

**Travis Air Force Base  
Environmental Restoration Program  
Remedial Program Manager's  
Meeting Minutes**

**26 January 2011, 0930 Hours**

Mr. Glenn Anderson, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 26 January at 0930 in the Main Conference Room, Building 570, Travis AFB, California. Attendees included:

- Glenn Anderson Travis AFB
- Lonnie Duke Travis AFB
- Merrie Schilter-Lowe Travis AFB
- Gregory Parrott Travis AFB
- Dezso Linbrunner United States Army Corp of Engineers (USACE),  
Omaha District
- Alan Friedman California Regional Water Quality Control Board  
(RWQCB)
- Jose Salcedo California Department of Toxic Substances Control  
(DTSC)
- Nadia Hollan Burke United States Environmental Protection Agency  
(USEPA)
- Rich Freitas United States Environmental Protection Agency  
(USEPA)
- Mary Snow Techlaw, Inc
- Rachel Hess ITSI
- Mike Wray CH2M HILL
- Loren Krook CH2M HILL
- Doug Berwick CH2M HILL

Handouts distributed at the meeting and presentations included:

- Attachment 1 Meeting Agenda
- Attachment 2 Master Meeting and Document Schedule
- Attachment 3 SBBGWTP Monthly Data Sheet (November and December 2010)
- Attachment 4 CGWTP Monthly Data Sheet (November and December 2010)
- Attachment 5 NGWTP Monthly Data Sheet (November and December 2010)
- Attachment 6 Presentation: SS015 EVO Injection Update
- Attachment 7 Presentation: Program Update: Activities Completed, In Progress  
and Upcoming
- Attachment 8 Presentation: Field Schedule Update

- Attachment 9 Presentation: Focused Feasibility Study Review

## 1. ADMINISTRATIVE

### A. Previous Meeting Minutes

The 01 December 2010 RPM meeting minutes were approved and finalized as written. With the following exception: Mr. Linbrunner requested to include the definition of the acronym (ORD) on page three in the ISCO/ERD paragraph, third sentence added: Office of Research and Development.

### B. Action Item Review.

Action items from December were reviewed.

Action item one still open. No change.

Action item two still open. No change.

Action item three still open. No change in due date. Travis AFB was added to the 'Responsible' column.

### 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

— Mr. Anderson explained to Ms. Burke why the 'RPM Teleconference' column is still listed on the schedule without dates. Teleconferences were originally held to give the regulatory representatives an open forum to discuss any issues candidly with Travis AFB project managers. It was initially beneficial to hold these meetings, but as the field work progressed, there has been less of a need. Travis will keep the 'RPM Teleconference' column on the schedule as it might be needed in the future.

#### Travis AFB Master Document Schedule

— Focused Feasibility Study (FFS): The response to comments meeting date was changed to coincide with the RPM meeting in April.

— Proposed Plan (PP): Public Comment Period date has been pushed up one week to allow the Proposed Plan recipients time to review the document before the October RAB meeting. The Draft Final and Final dates were changed accordingly.

— Groundwater Record of Decision (ROD): No change.

- Comprehensive Site Evaluation Phase II: Response to Comments (RTC) meeting date was changed. Travis has received comments from EPA and is working with Army Corp of Engineers and their contractor to thoroughly review and respond to EPA comments. The rest of the dates have changed accordingly.
- Potrero Hills Annex: (FFS, PP, and ROD): No change.
- ISCO/ERD Technical Memorandum: The Response to Comments meeting was changed to coincide with the February 2011 RPM meeting. Travis AFB is working on response to comments. The ‘Response to Comments Due’ and ‘Final Due’ dates have been changed accordingly.
- Site SS015 Field Implementation Plan: The RTC date was changed. The draft responses to agency will go out next week. The RTC was changed to coincide with the next RPM meeting scheduled in February 2011. The ‘Response to Comments Due’ and ‘Final Due’ dates have been changed accordingly.
- Sites SS014 and ST032 Tier 1 POCO Evaluation Report: The Pre-draft date was changed at Mr. Wray’s request in the 01 December 2010 RPM meeting. The rest of the dates were changed accordingly.
- Site ST018 POCO Field Implementation Report: The report submittal dates have changed, because the system cannot yet be turned on. Travis is waiting for the NPDES permit approval (expected in February).
- Site SD036 RPO Field Implementation Plan: The ‘Draft to Agencies’ and ‘Draft to RAB’ dates were changed to ease the high volume of documents being published. The rest of the dates were changed accordingly.
- 2010 GWTP RPO Annual Report: No change.
- Baseline Implementation Report: New document added.
- Quarterly Newsletter (January 2011): No change.
- 2009/2010 GSAP: The date for the ‘Agency Comments Due’ has been changed at the request of EPA. Travis is reviewing the EPA comments. The Water Board and DTSC will submit their comments before the 01 February 2011 due date. The remainder of the dates has changed accordingly.
- 2010 CAMU Annual Report: New document added. This informational report documents inspection of the CAMU in 2010.

## 2. CURRENT PROJECTS

### Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the treatment plant status.

#### **South Base Boundary Groundwater Treatment Plant (see Attachment 3)**

**November:** The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 4.8 million gallons of groundwater were extracted and treated during the month of November 2010. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 88.6 gallons per minute (gpm), and electrical power usage was 16,380 kWh. Approximately 22,441 pounds of CO<sub>2</sub> were created (based on DOE calculation); approximately 1.77 pounds of volatile organic compounds (VOCs) were removed in November. The total mass of VOCs removed since the startup of the system is 390 pounds.

Optimization Activities: None to report for the month of November.

**December:** The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 91.7% uptime, and 2.3 million gallons of groundwater were extracted and treated during the month of December 2010. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 82.3 gallons per minute (gpm), and electrical power usage was 5,580 kWh. Approximately 7,645 pounds of CO<sub>2</sub> were created (based on DOE calculation); approximately 0.81 pounds of volatile organic compounds (VOCs) were removed in December. The total mass of VOCs removed since the startup of the system is 391 pounds.

Optimization Activities: There were two electrical outages in the month of December both weather/rain related. The electrical power usage still appears to be abnormally high (according to the meter), and is continuing to be investigated.

#### **Central Groundwater Treatment Plant (see Attachment 4)**

**November:** The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.12 million gallons of groundwater extracted and treated during the month of November 2010. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 30.7 gpm, and electrical power usage was 55 kWh for all equipment connected to the Central plant; approximately 75 pounds of CO<sub>2</sub> were created. Approximately 3.10 pounds of VOCs were removed from groundwater in November. The total mass of VOCs removed since the startup of the system is 11,201 pounds.

Optimization Activities: In November 2010, the three 2,000 GAC vessels were removed from the CGWTP and relocated to Site ST018 for use in a new groundwater treatment system.

**December:** The Central Groundwater Treatment Plant (CGWTP) performed at 99.0% uptime with approximately 1.40 million gallons of groundwater extracted and treated during the month of December 2010. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 28.8 gpm, and electrical power usage was 75 kWh for all equipment connected to the Central plant; approximately 103 pounds of CO<sub>2</sub> were created. Approximately 5.93 pounds of VOCs were removed from groundwater in December. The total mass of VOCs removed since the startup of the system is 11,207 pounds.

Optimization Activities: None to report for the month of November.

Mr. Duke added that a low concentration of MTBE was detected in the influent and there was no detection in the effluent in the November and December sampling results. It appears that MTBE is being detected all over the base and that Travis will continue to watch and investigate.

### **North Groundwater Treatment Plant (see Attachment 5)**

**November:** The North Groundwater Treatment Plant (NGWTP) performed at 100% uptime with approximately 9.2 gallons of groundwater extracted and treated during the month of November 2010. The average flow rate of the NGWTP was 0.18 gpm, and electrical power use was 406 kWh for all the equipment connected to the North plant; approximately 556 pounds of CO<sub>2</sub> were created. The amount of VOCs removed was very low and consequently difficult to measure. The total mass of VOCs removed since the startup of the system is 656 pounds.

Optimization Activities: The NGWTP was shut down on 10 December 2010 due to the accumulation of seasonal standing water in the vernal pools at Site LF007C. No additional optimization activities to report.

**December:** The North Groundwater Treatment Plant (NGWTP) was shut down for the wet season. Site LF007C extraction wells will be restarted in 2011 once the vernal pools are dry. Monthly Data Sheets for the North Plant will be suspended until the system is brought back online and treatment resumes.

Optimization Activities: None to report for the month of December.

## **3. Presentations**

### **SS015 EVO Injection Update (see Attachment 6)**

Mr. Berwick gave the presentation on SS015.

The key points made for site SS015 presentation included:

- Injection of EVO started on 13 December 2010, in the three newly installed injection wells. It was a daylight operation to inject EVO and

- observe/monitor the surrounding wells.
- In the morning of 14 December 2010 a milky white watery substance (EVO) was discovered in the facility containment basin. The injection activities were halted and the Restoration group was notified. Approximately 250 gallons of EVO had been injected at the point when it was halted.
  - The EVO/Water injection mixture had apparently traveled approximately 75 feet below ground to the containment basin from the injection site.
  - A vacuum truck and trash pump were used to remove the standing EVO/water mixture that was in the containment basin.
  - Injection tests (using only water) were performed to find out how the injected water was getting into the containment basin. Water from a hydrant was injected into IW2126x15, and within about an hour it was breaching the surface concrete pavement at the slab seams. The injected water was also flowing into the containment basin in two drain pipes. Injection well IW2128x15 was tested and water was breaching the storm sewer (manhole) within about 5 minutes.
  - At that point it was determined that injection wells IW2126x15 and IW2128x15 were not suitable for further EVO injection.

Mr. Berwick said the next step was to investigate why the water was surfacing. There was a shallow excavation conducted in June and July 2003. Further review of the Administrative Record (AR) indicated that the excavation was only to a depth of about 20 inches. As discussed in previous RPM meetings, the vegetable oil injections conducted in 2000-2001 had been performed using approximately 40 direct push injection points, in the same area that is receiving the EVO injections. The old injection points could have acted as a conduit for the EVO to come up to the surface. Mr. Duke said he remembered that when the direct push injection points were abandoned, the contractor poured bentonite and sand down each boring and they did not compact these materials down the hole.

Mr. Freitas suggested perhaps too much EVO was injected too quickly. Mr. Wray said the same injection method that was used at the other EVO injection sites was used at this site. And those injections were successful. It is likely that the injected EVO at Site SS015 found some of the old injection points that acted as conduits to the surface, and that the old excavation also provided a place for the injected EVO to accumulate near the ground surface. The EVO mixture then found its way through the pavement seams and into the buried drainage pipes that emptied into the containment basin.

Mr. Berwick said that it was decided to test the third new injection well (IW2127x15) and several monitoring wells that were installed outside the area of the old injection points. Several 4-inch monitoring wells were constructed in the last round of drilling so they could serve as injection wells if needed. The injection test indicated that these

wells would function as injection wells.

Mr. Berwick showed on the map (attached) the locations of the problem injection wells and the injection well and monitoring wells that were used to successfully inject the EVO. The outfalls were monitored every hour to look for any sheen on the water; no sign of EVO entering the outfalls was detected. Mr. Freitas asked how many gallons of EVO were injected in the ground at his site. Mr. Berwick said about 800 gallons.

Mr. Duke said that, as a result of the water breach, a work request was submitted by the storm water program manager to look at resealing the concrete seams and the seams between the rings of the storm water drains and sewer system. Mr. Anderson said he appreciated the quick response and investigation of the CH2M HILL field crew which allowed them to determine why the injection did not work initially.

Ms. Burke asked is it possible that the injection wells were faulty. Mr. Berwick said no, he has seen faulty wells in the past, and the EVO in those situations came back up through the well annulus. It doesn't spread out as seen at SS015. Mr. Freitas asked if we are monitoring the wells in the area to see if the water level is rising. Mr. Berwick said yes the water levels are being measured in the surrounding wells.

### **Program Update: Activities Completed, In Progress and Upcoming (see Attachment 7)**

Mr. Wray reported on the status of field work and documents which are completed, in progress, and upcoming. See Attachment 7 for details. Ms. Burke asked if EPA could ask for more time beyond the 60 days allotted to review the FFS if it was needed. Mr. Wray said hopefully the agencies will not need it, because the schedules for the Decision Documents are fairly tight.

### **Field Schedule (see Attachment 8)**

Mr. Wray reported on the 2011 Field Schedule. See attachment 8 for details. Ms. Burke expressed interest in watching some of the GSAP sampling techniques.

### **Focused Feasibility Study Review (see Attachment 9)**

Mr. Krook gave the presentation on the FFS Review.

Mr. Anderson started by briefly explaining what the presentation will include and more importantly what it will not include. During the last RPM meeting there was a request to provide an in-depth site-by-site summary on the FFS. He added that to provide an in depth review of each site would not be productive; each site is at a

different cleanup stage and uses different remediation technologies. The FFS report has detailed site information.

Mr. Krook presented PowerPoint slides on the FFS report, which is scheduled to be submitted to the regulatory agencies tomorrow (27 January). The presentation began with a listing of the 18 sites which were the focus of the FFS (Section 1). He discussed the purpose of the FFS, which is to describe the development of potential groundwater remedial alternatives for Travis AFB Environmental Restoration Program (ERP). Mr. Krook then discussed some background (Section 2) that included the past and current implementation of the CERCLA process, the interim remedial actions (IRAs), and performance of the IRAs during the period of interim remediation. This presentation excludes POCO sites, and Site SS041, at which completed remedial actions are documented in a No Further Remedial Action Planned (NFRAP) consensus statement. In accordance with the NFRAP statement, Site SS041 will be closed in the Basewide Record of Decision (ROD).

A flow chart was provided to show past and current implementation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) at Travis AFB. The chart shows the actions taken and the applicability of the various operable units. The chart also shows the two Five-Year Reviews; the first completed in 2003, and the second one completed in 2008. The next Five-Year Review is scheduled for 2013.

Mr. Freitas asked why there is an Interim ROD (IROD) and not just a Final ROD. Mr. Anderson replied that, at the time, other bases were having a difficult time with the development and regulatory acceptance of groundwater cleanup levels. Travis AFB wanted to move forward with cleanup so it was decided to utilize IRODs, which contain interim goals rather than legally-binding cleanup levels, to get remediation started. Mr. Freitas voiced a concern that he does not think the IROD is legal per CERCLA. Ms. Burke assured Mr. Freitas that IRODs are not new and are used at many sites. Mr. Parrott stated that the EPA signed the two Travis AFB IRODs, and that they are legal documents.

Mr. Krook then explained that the draft Basewide Groundwater FFS will be submitted tomorrow, 27 January 2010. The document is approximately 900 pages, two big binders, and at least half of the document contains characterization data. The next step is to develop the Basewide Groundwater PP, and ROD. Following approval of the ROD, the Base would then implement the final remedial design/remedial actions (RD/RA), and enter into long-term operations/long-term maintenance (LTO/LTM).

Section 3 of the FFS contains the conceptual site models for the sites. Site specific groundwater contamination at Travis AFB primarily consists of chlorinated VOCs, mostly TCE, as well as 1,1-DCE, and 1,2-DCA. One site (LF008) is contaminated with organochlorine pesticides. This landfill site was excavated in 2003, and the pesticide container debris and pesticide-contaminated soil were removed. The Base is now addressing the residual effects of the pesticide contamination in groundwater. The conceptual site models were updated to include the results of 2009 and 2010 field investigations.



Section 4 of the FFS discusses the approach taken in developing the document. CERCLA guidance was used as the basis of the document. In addition, the criteria used to focus the study included past completion of the CERCLA process at the Base, existing groundwater IRA performance, ongoing IRA optimization actions, demonstration projects, and a preference for sustainable remediation technologies.

The FFS was originally requested by the EPA in January 2007. The term FFS is used to acknowledge that Travis AFB has already completed the CERCLA process, including Final RIs, Final FSs, and the IRODs. The FFS serves as the bridge between the completed steps, and the final Basewide Groundwater ROD. Some important points to keep in mind include:

- Travis AFB completed MNA assessments for many sites, where pump and treat systems have been in action for a decade. The FFS addresses how these actions are working and how they need to be optimized.
- There is a Presidential Executive order for using green sustainable remediation technologies. The objective is to select technologies that avoid excessive CO<sub>2</sub> generation by using huge amounts of electrical power over their periods of operation. Travis has strongly considered the use of “green” technologies.

Section 5 of the FFS discusses preliminary cleanup goals. Remedial Action Objectives (RAOs) are developed, which consist of general RAOs and specific RAOs. This section evaluates ARARs, and develops numerical preliminary cleanup goals. The Air Force’s position is to invoke the lesser of State or Federal MCLs as the preliminary cleanup goals. It was mentioned that the EPA attorney, Sara Goldsmith, will review the ARARs.

Section 6 presents identification and screening of technologies. The section describes the general response actions (GRA - the broad range of actions that will satisfy the RAOs). GRAs can consist of no action, institutional actions, containment, removal, treatment, and disposal.

Mr. Krook defined technologies and process options:

- Technologies are the general categories of remedies under a GRA
- Process options are specific categories of remedies within each remedial technology, and
- Representative process options are selected to represent a technology type, and are used to streamline the subsequent assembly of alternatives.

Several charts were presented to illustrate a summary of the technology screening that was conducted, and which remedies were determined to be representative process options.

Section 7 of the FFS discusses the assembly and screening of alternatives. The alternatives were developed to meet RAOs. The alternatives were assembled from the representative process options and then screened against the criteria of effectiveness, implementability, and cost. Several charts were presented to illustrate the assembly of

alternatives, and the application of the assembled alternatives to particular sites.

Section 8 is a detailed analysis of alternatives, using the nine CERCLA criteria.

Section 9 provides a comparative analysis of alternatives. A table was presented to show a comparison of IRAs that were implemented at the sites and the FFS alternatives. The conclusions in Section 9 are based on ten years of data collection, data gaps investigations, and the results of the focused feasibility study.

#### **4. New Action Item Review**

There are no new action items.

#### **5. PROGRAM/ISSUES/UPDATE**

None.

#### **General Discussion**

None.

#### **7. Action Items**

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Petition to have the Lysimeter removed.	TBD	Open
2.	Travis AFB	Research beneficial reuse of treated water and give update.	TBD	Open
3.	Travis AFB and EPA	Review past site closure completion reports to determine if future site closure reports are necessary.	TBD	Open