

**MONTHLY PROGRESS REPORT #255
FOR JUNE 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 28 May to 29 June 2018.

1. SUMMARY OF REMEDIATION ACTIONS

The following is a description of Remediation Actions (RA) underway at Camp Edwards as of June 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 2.586 billion gallons of water treated and re-injected as of 29 June 2018. No shut downs occurred in June:

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 572.2 million gallons of water treated and re-injected as of 29 June 2018. The following Pew Road MTU shut downs occurred in June:

- D1-EW-502 (MW-432) was started at 0730 on 1 June 2018 and run at 100 gpm to collect a sample from the extraction well for the Demo 1 SPM program. EW-502 (MW-432) was shut down at 0830 on 1 June 2018 after the sample was collected.
- 1415 on 15 May 2018 due to a "Bag filter high differential" alarm and was restarted at 1402 on 11 June 2018 after replacing pump, motor, and two sections of pipe.

The Base Boundary MTU is operating at a flow rate of 65 gpm with over 202.3 million gallons of water treated and re-injected as of 29 June 2018. The following Base Boundary MTU shut down occurred in June.

- 0754 on 18 June 2018 to install a fire fighter fitting and flow meter, and was restarted at 1314 on 18 June 2018.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 29 June 2018, over 109.3 million gallons of water treated and re-injected. The following Leading Edge system shut down occurred in June.

- 1204 on 21 June 2018 to install the influent flow meter, and was restarted at 1427 on 21 June 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 29 June 2018, over 1.012 billion gallons of water have been treated and re-injected. The following Northern Treatment Building shutdowns occurred in June:

- Turned off at 0753 on 7 June 2018 to replace and reprogram the VFD, and was restarted at 1040 on 7 June 2018.
- Turned off at 1142 on 13 June 2018 to replace a leaking pressure gauge in the well vault. The building was restarted at 1159 on 13 June 2018.
- Turned off at 0743 on 14 June 2018 to install a fire fighter fitting. The building was restarted at 1024 on 14 June 2018.

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 29 June 2018, over 1.512 billion gallons of water have been treated and re-injected. The following J-2 Range Northern MTU E or F shut downs occurred in June.

- Turned off at 0715 on 31 May to replace the VFDs in each MTU and for reprogramming, and were restarted at 1133 on 31 May 2018.
- 0800 on 13 June 2018 to repair the leaking fire fighter fitting and restarted at 1205 on 13 June 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 29 June 2018, over 1.092 billion gallons of water have been treated and re-injected. The following MTU H and I shutdowns occurred in June:

- Turned off at 0750 on 1 June 2018 to replace the VFD in Unit H and to reprogram the system. Both MTUs H and I were restarted at 1000 on 1 June 2018.
- 0043 on 3 June 2018 due to a power interruption, and were restarted at 0821 on 4 June 2018.
- Turned off at 1005 on 13 June 2018 to install a fire fighter fitting, and were restarted at 1400 on 13 June 2018.

MTU J continues to operate at a flow rate of 120 gpm. As of 29 June 2018, over 503.2 million gallons of water have been treated and re-injected. The following MTU J shutdowns occurred in June.

- MTU J was turned off at 0818 on 29 May 2018 to replace the VFD and to reprogram the system. The MTU was restarted at 1018 on 30 May 2018.
- 0043 on 3 June 2018 due to a power interruption, and was restarted at 0811 on 4 June 2018.
- 0750 on 20 June 2018 for the installation of a fire fighter fitting, and was restarted at 1040 on 20 June 2018.

MTU K continues to operate at a flow rate of 125 gpm. As of 29 June 2018, over 639.0 million gallons of water have been treated and re-injected. The following MTU K shutdowns occurred in June.

- Turned off at 0740 on 30 May 2018 to replace the VFD and reprogram the system, and was restarted at 1046 on 30 May 2018.
- 1024 on 19 June 2018 for the installation of a fire fighter fitting, and was restarted at 1345 on 19 June 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 235 gpm (while J3EW0032 is running at 45 gpm instead of 65 gpm). As of 29 June 2018, over 1.124 billion gallons of water have been treated and re-injected. The following J-3 Range system shut downs occurred in June:

- 0105 on 3 June due to a power interruption, and was restarted at 0847 on 4 June 2018.
- Extraction well 90WE0001 was shut down at 0730 on 8 June 2018 to replace and reprogram the VFD. J3EW0032, J3EW1P1 and J3EW1P2 were shut down at 0958 on 8 June 2018 to reprogram. The System was restarted at 1050 on 8 June 2018 when the work was completed.
- 1100 21 June 2018 to replace the power supply for the Programmable Logic Controller at 90EW0001, and was restarted at 1120 on 21 June 2018.

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 29 June 2018, over 485.8 million gallons of water have been treated and re-injected. The following J-1 Range Southern system shut downs occurred in June:

- 1330 on 4 June 2018 to drain Carbon Vessels #3, #4, #5 and #6 for carbon change out on 5 June 2018. Change out was completed and the System was restarted at 0805 on 6 June 2018.

- 1100 on 20 June 2018 to inspect the effluent line for fire fighter fitting installation, and was restarted at 1120 on 20 June 2018.
- 0732 on 21 June 2018 for the installation of a fire fighter fitting, and was restarted at 1018 on 21 June 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 29 June 2018, over 587.5 million gallons of water have been treated and re-injected. No J-1 Range Northern MTU shut downs occurred in June.

- Turned off at 1045 on 14 June 2018 to install a fire fighter fitting. The system was restarted at 1355 on 15 June 2018.
- The system was turned off at 1053 on 18 June 2018 to install two new flow meters, and was restarted at 1358 on 18 June 2018.

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 29 June 2018, over 1.409 billion gallons of water have been treated and re-injected. The following CIA treatment facility shut downs occurred in June:

- System 1 shut down at 0723 on 14 June 2018 due to a "Low pressure" alarm caused by a faulty pressure gauge, and was restarted at 1024 on 14 June 2018.
- System 1 was turned off at 1032 on 25 June 2018 to install influent flow meter, fire fighter fitting and influent pressure gauge, and was restarted at 1330 on 25 June 2018.
- System 2 was shut down at 0740 on 19 June 2018 to drain the effluent line to prepare for the installation of a fire fighter fitting, and was restarted at 1430 on 19 June 2018.
- System 2 was turned off at 0720 on 25 June 2018 to install influent flow meter and fire fighter fitting, and was restarted at 1220 on 25 June 2018.
- System 2 was shut down at 0340 on 29 June 2018 due to a PLC fault; possibly caused by a power interruption, and was restarted at 1122 on 29 June 2018.
- System 3 was turned off at 0930 on 15 June 2018 to install a fire fighter fitting. The system was restarted at 1310 on 15 June 2018.

SUMMARY OF ACTIONS TAKEN

Performed routine inspections of BEM cover at the CIA to ensure cover is secure and intact.

Demo 1 SPM hydraulic monitoring and groundwater sampling

EM-61 survey and collection of cued MetalMapper data in Phase 3 Area 1.

MEC and MD removal at J-2 proposed groundwater monitoring well pads and access roads.

Post-excavation sampling at J2SWT-2 well pad burial pit in grid P18.

MEC and MD removal at Training Areas 1949 ETS investigation grid.

Vegetation clearance and MEC surface sweep at Former E Range.

Excavated 9th lift (2-ft) and collected post-excavation samples from one Former B Range grid (DR158).

Installed and maintained LUC cameras.

MEC and MD removal around KD Range targets.

Surface water sampling within the J3 Range SPM program.

Residential water sampling within the Central Impact Area SPM and Northwest Corner LTM programs.

Process water samples were collected from the Central Impact Area (CIA), Demolition Area 1, J-1 Range Northern, J-1 Range Southern, J-2 Range Eastern, J-2 Range Northern, and J-3 Range.

Environmental and system performance monitoring groundwater samples were collected from Demolition Area 1.

Soil samples were collected from Former B Range and J2 Range Eastern.

JBCC IAGWSP Tech Update Meeting Minutes 14 June 2018

Project and Fieldwork Update

The drill rig arrived on Monday and began drilling Tuesday at the Demolition Area 1 location (north of NBC). As of Thursday morning they were at 201 feet and had collected seven samples. When this location is finished they will move to the CIA location on Canal View Road. It is anticipated that will be sometime next week. Contractors removed and replaced the damaged well pump at Demolition Area 1 Pew Road extraction well. Photographs were shown of the replacement activities. The well will undergo a two week two-step test. It was restarted at 65 gallons per minute and the influent will be tested and water level samples will be collected. Next week they will increase the pumping rate to 103 gallons per minute and perform the same sampling activities. Contractors have been working on performing preventative maintenance at all facilities e.g. replacing VFDs, line maintenance, etc. The sampling crews are performing annual sampling in Demolition Area 1. A contract action is being worked on to execute the J-1 drivepoint work.

In the CIA, the EM-61 is completing work in Area C performing recollects. This week they set up a second Metal Mapper. No issues have been reported. Figures showing the locations that they need to "sit" on were shown. There have been roughly 2,000 per acre. They are able to sit on approximately 400 points per day which is an increase over the old equipment as the new instrument doesn't need to sit as long. The plan is to finish the EM-61 data and provide the maps to the team to pick the next 100% grid.

In the Training Areas, Dawson is conducting the work that was outlined in the recently issued Project Notes. To date they have completed MEC removal in the KD Range aside from the primary APC target which still needs to be moved. They started the vegetation and surface clearance at the Former E Range. They have cleared two acres and have 18 to complete. They have moved to well pads and will resume at Former E once they finish that activity.

At the Small Arms Ranges, sample results were distributed yesterday. They showed that at the three Ranges still being worked on (Former B, C and D Ranges) results continue to be slightly above standards. At Former B Range, two of the three replicate samples were above 200 mg/kg and an additional lift will be removed next week. Additional lifts are required at C and D Range however the work is not currently on contract and must be scoped and awarded before proceeding. Excavated soil from the most recent lifts is stockpiled on poly and covered awaiting waste characterization results. IAGWSP has begun discussing Range restoration for the Small Arms Ranges with Jake McCumber and will discuss with the agencies to make sure everyone is in agreement on the path forward.

Small Arms Ranges Annual Environmental Monitoring Report Presentation

A presentation was provided on the Small Arms Ranges Annual Environmental Monitoring Report. It was noted that during the reporting period (March 2017 to March 2018), no new wells were installed but approximately 800 cubic yards of soil from Former B, C and D Range were excavated and disposed of off-site.

A total of fifteen wells were included in the 2018 monitoring program and twelve wells were successfully sampled. Representative samples could not be obtained during the 2018 reporting period due to low water levels in three monitoring well on B Range: monitoring wells MW-72S, MW-537M1 and MW-538M1. All samples were obtained using Low Flow methods. USGS ten year hydraulic trend well charts were reviewed and discussed.

Groundwater sampling results were reviewed. Tungsten was detected on B Range in MW-490S (0.17 J $\mu\text{g/L}$ total) and G Range in MW-35S (0.51 J $\mu\text{g/L}$ total). All other wells were non-detect. For metals, all twelve wells sampled had at least one metal detected. The highest antimony concentration was in MW-470S at 0.47 J $\mu\text{g/L}$ (total). The highest copper concentration was in MW-456S at 28.8 $\mu\text{g/L}$ (total). Lead was non-detect in all wells. Tungsten trend plots were displayed and discussed.

Comparison to Decision Document criteria was discussed. It was noted that the metals continue to be below cleanup levels and long-term groundwater monitoring will continue. No changes are being recommended to the monitoring well program. It is recommended to continue the annual sampling for three years.

Action Items

Action items were discussed and updated.

JBCC IAGWSP Tech Update Meeting Minutes 28 June 2018

The drill rig arrived on June 11th and completed the Demolition Area 1 location (BH700 north of NBC). They reached a depth of 326 feet. They moved to the CIA location on Canal View Road (BH699) and completed that location on June 25th at a depth of 266 feet. On June 27th the rig set up at the J-3 location on Greenway Road (BH701) and it is anticipated that they will finish after the second week of July as they will not be onsite for the week of July 4th. A screen setting call for the CIA location is tentatively scheduled for July 9th. All the remaining well pads have been completed, one requires a QC check and should be ready before the drill rig starts up again. During the clearance of one well pad a burial pit was uncovered containing 50 60mm M49 mortars. They were found approximately four feet deep in a 3' X 3' pit. The maximum depth of the pit was 72". A sample was collected at the pit bottom and post excavation sampling results are pending. During another well pad clearance, seven 81mm mortars were discovered. They were not co-located. They have been sent to the BEM holding area.

In the CIA, the EM-61 has completed work in Area C performing recollects. They are halfway through Area E and three quarters of the way through Area B. Parsons dig team will mobilize to the site on July 9th and begin digging by July 11th. One Metal Mapper is currently down and needs repairs. EPA and MassDEP requested Grid 39-35 as the 100% Grid. IAGWSP will distribute the Target Selection Tech Memo to the agencies.

In the Training Areas, Dawson is conducting the work that was outlined in the recently issued Project Notes. To date they have completed MEC removal in the KD Range aside from the primary APC target which still needs to be moved. They have completed ¼ acre grid MEC removal in area C14. They found one practice mine that is very likely inert but they can't tell for certain because of its condition. It has been moved to the BEM staging area. Other items were range related debris. They continue with vegetation and surface clearance at the Former E Range. They have cleared two acres and have 18 to complete. The only remaining task for the Training Areas is the pyrotechnics sampling which is scheduled for next week. IAGWSP will provide a presentation of results of the Training Areas work once it is completed.

At the Small Arms Ranges, a 9th lift was excavated at Former B Range. At the C and D range, one grid at each range requires an additional lift however the work is not currently on contract and must be scoped and awarded before proceeding.

Excavated soil from the most recent lifts is stockpiled on poly and covered awaiting waste characterization results. IAGWSP has begun discussing Range restoration for the Small Arms Ranges with Jake McCumber and will discuss with the agencies to make sure everyone is in agreement on the path forward.

Action Items

Action items were discussed and updated.

Demolition Area 1 Perchlorate & RDX Plume Shell Presentation

A presentation was provided on the Demolition Area 1 Perchlorate and RDX plume shells. It was explained that to develop the plume shell the following steps were taken: EDMS was queried for perchlorate and RDX data for Demo 1. An existing steady-state MODFLOW groundwater model was run for "average" conditions. The simulation is started at the earliest date of groundwater sample collection and ended at the present time (31 January 2018). Representative groundwater extraction rates are used for the simulation period. Particles in MODPATH are initiated at locations and times of each sample collection point and migrate using results of the MODFLOW groundwater flow model then a MODPATH

simulation is run to migrate particles (x, y, and z) to the present time. Model predicted x, y, z, and c values are imported to Excel and match the particles with their respective measured concentrations. Perchlorate concentrations are not adjusted (i.e. not attenuated) and RDX concentrations are decayed (Max decay 55% after 5 year) according to Jacobs. Values are imported to ArcView and used as a guide to manually develop plume contours representing 10 foot layers. 2D concentration contour lines are converted into 3D Control Points and kriged to MODFLOW Grid in Groundwater Desktop (GWD). The 3D concentration file is imported from GWD to Groundwater Vistas as initial concentration conditions for determining cleanup time-frames.

For Perchlorate the start date was August 7, 2000 and concentrations ranged from ND to 500 µg/L. The number of points migrated was 3,473 with 1,344 captured and 1,608 deleted and 521 used for the plume shell. There were 34 points that were outside of the model domain. For RDX the start date was November 7, 1997 and concentrations ranged from ND to 370 µg/L. The number of points migrated was 3,205 with 1,458 captured and 1,624 deleted and 123 used for the plume shell. There were 37 points that were outside of the model domain.

Figures for both RDX and Perchlorate showing the migrated data points that were retained and deleted and the 2018 and 2017.5 drift plume were displayed and discussed.

It was noted that the perchlorate plume is approximately 2.5 miles in length (including segmented sections) and 600 feet wide above 2 µg/L. There is approximately 14.5 pounds of perchlorate greater than 0.2 µg/L and 7.5 pounds greater than 2 µg/L.

For the RDX plume, the longest segment is approximately 1,200 feet in length and 275 feet wide above 0.6 µg/L. There are 0.65 pounds of RDX greater than ND and 0.35 pounds greater than 0.6 µg/L.

Comparison to Decision Document cleanup times was discussed. Based on the revised plume shell and assuming pumping rates do not change significantly with time, perchlorate plumes are simulated to be below 2 µg/L before 2025 (and currently in agreement with Addendum 2 to the Decision Document. The RDX plumes are simulated to be below 0.6 µg/L by 2025. This is approximately three years beyond the time-frame of 2022 identified in the Decision Document Animations showing the future migration of the plumes were displayed and discussed.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) meeting has yet to be scheduled. 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 June to 30 June 2018. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 1 June to 30 June 2018. 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:

- Draft Training Areas Decision Document 06/11/2018
- Monthly Progress Report No. 254 for May 2018 06/12/2018
- Final Northwest Corner 2017 Annual Environmental Monitoring Report 06/13/2018
- Draft Small Arms Ranges 2018 Annual Environmental Monitoring Report 06/13/2018

3. SCHEDULED ACTIONS

The following documents are being prepared or revised during July 2018:

Training Areas

- Training Areas Decision Document

Annual Reports/ Environmental Monitoring Reports/Work Plans

- Northwest Corner Annual Monitoring Report
- J-1 North and J-1 South Annual Monitoring Report
- L-Range Annual Monitoring Report

Central Impact Area

- CIA 2018 Source Area Workplan and MOR
- 2017 CIA Source Removal Annual Report

Miscellaneous

- Five Year Review report
- J-3 Geophysical and Soil Technical Memorandum
- Technology evaluation and attenuation study reports

TABLE 1
Sampling Progress: 1 June to 30 June 2018

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	BH-699	BH-699-GW-261-266	N	06/25/2018	Water	261	266
Central Impact Area	BH-699	BH-699-GW-241-246	N	06/25/2018	Water	241	246
Central Impact Area	BH-699	BH-699-GW-231-236	N	06/22/2018	Water	231	236
Central Impact Area	BH-699	BH-699-GW-221-226D	FD	06/22/2018	Water	221	226
Central Impact Area	BH-699	BH-699-GW-221-226	N	06/22/2018	Water	221	226
Central Impact Area	BH-699	BH-699-GW-211-216	N	06/21/2018	Water	211	216
Central Impact Area	BH-699	BH-699-GW-201-206	N	06/21/2018	Water	201	206
Central Impact Area	BH-699	BH-699-GW-191-196	N	06/21/2018	Water	191	196
Central Impact Area	BH-699	BH-699-GW-181-186	N	06/21/2018	Water	181	186
Central Impact Area	CIA2-EFF	CIA2-EFF-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-53A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA3-EFF	CIA3-EFF-24A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-24A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-24A	N	06/04/2018	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-24A	N	06/04/2018	Process Water	0	0
Demolition Area 1	MW-211M2	MW-211M2_S18	N	06/27/2018	Ground Water	175	185
Demolition Area 1	MW-211M1	MW-211M1_S18	N	06/27/2018	Ground Water	200	210
Demolition Area 1	MW-696M1	MW-696M1_R2	N	06/22/2018	Ground Water	175.2	185.2
Demolition Area 1	MW-697M1	MW-697M1_R2	N	06/22/2018	Ground Water	243	253
Demolition Area 1	MW-698M1	MW-698M1_R2	N	06/22/2018	Ground Water	212.4	222.4
Demolition Area 1	MW-173M2	MW-173M2_S18	N	06/20/2018	Ground Water	208	218
Demolition Area 1	MW-173M1	MW-173M1_S18	N	06/20/2018	Ground Water	243	253
Demolition Area 1	MW-341M3	MW-341M3_S18	N	06/20/2018	Ground Water	209.5	219.5
Demolition Area 1	MW-341M2	MW-341M2_S18	N	06/20/2018	Ground Water	264.5	269.5
Demolition Area 1	MW-341M2	MW-341M2_S18D	FD	06/20/2018	Ground Water	264.5	269.5
Demolition Area 1	MW-341M1	MW-341M1_S18	N	06/20/2018	Ground Water	289.5	299.5
Demolition Area 1	MW-661D	MW-661D_S18	N	06/19/2018	Ground Water	251.6	261.6
Demolition Area 1	MW-221M1	MW-221M1_S18	N	06/19/2018	Ground Water	221	231
Demolition Area 1	MW-533M1	MW-533M1_S18	N	06/19/2018	Ground Water	160	170
Demolition Area 1	MW-533M1	MW-533M1_S18D	FD	06/19/2018	Ground Water	160	170
Demolition Area 1	BH-700	BH-700-GW-306-311	N	06/19/2018	Water	306	311
Demolition Area 1	MW-642M2	MW-642M2_S18	N	06/19/2018	Ground Water	77.3	87.3
Demolition Area 1	BH-700	BH-700-GW-296-301	N	06/19/2018	Water	296	301
Demolition Area 1	MW-642M1	MW-642M1_S18	N	06/19/2018	Ground Water	104.3	114.3
Demolition Area 1	BH-700	BH-700-GW-286-291	N	06/19/2018	Water	286	291
Demolition Area 1	MW-610M2	MW-610M2_S18	N	06/18/2018	Ground Water	85	95
Demolition Area 1	BH-700	BH-700-GW-276-281	N	06/18/2018	Water	276	281
Demolition Area 1	BH-700	BH-700-GW-266-271	N	06/18/2018	Water	266	271
Demolition Area 1	MW-610M1	MW-610M1_S18	N	06/18/2018	Ground Water	110	120
Demolition Area 1	MW-611M2	MW-611M2_S18	N	06/18/2018	Ground Water	91	101
Demolition Area 1	MW-611M1	MW-611M1_S18	N	06/18/2018	Ground Water	141	151
Demolition Area 1	BH-700	BH-700-GW-256-261	N	06/18/2018	Water	256	261
Demolition Area 1	MW-598M2	MW-598M2_S18	N	06/18/2018	Ground Water	88	98
Demolition Area 1	MW-598M1	MW-598M1_S18	N	06/18/2018	Ground Water	122	132
Demolition Area 1	BH-700	BH-700-GW-246-251	N	06/18/2018	Water	246	251
Demolition Area 1	BH-700	BH-700-GW-236-241	N	06/15/2018	Water	236	241
Demolition Area 1	MW-641M2	MW-641M2_S18	N	06/15/2018	Ground Water	86.2	96.2
Demolition Area 1	MW-641M1	MW-641M1_S18	N	06/15/2018	Ground Water	113.2	123.2
Demolition Area 1	MW-559M2	MW-559M2_S18	N	06/15/2018	Ground Water	87	97
Demolition Area 1	MW-559M1	MW-559M1_S18	N	06/15/2018	Ground Water	135.6	145.6
Demolition Area 1	BH-700	BH-700-GW-226-231	N	06/14/2018	Water	226	231
Demolition Area 1	MW-542M1	MW-542M1_S18	N	06/14/2018	Ground Water	144	154
Demolition Area 1	BH-700	BH-700-GW-216-221D	FD	06/14/2018	Water	216	221
Demolition Area 1	BH-700	BH-700-GW-216-221	N	06/14/2018	Water	216	221

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 June to 30 June 2018

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Demolition Area 1	MW-532M2	MW-532M2_S18	N	06/14/2018	Ground Water	138	148
Demolition Area 1	MW-532M2	MW-532M2_S18D	FD	06/14/2018	Ground Water	138	148
Demolition Area 1	MW-532M1	MW-532M1_S18	N	06/14/2018	Ground Water	168	178
Demolition Area 1	MW-248M3	MW-248M3_S18	N	06/14/2018	Ground Water	143	153
Demolition Area 1	MW-248M2	MW-248M2_S18	N	06/14/2018	Ground Water	178	188
Demolition Area 1	BH-700	BH-700-GW-206-211	N	06/14/2018	Water	206	211
Demolition Area 1	MW-248M1	MW-248M1_S18	N	06/14/2018	Ground Water	216.3	226.3
Demolition Area 1	BH-700	BH-700-GW-196-201	N	06/14/2018	Water	196	201
Demolition Area 1	BH-700	BH-700-GW-186-191	N	06/13/2018	Water	186	191
Demolition Area 1	BH-700	BH-700-GW-176-181	N	06/13/2018	Water	176	181
Demolition Area 1	BH-700	BH-700-GW-166-171	N	06/13/2018	Water	166	171
Demolition Area 1	MW-531M1	MW-531M1_S18	N	06/13/2018	Ground Water	138	148
Demolition Area 1	BH-700	BH-700-GW-156-161	N	06/13/2018	Water	156	161
Demolition Area 1	MW-258M3	MW-258M3_S18	N	06/13/2018	Ground Water	77	82
Demolition Area 1	BH-700	BH-700-GW-146-151	N	06/13/2018	Water	146	151
Demolition Area 1	BH-700	BH-700-GW-146-151D	FD	06/13/2018	Water	146	151
Demolition Area 1	MW-258M2	MW-258M2_S18	N	06/13/2018	Ground Water	87	92
Demolition Area 1	BH-700	BH-700-GW-136-141	N	06/13/2018	Water	136	141
Demolition Area 1	BH-700	BH-700-GW-126-131	N	06/13/2018	Water	126	131
Demolition Area 1	MW-258M1	MW-258M1_S18	N	06/13/2018	Ground Water	109	119
Demolition Area 1	MW-258M1	MW-258M1_S18D	FD	06/13/2018	Ground Water	109	119
Demolition Area 1	BH-700	BH-700-GW-116-121	N	06/13/2018	Water	116	121
Demolition Area 1	BH-700	BH-700-GW-106-111	N	06/12/2018	Water	106	111
Demolition Area 1	MW-543M2	MW-543M2_S18	N	06/12/2018	Ground Water	91.8	101.8
Demolition Area 1	MW-543M1	MW-543M1_S18	N	06/12/2018	Ground Water	127	137
Demolition Area 1	PR-EFF	PR-EFF-147A	N	06/19/2018	Process Water	0	0
Demolition Area 1	PR-MID-2	PR-MID-2-147A	N	06/19/2018	Process Water	0	0
Demolition Area 1	MW-231M2	MW-231M2_S18	N	06/12/2018	Ground Water	165.5	175.5
Demolition Area 1	MW-231M1	MW-231M1_S18	N	06/12/2018	Ground Water	210.5	220.5
Demolition Area 1	MW-231M1	MW-231M1_S18D	FD	06/12/2018	Ground Water	210.5	220.5
Demolition Area 1	PR-MID-1	PR-MID-1-147A	N	06/19/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-147A	N	06/19/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-147F	N	06/15/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-147E	N	06/13/2018	Process Water	0	0
Demolition Area 1	MW-664M2	MW-664M2_S18	N	06/12/2018	Ground Water	218.5	228.5
Demolition Area 1	PR-INF	PR-INF-147D	N	06/12/2018	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-23A	N	06/12/2018	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-23A	N	06/12/2018	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-23A	N	06/12/2018	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-23A	N	06/12/2018	Process Water	0	0
Demolition Area 1	D1-EFF	D1-EFF-95A	N	06/12/2018	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-95A	N	06/12/2018	Process Water	0	0
Demolition Area 1	MW-664M1	MW-664M1_S18	N	06/12/2018	Ground Water	248.5	258.5
Demolition Area 1	D1-MID-1	D1-MID-1-95A	N	06/12/2018	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-95A	N	06/12/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID3A	FPR-2-GAC-MID3A-147B	N	06/12/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID2A	FPR-2-GAC-MID2A-147B	N	06/12/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-147B	N	06/12/2018	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-147A	N	06/12/2018	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-147A	N	06/12/2018	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-147A	N	06/12/2018	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-147A	N	06/12/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-147C	N	06/12/2018	Process Water	0	0
Demolition Area 1	PR-INF	PR-INF-147B	N	06/11/2018	Process Water	0	0
Demolition Area 1	MW-663D	MW-663D_S18	N	06/07/2018	Ground Water	240.6	250.6
Demolition Area 1	MW-663D	MW-663D_S18D	FD	06/07/2018	Ground Water	240.6	250.6
Demolition Area 1	MW-240M2	MW-240M2_S18	N	06/07/2018	Ground Water	125	135
Demolition Area 1	MW-240M1	MW-240M1_S18	N	06/07/2018	Ground Water	198	208
Demolition Area 1	MW-225M3	MW-225M3_S18	N	06/07/2018	Ground Water	125	135
Demolition Area 1	MW-225M2	MW-225M2_S18	N	06/07/2018	Ground Water	145	155

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 June to 30 June 2018

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
Demolition Area 1	MW-225M1	MW-225M1_S18	N	06/07/2018	Ground Water	175	185
Demolition Area 1	MW-662D	MW-662D_S18	N	06/07/2018	Ground Water	202.3	212.3
Demolition Area 1	MW-546M2	MW-546M2_S18	N	06/06/2018	Ground Water	100	110
Demolition Area 1	MW-546M1	MW-546M1_S18	N	06/06/2018	Ground Water	140	150
Demolition Area 1	MW-544M3	MW-544M3_S18	N	06/06/2018	Ground Water	77.5	87.5
Demolition Area 1	MW-544M2	MW-544M2_S18	N	06/06/2018	Ground Water	112	122
Demolition Area 1	MW-544M1	MW-544M1_S18	N	06/06/2018	Ground Water	162	172
Demolition Area 1	XX9514	XX9514_S18	N	06/06/2018	Ground Water	102	112
Demolition Area 1	XX9514	XX9514_S18D	FD	06/06/2018	Ground Water	102	112
Demolition Area 1	MW-558M2	MW-558M2_S18	N	06/05/2018	Ground Water	98	108
Demolition Area 1	MW-558M1	MW-558M1_S18	N	06/05/2018	Ground Water	134	144
Demolition Area 1	MW-597M2	MW-597M2_S18	N	06/05/2018	Ground Water	118	128
Demolition Area 1	MW-597M1	MW-597M1_S18	N	06/05/2018	Ground Water	148	158
Demolition Area 1	MW-352M1	MW-352M1_S18	N	06/05/2018	Ground Water	115	125
Demolition Area 1	MW-353M2	MW-353M2_S18	N	06/05/2018	Ground Water	57	67
Demolition Area 1	MW-353M1	MW-353M1_S18	N	06/05/2018	Ground Water	107	117
Demolition Area 1	MW-545M4	MW-545M4_S18	N	06/04/2018	Ground Water	72	82
Demolition Area 1	MW-545M3	MW-545M3_S18	N	06/04/2018	Ground Water	101.5	111.5
Demolition Area 1	MW-545M2	MW-545M2_S18	N	06/04/2018	Ground Water	142	152
Demolition Area 1	MW-545M1	MW-545M1_S18	N	06/04/2018	Ground Water	162	172
Demolition Area 1	MW-582M2	MW-582M2_S18	N	06/04/2018	Ground Water	84	94
Demolition Area 1	MW-582M1	MW-582M1_S18	N	06/04/2018	Ground Water	134	144
Demolition Area 1	MW-582M1	MW-582M1_S18D	FD	06/04/2018	Ground Water	134	144
Demolition Area 1	MW-571M2	MW-571M2_S18	N	06/01/2018	Ground Water	74	84
Demolition Area 1	MW-571M1	MW-571M1_S18	N	06/01/2018	Ground Water	114	124
Demolition Area 1	MW-569M2	MW-569M2_S18	N	06/01/2018	Ground Water	84	94
Demolition Area 1	MW-569M1	MW-569M1_S18	N	06/01/2018	Ground Water	114	124
Demolition Area 1	MW-659M2	MW-659M2_S18	N	06/01/2018	Ground Water	85	95
Demolition Area 1	MW-659M1	MW-659M1_S18	N	06/01/2018	Ground Water	120	130
Demolition Area 1	MW-432	MW-432_S18	N	06/01/2018	Ground Water	88	188
Former B Range	SSFBR140QRA	FBR140QRA_L	FR	06/22/2018	Soil	0	0.25
Former B Range	SSFBR140QRA	FBR140QRA_K	FR	06/22/2018	Soil	0	0.25
Former B Range	SSFBR140QRA	FBR140QRA_J	N	06/22/2018	Soil	0	0.25
J1 Range Northern	J1N-EFF	J1N-EFF-56A	N	06/06/2018	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-56A	N	06/06/2018	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-56A	N	06/06/2018	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-56A	N	06/06/2018	Process Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-127A	N	06/14/2018	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-127A	N	06/14/2018	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-127A	N	06/14/2018	Process Water	0	0
J2 Range Eastern	SSJ2DA203	DA062518J201_30A	N	06/26/2018	Soil	5	5.25
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-117A	N	06/11/2018	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-117A	N	06/11/2018	Process Water	0	0
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-141A	N	06/06/2018	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 1 June to 30 June 2018

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-2F	J2N-MID-2F-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-141A	N	06/06/2018	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-141A	N	06/06/2018	Process Water	0	0
J3 Range	BH-701	BH-701-GW-215-220	N	06/29/2018	Water	215	220
J3 Range	BH-701	BH-701-GW-205-210	N	06/29/2018	Water	205	210
J3 Range	BH-701	BH-701-GW-195-200	N	06/29/2018	Water	195	200
J3 Range	BH-701	BH-701-GW-185-190	N	06/28/2018	Water	185	190
J3 Range	BH-701	BH-701-GW-175-180	N	06/28/2018	Water	175	180
J3 Range	BH-701	BH-701-GW-165-170D	FD	06/28/2018	Water	165	170
J3 Range	BH-701	BH-701-GW-165-170	N	06/28/2018	Water	165	170
J3 Range	BH-701	BH-701-GW-155-160	N	06/28/2018	Water	155	160
J3 Range	BH-701	BH-701-GW-145-150	N	06/28/2018	Water	145	150
J3 Range	J3-EFF	J3-EFF-141A	N	06/06/2018	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-141A	N	06/06/2018	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-141A	N	06/06/2018	Process Water	0	0
J3 Range	J3-INF	J3-INF-141A	N	06/06/2018	Process Water	0	0

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
 Data Received June 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
J1 Range Northern	MW-590M2	MW-590M2_S18	238	248	05/14/2018	SW6850	Perchlorate	7.6		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-590M1	MW-590M1_S18	258	268	05/14/2018	SW6850	Perchlorate	0.054	J	ug/L	2.0		0.012	0.20
Demolition Area 2	MW-573M2	MW-573M2_S18	155.4	165.4	05/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.31		ug/L	0.60		0.036	0.20
Demolition Area 2	MW-573M2	MW-573M2_S18D	155.4	165.4	05/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.32		ug/L	0.60		0.036	0.20
J1 Range Northern	MW-303M2	MW-303M2_S18	235.09	245.1	05/09/2018	SW6850	Perchlorate	0.26		ug/L	2.0		0.012	0.20
J1 Range Northern	MW-303M2	MW-303M2_S18	235.09	245.1	05/09/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	3.7		ug/L	400		0.025	0.20
J1 Range Northern	MW-303M2	MW-303M2_S18	235.09	245.1	05/09/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	8.9		ug/L	0.60	X	0.036	0.20
J1 Range Northern	MW-303M2	MW-303M2_S18D	235.09	245.1	05/09/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	3.6		ug/L	400		0.025	0.20
J1 Range Northern	MW-303M2	MW-303M2_S18D	235.09	245.1	05/09/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	8.4		ug/L	0.60	X	0.036	0.20
J1 Range Northern	MW-689M2	MW-689M2_S18	231.4	241.4	05/09/2018	SW6850	Perchlorate	0.48		ug/L	2.0		0.012	0.20
J1 Range Northern	MW-689M1	MW-689M1_S18	253.5	263.5	05/09/2018	SW6850	Perchlorate	0.49		ug/L	2.0		0.012	0.20
J1 Range Northern	MW-584M2	MW-584M2_S18	228	238	05/08/2018	SW6850	Perchlorate	0.089	J	ug/L	2.0		0.012	0.20
J1 Range Northern	MW-584M1	MW-584M1_S18	248	258	05/08/2018	SW6850	Perchlorate	4.6		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-401M3	MW-401M3_S18	228.5	238.5	05/08/2018	SW6850	Perchlorate	0.060	J	ug/L	2.0		0.012	0.20
J1 Range Northern	MW-430M2	MW-430M2_S18	188.41	198.41	05/08/2018	SW6850	Perchlorate	0.058	J	ug/L	2.0		0.012	0.20
J1 Range Northern	MW-430M1	MW-430M1_S18	245.23	255.23	05/08/2018	SW6850	Perchlorate	0.043	J	ug/L	2.0		0.012	0.20
Central Impact Area	MW-609M1	MW-609M1_S18	210.39	220.39	05/04/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.2		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-608M2	MW-608M2_S18	253.4	263.4	05/04/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.3		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-608M2	MW-608M2_S18D	253.4	263.4	05/04/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.3		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-608M1	MW-608M1_S18	267.4	277.4	05/04/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.21		ug/L	400		0.025	0.20
Central Impact Area	MW-608M1	MW-608M1_S18	267.4	277.4	05/04/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.1		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-608M1	MW-608M1_S18D	267.4	277.4	05/04/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.21		ug/L	400		0.025	0.20
Central Impact Area	MW-608M1	MW-608M1_S18D	267.4	277.4	05/04/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.1		ug/L	0.60	X	0.036	0.20
J1 Range Northern	MW-606M2	MW-606M2_S18	193.2	203.2	05/03/2018	SW6850	Perchlorate	0.041	J	ug/L	2.0		0.012	0.20
J1 Range Northern	MW-606M1	MW-606M1_S18	233.3	243.3	05/03/2018	SW6850	Perchlorate	1.3		ug/L	2.0		0.012	0.20
Central Impact Area	MW-629M2	MW-629M2_S18	186.9	196.9	05/03/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.32		ug/L	400		0.025	0.20
Central Impact Area	MW-629M2	MW-629M2_S18	186.9	196.9	05/03/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.70		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-629M2	MW-629M2_S18D	186.9	196.9	05/03/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.31		ug/L	400		0.025	0.20
Central Impact Area	MW-629M2	MW-629M2_S18D	186.9	196.9	05/03/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.65		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-629M1	MW-629M1_S18	216.9	226.9	05/03/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.64		ug/L	0.60	X	0.036	0.20
J1 Range Northern	MW-245M2	MW-245M2_S18	204	214	05/02/2018	SW6850	Perchlorate	15.1		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-245M2	MW-245M2_S18	204	214	05/02/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	45.4		ug/L	0.60	X	0.36	2.0
J1 Range Northern	MW-245M2	MW-245M2_S18	204	214	05/02/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	6.3		ug/L	400		0.025	0.20
J1 Range Northern	MW-245M2	MW-245M2_S18D	204	214	05/02/2018	SW6850	Perchlorate	15.1		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-245M2	MW-245M2_S18D	204	214	05/02/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	44.1		ug/L	0.60	X	0.36	2.0
J1 Range Northern	MW-245M2	MW-245M2_S18D	204	214	05/02/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	6.3		ug/L	400		0.025	0.20
J1 Range Northern	MW-605M2	MW-605M2_S18	182.2	192.2	05/02/2018	SW6850	Perchlorate	0.062	J	ug/L	2.0		0.012	0.20
J1 Range Northern	MW-605M1	MW-605M1_S18	220.2	230.2	05/02/2018	SW6850	Perchlorate	0.052	J	ug/L	2.0		0.012	0.20
J1 Range Northern	MW-567M1	MW-567M1_S18	215.5	225.5	05/02/2018	SW6850	Perchlorate	2.1		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-564M1	MW-564M1_S18	227	237	05/02/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.40		ug/L	400		0.025	0.20
J1 Range Northern	MW-564M1	MW-564M1_S18	227	237	05/02/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.6		ug/L	0.60	X	0.036	0.20
J1 Range Northern	MW-564M1	MW-564M1_S18	227	237	05/02/2018	SW6850	Perchlorate	24.1		ug/L	2.0	X	0.024	0.40

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

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
 Data Received June 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
J1 Range Northern	MW-564M1	MW-564M1_S18D	227	237	05/02/2018	SW6850	Perchlorate	24.8		ug/L	2.0	X	0.024	0.40
J1 Range Northern	MW-370M1	MW-370M1_S18	245	255	05/01/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.21		ug/L	0.60		0.036	0.20
J1 Range Northern	MW-370M1	MW-370M1_S18	245	255	05/01/2018	SW6850	Perchlorate	8.5		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-370M1	MW-370M1_S18D	245	255	05/01/2018	SW6850	Perchlorate	8.0		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-549M1	MW-549M1_S18	227.4	237.4	05/01/2018	SW6850	Perchlorate	2.6		ug/L	2.0	X	0.012	0.20
J1 Range Northern	MW-566M1	MW-566M1_S18	232	242	05/01/2018	SW6850	Perchlorate	4.3		ug/L	2.0	X	0.012	0.20
J1 Range Southern	MW-669M2	MW-669M2_S18	201.7	211.7	04/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.88		ug/L	0.60	X	0.036	0.20
J1 Range Southern	MW-669M1	MW-669M1_S18	223.7	233.7	04/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27		ug/L	0.60		0.036	0.20
Central Impact Area	MW-223M1	MW-223M1_S18	211	221	04/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.45		ug/L	0.60		0.036	0.20
J1 Range Southern	MW-402M1	MW-402M1_S18	190.14	200.13	04/25/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27		ug/L	0.60		0.036	0.20
J1 Range Southern	MW-647M1	MW-647M1_S18	211.3	221.3	04/25/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.5		ug/L	0.60	X	0.036	0.20
J1 Range Southern	MW-647M1	MW-647M1_S18D	211.3	221.3	04/25/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.5		ug/L	0.60	X	0.036	0.20
J1 Range Southern	MW-524M1	MW-524M1_S18	148	158	04/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.69		ug/L	0.60	X	0.036	0.20
J1 Range Southern	MW-524M1	MW-524M1_S18D	148	158	04/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.74		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-617M1	MW-617M1_S18	175.8	185.8	04/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.71		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-607M3	MW-607M3_S18	157.4	167.4	04/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.76		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-607M2	MW-607M2_S18	177.4	187.4	04/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.6		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-607M2	MW-607M2_S18D	177.4	187.4	04/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.7		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-607M1	MW-607M1_S18	207.4	217.4	04/24/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.2		ug/L	0.60	X	0.036	0.20
J1 Range Southern	MW-592M1	MW-592M1_S18	201	211	04/23/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.23		ug/L	0.60		0.036	0.20
Central Impact Area	MW-108M4	MW-108M4_S18	240	250	04/19/2018	SW6850	Perchlorate	0.17	J	ug/L	2.0		0.012	0.20
Central Impact Area	MW-108M1	MW-108M1_S18	297	307	04/19/2018	SW6850	Perchlorate	0.041	J	ug/L	2.0		0.012	0.20
Central Impact Area	MW-102M2	MW-102M2_S18	237	247	04/19/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.35		ug/L	0.60		0.036	0.20
Central Impact Area	MW-102M2	MW-102M2_S18	237	247	04/19/2018	SW6850	Perchlorate	0.42		ug/L	2.0		0.012	0.20
Central Impact Area	MW-42M1	MW-42M1_S18	205.8	216	04/19/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27		ug/L	0.60		0.036	0.20
Central Impact Area	MW-644M1	MW-644M1_S18	275.9	285.9	04/18/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-626M1	MW-626M1_S18	282.2	292.2	04/18/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.1		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-626M1	MW-626M1_S18D	282.2	292.2	04/18/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.0		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-616M1	MW-616M1_S18	217.1	227.1	04/17/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.8		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-323M1	MW-323M1_S18	195	205	04/16/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.49		ug/L	0.60		0.036	0.20
Central Impact Area	MW-209M2	MW-209M2_S18	220	230	04/12/2018	SW6850	Perchlorate	0.37		ug/L	2.0		0.012	0.20
Central Impact Area	MW-209M1	MW-209M1_S18	240	250	04/12/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.61		ug/L	400		0.025	0.20
Central Impact Area	MW-209M1	MW-209M1_S18	240	250	04/12/2018	SW6850	Perchlorate	2.0		ug/L	2.0	X	0.012	0.20
Central Impact Area	MW-209M1	MW-209M1_S18	240	250	04/12/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.2		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-209M1	MW-209M1_S18D	240	250	04/12/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.60		ug/L	400		0.025	0.20
Central Impact Area	MW-209M1	MW-209M1_S18D	240	250	04/12/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.3		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-176M2	MW-176M2_S18	229	239	04/12/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.21		ug/L	400		0.025	0.20
Central Impact Area	MW-176M2	MW-176M2_S18	229	239	04/12/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.8		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-176M1	MW-176M1_S18	270	280	04/12/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.66		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-623M3	MW-623M3_S18	275	285	04/11/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.40		ug/L	400		0.025	0.20
Central Impact Area	MW-623M3	MW-623M3_S18	275	285	04/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.78		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-623M1	MW-623M1_S18	340	350	04/11/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		ug/L	0.60		0.036	0.20

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

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
 Data Received June 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
Central Impact Area	MW-249M2	MW-249M2_S18	174	184	04/10/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.61		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-633M2	MW-633M2_S18	197	207	04/10/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.25		ug/L	0.60		0.036	0.20
Central Impact Area	MW-686M2	MW-686M2_S18	194.3	204.3	04/10/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-208M1	MW-208M1_S18	195	205	04/05/2018	SW6850	Perchlorate	0.053	J	ug/L	2.0		0.012	0.20
Central Impact Area	MW-204M1	MW-204M1_S18	141	151	04/05/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.75		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-43M1	MW-43M1_S18	223	233	04/05/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.99		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-40S	MW-40S_S18	115.5	126	03/26/2018	SW8330	2-Amino-4,6-dinitrotoluene	0.28		ug/L	7.3		0.016	0.20
Central Impact Area	MW-40S	MW-40S_S18	115.5	126	03/26/2018	SW8330	4-Amino-2,6-dinitrotoluene	0.43		ug/L	7.3		0.015	0.20
Central Impact Area	MW-40S	MW-40S_S18	115.5	126	03/26/2018	SW8330	2,4,6-Trinitrotoluene	0.95		ug/L	2.0		0.027	0.20
Central Impact Area	MW-487M2	MW-487M2_S18	195.8	205.8	03/26/2018	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.24		ug/L	400		0.025	0.20
Central Impact Area	MW-487M2	MW-487M2_S18	195.8	205.8	03/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	5.6		ug/L	0.60	X	0.036	0.20
Central Impact Area	MW-37M3	MW-37M3_S18	130	140	03/26/2018	SW6850	Perchlorate	0.046	J	ug/L	2.0		0.012	0.20
Central Impact Area	MW-37M3	MW-37M3_S18	130	140	03/26/2018	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.53		ug/L	0.60		0.036	0.20

J = Estimated Result
 MDL = Method Detection Limit
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