

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

**21 July 2010, 0930 Hours**

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 21 July 2010 at 0930 in the Main Conference Room, Building 570, Travis AFB, California. Attendees included:

- Glenn Anderson Travis AFB
- Lonnie Duke Travis AFB
- Mark Smith Travis AFB
- Gregory Parrott Travis AFB
- Merrie Schilter-Lowe Travis AFB
- Judith Keith AFCEE ER
- Dezso Linbrunner United States Army Corp of Engineers (USACE), Omaha District
- James Chang United States Environmental Protection Agency (USEPA)
- Rich Freitas United States Environmental Protection Agency (USEPA)
- Alan Friedman California Regional Water Quality Control Board (RWQCB)
- Jose Salcedo California Department of Toxic Substances Control (DTSC)
- Mary Snow Tech Law, Inc.
- Rachel Hess ITSI
- Mike Wray 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 (May 2010)
- Attachment 4 CGWTP Monthly Data Sheet (May 2010)
- Attachment 5 Presentation: 2010 Field Installations Update
- Attachment 6 Presentation: Planned Tasks, July 2010 Through February 2011, Pre Focused Feasibility Study (FFS)
- Attachment 7 Presentation: Program Activities Completed, In Progress, and Upcoming

## **1. ADMINISTRATIVE**

### **A. Previous Meeting Minutes**

The 19 May 2010 RPM meeting minutes were approved and finalized as written. With the following exceptions: Mr. Chang requested minor changes on page 6, last paragraph, fourth line, insert FFS before “straw man”, and on the fifth line delete “department”. On Page 7, last paragraph, second sentence, replace “EPA’s IG” with “EPA as directed by EPA’s recent IG”.

### **B. Action Item Review.**

Action items from June were reviewed.

Action item one still open. No change.

Action item two still open. No change.

Action item three still open - bring ‘before and after’ poster of plume reduction to next RAB meeting.

Action item four still open - Document chemical oxidant demand soil testing results to agencies.

### **Master Meeting and Document Schedule Review (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 held on 25 August 2010.

#### **Travis AFB Master Document Schedule**

— Focused Feasibility Study (FFS): Pushed date forward six months to collect and report additional data after EVO injections are conducted at four sites.

— Proposed Plan (PP): Pushed date forward six months to allow for the change to the FFS schedule.

— Groundwater Record of Decision (ROD): Pushed date forward six months to allow for the change to the FFS schedule.

— Comprehensive Site Evaluation Phase II: Changed date to reflect changes in the draft coming out next week. Travis has been working with the Military Munitions Response Program (MMRP) to get the draft copy out. Mr. Chang asked if there is a website where the document can be accessed because he needs to provide a copy to EPA expert, Mr. Tom Hall. Mr. Chang will provide Mr. Hall’s email address to Mr. Linbrunner so he can email an electronic copy of the draft report for EPA’s review.

- Potrero Hills Annex: (FFS, PP, and ROD): No change.
- Union Creek Sites SD001 and SD033 Remedial Action Report: Dates changed to reflect one final comment. Ms. Hess handed final document on CD to agencies in RPM meeting.
- Natural Attenuation Assessment Report (NAAR): Dates have changed to show when the document will go final.
- SD036/SD037 RPO Work Plan: Move to historical.
- ST027B Site Characterization Report: Move to historical.
- Phytostabilization Study Report: No change. All three agencies are still reviewing the document. Mr. Anderson asked if they could look at the document and provide any comments they might have as soon as possible. This is an AFCEE funded project and the period of performance is up at the end of September.
- Quarterly Newsletter (July 2010): July Newsletter went final on 20 July 2010. Next Newsletter is schedule for October.
- 2009 GWTP RPO Annual Report: Move to historical.
- 2008-2009 CAMU Monitoring Annual Report: No change.

## **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)**

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 98.9% uptime, and 5.0 million gallons of groundwater were extracted and treated during the month of June 2010. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 104 gallons per minute (gpm) and electrical power usage was 21,180 kWh; 29,000 pounds of CO<sub>2</sub> was created (based on DOE calculation). Approximately 2.14 pounds of volatile organic compounds (VOCs) were removed in June. The total mass of VOCs removed since the startup of the system is 383 pounds (see Attachment 3).

The carbon vessels were inspected for usability. It was determined upon inspection that the carbon needs to be changed out. Travis is working to schedule the carbon change-out.

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

The Central Groundwater Treatment Plant (CGWTP) was off line in June 2010 for the fire station construction (adjacent site on the flightline). The pipeline relocation has been completed. The system was restarted early this month.

## **North Groundwater Treatment Plant**

On 7 June 2010 two solar wells were turned back on. The vernal pool at LF007C was dry enough that the U.S. Fish and Wildlife Service (USFWS) gave us their approval to turn the extraction wells back on. During the initial sampling, there was TPH-D detected in both the influent and effluent. A confirmation sample was taken which came back non-detect. Travis plans on adding a third vessel to ensure complete treatment.

## **Administrative Record Update Process**

Mr. Smith reported on the administrative record (AR) update process. The AR is stored in an on-base storage facility that contains Travis AFB physical records. All decision documents and documents leading up to decisions are 'public records.' These documents are available in hard copy; electronic copy, as well as on CDs. In the past Travis didn't produce enough documents to warrant scanning on a regular basis. Travis would ship the documents every 2 years or sometimes 4 years according to the NAD COM contract to a contractor for scanning. Since the award of the two Performance Based Contracts (PBCs), document production, review and finalization are taking place at a faster rate. Travis has a request in to AMC to see if documents may be put into the electronic online version of the administrative record faster. Travis is working on sending electronic files verses scanning documents. Mr. Salcedo asked if there is an index file for the documents that are filed in the library. Mr. Smith said yes. Mr. Smith added that until that process is improved, any documents that are needed for review and are not in the AR, a copy can be provided upon request from the Travis ERP files. The website to access the documents is <http://www.amcadminrec.com/>. Mr. Salcedo would like to put this link on the DTSC website.

Mr. Anderson gave a brief description on the antiquated process as to how the documents eventually make it to the web-based site. Mr. Duke added the technology is moving faster than their contractual obligations.

## **3. Presentations**

### **2010 Field Installations Update (see Attachment 5)**

Mr. Wray reported on the 2010 Field Installations Update.

The key points made in the presentation include:

#### Site DP039 EVO Biobarrier

- Completed the injection of 25,000 lbs of EVO on 10 July 2010.
- The quarterly performance monitoring of the biobarrier system will start in October 2010.
- Evaluation of progress will be documented in the GSAP reports.

Mr. Wray said it took approximately one month to pump the EVO into the ground. A

CH2M HILL employee was on site while the EVO was being injected, to monitor progress and ensure there were no leaks of the EVO. After the EVO injection was complete, chase water (potable water from a hydrant) was injected for several days to push the EVO out into the formation.

#### Site SS016 OSA Source Are Bioreactor

- Monitoring wells MW2112x16A (shallow) and MW2112x16B (deep) were installed to the southeast of the future bioreactor in May.
- Sample results from the new wells indicate 39,000 µg/L TCE in the shallow well and 21 µg/L TCE in the deep well.
- Contracting for the construction of the bioreactor is in progress.
- The tentative start date for bioreactor construction is 16 August 2010.
- Canopy removal and bioreactor installation is scheduled for the August/September timeframe.

Mr. Wray said SS016 bioreactor will be deeper than the DP039 bioreactor to remove as much DNAPL mass as possible.

#### Site SS030

- Maximize groundwater extraction.
- Monitor groundwater levels and TCE concentrations across the site during annual GSAP event in June 2010.
- Determine if additional monitoring and/or extraction wells are needed to capture TCE plume.
- The groundwater levels from the 2010 GSAP shows improving capture of the TCE plume.

Mr. Wray said there isn't a high level of TCE reduction in the wells to the east yet. There are two wells (shown on map) that are showing trends of higher TCE concentrations. The plan is to monitor this site during the next two quarters.

#### Site SD036

- The design for the EVO injection is in progress. Estimated completion for the design is in late August 2010.
- The installation of the injection wells is scheduled for early September 2010.
- Baseline sampling is scheduled for mid September 2010.
- EVO injection is scheduled for early October 2010.

#### Site SD037

- Received analytical data for the new wells located up-gradient and down-gradient of the hot spot.
- Currently injecting 36,000 lbs of EVO into seven injection wells.
- The planned completion of the EVO injection is 02 August 2010.
- Initiate performance monitoring of the remedy optimization. First event is scheduled in November 2010.

#### Site SS015

- Sample results from well MW2119x15, northwest of the plume, indicate non-detect for TCE and daughter products.
- Sample results from well MW2120x15, north of the plume, indicate non-detect for TCE and daughter products.
- The groundwater plume trends to the northeast.
- Two additional wells are planned for installation in late July, MW2124x15 and MW2125x15. One of those wells is being drilled today on Hangar Avenue.
- The EVO injection design is scheduled for completion in late August.

#### Site FT005 Rebound Sampling

- Conducted rebound sampling during the GSAP event.
- Results indicate some minor rebound has occurred in several wells.
- Currently in the process of turning selected extraction wells back on to capture areas where rebound has occurred.

#### **Planned Tasks July 2010 through February 2011 Pre Focused Feasibility Study (see attachment 6)**

Mr. Wray reported on the planned tasks July 2010 through February 2011 pre focused feasibility study.

The key points made in this presentation include:

#### Optimization Designs

- SS015 EVO injection. Completion date is planned for 20 August 2010.
- SD036 EVO injection. Completion date is planned for 20 August 2010.
- SS030 Groundwater Extraction Treatment System (GETS) Installation. Date is TBD.
- LF007C GETS Installation. Date is TBD.

#### EVO Injections

- DP039 EVO injection completed. Baseline sampling has been completed.
- SD037 EVO injection in progress and scheduled to be completed 02 August 2010. Baseline sampling has been completed.
- SS015 EVO injection is scheduled for late September 2010. Baseline sampling is scheduled for mid September 2010.
- SD036 EVO injection is scheduled for early October 2010. Baseline sampling is scheduled for mid September 2010.

### Construction Tasks

- SS016 Bioreactor Installation. Construction to begin mid August with start up in early September 2010.
- SS030 GETS modification, as required. Date is TBD.
- LF007C GETS modification, as required. Date is TBD.
- ST018, POCO site, GETS installation. Scheduled for mid September through end of October 2010.

### Sampling – Rebound Studies

- FT004/SD031 and FT005 sampling schedule is November 2010 and May 2011. Sampling for VOCs.
- LF008 sampling schedule is November 2010 and May 2011. Sampling for Pesticides.
- WIOU sampling schedule is November 2010 and May 2011. Sampling for VOCs and TPH.

Note: November 2010 analytical data will be included in the FFS.

### Sampling – Bioreactor Performance Monitoring

- DP039 and SS016 sampling schedule is November 2010 and May 2011. Sampling for VOCs.

Note: November 2010 analytical data will be included in the FFS.

### Sampling EVO Performance Monitoring

- DP039 sampling schedule is October 2010 and January 2011. SD037 sampling schedule November 2010 and February 2011. Sampling for VOCs.
- SS015 sampling schedule is January 2011 and March 2011. SD036 sampling schedule is February 2011 and May 2011. Sampling for VOCs.

Note: October and November analytical data will be included in the FFS.

### Sampling – GSAP Schedule

- 2010 Semiannual is scheduled for November.
- 2011 Annual is schedule for May/June.

### Focused Feasibility Study Schedule

- Draft FFS submitted to agencies January 27, 2011.

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

Mr. Wray reported on the Program Update. See attachment for details.

#### 4. New Action Item Review

None

#### 5. PROGRAM/ISSUES/UPDATE

Mr. Smith announced that Mr. Chang is retiring and wanted to talk about the transition for the new EPA representative. Mr. Smith said he is putting together a binder to help orient Mr. Chang's replacement and would also like to provide a site tour to help her/him get familiar with the base. Mr. Chang said he is the fourth person to recently transfer/retire from his office, and his boss, Mr. Loren Henning, is working to fill the vacancies. In the meantime Mr. Freitas and Ms. Snow will be available to help. Mr. Freitas said he would like a copy of the schedule (MMDS). Mr. Smith said that Ms. Cumberland will email a schedule out at the end of this week along with June's RPM final minutes.

Mr. Chang said as his final act he will review the Phytostabilization Study Report before he retires. Mr. Chang suggested that any emails sent by Travis to Mr. Henning should be copied to Ms. Snow.

Mr. Smith invited the RPM attendees to the current EVO injection site at SD037 immediately following the meeting. Mr. Smith also extended an invitation to a farewell luncheon for Mr. Chang.

Mr. Chang ended the meeting by stating he appreciated the professionalism of Travis AFB and all the hard work Travis has done in cleaning up the base. Mr. Chang also acknowledged Ms. Snow for all her technical help.

#### 6. Potential Response to Comments Meetings

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	Schedule a RAB tour at site SS016 for when the bioreactor is being installed.	TBD	Provide 30 days notice to RAB members for tour.



3.	Travis AFB	Bring 'before and after' poster of plume reduction to next RAB meeting.	21 October 2010	Open
4.	Travis AFB	Document chemical oxidant demand soil testing results to agencies.	TBD	Open

TRAVIS AIR FORCE BASE  
ENVIRONMENTAL RESTORATION PROGRAM  
REMEDIAL PROGRAM MANAGER'S MEETING  
BLDG 570, Main Conference Room  
21 July 2010, 9:30 P.M.  
AGENDA

1. ADMINISTRATIVE

- A. PREVIOUS MEETING MINUTES
- B. ACTION ITEM REVIEW
- C. MASTER MEETING AND DOCUMENT SCHEDULE REVIEW

2. CURRENT PROJECTS

- A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)
- B. ADMINISTRATIVE RECORD UPDATE PROCESS (MARK)

3. PRESENTATIONS

- A. 2010 FIELD WORK UPDATE
- B. PLANNED TASKS, JULY 2010 THROUGH FEBRUARY 2011, PRE FOCUSED FEASIBILITY STUDY (FFS)
- C. PROGRAM UPDATE: ACTIVITIES COMPLETED, IN PROGRESS AND UPCOMING

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

- A. EPA REPRESENTATIVE ORIENTATION SCHEDULE

6. POTENTIAL RESPONSE TO COMMENTS MEETINGS

## Travis AFB Master Document Schedule

### Annual Meeting and Teleconference Schedule

Monthly RPM Meeting (Begins at 9:30 a.m.)	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.)
01-27-10	—	—
—	—	—
03-30-10	—	—
04-22-10 *(1:00 PM)	—	04-22-10
05-19-10	—	—
06-23-10	—	—
07-21-10	—	—
08-25-10	—	—
09-22-10	—	—
10-21-10 *(1:00 PM)	—	10-21-10
—	11-17-10	—
12-08-10	—	—

\* RPM meeting moved to coincide with the RAB meeting.

## Travis AFB Master Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	Basewide Groundwater		
	Focused Feasibility Study Travis, Glenn Anderson CH2M Hill, Loren Krook	Proposed Plan Travis, Glenn Anderson CH2M HILL, Loren Krook	Record of Decision Travis, Glenn Anderson CH2M HILL, Tony Jaegel
<b>Scoping Meeting</b>	<b>03-30-10</b>	NA	<b>01-24-07</b>
Predraft to AF/Service Center	12-30-10	06-08-11	12-08-11
AF/Service Center Comments Due	01-13-11	06-22-11	01-11-12
Draft to Agencies	01-27-11	07-06-11	01-25-12
Draft to RAB	01-27-11	07-06-11	01-25-12
Agency Comments Due	02-28-11	08-31-11	03-28-12
<b>Response to Comments Meeting</b>	<b>03-23-11</b>	<b>09-22-11</b>	04-18-12
Agency Concurrence with Remedy	NA	NA	05-09-12
Public Comment Period	NA	10-13-11 to 11-14-11	NA
<b>Public Meeting</b>	NA	*10-20-11	NA
Response to Comments Due	04-12-11	12-14-11	05-29-12
Draft Final Due	04-12-11	12-14-11	05-29-12
Final Due	05-12-11	01-13-12	06-27-12

\*Public meeting to coincide with RAB meeting.

PRIMARY DOCUMENTS	
Life Cycle	Comprehensive Site Evaluation Phase II Travis AFB, Glenn Anderson Sky Research, Ian Roberts
	Report
Scoping Meeting	NA
Predraft to AF/Service Center	04-23-10
AF/Service Center Comments Due	05-04-10
Draft to Agencies	07-28-10
Draft to RAB	07-28-10
Agency Comments Due	08-27-10
Response to Comments Meeting	09-14-10
Agency Concurrence with Remedy	NA
Public Comment Period	NA
Public Meeting	NA
Response to Comments Due	09-20-10
Draft Final Due	09-20-10
Final Due	10-20-10

PRIMARY DOCUMENTS				
Life Cycle	Potrero Hills Annex Travis, Glenn Anderson			Union Creek Sites SD001 &SD033 Remedial Action Travis, Lonnie Duke ITSI, Rachel Hess
	FFS	Proposed Plan	ROD	Completion Report
<b>Scoping Meeting</b>	<b>180 days after Water Board Order Rescinded</b>	<b>+470 days</b>	<b>+735 days</b>	<b>NA</b>
Predraft to AF/Service Center	+ 270 days	+530 days	+ 915 days	01/06/10
AF/Service Center Comments Due	+ 300 days	+560 days	+ 975 days	02/05/10
Draft to Agencies	+330 days	+590 days	+ 1035 days	03/30/10
Draft to RAB	+ 330 days	+590 days	+ 1035 days	03/30/10
Agency Comments Due	+390 days	+650 days	+ 1095 days	06/01/10
<b>Response to Comments Meeting</b>	<b>+ 405 days</b>	<b>+665 days</b>	<b>+ 1110 days</b>	<b>06/23/10</b>
Agency Concurrence with Remedy	NA	NA	+ 1130 days	NA
Public Comment Period	NA	+735 to 765 days	NA	NA
<b>Public Meeting</b>	<b>NA</b>	<b>+745 days</b>	<b>NA</b>	<b>NA</b>
Response to Comments Due	+430 days	+695days	+ 1190 days	07/02/10
Draft Final Due	+430 days	+695 days	+ 1190 days	07/02/10
Final Due	+460 days	+725 days	+ 1250 days	07/12/10

SECONDARY DOCUMENTS	
Life Cycle	Natural Attenuation Assessment Report Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer
Scoping Meeting	NA
Predraft to AF/Service Center	07-07-09
AF/Service Center Comments Due	07-21-09
Draft to Agencies	08-26-09
Draft to RAB	08-26-09
Agency Comments Due	10-15-09
Response to Comments Meeting	05-13-10 (Teleconference w/EPA)
Response to Comments Due	02-02-10 (06-23-10)
Draft Final Due	07-06-10
Final Due	08-05-10
Public Comment Period	NA
Public Meeting	NA

SECONDARY DOCUMENTS			
Life Cycle	SD036/SD037 RPO Work Plan Travis AFB, Lonnie Duke CH2M HILL, Loren Krook	ST027B Site Characterization Report Travis AFB, Lonnie Duke CH2M HILL, Gavan Heinrich	Phytostabilization Study Report Travis AFB, Glenn Anderson Parsons, Bill Plaehn
<b>Scoping Meeting</b>	NA	NA	<b>10-09-08</b>
Predraft to AF/Service Center	08-13-09	02-23-10	04-12-10
AF/Service Center Comments Due	08-27-09	03-08-10	06-07-10
Draft to Agencies	10-01-09	03-29-10	06-16-10
Draft to RAB	10-01-09	03-29-10	06-16-10
Agency Comments Due	11-02-09 (01-27-10)	(04-28-10) 06-08-10	07-19-10
<b>Response to Comments Meeting</b>	<b>06-23-10</b>	<b>06-23-10</b>	<b>07-21-10</b>
Response to Comments Due	07-16-10	07-13-10	08-04-10
Draft Final Due	NA	NA	NA
Final Due	07-16-10	07-13-10	08-18-10
Public Comment Period	NA	NA	NA
<b>Public Meeting</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>



<b>INFORMATIONAL DOCUMENTS</b>			
<b>Life Cycle</b>	<b>Quarterly Newsletters (July 2010) Travis, Glenn Anderson</b>	<b>2009 GWTP RPO Annual Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick</b>	<b>2008-2009 CAMU Monitoring Annual Report Travis AFB, Lonnie Duke ITSI Rachel Hess</b>
<b>Scoping Meeting</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>
Predraft to AF/Service Center	NA	03-09-10	11-24-09
AF/Service Center Comments Due	NA	03-30-10	12-24-09
Draft to Agencies	07-05-10	04-28-10	01-27-10
Draft to RAB	NA	04-28-10	03-08-10
Agency Comments Due	07-19-10	05-28-10	03-08-10
<b>Response to Comments Meeting</b>	<b>TBD</b>	<b>06-23-10</b>	<b>TBD</b>
Response to Comments Due	07-21-10	07-14-10	05-19-10
Draft Final Due	NA	NA	NA
Final Due	07-26-10	07-14-10	05-19-10
Public Comment Period	NA	<b>NA</b>	<b>NA</b>
<b>Public Meeting</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

HISTORICAL	
Life Cycle	DP039 RPO Work Plan Travis AFB, Glenn Anderson CH2M HILL, Loren Krook
Scoping Meeting	NA
Predraft to AF/Service Center	09-17-09
AF/Service Center Comments Due	10-01-09
Draft to Agencies	10-11-09
Draft to RAB	10-11-09
Agency Comments Due	11-13-09 (01-27-10)
Response to Comments Meeting	04-22-10
Response to Comments Due	06-03-10
Draft Final Due	NA
Final Due	06-09-10
Public Comment Period	NA
Public Meeting	NA

# South Base Boundary Groundwater Treatment Plant

## Monthly Data Sheet

Report Number: 119

Reporting Period: 27 May 2010 – 30 June 2010

Date Submitted: 21 July 2010

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 – June 2010

Operating Time: **806 hours**

Percent Uptime: **98.9%**

Electrical Power Usage: **21,180 kWh**

Gallons Treated: **5.0 million gallons**

Gallons Treated Since July 1998: **695 million gallons**

Volume Discharged to Union Creek: **5.0 million gallons<sup>a</sup>**

VOC Mass Removed: **2.14 pounds<sup>a</sup>**

VOC Mass Removed Since July 1998: **383 pounds**

Rolling 12-Month Cost per Pound of Mass Removed<sup>b</sup>: \$4,596

Monthly Cost per Pound of Mass Removed : \$2,001

<sup>a</sup> Calculated using June 2010 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.

### Flow Rates

Average Groundwater Total Flow Rate: 104 gpm<sup>a</sup>

Average Flow Rate (gpm) <sup>b</sup>							
FT005 <sup>c</sup>				SS029		SS030	
EW01x05	Off line	EW736x05	Off line	EW01x29	0.7	EW01x30	8.8
EW02x05	Off line	EW737x05	Off line	EW02x29	5.4	EW02x30	1.9
EW03x05	Off line	EW742x05	Off line	EW03x29	Off line <sup>d</sup>	EW03x30	1.8
EW731x05	Off line	EW743x05	Off line	EW04x29	5.0	EW04x30	22.4
EW732x05	Off line	EW744x05	Off line	EW05x29	14.3	EW05x30	10.8
EW733x05	Off line	EW745x05	Off line	EW06x29	19.0	EW06x30	Dry
EW734x05	Off line	EW746x05	Off line	EW07x29	16.6	EW711x30	10.0 <sup>e</sup>
EW735x05	Off line						
FT005 Total:		Off line		SS029 Total: 61.0		SS030 Total: 55.7	

<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> Extraction well flow rates are based on the average of the weekly readings.

<sup>c</sup> Extraction wells at FT005 were taken off line in accordance with the 2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant.

<sup>d</sup> Extraction well is off line due to low VOC concentrations.

<sup>e</sup> Extraction well online, but has a faulty flow meter. Flow rate is measured at the well head.

gpm—gallons per minute

## Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
SBBGWTP	No Shutdowns				
SBBGWTP = South Base Boundary Groundwater Treatment Plant					

## Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 7 June 2010. Sample results are presented in Table 1. The total VOC concentration (51.1 µg/L) in the influent sample has increased since the May 2010 sample (45.6 µg/L) was collected. VOCs were not detected in the effluent sample, indicating good treatment efficiency.

On 7 June 2010, the SBBGWTP was configured to bypass the air stripper and utilize the existing two 6,000 pound liquid phase granular activated carbon (GAC) vessels in an attempt to investigate the state of the GAC within the vessels. During this operation, all process water flowing out of the carbon vessels was contained within the backwash tank, also existing at the SBBGWTP. After collecting influent (FLTR-0001), midpoint (MID-0002), and effluent (EFFT-0003) samples, all process water from the backwash tank was processed through the air stripper. The usual effluent sample (EFFT-0004) was collected at this time prior to discharge to Union Creek.

## Optimization Activities

During the June 2010 sampling event, an optimization test was initiated when the SBBGWTP was converted to operate using only the existing 6,000 pound GAC vessels to treat the incoming groundwater extracted from Sites SS029 and SS030. In this configuration, the air stripper was bypassed, and its positive displacement air blower was taken off line. When operating in this configuration, the flow rate through the system and the pressure drops across the carbon vessels were monitored to ensure sufficient operation. The flow rate when operating in this alternate configuration was the approximately the same (approximately 114 gpm) as when operating under the normal configuration at the SBBGWTP (i.e. when the air stripper is used to treat the process water). The pressure drop across the carbon vessels was minimal, which indicated that the GAC within each vessel had not cemented up or become plugged.

Samples were collected leading into, between, and after both carbon vessels to identify the capacity of the carbon to remediate the influent process water. Analytical results from these samples are presented in Table 2.

Only vinyl chloride was detected in the midpoint and effluent samples through the two carbon vessels. Since the influent groundwater entering the carbon vessels did not contain any vinyl chloride, these concentrations were likely the result of mass sorbed to the carbon and partitioning back into the process water as it passed through. Vinyl chloride is a common breakdown or “daughter” product from the contaminant most often seen in the influent process stream, TCE. Based on these results, the carbon within each 6,000 pound carbon vessel will likely have to be replaced before operating the system in a GAC-vessel-only configuration.

Upon completion of the optimization test, the system was configured once again to utilize the air stripper to treat the extracted groundwater at the SBBGWTP. Process water accumulated during the optimization test was re-treated through the air stripping prior to resuming discharge to Union Creek.

Table 1

Summary of Groundwater Analytical Data for June 2010 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	7 June 2010 (µg/L)	
				Influent	Effluent
Halogenated Volatile Organics					
Bromodichloromethane	5.0	0.15	0	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND
Chloroform	5.0	0.16	0	ND	ND
Dibromochloromethane	5.0	0.13	0	ND	ND
1,1-Dichloroethane	5.0	0.19	0	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	2.8	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND
1,1,2-Trichloroethane	5.0	0.20	0	ND	ND
Trichloroethene	5.0	0.19	0	48.3	ND
Vinyl Chloride	0.5	0.18	0	ND	ND
Non-Halogenated Volatile Organics					
Benzene	1.0	0.17	0	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND
Toluene	5.0	0.14	0	ND	ND
Xylenes	5.0	0.23 – 0.5	0	ND	ND
Other					
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	ND	ND
Total Suspended Solids (mg/L)	NE	1.0	0	5 J	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			

Table 2

Summary of Groundwater Analytical Data for June 2010 Optimization Test – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum (µg/L)	Detection Limit (µg/L)	N/C	7 June 2010 (µg/L)	
				Carbon Midpoint	Carbon Effluent
Halogenated Volatile Organics					
Bromodichloromethane	--	0.15	--	ND	ND
Carbon Tetrachloride	--	0.14	--	ND	ND
Chloroform	--	0.16	--	ND	ND
Dibromochloromethane	--	0.13	--	ND	ND
1,1-Dichloroethane	--	0.19	--	ND	ND
1,2-Dichloroethane	--	0.15	--	ND	ND
1,1-Dichloroethene	--	0.19	--	ND	ND
cis-1,2-Dichloroethene	--	0.19	--	ND	ND
trans-1,2-Dichloroethene	--	0.33	--	ND	ND
Methylene Chloride	--	0.66	--	ND	ND
Tetrachloroethene	--	0.21	--	ND	ND
1,1,1-Trichloroethane	--	0.14	--	ND	ND
1,1,2-Trichloroethane	--	0.20	--	ND	ND
Trichloroethene	--	0.19	--	ND	ND
Vinyl Chloride	--	0.18	--	3.9	1

mg/L = milligrams per liter  
 N/C = number of samples out of compliance with discharge limits  
 ND = not detected  
 µg/L = micrograms per liter

# Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 131

Reporting Period: 27 May 2010 – 30 June 2010

Date Submitted: 21 July 2010

This data sheet includes the following: results for the operation of the Central Groundwater Treatment Plant (CGWTP) and West Treatment and Transfer Plant (WTTP). A summary of flow rates for the CGWTP, WTTP, 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 are also included on this data sheet.

## Operations Summary – June 2010<sup>a</sup>

Operating Time:

Percent Uptime:

Electrical Power Usage:

**CGWTP:** 0 hours

**CGWTP:** 0%

**CGWTP:** 0 kWh

**WTTP:** Water: 0 hours

**WTTP:** Water: 0%

**WTTP:** 0 kWh

Vapor: 0 hours

Vapor: 0%

Gallons Treated: **0 gallons**

Gallons Treated Since January 1996: **429 million gallons**

VOC Mass Removed:

VOC Mass Removed Since January 1996:

**0 lbs (groundwater only)**

**2,492 lbs from groundwater**

**0 lbs (vapor only)**

**8,686 lbs from vapor**

Rolling 12-Month Cost per Pound of Mass Removed: \$1,683<sup>b</sup>

Monthly Cost per Pound of Mass Removed: \$885<sup>b,c</sup>

<sup>a</sup> CGWTP off line in May 2010 for fire station construction

<sup>b</sup> Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the CGWTP and WTTP.

<sup>c</sup> Costs are low due to system being offline for June 2010 for continued fire station construction activities

DRE = destruction removal efficiency

## Flow Rates

Average Groundwater Flow Rate: **0.0 gpm<sup>a</sup>**

Location	Average Flow Rate	
	Groundwater (gpm) <sup>b</sup>	Soil Vapor (scfm)
EW01x16	Off line	NA
EW02x16	Off line	NA
EW03x16	Off line	NA
EW605x16	Off line	NA
EW610x16	Off line	NA
WTTP	Off line	Off line
ThOx <sup>b</sup>	NA	NA

<sup>a</sup> CGWTP off line in June 2010 for fire station construction.

<sup>b</sup> ThOx was disassembled and removed 22 April 2010

gpm = gallons per minute

NA = not applicable/not available

scfm = standard cubic feet per minute

## Flow Rates from Wells Sites that Feed into the WTTP

Average Flow Rate from the WIOU Extraction Wells (gpm)							
SD037/ SD043				SD033/SD034		SD036	
EW599x37	Off line <sup>a</sup>	EW705x37	Off line <sup>a</sup>	EW501x33	Off line <sup>a</sup>	EW593x36	Off line <sup>a</sup>
EW700x37	Off line <sup>a</sup>	EW706x37	Off line <sup>a</sup>	EW503x33	Off line <sup>a</sup>	EW594x36	Off line <sup>a</sup>
EW701x37	Off line <sup>a</sup>	EW707x37	Off line <sup>a</sup>	EW01x34	Off line <sup>a</sup>	EW595x36	Off line <sup>a</sup>
EW702x37	Off line <sup>a</sup>	EW510x37	Off line <sup>a</sup>	EW03x34	Off line <sup>a</sup>		
EW703x37	Off line <sup>a</sup>	EW511x37	Off line <sup>a</sup>				
EW704x37	Off line <sup>a</sup>	EW555x43	Off line <sup>a</sup>				
gpm—gallons per minute NA – not available / not recorded <sup>a</sup> Extraction wells are off line due to CGWTP inactivity during June 2010							

## Shutdown/Restart Summary

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater):					
CGWTP	28 April 2010	11:15			Unscheduled due to Fire Station construction activities – continued through June 2010
WTTP (Groundwater):					
WTTP	28 April 2010	11:15			Unscheduled due to Fire Station construction activities – continued through June 2010
WTTP (Vapor):					
WTTP	24 August 2009				SVE system shut down for rebound study
CGWTP = Central Groundwater Treatment Plant WTTP = West Treatment and Transfer Plant					



## Summary of O&M Activities

Monthly groundwater and vapor sampling at the CGWTP was not performed in June 2010 due to the system being off line for the duration of the month for Fire Station construction activities.

Leaks remain in the well vaults for EW599x37, EW701x37, EW702x37, and EW703x37. Since these well have remained off line during June 2010, details on the status of these repairs will be presented in the monthly data sheet after each well has been returned to service.

The CGWTP is expected to be brought back online in July when construction activities involving CGWTP water piping have concluded.

## Optimization Activities

No optimization activities occurred in June 2010.

## 2010 Field Work Update

Travis Air Force Base, California  
July 21, 2010

### Installations in Progress

- Site DP039 EVO Biobarrier
- Site SS016 OSA Source Area Bioreactor
- Site SS030 Investigation
- Site SD037 EVO Injection
- Site SD036 EVO Injection
- Site SS015 Investigation
- Site FT005 Rebound Sampling

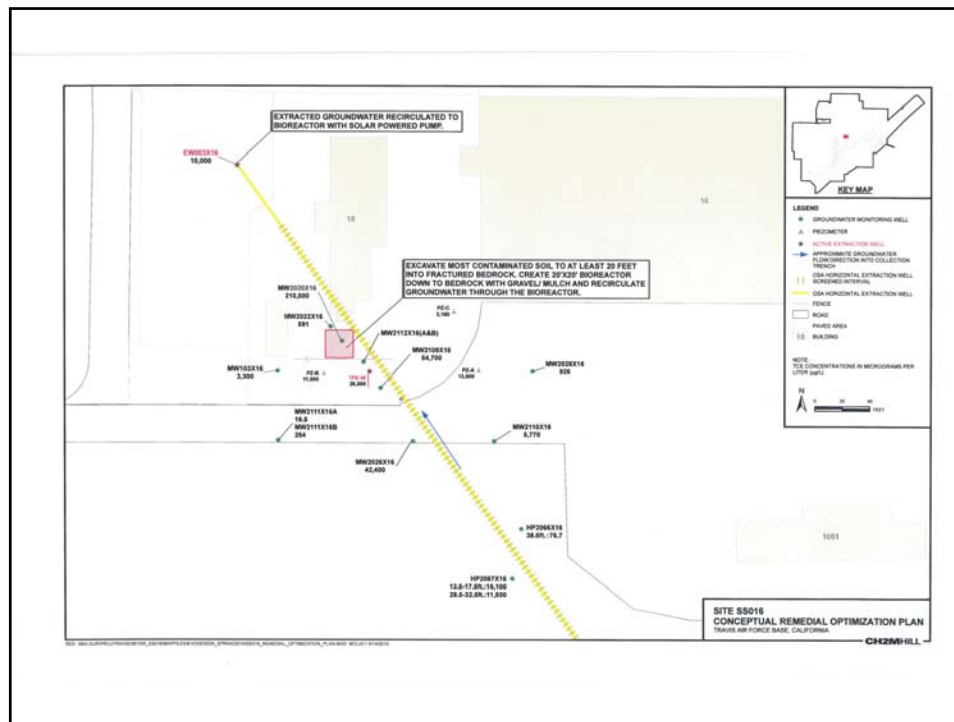






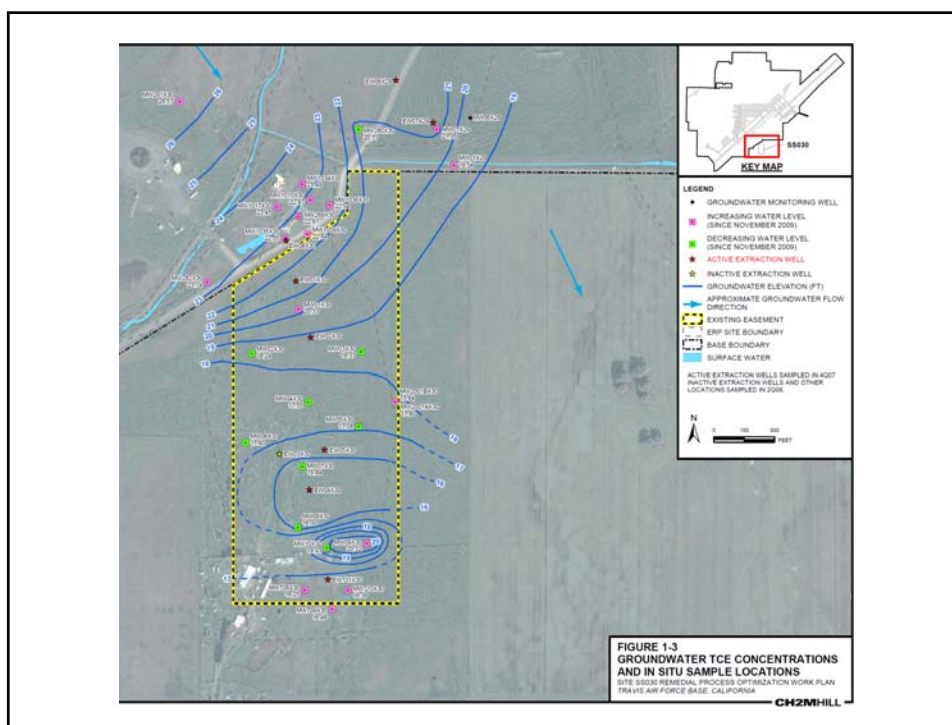
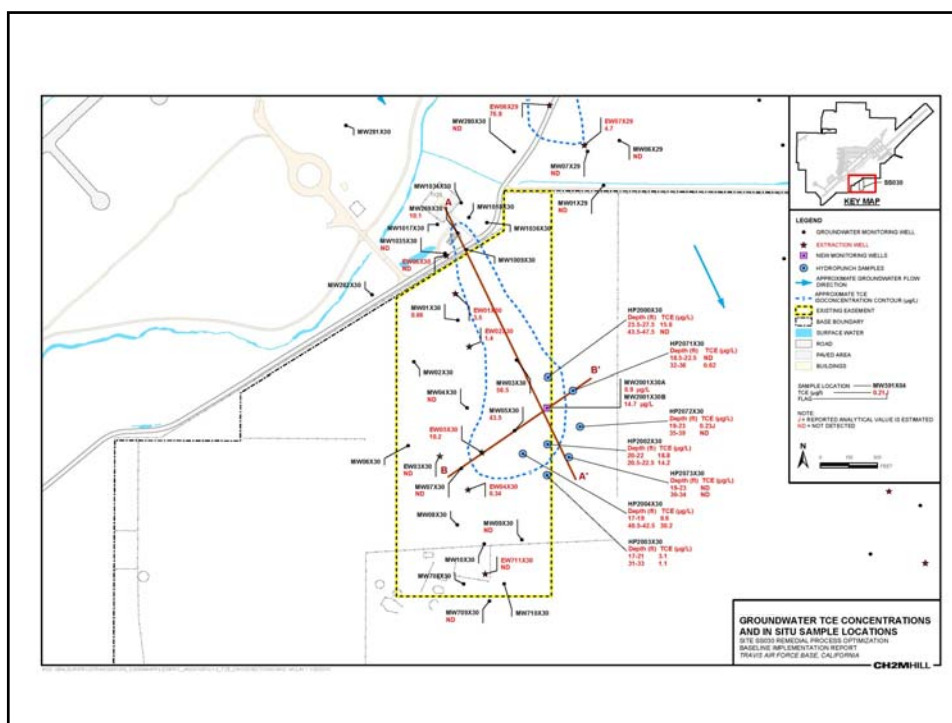
## Site SS016 OSA Source Area Bioreactor

- Wells MW2112x16A and B were installed to southeast of the bioreactor in May
- Sample results from new wells indicate 39,000 µg/L TCE in the shallow well, and 21 µg/L TCE in the deep well
- Contracting for construction of the bioreactor is in progress
- Tentative start date for construction is 16 August



## Site SS030 Investigation

- Maximize groundwater extraction at the site
- Monitor groundwater levels and TCE concentrations across the site during annual GSAP event in June 2010
- Determine if additional monitoring wells and extraction wells are needed to obtain capture of the SS030 TCE plume following the GSAP event
- Groundwater levels from 2010 GSAP show improving capture of the TCE plume





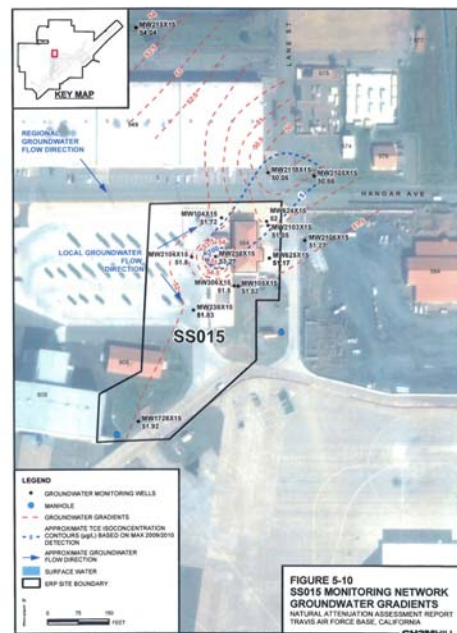
- Received analytical data for new wells located up-gradient and down-gradient of the hot spot
- Currently injecting 36,000 lbs of EVO into 7 injection wells
- Planned completion of EVO injection is 02 August
- Initiate performance monitoring of the remedy optimization (first event is November)



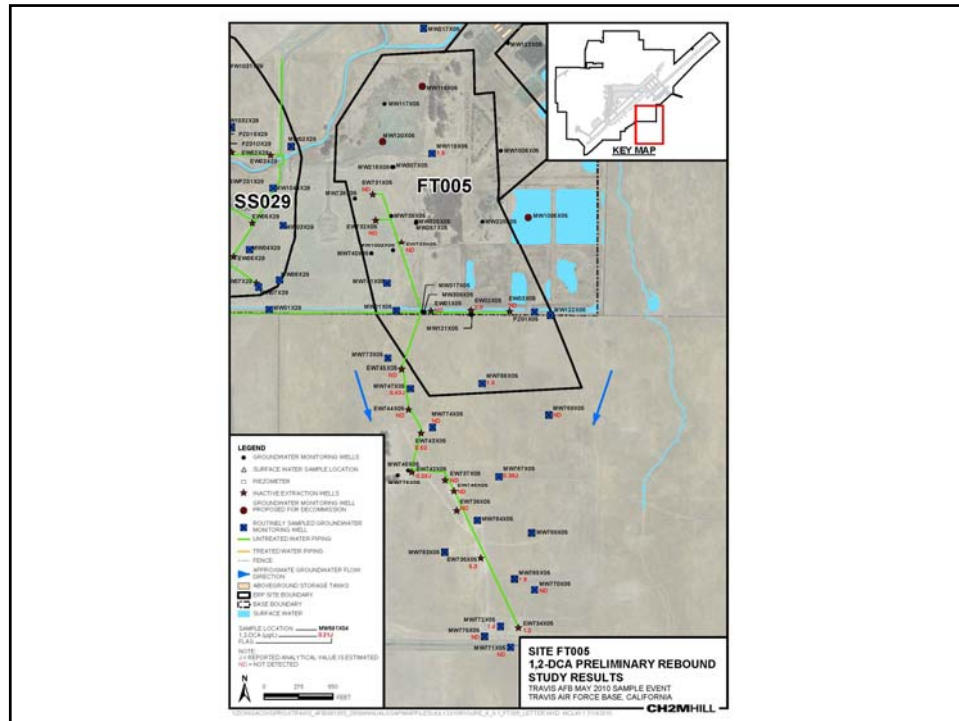
- Design for EVO injection is in progress (estimated completion is late August)
- Injection wells scheduled for installation in early September
- Baseline sampling scheduled for mid September
- EVO injection scheduled for early October

## Site SS015 Investigation

- Sample results from well MW2119x15 (northwest of plume) indicate ND for TCE and daughter products
- Sample results from well MW2120x15 (north of plume) indicate ND for TCE and daughter products
- Groundwater plume trends to the northeast
- Two additional wells planned for installation in late July (MW2124x15 and MW2125x15)
- EVO Injection design scheduled for completion in late August



- Conducted rebound sampling during GSAP event
- Results indicate some rebound occurred in several wells at the site
- In process of turning select extraction wells on to capture areas where rebound has occurred



Questions/Comments?

**Planned Tasks**  
**July 2010 through February 2011**  
**Pre Focused Feasibility Study**

Travis AFB  
RPM Meeting  
July 21, 2010

**Overview of Planned Tasks**

- Optimization Designs
- EVO Injections
- Construction
- Sampling – Rebound Studies
- Sampling – Bioreactor Performance Monitoring
- Sampling – EVO Performance Monitoring
- Sampling – GSAP
- Focused Feasibility Study (FFS) Schedule

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## Optimization Designs

<u>Site/Technology</u>	<u>Completion Date</u>
SS015 EVO Injection	30 August
SD036 EVO Injection	30 August
SS030 GETS Installation	TBD
LF007C GETS Installation	TBD

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## EVO Injections

<u>Site</u>	<u>Baseline Sampling</u>	<u>EVO Injection</u>
DP039	19-21 May & 24 Jun	15 Jun - 10 Jul
SD037	12-13 May	13 Jul - 02 Aug
SS015	Mid Sep	27 Sep - 08 Oct
SD036	Mid Sep	04 Oct - 05 Nov

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## Construction Tasks

<u>Site</u>	<u>Task</u>
SS016	Bioreactor Installation
SS030	GETS Modifications (as required)
LF007C	GETS Modifications (as required)
ST018*	GETS Installation

\* POCO Site - MTBE

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## Construction Schedule

<u>Site</u>	<u>Construction</u>	<u>Start-up</u>
SS016	16 Aug – 03 Sep	06 Sep
SS030	TBD	TBD
LF007C	TBD	TBD
ST018*	13 Sep – 31 Oct	02 Nov

\* POCO Site - MTBE

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## Sampling – Rebound Studies

Note: Text with this font indicates the data will be included in the FFS

<u>Site</u>	<u>Sample Schedule</u>	<u>Analytical</u>
FT004	Nov/May	VOCs
SD031	Nov/May	VOCs
LF008	Nov/May	Pesticides
FT005	Nov/May	VOCs
WIOU	Nov/May	VOCs, TPH

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## Sampling – Bioreactor Performance Monitoring

<u>Site</u>	<u>Sample Schedule</u>	<u>Analytical</u>
DP039	Nov/May	VOCs
SS016	Sep/Nov/Feb/May*	VOCs

\* Convert to semiannual sampling after May 2011

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## Sampling EVO Performance Monitoring

<u>Site</u>	<u>Sample Schedule</u>	<u>Analytical</u>
DP039	Oct/Jan	VOCs
SD037	Nov/Feb	VOCs
SS015	Jan/Mar	VOCs
SD036	Feb/May	VOCs

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## Sampling – GSAP

- 1) 2010 Semiannual – November 2010
- 2) 2011 Annual – May/June 2011

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## Focused FS Schedule

- Draft submitted to agencies January 27, 2011

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# Travis AFB Groundwater Program Management Overview Briefing

RPM Meeting  
July 21, 2010

## Completed Documents

### Documents

- Basewide Health & Safety Plan (HSP)
- Action Plan
- 2007/2008 GSAP Annual Report
- LF007C RPO Work Plan
- LF008 Rebound Study Work Plan
- SS014 Tier 1 POCO Evaluation WP
- ST027B Site Characterization WP
- SS030 RPO Work Plan
- ST032 POCO Technical Memo
- DP039 Bioreactor Work Plan
- 2008 Annual GWTP RPO Report
- Passive Diffusion Bag (PDB) Technical Memo
- RD/RA QAPP Update
- ST032 Tier 1 POCO Evaluation WP
- Phytostabilization Demonstration Tech Memo
- Model QAPP
- LF008 Rebound Test Tech Memo

### Documents

- Comprehensive Site Evaluation Phase II Work Plan
- Field Sampling Plan (FSP)
- SS016 RPO Work Plan
- ST018 POCO RA Work Plan
- Vapor Intrusion Assessment Report
- GSAP 2008/2009 Annual Report
- FT005 Data Gap Work Plan
- First and Second Site DP039 Sustainable Bioreactor Demonstration Progress Reports
- DP039 RPO Work Plan
- **SD036/SD037 RPO Work Plan**
- **ST027B Site Characterization Report**
- **2009 GWTP RPO Annual Report**
- **Union Creek Sites SD001 & SD033 Remedial Action Report**

## Completed Field Work

- ST027B Gore Sorber Survey – Ph 1
- ST027B Field Sampling – Phase 2
- GSAP 2008 Semi-annual Event
- ST027B Installation of Wells – Phase 3
- SS014 Site Characterization
- LF008 Rebound Study
- GSAP Annual Sampling Event - 2009
- SS030 Site Characterization – Ph 1
- ST027 Site Characterization -Ph 3
- ST014 Monitor Well Install - Subsite 3
- SD001/SD033 Sediment RA
- SS016 Site Characterization (OSA source area)
- ST018 Site Characterization
- SS030 Site Characterization (Off-base VOC Plume)
- DP039 Site Characterization (for Biobarrier Placement)
- SS014 & ST032 Q1 2010 MNA Sampling (2<sup>nd</sup> of 4 quarterly events)
- SD036 Additional Site Characterization (north & east)
- Therm/Ox System Removal
- SS016 Monitoring Well Installation
- SD037 EVO Injection Well Installation
- **FT005 Additional Site Data Gap Investigation**
- **DP039 Monitoring Well & Injection Well Installation**
- **DP039 EVO Injection**
- **SD037 Monitoring Well Installation**
- **GSAP 2010 Annual Sampling Event**

## In-Progress Documents & Field Work

### Documents

- Natural Attenuation Assessment Report (NAAR) (***Draft-Final***)
- CAMU 2008-2009 Monitoring Annual Report (Draft)
- Phytostabilization Study Report (Draft)

### Field Work

- **SS015 Monitor well Installation & Sampling (Round 3)**
- **SD037 EVO Injection**

## Upcoming Documents

- |  |                 |
|--|-----------------|
| • <b>2010 Annual GSAP Report</b>             | <b>Nov</b>      |
| • Focused Feasibility Study (FFS)            | <b>Jan 2011</b> |
| • <b>SS015 Remedy Optimization Work Plan</b> | <b>TBD</b>      |
| • <b>ISCO/ERD Tech Memo</b>                  | <b>TBD</b>      |

## Upcoming Field Work

- |  |                |
|--|----------------|
| • SD037 EVO Injection  | Jul            |
| • SS016 Bioreactor Installation                                  | <b>Aug</b>     |
| • SD036 Injection Well Installation                              | <b>Sep</b>     |
| • ST018 GETS Installation  | <b>Sep</b>     |
| • <b>SS016 Bioreactor Initial Quarterly Performance Sampling</b> | <b>Sep</b>     |
| • <b>SS015 Injection Well Installation</b>                       | <b>Sep</b>     |
| • <b>SS015 EVO Baseline Sampling</b>                             | <b>Sep</b>     |
| • <b>SD036 EVO Baseline Sampling</b>                             | <b>Sep</b>     |
| • <b>SS015 EVO Injection</b>                                     | <b>Sep-Oct</b> |
| • <b>SD036 EVO Injection</b>                                     | <b>Oct-Nov</b> |
| • <b>DP039 Bioreactor Quarterly Performance Sampling</b>         | <b>Oct</b>     |
| • <b>DP039 EVO Quarterly Performance Sampling</b>                | <b>Oct</b>     |
| • LF007C Site Characterization (Wetlands)                        | <b>TBD</b>     |