

**Travis Air Force Base  
Environmental Management  
Building 570, Travis AFB, California  
Environmental Restoration Program  
Remedial Program Managers  
Meeting Minutes**

**19 March 2008, 0800 Hours, Teleconference**

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 19 March 2008 at 0800 via teleconference. Attendees included:

- Mark Smith Travis AFB
- Lonnie Duke Travis AFB
- Glenn Anderson Travis AFB
- James Chang U.S. Environmental Protection Agency (USEPA)
- Alan Friedman California Regional Water Quality Control Board (CRWQCB)
- Jose Salcedo Department of Toxic Substances Control (DTSC)
- Tom Barry Shaw Engineering and Infrastructure (Shaw E&I)
- Allen Mason EQM
- Mary Snow TechLaw
- Mike Wray CH2M Hill
- Roger Wilkson Air Force Center for Engineering and Environment (AFCEE)

Handouts distributed via email prior to the start of the meeting included:

- Attachment 1 Meeting Agenda
- Attachment 2 Master Meeting, Teleconference, and Document Schedules
- Attachment 3 SBBGWTP Monthly Data Sheet (February 2008)
- Attachment 4 CGWTP Monthly Data Sheet (February 2008)
- Attachment 5 NGWTP Monthly Data Sheet (February 2008)

## 1. ADMINISTRATIVE

Mr. Duke and Mr. Anderson will be in San Antonio for training the rest of March. Both will be checking in on email, but not readily available. Mr. Smith will be in the office. Please note to copy Mr. Smith on all correspondence to Mr. Duke or Mr. Anderson during the rest of March while they are away from the office.

### A. Previous Meeting Minutes

The February 2008 RPM meeting minutes were approved and finalized.

### B. Action Item Review

No new action items.

### C. Meeting Dates and Master Document Schedule Review

The Travis AFB Master Meeting, Teleconference, and Document Schedules were discussed during this meeting (see Attachment 2).

#### Travis AFB Annual Meeting and Teleconference Schedule

- The next Suppliers teleconference is scheduled for 22<sup>nd</sup> April. The monthly RPM meeting will be 23<sup>rd</sup> April at Travis, and the RAB meeting will be 24<sup>th</sup> April at the Northern Solano County Association of Realtors office.

#### Travis AFB Master Document Schedule

- Five Year Review: The internal working draft is being reviewed. The term “Second” has been incorporated into the title as suggested by EPA. The team is in the process of reviewing the selected interim remedies to ensure they are protective of human health and environment. Document is on schedule for delivery to agencies on 10 April, with the agencies having a little over thirty (30) days to review.
- Soil Remedial Action Report: The dates in the schedule are not being met. Funding on the government purchase card is in place, and the report has been sent to the on-base printing office; however, a power outage delayed the actual printing of the document. A revised schedule is not available until we get a publishing date from the printing office. The date the document will be sent to the regulatory agencies for their review is most likely early April. The problem with publishing will be addressed in the cover letter, which will also contain a revised schedule. The agencies will still have sixty (60) days for review. Mr. Smith stated that the funding issues are not normal and that the report from Shaw is in good shape. The problem is getting the money onto the government purchase card. While

the team tried to avoid delivering two documents (RACR and Five Year Review) at the same time, it was unavoidable.

- GSAP Annual Report: Response to Comments due date should be 19 March 2008. This date is the same also for Final Due. More discussion on the Response to Comments with the agencies will follow this meeting. The final may still get out 19 March 2008.
- Groundwater ROD Support VI Screening Level Assessment: This document supports the Basewide groundwater ROD and upcoming field work. Mr. Anderson asked if the agencies had time to review the document and if they expected having comments. Ms. Snow and Mr. Chang responded as yes to both. Response to comments will be rescheduled. While Mr. Anderson is gone, all comments should be sent to Mr. Smith.
- POCO MNA Evaluation Report has been added to the schedule. The laboratory data is now available. The report is being worked on, and an electronic copy will be sent to the Water Board for review when it's complete.
- Guardian quarterly newsletter: The draft will be sent to the regulators for their review today. The power outage affected the production of the draft newsletter, as is obvious by the quality of the draft that was sent. The text and photographs in the final version will be the same, just some detail changes for a professional look. Mr. Chang asked if Mr. Cooper had contacted the base with comments. Mr. Anderson answered only by email – not in person. He would like to confirm what community relation items need to be addressed for the Five Year Review. This may need to be resolved by email, because of the difficulty of actually getting together in person. The question was put forth to Mr. Salcedo if DTSC has the same requirements for public notice. He responded yes; he will get back to Mr. Anderson.
- CAMU Monitoring and Maintenance Report: The inspection of the CAMU is currently being performed. Everything is working as forecasted. Its cap is turning green with vegetation now. The erosion check has been done and looks good. The vegetative growth is good. It's not really grass, but should be considered "special weeds".
- The Groundwater Treatment Plant O&M Report can be removed from the Historical section of the schedule.
- Annual Land Use Control Report: Mr. Anderson received comments from the EPA. Suggestions are much appreciated and will be considered for the next report. The previous focus had been on compliance with the two soil RODs, but future reports will include the Basewide perspective. Mr. Anderson will get back to EPA on the comments. Mr. Chang added that EPA wanted be as helpful as possible for the Five Year Review. Mr. Anderson thanked him for their input.

## **2. CURRENT PROJECTS**

### **A. Soil Remedial Action Report**

Mr. Anderson reported on the Soil RACR status. The report should be out in early April. Mr. Anderson will confirm with the Travis AFB Document Automation and Production Service (DAPS).

### **B. Five Year Review Status**

Mr. Anderson reported on the 5 Year Review status. The status was covered rather well in the above discussion on the document schedule.

### **C. Treatment Plant Operation and Maintenance Update**

Mr. Duke reported on the water treatment plant sites.

#### **1. South Base Boundary Groundwater Treatment Plant**

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 97.4% uptime, and 3.34 million gallons of groundwater were extracted and treated during the month of February 2008. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 82.2 gallons per minute (gpm). Approximately 2.0 pounds of volatile organic compounds (VOCs) was removed during February 2008. The total mass of VOCs removed since the startup of the system is 328.6 pounds (see Attachment 3).

One small shutdown in February 2008 occurred due to a power surge.

No new optimization activities were conducted in February 2008.

#### **2. Central Groundwater Treatment Plant**

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 3.3 million gallons of groundwater extracted and treated during the month of February 2008. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 78.1 gpm. Approximately 9.6 pounds of VOCs were removed from groundwater, and 8.0 pounds from vapor, during February 2008. The total mass of VOCs removed since the startup of the system is 10,728 pounds. (see Attachment 4).

The WTTP vapor system was shut down twice in February, once on 2 February due to a high vapor temperature alarm and again on 19 February due to an electrical power surge/volt spike.

The GAC filter that had developed a small leak was repaired on 29 February. A welding company cut out a section and welded a new piece of steel in its place.

An evaluation of the granular activated carbon (GAC) system is in progress. The carbon change-out for the GAC vessel is on-hold while optimization options for the entire treatment system are being evaluated. The system performance will continue to be monitored in the upcoming months.

### **3. North Groundwater Treatment Plant**

The North Groundwater Treatment Plant (NGWTP) performed at 100% uptime with approximately 230,000 gallons of groundwater extracted and treated during the month of February 2008. All treated water was discharged to the duck pond. The average flow for the NGWTP was 5.6 gpm. Less than an ounce of VOCs was removed during February 2008. The total mass of VOCs removed since the startup of the system is 5,414 pounds (see Attachment 5).

No new optimization activities were conducted in February 2008.

#### **D. Petroleum Only Contamination (POCO) Status**

Mr. Duke gave an update on the Petroleum Only Contamination (POCO) status.

The report is on schedule. Mr. Duke has not seen the technical memo yet for the final quarter. He will talk to the Water Board on the report, as the base has used the triad approach to carry out the project. No surprises are expected on this project.

### **3. Program/Issues/Update**

Mr. Smith stated that this item was left TBD as he wasn't sure what would be discussed. The Guardian will have a viewpoint article in it summarizing the changes from centralization of the Restoration program and an AFCEE remedial process optimization team was on base.

Mr. Smith introduced Mr. Wilkson from the Program Management Office at the Air Force Center for Engineering and the Environment (AFCEE). Mr. Wilkson presented a summary of his base visit and also the progress of the centralization efforts of the program. The transition of the cleanup program involves centralizing the program management aspects that headquarters AMC used to have for all AMC bases, at one location in San Antonio within AFCEE. This provides clear authority, responsibility and accountability of all aspects of the cleanup program. This allows the Air Force to be more consistent on its approaches and management, and also allows it to look at the program as a whole and see areas where there might be opportunities for savings. The AF will still be able to reach back and enhance and leverage the technical resources that it has.

These changes result in a reduction of the MAJCOM and air staff roles but doesn't significantly change the base level remedial program manager (RPM) role. Typically, the MAJCOMs have been the advocates for the bases to the

Pentagon; all that has been shifted to San Antonio PMO and they will become the advocate for all the restoration funding and prioritizing requirements across the AF. They will also be responsible for building an annual Execution Strategy and to go before corporate structure, which is the Senior Civil Engineer, General Eulberg, to get his buy-in to the program. He will approve the program and insert any initiatives that he thinks are appropriate for AFCEE. This also allows air staff or Pentagon people insight into the program.

AFCEE itself has had a name change. Previously known as the Air Force Center for Environmental Excellence, they are now known as the Air Force Center for Engineering and Environment. Underneath AFCEE a new organization has been developed called the Restoration Program Management Office (PMO). Currently structured with a chief of that department and divided primarily into East and West, and divided by EPA regions.

Most of the MAJCOMs have already transitioned their management responsibilities to AFCEE, except for AFMC, AMC and ACC. The goal for ACC is the end of March, and AFMC and AMC are expected to transition in April 2008. The points of contact and people advocating for the resources will transition for those commands. The PMO roles and responsibilities include program management, including planning and scheduling and conducting program reviews. The PMO will review, prioritize and validate restoration projects, to determine who is eligible for ERA funding, and to verify that a peer review has been conducted for a construction type project. They will be tracking program requirements and reporting the metrics to the General. Another responsibility will be data management; the AF has a system called AFRIMS which stands for Air Force Restoration Information Management System which is where projects and status of sites are tracked in the CERCLA process as well as for Military Munitions Response Program (MMRP) and Petroleum Only Contaminated (POCO) sites. Data calls are performed throughout the year. Information is used in conducting Remedial Process Optimizations, and also Congress requires the AF to report on environmental liabilities annually. Reporting of environmental liabilities will all be done at the air staff level.

The San Francisco REO is setting up meetings in California to build relationships between the PMO and the state. This will be an introduction to the state agencies and stakeholders, at a partnering level to explain the ERP transition. The PMO is attempting to bring consistency across the US in the partnering arrangements, whether formal or informal. Items to be discussed will be funding approval and how support will be provided. Air staff will still provide program and policy oversight. A Program Objective Memo (POM) will still be issued which defines projects and funding over the next 5 years.

The biggest change is the roles and responsibilities of the MAJCOMs. MAJCOMs will still coordinate Land Use Controls and organize training with the base. The Remedial Program Managers (Base RPMs) work for the base and

MAJCOM – not AFCEE. Records of Decision (RODs) will still require review by the MAJCOM. Their role is reduced on the planning on programming side.

The role of the base RPM won't change very much. There will be slight changes on some bases for standardization. There is a need on some bases to push planning and programming responsibilities to the base RPM. Costing, identifying requirements, providing field coordination, interfacing with regulatory agencies, conducting RABs and integrating requirements into the Base Master Plans are some of the responsibilities of the RPM. There won't be much of a change for Travis.

Funds management will be different this year. Project money will go to AFCEE first, then distributed to the bases. Manpower and management funds will go to the MAJCOMs for distribution.

The first or second week of April is the approximate timeframe for the visit by PMO representatives. More time can be spent at that time for any questions or concerns about the transition. Mr. Chang requested the second week, if possible. Mr. Wilkson said Mr. Baha Zahra of the SF REO is making the arrangements.

The FY09 program for Travis was reviewed. No major issues or concerns – it appears to be a good, well managed and well run program. The base is making good progress towards getting every site to Remedy in Place (RIP). Mr. Wilkson was able to see the individual sites and treatment systems. A pre-remedial process optimization visit occurred and gathered operation data. The week of 19 May 2008 a team from AFCEE will be looking at the details of the performance of the treatment system design/ build and will recommend optimization at that time. The Friday of that week (23 May) will be an out brief of that team's recommendations and would like to have the regulatory agencies attend. The agencies are also welcome to participate during the week.

Mr. Smith thanked Mr. Wilkson for his introduction and update. He stated that the PBC award will follow shortly after the Statement of Objectives is developed and finalized. The RPO Phase 1 visit will be during the time that potential bidders will be developing their proposals. Any RPO recommendations made after PBC award could affect the PBC contract.

Mr. Wilkson stated he is looking forward to meeting everyone in April. The first meeting in San Francisco will be for EPA and then in Sacramento for state agencies and stakeholders. Mr. Baha Zahra is coordinating both meetings.

Mr. Smith asked if anyone had any new action items to list.

Mr. Chang commented that having a RIP of 2012 may be hindered by MMRP. Mr. Wilkson stated that MMRP has different goals; he can provide the information if needed. Mr. Smith added that the SI planned for FY08 has been rescheduled for FY09 for Travis due to higher MMRP priorities at other bases.

TRAVIS AIR FORCE BASE  
ENVIRONMENTAL RESTORATION PROGRAM  
REMEDIAL PROGRAM MANAGER'S MEETING  
19 March 2008, 9:00 A.M.  
AGENDA

This meeting will be held as a teleconference. Call in number is (707) 424-8811

1. ADMINISTRATIVE
  - A. PREVIOUS MEETING MINUTES (ALL)
  - B. ACTION ITEM REVIEW (ALL)
  - C. MEETING DATES AND MASTER DOCUMENT SCHEDULE REVIEW (ALL)
  
2. CURRENT PROJECTS
  - A. SOIL REMEDIAL ACTION REPORT (GLENN)
  - B. 5-YEAR REVIEW STATUS (GLENN)
  - C. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)
  - D. PETROLEUM ONLY CONTAMINATION (POCO) STATUS (LONNIE)
  
3. PROGRAM/ISSUES/UPDATE
  - A. TBD
  
4. NEW ACTION ITEM REVIEW

## Travis AFB Master Meeting and Document Schedule

### Annual Meeting and Teleconference Schedule

Suppliers Teleconference (8:30 a.m. - 10:00 a.m.)	Monthly RPM Meeting (Begins at 9:30 a.m.)	Monthly RPM Teleconference (Begins at 9:30 a.m.)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
1-22-08	1-23-08	1-7-08*	—
2-26-08	2-27-08	2-4-08	—
3-18-08	3-19-08 #	—	—
4-22-08	4-23-08	4-7-08	4-24-08
5-20-08	5-21-08	5-5-08	—
6-17-08	6-18-08	6-2-08	—
7-22-08	7-23-08	7-7-08**	—
8-26-08	8-27-08	8-11-08	—
9-23-08	9-24-08	9-8-08	—
10-21-08	10-22-08	10-6-08	10-23-08
—	—	11-10-08	—
12-09-08	12-10-08	—	—

\*During the 7 Jan teleconference an additional meeting with EPA was scheduled for 9-10 Jan to discuss past GSAP issues in preparation for moving ahead with the current GSAP and the upcoming Groundwater Performance Based Contract (PBC).

\*\*Holiday Weekend

# Teleconference for the 3/19/08 meeting at **0800**

**Travis AFB Master Document Schedule**  
(continued)

	<b>PRIMARY DOCUMENTS</b>			
	<b>Basewide Travis, Glenn Anderson</b>	<b>Potrero Hills Annex Travis, Glenn Anderson</b>	<b>Five Year Review Travis, Glenn Anderson</b>	<b>Soil Remedial Action Report Travis, Glenn Anderson</b>
<b>Life Cycle</b>	<b>Groundwater ROD</b>	<b>Potrero Hills ROD</b>		<b>FT003, FT004, LF007E, SD045</b>
<b>Scoping Meeting</b>	<b>1-24-07</b>	<b>180 days after Water Board Order Rescinded</b>	<b>01-23-08</b>	<b>NA</b>
Predraft to AF/Service Center	2-01-09	+ 360 days	03-11-08	01-29-08
AF/Service Center Comments Due	4-01-09	+ 420 days	03-26-08	02-13-08
Draft to Agencies	6-15-09	+ 480 days	04-10-08	02-22-08
Draft to RAB	6-15-09	+ 480 days	04-10-08	02-22-08
Agency Comments Due	8-15-09	+ 540 days	05-15-08	04-22-08
<b>Response to Comments Meeting</b>	<b>9-01-09</b>	<b>+ 555 days</b>	<b>05-21-08</b>	<b>04-23-08</b>
Agency Concurrence with Remedy	9-15-09	+ 570 days	<b>NA</b>	<b>NA</b>
Draft Proposed Plan to Agencies	12-01-09	+ 600 days	<b>NA</b>	<b>NA</b>
Issue Proposed Plan	1-15-10	+ 615 days	<b>NA</b>	<b>NA</b>
Public Comment Period	1-15-10 to 2-15-10	+ 615 to 645 days	<b>NA</b>	<b>NA</b>
<b>Public Meeting</b>	<b>1-28-10</b>	<b>+ 625 days</b>	<b>NA</b>	<b>NA</b>
Response to Comments Due	3-01-10	+ 640 days	06-18-08	05-13-08
Draft Final Due	3-01-10	+ 640 days	07-28-08	05-13-08
Final Due	5-01-10	+ 700 days	08-27-08	06-13-08

**Travis AFB Master Document Schedule  
(Continued)**

<b>SECONDARY DOCUMENTS</b>			
<b>Life Cycle</b>	<b>2007 GSAP Annual Report Travis, Lonnie Duke; CH2M Hill, Mike Wray</b>	<b>Groundwater ROD Support VI Screening Level Assessment Travis, Glenn Anderson; CH2M Hill, Mike Wray</b>	<b>POCO Evaluation of Monitored Natural Attenuation Travis, Lonnie Duke</b>
<b>Scoping Meeting</b>	NA	NA	NA
Predraft to AF/Service Center	10-19-07	01-18-08	4-25-08
AF/Service Center Comments Due	11-02-07	02-08-07	05-09-08
Draft to Agencies	11-16-07	02-15-08	05-23-08
Draft to RAB	11-16-07	02-15-08	05-23-08
Agency Comments Due	01-18-08	03-14-08	06-20-08
<b>Response to Comments Meeting</b>	<b>02-27-08</b>	<b>03-19-08</b>	<b>07-23-08</b>
Response to Comments Due	03-05-08	04-11-08	08-15-08
Draft Final Due	NA	04-11-08	NA
Final Due	03-05-08	04-11-08	08-15-08
Public Comment Period	NA	NA	NA
<b>Public Meeting</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

**Travis AFB Master Document Schedule  
(Continued)**

<b>INFORMATIONAL DOCUMENTS</b>	
<b>Life Cycle</b>	<b>Quarterly Newsletters (April 2008) Travis, Mark Smith</b>
<b>Scoping Meeting</b>	NA
Predraft to AF/Service Center	NA
AF/Service Center Comments Due	NA
Draft to Agencies	3-19-2008
Draft to RAB	NA
Agency Comments Due	4-04-2008
<b>Response to Comments Meeting</b>	<b>TBD</b>
Response to Comments Due	4-11-2008
Draft Final Due	TBD
Final Due	4-17-2008
<b>Public Meeting</b>	NA

**Travis AFB Master Document Schedule  
(Continued)**

<b>INFORMATIONAL DOCUMENTS</b>	
<b>Life Cycle</b>	<b>CAMU Monitoring &amp; Maintenance Report Travis, Lonnie Duke</b>
<b>Scoping Meeting</b>	NA
Predraft to AF/Service Center	08-15-08
AF/Service Center Comments Due	08-30-08
Draft to Agencies	NA
Draft to RAB	NA
Agency Comments Due	NA
<b>Response to Comments Meeting</b>	NA
Response to Comments Due	NA
Draft Final Due	NA
Final Due	09-12-08
Public Comment Period	NA
<b>Public Meeting</b>	NA

**Travis AFB Master Document Schedule  
(Continued)**

<b>HISTORICAL DOCUMENTS</b>	
	<b>Groundwater Treatment Plant O&amp;M Reports Travis, Lonnie Duke; CH2M Hill, Mike Wray</b>
<b>Life Cycle</b>	<b>Groundwater Treatment Plants Annual Reports Fiscal Year 2008</b>
<b>Scoping Meeting</b>	NA
Predraft to AF/Service Center	2-04-08
AF/Service Center Comments Due	2-08-08
Draft to Agencies	NA
Draft to RAB	NA
Agency Comments Due	NA
<b>Response to Comments Meeting</b>	NA
Response to Comments Due	NA
Draft Final Due	NA
Final Due	2-14-08
Public Comment Period	NA
<b>Public Meeting</b>	NA

# South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 91

Reporting Period: 1 – 29 February 2008

Date Submitted: 12 March 2008

This data sheet includes the following: results for the operation of the South Base Boundary Groundwater Treatment Plant (SBBGWTP); a summary of flow rates for the individual extraction wells; a brief description of any shutdowns or significant events related to the system; and a summary of analytical results for selected samples collected.

## Operations Summary – February 2008

Operating Time: **678 hours**

Percent Uptime: 97.4%

Electrical Power Usage: 15,960 kWh

Gallons Treated: **3.34 million gallons**

Gallons Treated Since July 1998: **596 million gallons**

Volume Discharged to Union Creek: **3.34 million gallons**

Volume Used for Dust Suppression: **0 gallons**

VOC Mass Removed: **2.0 pounds<sup>a</sup>**

VOC Mass Removed Since July 1998: **328.6 pounds**

Rolling 12-Month Cost per Pound of Mass Removed: \$3,638<sup>b</sup>

Monthly Cost per Pound of Mass Removed: \$7,541<sup>b</sup>

<sup>a</sup> Calculated using February 2008 EPA Method SW8260B analytical results.

<sup>b</sup> Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system. High costs are due to low influent concentrations

## Flow Rates

Average Groundwater Total Flow Rate: **82.2<sup>a</sup>**

Average Flow Rate (gpm) <sup>b</sup>							
FT005				SS029		SS030	
EW01x05	2.0	EW736x05	3.2	EW01x29	5.6	EW01x30	4.7
EW02x05	2.9	EW737x05	Off line <sup>c</sup>	EW02x29	10.1	EW02x30	1.2
EW03x05	3.8	EW742x05	Off line <sup>c</sup>	EW03x29	Off line <sup>e</sup>	EW03x30	Off line <sup>e</sup>
EW731x05	Off line <sup>c</sup>	EW743x05	Off line <sup>c</sup>	EW04x29	12.1	EW04x30	20.1
EW732x05	Off line <sup>c</sup>	EW744x05	Off line <sup>c</sup>	EW05x29	4.3	EW05x30	12.1
EW733x05	Off line <sup>c</sup>	EW745x05	Off line <sup>c</sup>	EW06x29	2.7 <sup>d</sup>	EW06x30	3.2 <sup>d</sup>
EW734x05	13.2 <sup>d</sup>	EW746x05	Off line <sup>c</sup>	EW07x29	Off line <sup>e</sup>	EW711x30	3.6
EW735x05	4.3						
<b>FT005 Total:</b>		<b>29.4</b>		<b>SS029 Total:</b>		<b>34.8</b>	
				<b>SS030 Total:</b>		<b>44.9</b>	

<sup>a</sup> The average groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the operating time of the plant.  
<sup>b</sup> Average extraction well flow rates measured by each extraction well totalizer divided by the well's operating time.  
<sup>c</sup> Extraction well was shutdown for a one-year rebound study in December 2007 based on the *Work Plan for RPO Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007).  
<sup>d</sup> Extraction well was pumping for less than 10% of the operating time.  
<sup>e</sup> Extraction well was off line due to low VOC concentrations.

gpm—gallons per minute

## Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
SBBGWTP (water)	19 February 2008	15:00	20 February 2008	09:00	Electrical power surge/volt spike.
SBBGWTP = South Base Boundary Groundwater Treatment Plant					

## Summary of O&M Activities

Monthly groundwater sampling at the SBBGWTP was performed on 1 February 2008. Sample results are presented in Table 1. The total VOC concentration (72.1 µg/L) in the influent sample has decreased since the January 2008 sample (86.4 µg/L). VOCs were not detected in the effluent sample.

## Optimization Activities

On 4 December 2007, nine extraction wells (EW731x05, EW732x05, EW733x05, EW737x05, and EW742x05 through EW746x05) were shut down for rebound testing in accordance with the *Work Plan for Remedial Process Optimization (RPO) Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007). These extraction wells will remain off-line for one year. At the end of the rebound period, the groundwater extraction wells will be sampled to assess plume stability. During February 2008, no new optimization activities were conducted.

**Table 1**

Summary of Groundwater Analytical Data for February 2008 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	1 February 2008 (µg/L)	
				Influent	Effluent
<b>Halogenated Volatile Organics</b>					
Bromodichloromethane	0.5	0.17	0	ND	ND
Carbon Tetrachloride	0.5	0.19	0	ND	ND
Chloroform	5	0.16	0	ND	ND
Dibromochloromethane	0.5	0.17	0	ND	ND
1,1-Dichloroethane	5	0.16	0	ND	ND
1,2-Dichloroethane	0.5	0.13	0	0.5	ND
1,1-Dichloroethene	5	0.14	0	ND	ND
cis-1,2-Dichloroethene	5	0.15	0	4.6	ND
trans-1,2-Dichloroethene	5	0.15	0	ND	ND
Methylene Chloride	5	0.32	0	ND	ND
Tetrachloroethene	5	0.20	0	ND	ND
1,1,1-Trichloroethane	5	0.16	0	ND	ND
1,1,2-Trichloroethane	5	0.32	0	ND	ND
Trichloroethene	5	0.16 – 0.32	0	67	ND
Vinyl Chloride	0.5	0.17	0	ND	ND
<b>Non-Halogenated Volatile Organics</b>					
Benzene	1.0	0.16	0	ND	ND
Ethylbenzene	5.0	0.16	0	ND	ND
Toluene	5.0	0.17	0	ND	ND
Xylenes	5.0	0.34	0	ND	ND
<b>Other</b>					
Total Petroleum Hydrocarbons – Gasoline	50	4.9	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	33	0	NM	ND
Total Suspended Solids (mg/L)	NE	1.1	0	9.2	NM
<sup>a</sup> In accordance with Appendix B of the <i>Travis AFB South Base Boundary Groundwater Treatment Plant Operations and Maintenance Manual</i> (CH2M HILL, 2004).					
J	=	analyte concentration is considered an estimated value			
mg/L	=	milligrams per liter			
N/C	=	number of samples out of compliance with discharge limits			
ND	=	not detected			
NE	=	not established			
NM	=	not measured			
µg/L	=	micrograms per liter			

# Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 104      Reporting Period: 1 – 29 February 2008      Date Submitted: 12 March 2008

This data sheet includes the following: results for the operation of the Central Groundwater Treatment Plant (CGWTP), West Treatment and Transfer Plant (WTTP), and thermal oxidation (ThOx) system (previously referred to as the two-phase extraction [TPE] system); a summary of flow rates for the CGWTP, WTTP, ThOx, and extraction wells EW01x16, EW02x16, EW03x16, EW605x16, and EW610x16; a brief description of any shutdowns or significant events related to the systems; and a summary of analytical results for selected samples collected.

## Operations Summary – February 2008

Operating Time:	Percent Uptime:	Electrical Power Usage:
<b>CGWTP:</b> 696 hours	<b>CGWTP:</b> 100%	<b>CGWTP:</b> 7,900 kWh
<b>WTTP:</b> Water: 696 hours	<b>WTTP:</b> Water: 100%	<b>WTTP:</b> 22,874 kWh
Vapor: 631 hours	Vapor: 90.7%	
<b>ThOx:</b> 696 hours	<b>ThOx:</b> 100%	<b>ThOx:</b> 15,967 kWh
Gallons Treated: <b>3.3 million gallons</b>	Gallons Treated Since January 1996: <b>373.2 million gallons</b>	
VOC Mass Removed:	VOC Mass Removed Since January 1996:	
<b>9.6 lbs (groundwater only)<sup>a</sup></b>	<b>2,268 lbs from groundwater</b>	
<b>8.0 lbs (vapor only)<sup>b</sup></b>	<b>8,460 lbs from vapor</b>	
UV/Ox DRE: 100%	ThOx DRE: 99.9%	
Rolling 12-Month Cost per Pound of Mass Removed: \$812 <sup>c</sup>		
Monthly Cost per Pound of Mass Removed: \$1,410 <sup>c</sup>		
<sup>a</sup> Calculated using February 2008 EPA Method SW8260B analytical results.		
<sup>b</sup> Total VOC vapor mass removed was calculated using December 2007 EPA Method TO-14 analytical results for the WTTP extraction wells and the ThOx.		
<sup>c</sup> Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.		
DRE = destruction removal efficiency		UV/Ox = ultraviolet oxidation

## Flow Rates

Average Groundwater Flow Rate: **78.1 gpm<sup>a</sup>**

Location	Average Flow Rate	
	Groundwater (gpm) <sup>b</sup>	Soil Vapor (scfm)
EW01x16	24.1	NA
EW02x16	6.8 <sup>c</sup>	NA
EW03x16	Off line <sup>d</sup>	NA
EW605x16	13.0	NA
EW610x16	4.2	NA
WTTP	23.7 <sup>e</sup>	162
ThOx	NA	54.5

<sup>a</sup> as measured by the effluent discharge to the storm drain divided by the operating time.

<sup>b</sup> as measured by extraction well totalizer divided by the operating time.

<sup>c</sup> EW02x16 (water) was turned on 21 June 2007.

<sup>d</sup> EW03x16 (water) was taken off line in September 2002 due to a significant decrease in flow rates. EW03x16 was operational for a couple of hours on 1 February 2008 prior to the collected of monthly sampling. The flow rate was approximately 20 gpm. This well is currently off line.

<sup>e</sup> as measured by the effluent groundwater pumped to the CGWTP divided by the operating time.

gpm = gallons per minute

NA = not applicable

scfm = standard cubic feet per minute

## Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
<b>CGWTP (Groundwater):</b>					
CGWTP	NA	NA	NA	NA	No shutdowns during the month of February 2008
<b>WTTP (Groundwater):</b>					
WTTP	NA	NA	NA	NA	No shutdowns during the month of February 2008
<b>WTTP (Vapor):</b>					
WTTP	2 February 2008	12:00	4 February 2008	10:00	High vapor temperature alarm
WTTP	19 February 2008	15:00	20 February 2008	10:00	Electrical power surge/volt spike.
<b>ThOx (vapor):</b>					
ThOx	NA	NA	NA	NA	No shutdowns during the month of February 2008
CGWTP = Central Groundwater Treatment Plant NA = not applicable ThOx = Thermal Oxidation System WTTP = West Treatment and Transfer Plant					

## Summary of O&M Activities

Monthly groundwater sampling at the CGWTP was performed on 1 February 2008. Groundwater sample results are summarized in Table 1. The total VOC concentration (354.9 µg/L) in the February 2008 CGWTP influent groundwater sample has decreased since the January 2008 sampling (612.6 µg/L). The higher total VOC concentration in January 2008 was likely due to the WTTP being off line and groundwater extraction from Site SS016. Chloroform, cis-1,2-dichloroethene (DCE), and trichloroethene (TCE) were present in the groundwater samples from the granular activated carbon (GAC) sample points. Only cis-1,2-DCE and TCE were detected in the system effluent, but at low concentrations and less than their respective effluent limits. The detections in these samples may be attributed to desorption from the GAC. The lead carbon was taken off-line and bypassed in July 2007 due to erratic performance. In October 2007, a hole was discovered near the bottom of the lead carbon unit. The hole was likely created by corrosion. On 29 February 2008, the lead 20,000-lb carbon unit was repaired. The affected area was cut out completely, and an oversized patch was placed inside over the new hole and welded from the outside. The weld was then Magnafluxed. The patch was painted with epoxy on the inside and primer on the outside.

On 21 January 2008, the pump replacement at EW03x16 began. On 1 February 2008, EW03x16 was turned on manually prior to collecting the monthly groundwater samples. The well operated for several hours before it was turned off again. On 12 February 2008, a sample port, pressure gauge, and remaining hardware was added to EW03x16. A grab groundwater sample from the well was collected on 25 February 2008 to determine the current VOC contaminations.

In February 2008, the wells at the WIOU were checked and repairs were made accordingly. Flow meters were replaced at EW501x33, EW707x303, EW700x37, and EW703x37. Some of the electrical boxes at the WIOU wells had wires that were corroded due to flooding within the well vaults. All of the corroded wires were replaced/repared, except for EW501x33 because additional parts needed to be ordered. A

leak was found inside of EW599x37 due to a corroded fitting. The fitting was replaced and the well was placed back on line. Water was purged from all the vapor lines for the WTTTP SVE system.

### **Optimization Activities**

An evaluation of the GAC system at the CGWTP to determine the optimum configuration of the treatment system (GAC and UV/Ox) is in progress. The system is currently running without the lead carbon. The carbon change-out for the GAC vessel is on-hold while optimization options for the entire treatment system are being evaluated. The system performance will continue to be monitored in the upcoming months.

**Table 1**

Summary of Groundwater Analytical Data for February 2008 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	1 February 2008 (µg/L)					
				Influent	After UV/OX	After Carbon 1 Effluent <sup>b</sup>	After Carbon 2 Effluent	After Carbon 3 Effluent	System Effluent
<b>Halogenated Volatile Organics</b>									
Bromodichloromethane	5.0	0.17	0	ND	ND	NS	ND	ND	ND
Carbon Tetrachloride	0.5	0.19	0	ND	ND	NS	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	NS	ND	0.18 J	ND
Dibromochloromethane	5.0	0.17	0	ND	ND	NS	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.13	0	0.58	ND	NS	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.16	0	0.20 J	ND	NS	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.16	0	0.17 J	ND	NS	ND	ND	ND
1,1-Dichloroethane	5.0	0.16	0	ND	ND	NS	ND	ND	ND
1,2-Dichloroethane	0.5	0.13	0	ND	ND	NS	ND	ND	ND
1,1-Dichloroethene	5.0	0.14	0	1.5	ND	NS	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.15	0	48	ND	NS	0.43 J	0.67	0.48 J
trans-1,2-Dichloroethene	5.0	0.15	0	2.5	ND	NS	ND	ND	ND
Methylene Chloride	5.0	0.32	0	ND	ND	NS	ND	ND	ND
Tetrachloroethene	5.0	0.20	0	0.84	ND	NS	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.16	0	ND	ND	NS	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.32	0	ND	ND	NS	ND	ND	ND
Trichloroethene	5.0	0.16 – 1.6	0	300	ND	NS	2.2	1.4	0.87
Vinyl Chloride	0.5	0.17	0	1.1	ND	NS	ND	ND	ND
<b>Non-Halogenated Volatile Organics</b>									
Benzene	1.0	0.16	0	ND	ND	NS	ND	ND	ND
Ethylbenzene	5.0	0.16	0	ND	ND	NS	ND	ND	ND
Toluene	5.0	0.17	0	ND	ND	NS	ND	ND	ND
Total Xylenes	5.0	0.19 – 0.34	0	ND	ND	NS	ND	ND	ND

<sup>a</sup> In accordance with Appendix G of the *Travis AFB Central Groundwater Treatment Plant Operations and Maintenance Manual* (URS Group, Inc., 2002).

<sup>b</sup> The lead carbon unit was taken off-line and bypassed. The system is currently running w/o the lead carbon unit.

J = analyte concentration is considered an estimated value

N/C = number of samples out of compliance with discharge limits

ND = not detected

NS = not sampled

µg/L = micrograms per liter

# North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 93

Reporting Period: 1 – 29 February 2008

Date Submitted: 12 March 2008

This data sheet includes the following: results for the operation of the groundwater extraction systems; a summary of flow rates for the individual extraction wells; a brief description of any shutdowns or significant events related to the systems; and a summary of analytical results for selected samples collected.

## Operations Summary – February 2008

Operating Time: **Water:** 696 hours

Percent Uptime: **Water:** 100%

Electrical Power Usage: **13,197 kWh**

Gallons Treated: **0.23 million gallons**

Gallons Treated Since March 2000: **78.5 million gallons**

Volume Discharged to Duck Pond: **0.23 million gallons**

Volume Discharged to Storm Drain: **0 gallons**

Percentage of Treated Water to Beneficial Use: 100%

VOC Mass Removed:

VOC Mass Removed Since March 2000:

**0.004 lbs (groundwater only)<sup>a</sup>**

**173.7 lbs from groundwater**

**0 lbs (vapor only)<sup>b</sup>**

**5,240 lbs from vapor<sup>c</sup>**

Rolling 12-Month Cost per Pound of Mass Removed: \$55,764<sup>de</sup>

Monthly Cost per Pound of Mass Removed: \$3,159,372<sup>d</sup>

<sup>a</sup> Calculated using February 2008 EPA Method SW8260B analytical results.

<sup>b</sup> The SVE system was shut down in December 2007 in accordance with the *Work Plan for Remedial Process Optimization (RPO) Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007).

<sup>c</sup> Cumulative total VOC vapor mass removed includes 4,860 pounds of petroleum hydrocarbon VOC mass removed and treated by a portable catalytic oxidizer system between 15 July and 17 September 2003.

<sup>d</sup> Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system. High costs are due to low influent groundwater concentrations and low flow rates.

<sup>e</sup> The rolling 12-month cost per pound of mass removed is calculated by the sum of the monthly cost over the past 12 months divided by the sum of pounds removed during the same period.

## Flow Rates

Average Groundwater Total Flow Rate: **5.6 gpm<sup>a</sup>**

Location	Groundwater Flow Rate on 29 February 2008 (gpm)
EW565x31	Off line <sup>b</sup>
EW566x31	Off line <sup>b</sup>
EW567x31	Off line <sup>b</sup>
EW576x04	1.2
EW577x04	1.3
EW578x04	Off line <sup>b</sup>
EW579x04	Off line <sup>b</sup>
EW580x04	Off line <sup>b</sup>
EW621x04	3.6
EW622x04	1.7
EW623x04	1.6
EW614x07	Off line <sup>c</sup>
EW615x07	Off line <sup>c</sup>

<sup>a</sup> The flow rate was calculated using the effluent discharge totalizer divided by the operating time of the plant. The rates for EW621x04, EW622x04, and EW623x04 increased on 22 February 2008 after the eductor pumps were back flushed.

<sup>b</sup> Extraction well was shutdown for a one-year rebound study in December 2007 based on the *Work Plan for RPO Actions at Sites SD031, FT004, and FT005* (CH2M HILL, 2007).

<sup>c</sup> LF007 wells were turned off for the wet winter season on 10 January 2008.

gpm = gallons per minute

## Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
NGWTP (water)	NA	NA	NA	NA	No shutdowns during the month of February 2008
NA = not applicable NGWTP = North Groundwater Treatment Plant					

## Summary of O&M Activities

Monthly groundwater sampling at the NGWTP was performed on 1 February 2008. Sample results are presented in Table 1. The total VOC concentration (2.3 µg/L) in the influent sample has decreased since the January 2008 sample (17.3 µg/L). TCE was the only VOC detected in the influent sample. Since the SD031 extraction wells were shut down, the indicator chemical for the site, 1,1-DCE, was not detected. All VOCs were non-detect in the effluent sample; however, TPH-G was detected at a concentration of 5.0 J µg/L.

On 22 February 2008, the air eliminator at EW621x04 was replaced, and the eductor pump was back flushed. The eductor pumps for EW622x04 and EW623x04 were also back flushed. The extraction well flow rates increased from these three wells.

## Optimization Activities

On 4 December 2007, the six extraction wells (EW565x31, EW566x31, EW567x31, EW578x04, EW579x04, and EW580x04) were shut down for rebound testing. These extraction wells will remain off-line for one year. At the end of the rebound period, the groundwater extraction wells will be sampled to assess plume stability. No other optimization activities were conducted in February 2008.

**Table 1**

Summary of Groundwater Analytical Data for February 2008 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	1 February 2008 (µg/L)	
				Influent	Effluent
<b>Halogenated Volatile Organics</b>					
Bromodichloromethane	0.5	0.17	0	ND	ND
Bromoform	NE	0.19	0	ND	ND
Carbon Tetrachloride	0.5	0.19	0	ND	ND
Chloroform	5.0	0.16	0	ND	ND
Dibromochloromethane	0.5	0.17	0	ND	ND
1,1-Dichloroethane	5.0	0.16	0	ND	ND
1,2-Dichloroethane	0.5	0.13	0	ND	ND
1,1-Dichloroethene	5.0	0.14	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.15	0	ND	ND
trans-1,2-Dichloroethene	5.0	0.15	0	ND	ND
Methylene Chloride	5.0	0.32	0	ND	ND
Tetrachloroethene	5.0	0.20	0	ND	ND
1,1,1-Trichloroethane	5.0	0.16	0	ND	ND
1,1,2-Trichloroethane	5.0	0.32	0	ND	ND
Trichloroethene	5.0	0.16	0	2.3	ND
Vinyl Chloride	0.5	0.38	0	ND	ND
<b>Non-Halogenated Volatile Organics</b>					
Benzene	1.0	0.16	0	ND	ND
Ethylbenzene	5.0	0.16	0	ND	ND
Toluene	5.0	0.17	0	ND	ND
Xylenes	5.0	0.34	0	ND	ND
<b>Other</b>					
Total Petroleum Hydrocarbons – Gasoline	50	4.9	0	NM	5.0 J
Total Petroleum Hydrocarbons – Diesel	50	32	0	NM	ND

<sup>a</sup> In accordance with Appendix G of the *Travis AFB North Groundwater Treatment Plant Operations and Maintenance Manual*, Sites FT004, SD031, and LF007 Area C (URS Group, Inc., 2005).

J = analyte concentration is considered an estimated value  
N/C = number of samples out of compliance with discharge limits  
ND = not detected  
NM = not measured  
µg/L = micrograms per liter