

**Travis Air Force Base
Environmental Restoration Program
Restoration Program Manager's
Meeting Minutes
15 November 2017, 0930 Hours**

Mr. Lonnie Duke of the Air Force Civil Engineer Center (AFCEC) Restoration Installation Support Section (ISS) conducted the Restoration Program Manager's (RPM) meeting on 15 November at 0930 hours in Building 248 at Travis AFB, California. Attendees included:

Lonnie Duke	AFCEC/CZOW
Glenn Anderson	AFCEC/CZOW
Milton 'Gene' Clare	AFCEC/CZOW
Angel Santiago Jr.	AFCEC/CZOW
Merrie Schilter-Lowe	Travis AFB/PAO
Adriana Constantinescu (via telephone)	RWQCB
Ben Fries (via telephone)	DTSC
Nadia Hollan Burke (via telephone)	USEPA
Indira Balkissoon (via telephone)	Techlaw, Inc
Mike Riggle (via telephone)	USACE/Omaha
Jeff Gamlin (via telephone)	CH2M
Leslie Royer	CH2M
Mike Wray	CH2M

Handouts distributed prior to or at the meeting, discussions, and presentations included:

Attachment 1	Meeting Agenda
Attachment 2	Master Meeting and Document Schedule
Attachment 3	SBBGWTP Monthly Data Sheet (October 2017)
Attachment 4	CGWTP Monthly Data Sheet (October 2017)
Attachment 5	LF007C GWTP Monthly Data Sheet (October 2017)
Attachment 6	ST018 Monthly Data Sheet (October 2017)
Attachment 7	Presentation: OSWER Site Closure Guidance
Attachment 8	Presentation: Site SS035 Site Closure

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 19 October 2017 RPM meeting minutes were approved and finalized as written.

B. Action Item Review.

Action items from October 2017 were reviewed.

Action item 1 is ongoing: Ms. O'Sullivan to provide updates on perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA). 15 November 2017 update: The last round of samples for the Site Inspection (SI) were collected on 23 October 2017. Sampling is now complete; the SI Report is expected to be ready for review in late January 2018.

C. Master Meeting and Document Schedule Review (see Attachment 2)

The Travis AFB Master Meeting and Document Schedule (MMDS) was discussed during this meeting (see Attachment 2).

Travis AFB Annual Meeting and Teleconference Schedule

The next RPM meeting will be a teleconference held on Wednesday 17 January 2018, at 0930 hours.

Lonnie is scheduled to be in Alabama during the scheduled RPM teleconference in September 2018. This meeting date (09-19-2018) may need to be re-scheduled.

Travis AFB Master Document Schedule

- Community Relations Plan (CRP): No change was made to the schedule. The draft document has been sent to AFCEC Public Affairs. A schedule update is expected at the next RPM meeting.
- Work Plan for the Fourth Five-year Review: The Response to Comments Due date was changed to 18 October 2017 to reflect actual submittal date of RTCs to EPA; the remainder

of the schedule was changed accordingly. This document will be moved to the history in January.

- Amendment to the WABOU Soil ROD for Travis AFB ERP Sites DP039, SD043, and SS046: No change was made to the schedule.
- Amendment to the NEWIOU Soil ROD for the Travis AFB ERP Sites SS016 and SD033: This is a new document/new schedule.
- Potrero Hills Annex (FS, PP, and ROD): No change was made to the schedule. Mr. Anderson said the contractor is completing the field work and he will ask for updates for the January meeting.
- Data Gap Investigation Results Technical Memorandum for Soil Sites SD033, SD043, and SS046: The Agency Comments Due date was changed to 20 November 2017 to accommodate requested additional review time; the remainder of the schedule was changed accordingly. Ms. Burke noted that she and her staff have started the review process, but she is unsure if EPA will be able to meet the requested date due to recent wildfire deployments. She may request an additional 30 days; if needed, she will submit a formal request.
- Data Gap Investigation Results Technical Memorandum for Soil Site SS016: Draft to Agencies date changed to 21 November 2017 to accommodate additional preparation time, the rest of the dates were changed accordingly. Mr. Anderson noted the upcoming holidays and requested regulators let him know if additional review time will be necessary.
- Quarterly Newsletters (January 2018): The schedule was updated to reflect the January 2018 newsletter.
- 2016 Annual GRISR: The Response to Comments date has been changed to 15 December 2017; the remainder of the schedule was changed accordingly.
- Site TS060 Removal Action Completion Report: The Predraft to AF/Service Center date was changed to 8 November 2017 to account for additional internal review time. The rest of the schedule was changed accordingly. Mr. Anderson noted the upcoming holidays and requested regulators let him know if additional review time will be necessary.
- Site SS035 Site Closure Report: This is a new document and a new schedule.
- POCO Evaluation/Closure Report for DERA-funded Oil/Water Separators OW040, OW047, OW048, OW049, OW052, OW050, OW052, OW055, OW056, and OW057. Draft to Agencies Due date was changed to 29 November 2017; the rest of the dates were changed accordingly.
- The following documents were moved to History:
 - Site ST032 POCO Well Decommissioning and Site Closeout Technical Memorandum
 - POCO Evaluation/Closure Report for DERA-funded Oil/Water Separators OW040, OW047, OW048, OW049, OW052, OW050, OW052, OW055, OW056, and OW057

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

South Base Boundary Groundwater Treatment Plant, October 2017 (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 99.9% uptime, and 4.1 million gallons of groundwater were extracted and treated in October 2017. All treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 94.4 gallons per minute (gpm). Electrical power usage was 9,261 kWh, and approximately 7,653 pounds of CO₂ were created (based on DOE calculation). Approximately 1.68 pounds of volatile organic compounds (VOCs) were removed in October. The total mass of VOCs removed since startup of the system is 492.6 pounds.

Optimization Activities for SBBGWTP: Based on two aquifer tests conducted in June 2017, it was determined that five (5) new extraction wells would be needed to optimize removal of residual 1,2-DCA at Site FT005. The well installations were completed in October 2017, and the wells will be connected to the SBBGWTP in November 2017.

Central Groundwater Treatment Plant, October 2017 (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 99.3% uptime with approximately 1,135,193 gallons of groundwater extracted and treated in October 2017. All treated water was discharged to the storm sewer system which discharges to Union Creek. The average flow rate for the CGWTP was 25.6 gpm. Electrical power usage was 1,761 kWh for all equipment connected to the Central Plant, and approximately 2,191 pounds of CO₂ were generated. Approximately 1.93 pounds of VOCs were removed from groundwater by the treatment plant in October. The total mass of VOCs removed since the startup of the system is 11,475 pounds.

Optimization Activities for CGWTP: No optimization activities are reported for the month of October 2017.

LF007C Groundwater Treatment Plant, October 2017 (see Attachment 5)

The Subarea LF007C Groundwater Treatment Plant (LF007C GWTP) performed at 89.7% uptime with approximately 188,368 gallons of groundwater extracted and treated in October 2017. All treated water was discharged to the Duck Pond for

beneficial reuse. The average flow rate was 4.9 gpm. This plant operates on solar power only. Approximately 1.95×10^{-3} pound of VOCs was removed from groundwater by the treatment plant in October. The total mass of VOCs removed since the startup of the system is 174.38 pounds.

Optimization Activities for LF007C GWTP: No optimization activities are reported for the month of September 2017.

Note: On 6 September, the LF007C GWTP was shut down because of high pressures; the shutdown was not identified until 13 September when the system was planned to be shut down because of the potentially false-positive TPH exceedances. On 14 September, the system was restarted for 2 hours prior to collecting the additional confirmation samples. The system was shut down after the samples were collected, and remained off line for the remainder of the reporting period. The system was restarted on 4 October 2017.

Mr. Wray followed up regarding the TPH exceedances and confirmation sampling, stating that the exceedances were not related to site contamination. The source of the TPH in these samples will be investigated in November 2017 as part of the periodic basewide sampling effort.

Mr. Wray also noted that the seasonal rains have begun, adding that we will inspect this GWTP after any rain event, and if standing water is observed, the system will be shut down.

ST018 Groundwater (MTBE) Treatment Plant, October 2017 (see Attachment 6)

Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 100% uptime with approximately 146,380 gallons of groundwater extracted and treated in October 2017. All treated water was discharged to the Fairfield – Suisun Sewer District. The average flow rate for the ST018 GWTP was 3.4 gpm. Electrical power usage for the month was 81 kWh for all equipment connected to the ST018 GWTP. The total CO₂ equivalent, including an estimate for the carbon change-out, equates to approximately 60 pounds. Approximately 0.07 pound of BTEX, VOCs, and TPH was removed in October by the treatment plant, and approximately 0.00 pound of MTBE was removed from groundwater. The total BTEX, MTBE and TPH mass removed since the startup of the system is 42.7 pounds, and the total MTBE mass removed since startup of the system is 10.6 pounds.

Note: Electrical power use at the ST018 GWTP is only for the alarm system and a pump that pushes water through the GAC vessels for treatment. The four groundwater extraction pumps in the system are all solar powered.

Optimization Activities for ST018 GWTP: Beginning in October 2017, three of the four extraction wells (EW2014x18, EW2016x18, and EW2333x18) began operating in a two-week “pulse-mode” (two weeks off, two weeks on, two weeks off, and so forth).

The furthest downgradient extraction well EW2019x18 will not be turned off during the pulsed mode operation.

3. Presentations:

A) OSWER Site Closure Process (See Attachment 7)

Mr. Gamlin provided an overview of the OSWER guidance and data considerations related to the site closure process. Highlights of the presentation include:

The purpose of the presentation is proactive planning, to open dialogue for advanced planning for forthcoming site closures. The Air Force will draft a white paper with recommended data collection and evaluation procedures for review.

A high level summary of the approach we will follow includes consideration of active vs. passive remediation (i.e., monitored natural attenuation versus pump and treat) and how concentration trends may be affected, site closure monitoring requirements dictated in the groundwater Record of Decision, considerations of recommendations set forth in OSWER 9283.1-44 (guidance in OSWER 2011 9320.2-22 will also be considered, but this presentation focuses on groundwater; therefore it discusses the 2014 recommended approach for evaluating completion of groundwater restoration remedial action at groundwater monitoring wells), consideration of groundwater data trends relative to the conceptual site model, and use of appropriate statistical methods and tools as recommended in the 2014 OSWER guidance.

There are two phases of monitoring according to OSWER: remediation monitoring and attainment monitoring. Remediation monitoring is complete when all the RAOs for all site COCs have been achieved as set forth in the groundwater ROD. Attainment monitoring is complete when the contaminant cleanup level for all site COCs has been met and continues to be at or below the 95% Upper Confidence Limit (UCL) for 2 years to support closure.

OSWER recommends semiannual sampling for two years for attainment monitoring; however, there is flexibility in how many sampling events must be completed within the attainment monitoring timeframe.

The site CSM dictates what is done for monitoring at each site, considering factors such as groundwater velocity and active vs. passive remediation. The guidance recommends evaluating only what is related to the site release history in the CSM. Mr. Gamlin noted that comingled plumes exist as do trespass plumes, but these need to be considered and tied to the site identifier with which they are associated.

The OSWER guidance allows use of data across both phases of monitoring and does not specify a number of samples to be collected; it must be enough to calculate a 95% UCL. Passive remedies may require fewer data points; active remedies may require more due to system shutdown and rebound effects. Many sites will have long monitoring periods to evaluate trends.

It is appropriate to look at the entire trend for an MNA or other passive remedy and for each phase separately for active remedies due to rebound periods and other site condition changes. Outliers in data happen, that's why the 95% UCL is important.

If a site COC concentration from a specific well is below the MCL throughout all monitoring events, then there is no need to complete a statistical evaluation of the data from that well because concentrations have not exceeded the MCL.

A technical memorandum outlining the Air Force's proposed rationale for site closure monitoring and data evaluation is forthcoming. Additional information is required for addressing comingled and trespass plumes; however, infrastructure can be transferred to other sites if it has served its purpose on its original site but can assist in monitoring comingled or trespass plumes from upgradient or crossgradient sources.

B) Site SS035 Site Closure (See Attachment 8)

Ms. Royer provided an overview of the Site SS035 Site Closure Report, expected to be submitted in December. Please refer to Attachment 8 for details. Highlights of the presentation include the following:

By the time the groundwater ROD for this site was signed, contaminant concentrations at the site had dropped below selected cleanup levels.

Site closure monitoring was performed in seven monitoring events conducted from 2Q2014 through 2Q2017; results indicate that site related COCs have remained below cleanup levels, and all requirements specified in the Groundwater ROD have been met.

The infrastructure (monitoring wells) will be retained to support West Industrial Operable Unit (WIOU) and Site SS014 monitoring.

The site is on the periphery of the large WIOU TCE plume, bordered on the northwestern, western, and southern sides by the much larger Site SD037, and overlapped by petroleum-only contaminated Site SS014 Subsite 2 on the northeastern side.

Site features include facilities used for aircraft maintenance, two oil water separators (both of which were cleaned and closed in place in 2016), and a hydraulic lift.

Two contaminant sources were identified utilizing soil gas and groundwater data during the 1994-1995 remedial investigation – the former oil water separator located at the southwestern corner of Facility 818 and the hydraulic lift storage area are in the same vicinity.

The maximum TCE concentration detected in groundwater during the RI was 21 ug/L near well MW818x35.

Remedial actions taken at the site include no action for soil (PCBs and metals found to pose acceptable present and future risk), OWSs were certified clean and closed in 2016, an interim remedy of MNA was selected to address TCE and TPH-D in groundwater over the period leading to the groundwater ROD (1997 – 2014), as well as the final groundwater remedy. The Groundwater ROD specified that site closure monitoring should begin because cleanup levels had been attained.

The depth to groundwater is approximately 10 feet bgs. Approximately 30 feet of alluvium overlies the weathered bedrock. Groundwater flows primarily through the low permeability alluvium. Groundwater flow is generally to the southwest, the presence of a southwest trending groundwater trough results in more southerly flow in the northern portion of the site, and more westerly flow in the eastern portion of the site. The trough continues into the WIOU, so contamination from multiple sites flows towards the trough and coning.

Cleanup levels at the site are 5 ug/L for TCE, and the environmental screening level of 100 ug/L for TPH-D. These cleanup levels have been attained through attenuation over the interim period leading up to the groundwater ROD. Per the ROD, closure monitoring was initiated in 2014 to verify the maintenance of these levels.

Seven closure monitoring events were conducted between 2Q2014 and 2Q2107 at the required 4 Site SS035 monitoring wells. Two of these wells are located upgradient of the historical Site SS035 source area: one in the historical source area for Site SS014, and one that is impacted by the adjacent WIOU groundwater plume. Both of these wells are impacted by contamination from other sites. Data from downgradient wells was evaluated to confirm COC concentrations downgradient of the site remained below the cleanup level and ESL.

In 2Q 2017, TCE concentrations did not exceed the cleanup level at any well, and TPH-D concentrations did not exceed the ESL, with the exception of one upgradient well impacted by nearby Site SS014. The TCE cleanup level has been maintained at the Site SS035 historical source area wells, as well as at the downgradient well, over the closure monitoring period. TCE concentrations in excess of the cleanup level have been observed at an upgradient well which is impacted by adjacent WIOU groundwater plume.

TPH-D remains below the ESL in the former source area wells; aside from well MWRW1x35, which is impacted by Site SS014. TPH-D concentrations downgradient of the site are below the ESL.

The two years of closure monitoring required by the groundwater ROD have been completed, and demonstrate that groundwater contamination resulting from site related activities has naturally attenuated and has remained below cleanup levels. Groundwater site closure requirements specified in the ROD have been met and closure is appropriate for Site SS035.

Site monitoring wells will be retained to support the GRISR and for monitoring of the adjacent WIOU plume and Site SS014, subsite 2.

During the presentation, a discussion was held regarding the fact that the former source area wells for SS035 are shown on the figures as being outside of the site boundaries. The regulators requested that the Air Force look into moving the site boundaries slightly to the west to include the former source area wells. Moving the Site SS014 boundaries to better capture this site was also discussed. The Air Force agreed to check on the possibility of moving these boundaries.

C) Program Update: Activities Completed, In Progress, and Upcoming (see Attachment 9)

Mr. Wray reported on the status of fieldwork and documents which are completed, in progress, and upcoming. Please refer to Attachment 9 for the full briefing.

4. New Action Item Review

The Air Force will determine if site boundaries can be changed.

5. PROGRAM/ISSUES/UPDATE

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Monika O'Sullivan	Ms. O'Sullivan to provide updates on PFOS and PFOA as she becomes aware of them.	Ongoing	Open