

**MONTHLY PROGRESS REPORT #341
FOR August 2025**

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 29 August 2025.

1. SUMMARY OF REMEDIATION ACTIONS

Remediation Actions (RA) Underway at Camp Edwards as of 29 August 2025:

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. On 31 March 2025, the flow rate at the Frank Perkins Treatment Facility was reduced from 175 gallons per minute (gpm) to 100 gpm as a result of shutting down extraction well D1-EW-501, leaving only D1-EW-4 pumping as part of the Frank Perkins Road system. Due to a vault flood on 23 May 2025, which damaged electrical and pump equipment. EW-501 is currently operating at 100 gpm in place of EW-4. Diagnostics are ongoing. As of 29 August 2025, over 3.181 billion gallons of water were treated and re-injected.

The Base Boundary Mobile Treatment Unit (MTU) continues to operate at a flow rate of 65 gpm. As of 29 August 2025, over 443.6 million gallons of water were treated and re-injected. The following Base Boundary MTU shutdowns occurred in the reporting period:

- 1318 on 08 August 2025 due to a power interruption and was restarted at 1420 on 08 August 2025.
- 0755 on 22 August 2025 to replace a leaking camlock fitting on the effluent line. The Base Boundary MTU was restarted at 0810 on 22 August 2025.

The Leading-Edge System was turned off with regulatory approval on 19 August 2025 (formerly operated at a flow rate of 125 gpm). Over 469.4 million gallons of water were treated and re-injected since RA. The following Leading-Edge shutdowns occurred in the reporting period:

- 1318 on 08 August 2025 due to a power interruption and was restarted at 1406 on 08 August 2025.

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 29 August 2025, over 2.363 billion gallons of water have been treated and re-injected. The following MTU E and F system shutdowns occurred in the reporting period:

- 1315 on 08 August 2025 due to a power interruption. MTUs E and F were restarted at 1404 on 08 August 2025.
- 0155 on 21 August 2025 Unit E tripped due to a power interruption. MTU E was restarted at 1101 on 21 August 2025.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 29 August 2025, over 1.824 billion gallons of water have been treated and re-injected. The following MTU G system shutdowns occurred in the reporting period:

- 1317 on 08 August 2025 due to a power interruption. MTU G was restarted at 1415 on 08 August 2025.

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 29 August 2025, over 2.008 billion gallons of water have been treated and re-injected. No MTU H and I system shutdowns occurred in the reporting period.

MTU J continues to operate at a flow rate of 120 gpm. As of 29 August 2025, over 940.5 million gallons of water have been treated and re-injected. The following MTU J shutdowns occurred in the reporting period:

- 1300 on 11 August 2025 to replace a leaking pressure relief valve on the influent pipe. MTU J was restarted at 1335 on 11 August 2025.

MTU K continues to operate at a flow rate of 125 gpm. As of 29 August 2025, over 1.075 billion gallons of water have been treated and re-injected. The following MTU K shutdowns occurred in the reporting period:

- 0916 on 25 August 2025 due to the PLC losing its programming. Satuit Automation was onsite on 27 August 2025 to reprogram the PLC. Unit K was restarted at 0825 on 27 August 2025.

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 29 August 2025, over 1.995 billion gallons of water have been treated and re-injected. The following J-3 system shutdowns occurred in the reporting period:

- 1640 on 13 August 2025 due to FS-12 being off for an energy curtailment. The J-3 system was restarted at 0812 on 15 August 2025.

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 has been optimized as part of the ESPM program at J-1 Range Southern. The on-base extraction well J1SEW0001 was turned off with regulatory approval on 28 February 2017 (formerly operated at a flow of 35 gpm), and flow was increased from 90 gpm to 125 gpm at the Leading-Edge extraction well J1SEW0002. The Leading-Edge extraction well continues to operate at a flow rate of 125 gpm. As of 29 August 2025, over 880.8 million gallons of water have been treated and re-injected. No J-1 Range Southern MTU shutdowns occurred in the reporting period.

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. The flow rates for the two extraction wells at J-1 Northern were modified on 28 October 2024 based on regulatory agency concurrence with the J-1 Range Northern Data Presentation for January 2023 to December 2023. The flow rate at J1NEW0001 was reduced from 125 gpm to 85 gpm and the flow rate at J1NEW0002 was increased from 125 gpm to 165 gpm. Due to an “Over Temp” alarm at EW0002 on 29 July 2025 J-1 North is currently running at 145 gpm, rather than 165 gpm and EW0001 running at 105 gpm, rather than 85 gpm.

As of 29 August 2025, over 1.521 billion gallons of water have been treated and re-injected. No J-1 Range Northern MTU shutdowns occurred in the reporting period.

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 29 August 2025, over 4.097 billion gallons of water have been treated and re-injected. The following CIA system shutdowns occurred in the reporting period:

- 1011 on 25 August 2025 due to a broken hose on the influent line of train 2. A new hose and camlock fitting were installed and CIA-1 was restarted at 1334 on 25 August 2025.

2. SUMMARY OF ACTIONS TAKEN

Operable Unit (OU) Activity as of 29 August 2025:

CIA

- Source Area Investigation
 - Vegetation clearance in staging area and around targets
 - Conducted routine visual check of CSS cover and surface area around perimeter of the CSS.

Demolition Area 1

- No activity

Demolition Area 2

- No activity

J-1 Range

- No activity

J-2 Range

- Groundwater sampling within the J-2 Range East SPM Program
- Completed PFAS well installation at MW-742
- Bag filters were changed at Unit F
- Bag filters were changed at Unit J

J-3 Range

- Bag filters were changed
- Completed PFAS well installation at MW-744, MW-745, MW-747

L Range

- No activity

Small Arms Ranges

- No activity

Northwest Corner

- No activity

Training Areas

- No activity

Impact Area Roads

- No activity

Other

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

JBCC Impact Area Groundwater Study Program (IAGWSP) Tech Update Meeting Minutes for 14 July 2025Project and Fieldwork Update

Jeff Dvorak (USACE) provided the project and fieldwork update. He reported that groundwater sampling crews completed the J-2 East annual system performance monitoring (SPM) event (23 screens) and synoptic event (65 screens) on 8/12/25. The J-2 North Annual SPM event is scheduled for the beginning of September.

Mr. Dvorak (USACE) stated that the August monthly treatment system process water sampling was completed on 8/7/25 and the results are pending. Carbon changeouts were performed at CIA-1 due to RDX reported at 0.27 µg/L, exceeding the 0.25 µg/L action level (AL) and CIA-3 due to RDX reported at 0.33 µg/L, exceeding the 0.25 µg/L AL. An ion exchange resin changeout occurred for J-2 East Unit I due to perchlorate reported at 0.52 µg/L, exceeding the 0.35 µg/L AL.

Mr. Dvorak (USACE) provided an update on the status of groundwater treatment systems. He noted that Demo-1 Frank Perkins Road (FPR) system continues to operate at 100 gallons per minute (gpm) using EW-501. In J-1 North, the system is currently running at 250 gpm, with EW-1 pumping at 105 gpm rather than 85 GPM and EW-2 running at 145 gpm rather than 165 gpm. The Demolition Area 1 Leading Edge is scheduled to be turned off on 8/19/25 in preparation for plant decommissioning scheduled for late August and September.

Mr. Dvorak (USACE) continued by reporting that drilling and groundwater profiling has been completed at the two J-2 N and the four J-3 PFAS well locations, including: J-2 PFAS 1 and 2 (borehole [BH]-742 & BH-743) and J-3 PFAS 1, 2, 3 and 4 (BH-744, BH-745, BH-746 and BH-747). Screen installation is scheduled to begin at MW-747 on Monday, 8/18/25, followed by screen installation at MW-746. He noted that well development and groundwater sampling at the newly installed wells will begin after the completion of screen/well installation.

Mr. Dvorak (USACE) provided a CIA Consolidated Shot Structure (CSS) and soil update. Off-site disposal of the blow-in-place and cracked open item location soils and CSS material (~500 cubic yards total) was performed from 7/22/25 -7/24/25. The material was sent to the Bourne Landfill.

Mr. Dvorak (USACE) continued with a CIA update. He noted that they are working on the responses to comments to the 2025 Source Removal Report and it will be submitted to the agencies soon. He noted that there is currently a team performing vegetation clearance in the CIA. Shawn Cody (ARNG) noted that the Army Corps had a site visit for the next UXO contract. He explained that nine companies came for a tour and the Corps will work through the bidding process to select a contractor for the next field season.

Document and Project Tracking

Jeff Dvorak (USACE) reviewed the tracking list for documents and upcoming presentations.

Len Pinaud asked if there was an itinerary for the tour scheduled for August 19th with the EPA Regional Administrator. Mr. Cody (ARNG) gave an overview of the schedule for the day. Mr. Pinaud said it would be beneficial to him to receive a participant list. Bob Lim (EPA) said he believed that it would be him, the EPA Regional Administrator, and his assistant, but said he would confirm and get back to the group.

Jodi Lyn Cutler (IAGWSP) asked if there was any feedback on the recent screen setting recommendations that were provided earlier in the week via email. Elliot Jacobs (MassDEP) said he thought the well screen settings were appropriate. Mr. Lim (EPA) said he would defer to James Carney (TechLaw) for his comments. Mr. Carney (TechLaw) noted that his team generally agreed with the recommendations, however they suggested that for BH-746M2, which is currently recommended to be set at 140'-150' below ground surface (bgs), potentially should be lowered because there are four PFAS detections at 151' and 156' bgs. He suggested lowering it to 145'-155' bgs or 150' to 160' bgs. He noted that they concurred with the BH-747 recommended screen locations. Mr. Dvorak (USACE) noted that Dan Folan, who is the lead on the PFAS project, was not able to join the call so he would discuss the comments with him and get back to the group. Mr. Carney (TechLaw) showed a chart with the sample interval that corresponded to the recommended screen setting and noted where their alternate location was relative to the PFAS detections seen in the deeper interval. Mr. Jacobs (MassDEP) said to him it was a "flip of the coin" if you want to stay with the recommended screen to bracket the PFAS detection or go after the deeper PFOA detection. He suggested perhaps a screen could be set that straddles both, if there was a way to do that. Mr. Carney (TechLaw) felt that lowering to 145' to 155' bgs could achieve that. Mr. Carney (TechLaw) said that while his senior hydrogeologist did not disagree with the recommendation for BH-746M1, she did have additional information she felt should be considered. May not be the best depth to choose because PFAS was not detected in the grab samples from this depth or in adjacent shallower and deeper intervals. As such, it may be more appropriate to propose a shallower well rather than this deep well location as the data indicates that the 98' sample for MW-746 had the highest PFAS concentrations and most PFAS compounds detected. Mr. Carney (TechLaw) noted that he didn't disagree with the proposed location but there was a high concentration of PFAS detected in a shallower interval. Ms. Cutler (IAGWSP) noted that the shallow interval was already covered by a different well, so this particular well screen was recommended to border existing data. Mr. Dvorak (USACE) suggested that the team talk internally and send a response before setting screens.

J-1 Range Southern Groundwater Monitoring Annual Report Presentation

Ms. Cutler (IAGWSP) introduced the J-1 Range Southern data presentation and remarked that J-1 Southern is such a success story and noted the change in concentrations in the plume is remarkable. Chris Kilbridge (USACE) began the presentation by noting that during the reporting period (January 2024 to December 2024), there was no new work performed. The J-1 Range Southern groundwater treatment system performance statistics were reviewed and discussed. Mr. Kilbridge (USACE) reminded the group that while there are two extraction wells associated with the system, only the off-base well is operating. During the reporting period, the treatment

system was up about 97.95% of the time. There were no carbon breakthroughs or changeouts at J-1 Southern in 2024. He said that 65 million gallons of groundwater was treated and 0.05 pounds of RDX were removed during the reporting period. Graphs showing influent concentrations and contaminant mass removal were displayed and discussed.

Mr. Kilbridge (USACE) continued with a figure of the plume based on the fall 2024 chemistry results and highlighted the absence of any contours for RDX levels greater than 2 µg/L and noted that sitewide concentrations in 2024 were below 1 µg/L. He also noted that this is the first presentation that will be using the new 0.97 µg/L regional screening level for RDX. The plume consists mainly of fractured remnants at low concentrations near the cleanup level. The majority of the mass in the plume is located close to the base boundary. Sampling locations, groundwater monitoring results, and trends were reviewed and discussed.

Mr. Kilbridge (USACE) stated that there are 53 well screens sampled in the annual sampling event and 29 are sampled semi-annually for a total of 82 actual samples for explosives collected during the reporting period. Most of the samples were either non-detect or only trace values, and only ten were above the reporting limit of .2 µg/L. He explained there was a maximum single detection of 2.0 µg/L at MW-524M1 on Grand Oak Road. There were only two screens had a concentration greater than 0.97 µg/L, which include MW-524M1 and MW-721M1 which is right at the base boundary. Mr. Kilbridge (USACE) displayed a figure showing a cross-section with the current interpreted extent of the plume and noted that most of the detected concentrations are close to 0.97 µg/L.

Mr. Kilbridge (USACE) reviewed the hydraulic monitoring and capture zone analysis was reviewed and discussed. He said there was one synoptic water level round in October 2024 and noted hydraulic measurements were generally consistent with past results. Water levels from the top of the mound increased by approximately 1.4 feet from last year. He noted that the regional hydraulic gradient was .00049 ft/ft. which is within range with typical regional gradients that have been seen in the past. Mr. Kilbridge (USACE) pointed out the delineation to the limit of downgradient capture, or the downgradient stagnation point, on Grand Oak Road in the vicinity of MW-669. He explained that there is a small mass of RDX upgradient of Checkerberry Lane not captured, which is not unexpected. Mr. Kilbridge (USACE) displayed figures with the model - predicted vs. observed capture zones at both the design rate of 125 gpm and the current pumping rate of 50 gpm.

Mr. Kilbridge (USACE) showed a figure with the model-predicted vs. observed plume and noted that the main portion of the plume along Grand Oak Road, so the high detection of 2.0 µg/L is captured and extracted in less than a year. The other largest remaining mass is near the base boundary and MW-645M1/M2 on Windsong Road is also captured. The off-base mass on Checkerberry Lane at 0.91 µg/L should pass through and attenuate by 2027. Mr. Kilbridge (USACE) noted that the model predicted the maximum RDX concentration would be 1.49 µg/L near the base boundary which matches up with the magnitude and location of the observed maximum concentrations seen during the reporting period. He also noted that there was a good match between the extent of the RDX plume at Checkerberry Lane.

Mr. Kilbridge (USACE) reviewed a chart showing the estimated cleanup times and Decision Document (DD) cleanup timelines were discussed. The May 2011 DD cleanup timeline was 2024 but the September 2011 project note that located the leading-edge extraction well predicted 2032. Mr. Kilbridge (USACE) noted that the DD comparisons were relative to 0.6 µg/L but the times presented in chart would be compared to the new cleanup value of 0.97 µg/L. J-1 Range Southern site-wide cleanup is predicted by 2031 but downgradient of EW-2 would achieve cleanup first in 2025, upgradient of the base boundary would clean up by 2026, and between the base boundary and EW-2 would achieve cleanup in 2031.

IAGWSP recommends making no changes to the current treatment system operations or the chemical and hydraulic monitoring networks. The wellfield extraction rates are currently being evaluated to determine if it is appropriate to deactivate EW-2. The plume shell will be updated in 2026 if EW-2 remains active.

Mr. Kilbridge (USACE) ended the presentation by showing a figure comparing the J-1 Range Southern plume in 2011 to 2024 and a figure of all IAGWSP plumes at their historical maximums vs. current maximums. Mr. Jacobs (MassDEP) remarked on the great progress made at J-1 Southern.

Ms. Cutler (IAGWSP) said the program has been consistent with modeling efforts and with all aspects of the environmental monitoring reports and asked that if there were questions about modeling techniques or how mass removal is calculated that they be discussed before comments are provided on a report as many issues have been discussed and resolved with the agencies in previous reports.

Mr. Dvorak (USACE) noted that he reached out to Mr. Folan during the meeting and also to the drillers who are installing the well screens, and everyone is on board for the five-foot deeper interval from 145'-155' bgs at BH-746M2.

Mr. Dvorak (USACE) ended the meeting congratulating Mr. Jacobs (MassDEP) on his retirement and thanking him for his many years of work on the project.

Upcoming tech meeting: September 11, 2025

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) meeting has yet to be scheduled (previous meeting was 27 August 2025). Meeting details and presentation materials 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 29 August 2025. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results

received from 01 to 29 August 2025. 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 29 August 2025. 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, and Small Arms Ranges. 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 repository (IAGWSP office).

4. SUBMITTED DELIVERABLES

Deliverables submitted during the reporting period include the following:

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| • Final Central Impact Area Environmental Monitoring Report for July 2023 through June 2024 | 28 August 2025 |
| • Response to Comments Letter for the Draft J-1 Northern Environmental Monitoring Report for January 2023 through December 2023 | 28 August 2025 |
| • Draft J-2 Range Northern Environmental Monitoring Report for November 2023 through October 2024 | 28 August 2025 |

5. SCHEDULED ACTIONS

The following actions and/or documents are being prepared in September 2025.

- Draft J-3 Range EMR for September 2023 through August 2024
- Draft L Range EMR for March 2024 through February 2025
- Draft J-1 Range South EMR for January 2024 through December 2024
- Site-Wide Decision Document Addendum: Change in RDX Groundwater Cleanup Level for Impact Area

TABLE 1
Sampling Progress: 01 to 29 August 2025

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Eastern	MW-366M1	MW-366M1_F25	N	08/12/2025	Ground Water	215.00	225.00
J2 Range Eastern	MW-339M1	MW-339M1_F25	N	08/12/2025	Ground Water	233.00	243.00
J2 Range Eastern	MW-436M1	MW-436M1_F25	N	08/12/2025	Ground Water	295.47	305.47
J2 Range Eastern	J2MW-01M2	J2MW-01M2_F25	N	08/11/2025	Ground Water	245.00	255.00
J2 Range Eastern	J2MW-02M1	J2MW-02M1_F25	N	08/11/2025	Ground Water	271.00	281.00
J2 Range Eastern	MW-324M2	MW-324M2_F25	N	08/11/2025	Ground Water	203.74	214.74
J2 Range Eastern	MW-324M1	MW-324M1_F25	N	08/11/2025	Ground Water	234.85	244.85
Central Impact Area	CIA2-EFF	CIA2-EFF-139A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA2-MID2	CIA2-MID2-139A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA2-MID1	CIA2-MID1-139A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA2-INF	CIA2-INF-139A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA1-EFF	CIA1-EFF-139A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA1-MID2	CIA1-MID2-139A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA1-MID1	CIA1-MID1-139A	N	08/07/2025	Process Water	0.00	0.00
J2 Range Eastern	MW-666M1	MW-666M1_F25	N	08/07/2025	Ground Water	244.80	254.80
Central Impact Area	CIA1-INF	CIA1-INF-139A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA3-EFF	CIA3-EFF-110A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA3-MID2	CIA3-MID2-110A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA3-MID1	CIA3-MID1-110A	N	08/07/2025	Process Water	0.00	0.00
Central Impact Area	CIA3-INF	CIA3-INF-110A	N	08/07/2025	Process Water	0.00	0.00
J2 Range Eastern	MW-667M2	MW-667M2_F25	N	08/07/2025	Ground Water	277.30	287.30
J2 Range Eastern	MW-667M1	MW-667M1_F25	N	08/07/2025	Ground Water	302.30	312.30
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-227A	N	08/06/2025	Process Water	0.00	0.00
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-227A	N	08/06/2025	Process Water	0.00	0.00
J2 Range Northern	J2N-INF-G	J2N-INF-G-227A	N	08/06/2025	Process Water	0.00	0.00
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-227A	N	08/06/2025	Process Water	0.00	0.00
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-227A	N	08/06/2025	Process Water	0.00	0.00
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-227A	N	08/06/2025	Process Water	0.00	0.00

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 29 August 2025

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-2E	J2N-MID-2E-227A	N	08/06/2025	Process Water	0.00	0.00
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-227A	N	08/06/2025	Process Water	0.00	0.00
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-227A	N	08/06/2025	Process Water	0.00	0.00
J1 Range Northern	J1N-EFF	J1N-EFF-142A	N	08/06/2025	Process Water	0.00	0.00
J1 Range Northern	J1N-MID2	J1N-MID2-142A	N	08/06/2025	Process Water	0.00	0.00
J1 Range Northern	J1N-MID1	J1N-MID1-142A	N	08/06/2025	Process Water	0.00	0.00
J1 Range Northern	J1N-INF2	J1N-INF2-142A	N	08/06/2025	Process Water	0.00	0.00
J1 Range Southern	J1S-EFF	J1S-EFF-213A	N	08/05/2025	Process Water	0.00	0.00
J1 Range Southern	J1S-MID	J1S-MID-213A	N	08/05/2025	Process Water	0.00	0.00
J1 Range Southern	J1S-INF-2	J1S-INF-2-213A	N	08/05/2025	Process Water	0.00	0.00
J2 Range Eastern	MW-705M2	MW-705M2_F25	N	08/05/2025	Ground Water	185.90	195.90
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-233A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-233A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	FPR-2-INF	FPR-2-INF-233A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	D1LE-EFF	D1LE-EFF-109A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	D1LE-MID2	D1LE-MID2-109A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	D1LE-MID1	D1LE-MID1-109A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	D1LE-INF	D1LE-INF-109A	N	08/05/2025	Process Water	0.00	0.00
J2 Range Eastern	MW-215M2	MW-215M2_F25	N	08/05/2025	Ground Water	205.00	215.00
Demolition Area 1	D1-EFF	D1-EFF-181A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	D1-MID-2	D1-MID-2-181A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	D1-MID-1	D1-MID-1-181A	N	08/05/2025	Process Water	0.00	0.00
Demolition Area 1	D1-INF	D1-INF-181A	N	08/05/2025	Process Water	0.00	0.00
J2 Range Eastern	MW-215M1	MW-215M1_F25	N	08/05/2025	Ground Water	240.00	250.00
J2 Range Eastern	MW-307M3	MW-307M3_F25	N	08/04/2025	Ground Water	125.80	135.82
J2 Range Eastern	MW-707S	MW-707S_F25	MS	08/04/2025	Ground Water	110.30	120.30
J2 Range Eastern	MW-707S	MW-707S_F25	N	08/04/2025	Ground Water	110.30	120.30
J2 Range Eastern	MW-707S	MW-707S_F25	SD	08/04/2025	Ground Water	110.30	120.30

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 29 August 2025

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J3 Range	J3-EFF	J3-EFF-227A	N	08/04/2025	Process Water	0.00	0.00
J3 Range	J3-MID-2	J3-MID-2-227A	N	08/04/2025	Process Water	0.00	0.00
J3 Range	J3-MID-1	J3-MID-1-227A	N	08/04/2025	Process Water	0.00	0.00
J3 Range	J3-INF	J3-INF-227A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	MW-321M2	MW-321M2_F25	N	08/04/2025	Ground Water	155.67	165.67
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-INF-K	J2E-INF-K-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	MW-321M1	MW-321M1_F25	N	08/04/2025	Ground Water	174.61	184.61
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-INF-J	J2E-INF-J-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-203A	N	08/04/2025	Process Water	0.00	0.00
J2 Range Eastern	J2E-INF-I	J2E-INF-I-203A	N	08/04/2025	Process Water	0.00	0.00

N = Normal Sample
FD = Field Duplicate

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received 01 to 29 August 2025

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-303M2	MW-303M2_S25	235.09	245.10	06/05/2025	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.5		µg/L	0.60	X	0.092	0.20
J1 Range Northern	MW-303M2	MW-303M2_S25	235.09	245.10	06/05/2025	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.3		µg/L	400		0.13	0.20
J1 Range Northern	MW-303M2	MW-303M2_S25D	235.09	245.10	06/05/2025	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.6		µg/L	0.60	X	0.092	0.20
J1 Range Northern	MW-303M2	MW-303M2_S25D	235.09	245.10	06/05/2025	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	2.3		µg/L	400		0.13	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

TABLE 3
VALIDATED PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) RESULTS
Data Received 01 to 29 August 2025

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_JUL25	0.00	0.00	07/22/2025	E1633	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	13.0		ng/L			0.79	3.2
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluoroheptanoic acid (PFHpA)	0.71	J	ng/L	20.0		0.40	1.6
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluorohexanoic acid (PFHxA)	1.1	J	ng/L	990		0.40	1.6
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluorooctanesulfonic acid (PFOS)	1.7		ng/L	4.0		0.40	1.6
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluorooctanoic acid (PFOA)	2.7		ng/L	6.0		0.40	1.6
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluoropentanoic acid (PFPeA)	0.84	J	ng/L			0.40	1.6
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	11.0		ng/L			0.76	3.0
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluorobutanesulfonic acid (PFBS)	0.41	J	ng/L	600		0.41	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluoroheptanesulfonic acid (PFHpS)	0.79	J	ng/L			0.38	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluoroheptanoic acid (PFHpA)	0.47	J	ng/L	20.0		0.38	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluorohexanesulfonic acid (PFHxS)	6.1		ng/L	20.0		0.38	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluorohexanoic acid (PFHxA)	0.74	J	ng/L	990		0.38	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluorooctanesulfonic acid (PFOS)	10.0		ng/L	4.0	X	0.38	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluorooctanoic acid (PFOA)	3.6		ng/L	6.0		0.38	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25D	0.00	0.00	07/22/2025	E1633	Perfluoropentanoic acid (PFPeA)	0.69	J	ng/L			0.38	1.5
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	12.0		ng/L			0.72	2.9
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluoroheptanesulfonic acid (PFHpS)	0.80	J	ng/L			0.36	1.4
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluoroheptanoic acid (PFHpA)	0.44	J	ng/L	20.0		0.36	1.4
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluorohexanesulfonic acid (PFHxS)	6.3		ng/L	20.0		0.36	1.4
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluorohexanoic acid (PFHxA)	0.68	J	ng/L	990		0.36	1.4
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluorooctanesulfonic acid (PFOS)	10.0		ng/L	4.0	X	0.36	1.4
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluorooctanoic acid (PFOA)	3.4		ng/L	6.0		0.36	1.4
J2 Range Northern	J2N-INF-F	J2N-INF-F_JUL25	0.00	0.00	07/22/2025	E1633	Perfluoropentanoic acid (PFPeA)	0.68	J	ng/L			0.36	1.4
J3 Range	BH-746	BH-746-161-166	161.00	166.00	07/21/2025	E1633	Perfluorooctanesulfonic acid (PFOS)	0.71	J	ng/L	4.0		0.40	1.6
J3 Range	BH-746	BH-746-161-166	161.00	166.00	07/21/2025	E1633	Perfluorooctanoic acid (PFOA)	0.98	J	ng/L	6.0		0.40	1.6
J3 Range	BH-746	BH-746-151-156	151.00	156.00	07/21/2025	E1633	Perfluoroheptanoic acid (PFHpA)	0.40	J	ng/L	20.0		0.37	1.5
J3 Range	BH-746	BH-746-151-156	151.00	156.00	07/21/2025	E1633	Perfluorohexanesulfonic acid (PFHxS)	0.39	J	ng/L	20.0		0.37	1.5
J3 Range	BH-746	BH-746-151-156	151.00	156.00	07/21/2025	E1633	Perfluorooctanesulfonic acid (PFOS)	0.64	J	ng/L	4.0		0.37	1.5

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit

TABLE 3
VALIDATED PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) RESULTS
Data Received 01 to 29 August 2025

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
J3 Range	BH-746	BH-746-151-156	151.00	156.00	07/21/2025	E1633	Perfluorooctanoic acid (PFOA)	2.3		ng/L	6.0		0.37	1.5
J3 Range	BH-746	BH-746-141-146	141.00	146.00	07/18/2025	E1633	Perfluorooctanesulfonic acid (PFOS)	1.8		ng/L	4.0		0.37	1.5
J3 Range	BH-746	BH-746-131-136	131.00	136.00	07/18/2025	E1633	Perfluoropropanoic acid (PFPrA)	4.2	J	ng/L			1.9	7.5
J3 Range	BH-746	BH-746-121-126	121.00	126.00	07/18/2025	E1633	Perfluoropropanoic acid (PFPrA)	1.9	J	ng/L			1.8	7.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	9-Chlorohexadecafluoro-3-oxanone-1-sulfonic acid (9CI-PF3ONS)	1.6		ng/L			0.38	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluoropropanoic acid (PFPrA)	12.0		ng/L			1.6	6.6
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluorobutanesulfonic acid (PFBS)	1.5	J	ng/L	600		0.35	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluorobutanoic acid (PFBA)	7.3		ng/L	1800		0.66	2.6
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluorodecanoic acid (PFDA)	0.87	J	ng/L	20.0		0.33	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluoroheptanoic acid (PFHpA)	1.4		ng/L	20.0		0.33	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluorohexanoic acid (PFHxA)	1.3		ng/L	990		0.33	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluorononanoic acid (PFNA)	1.2	J	ng/L	5.9		0.33	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluorooctanesulfonic acid (PFOS)	1.2	J	ng/L	4.0		0.33	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluorooctanoic acid (PFOA)	3.1		ng/L	6.0		0.33	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluoropentanoic acid (PFPeA)	1.5		ng/L			0.33	1.3
J3 Range	BH-746	BH-746-98	98.00	98.00	07/18/2025	E1633	Perfluoroundecanoic acid (PFUnA)	0.34	J	ng/L	600		0.33	1.3
J3 Range	BH-747	BH-747-191-196	191.00	196.00	07/09/2025	E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.51	J	ng/L	1.5		0.30	1.1
J3 Range	BH-747	BH-747-181-186	181.00	186.00	07/09/2025	E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.53	J	ng/L	1.5		0.29	1.1
J3 Range	BH-747	BH-747-171-176	171.00	176.00	07/09/2025	E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.59	J	ng/L	1.5		0.29	1.1
J3 Range	BH-747	BH-747-171-176	171.00	176.00	07/09/2025	E1633	Perfluoropropanoic acid (PFPrA)	2.0	J	ng/L			1.9	7.4
J3 Range	BH-747	BH-747-161-166	161.00	166.00	07/09/2025	E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.54	J	ng/L	1.5		0.29	1.1
J3 Range	BH-747	BH-747-151-156	151.00	156.00	07/08/2025	E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.59	J	ng/L	1.5		0.27	1.1
J3 Range	BH-747	BH-747-141-146-D	141.00	146.00	07/08/2025	E1633	Hexafluoropropylene oxide dimer acid (HFPO-DA)	0.57	J	ng/L	1.5		0.28	1.1
J3 Range	BH-747	BH-747-121-126	121.00	126.00	07/08/2025	E1633	Perfluoropropanoic acid (PFPrA)	3.9	J	ng/L			2.3	9.2
J3 Range	BH-747	BH-747-111-116	111.00	116.00	07/08/2025	E1633	Perfluoropropanoic acid (PFPrA)	3.4	J	ng/L			2.3	9.2

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

MCL/HA= Either the MCL or Lowest Health Advisory Limit