

**MONTHLY PROGRESS REPORT #234
FOR SEPTEMBER 2016**

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 1 September to 30 September 2016.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of September 2016.

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 325 gpm, with over 2.416 billion gallons of water treated and re-injected as of 30 September 2016. No Frank Perkins Road facility shut down occurred in September.

The Pew Road Mobile Treatment Unit (MTU) continues to operate at a flow rate of 105 gpm with over 486.2 million gallons of water treated and re-injected as of 30 September 2016. No Pew Road MTU shut downs occurred in September.

The Base Boundary RA was shut down on 3 April 2016 and is offline awaiting extraction well motor replacement, with over 147.6 million gallons of water treated and re-injected as of 30 September 2016.

The Leading Edge system continues to operate at a flow rate of 100 gpm with over 12.18 million gallons of water treated and re-injected as of 30 September 2016. No system shut downs occurred in September.

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 September 2016, over 362 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut downs occurred in September:

- EW0001 was shut down on 14 September at 1426 due to a power interruption and was restarted on 15 September at 1237.

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 will continue to operate at a total system flow rate of 250 gpm. As of 30 September 2016, over 336 million gallons of water have been treated and re-injected. No J-1 Range Northern MTU shut downs occurred in September.

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 continues to operate at a flow rate of 255 gpm. As of 30 September 2016, over 940.3 million gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in September:

- Shut down on 5 September at 1838 due to a power interruption and was restarted on 6 September at 0812.

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 September 2016, over 797.5 million gallons of water have been treated and re-injected. No Northern Treatment Building shut down occurred in September.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 30 September 2016, over 1.280 billion gallons of water have been treated and re-injected. The following J-2 Range Northern MTU shut downs occurred in September:

- MTUs E and F were shut down on 31 August at 1315 for media change-out and were restarted on 1 September at 0800;
- MTU E shut down on 13 September at 0914 due to a system alarm and was restarted on 13 September at 0932;
- MTU F shut down on 13 September at 0902 due to a system alarm and was restarted on 13 September at 0931;
- MTU E shut down on 21 September at 1437 due to a system alarm and was restarted on 21 September at 1442; and
- MTU F shut down on 21 September at 1426 due to a system alarm and was restarted on 21 September at 1440.

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 September 2016, over 874.5 million gallons of water have been treated and re-injected. No shut downs of MTUs H and I occurred in September.

MTU J continues to operate at a flow rate of 120 gpm. As of 30 September 2016, over 393 million gallons of water have been treated and re-injected. The following shut downs of MTU J occurred in September:

- MTU J shut down on 16 September at 1103 due to a system alarm and was restarted on 19 September at 0824.

MTU K continues to operate at a flow rate of 125 gpm. As of 30 September 2016, over 498 million gallons of water have been treated and re-injected. No MTU K shut downs occurred in September.

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 September 2016, over 714 million gallons of water have been treated and re-injected. The following CIA treatment facility shut downs occurred in September:

- System 2 was shut down on 29 September at 1045 to observe reinjection gallery and was restarted on 29 September at 1103.

SUMMARY OF ACTIONS TAKEN

Samples collected during the reporting period are summarized in Table 1.

Process water samples were collected at Frank Perkins Road, Pew Road, J-1 Range Southern, J-1 Range Northern, J-2 Range Northern, J-2 Range Eastern, J-3 Range, and Central Impact Area (CIA).

Environmental and system performance monitoring groundwater samples were collected at J-2 Range Northern, J-2 Range Eastern, L Range, and Western Boundary.

Collected surface water samples at J-3 Range (Snake Pond).

Collected soil samples at Former B Range, Former D Range, U Range, J-2 Range Eastern, and CIA.

Drilled and collected groundwater profile samples at J-2 Range Eastern (BH-667, BH-668) and drilled and collected groundwater and soil profile samples at J-1 Range Southern (BH-669).

Completed excavation (2nd lifts) and post-excavation sampling at 11 Former B Range grids.

Completed excavation (4th lifts) and post-excavation sampling at one Former D Range grid.

Completed soil excavation (3rd lift) at G Range.

Completed soil excavation (3rd lift) at D Range.

Began soil excavation (4th lift) at C Range.

Performed road repair in J-1 Range Northern.

Completed site restoration and testing of the new in-plume extraction well at J-3 Range.

Completed MEC investigation at J-3 Range.

Installed telemetry poles and electrical at Demolition Area 1 Leading Edge, and performed start-up testing for extraction well D1-EW-4.

Performed daily inspection of BEM cover at the CIA to ensure cover is secure and intact.

Completed demolition operations in the CIA.

Continued intrusive investigation of anomalies and Metalmapper collection of cued data in Phase II area 2 at the CIA.

JBCC IAGWSP Tech Update Meeting Minutes 15 September 2016

Project and Field Work Update

Drilling was completed at BH-668 at 216 feet per the project note. Data is expected mid-next week. Crews will move to the neighborhood to begin the J-1 south wells. The fourteen drive point locations have been staked based on the project note with the exception of two on the side of the access road that had to be

offset by ten feet upgradient due to their proximity to power lines. The locations have been approved by Natural Heritage, still waiting for SHPO and Tribe approvals. A project note was submitted this week for two additional CIA locations as required by the last monitoring report.

Work has finished at the J-3 Range. A total of forty-seven potential MEC items were found during investigations and a MEC tracking log was forwarded to the agencies. Thirty-two items were found in the Barrage Rocket area, two in the meandering paths, three in the Demolition Area, six in the Northern Demolition Area and four in the Hillside. A determination as to whether or not the items were HE filled will be made after they are destroyed in the BEM. A completion of work will be submitted. MEC investigations of twenty-three additional grids at the J-2 Range will start in late September or early October.

Soil from the J-2 Range and U Range has been shipped off site to the Bourne Landfill. Post – excavation sample results are pending.

CIA field crews continue to work in Phase II Area 2. Metal Mapper team projects completing Area 2 by the end of September. Work is ongoing in the 100% grids; one is complete the other is underway.

At the Small Arms Ranges, crews have completed four of the ten Ranges where post-DD work is being done. Stockpiled soil that had TCLP exceedances for lead is being shipped to Canada in mid-October. Non-hazardous soil is being sent either to Bourne or Fall River.

All treatment systems are up and running with the exception of Demolition Area 1 base boundary system. Eversource has been paid to isolate the power lines in order to make system repairs. They have indicated that they will be able to come and install the switch in late October but will try to do it sooner. Sampling of wells near the base boundary to determine if there has been any impact due to the system being off-line has been completed and the results are being validated.

Action Items

The action items were discussed and updated.

Demolition Area 2 Annual Environmental Monitoring Report Presentation

A presentation was provided on the Demolition Area 2 Environmental Monitoring Report. During the reporting period (July 2015 to June 2016), no new field work was conducted.

Sampling locations, groundwater monitoring results, and trends were reviewed and discussed. RDX was detected in five of twenty-one monitoring wells sampled and concentrations ranged from 0.24 µg/L (MW-435M2) to 1.9 µg/L (MW-161S). Only three locations (MW-160S, MW-161S, and MW-573M2) exceeded the 0.6 µg/L risk-based level. No samples exceeded the 2 µg/L EPA lifetime health advisory. HMX was detected in two of twenty-one monitoring wells sampled. A review of the model-predicted vs. measured plume was discussed.

Decision Document cleanup timelines were discussed. The estimates presented in the 2015 Decision Document addendum of below Health Advisory (2 µg/L) by 2016, below Risk-Based Level (0.6 µg/L) by 2018 and below Background Level (0.25 µg/L) by 2025 are still accurate.

IAGWSP recommends reducing monitoring at well locations MW-311M1 and MW-404 M1/M2 from semi-annual to annual.

JBCC Cleanup Team Meeting

The JBCC Cleanup Team (JBCCCT), formerly the MMR Cleanup Team (MMRCT) is scheduled to meet on October 12, 2016. 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 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 September to 30 September 2016. 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.

There are currently twelve operable units (OU) 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. 233 for August 2016 09/10/2016
- Draft Demolition Area 2 Annual Environmental Monitoring Report 09/06/2016
- Final L Range 2016 Annual Environmental Monitoring Report 09/12/2016
- Draft Land Use Controls Monitoring Report 09/23/2016
- Draft Demolition Area 1 2016 Annual Environmental Monitoring Report 09/30/2016

3. SCHEDULED ACTIONS

The following documents are being prepared or revised during October 2016:

- Training Areas Draft Investigation Report;
- Training Areas Draft Remedy Selection Plan;
- CIA 2016 Annual Environmental Monitoring Report;
- Draft BIP Report;
- Demolition Area 1 2016 Annual Environmental Monitoring Report;
- Demolition Area 2 Annual Environmental Monitoring Report;
- J-3 Range Environmental Monitoring Work Plan;
- J-3 Range 2016 Interim Environmental Monitoring Report;
- Northwest Corner 2016 Annual Environmental Monitoring Report;
- J-1 Range Northern and J-1 Range Southern 2016 Environmental Monitoring Report; and
- Small Arms Ranges 2016 Annual Interim Environmental Monitoring Report.

TABLE 1
Sampling Progress: 1 September to 30 September 2016

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	BH-669	J1SP-4_266-271	N	09/30/2016	GW Profile	266	271
J2 Range Eastern	MW-351M2	MW-351M2_F16	N	09/30/2016	Ground Water	233.7	243.7
J2 Range Eastern	MW-351M1	MW-351M1_F16	N	09/30/2016	Ground Water	278.6	288.6
J2 Range Eastern	MW-393M2	MW-393M2_F16	N	09/30/2016	Ground Water	218.2	228.2
J1 Range Southern	BH-669	SSJ1SP-4_261-271	N	09/30/2016	Soil Profile	261	271
J2 Range Eastern	MW-393D	MW-393D_F16	N	09/30/2016	Ground Water	313.6	323.6
J1 Range Southern	BH-669	J1SP-4_256-261	N	09/30/2016	GW Profile	256	261
J2 Range Eastern	MW-393M1	MW-393M1_F16	N	09/30/2016	Ground Water	268	278
J2 Range Eastern	MW-627M1	MW-627M1_F16	N	09/29/2016	Ground Water	269.5	279.5
J2 Range Eastern	MW-372M1	MW-372M1_F16	N	09/29/2016	Ground Water	273.1	283.1
Former B Range	SSFBR140QRA	FBR140QRA_A	N	09/29/2016	Soil	0	0.25
J2 Range Eastern	MW-334M1	MW-334M1_F16	N	09/29/2016	Ground Water	285	295
J1 Range Southern	BH-669	SSJ1SP-4_251-261	N	09/29/2016	Soil Profile	251	261
J2 Range Eastern	MW-365M2	MW-365M2_F16	N	09/29/2016	Ground Water	205.5	215.5
J1 Range Southern	BH-669	J1SP-4_246-251	N	09/29/2016	GW Profile	246	251
J2 Range Eastern	MW-57D	MW-57D_F16	N	09/29/2016	Ground Water	213	223
J2 Range Eastern	MW-366M3	MW-366M3_F16	N	09/28/2016	Ground Water	145	155
J2 Range Eastern	MW-366M2	MW-366M2_F16	N	09/28/2016	Ground Water	175	185
J2 Range Eastern	MW-366M1	MW-366M1_F16	N	09/28/2016	Ground Water	215	225
J1 Range Southern	BH-669	SSJ1SP-4_241-251	N	09/28/2016	Soil Profile	241	251
J2 Range Eastern	MW-339M2	MW-339M2_F16	N	09/28/2016	Ground Water	213	223
J2 Range Eastern	MW-339M1	MW-339M1_F16	N	09/28/2016	Ground Water	233	243
J1 Range Southern	BH-669	SSJ1SP-4_231-241	N	09/28/2016	Soil Profile	231	241
J1 Range Southern	BH-669	J1SP-4_226-231	N	09/27/2016	GW Profile	226	231
J2 Range Eastern	MW-310M1	MW-310M1_F16	N	09/27/2016	Ground Water	171.4	181.4
J2 Range Eastern	MW-368M3	MW-368M3_F16	N	09/27/2016	Ground Water	155.5	165.5
J1 Range Southern	BH-669	SSJ1SP-4_221-231	N	09/27/2016	Soil Profile	221	231
J2 Range Eastern	MW-368M2	MW-368M2_F16	N	09/27/2016	Ground Water	202.7	212.7
J2 Range Eastern	MW-368M2	MW-368M2_F16D	FD	09/27/2016	Ground Water	202.7	212.7
J1 Range Southern	BH-669	J1SP-4_216-221	N	09/27/2016	GW Profile	216	221
J2 Range Eastern	MW-368M1	MW-368M1_F16	N	09/27/2016	Ground Water	237.4	247.4
J2 Range Eastern	MW-368M1	MW-368M1_F16D	FD	09/27/2016	Ground Water	237.4	247.4
Western Boundary	4036000-04G	4036000-04G_16Q3	N	09/27/2016	Ground Water	55	65
Western Boundary	4036000-03G	4036000-03G_16Q3	N	09/27/2016	Ground Water	50	60
Western Boundary	4036000-06G	4036000-06G_16Q3	N	09/27/2016	Ground Water	108	128
J1 Range Southern	BH-669	SSJ1SP-4_211-221	N	09/27/2016	Soil Profile	211	221
Western Boundary	4036000-01G	4036000-01G_16Q3	N	09/27/2016	Ground Water	38	70
J2 Range Northern	MW-586M2	MW-586M2_F16	N	09/26/2016	Ground Water	211	221
J1 Range Southern	BH-669	J1SP-4_206-211	N	09/26/2016	GW Profile	206	211
J1 Range Southern	BH-669	J1SP-4_206-211D	FD	09/26/2016	GW Profile	206	211
J2 Range Northern	MW-586M1	MW-586M1_F16	N	09/26/2016	Ground Water	237	247
J2 Range Northern	MW-289S	MW-289S_F16	N	09/26/2016	Ground Water	105	115
J2 Range Northern	MW-289M2	MW-289M2_F16	N	09/26/2016	Ground Water	162	172
J2 Range Northern	MW-289M2	MW-289M2_F16D	FD	09/26/2016	Ground Water	162	172
J2 Range Northern	MW-289M1	MW-289M1_F16	N	09/26/2016	Ground Water	305	315
J1 Range Southern	BH-669	SSJ1SP-4_201-211	N	09/26/2016	Soil Profile	201	211
J1 Range Southern	BH-669	SSJ1SP-4_201-211D	FD	09/26/2016	Soil Profile	201	211
J2 Range Northern	J2EW0002	J2EW0002_F16	N	09/26/2016	Ground Water	198	233
J2 Range Northern	J2EW0001	J2EW0001_F16	N	09/26/2016	Ground Water	179	234
J2 Range Northern	J2EW2-MW2-B	J2EW2-MW2-B_F16	N	09/23/2016	Ground Water	209.8	219.8
J1 Range Southern	BH-669	J1SP-4_196-201	N	09/23/2016	GW Profile	196	201
J1 Range Southern	BH-669	J1SP-4_196-201D	FD	09/23/2016	GW Profile	196	201
J1 Range Southern	BH-669	SSJ1SP-4_191-201	N	09/23/2016	Soil Profile	191	201
J1 Range Southern	BH-669	SSJ1SP-4_191-201D	FD	09/23/2016	Soil Profile	191	201
J2 Range Northern	J2EW2-MW2-C	J2EW2-MW2-C_F16	N	09/23/2016	Ground Water	243.8	253.8
J1 Range Southern	BH-669	J1SP-4_186-191	N	09/23/2016	GW Profile	186	191
J1 Range Southern	BH-669	SSJ1SP-4_181-191	N	09/23/2016	Soil Profile	181	191

N = Normal Sample
 FD = Field Duplicate

TABLE 1
Sampling Progress: 1 September to 30 September 2016

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	BH-669	J1SP-4_176-181	N	09/23/2016	GW Profile	176	181
J1 Range Southern	BH-669	SSJ1SP-4_171-181	N	09/22/2016	Soil Profile	171	181
J1 Range Southern	BH-669	J1SP-4_166-171	N	09/22/2016	GW Profile	166	171
J1 Range Southern	BH-669	SSJ1SP-4_161-171	N	09/22/2016	Soil Profile	161	171
Former B Range	SSFBR08A	FBR08A_C	FR	09/22/2016	Soil	0	0.25
Former B Range	SSFBR08A	FBR08A_B	FR	09/22/2016	Soil	0	0.25
Former B Range	SSFBR08A	FBR08A_A	N	09/22/2016	Soil	0	0.25
J1 Range Southern	BH-669	J1SP-4_156-161	N	09/22/2016	GW Profile	156	161
Former B Range	SSFBR03A	FBR03A_A	N	09/22/2016	Soil	0	0.25
Former B Range	SSFBR07A	FBR07A_A	N	09/22/2016	Soil	0	0.25
Former B Range	SSFBR09A	FBR09A_A	N	09/22/2016	Soil	0	0.25
J1 Range Southern	BH-669	SSJ1SP-4_151-161	N	09/22/2016	Soil Profile	151	161
Former B Range	SSFBR12A	FBR12A_A	N	09/22/2016	Soil	0	0.25
Former B Range	SSFBR15A	FBR15A_A	N	09/22/2016	Soil	0	0.25
Former B Range	SSFBR16A	FBR16A_C	FR	09/22/2016	Soil	0	0.25
Former B Range	SSFBR16A	FBR16A_B	FR	09/22/2016	Soil	0	0.25
Former B Range	SSFBR16A	FBR16A_A	N	09/22/2016	Soil	0	0.25
J1 Range Southern	BH-669	J1SP-4_146-151	N	09/22/2016	GW Profile	146	151
Former B Range	SSFBR17A	FBR17A_A	N	09/22/2016	Soil	0	0.25
Former B Range	SSFBR18A	FBR18A_A	N	09/22/2016	Soil	0	0.25
Former B Range	SSFBR140LA	FBR140LA_C	FR	09/22/2016	Soil	0	0.25
Former B Range	SSFBR140LA	FBR140LA_B	FR	09/22/2016	Soil	0	0.25
Former B Range	SSFBR140LA	FBR140LA_A	N	09/22/2016	Soil	0	0.25
Former D Range	SSD-1AA-A	D-1AA-A_C	FR	09/22/2016	Soil	0	0.25
Former D Range	SSD-1AA-A	D-1AA-A_B	FR	09/22/2016	Soil	0	0.25
Former D Range	SSD-1AA-A	D-1AA-A_A	N	09/22/2016	Soil	0	0.25
J1 Range Southern	BH-669	SSJ1SP-4_141-151	N	09/21/2016	Soil Profile	141	151
J2 Range Northern	J2EW0003	J2EW0003_F16	N	09/21/2016	Ground Water	202	232
J1 Range Southern	BH-669	SSJ1SP-4_131-141	N	09/21/2016	Soil Profile	131	141
J1 Range Southern	BH-669	SSJ1SP-4_121-131	N	09/21/2016	Soil Profile	121	131
J1 Range Southern	BH-669	SSJ1SP-4_111-121	N	09/21/2016	Soil Profile	111	121
J1 Range Southern	BH-669	SSJ1SP-4_101-111	N	09/21/2016	Soil Profile	101	111
J1 Range Southern	BH-669	SSJ1SP-4_91-101	N	09/21/2016	Soil Profile	91	101
J1 Range Southern	BH-669	SSJ1SP-4_81-91	N	09/21/2016	Soil Profile	81	91
J2 Range Northern	MW-589M2	MW-589M2_F16	N	09/20/2016	Ground Water	211	221
J2 Range Northern	MW-589M2	MW-589M2_F16D	FD	09/20/2016	Ground Water	211	221
J2 Range Northern	MW-589M1	MW-589M1_F16	N	09/20/2016	Ground Water	240	250
J2 Range Northern	J2EW1-MW1-A	J2EW1-MW1-A_F16	N	09/20/2016	Ground Water	140.8	150.8
J2 Range Northern	J2EW1-MW1-B	J2EW1-MW1-B_F16	N	09/20/2016	Ground Water	205.8	215.8
J2 Range Northern	J2EW1-MW1-C	J2EW1-MW1-C_F16	N	09/20/2016	Ground Water	240.8	250.8
J2 Range Northern	MW-622M2	MW-622M2_F16	N	09/19/2016	Ground Water	220.4	230.4
J2 Range Northern	MW-622M1	MW-622M1_F16	N	09/19/2016	Ground Water	245.4	255.4
J2 Range Northern	MW-585M3	MW-585M3_F16	N	09/19/2016	Ground Water	198.5	208.5
J2 Range Northern	MW-585M3	MW-585M3_F16D	FD	09/19/2016	Ground Water	198.5	208.5
J2 Range Northern	MW-585M2	MW-585M2_F16	N	09/19/2016	Ground Water	218.5	228.5
J2 Range Northern	MW-585M2	MW-585M2_F16D	FD	09/19/2016	Ground Water	218.5	228.5
J2 Range Northern	MW-585M1	MW-585M1_F16	N	09/19/2016	Ground Water	240	250
J2 Range Northern	MW-585M1	MW-585M1_F16D	FD	09/19/2016	Ground Water	240	250
J2 Range Northern	MW-640M2	MW-640M2_F16	N	09/16/2016	Ground Water	216	226
J2 Range Northern	MW-640M1	MW-640M1_F16	N	09/16/2016	Ground Water	246	256
J2 Range Northern	MW-300M3	MW-300M3_F16	N	09/16/2016	Ground Water	135.3	145.3
J2 Range Northern	MW-300M2	MW-300M2_F16	N	09/16/2016	Ground Water	197.2	207.2
J2 Range Northern	MW-300M1	MW-300M1_F16	N	09/16/2016	Ground Water	293	303
J2 Range Northern	MW-587M2	MW-587M2_F16	N	09/15/2016	Ground Water	220	230
J2 Range Northern	MW-587M2	MW-587M2_F16D	FD	09/15/2016	Ground Water	220	230
J2 Range Northern	MW-587M1	MW-587M1_F16	N	09/15/2016	Ground Water	250	260
Central Impact Area	SSCIAMM940	DA091416CIA02_30A	N	09/15/2016	Soil	0	0.25

TABLE 1
Sampling Progress: 1 September to 30 September 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Northern	MW-613M2	MW-613M2_F16	N	09/15/2016	Ground Water	246.1	256.1
J2 Range Northern	MW-613M1	MW-613M1_F16	N	09/15/2016	Ground Water	267.1	277.1
J2 Range Northern	MW-348M2	MW-348M2_F16	N	09/14/2016	Ground Water	206.5	216.5
J2 Range Northern	MW-293S	MW-293S_F16	N	09/14/2016	Ground Water	110.1	120.1
J2 Range Eastern	BH-668	J2EP-1_211-216	N	09/14/2016	GW Profile	211	216
J2 Range Northern	MW-293M2	MW-293M2_F16	N	09/14/2016	Ground Water	196.4	206.4
J2 Range Eastern	BH-668	J2EP-1_201-206	N	09/14/2016	GW Profile	201	206
J2 Range Northern	MW-293M1	MW-293M1_F16	N	09/14/2016	Ground Water	296	306
J2 Range Eastern	BH-668	J2EP-1_191-196	N	09/14/2016	GW Profile	191	196
J2 Range Eastern	BH-668	J2EP-1_181-186	N	09/13/2016	GW Profile	181	186
J2 Range Northern	J2EW2-MW3-B	J2EW2-MW3-B_F16	N	09/13/2016	Ground Water	212.7	222.7
J2 Range Eastern	BH-668	J2EP-1_171-176	N	09/13/2016	GW Profile	171	176
J2 Range Northern	J2EW2-MW3-C	J2EW2-MW3-C_F16	N	09/13/2016	Ground Water	246	256
J2 Range Eastern	BH-668	J2EP-1_161-166	N	09/13/2016	GW Profile	161	166
J2 Range Eastern	BH-668	J2EP-1_161-166D	FD	09/13/2016	GW Profile	161	166
J2 Range Eastern	BH-668	J2EP-1_151-156	N	09/13/2016	GW Profile	151	156
J2 Range Eastern	BH-668	J2EP-1_141-146	N	09/13/2016	GW Profile	141	146
J2 Range Northern	MW-327M3	MW-327M3_F16	N	09/13/2016	Ground Water	220.2	230.2
J2 Range Eastern	BH-668	J2EP-1_131-136	N	09/13/2016	GW Profile	131	136
J2 Range Northern	MW-327M2	MW-327M2_F16	N	09/12/2016	Ground Water	265	275
J2 Range Northern	MW-327M1	MW-327M1_F16	N	09/12/2016	Ground Water	296.1	306
J2 Range Northern	MW-313M3	MW-313M3_F16	N	09/12/2016	Ground Water	195.1	205.6
J2 Range Northern	MW-313M2	MW-313M2_F16	N	09/12/2016	Ground Water	215.5	225.5
J2 Range Northern	MW-313M1	MW-313M1_F16	N	09/12/2016	Ground Water	255.4	265.4
J2 Range Northern	MW-313M1	MW-313M1_F16D	FD	09/12/2016	Ground Water	255.4	265.4
J2 Range Eastern	BH-667	J2EP-3_321-326	N	09/09/2016	GW Profile	321	326
J2 Range Northern	MW-621M2	MW-621M2_F16	N	09/08/2016	Ground Water	219.4	229.4
J2 Range Eastern	BH-667	J2EP-3_311-316	N	09/08/2016	GW Profile	311	316
J2 Range Northern	MW-621M1	MW-621M1_F16	N	09/08/2016	Ground Water	249.4	259.4
J2 Range Eastern	BH-667	J2EP-3_301-306	N	09/08/2016	GW Profile	301	306
J2 Range Northern	MW-588M2	MW-588M2_F16	N	09/08/2016	Ground Water	198	208
J2 Range Northern	MW-588M2	MW-588M2_F16D	FD	09/08/2016	Ground Water	198	208
Demolition Area 1	PR-EFF	PR-EFF-126A	N	09/08/2016	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-126A	N	09/08/2016	Process Water	0	0
Demolition Area 1	PR-MID-1	PR-MID-1-126A	N	09/08/2016	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-126A	N	09/08/2016	Process Water	0	0
J2 Range Northern	MW-588M1	MW-588M1_F16	N	09/08/2016	Ground Water	238	248
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-126A	N	09/08/2016	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-126A	N	09/08/2016	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-126A	N	09/08/2016	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-126A	N	09/08/2016	Process Water	0	0
J2 Range Northern	MW-631M2	MW-631M2_F16	N	09/08/2016	Ground Water	200.1	210.1
J2 Range Northern	MW-631M1	MW-631M1_F16	N	09/08/2016	Ground Water	233.1	243.1
J2 Range Northern	MW-619M2	MW-619M2_F16	N	09/07/2016	Ground Water	234.1	244.1
J2 Range Northern	MW-619M1	MW-619M1_F16	N	09/07/2016	Ground Water	255.1	265.1
J3 Range	J3-EFF	J3-EFF-120A	N	09/07/2016	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-120A	N	09/07/2016	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-120A	N	09/07/2016	Process Water	0	0
J3 Range	J3-INF	J3-INF-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	MW-302M2	MW-302M2_F16	N	09/07/2016	Ground Water	194.4	204.4
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	MW-302M1	MW-302M1_F16	N	09/07/2016	Ground Water	299.6	309.7
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-120A	N	09/07/2016	Process Water	0	0

N = Normal Sample
 FD = Field Duplicate

TABLE 1
Sampling Progress: 1 September to 30 September 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-120A	N	09/07/2016	Process Water	0	0
J2 Range Northern	MW-337M1	MW-337M1_F16	N	09/07/2016	Ground Water	243.7	253.7
J1 Range Northern	J1N-EFF	J1N-EFF-35A	N	09/07/2016	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-35A	N	09/07/2016	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-35A	N	09/07/2016	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-35A	N	09/07/2016	Process Water	0	0
J2 Range Northern	MW-620M1	MW-620M1_F16	N	09/06/2016	Ground Water	268.6	278.6
J2 Range Northern	MW-331M2	MW-331M2_F16	N	09/06/2016	Ground Water	195.3	205.3
J1 Range Southern	J1S-EFF	J1S-EFF-106A	N	09/06/2016	Process Water	0	0
J1 Range Southern	J1S-MID-2	J1S-MID-2-106A	N	09/06/2016	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-106A	N	09/06/2016	Process Water	0	0
J2 Range Northern	MW-331M1	MW-331M1_F16	N	09/06/2016	Ground Water	235.4	245.4
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-96A	N	09/06/2016	Process Water	0	0
L Range	90EW0017	90EW0017_F16	N	09/06/2016	Ground Water	185.8	205.8
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-96A	N	09/06/2016	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-96A	N	09/06/2016	Process Water	0	0
U Range	SSURFL06A	URFL06A_A	N	09/05/2016	Soil	0	0.25
U Range	SSURFL02A	URFL02A_A	N	09/05/2016	Soil	0	0.25
U Range	SSURFL01A	URFL01A_A	N	09/05/2016	Soil	0	0.25
U Range	SSURFL05A	URFL05A_C	FR	09/05/2016	Soil	0	0.25
U Range	SSURFL05A	URFL05A_B	FR	09/05/2016	Soil	0	0.25
U Range	SSURFL05A	URFL05A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2015A	J2O15A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2N14A	J2N14A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2O14A	J2O14A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2N15A	J2N15A_C	FR	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2N15A	J2N15A_B	FR	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2N15A	J2N15A_A	FR	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2M15A	J2M15A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2L15A	J2L15A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2N16A	J2N16A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2N22A	J2N22A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2M32A	J2M32A_A	N	09/05/2016	Soil	0	0.25
J2 Range Eastern	SSJ2N34A	J2N34A_A	N	09/05/2016	Soil	0	0.25
J2 Range Northern	MW-634M3	MW-634M3_F16	N	09/01/2016	Ground Water	170.6	180.6
J2 Range Northern	MW-634M2	MW-634M2_F16	N	09/01/2016	Ground Water	200.6	210.6
J2 Range Northern	MW-634M1	MW-634M1_F16	N	09/01/2016	Ground Water	305.6	315.6
Central Impact Area	CIA2-EFF	CIA2-EFF-32A	N	09/01/2016	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-32A	N	09/01/2016	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-32A	N	09/01/2016	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-32A	N	09/01/2016	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-32A	N	09/01/2016	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-32A	N	09/01/2016	Process Water	0	0

TABLE 1
Sampling Progress: 1 September to 30 September 2016

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Central Impact Area	CIA1-MID1	CIA1-MID1-32A	N	09/01/2016	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-32A	N	09/01/2016	Process Water	0	0

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received September 2016

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
Demolition Area 1	MW-341M2	MW-341M2_T16	264.5	269.5	08/16/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.2		UG/L	0.60	X	0.025	0.20
J3 Range	RS0011OSNK	RS0011OSNK_F16	0	0	08/11/2016	SW6850	Perchlorate	0.16	J	UG/L	2.0		0.019	0.20
J3 Range	MW-171M2	MW-171M2_F16	81	86	08/11/2016	SW6850	Perchlorate	0.17	J	UG/L	2.0		0.019	0.20
J3 Range	J3-MW-1-A	J3-MW-1-A_F16	128.6	138.6	08/10/2016	SW6850	Perchlorate	0.13	J	UG/L	2.0		0.019	0.20
J3 Range	J3-MW-1-B	J3-MW-1-B_F16	175.6	185.6	08/10/2016	SW6850	Perchlorate	1.0		UG/L	2.0		0.019	0.20
J3 Range	J3-MW-1-C	J3-MW-1-C_F16	203.6	213.6	08/10/2016	SW6850	Perchlorate	0.18	J	UG/L	2.0		0.019	0.20
J3 Range	J3-MW-1-C	J3-MW-1-C_F16	203.6	213.6	08/10/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.40		UG/L	0.60		0.025	0.20
Demolition Area 1	MW-544M2	MW-544M2_T16	112	122	08/02/2016	SW6850	Perchlorate	0.23		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-544M1	MW-544M1_T16	162	172	08/02/2016	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.24	J	UG/L	0.60		0.025	0.20
Demolition Area 1	MW-544M1	MW-544M1_T16	162	172	08/02/2016	SW6850	Perchlorate	0.25		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-545M1	MW-545M1_T16	162	172	08/02/2016	SW6850	Perchlorate	0.54		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-545M2	MW-545M2_T16	142	152	08/02/2016	SW6850	Perchlorate	0.26		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-554M2	MW-554M2_T16	89.1	99.1	08/02/2016	SW6850	Perchlorate	0.40		UG/L	2.0		0.019	0.20
Demolition Area 1	MW-554M1	MW-554M1_T16	120	130	08/02/2016	SW6850	Perchlorate	3.6		UG/L	2.0	X	0.019	0.20
Demolition Area 1	MW-533M1	MW-533M1_T16	160	170	07/12/2016	SW6850	Perchlorate	2.1		UG/L	2.0	X	0.019	0.20

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