	Perchlorate	0.22	J	ug/L	2.0		0.082	0.50
J2 Range Eastern	J2MW-04M1	J2MW-04M1_F18	257	267	09/27/2018	SW6850	Perchlorate	0.093	J	ug/L	2.0		0.082	0.50
J2 Range Eastern	J2MW-04M1	J2MW-04M1_F18	257	267	09/27/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.26		ug/L	400		0.025	0.20

J = Estimated Result  
MDL = Method Detection Limit  
RL = Reporting Limit

**TABLE 2  
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS  
Data Received November 2018**

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
J2 Range Eastern	MW-685M1	MW-685M1_F18	166.2	176.2	09/26/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.35		ug/L	400		0.025	0.20
J2 Range Eastern	MW-685M1	MW-685M1_F18	166.2	176.2	09/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.12	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	MW-685M1	MW-685M1_F18	166.2	176.2	09/26/2018	SW6850	Perchlorate	0.25	J	ug/L	2.0		0.082	0.50
J2 Range Eastern	MW-668M1	MW-668M1_F18	168.7	178.7	09/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.23	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	MW-668M1	MW-668M1_F18	168.7	178.7	09/26/2018	SW6850	Perchlorate	13.4		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-668M1	MW-668M1_F18D	168.7	178.7	09/26/2018	SW6850	Perchlorate	13.6		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-666M3	MW-666M3_F18	199.8	209.8	09/26/2018	SW6850	Perchlorate	1.4		ug/L	2.0		0.082	0.50
J2 Range Eastern	MW-666M3	MW-666M3_F18	199.8	209.8	09/26/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.12	J	ug/L	400		0.025	0.20
J2 Range Eastern	MW-666M2	MW-666M2_F18	219.8	229.8	09/26/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.23		ug/L	400		0.025	0.20
J2 Range Eastern	MW-666M2	MW-666M2_F18	219.8	229.8	09/26/2018	SW6850	Perchlorate	1.3		ug/L	2.0		0.082	0.50
J2 Range Eastern	MW-666M1	MW-666M1_F18	244.8	254.8	09/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.16	J	ug/L	0.60		0.036	0.20
J2 Range Eastern	MW-666M1	MW-666M1_F18	244.8	254.8	09/26/2018	SW6850	Perchlorate	7.4		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-666M1	MW-666M1_F18D	244.8	254.8	09/26/2018	SW6850	Perchlorate	7.4		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-368M2	MW-368M2_F18	202.73	212.73	09/25/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	8.7		ug/L	400		0.025	0.20
J2 Range Eastern	MW-368M2	MW-368M2_F18	202.73	212.73	09/25/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	5.8		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-368M2	MW-368M2_F18	202.73	212.73	09/25/2018	SW6850	Perchlorate	12.3		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-368M2	MW-368M2_F18D	202.73	212.73	09/25/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	5.9		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-368M2	MW-368M2_F18D	202.73	212.73	09/25/2018	SW6850	Perchlorate	12.6		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-368M2	MW-368M2_F18D	202.73	212.73	09/25/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	8.6		ug/L	400		0.025	0.20
J2 Range Eastern	MW-368M1	MW-368M1_F18	237.35	247.35	09/25/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.0		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-368M1	MW-368M1_F18	237.35	247.35	09/25/2018	SW6850	Perchlorate	31.9		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-368M1	MW-368M1_F18D	237.35	247.35	09/25/2018	SW6850	Perchlorate	33.2		ug/L	2.0	X	0.082	0.50
J2 Range Eastern	MW-368M1	MW-368M1_F18D	237.35	247.35	09/25/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		ug/L	0.60	X	0.036	0.20
J2 Range Eastern	MW-366M1	MW-366M1_F18	215	225	09/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.31		ug/L	0.60		0.036	0.20
J2 Range Eastern	MW-366M1	MW-366M1_F18	215	225	09/24/2018	SW6850	Perchlorate	1.7		ug/L	2.0		0.082	0.50
J2 Range Eastern	MW-339M1	MW-339M1_F18	233	243	09/24/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.10		ug/L	400		0.025	0.20
J2 Range Eastern	MW-339M1	MW-339M1_F18	233	243	09/24/2018	SW6850	Perchlorate	0.70		ug/L	2.0		0.082	0.50
J2 Range Northern	MW-587M2	MW-587M2_F18	220	230	08/28/2018	SW6850	Perchlorate	68.6	J	ug/L	2.0	X	0.82	5.0
J2 Range Northern	MW-587M2	MW-587M2_F18D	220	230	08/28/2018	SW6850	Perchlorate	68.7	J	ug/L	2.0	X	0.82	5.0
J2 Range Northern	MW-587M1	MW-587M1_F18	250	260	08/28/2018	SW6850	Perchlorate	10.5	J	ug/L	2.0	X	0.082	0.50
J2 Range Northern	MW-640M2	MW-640M2_F18	216	226	08/28/2018	SW6850	Perchlorate	1.7	J	ug/L	2.0		0.082	0.50
J2 Range Northern	MW-640M1	MW-640M1_F18	246	256	08/28/2018	SW6850	Perchlorate	7.5	J	ug/L	2.0	X	0.082	0.50
J2 Range Northern	MW-622M2	MW-622M2_F18	220.4	230.4	08/28/2018	SW6850	Perchlorate	2.9	J	ug/L	2.0	X	0.082	0.50
J2 Range Northern	MW-622M1	MW-622M1_F18	245.4	255.4	08/28/2018	SW6850	Perchlorate	0.32	J	ug/L	2.0		0.082	0.50
J2 Range Northern	MW-348M2	MW-348M2_F18	206.5	216.5	08/27/2018	SW6850	Perchlorate	0.16	J	ug/L	2.0		0.082	0.50
J2 Range Northern	MW-621M2	MW-621M2_F18	219.4	229.4	08/27/2018	SW6850	Perchlorate	3.0	J	ug/L	2.0	X	0.082	0.50
J2 Range Northern	MW-631M2	MW-631M2_F18	200.1	210.1	08/27/2018	SW6850	Perchlorate	0.17	J	ug/L	2.0		0.082	0.50
J2 Range Northern	MW-631M1	MW-631M1_F18	233.1	243.1	08/27/2018	SW6850	Perchlorate	0.19	J	ug/L	2.0		0.082	0.50
J2 Range Northern	J2EW3-MW-2-C	J2EW3-MW-2-C_F18	251.1	261.1	08/23/2018	SW6850	Perchlorate	0.14	J	ug/L	2.0		0.012	0.20
J2 Range Northern	J2EW2-MW2-B	J2EW2-MW2-B_F18	209.8	219.8	08/23/2018	SW6850	Perchlorate	0.032	J	ug/L	2.0		0.012	0.20
J2 Range Northern	J2EW2-MW2-C	J2EW2-MW2-C_F18	243.8	253.8	08/23/2018	SW6850	Perchlorate	0.079	J	ug/L	2.0		0.012	0.20
J2 Range Northern	MW-289M2	MW-289M2_F18	162	172	08/22/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.5		ug/L	400		0.025	0.20
J2 Range Northern	MW-289M2	MW-289M2_F18	162	172	08/22/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.2		ug/L	0.60	X	0.036	0.20

J = Estimated Result  
MDL = Method Detection Limit  
RL = Reporting Limit

**TABLE 2  
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS  
Data Received November 2018**

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
J2 Range Northern	MW-289M2	MW-289M2_F18	162	172	08/22/2018	SW6850	Perchlorate	2.5		ug/L	2.0	X	0.012	0.20
J2 Range Northern	MW-289M2	MW-289M2_F18D	162	172	08/22/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.5		ug/L	400		0.025	0.20
J2 Range Northern	MW-289M2	MW-289M2_F18D	162	172	08/22/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.2		ug/L	0.60	X	0.036	0.20
J2 Range Northern	MW-289M1	MW-289M1_F18	305	315	08/22/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.43		ug/L	400		0.025	0.20
J2 Range Northern	MW-289M1	MW-289M1_F18	305	315	08/22/2018	SW6850	Perchlorate	0.59		ug/L	2.0		0.012	0.20
J2 Range Northern	MW-289M1	MW-289M1_F18	305	315	08/22/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.87		ug/L	0.60	X	0.036	0.20
J2 Range Northern	MW-634M3	MW-634M3_F18	170.6	180.6	08/22/2018	SW6850	Perchlorate	0.30		ug/L	2.0		0.012	0.20
J2 Range Northern	MW-634M2	MW-634M2_F18	200.6	210.6	08/22/2018	SW6850	Perchlorate	1.4		ug/L	2.0		0.012	0.20
J2 Range Northern	MW-634M1	MW-634M1_F18	305.6	315.6	08/22/2018	SW6850	Perchlorate	0.31		ug/L	2.0		0.012	0.20

J = Estimated Result  
MDL = Method Detection Limit  
RL = Reporting Limit