MONTHLY PROGRESS REPORT #322
FOR JANUARY 2024

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

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

The following summary of progress is for the period from 01 to 31 January 2024.

1. SUMMARY OF REMEDIATION ACTIONS

Remediation Actions (RA) Underway at Camp Edwards as of 26 January 2024:

Demolition Area 1 Comprehensive Groundwater RA

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

The Frank Perkins Road Treatment Facility has been optimized as part of the Environmental and System Performance Monitoring (ESPM) program at Demolition Area 1. The treatment facility continues to operate at a flow rate of 175 gallons per minute (gpm), with over 3.062 billion gallons of water treated and re-injected as of 26 January 2024. The following Frank Perkins Road Treatment Facility shutdowns occurred:

- 0922 on 24 January 2024 to update firmware on the programmable logic computer (PLC) and was restarted at 1020 on 24 January 2024.
- 1040 on 26 January 2024 to update system software and was restarted at 1400 on 26 January 2024.

The Base Boundary Mobile Treatment Unit (MTU) continues to operate at a flow rate of 65 gpm. As of 26 January 2024, over 389.9 million gallons of water were treated and re-injected. No Base Boundary MTU shutdowns occurred.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 26 January 2024, over 389.0 million gallons of water were treated and re-injected. No Leading Edge system shutdowns occurred.

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

J-2 Range Groundwater RA

Northern

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

The Northern MTUs E and F continue to operate at a flow rate of 250 gpm. As of 26 January 2024, over 2.169 billion gallons of water have been treated and re-injected. The following MTU E and F shutdowns occurred:

- 0851 on 23 January 2024 due to a power interruption at Unit E and was restarted at 1125 on 23 January 2024.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 26 January 2024, over 1.670 billion gallons of water have been treated and re-injected. The following MTU G shutdowns occurred:

- 0234 on 21 January 2024 due to a power interruption and was restarted at 0745 on 22 January 2024.

Eastern

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

The MTUs H and I continue to operate at a flow rate of 250 gpm. As of 26 January 2024, over 1.807 billion gallons of water have been treated and re-injected. No MTU H and I shutdowns occurred.

MTU J continues to operate at a flow rate of 120 gpm. As of 26 January 2024, over 847.8 million gallons of water have been treated and re-injected. No MTU J shutdowns occurred.

MTU K continues to operate at a flow rate of 125 gpm. As of 26 January 2024, over 972.7 million gallons of water have been treated and re-injected. No MTU K shutdowns occurred.

J-3 Range Groundwater RA

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

The J-3 system is currently operating at a flow rate of 255 gpm. As of 26 January 2024, over 1.789 billion gallons of water have been treated and re-injected. The following J3 system shutdowns occurred:

- 1530 on 04 January 2024 due to a variable frequency drive (VFD) fault and was restarted at 0900 on 05 January 2024.
- 0320 on 05 January 2024 due to a dead short in the 90EW001 VFD motor, the motor's replacement, and was restarted at 1316 on 24 January 2024.

- 0330 on 10 January 2024 due to a power interruption and was restarted at 0835 on 10 January 2024.
- 1200 on 23 January 2024 EW0032 was turned off to drain the pipeline for the motor replacement at 90EW0001 and was restarted at 1316 on 24 January 2024.

J-1 Range Groundwater RA

Southern

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

The Southern MTU continues to operate at a flow rate of 125 gpm. As of 26 January 2024, over 778.7 million gallons of water have been treated and re-injected. No J-1 Range Southern MTU shutdowns occurred.

Northern

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

The Northern MTU continues to operate at a total system flow rate of 250 gpm. As of 26 January 2024, over 1.315 billion gallons of water have been treated and re-injected. The following J-1 Range Northern MTU shutdowns occurred:

- 0940 on 19 January 2024 to replace a pressure transmitter and was restarted at 1100 on 19 January 2024.

Central Impact Area RA

The Central Impact Area (CIA) Groundwater treatment system consists of removal and treatment of groundwater to minimize downgradient migration of explosives compounds and perchlorate. The ETR system includes the following components: three extraction wells, an ex-situ treatment process consisting of an ion exchange resin and granular activated carbon media to treat explosives compounds, and three infiltration galleries to return treated water to the aquifer. The CIA systems 1, 2, and 3 continue to run at a combined total flow rate of 750 gpm. As of 26 January 2024, over 3.465 billion gallons of water have been treated and re-injected. The following CIA system shutdowns occurred:

- 0740 on 19 January 2024 at CIA-2 to replace a phase monitor and was restarted at 0755 on 19 January 2024.
- 0805 on 19 January 2024 at CIA-1 to replace a pressure transmitter and was restarted at 0826 on 19 January 2024.
- 1506 on 20 January 2024 at CIA-3 due to a power outage and the system was restarted at 0735 on 25 January 2024.

2. SUMMARY OF ACTIONS TAKEN

Operable Unit (OU) Activity as of 26 January 2024:

CIA
- Groundwater sampling within the CIA SPM Program
- Source Area investigations
    - Routine visual check of CSS soil cover and surface area around the perimeter of the CSS

Demolition Area 1
- Groundwater sampling within the Demo 1 SPM Program

Demolition Area 2
- No activity

J-1 Range
- No activity

J-2 Range
- Hydraulic monitoring event within the J-2 East SPM Program
- Groundwater sampling within the J-2 East SPM Program
- Replaced transformer in rear heating system at Unit J

J-3 Range
- Groundwater sampling within the J-3 Range SPM Program
- Bag filters changed

L Range
- Groundwater sampling within the L Range LTM Program

Small Arms Ranges
- No activity

Northwest Corner
- No activity

Training Areas
- No activity

Impact Area Roads
- No activity

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

JBCC Impact Area Groundwater Study Program (IAGWSP) Tech Update Meeting Minutes for 25 January 2024

Project and Fieldwork Update

Darrin Smith (USACE) provided the project and fieldwork update starting with the status of the groundwater sampling crews. He said that since the last technical update meeting on 14 December 2023, Koman Government Solutions (KGS) groundwater sampling crews have completed the Central Impact Area (CIA) semi-annual system performance monitoring (SPM) sampling, the Demolition Area 1 semi-annual SPM sampling, the J-2 East semi-annual SPM sampling, and the L Range annual long term monitoring sampling. Crews are currently performing annual sampling in the CIA and began the J-3 Range semi-annual SPM sampling. Mr. Smith (USACE) noted that they are a few wells left to sample at the J-3 Range, but crews moved to CIA while they had the opportunity to access those wells. They will most likely finish at the J-3 Range this week or next.

Mr. Smith (USACE) provided a status of operations and maintenance activities. He noted that the December monthly process water samples were collected between 4 December and 7 December 2023 and results showed everything was below the criteria so no changeouts are needed. January monthly process water samples were completed on 9 January 2024 and results are pending. The J-2 North influent and effluent quarterly PFAS sampling was performed on 4 January 2024 and the next round will be in April. A notable system shutdown since the last tech meeting was at J-3 Range extraction well 90EW001, which was shut down on 5 January 2024 because the motor stopped functioning. It was replaced today (25 January 2024) and is now running at full capacity. All other systems are up and running.

Gina Kaso (USACE) provided a CIA update. She explained that there is no work being performed as the contractor de-mobilized from the site in early December, and they are expected to return in early March 2024. They will start with vegetation clearance and continue intrusive investigations with the carry-over acreage. The contractor is addressing internal comments on the 2023 report and once those are resolved they will issue it to the agencies in mid-February. Ms. Kaso (USACE) said that EPA comments are still outstanding on the 2021 annual report addendum. Jane Dolan (EPA) said she was aware she owed comments.

Shawn Cody (ARNG) asked Ms. Kaso (USACE) if she planned to discuss the bats. Ms. Kaso (USACE) explained that back in 2015 when the northern long-eared bat became an issue, the Environmental and Readiness Center (E&RC) conducted an acoustic survey in the CIA, and the program received a waiver that the program didn't need to adhere to the restrictions and clearance could be performed whenever needed. The window to perform clearance was 15 October to 15 April. She explained that the acoustic survey is outdated, and the bats are now a federally-listed endangered species, so a new survey needs to be performed. IAGWSP will need to finish all vegetation clearance by 15 April 2024. Ms. Kaso (USACE) noted that E&RC informed the group that there was a blanket exemption that was only good for one year, which is valid through the end of April 2024.

Ms. Kaso (USACE) explained that the contractor had planned to begin activities with vegetation clearance, but their schedule called for that to continue through the end of April 2024. Ms. Kaso

(USACE) said she is confirming with E&RC if the stop date for vegetation clearance is 15 April or 30 April, and she is also asking the contractor if they can mobilize a little early. In addition, it would be helpful if the agencies could provide their recommendations for the next 10 acres sooner than was originally requested to help with scheduling and planning. Mr. Cody (ARNG) noted that while we have been told the CIA has low-probability, the likelihood of finding at least one bat is high. Len Pinaud (MassDEP) noted a training area wide investigation would be beneficial. Mr. Cody (ARNG) agreed. Mr. Pinaud (MassDEP) said they will try and get the 10 acre comments completed quickly after coordinating with EPA. Ms. Dolan (EPA) requested one more figure that shows number of unexploded ordnance per quarter acre grid. Ms. Kaso (USACE) agreed to send the figures as requested.

Document and Project Tracking

Jeff Dvorak (USACE) reviewed the tracking list for documents and upcoming presentations. Bob Lim (EPA) noted he would aim to provide his comments on the Five-Year Review by 12 February 2024. Ms. Dolan (EPA) asked Mr. Cody (ARNG) and Ms. Cutler (IAGWSP) when they would like to present the data for the PFAS report. Mr. Cody (ARNG) said he would discuss internally and get back to the group. Ms. Dolan (EPA) noted that the CIA data presentation is the next meeting and asked when the J-3 Range would be presented, since that report is due in February. Mr. Dvorak (USACE) noted that he will check with the team and get back to her.

Mr. Cody (ARNG) noted that the IAGWSP is trying to close out the Demolition Area 2 site, and the agencies' request for PFAS samples to be collected. EPA recommended eight locations and IAGWSP sampled five because they are so close together and, if there were any detections, other wells could be tested, as needed. Mr. Lim (EPA) said that he and Ms. Cutler (IAGWSP) had discussed the IAGWSP recommended wells yesterday, and he agreed to take another look at the proposal and get back to Ms. Cutler (IAGWSP) later today.

Mr. Cody (ARNG) noted that the timeframe for cleanup of Demolition Area 1, per the Decision Document, is 2025 and the current predicted cleanup for the off-base portion of the plume is 2029. He noted that the real estate agreement for the property where the off-base treatment system is located ends in November of 2025. Mr. Cody (ARNG) reminded the group that when the original lease was signed, the offer was for $60,000 for 15 years. The family did not agree to these terms and negotiated $90,000 for ten years. If the program wants to try to enter into a new easement for the property, a very rough estimate is $122,000, which assumes 50% over the appraised value for another ten years. The family would need to agree with this.
The process would take approximately one year. Mr. Cody (ARNG) said that the IAGWSP doesn't believe there is a benefit to extending the lease based on current conditions. He explained that the IAGWSP would like to decommission the system within the rights of the existing easement, prior to its expiration in November of 2025. Mr. Cody (ARNG) explained that he'd also like to take the system and reuse it somewhere else on base. Ms. Cutler (IAGWSP) summarized that the IAGWSP will be making a formal proposal to decommission the leading-edge treatment system at Demolition Area 1 and will follow up with a proposal in writing for the agencies to consider.

Elliot Jacobs (MassDEP) said the 2029 cleanup date is very conservative because it's modeled data and there are no wells that are upgradient of that location that are detecting perchlorate above the Massachusetts Maximum Contaminant Level (MMCL). He suggested it would be good if there was one more round of data and the recommendation to decommission the system

was technically based. Mr. Jacobs (MassDEP) asked if there are any private wells in the area. Pam Richardson (IAGWSP) confirmed that there are no private wells. Mike Kulbersh (USACE) noted that the plume shell that will be discussed during the upcoming presentation is very conservative. Mr. Lim (EPA) said he'd like to echo what Mr. Jacobs (MassDEP) said that the proposal to decommission the system be based on its technical merits and the project note should document that there is full capture at the base boundary. Mr. Lim (EPA) said he supports the request Mr. Jacobs (MassDEP) suggested, namely that there would be another round of sampling. Mr. Kulbersh (USACE) clarified that the program isn't suggesting to not collect the next round of samples and those samples are currently scheduled for May.

Demolition Area 1 Annual Environmental Monitoring Report Presentation

Mike Kulbersh (USACE) began a presentation on the Demolition Area 1 Annual Monitoring Report. Mr. Kulbersh (USACE) explained that during the reporting period (July 2022 through June 2023), no new soil boring or monitoring wells were installed, however monitoring wells off-base on a commercial property (MW-554M1/M2) were abandoned in February 2023. New Perchlorate and RDX plume shells were created using the five-year protocol. Both 2D and 3D presentations were given at Tech Meetings in February and April 2023, respectively.

Mr. Kulbersh (USACE) provided a review of treatment system performance. He described the uptimes of each treatment system, noting that the Frank Perkins Road system was up 94.3% of the time, the base boundary extraction well was up 99.96%, and the leading-edge extraction well was up 99.5%. Mr. Kulbersh (USACE) reviewed the mass removal during the reporting period and said the perchlorate mass removed was 0.2 pounds total with 0.15 pounds from the base boundary. The perchlorate mass removed since system start up (including the Pew Road treatment system) is 119.8 pounds. For RDX, 0.05 pounds was removed during this reporting period, all from the Frank Perkins Road system. Since startup, 53.4 pounds of RDX mass have been removed, which includes the Pew Road treatment system.

Mr. Kulbersh (USACE) continued presenting groundwater sampling locations, groundwater monitoring results, and trends. He explained that, excluding field duplicates and monthly treatment plant samples, there were 105 samples tested for perchlorate and 112 samples tested for explosives. For Zone 1 (source to Frank Perkins Road), the maximum RDX concentration was 1.6 µg/L (MW-19S), which is in the former source area and is 575 feet upgradient of D1-EW-4. He noted that no monitoring wells or extraction wells are sampled for perchlorate, that the maximum influent perchlorate concentration was <0.1 µg/L, and the maximum RDX influent concentration was 0.15 µg/L. For Zone 2 (Frank Perkins Road to Pew Road), the maximum RDX concentration was <0.1 µg/L (MW-341M2) and the maximum perchlorate concentration was 0.46 µg/L (MW- 211M1). For Zone 3 (Pew Road to Base Boundary), the maximum RDX concentration was 4.2 µg/L (MW-730M2), and the maximum perchlorate concentration was 17 µg/L (MW-533M1). For Zone 4 (off-base), RDX was not detected in any of the samples and one perchlorate sample was detected at the MMCL of 2 µg/L (MW-611M1).

Mr. Jacobs (MassDEP) asked if there were any wells in the area where the model predicts a small portion of contamination upgradient of extraction well EW-5 that could be monitored to confirm whether it is really there, if anything. Mr. Kulbersh (USACE) replied that nearby Lily Pond plays a role there. He explained that there are many wells in the area of the extraction well and upgradient and in this report, another well is recommended to be added to confirm because there are no wells in the immediate vicinity as this area is difficult to get to.

Mr. Kulbersh (USACE) continued with a review of the results of hydraulic monitoring and a capture zone analysis. For the aquifer hydraulic monitoring, one site-wide synoptic water level round was conducted during the reporting period. Hydraulic monitoring observations were consistent with past reporting periods. For the capture zone analysis, the capture zones were developed manually and later compared to model simulated capture zones. In Zone 1, RDX is adequately captured by D1-EW4 and D1-EW501; and perchlorate is not applicable. Perchlorate and RDX contamination in Zone 2 is below screening levels. In Zone 3, perchlorate and RDX between Fredrickson Road and the Base Boundary is within the D1-EW-3 capture zone. Portions of the plumes south of MW-533M1/MW-730M2/MW-731M2 and MW-663D are outside the capture zone and simulated to be below MMCLs/risk-based concentrations (RBCs) before reaching the base boundary. Mr. Kulbersh (USACE) said that in Zone 4, perchlorate upgradient of D1-EW 5 is within the well's capture zone. Currently only one well downgradient of County Road (MW-611M1) was detected at the perchlorate MMCL of 2 µg/L, and this lobe is predicted to attenuate/discharge to Pocasset River/Buzzards Bay. He noted that there is no RDX plume within this zone.

Mr. Kulbersh (USACE) continued with a review of the measured vs. model predicted mass removal statistics. The newly created Perchlorate and RDX plume shells developed with data through July 2022 and migrated to 31 December 2022 were used. The total perchlorate removed for the reporting period for all systems was 0.2 pounds and RDX was 0.05 pounds. In general, mass removal continues to decline and is minimal compared to rates removed during early remedial action activities.

Decision Document (DD) cleanup timelines were discussed. For perchlorate, the plume shell was updated with data through July 2022 (migrated through to 31 December 2022) using the five-year protocol and was conservatively modeled without incorporating dispersion. Zone 3 is expected to attenuate below 2 µg/L by 2034. Zone 4 is estimated to attenuate below 2 µg/L by 2029 (upgradient of D1-EW5) and downgradient of County Road by 2024. For RDX—using the plume shell that was updated with data through July 2022 (migrated through to 31 December 2022) with the five-year protocol and including an attenuation factor for RDX—estimates in Zone 1 (source area to D1-EW4) attenuation below RBC is expected by 2025. Attenuation to below RBC by 2024 is estimated for the area from D1-EW4 to D1- EW5. In Zone 3, west of Pew Road to the base boundary, attenuation to below the RBC is expected by 2025.

Mr. Kulbersh (USACE) continued with a review of the recommendations presented in the draft report. In Zone 1, based on updated plume shell and monitoring well data, consideration for shutting down D1-EW-501 will be provided in the 2023/2024 environmental monitoring report (EMR). In Zone 3, a memorandum approved in May 2023 to further packer 20 feet of D1-EW-3 was implemented on 31 August 2023 and will be reported on in the 2023/2024 EMR. No changes to the hydraulic monitoring network or to the annual synoptic gauging program are being recommended. For the chemical monitoring network, 38 monitoring wells are being optimized because of a history of non-detects (NDs) or results below reporting limits (RL). One well (MW-602M1) is recommended for addition to the chemical monitoring network to verify potential off base migration downgradient of MW-544M1. Mr. Kulbersh (USACE) noted that no new work is proposed at this time.

Mr. Kulbersh (USACE) concluded the presentation with photos of site restoration and current conditions activities and a figure comparing the historic plumes to the current depiction.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) is scheduled for 10 April 2024 (previous meeting was 13 December 2023). Meeting details and presentation materials for this meeting and from previous meetings can be found on the IAGWSP web site at http://jbcc-iagwsp.org/community/impact/presentations/. The Cleanup Team meeting discusses late breaking news and responses to action items, as well as updates from the IAGWSP and the Installation Restoration Program (IRP). The JBCCCT meetings provide a forum for community input regarding issues related to both the IRP and the IAGWSP.

3. SUMMARY OF DATA RECEIVED

Table 1 summarizes sampling for all media from 01 to 31 January 2024. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 01 to 31 January 2024. These results are compared to the Maximum Contaminant Levels/Health Advisory (MCL/HA) values for respective analytes. Explosives and perchlorate are the primary contaminants of concern (COC) at Camp Edwards. Table 3 summarizes the validated detections of per- and polyfluoroalkyl substances (PFAS) for influent and groundwater results analyzed by EPA draft Method 1633 and received from 01 to 31 January 2024. Table 3 PFAS results are compared to the Regional Screening Levels (RSLs) published by EPA in November 2023.

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

4. SUBMITTED DELIVERABLES

Deliverables submitted during the reporting period include the following:

- Monthly Progress Report No. 321 for December 2023 — 16 January 2024
- Draft Demolition Area 1 Environmental Monitoring Report for July 2022 through June 2023 — 04 January 2024
- Draft Central Impact Area Environmental Monitoring Report for July 2022 through June 2023 — 04 January 2024
- Response to Comments for Draft J-1 Range Southern Environmental Monitoring Report for January 2021 through December 2022, dated July 2023 — 05 January 2024

5. SCHEDULED ACTIONS

The following actions and/or documents are being prepared in February 2024.

- IAGWSP Comprehensive PFAS Groundwater Sampling Summary Report
- Central Impact Area 2023 Source Removal Report
- Response to Comments on J-1 Range North Environmental Monitoring Report for January 2021 – December 2022 with Plume Shell Technical Memorandum
- Response to Comments on J-3 Range Environmental Monitoring Report for September 2021 to August 2022
- Draft J-3 Range Environmental Monitoring Report for September 2022 to August 2023 with Plume Shell Technical Memorandum
- Final Demolition Area 2 Environmental Monitoring Report for June 2022 – May 2023
- Response to Comments on Draft Demolition Area 2 Technical Memorandum on Discontinuing Chemical Monitoring for Explosives and Proposed One-time PFAS Sampling Event
- Final J-1 Range South Environmental Monitoring Report for January 2021 – December 2022
- Response to Comments on Draft Demolition Area 1 Environmental Monitoring Report for July 2022 – June 2023 with Plume Shell Technical Memorandum
- J-2 Range East Environmental Monitoring Report for November 2022 – October 2023
- J-2 Range North Environmental Monitoring Report for November 2022 – October 2023
- Draft Land Use Controls Monitoring Report
- Sitewide Plume Booklet
- Memorandum of Resolution for the Northwest Corner Demonstration of Compliance Report (on hold pending resolution of PFAS issues)
- Response to Comments on Central Impact Area 2021 Source Removal Report Addendum
- Five Year Review Report
- Response to comments on Central Impact Area Environmental Monitoring Report for July 2022 – June 2023

TABLE 1
Sampling Progress: 01 to 31 January 2024

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	MW-92S	MW-92S_S24	N	01-25-2024	Ground Water	139	149
Central Impact Area	MW-98S	MW-98S_S24	N	01-25-2024	Ground Water	137	147
Central Impact Area	MW-98M1	MW-98M1_S24	N	01-25-2024	Ground Water	164	174
Central Impact Area	MW-99S	MW-99S_S24	N	01-25-2024	Ground Water	133	143
Central Impact Area	MW-99M1	MW-99M1_S24	N	01-25-2024	Ground Water	195	205
Central Impact Area	MW-112M2	MW-112M2_S24	N	01-24-2024	Ground Water	165	175
Central Impact Area	MW-112M1	MW-112M1_S24	N	01-24-2024	Ground Water	195	205
Central Impact Area	MW-113M2	MW-113M2_S24	N	01-24-2024	Ground Water	190	200
Central Impact Area	MW-113M1	MW-113M1_S24	N	01-24-2024	Ground Water	240	250
Central Impact Area	MW-179M1	MW-179M1_S24	N	01-24-2024	Ground Water	187	197
J3 Range	MW-653M2	MW-653M2_S24	N	01-23-2024	Ground Water	59.3	69.3
J3 Range	J3EWIP2	J3EWIP2_S24	N	01-23-2024	Process Water	150.5	170.5
J3 Range	J3EWIP2	J3EWIP2_S24D	FD	01-23-2024	Process Water	150.5	170.5
J3 Range	J3EWIP1	J3EWIP1_S24	N	01-23-2024	Process Water	153	193
J3 Range	J3EW0032	J3EW0032_S24	N	01-23-2024	Process Water	102	152
J3 Range	90PLT01006	90PLT01006_S24	N	01-23-2024	Process Water	0	0
J3 Range	MW-653M1	MW-653M1_S24	N	01-22-2024	Ground Water	147.5	157.5
J3 Range	MW-637M3	MW-637M3_S24	N	01-22-2024	Ground Water	174.1	184.1
J3 Range	MW-637M2	MW-637M2_S24	N	01-22-2024	Ground Water	214.1	224.1
J3 Range	MW-637M1	MW-637M1_S24	N	01-22-2024	Ground Water	236.1	246.1
J3 Range	MW-197M1	MW-197M1_S24	N	01-22-2024	Ground Water	120	125
Lima Range	MW-242M1	MW-242M1_S24	MS	01-17-2024	Ground Water	235	245
Lima Range	MW-242M1	MW-242M1_S24	N	01-17-2024	Ground Water	235	245
Lima Range	MW-242M1	MW-242M1_S24	SD	01-17-2024	Ground Water	235	245
Lima Range	90MW0031	90MW0031_S24	N	01-17-2024	Ground Water	195.3	200.2
Lima Range	MW-651M1	MW-651M1_S24	N	01-17-2024	Ground Water	242.3	252.3
Lima Range	MW-650M1	MW-650M1_S24	N	01-17-2024	Ground Water	260	270
Lima Range	MW-595M2	MW-595M2_S24	N	01-16-2024	Ground Water	205.3	215.3
Lima Range	MW-595M1	MW-595M1_S24	N	01-16-2024	Ground Water	255.3	265.3
Lima Range	MW-595M1	MW-595M1_S24D	FD	01-16-2024	Ground Water	255.3	265.3
Lima Range	MW-596M1	MW-596M1_S24	N	01-16-2024	Ground Water	231.1	241.1
Lima Range	90MW0034	90MW0034_S24	N	01-16-2024	Ground Water	94	99
J2 Range Eastern	MW-393D	MW-393D_S24	MS	01-11-2024	Ground Water	313.56	323.56
J2 Range Eastern	MW-393D	MW-393D_S24	N	01-11-2024	Ground Water	313.56	323.56
J2 Range Eastern	MW-393D	MW-393D_S24	SD	01-11-2024	Ground Water	313.56	323.56
J2 Range Eastern	MW-324M2	MW-324M2_S24	N	01-11-2024	Ground Water	203.74	214.74
J2 Range Eastern	MW-324M1	MW-324M1_S24	N	01-11-2024	Ground Water	234.85	244.85
J2 Range Eastern	MW-339M1	MW-339M1_S24	N	01-10-2024	Ground Water	233	243
J2 Range Eastern	MW-368M2	MW-368M2_S24	N	01-10-2024	Ground Water	202.73	212.73
J2 Range Eastern	MW-368M2	MW-368M2_S24D	FD	01-10-2024	Ground Water	202.73	212.73
J2 Range Eastern	J2MW-04M2	J2MW-04M2_S24	N	01-10-2024	Ground Water	210	220
J2 Range Eastern	J2MW-04M1	J2MW-04M1_S24	N	01-10-2024	Ground Water	257	267
Demolition Area 1	MW-659M1	MW-659M1_F23	N	01-09-2024	Ground Water	120	130
J3 Range	J3-EFF	J3-EFF-208A	N	01-09-2024	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-208A	N	01-09-2024	Process Water	0	0
J3 Range	J3-MID-1	J3-MID-1-208A	N	01-09-2024	Process Water	0	0
J3 Range	J3-INF	J3-INF-208A	N	01-09-2024	Process Water	0	0
Demolition Area 1	XX9514	XX9514_F23	N	01-09-2024	Ground Water	0	0
J1 Range Southern	J1S-EFF	J1S-EFF-194A	N	01-09-2024	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-194A	N	01-09-2024	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-194A	N	01-09-2024	Process Water	0	0
Demolition Area 1	MW-533M1	MW-533M1_F23	N	01-09-2024	Ground Water	160	170
Demolition Area 1	MW-533M1	MW-533M1_F23D	FD	01-09-2024	Ground Water	160	170
Demolition Area 1	MW-544M2	MW-544M2_F23	N	01-08-2024	Ground Water	112	122
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-214A	N	01-08-2024	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-214A	N	01-08-2024	Process Water	0	0
Demolition Area 1	MW-544M1	MW-544M1_F23	N	01-08-2024	Ground Water	162	172
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-214A	N	01-08-2024	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-214A	N	01-08-2024	Process Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-90A	N	01-08-2024	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 31 January 2024

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	D1LE-MID2	D1LE-MID2-90A	N	01-08-2024	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-90A	N	01-08-2024	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-90A	N	01-08-2024	Process Water	0	0
Demolition Area 1	MW-545M4	MW-545M4_F23	N	01-08-2024	Ground Water	72	82
Demolition Area 1	MW-545M3	MW-545M3_F23	N	01-08-2024	Ground Water	101.5	111.5
Demolition Area 1	D1-EFF	D1-EFF-162A	N	01-08-2024	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-162A	N	01-08-2024	Process Water	0	0
Demolition Area 1	MW-545M2	MW-545M2_F23	N	01-08-2024	Ground Water	142	152
Demolition Area 1	D1-MID-1	D1-MID-1-162A	N	01-08-2024	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-162A	N	01-08-2024	Process Water	0	0
Demolition Area 1	MW-545M1	MW-545M1_F23	N	01-08-2024	Ground Water	162	172
Demolition Area 1	MW-730M3	MW-730M3_F23	N	01-04-2024	Ground Water	115.46	125.46
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-INF-G	J2N-INF-G-208A	N	01-04-2024	Process Water	0	0
Demolition Area 1	MW-730M2	MW-730M2_F23	N	01-04-2024	Ground Water	165.87	175.87
Demolition Area 1	MW-730M2	MW-730M2_F23D	FD	01-04-2024	Ground Water	165.87	175.87
Demolition Area 1	MW-730M1	MW-730M1_F23	N	01-04-2024	Ground Water	185.82	195.82
J1 Range Northern	J1N-EFF	J1N-EFF-123A	N	01-04-2024	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-123A	N	01-04-2024	Process Water	0	0
J1 Range Northern	J1N-MID1	J1N-MID1-123A	N	01-04-2024	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-123A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JAN24	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	FD	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-208A	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	N	01-04-2024	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-208A	N	01-04-2024	Process Water	0	0
Demolition Area 1	MW-732M2	MW-732M2_F23	N	01-03-2024	Ground Water	96.2	106.2
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-184A	N	01-03-2024	Process Water	0	0
Demolition Area 1	MW-732M1	MW-732M1_F23	N	01-03-2024	Ground Water	156	166
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-184A	N	01-03-2024	Process Water	0	0
Demolition Area 1	MW-731M3	MW-731M3_F23	N	01-03-2024	Ground Water	160.1	170.1
Demolition Area 1	MW-731M2	MW-731M2_F23	N	01-03-2024	Ground Water	190.9	200.9
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-184A	N	01-03-2024	Process Water	0	0
Demolition Area 1	MW-731M1	MW-731M1_F23	MS	01-03-2024	Ground Water	220.8	230.8
Demolition Area 1	MW-731M1	MW-731M1_F23	N	01-03-2024	Ground Water	220.8	230.8
Demolition Area 1	MW-731M1	MW-731M1_F23	SD	01-03-2024	Ground Water	220.8	230.8
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-184A	N	01-03-2024	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-184A	N	01-03-2024	Process Water	0	0
Demolition Area 1	MW-431	MW-431_F23	N	01-02-2024	Ground Water	88	180
Demolition Area 1	EW-658	EW-658_F23	N	01-02-2024	Ground Water	96	136
Demolition Area 1	MW-77M2	MW-77M2_F23	N	01-02-2024	Ground Water	120	130
Central Impact Area	CIA2-EFF	CIA2-EFF-120A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-120A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA2-MID1	CIA2-MID1-120A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-120A	N	01-02-2024	Process Water	0	0

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 31 January 2024

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-EFF	CIA1-EFF-120A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-120A	N	01-02-2024	Process Water	0	0
Demolition Area 1	MW-73S	MW-73S_F23	N	01-02-2024	Ground Water	38.5	48
Central Impact Area	CIA1-MID1	CIA1-MID1-120A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA1-INF	CIA1-INF-120A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA3-EFF	CIA3-EFF-91A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-91A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-91A	N	01-02-2024	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-91A	N	01-02-2024	Process Water	0	0
Demolition Area 1	MW-19S	MW-19S_F23	N	01-02-2024	Ground Water	38	48
Demolition Area 1	MW-19S	MW-19S_F23D	FD	01-02-2024	Ground Water	38	48

N = Normal Sample
FD = Field Duplicate

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received January 2024

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-625M1	MW-625M1_F23	260	270	12-21-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.29		µg/L	0.60		0.043	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW6850	Perchlorate	0.16	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW8330	1,3-Dinitrobenzene	0.054	J	µg/L	1.0		0.039	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW8330	2,4,6-Trinitrotoluene	2.0		µg/L	2.0		0.096	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW8330	2,4-Dinitrotoluene	0.14	J	µg/L	5.0		0.045	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW8330	2-Amino-4,6-dinitrotoluene	0.34		µg/L	7.3		0.038	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW8330	4-Amino-2,6-dinitrotoluene	0.30		µg/L	7.3		0.075	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.9	J	µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-695S	MW-695S_F23	130	140	12-21-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.14	J	µg/L	400		0.091	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW6850	Perchlorate	0.18	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW8330	1,3-Dinitrobenzene	0.056	J	µg/L	1.0		0.039	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW8330	2,4,6-Trinitrotoluene	2.0		µg/L	2.0		0.096	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW8330	2,4-Dinitrotoluene	0.15	J	µg/L	5.0		0.045	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW8330	2-Amino-4,6-dinitrotoluene	0.34		µg/L	7.3		0.038	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW8330	4-Amino-2,6-dinitrotoluene	0.31		µg/L	7.3		0.075	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.9	J	µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-695S	MW-695S_F23D	130	140	12-21-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.13	J	µg/L	400		0.091	0.20
Central Impact Area	MW-623M2	MW-623M2_F23	291.8	301.8	12-20-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.085	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-616M1	MW-616M1_F23	217.1	227.1	12-19-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-430M2	MW-430M2_F23	188.41	198.41	12-19-2023	SW6850	Perchlorate	0.30		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-430M2	MW-430M2_F23	188.41	198.41	12-19-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.091	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-430M1	MW-430M1_F23	245.23	255.23	12-19-2023	SW6850	Perchlorate	0.054	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-584M1	MW-584M1_F23	248	258	12-18-2023	SW6850	Perchlorate	0.48		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-541M1	MW-541M1_F23	210	220	12-14-2023	SW6850	Perchlorate	0.044	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-349M1	MW-349M1_F23	228.6	238.6	12-14-2023	SW6850	Perchlorate	0.11	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-349M1	MW-349M1_F23	228.6	238.6	12-14-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6	J	µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-349M1	MW-349M1_F23D	228.6	238.6	12-14-2023	SW6850	Perchlorate	0.073	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-349M1	MW-349M1_F23D	228.6	238.6	12-14-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6	J	µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-346M4	MW-346M4_F23	140	150	12-12-2023	SW6850	Perchlorate	0.046	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-346M3	MW-346M3_F23	175.3	185.3	12-12-2023	SW6850	Perchlorate	0.12	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-346M2	MW-346M2_F23	205.3	215.3	12-12-2023	SW6850	Perchlorate	0.040	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-346M2	MW-346M2_F23	205.3	215.3	12-12-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.81		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-346M2	MW-346M2_F23	205.3	215.3	12-12-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.3		µg/L	400		0.091	0.20
J1 Range Northern	MW-346M1	MW-346M1_F23	244.7	254.7	12-12-2023	SW6850	Perchlorate	12.0		µg/L	2.0	X	0.078	0.40
J1 Range Northern	MW-346M1	MW-346M1_F23	244.7	254.7	12-12-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	11.0		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-346M1	MW-346M1_F23	244.7	254.7	12-12-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.31		µg/L	400		0.091	0.20
J1 Range Northern	MW-346M1	MW-346M1_F23D	244.7	254.7	12-12-2023	SW6850	Perchlorate	12.0		µg/L	2.0	X	0.078	0.40
J1 Range Northern	MW-346M1	MW-346M1_F23D	244.7	254.7	12-12-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	11.0		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-346M1	MW-346M1_F23D	244.7	254.7	12-12-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.31		µg/L	400		0.091	0.20
J1 Range Northern	MW-326M2	MW-326M2_F23	196.27	206.28	12-11-2023	SW6850	Perchlorate	0.17	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-326M2	MW-326M2_F23	196.27	206.28	12-11-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.2		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-326M2	MW-326M2_F23	196.27	206.28	12-11-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.2		µg/L	400		0.091	0.20
J1 Range Northern	MW-326M1	MW-326M1_F23	250.01	260.01	12-11-2023	SW6850	Perchlorate	2.6		µg/L	2.0	X	0.039	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit
February 08, 2024

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received January 2024

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-245M2	MW-245M2_F23	204	214	12-11-2023	SW6850	Perchlorate	9.4		µg/L	2.0	X	0.078	0.40
J1 Range Northern	MW-245M2	MW-245M2_F23	204	214	12-11-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	22.0		µg/L	0.60	X	0.086	0.40
J1 Range Northern	MW-245M2	MW-245M2_F23	204	214	12-11-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	6.7		µg/L	400		0.091	0.20
J1 Range Northern	MW-245M2	MW-245M2_F23D	204	214	12-11-2023	SW6850	Perchlorate	9.4		µg/L	2.0	X	0.078	0.40
J1 Range Northern	MW-245M2	MW-245M2_F23D	204	214	12-11-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	22.0		µg/L	0.60	X	0.086	0.40
J1 Range Northern	MW-245M2	MW-245M2_F23D	204	214	12-11-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	6.8		µg/L	400		0.091	0.20
J1 Range Northern	MW-245M1	MW-245M1_F23	244	254	12-11-2023	SW6850	Perchlorate	2.0		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-245M1	MW-245M1_F23	244	254	12-11-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-590M2	MW-590M2_F23	238	248	12-07-2023	SW6850	Perchlorate	1.5		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-590M2	MW-590M2_F23	238	248	12-07-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		µg/L	0.60		0.043	0.20
J1 Range Northern	MW-590M2	MW-590M2_F23D	238	248	12-07-2023	SW6850	Perchlorate	1.4		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-590M2	MW-590M2_F23D	238	248	12-07-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.22		µg/L	0.60		0.043	0.20
J1 Range Northern	MW-564M1	MW-564M1_F23	227	237	12-06-2023	SW6850	Perchlorate	0.22		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-564M1	MW-564M1_F23	227	237	12-06-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.24		µg/L	0.60		0.043	0.20
J1 Range Northern	MW-564M1	MW-564M1_F23	227	237	12-06-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.18	J	µg/L	400		0.091	0.20
J1 Range Northern	MW-564M1	MW-564M1_F23D	227	237	12-06-2023	SW6850	Perchlorate	0.24		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-564M1	MW-564M1_F23D	227	237	12-06-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.18	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-564M1	MW-564M1_F23D	227	237	12-06-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.16	J	µg/L	400		0.091	0.20
J1 Range Northern	MW-549M1	MW-549M1_F23	227.4	237.4	12-06-2023	SW6850	Perchlorate	1.5		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-265M2	MW-265M2_F23	225	235	12-05-2023	SW6850	Perchlorate	3.4		µg/L	2.0	X	0.039	0.20
J1 Range Northern	MW-265M2	MW-265M2_F23	225	235	12-05-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.4		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-265M2	MW-265M2_F23	225	235	12-05-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.16	J	µg/L	400		0.091	0.20
J1 Range Northern	MW-265M1	MW-265M1_F23	265	275	12-05-2023	SW6850	Perchlorate	9.2		µg/L	2.0	X	0.039	0.20
J1 Range Northern	MW-315M2	MW-315M2_F23	195.72	205.72	12-05-2023	SW6850	Perchlorate	0.059	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-315M1	MW-315M1_F23	245.49	255.49	12-05-2023	SW6850	Perchlorate	2.4		µg/L	2.0	X	0.039	0.20
J1 Range Northern	MW-567M1	MW-567M1_F23	215.5	225.5	12-04-2023	SW6850	Perchlorate	0.76		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-306M2	MW-306M2_F23	164.69	174.69	12-04-2023	SW6850	Perchlorate	0.062	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-253M1	MW-253M1_F23	265.4	275.4	11-29-2023	SW6850	Perchlorate	0.13	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-370M1	MW-370M1_F23	245.62	255.62	11-29-2023	SW6850	Perchlorate	3.0		µg/L	2.0	X	0.039	0.20
J1 Range Northern	MW-370M1	MW-370M1_F23	245.62	255.62	11-29-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.17	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-566M1	MW-566M1_F23	232	242	11-28-2023	SW6850	Perchlorate	0.57		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-656M1	MW-656M1_F23	244.1	254.1	11-28-2023	SW6850	Perchlorate	0.071	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-547M1	MW-547M1_F23	237	247	11-28-2023	SW6850	Perchlorate	3.6		µg/L	2.0	X	0.039	0.20
J1 Range Northern	MW-547M1	MW-547M1_F23	237	247	11-28-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.091	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-689M1	MW-689M1_F23	253.5	263.5	11-27-2023	SW6850	Perchlorate	0.82		µg/L	2.0		0.039	0.20
J1 Range Northern	MW-369M1	MW-369M1_F23	254.07	264.07	11-21-2023	SW6850	Perchlorate	0.096	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-369M1	MW-369M1_F23	254.07	264.07	11-21-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.30	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-166M3	MW-166M3_F23	125	135	11-21-2023	SW8330	4-Amino-2,6-dinitrotoluene	0.68		µg/L	7.3		0.075	0.20
J1 Range Northern	MW-166M3	MW-166M3_F23	125	135	11-21-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.27	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-166M3	MW-166M3_F23	125	135	11-21-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.18	J	µg/L	400		0.091	0.20
J1 Range Northern	MW-166M3	MW-166M3_F23D	125	135	11-21-2023	SW8330	4-Amino-2,6-dinitrotoluene	0.76		µg/L	7.3		0.075	0.20
J1 Range Northern	MW-166M3	MW-166M3_F23D	125	135	11-21-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.30	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-166M3	MW-166M3_F23D	125	135	11-21-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.20		µg/L	400		0.091	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit
February 08, 2024

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received January 2024

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-166M1	MW-166M1_F23	218	223	11-21-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.14	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-303M2	MW-303M2_F23	235.09	245.1	11-20-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-303M2	MW-303M2_F23	235.09	245.1	11-20-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.3		µg/L	400		0.091	0.20
J1 Range Northern	MW-303M2	MW-303M2_F23D	235.09	245.1	11-20-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		µg/L	0.60	X	0.043	0.20
J1 Range Northern	MW-303M2	MW-303M2_F23D	235.09	245.1	11-20-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.4		µg/L	400		0.091	0.20
J1 Range Northern	MW-303M1	MW-303M1_F23	299.07	309.07	11-20-2023	SW6850	Perchlorate	0.049	J	µg/L	2.0		0.039	0.20
J1 Range Northern	MW-164M2	MW-164M2_F23	157	167	11-20-2023	SW8330	4-Amino-2,6-dinitrotoluene	0.098	J	µg/L	7.3		0.075	0.20
J1 Range Northern	MW-164M2	MW-164M2_F23	157	167	11-20-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.18	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-164M2	MW-164M2_F23	157	167	11-20-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	7.2		µg/L	400		0.091	0.20
J1 Range Northern	MW-303M3	MW-303M3_F23	139.74	149.69	11-20-2023	SW8330	4-Amino-2,6-dinitrotoluene	2.3		µg/L	7.3		0.075	0.20
J1 Range Northern	MW-303M3	MW-303M3_F23	139.74	149.69	11-20-2023	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20	J	µg/L	0.60		0.043	0.20
J1 Range Northern	MW-303M3	MW-303M3_F23	139.74	149.69	11-20-2023	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	J	µg/L	400		0.091	0.20

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit
February 08, 2024

TABLE 3
VALIDATED PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) RESULTS
Data Received January 2024

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	J2N-EFF-F	J2N-EFF-F_JAN24	0	0	01-04-2024	E1633DR	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	16.0		ng/L			1.8	7.3
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluoroheptanoic acid (PFHpA)	0.52	J	ng/L			0.46	1.8
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluorohexanoic acid (PFHxA)	0.90	J	ng/L	990		0.46	1.8
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluorooctanoic acid (PFOA)	0.98	J	ng/L	6.0		0.46	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	0	0	01-04-2024	E1633DR	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	18.0		ng/L			1.8	7.2
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	0	0	01-04-2024	E1633DR	Perfluoroheptanesulfonic acid (PFHpS)	1.1	J	ng/L			0.45	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	0	0	01-04-2024	E1633DR	Perfluoroheptanoic acid (PFHpA)	0.76	J	ng/L			0.45	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	0	0	01-04-2024	E1633DR	Perfluorohexanesulfonic acid (PFHxS)	9.8		ng/L	39.0		0.45	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	0	0	01-04-2024	E1633DR	Perfluorohexanoic acid (PFHxA)	0.81	J	ng/L	990		0.45	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	0	0	01-04-2024	E1633DR	Perfluorooctanesulfonic acid (PFOS)	9.4	J	ng/L	4.0	X	0.45	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24-D	0	0	01-04-2024	E1633DR	Perfluorooctanoic acid (PFOA)	3.5		ng/L	6.0		0.45	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	0	0	01-04-2024	E1633DR	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	15.0		ng/L			1.8	7.3
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluoroheptanesulfonic acid (PFHpS)	1.0	J	ng/L			0.46	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluoroheptanoic acid (PFHpA)	0.79	J	ng/L			0.46	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluorohexanesulfonic acid (PFHxS)	10.0		ng/L	39.0		0.46	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluorohexanoic acid (PFHxA)	0.78	J	ng/L	990		0.46	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluorooctanesulfonic acid (PFOS)	8.8	J	ng/L	4.0	X	0.46	1.8
J2 Range Northern	J2N-INF-F	J2N-INF-F_JAN24	0	0	01-04-2024	E1633DR	Perfluorooctanoic acid (PFOA)	3.5		ng/L	6.0		0.46	1.8

J = Estimated Result
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February 08, 2024