MONTHLY PROGRESS REPORT #325
FOR APRIL 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 30 April 2024.

1. SUMMARY OF REMEDIATION ACTIONS

Remediation Actions (RA) Underway at Camp Edwards as of 26 April 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 3.085 billion gallons of water treated and re-injected as of 26 April 2024. No Frank Perkins Road Treatment Facility shutdowns occurred in April.

The Base Boundary Mobile Treatment Unit (MTU) continues to operate at a flow rate of 65 gpm. As of 26 April 2024, over 398.4 million gallons of water were treated and re-injected. No Base Boundary MTU shutdowns occurred in April.

The Leading Edge system continues to operate at a flow rate of 100 gpm. As of 26 April 2024, over 402.0 million gallons of water were treated and re-injected. No Leading Edge system shutdowns occurred in April.

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 April 2024, over 2.201 billion gallons of water have been treated and re-injected. No MTU E and F shutdowns occurred in April.

The Northern Treatment Building G continues to operate at a flow rate of 225 gpm. As of 26 April 2024, over 1.698 billion gallons of water have been treated and re-injected. No MTU G shutdowns occurred in April.

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 April 2024, over 1.839 billion gallons of water have been treated and re-injected. No MTU H and I shutdowns occurred in April.

MTU J typically operates at a flow rate of 120 gpm. As of 26 April 2024, over 862.4 million gallons of water have been treated and re-injected. The following MTU J shutdowns occurred in April:

- 0845 on 22 April 2024 to redevelop extraction well J2EW0004 during which the pump and motor were inspected and found to be in need of replacement; J2EW0004 will remain off until the new pump and motor are installed.

MTU K continues to operate at a flow rate of 125 gpm. As of 26 April 2024, over 988.9 million gallons of water have been treated and re-injected. No MTU K shutdowns occurred in April.

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 April 2024, over 1.821 billion gallons of water have been treated and re-injected. No J-3 system shutdowns occurred in April.

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 April 2024, over 794.9 million gallons of water have been treated and re-injected. No J-1 Range Southern MTU shutdowns occurred in April.

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 April 2024, over 1.347 billion gallons of water have been treated and re-injected. No J-1 Range Northern MTU shutdowns occurred in April.

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 April 2024, over 3.561 billion gallons of water have been treated and re-injected. No CIA system shutdowns occurred in April.

2. SUMMARY OF ACTIONS TAKEN

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

CIA

- Source Area investigations
  - Conducted surface clearance of P4A4 grids
  - Conducted vegetation clearance in P4A4 grids
  - Conducted quality control (QC) seeding
  - Conducted consolidated shot structure (CSS) liner inspection
  - Conducted quality assurance (QA) seeding
  - Conducted digital geophysical mapping (DGM) survey in P4A4 grids
  - Conducted MetalMapper (MM) cued surveys in P4A4
  - Conducted intrusive investigation in P4A2 and P4A3 grids
  - 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
- Bag filters changed
- Reinjection well D1-IW-1 redeveloped

Demolition Area 2
- No activity

J-1 Range
- Bag filters changed

J-2 Range
- Groundwater sampling within the J2N SPM Program
- Groundwater sampling within the J2N PFAS Program

J-3 Range
- Bag filters changed

L Range
- No activity

Small Arms Ranges
- Groundwater sampling within the SAR LTM Program

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
- Collected quarterly influent and effluent PFAS samples at J-2 Range Northern
- Collected semiannual influent and effluent PFAS samples at J-3 Range

JBCC Impact Area Groundwater Study Program (IAGWSP) Tech Update Meeting Minutes for 11 April 2024

Project and Fieldwork Update

Darrin Smith (USACE) stated that Koman Government Solutions (KGS) completed the Central Impact Area (CIA) annual sampling of 162 screens at the end of March 2024. They also recently

completed the Small Arms Ranges biannual long-term monitoring (LTM) sampling of 19 screens and the J-2 Range North semi-annual sampling of three screens. Crews are currently completing the second round of sampling for the new PFAS wells (14 screens) at J-2 Range North; this sampling round also includes analysis for perchlorate. Crews will conduct the J-2 Range North semi-annual sampling for PFAS at nine screens. The annual Demolition Area 1 (Demo 1) sampling event is next on the schedule. The abandonment/decommissioning of Demo 1 monitoring well MW5-98 on Country Road is scheduled for the end of April 2024.

Mr. Smith (USACE) continued with an update on operations and maintenance activities. IAGWSP is awaiting results from the April monthly process water sampling that occurred 1-4 April 2024. The J-2 Range North influent and effluent quarterly sampling is scheduled for today, 11 April 2024. The J-3 Range treatment systems semi-annual PFAS sampling is also scheduled for today. There were no notable system shutdowns since the last technical meeting.

Gina Kaso (USACE) moved on to the CIA update and explained that unexploded ordnance (UXO) crews mobilized in March and have completed the site preparatory work such as vegetation and surface clearance and staking new grids. The UXO teams are currently conducting intrusive investigations in the Phase IV Areas 2 and 3 carry-over grids. They also are performing EM-61 geophysical surveys in the Phase IV Area 4 grids. The contractor has removed dirt/fill from the consolidated shot structure in anticipation of the agencies' liner inspection today.

PFAS Update

Jodi Lyn Cutler (IAGWSP) asked if the agencies had any feedback on the draft PFAS figures, which had been provided before the meeting. Jane Dolan (EPA) said she briefly looked at the figures and more substantive comments are forthcoming. Ms. Dolan (EPA) said she would prefer pie chart visualization on a site-by-site basis. She appreciated the site-wide figures but would like a drill down of the information at the specific site level to better understand potential source areas.

Ms. Dolan (EPA) asked if a forensic analysis is planned to differentiate the types of detections. She requested "a principle component analysis to parse the different detections and determine what they mean." She stated that a section of the PFAS report should include data sets to substantiate any background statements.

Ms. Dolan (EPA) asked for clarification on whether the labs have been providing branched and linear PFAS data under Method 1633. Yixian Zhang (USACE) replied that the lab reports currently do not differentiate between branched or linear, but she will determine if that can be provided in the future.

Ms. Cutler (IAGWSP) confirmed there will be forensic analysis using radar plots. She noted that for the figures that were sent, there was a site-wide overview and a transect cross-section example for the J-2 Range North Operable Unit (OU). Once there is agency approval on that type of example, that information can be provided for the other OUs.

Len Pinaud (MassDEP) and Elliot Jacobs (MassDEP) said they did not have comments at this time. Ms. Dolan (EPA) stated that EPA will formalize their comments in an email.

Shawn Cody (ARNG) explained that two preliminary assessments for PFAS have been conducted at JBCC: one by the Air Force Civil Engineer Center (AFCEC) and one by Army National Guard (ARNG). The findings of both assessments were very similar, which determined that there were probable PFAS releases in the Cantonment Area but not in the northern 15,000 acres. There was evidence of only one release of Type A Foam, which does not contain PFAS, that was used once, following a lightning strike in the northern 15,000 acres.

Without confirmed evidence of a release, Department of Defense (DoD) funding was not available or permitted for the sampling. Mr. Cody (ARNG) pointed out that the agencies understandably wanted sampling. To resolve the issue, the IAGWSP used two technical papers citing the existence of open burn and open detonation sites, which very likely involved the existence and potential use of fire extinguishers containing aqueous film forming foams (AFFF). This rationale was presented to DoD and resulted in change in protocol around the country, allowing for PFAS sampling at those types of sites. Mr. Cody (ARNG) noted that over 300 samples have been taken and despite some sporadic detections, it appears that PFAS is not a pervasive issue for the IAGWSP OUs.

Mr. Cody (ARNG) stated that additional rationale was presented so that sampling also could be conducted in the CIA due to the fact that it sits on the top of groundwater mound for the sole source aquifer, and it is also the location of the former contractor ranges. Approval was granted and sampling in the CIA was completed. No source has been identified.

The PFAS report is at the Site Investigation (SI) level, which will allow a follow on effort of a Remedial Investigation (RI) for anything that needs further investigation. EPA pointed out that it was their understanding that there was “no money” for PFAS investigations. Mr. Cody (ARNG) replied that he is working on securing funding.

Ms. Dolan (EPA) said that she believes there is a data gap for PFAS contamination that is unrelated to AFFF. She asked for clarification on how the AFCEC PFAS plume outline was drawn. Mr. Jacobs replied that it was based on multiple, simultaneous detections, above a regulatory standard, in multiple wells along the same flow path. For example, there were three wells, along a similar flow path, that exceeded the regulatory standards simultaneously.

Mr. Jacobs (MassDEP) further explained that PFOS, PFOA and the six-chain were the primary drivers. He noted that with the new federal maximum contaminant level (MCL), the mapping will need to be updated. Bob Lim (EPA) said AFCEC had been mapping the detections in comparison to the regional screening levels (RSLs), so he is not concerned that there is any significant portion of the potential plume that has not been identified, but that will be confirmed.

Ms. Dolan (EPA) requested an Environmental Data Management System (EDMS) tutorial and USACE agreed to schedule one for the near future.

Ms. Dolan (EPA) requested information on the use of insecticides and herbicides. Mr. Cody (ARNG) said he can provide the information and records from Natural Resources. Mr. Pinaud (MassDEP) said he would like to be part of that conversation and would specifically like information about the northern 15,000 acres. Mr. Cody (ARNG) noted that the information has also been included in the State of the Reservation report since 2002. Ms. Dolan (EPA) said that she is looking for a particular pesticide that has been identified as containing PFAS. Mr. Cody

(ARNG) noted that there is no control over what Eversource uses in that area. There is an annual plan that outlines the use of pesticides and herbicides. They (Eversource) are required to maintain that as a rare species habitat. Mr. Cody (ARNG) noted that the planning and reporting was not as good when NSTAR was the utility company, so the older information is not as reliable. Mr. Pinaud (MassDEP) stated that the Environmental Management Commission (EMC) has more authority on that particular portion of JBCC and might be able to get access to more specific information, if needed.

Document and Project Tracking

Ms. Kaso (USACE) provided the list of deliverables in advance of the meeting. Ms. Keating (EPA) asked if there would be a meeting following the delivery of the PFAS Report. Ms. Cutler (IAGWSP) confirmed that would be the case.

The Five-Year Review Report will be discussed at the 23 May 2024 Technical Meeting.

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

Project and Fieldwork Update

Darrin Smith (USACE) stated that Koman Government Solutions (KGS) completed sampling of the J-2 Range North (J-2N) PFAS wells (14 screens), which is round two of two. Crews also completed the J-2N semi-annual PFAS sampling at nine screens. Crews are currently conducting annual sampling at Demolition Area 1 (Demo 1) at 86 screens and the biannual sampling at 11 screens. After that work is completed, there will be hydro sampling of 188 screens. The abandonment/decommissioning of Demo 1 monitoring well MW-598 on Country Road is scheduled for 29 April 2024.

Mr. Smith (USACE) continued with an update on operations and maintenance activities. IAGWSP is awaiting results from the April monthly process water sampling that occurred 1-4 April 2024. The J-2N influent and effluent quarterly sampling occurred on 11 April 2024. The J-3 Range treatment systems semi-annual PFAS sampling also occurred on 11 April 2024. The redevelopment of J-2 Range East (J-2E) extraction well (EW)-4 at mobile treatment unit (MTU) J was completed. The pump needs to be replaced, so the system is currently offline and is expected to be down for approximately two weeks. The redevelopment of the Demo 1 Frank Perkins reinjection well is ongoing. That system is not offline because EW-5 is operational. The packering at J-2E EW-5 will begin next week.

Gina Kaso (USACE) stated that work is continuing in the Phase IV Areas 2 and 3 carry-over grids. Crews are also performing EM-61 geophysical surveys in Phase IV Area 4 grids. This is the last week of polygon work on contract until funding can be added for the completion of that work. KGS is currently analyzing data from the Digital Geophysical Mapping (DGM) work. The metal mapper work has commenced.

Document and Project Tracking

Jeff Dvorak (USACE) reviewed the list of deliverables that was provided in advance of the meeting. The Five-Year Review Report will be discussed after the next Technical Meeting on 23 May 2024.

Jodi Lyn Cutler (IAGWSP) stated that the Camp Edwards tours will commence on 17 May 2024.

Mr. Dvorak (USACE) also stated that there will be Environmental Database Management System (EDMS) training with Synectics, and he will provide dates.

L Range Annual Environmental Monitoring Report (EMR) Presentation

Chris Kilbridge (USACE) introduced a presentation on the L Range Annual Environmental Monitoring Report (EMR), covering the period of March 2023 to February 2024. Pictures from the L Range were displayed to provide some background context for the site. Mr. Kilbridge (USACE) noted that this site was a grenade launching practice range. In 2008-2009, there was contaminated soil removal with robotic equipment and the soil was treated on site using alkaline hydrolysis. The decision document was issued in 2010.

An aerial figure was displayed. L Range is a site for which the remedy is monitored natural attenuation (MNA). Mr. Kilbridge (USACE) noted that there are eight wells sampled annually and five wells sampled semi-annually for explosives. Sampling for perchlorate was discontinued in 2014. L Range plumes are in advanced stages of attenuation.

Mr. Kilbridge (USACE) explained that the August 2023 semi-annual sampling event included MW-242M1, MW- 595M1/M2, MW-596M1, and MW-651M1. RDX was detected in one sample above the risk-based concentration (RBC) of 0.6 µg/L (0.66 µg/L at MW-595M1). This confirms the plume is migrating as expected because the previous highest concentration was 0.9 µg/L at MW-651M1, which is downgradient of the base boundary (western plume lobe).

Mr. Kilbridge (USACE) continued with the January 2023 annual event and noted it included eight wells, plus five from the semi-annual event, and 90MW0031, 90MW0034 and MW-650M1. There were no samples above the RBC of 0.6 µg/L, and there were no samples above the Environmental Protection Agency (EPA) risk-screening level of 0.97 µg/L or the Massachusetts Department of Environmental Protection (MassDEP) Groundwater-1 (GW-1) standard of 1 µg/L. The maximum detected concentration was 0.29 µg/L at MW-595M. RDX at MW-651M1 decreased from 0.26 µg/L in January 2023 to 0.23 µg/L in January 2024. Mr. Kilbridge (USACE) noted that MW-596M1 bounds the eastern RDX lobe to the south and MW-650M1bounds the central lobe to the south. Mr. Kilbridge (USACE) displayed a figure showing RDX declining trends in key wells during the reporting period.

Comparisons to Decision Document criteria were discussed. Based on the July 2020 plume shell, which was migrated through February 2024, RDX is predicted to be below the RBC (0.6 µg/L) by 2031 and below background levels (0.25 µg/L) by 2053. There are currently no concentrations above the health advisory.

Elliot Jacobs (MassDEP) asked for the distance between MW-595 and MW-650. Mr. Kilbridge (USACE) estimated it to be about 200 feet. Mr. Jacobs (MassDEP) noted that the very low detection at MW-595 should now be close to MW-650M1, unless it is bound up in tight soils and

therefore, possibly already below the January 2024 detection. Mr. Kilbridge (USACE) said that MW-650 is located in an ideal spot to pick up any potential detection if it has not already attenuated. He added that the next sampling event should pick it up, if it is at a detectable amount.

Mr. Kilbridge (USACE) stated that sampling at MW-295M2 will be decreased from semi-annual to biennial, with the next sampling event occurring in January 2025. The next update for the transport model is scheduled to take place in 2025 per the Five-Year Protocol (FYP), but that will need to be discussed depending on if there are any detections in the summer sampling round.

Len Pinaud (MassDEP) suggested this site be closed out and stated that it could be if it were only under the Massachusetts Contingency Plan (MCP). He asked if it made fiscal sense to spend money through 2031 just for monitoring the low detections. Mr. Kilbridge (USACE) noted that the site is monitored to 0.6 µg/L and a very conservative approach outlines two small plumelets. He stated that Mr. Pinaud (MassDEP) might want to note his suggestion in the comments on the EMR and suggested EPA should also consider the need for monitoring in the future. Mr. Pinaud (MassDEP) noted that EPA is considered the primary regulatory agency for the program and MassDEP is the secondary regulator. Bob Lim (EPA) agreed that the current trajectory could indicate a discontinuation after the next sampling event, but he is not ready to make a decision on site closeout just yet.

J-2 East Extraction Well Project Note Discussion

Ms. Cutler (IAGWSP) noted that IAGWSP responses to EPA comments on the J-2E Extraction Well Project Note (PN) were sent via email. Mr. Lim (EPA) stated the responses addressed EPA's comments, but some additional clarification is needed with regards to the modeling, sentinel wells, and PFAS sampling. He asked Josh Fontaine (EPA) to elaborate more on what EPA would like to see in the PN.

Mr. Fontaine (EPA) shared a figure with an overlay of the model compared to locations of the wells, with the upper screen and the lower screen, and the silty clay layer. He noted that estimated travel of the silty lay layer is 1 foot per day. Mr. Fontaine expressed concern that by removing the pull from the upper screen, "the likelihood of all of this water acting this way with this barrier in between that and the pump seems a little questionable." He believes some of the particulates could move down towards EW-6. In his experience, a silty clay layer can act as a huge barrier for pumps. Mike Kulbersh (USACE) explained that EW-6 is simulated in the model. Mr. Fontaine (EPA) clarified that he thought the model was focused on the pull from EW-5. Ryan Hupfer (USACE) clarified that all three wells (EW-4, EW-5, and EW-6) are simulated in the model. Mr. Lim (EPA) asked if there were particle tracks for EW-6. Mr. Hupfer (USACE) said the capture zones for the wells are shown in plan view in the EMRs. Mr. Kulbersh (USACE) displayed those figures, which showed the three-dimensional capture zone for J2E EW-4. He noted that the model depicted migration either around the capture zone or beneath the capture zone.

Mr. Kulbersh (USACE) explained the goal of the packering is to look at the capture zone after the upper screen is packed to determine if the additional area of contamination, with higher levels of perchlorate, is captured. Mr. Fontaine (EPA) said the capture zones "don't interact with

each other" so there is some intermixing that will occur at the fringes of those zones. He requested the sideview depiction of the particle maps with EW-6 next to EW-5. Mr. Hupfer (USACE) showed depictions of the vertical capture zones, which were not part of the PN. He explained that there is another capture zone, downgradient of EW-5.

Mr. Fontaine (EPA) noted that EPA had requested increased sampling frequency in those wells to monitor groundwater that potentially bypasses EW-6 after the packering. He acknowledged the travel estimates that show the water could take years to get to that point and, therefore, quarterly sampling might not be applicable. EPA wanted the concern about the silt layer possibly bisecting those two screens to be noted.

Mr. Kulbersh (USACE) explained that the purpose of this effort was to look at what could happen with the deeper contamination since it appears to be hung up in the silt. Mr. Fontaine (EPA) concurred and added he just wants to make sure an area of shallower contamination is not missed while trying to move the deeper area of contamination. Mr. Kulbersh (USACE) stated that any deflection away from EW-5 is likely not going to move outside the vertical capture zone downgradient of EW-6. Ms. Cutler (IAGWSP) noted that the packering is just a short-term experiment to optimize contaminant removal. IAGWSP also will consider additional sampling. She also noted that there are no receptors in that area.

Mr. Lim (EPA) requested a sideview particle tracks for EW-6 be included in the PN. He also asked if the additional data will be part of the next EMR. Ms. Cutler (IAGWSP) confirmed that the data would be included in the next EMR. Mr. Dvorak (USACE) stated that the team will discuss the request for the sideview particle tracks. He suggested that EPA note that in their comment and IAGWSP will formally respond to that request.

The group discussed the five proposed locations for the additional wells for gauging purposes: MW-335 M1/M2/ M3; J-2 MW-01, M1/M2; PZ M1/M2; MW-324 cluster of two wells; and MW-368 cluster with three wells. These locations were proposed in order to look at the vertical gradients and compare them pre- and post-packering to see what effect, if any, this has on the vertical gradients and to see if more contamination is captured.

IAGWSP recommended collecting water level data at 14 screens before the packering and then a round of sampling at the same 14 locations about a week after the packering. Water levels would also be collected from the full synoptic group sampling during the regularly scheduled synoptic gauging event in August. Ms. Cutler (IAGWSP) noted that the water level data might be compromised given that EW-4 is currently shutdown due to a pump issue and will remain that way for a few weeks.

Mr. Kulbersh (USACE) stated that if the shallow screen before packering is in the more permeable aquifer materials, then by shutting it off at the upper screen, the heads should ultimately just reverse and there would be downward flow at times. This would mean that the deeper screen is doing what's intended.

Mr. Jacobs (MassDEP) said MassDEP had considered Mr. Fontaine's (EPA) concern about a possible loss of capture at the upper extraction well screen and a possible loss of capture at MW-368M2. Mr. Jacobs (MassDEP) noted that the contamination there is "in the single digits" and likely would be captured by the downgradient extraction well or it could disperse to below 2

ug/L through MNA, before it ever reached the downgradient extraction well. MassDEP thinks it is a worthwhile exercise to try to mobilize the contamination that's been deep in the aquifer for five to six years.

Mr. Kulbersh (USACE) explained that the August synoptic round will collect water level data once the system has been fully operational and this will be useful information. IAGWSP will discuss the level of effort for requested sideview particle tracks.

JBCC Cleanup Team Meeting

The next JBCC Cleanup Team (JBCCCT) has yet to be scheduled (previous meeting was 10 April 2024). 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 30 April 2024. Table 2 summarizes the validated detections of explosives compounds and perchlorate for all groundwater results received from 01 to 30 April 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 30 April 2024. Table 3 PFAS results are compared to the Regional Screening Levels (RSLs) published by EPA in November 2023. No PFAS validation was completed during April 2024, therefore, Table 3 is not included.

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. 324 for March 2024	10 April 2024
• Impact Area Groundwater Study Program Responses to MassDEP Comments on the Draft 2023 Annual Land Use Controls Monitoring Report	04 April 2024
• Draft J-2 Range Eastern Optimization at J2EW0005 Project Note	05 April 2024
• Response to Comments on the Draft Land Use Controls Monitoring Report	23 April 2024
• Response to Comments on the Draft Central Impact Area Environmental Monitoring Report for July 2022 through June 2023	24 April 2024
• Response to Comments on the Draft J-3 Range Annual Environmental Monitoring Report for September 2021 through August 2022	26 April 2024

5. SCHEDULED ACTIONS

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

- Response to Comments on the Five-Year Review
- 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 – August 2022
- Draft Demolition Area 2 2023 EMR Project Note
- Response to Comments on Central Impact Area Environmental Monitoring Report for July 2022 – June 2023
- Final Demolition Area 1 Environmental Monitoring Report for July 2022 – June 2023 with Plume Shell Technical Memorandum
- Response to Comments on J-3 Range Environmental Monitoring Report for September 2022 – August 2023 with Plume Shell Technical Memorandum
- IAGWSP Comprehensive PFAS Report
- Land Use Controls Monitoring Report
- Sitewide Plume Booklet
- Central Impact Area 2021 Source Removal Report Addendum
- Central Impact Area 2023 Source Removal Report
- Draft J-2 Range Northern Environmental Monitoring Report for November 2022 – October 2023
- J-2 Range Eastern Optimization at J2EW0005 Project Note

TABLE 1
Sampling Progress: 01 to 30 April 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	MW-531M1	MW-531M1_S24	N	04-29-2024	Ground Water	138	148
Demolition Area 1	MW-531M1	MW-531M1_S24D	FD	04-29-2024	Ground Water	138	148
Demolition Area 1	MW-696M1	MW-696M1_S24	N	04-29-2024	Ground Water	175.2	185.2
Demolition Area 1	MW-258M3	MW-258M3_S24	N	04-29-2024	Ground Water	77	82
Demolition Area 1	MW-258M2	MW-258M2_S24	N	04-29-2024	Ground Water	87	92
Demolition Area 1	MW-258M1	MW-258M1_S24	N	04-29-2024	Ground Water	109	119
Demolition Area 1	MW-697M1	MW-697M1_S24	N	04-25-2024	Ground Water	243	253
Demolition Area 1	MW-248M3	MW-248M3_S24	N	04-25-2024	Ground Water	143	153
Demolition Area 1	MW-248M2	MW-248M2_S24	N	04-25-2024	Ground Water	178	188
Demolition Area 1	MW-248M1	MW-248M1_S24	N	04-25-2024	Ground Water	216.3	226.3
Demolition Area 1	MW-698M1	MW-698M1_S24	N	04-24-2024	Ground Water	212.4	222.4
Demolition Area 1	MW-664M2	MW-664M2_S24	MS	04-24-2024	Ground Water	218.5	228.5
Demolition Area 1	MW-664M2	MW-664M2_S24	N	04-24-2024	Ground Water	218.5	228.5
Demolition Area 1	MW-664M2	MW-664M2_S24	SD	04-24-2024	Ground Water	218.5	228.5
Demolition Area 1	MW-664M1	MW-664M1_S24	N	04-24-2024	Ground Water	248.5	258.5
Demolition Area 1	MW-663D	MW-663D_S24	N	04-24-2024	Ground Water	240.6	250.6
Demolition Area 1	MW-663D	MW-663D_S24D	FD	04-24-2024	Ground Water	240.6	250.6
Demolition Area 1	MW-231M2	MW-231M2_S24	N	04-24-2024	Ground Water	165.5	175.5
Demolition Area 1	MW-231M1	MW-231M1_S24	N	04-24-2024	Ground Water	210.5	220.5
Demolition Area 1	MW-240M2	MW-240M2_S24	MS	04-23-2024	Ground Water	125	135
Demolition Area 1	MW-240M2	MW-240M2_S24	N	04-23-2024	Ground Water	125	135
Demolition Area 1	MW-240M2	MW-240M2_S24	SD	04-23-2024	Ground Water	125	135
Demolition Area 1	MW-240M1	MW-240M1_S24	N	04-23-2024	Ground Water	198	208
Demolition Area 1	MW-225M3	MW-225M3_S24	N	04-23-2024	Ground Water	125	135
Demolition Area 1	MW-225M2	MW-225M2_S24	N	04-23-2024	Ground Water	145	155
Demolition Area 1	MW-225M1	MW-225M1_S24	N	04-23-2024	Ground Water	175	185
Demolition Area 1	MW-431	MW-431_S24	N	04-22-2024	Ground Water	88	180
Demolition Area 1	MW-341M3	MW-341M3_S24	N	04-22-2024	Ground Water	209.5	219.5
Demolition Area 1	MW-341M2	MW-341M2_S24	N	04-22-2024	Ground Water	264.5	269.5
Demolition Area 1	MW-211M1	MW-211M1_S24	N	04-22-2024	Ground Water	200	210
Demolition Area 1	MW-173M2	MW-173M2_S24	N	04-22-2024	Ground Water	208	218
Demolition Area 1	MW-210M2	MW-210M2_S24	N	04-22-2024	Ground Water	156	166
Demolition Area 1	MW-165M2	MW-165M2_S24	N	04-22-2024	Ground Water	124.5	134.5
Demolition Area 1	MW-662D	MW-662D_S24	N	04-22-2024	Ground Water	202.3	212.3
Demolition Area 1	MW-78M2	MW-78M2_S24	N	04-16-2024	Ground Water	115	125
Demolition Area 1	MW-78M1	MW-78M1_S24	N	04-16-2024	Ground Water	135	145
Demolition Area 1	MW-78M1	MW-78M1_S24D	FD	04-16-2024	Ground Water	135	145
Demolition Area 1	MW-75M2	MW-75M2_S24	N	04-16-2024	Ground Water	115	125
Demolition Area 1	MW-75M1	MW-75M1_S24	N	04-16-2024	Ground Water	140	150
J2 Range Northern	MW-337D	MW-337D_SPR24	N	04-15-2024	Ground Water	310	320
J2 Range Northern	MW-330M3	MW-330M3_SPR24	N	04-15-2024	Ground Water	154.97	164.99
J2 Range Northern	MW-330M2	MW-330M2_SPR24	N	04-15-2024	Ground Water	238.01	248.04
J2 Range Northern	MW-330M1	MW-330M1_SPR24	N	04-15-2024	Ground Water	313.1	323.13
J2 Range Northern	MW-330M1	MW-330M1_SPR24D	FD	04-15-2024	Ground Water	313.1	323.13
J2 Range Northern	MW-340D	MW-340D_SPR24	N	04-15-2024	Ground Water	329.6	339.6
J2 Range Northern	MW-293M1	MW-293M1_SPR24	N	04-15-2024	Ground Water	296.26	306.27
J2 Range Northern	J2EW0002	J2EW0002_SPR24	N	04-11-2024	Process Water	198	233
J2 Range Northern	MW-345M2	MW-345M2_SPR24	N	04-11-2024	Ground Water	236.62	246.62
J2 Range Northern	MW-345M1	MW-345M1_SPR24	MS	04-11-2024	Ground Water	311.5	321.5
J2 Range Northern	MW-345M1	MW-345M1_SPR24	N	04-11-2024	Ground Water	311.5	321.5
J2 Range Northern	MW-345M1	MW-345M1_SPR24	SD	04-11-2024	Ground Water	311.5	321.5
J2 Range Northern	J2N-EFF-F	J2N-EFF-F_APR24	N	04-11-2024	Process Water	0	0
J2 Range Northern	J2N-INF-F	J2N-INF-F_APR24	N	04-11-2024	Process Water	0	0
J2 Range Northern	J2N-INF-F	J2N-INF-F_APR24-D	FD	04-11-2024	Process Water	0	0
J2 Range Northern	MW-735M2	MW-735M2_S24	N	04-11-2024	Ground Water	190.3	200.3
J2 Range Northern	MW-735M2	MW-735M2_S24	N	04-11-2024	Ground Water	190.3	200.3
J3 Range	J3-EFF	J3-EFF-F_APR24	N	04-11-2024	Process Water	0	0
J3 Range	J3-INF	J3-INF_APR24	N	04-11-2024	Process Water	0	0
J2 Range Northern	MW-735M1	MW-735M1_S24	N	04-11-2024	Ground Water	250.2	260.2

N = Normal Sample
FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 30 April 2024

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J2 Range Northern	MW-735M1	MW-735M1_S24	N	04-11-2024	Ground Water	250.2	260.2
J2 Range Northern	MW-737M2	MW-737M2_S24	N	04-10-2024	Ground Water	257	267
J2 Range Northern	MW-737M2	MW-737M2_S24	N	04-10-2024	Ground Water	257	267
J2 Range Northern	MW-737M2	MW-737M2_S24D	FD	04-10-2024	Ground Water	257	267
J2 Range Northern	MW-737M2	MW-737M2_S24D	FD	04-10-2024	Ground Water	257	267
J2 Range Northern	MW-737M1	MW-737M1_S24	N	04-10-2024	Ground Water	327	337
J2 Range Northern	MW-737M1	MW-737M1_S24	N	04-10-2024	Ground Water	327	337
J2 Range Northern	MW-736M2	MW-736M2_S24	N	04-10-2024	Ground Water	240	250
J2 Range Northern	MW-736M2	MW-736M2_S24	N	04-10-2024	Ground Water	240	250
J2 Range Northern	MW-736M2	MW-736M2_S24D	FD	04-10-2024	Ground Water	240	250
J2 Range Northern	MW-736M2	MW-736M2_S24D	FD	04-10-2024	Ground Water	240	250
J2 Range Northern	MW-736M1	MW-736M1_S24	N	04-10-2024	Ground Water	285	295
J2 Range Northern	MW-736M1	MW-736M1_S24	N	04-10-2024	Ground Water	285	295
J2 Range Northern	MW-738M2	MW-738M2_S24	N	04-09-2024	Ground Water	197	207
J2 Range Northern	MW-738M2	MW-738M2_S24	N	04-09-2024	Ground Water	197	207
J2 Range Northern	MW-738M1	MW-738M1_S24	N	04-09-2024	Ground Water	242	252
J2 Range Northern	MW-738M1	MW-738M1_S24	N	04-09-2024	Ground Water	242	252
J2 Range Northern	MW-739M2	MW-739M2_S24	N	04-09-2024	Ground Water	204	214
J2 Range Northern	MW-739M2	MW-739M2_S24	N	04-09-2024	Ground Water	204	214
J2 Range Northern	MW-739M1	MW-739M1_S24	MS	04-09-2024	Ground Water	239	249
J2 Range Northern	MW-739M1	MW-739M1_S24	MS	04-09-2024	Ground Water	239	249
J2 Range Northern	MW-739M1	MW-739M1_S24	N	04-09-2024	Ground Water	239	249
J2 Range Northern	MW-739M1	MW-739M1_S24	N	04-09-2024	Ground Water	239	249
J2 Range Northern	MW-739M1	MW-739M1_S24	SD	04-09-2024	Ground Water	239	249
J2 Range Northern	MW-739M1	MW-739M1_S24	SD	04-09-2024	Ground Water	239	249
J2 Range Northern	MW-740M2	MW-740M2_S24	N	04-09-2024	Ground Water	197	207
J2 Range Northern	MW-740M2	MW-740M2_S24	N	04-09-2024	Ground Water	197	207
J2 Range Northern	MW-740M1	MW-740M1_S24	N	04-09-2024	Ground Water	247	257
J2 Range Northern	MW-740M1	MW-740M1_S24	N	04-09-2024	Ground Water	247	257
GB Range	03MW0122A	03MW0122A_S24	N	04-08-2024	Ground Water	0	0
GA Range	03MW0710	03MW0710_S24	N	04-08-2024	Ground Water	73.6	83.3
CS-10 (ARNG)	03MW0709	03MW0709_S24	N	04-08-2024	Ground Water	0	0
Demolition Area 1	D1LE-EFF	D1LE-EFF-93A	N	04-04-2024	Process Water	0	0
Demolition Area 1	D1LE-MID2	D1LE-MID2-93A	N	04-04-2024	Process Water	0	0
Demolition Area 1	D1LE-MID1	D1LE-MID1-93A	N	04-04-2024	Process Water	0	0
Demolition Area 1	D1LE-INF	D1LE-INF-93A	N	04-04-2024	Process Water	0	0
J2 Range Northern	MW-734M2	MW-734M2_S24	N	04-04-2024	Ground Water	205	215
J2 Range Northern	MW-734M2	MW-734M2_S24	N	04-04-2024	Ground Water	205	215
J2 Range Northern	MW-734M1	MW-734M1_S24	N	04-04-2024	Ground Water	265.5	275.5
J2 Range Northern	MW-734M1	MW-734M1_S24	N	04-04-2024	Ground Water	265.5	275.5
J1 Range Southern	J1S-EFF	J1S-EFF-197A	N	04-04-2024	Process Water	0	0
J1 Range Southern	J1S-MID	J1S-MID-197A	N	04-04-2024	Process Water	0	0
J1 Range Southern	J1S-INF-2	J1S-INF-2-197A	N	04-04-2024	Process Water	0	0
Demolition Area 1	FPR-2-EFF-A	FPR-2-EFF-A-217A	N	04-04-2024	Process Water	0	0
Demolition Area 1	FPR-2-GAC-MID1A	FPR-2-GAC-MID1A-217A	N	04-04-2024	Process Water	0	0
Demolition Area 1	FPR2-POST-IX-A	FPR2-POST-IX-A-217A	N	04-04-2024	Process Water	0	0
Demolition Area 1	FPR-2-INF	FPR-2-INF-217A	N	04-04-2024	Process Water	0	0
J2 Range Northern	J2EW0001	J2EW0001_S24	N	04-04-2024	Process Water	179	234
J2 Range Northern	J2EW0002	J2EW0002_S24	N	04-04-2024	Process Water	198	233
J2 Range Northern	J2EW0002	J2EW0002_S24D	FD	04-04-2024	Process Water	198	233
Demolition Area 1	D1-EFF	D1-EFF-165A	N	04-04-2024	Process Water	0	0
Demolition Area 1	D1-MID-2	D1-MID-2-165A	N	04-04-2024	Process Water	0	0
J2 Range Northern	J2EW0003	J2EW0003_S24	N	04-04-2024	Process Water	202	232
Demolition Area 1	D1-MID-1	D1-MID-1-165A	N	04-04-2024	Process Water	0	0
Demolition Area 1	D1-INF	D1-INF-165A	N	04-04-2024	Process Water	0	0
J3 Range	J3-EFF	J3-EFF-211A	N	04-03-2024	Process Water	0	0
J3 Range	J3-MID-2	J3-MID-2-211A	N	04-03-2024	Process Water	0	0
C Range	MW-456S	MW-456S_S24	N	04-03-2024	Ground Water	150.34	160.34
J3 Range	J3-MID-1	J3-MID-1-211A	N	04-03-2024	Process Water	0	0

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TABLE 1
Sampling Progress: 01 to 30 April 2024

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-INF	J3-INF-211A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-EFF-K	J2E-EFF-K-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2K	J2E-MID-2K-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1K	J2E-MID-1K-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-INF-K	J2E-INF-K-187A	N	04-03-2024	Process Water	0	0
C Range	MW-491S	MW-491S_S24	N	04-03-2024	Ground Water	146.93	156.93
J2 Range Eastern	J2E-EFF-J	J2E-EFF-J-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2J	J2E-MID-2J-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1J	J2E-MID-1J-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-INF-J	J2E-INF-J-187A	N	04-03-2024	Process Water	0	0
Central Impact Area	MW-123S	MW-123S_S24	N	04-03-2024	Ground Water	139	149
J2 Range Eastern	J2E-EFF-IH	J2E-EFF-IH-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-2H	J2E-MID-2H-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1H	J2E-MID-1H-187A	N	04-03-2024	Process Water	0	0
B Range	MW-455S	MW-455S_S24	N	04-03-2024	Ground Water	117.57	127.57
Central Impact Area	MW-455S	MW-455S_S24	N	04-03-2024	Ground Water	117.57	127.57
J2 Range Eastern	J2E-MID-2I	J2E-MID-2I-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-MID-1I	J2E-MID-1I-187A	N	04-03-2024	Process Water	0	0
J2 Range Eastern	J2E-INF-I	J2E-INF-I-187A	N	04-03-2024	Process Water	0	0
B Range	MW-539M1	MW-539M1_S24	N	04-02-2024	Ground Water	113	123
B Range	MW-490S	MW-490S_S24	N	04-02-2024	Ground Water	108.08	118.08
Central Impact Area	CIA2-EFF	CIA2-EFF-123A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA2-MID2	CIA2-MID2-123A	N	04-02-2024	Process Water	0	0
B Range	MW-537M1	MW-537M1_S24	N	04-02-2024	Ground Water	106	116
Central Impact Area	CIA2-MID1	CIA2-MID1-123A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA2-INF	CIA2-INF-123A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA1-EFF	CIA1-EFF-123A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA1-MID2	CIA1-MID2-123A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA1-MID1	CIA1-MID1-123A	N	04-02-2024	Process Water	0	0
B Range	MW-72S	MW-72S_S24	N	04-02-2024	Ground Water	106	116
B Range	MW-72S	MW-72S_S24D	FD	04-02-2024	Ground Water	106	116
Central Impact Area	MW-72S	MW-72S_S24	N	04-02-2024	Ground Water	106	116
Central Impact Area	MW-72S	MW-72S_S24D	FD	04-02-2024	Ground Water	106	116
Central Impact Area	CIA1-INF	CIA1-INF-123A	N	04-02-2024	Process Water	0	0
Juliet Range	MW-471S	MW-471S_S24	N	04-02-2024	Ground Water	84.59	94.59
Central Impact Area	CIA3-EFF	CIA3-EFF-94A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA3-MID2	CIA3-MID2-94A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA3-MID1	CIA3-MID1-94A	N	04-02-2024	Process Water	0	0
Central Impact Area	CIA3-INF	CIA3-INF-94A	N	04-02-2024	Process Water	0	0
Juliet Range	MW-472S	MW-472S_S24	N	04-01-2024	Ground Water	85.31	95.31
Kilo Range	MW-474S	MW-474S_S24	N	04-01-2024	Ground Water	86.44	96.44
J2 Range Northern	J2N-EFF-G	J2N-EFF-G-211A	N	04-01-2024	Process Water	0	0
J2 Range Northern	J2N-MID-2G	J2N-MID-2G-211A	N	04-01-2024	Process Water	0	0
J2 Range Northern	J2N-MID-1G	J2N-MID-1G-211A	N	04-01-2024	Process Water	0	0
GA Range	MW-690S	MW-690S_S24	N	04-01-2024	Ground Water	99.2	109.2
J2 Range Northern	J2N-INF-G	J2N-INF-G-211A	N	04-01-2024	Process Water	0	0
J2 Range Northern	J2N-EFF-EF	J2N-EFF-EF-211A	N	04-01-2024	Process Water	0	0
J2 Range Northern	J2N-MID-2F	J2N-MID-2F-211A	N	04-01-2024	Process Water	0	0
J2 Range Northern	J2N-MID-1F	J2N-MID-1F-211A	N	04-01-2024	Process Water	0	0
Demolition Area 1	MW-35S	MW-35S_S24	MS	04-01-2024	Ground Water	84	94
Demolition Area 1	MW-35S	MW-35S_S24	N	04-01-2024	Ground Water	84	94
Demolition Area 1	MW-35S	MW-35S_S24	SD	04-01-2024	Ground Water	84	94
J2 Range Northern	J2N-INF-EF	J2N-INF-EF-211A	N	04-01-2024	Process Water	0	0
J2 Range Northern	J2N-MID-2E	J2N-MID-2E-211A	N	04-01-2024	Process Water	0	0
J2 Range Northern	J2N-MID-1E	J2N-MID-1E-211A	N	04-01-2024	Process Water	0	0
G Range	MW-470S	MW-470S_S24	N	04-01-2024	Ground Water	76.32	86.32
G Range	MW-470S	MW-470S_S24D	FD	04-01-2024	Ground Water	76.32	86.32
J1 Range Northern	J1N-EFF	J1N-EFF-126A	N	04-01-2024	Process Water	0	0
J1 Range Northern	J1N-MID2	J1N-MID2-126A	N	04-01-2024	Process Water	0	0

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FD = Field Duplicate

TABLE 1
Sampling Progress: 01 to 30 April 2024

Area Of Concern	Location	Field Sample ID	Sample Type	Date Sampled	Matrix	Top of Screen (ft bgs)	Bottom of Screen (ft bgs)
J1 Range Northern	J1N-MID1	J1N-MID1-126A	N	04-01-2024	Process Water	0	0
J1 Range Northern	J1N-INF2	J1N-INF2-126A	N	04-01-2024	Process Water	0	0
Demolition Area 1	MW-36S	MW-36S_S24	N	04-01-2024	Ground Water	73	83

N = Normal Sample
FD = Field Duplicate

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received April 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-626M2	MW-626M2_S24	237.2	247.2	03-12-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.20		µg/L	0.60		0.043	0.20
Central Impact Area	MW-626M1	MW-626M1_S24	282.2	292.2	03-12-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.72		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-42M3	MW-42M3_S24	165.8	176	03-12-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	4.1		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-42M2	MW-42M2_S24	185.8	196	03-12-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.30		µg/L	0.60		0.043	0.20
Central Impact Area	MW-42M1	MW-42M1_S24	205.8	216	03-12-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.6		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-42M1	MW-42M1_S24D	205.8	216	03-12-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	3.5		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-618M1	MW-618M1_S24	238.5	248.5	03-12-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.15	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-618M1	MW-618M1_S24	238.5	248.5	03-12-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.33		µg/L	400		0.091	0.20
Central Impact Area	MW-323M1	MW-323M1_S24	195	205	03-11-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.49		µg/L	0.60		0.043	0.20
Central Impact Area	MW-338M1	MW-338M1_S24	189	199	03-11-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.45		µg/L	0.60		0.043	0.20
Central Impact Area	MW-102M2	MW-102M2_S24	237	247	03-07-2024	SW6850	Perchlorate	0.14	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-102M2	MW-102M2_S24	237	247	03-07-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.12	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-102M1	MW-102M1_S24	267	277	03-07-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.15	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-23M1	MW-23M1_S24	225	235	03-07-2024	SW6850	Perchlorate	0.68		µg/L	2.0		0.039	0.20
Central Impact Area	MW-23D	MW-23D_S24	272	282	03-07-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26		µg/L	0.60		0.043	0.20
Central Impact Area	MW-124M1	MW-124M1_S24	234	244	03-07-2024	SW6850	Perchlorate	0.043	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-699M1	MW-699M1_S24	261.5	271.5	03-06-2024	SW6850	Perchlorate	0.062	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-699M1	MW-699M1_S24	261.5	271.5	03-06-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.57		µg/L	0.60		0.043	0.20
Central Impact Area	MW-628M1	MW-628M1_S24	230.8	240.8	03-06-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.26		µg/L	0.60		0.043	0.20
Central Impact Area	MW-608M4	MW-608M4_S24	185.4	195.4	03-05-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.59		µg/L	0.60		0.043	0.20
Central Impact Area	MW-608M3	MW-608M3_S24	220.4	230.4	03-05-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.22		µg/L	0.60		0.043	0.20
Central Impact Area	MW-608M1	MW-608M1_S24	267.4	277.4	03-05-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.071	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-209M2	MW-209M2_S24	220	230	03-04-2024	SW6850	Perchlorate	0.073	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-209M1	MW-209M1_S24	240	250	03-04-2024	SW6850	Perchlorate	2.2		µg/L	2.0	X	0.039	0.20
Central Impact Area	MW-209M1	MW-209M1_S24	240	250	03-04-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.3		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-209M1	MW-209M1_S24	240	250	03-04-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.42		µg/L	400		0.091	0.20
Central Impact Area	MW-209M1	MW-209M1_S24D	240	250	03-04-2024	SW6850	Perchlorate	2.1		µg/L	2.0	X	0.039	0.20
Central Impact Area	MW-209M1	MW-209M1_S24D	240	250	03-04-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.3		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-209M1	MW-209M1_S24D	240	250	03-04-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.43		µg/L	400		0.091	0.20
Central Impact Area	MW-87M2	MW-87M2_S24	169	179	02-29-2024	SW6850	Perchlorate	0.051	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-87M1	MW-87M1_S24	194	204	02-29-2024	SW6850	Perchlorate	0.54		µg/L	2.0		0.039	0.20
Central Impact Area	MW-87M1	MW-87M1_S24	194	204	02-29-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.16	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-88M2	MW-88M2_S24	213	223	02-29-2024	SW6850	Perchlorate	0.86		µg/L	2.0		0.039	0.20
Central Impact Area	MW-88M2	MW-88M2_S24	213	223	02-29-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.53		µg/L	0.60		0.043	0.20
Central Impact Area	MW-88M2	MW-88M2_S24	213	223	02-29-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.11	J	µg/L	400		0.091	0.20
Central Impact Area	MW-88M1	MW-88M1_S24	233	243	02-29-2024	SW6850	Perchlorate	0.089	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-88M1	MW-88M1_S24	233	243	02-29-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.081	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-39M1	MW-39M1_S24	220	230	02-28-2024	SW6850	Perchlorate	0.22		µg/L	2.0		0.039	0.20
Central Impact Area	MW-39M1	MW-39M1_S24	220	230	02-28-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.84		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-95M2	MW-95M2_S24	167	177	02-28-2024	SW6850	Perchlorate	0.066	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-95M1	MW-95M1_S24	202	212	02-28-2024	SW6850	Perchlorate	1.6		µg/L	2.0		0.039	0.20
Central Impact Area	MW-95M1	MW-95M1_S24	202	212	02-28-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.1		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-95M1	MW-95M1_S24D	202	212	02-28-2024	SW6850	Perchlorate	1.6		µg/L	2.0		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
May 08, 2024

TABLE 2
VALIDATED EXPLOSIVE AND PERCHLORATE RESULTS
Data Received April 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-95M1	MW-95M1_S24D	202	212	02-28-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.0		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-43M1	MW-43M1_S24	223	233	02-28-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.84		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-89M3	MW-89M3_S24	174	184	02-27-2024	SW6850	Perchlorate	0.040	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-89M2	MW-89M2_S24	214	224	02-27-2024	SW6850	Perchlorate	1.4		µg/L	2.0		0.039	0.20
Central Impact Area	MW-89M2	MW-89M2_S24	214	224	02-27-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	5.8		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-89M2	MW-89M2_S24	214	224	02-27-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.0		µg/L	400		0.091	0.20
Central Impact Area	MW-89M2	MW-89M2_S24D	214	224	02-27-2024	SW6850	Perchlorate	1.4		µg/L	2.0		0.039	0.20
Central Impact Area	MW-89M2	MW-89M2_S24D	214	224	02-27-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	5.7		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-89M2	MW-89M2_S24D	214	224	02-27-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	1.0		µg/L	400		0.091	0.20
Central Impact Area	MW-89M1	MW-89M1_S24	234	244	02-27-2024	SW6850	Perchlorate	0.53		µg/L	2.0		0.039	0.20
Central Impact Area	MW-89M1	MW-89M1_S24	234	244	02-27-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.55		µg/L	0.60		0.043	0.20
Central Impact Area	MW-204M1	MW-204M1_S24	141	151	02-26-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-204M1	MW-204M1_S24	141	151	02-26-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.27		µg/L	400		0.091	0.20
Central Impact Area	MW-204M1	MW-204M1_S24D	141	151	02-26-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.2		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-204M1	MW-204M1_S24D	141	151	02-26-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.26		µg/L	400		0.091	0.20
Central Impact Area	MW-86S	MW-86S_S24	143	153	02-26-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.25		µg/L	0.60		0.043	0.20
Central Impact Area	MW-86M2	MW-86M2_S24	158	168	02-26-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.31		µg/L	0.60		0.043	0.20
Central Impact Area	MW-208M1	MW-208M1_S24	195	205	02-22-2024	SW6850	Perchlorate	0.060	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-176M2	MW-176M2_S24	229	239	02-22-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.48		µg/L	0.60		0.043	0.20
Central Impact Area	MW-176M1	MW-176M1_S24	270	280	02-22-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.90		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-687M2	MW-687M2_S24	188	198	02-21-2024	SW6850	Perchlorate	0.060	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-686M2	MW-686M2_S24	194.3	204.3	02-21-2024	SW6850	Perchlorate	0.11	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-686M2	MW-686M2_S24	194.3	204.3	02-21-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	1.3		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-25	MW-25_S24	108	118	02-20-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.1		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-25	MW-25_S24	108	118	02-20-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.15	J	µg/L	400		0.091	0.20
Central Impact Area	MW-38M4	MW-38M4_S24	132	142	02-20-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.51		µg/L	0.60		0.043	0.20
Central Impact Area	MW-38M3	MW-38M3_S24	170	180	02-20-2024	SW6850	Perchlorate	0.045	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-38M3	MW-38M3_S24	170	180	02-20-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.69		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-728M1	MW-728M1_S24	153.4	163.4	02-20-2024	SW6850	Perchlorate	0.086	J	µg/L	2.0		0.039	0.20
Central Impact Area	MW-728M1	MW-728M1_S24	153.4	163.4	02-20-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	0.076	J	µg/L	0.60		0.043	0.20
Central Impact Area	MW-184M1	MW-184M1_S24	186	196	02-20-2024	SW6850	Perchlorate	0.77		µg/L	2.0		0.039	0.20
Central Impact Area	MW-184M1	MW-184M1_S24	186	196	02-20-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.8		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-184M1	MW-184M1_S24	186	196	02-20-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.64		µg/L	400		0.091	0.20
Central Impact Area	MW-184M1	MW-184M1_S24D	186	196	02-20-2024	SW6850	Perchlorate	0.83		µg/L	2.0		0.039	0.20
Central Impact Area	MW-184M1	MW-184M1_S24D	186	196	02-20-2024	SW8330	Hexahydro-1,3,5-trinitro-1,3,5-triazine (RDX)	2.7		µg/L	0.60	X	0.043	0.20
Central Impact Area	MW-184M1	MW-184M1_S24D	186	196	02-20-2024	SW8330	Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	0.65		µg/L	400		0.091	0.20

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MDL = Method Detection Limit
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ND = Non-Detect

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