



**Final
Hazardous and Toxic Waste (HTW) Base Realignment
and Closure (BRAC) Cleanup Team (BCT)
Meeting Minutes
May 19, 2023**



BRAC Conference Room and Teleconference
Former Fort Ord, California

Agenda

Reference the handout titled "HTW BRAC Cleanup Team Meeting Agenda, Friday, May 19, 2023 at 1:30 PM, Former Fort Ord, California."

1. Attendance and Announcements

Last Name	First Name	Organization	By Phone
Anderson	Thor	Burleson Consulting	
Bleichner	Randall	California Department of Toxic Substances Control (DTSC)	x
Cervantes	Christina	Chenega for BRAC	x
Clancy	Maeve	U.S. Environmental Protection Agency (USEPA)	
Corr	Erin	U.S. Army Corps of Engineers (USACE)	
Dillon	Holly	Ahtna Global, LLC (Ahtna)	x
Facchini	Hudson	Chenega for BRAC	
Herrmann	Christian	Chenega for BRAC	
Hession	Shaelyn	Ahtna	x
Kellett	MC	USACE	
Kosowski	Sylvester	Ahtna	x
Kowalski	Bart	Chenega for BRAC	
Lam	Nancy	USACE	
Lieberman	Derek	Ahtna	
Lindh	Margaret	Ahtna	x
No	Jason	Chenega for BRAC	
Nozaki	Chieko	Chenega for BRAC	
Payton	Curtis	U.S. Army BRAC, Fort Ord Office	
Sarmiento	Riz	DTSC	x
Schmidt	Eric	Ahtna	
Sellinger	Amber	California Regional Water Quality Control Board, Central Coast Region (CCRWQCB)	x
Soderberg	Sheila	CCRWQCB	x
Walak	Kelsey	USACE	

Some of the handouts have been changed from the way the information is normally presented to streamline the presentation of information. The regulatory agencies are encouraged to have a conversation with USACE to determine if the changes are beneficial.

2. BCT Minutes Status

The HTW BCT meeting minutes are final through the last meeting in February.

3. Community Outreach Update

The handout titled “U.S. Army Fort Ord Environmental Cleanup Community Outreach Update” was reviewed. Additional discussion included:

- Analysis of the 2021 Community Survey is in progress. The community outreach report for the 2021-2022 program is in progress.
- The Community Involvement Workshop (CIW) was conducted on February 11 with 36 community members in attendance and the Technical Review Committee meeting was held on February 14, both covering HTW topics.
- There were several recent informational booths or presentations held for munitions safety and environmental cleanup including:
 - Booth on March 26 California Wildlife Day with 57 participants for munitions safety.
 - Booth on April 15 Marina Earth Day Celebration with 82 participants for munitions safety.
 - Presentation on April 18 Pacific Grove High School AP Environmental Science class with 31 participants for munitions safety and environmental cleanup.
 - Presentation on April 19 Presidio of Monterey Spouse Orientation with 7 participants for environmental cleanup. It was emphasized that Marina Coast Water District provides the drinking water since sometimes military spouses will call the BRAC office about drinking water quality.
 - Booth on April 21 California State University Monterey Bay (CSUMB) Earth Day Festival with 40 participants for munitions safety.
 - Booth on April 23 Seaside Earth Day Celebration with 77 participants for munitions safety.
 - Booth on May 12 Defense Language Institute’s Language Day event with 185 people for munitions safety.
 - Photos of recent events were shared.
- There was an inquiry on May 15 from Monterey County Weekly about munitions debris found on the former Fort Ord with the jurisdiction of the City of Marina during an Earth Day planting event (separate from the ones listed above). The article was issued May 18. The reporter also indicated they will be working on an article about groundwater.
- Information was shared with the community via mail and email about the upcoming Guided Nature Walk on May 20.
- The next CIW is on July 15 and TRC on July 18, discussing munitions cleanup topics.
- There have been some comments on HTW documents received from the Fort Ord Community Advisory Group (FOCAG). Responses to comments are in progress or already addressed.

4. Operable Unit 2 (OU2)

a. Groundwater Remedy/Monitoring –

The handout titled “Operable Unit 2 Data and Status” was reviewed. Additional discussion included:

- The OU2 Remedial Summary was added to the handout to include background information as a reference, particularly for those who are newer to the project.

- Table 1 shows that the OU2 groundwater treatment plant (GWTP) was online 100 percent (%) of the time for February, March, and April. The GWTP flow rate is approximately 1,000 gallons per minute (gpm) removing over two pounds of chemicals of concern (COCs) per month.
- Key events were discussed for February through May and upcoming events as listed in the handout.
- Table 2 shows the past four quarterly events maximum COC concentration for the A-Aquifer and the Upper 180-Foot Aquifer in Table 3.
 - The bolded and grayed cells indicate COC concentrations above aquifer cleanup levels (ACL). The maximum concentration of a COC is compared to its ACL as a ratio in the table and the maximum concentration hydraulic zone is shown.
 - In the A-Aquifer, there are 7 out of the 11 COCs with concentrations above ACLs in the past four quarterly events. The range of COC concentration/ACL ratios is approximately 2 to 8 times the ACL, with vinyl chloride the highest ratio and an outlier at 74 times the ACL.
 - Four COCs in the A-Aquifer had their maximum concentration in the past year in Hydraulic Zone 5.
 - In the Upper 180-Foot Aquifer, only one COC (TCE) is above its ACL at 3 times the ACL for the maximum concentration in the past year.
 - The graph shows the trend over the past year of the COC concentration/ACL ratios, showing a general steady or declining trend over time, with the exception of vinyl chloride.
- The First Quarter 2023 A-Aquifer COC plume map was shared. Extraction wells are located in Hydraulic Zones 1, 3, and 4.
 - Hydraulic Zone 5 well trend charts were shown. The trend charts for the OU2 A-Aquifer often have multiple COCs shown and are shown as COC/ACL ratios instead of concentrations. The yellow line indicates where the COC concentration equals its ACL.
 - MW-OU2-05-AR is located in the northwest section and downgradient area of Hydraulic Zone 5. COC concentrations were increasing, especially 1,1-dichloroethane (1,1-DCA), but had a recent decline in the First Quarter 2023 GWMP. 1,1-DCA reached over three times its ACL.
 - MW-OU2-06-AR is in the western portion of Hydraulic Zone 5 downgradient of the eastern extraction well network and upgradient of the western extraction well network. 1,2-dichloroethane (1,2-DCA) is the maximum COC/ACL ratio for this well reaching over two times the ACL and the only COC currently above the ACL. Recently there was a decline in trichloroethene (TCE) at this well.
 - MW-OU2-07-A is located upgradient of MW-OU2-05-AR, vinyl chloride has the highest COC/ACL ratio trend reaching over five times the ACL, but with a large decrease in the First Quarter 2023 GWMP. 1,1-DCA is the second highest COC/ACL ratio trend reaching over three times the ACL, also with a large decrease in the Fourth Quarter 2022 GWMP.
 - MW-OU2-08-A is located upgradient of MW-OU2-07-A with seven COCs above their ACLs previously. However, in the past two quarterly events, all COCs have not been detected, which has happened historically at this well. The well will continue to be monitored. The highest COC/ACL ratio trend is cis-1,2-dichloroethene (cis-1,2-DCE).
 - One of the decreases is due to a sample at the wrong depth.
 - Typically, volatile organic compounds (VOCs) are heavier than water and have higher concentrations at the deepest sample station.
 - Some of the data are anomalous but can be described by a possible bubble of contaminants flowing through the area.

- Active treatment of the area can also have an impact on the concentrations.
- MW-OU2-75-A is located upgradient of MW-OU2-08-A in the northeastern section of Hydraulic Zone 5. There are five COCs above their ACLs, with tetrachloroethene (PCE) as the highest COC/ACL ratio trend reaching 3.5 times the ACL. Slight decrease in concentrations in the First Quarter 2023.
- The First Quarter 2023 Upper 180-Foot Aquifer COC plume map was shared. TCE was not detected above the ACL in Hydraulic Zone 8 in the First Quarter 2023, but has been in the past. Hydraulic Zone 8 well charts were shown with TCE concentration compared to its ACL.
 - MW-OU2-28-180 is located east and downgradient in Hydraulic Zone 8. TCE was above the ACL a few times previously but has been below the ACL the past couple quarterly events.
 - MW-OU2-62-180 is located west and upgradient in Hydraulic Zone 8 with TCE concentrations up to above 12 micrograms per liter ($\mu\text{g/L}$) in 2019 and has been declining since then and below the ACL in the past couple years.
- There was a discussion about increased precipitation, groundwater elevations, and potential impacts to COC concentrations.
 - There has been an overall decline in concentrations in the First Quarter 2023 event and it is unclear if it is related to the increase in precipitation during the 2022-2023 wet season. This will continue to be monitored in the Second Quarter 2023.
 - In the late 1990s, when there was an El Niño wet season event, groundwater elevations in the A-Aquifer rose approximately 10 feet within three months and had gradual decline in elevation over the next several years, but no apparent change in COC concentration that correlated to changes in groundwater elevations.

b. Treated Water Reuse – The handout titled “Operable Unit 2 Treated Water Reuse” was reviewed. The total treated water used since October 2016 is approximately 4.4 million gallons.

c. Landfills Operations and Maintenance (O&M) – The handout titled “Former Fort Ord Operable Unit 2 Landfills Data and Status” was reviewed. Additional discussion included:

- A tarp was placed on the eroded slope section of the northern side of Area F on April 12.
- The quarterly Monterey County Department of Health (MCDH) OU2 Landfills inspections were conducted on February 21 and May 9 with no issues.
- The Second Quarter 2023 annual probe monitoring, volatile organic compound sampling, and source testing were completed earlier this month. All probe monitoring results were normal.
- The thermal treatment unit (TTU) had a failed Siemens analyzer pump which went offline February 14 and was replaced and online March 7. The regulatory agencies were notified via email when the TTU had downtime due to maintenance and repair activities. The TTU is now operating normally.
- The amount of methane removed annually from the Landfills has been declining since TTU startup in 2007 as expected. Accordingly, the TTU operating hours have been reduced to maintain an operational methane concentration.
- The most recent methane reading from the TTU influent was 37.3% and has been stabilized.

5. Sites 2 and 12 (Sites 2/12)

The handout titled “Sites 2 and 12 Data and Status” was reviewed. Additional discussion included:

- The Sites 2/12 Remedial Summary was added to the handout to include background information as a reference, particularly for those who are newer to the project.

- The GWTP is operated with a pulse pumping strategy, online for one week, and offline for one week. This has been successful in removing additional PCE mass, especially in stagnant areas around extraction well EW-12-08-180U. EW-12-08-180U is the only well with PCE above the ACL at Sites 2/12. EW-12-05-180M operation aids in optimization of the capture of PCE.
- The soil vapor treatment unit (SVTU) was shut down in March due to low soil gas COC concentrations during the First Quarter soil gas monitoring program (SGMP) event. The regulatory agencies were notified via email prior to the SVTU shut down. The SVTU was restarted May 12 after Second Quarter 2023 soil gas sampling was completed. Once results are received, the operational strategy for SVTU will be determined.
- On April 13, soil gas probe cluster SG-12-13 was damaged by construction work. The probe was decommissioned in place by the construction personnel with Monterey County and Army approval on April 25. The regulatory agencies were notified of the decommissioning via email on May 10.
- The Shea Homes site developer would like to have a few older groundwater wells (EW-12-04-180U, EW-12-14-180M, and MW-12-05-180) and one soil gas probe (SG-12-18) decommissioned due to planned construction work. There is no Shea Homes work plan in progress for the decommissioning as of now. The Army will likely not be ready to decommission the wells for at least a few years. Prior to decommissioning, a Work Plan will undergo document review. Wells recommended for decommissioning are also listed in the Annual Reports.
- The First Quarter 2023 GWMP PCE results were discussed.
 - TCE groundwater concentrations have been below the ACL for quite some time, so the TCE data were not shown on the handout.
 - PCE groundwater concentrations for all wells, except EW-12-08-180U, have been below the ACL for quite some time.
 - The trend chart for EW-12-08-180U shows PCE rebound after the GWTP was shut down and variable concentrations after pulse pumping was implemented. There is likely residual mass of PCE coming through the area in “bubbles.”
 - The First Quarter 2023 groundwater COC plume map shows a small PCE plume around EW-12-08-180U.
- The First Quarter 2023 SGMP data were presented.
 - After analytical results from the First Quarter 2023 SGMP event, the soil vapor extraction and treatment system (SVETS) was shut down. The SVETS was restarted on May 12 after the Second Quarter 2023 SGMP event was completed.
 - In the First Quarter 2023 SGMP event, COCs were either not detected or were well below the soil gas screening level (SG-SL).
 - The only soil gas probes with concentrations above the soil gas cleanup level (SGCL) was TCE at SG-12-04 in the Fourth Quarter 2022. As of the First Quarter 2023, there were no concentrations above SG-SL or SGCL due to operation of the SVTU.
 - Columns were added to Table 4 to indicate the last time there was an exceedance of the TCE and PCE SG-SL or SGCL at a soil gas probe.
 - SG-12-02, located by Target, is outside the influence of the SVETS, but shows natural attenuation of COCs.
 - The TCE concentrations at SG-12-04 decreased rapidly with SVETS operation and have a gradual rebound after SVETS shut down. There may be geologic paleosols in the vadose zone that are desorbing COCs and causing concentration rebound in soil gas.
 - SG-12-07 is located in the parking lot area and has PCE concentrations with mild rebound after SVETS shutdown, but remained below the SGCL.

6. Operable Unit Carbon Tetrachloride Plume (OUCTP)

a. Groundwater Remedy/Monitoring – The handout titled “Operable Unit Carbon Tetrachloride Plume Data and Status” was reviewed. Additional discussion included:

- The OUCTP Remedial Summary was added to the handout to include information about the site as reference, especially for those who are newer to the project.
- A Work Plan is in review to install three new monitoring wells in the A-Aquifer Hydraulic Zone 5 in the downgradient City of Marina area.
- A proposal is in progress for installing three monitoring wells in the A-Aquifer Hydraulic Zone 2.
- A Remedial Design Addendum is in review for installing one additional extraction in the Upper 180-Foot Aquifer.
- The First Quarter 2023 GWMP data were discussed:
 - The max COC concentrations over the past year were compared to ACLs as ratios in Tables 1-3.
 - The A-Aquifer had two COCs above ACLs: CT and chloroform at 18 and 2 times their ACLs, respectively. The maximum concentration of CT was located in Hydraulic Zone 5 and the maximum concentration of chloroform was in Hydraulic Zone 4.
 - The Upper 180-Foot Aquifer had CT detected at approximately 15 times its ACL.
 - The Lower 180-Foot Aquifer had CT and TCE detected at approximately 9 and 2 times their ACLs, respectively.
 - The trend chart for the ratios shows COC concentrations generally declined in the First Quarter 2023.
 - The First Quarter 2023 GWMP event shallow CT concentration results in the A-Aquifer Hydraulic Zone 5 wells in the City of Marina were discussed.
 - All results were below the CT ACL.
 - The trend chart for MW-BW-80-A shows two sample stations during each event, located at the top two stations in the well. They have similar concentrations, were above the ACL for a while and both went below the ACL.
 - The First Quarter 2023 Upper 180-Foot Aquifer CT plume map shows there are two plumes. MP-BW-46-170 is located in the northern upgradient plume with the highest CT concentration in the aquifer. CT concentrations have been above the ACL since monitoring began.
 - The First Quarter 2023 Lower 180-Foot Aquifer CT plume map shows two wells have CT concentrations above the ACL and one well has a TCE concentration above the maximum contaminant level (MCL).
 - MP-BW-49-316 CT trend chart shows concentrations above the ACL since monitoring began with a seasonal trend.
 - MW-BW-59-180 had an abnormal decrease in the TCE concentration below the MCL in the Fourth Quarter 2022 but increased above the MCL in the First Quarter 2023.

b. TCE in the Lower 180-Foot Aquifer – TCE is not a COC for the Lower 180-Foot Aquifer, but it is being monitored to assess any potential impact on the downgradient drinking water supply wells.

- A chart with First Quarter 2023 TCE data for the Lower 180-Foot Aquifer was provided in the OUCTP handout in agenda item 6a.
- All of the wells had a decrease in TCE concentrations in the First Quarter 2023 except for an increase at MW-BW-59-180.
- In a future BCT meeting, the facts and recommendation for an Explanation of Significant Differences (ESD) will be presented to address TCE in the Lower 180-Foot Aquifer.

7. Per- and Polyfluoroalkyl Substances (PFAS)

PFAS Preliminary Assessment/Site Inspection (PA/SI) – The handout titled “Per- and Polyfluoroalkyl Substances (PFAS) Preliminary Assessment/Site Inspection” was reviewed. Additional discussion included:

- SI fieldwork was completed at the seven sites indicated on the map.
- The SI Narrative Report is a primary document in preliminary draft review and scheduled to be issued draft in June. The regulatory agencies will likely ask for additional review time.
- The full list of 40 PFAS compounds included in the U.S. Environmental Protection Agency (EPA) laboratory Method 1633 were reported.
- Table 1 lists the six PFAS compounds with EPA regional screening levels (RSLs) and Department of Defense (DoD) project screening levels (PSLs).
 - The two sets of screening levels are shown under two exposure scenarios: residential and industrial/commercial worker.
 - In previous HTW meetings, the PSLs/RSLs at a Hazard Quotient (HQ) of 1 were used as the comparison criteria. However, the EPA and DoD guidance states that, if more than one PFAS is detected, the analytical results should be compared to the PSLs/RSLs at an HQ of 0.1. PSLs/RSLs at HQ = 1 and HQ = 0.1 were added to the table.
 - The interpretation of the guidance is that HQ of 0.1 is used if any two or more of the 40 PFAS compounds were detected in one sample and not just the six PFAS compounds with screening levels.
 - Previous samples/sites described as having no screening level exceedance may now have an exceedance when applying PSLs/RSLs at HQ = 0.1. Samples that had a PFAS detection did have more than one PFAS detected.
 - In the handout, data that exceeded a screening level are color-coded with blue for exceedances at HQ = 1 and green for exceedances at HQ = 0.1.
- Table 2 lists quality control (QC) and investigation-derived waste (IDW) sample analytical results.
 - PFAS were not detected in any QC samples, indicating no cross-contamination issues occurred during SI fieldwork.
 - Potable water taken from a spigot at the OU2 GWTP was used during installation of monitoring well MW-10-07-180. This potable water source was sampled and no PFAS were detected.
 - One soil IDW sample had multiple PFAS detections, with the concentration of perfluorooctanesulfonic acid (PFOS) above the residential scenario screening level at HQ = 0.1, but below the industrial/commercial screening levels. Since the soil IDW is disposed of at the OU2 Landfills, a non-residential area, no further actions are necessary.
 - No PFAS were detected in the soil IDW sample collected from the MW-40A-01-A borehole with an unusual dark color.
- Maps of the seven sites were presented showing the sampling locations and analytical results for detected PFAS with screening levels. Results above screening levels were color-coded blue for exceedances at HQ = 1 and green for exceedances at HQ = 0.1.
 - Site 2 – Main Garrison Sewage Treatment Plant: PFAS in soil samples were detected at concentrations below screening levels. PFAS in groundwater samples were detected at concentrations above the HQ = 0.1 residential screening levels.
 - Main Garrison Fire Station: PFAS were detected in soil samples at concentrations above screening levels (above industrial HQ = 1 and above residential HQ = 0.1). A

downgradient groundwater sample had a PFAS detection above the residential HQ = 0.1 screening level.

- Site 10 – Former Burn Pit: PFAS in soil samples were detected at concentrations below screening levels and there is no apparent source of PFAS to groundwater.
- Site 40A – East Fritzsche Army Airfield (FAAF) Helicopter Defueling Area: PFAS in soil samples were detected at concentrations below screening levels.
- OU2 Fort Ord Landfills: Potentially impacted soil is encapsulated in the Landfills and is not a source to groundwater. PFAS were detected in groundwater samples above screening levels (above the residential HQ = 1 screening level and above the residential HQ = 0.1 screening level).
- FAAF Fire & Rescue Station: PFAS were detected in soil and groundwater samples at concentrations above screening levels (soil samples above residential HQ = 0.1 and groundwater samples above residential HQ = 1).
- FAAF Fire Drill Area: PFAS were detected in soil samples at concentrations below screening levels. PFAS were detected in groundwater samples above residential HQ = 1 screening levels.
- Maeve Clancy with the USEPA thinks it is helpful to have the information about HQ = 1 exceedance even when HQ = 0.1 exceedance criteria is used. Riz Sarmiento with DTSC noted that HQ = 0.1 is good for representing cumulative hazards.
- The SI fieldwork has determined where PFAS concentrations exceeding screening levels is located, which then triggers a Remedial Investigation (RI) as the next step in the CERCLA [Comprehensive Environmental Response, Compensation, and Liability Act] process.

8. Basewide Range Assessment (BRA) and Lead Evaluation Status

There was no handout for the BRA and Lead Evaluation Status. Discussion included:

a. BRA – Some comments were received for the Comprehensive BRA Report and edits are in progress. The first priority will be FOCAG responses for agency review.

b. Lead Evaluation at HA 18D and HA 23D – The Army is preparing an ESD for Site 39 with a lead cleanup value for soil for a residential use scenario. Internal Army comments were received, and edits are in progress. Maeve Clancy with the USEPA said there is no recent update from USEPA for a lead cleanup value. Maeve will ask for an update and see if any other sites are moving ahead with a cleanup level. Riz Sarmiento with DTSC has seen other military sites using an 80 mg/kg lead cleanup level and will let Maeve know which sites they were.

c. Habitat Restoration – The handout titled “Site 39 Inland Ranges Habitat Restoration Status Update” was reviewed. Additional discussion included:

- The 2022 Annual Habitat Restoration Report was finalized in April and the results were discussed at the annual habitat meeting on April 19. The years 5 and 8 of the monitoring program were also discussed.
- Sand gilia surveys were completed.
- Photo point monitoring was completed.
- Monterey spineflower surveys are in progress.
- Maintenance activities were conducted such as removing pampas grass and Monterey cypress plants at HAs 34, 36, and 37. Monterey cypress are undesirable in maritime chaparral habitat and may have been infiltrating from the mulch.

9. Federal Facility Agreement (FFA) Schedule

a. Status Update – The FFA schedule is provided to the agencies with the upcoming primary documents with the month the Draft and Draft Final versions will be issued. Draft versions have a 60-day review period, and Draft Final versions have a 30-day review period.

b. Document Schedule – The handout titled “May 19, 2023, BCT Deliverable Schedule” was reviewed, and near-term documents were identified.

10. Action Items

The handout titled “HTW BCT 2023 Action Items” was reviewed.

- Actions Item #1-2 are still in progress and were discussed previously.
- A new item was discussed. A guidance document is being developed to determine when and how to accept offsite soil at the OU2 Landfills as future cover material. The Record of Decision (ROD) criteria and DTSC soil reuse guidance were used as resources for the document. The document will be sent to regulators for review.

11. Calendar Update

The calendar was reviewed for upcoming community outreach and HTW BCT meeting dates:

- Guided Nature Walk: May 20
- HTW BCT: July 14 at 1:30 pm
- CIW (MR): July 15 at 9:00 am
- TRC (MR): July 18 at 10:00 am
- HTW BCT: Oct 27 at 1:30 pm