

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

**16 May 2012, 0930 Hours**

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 16 May 2012 at 0930 hours, at Travis AFB, California. Attendees included:

- Mark Smith Travis AFB
- Glenn Anderson Travis AFB
- Lonnie Duke Travis AFB
- Merrie Schilter-Lowe Travis AFB
- Gregory Parrott Travis AFB
- Dezso Linbrunner USACE-Omaha
- Alan Friedman California Regional Water Quality Control Board (RWQCB)
- Jose Salcedo California Department of Toxic Substances Control (DTSC)
- Dawn Wright California Department of Toxic Substances Control (DTSC)
- Nadia Hollan Burke United States Environmental Protection Agency (USEPA)
- Mary Snow Techlaw, Inc
- Rachel Hess ITSI
- Glenn Leong Trihydro
- Mike Wray CH2M HILL
- Loren Krook CH2M HILL
- Leslie Royer 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 (April 2012)
- Attachment 4 CGWTP Monthly Data Sheet (April 2012)
- Attachment 5 Site ST018 Monthly Data Sheet (April 2012)
- Attachment 6 Presentation: Combined Annual GSAP/RPO Report
- Attachment 7 Presentation: Program Overview

Mr. Smith introduced Ms. Dawn Wright, Public Participation Specialist for DTSC. Ms. Wright is replacing Mr. Marcus Simpson.

## **1. ADMINISTRATIVE**

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

The 16 April 2012 RPM meeting minutes were approved and finalized as written, with the following exceptions:

Ms. Burke requested the following changes be made on page four, seventh sentence - "...the removal is limited to the Old Skeet Range area and that EPA would like confirmation of the entire area." to "...the removal is limited to the area of the elevated PAHs and that EPA would like confirmation of the entire area."

Ms. Burke requested the following change be made on page six, section five, first paragraph - "Ms. Burke indicated that Mr. David Cooper, EPA's community involvement person, is no longer assigned to Travis AFB.." to "Ms Burke indicated that Mr. David Cooper, EPA's community involvement person, has a limited role with Travis AFB due to other duties assigned..."

Mr. Salcedo suggested inserting "AFB" after "Travis" on page two, section B, action item five, and on page four, first paragraph, second and ninth sentences.

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

Action items from April were reviewed.

Action item two still open: Travis AFB to research beneficial reuse of treated water. Mr. Smith will contact the Project Manager at AFCEE to discuss, and give an update at next RPM meeting.

### **Master Meeting and Document Schedule Review (see Attachment 2)**

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

#### **Travis AFB Annual Meeting and Teleconference Schedule**

— The next RPM meeting will be held on 13 June 2012 at 0930 hours.

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

— Proposed Plan (PP): Draft to Agencies date was changed to 09 May 2012 to reflect the actual date the PP was submitted to the Agencies. PP Public Meeting is tentatively scheduled for 15 August 2012. The rest of the document submittal dates have changed accordingly. Mr. Anderson said that the TEFA comments and responses have been agreed to and that Travis AFB

needs to incorporate those agreed changes into the TEFA before going final. Travis AFB requested permission from AFCEE to get the PP out before the TEFA went final. AFCEE gave their approval to move forward with the PP within twenty-four hours of Travis AFB request. Mr. Anderson said an additional week was added to the normal thirty day review time for the PP. Ms. Burke said that she thought the normal review time was sixty days, according to the Federal Facility Agreement (FFA), but acknowledged that Travis AFB had been working under an aggressive document review schedule. Ms. Burke added that if EPA needs more review time she will submit a request in writing. Mr. Salcedo said in terms of content he will try and get his comments to Travis AFB in the early part of June so the document can be discussed at the RPM meeting. Mr. Friedman said he would try to do the same.

- Groundwater Record of Decision (ROD): No change.
- Potrero Hills Annex: (FS, PP, and ROD): No change. Mr. Anderson and Mr. Duke attended a “meet and greet” at the Potrero Hills Annex, with Camp Dresser McKee and Smith (CDMS), Autoliv, and Goodrich. Mr. Kent Aue from California Regional Water Quality Control Board (CRWQCB) gave suggestions to CDMS regarding what steps to take in conducting a remedial investigation (RI). Mr. Anderson gave Ms. Wright a brief history on Potrero Hills Annex and the chemicals of concern (COC). The property is currently under regulatory oversight by CRWQCB, and will stay under their oversight until the site has been cleaned up. Ms. Wright asked who is responsible for the Feasibility Study and notifying the public. Mr. Smith said it is not under the CERCLA process. Ms. Burke asked if this site was originally in the CERCLA process. Mr. Parrott said originally yes, but it was pulled out. Mr. Anderson added it was pulled out of the CERCLA process at the recommendation of Ms. Bobbie Smith and Ms. Suzette Leith with EPA. Mr. Parrott added this site was in the WABOU ROD, and EPA signed the ROD. It was removed from the CERCLA process in 2002 so that the CRWQCB could provide regulatory oversight of both the Annex and the adjacent private property. Ms. Burke said even if it was pulled out she strongly suggested this site should still follow the CERCLA process. Mr. Smith said eventually it will, once the CRWQCB is finished overseeing the cleanup by Autoliv. Mr. Friedman said CRWQCB has a public participation process requirement in place and they will follow that process.
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes: Predraft to AF/Service Center new due date is 18 May 2012. The rest of the document submittal dates have changed accordingly.
- Work Plan for Remedial Process Optimization of Sites SS016 and SS029: The Response to Comments Meeting (RTC) was changed to 16 May 2012. The rest of the document submittal dates were changed to TDB. The TDB dates will be filled in after the RTC meeting being held this afternoon. Mr. Friedman and Mr. Salcedo said they had no comments on the document.

- Technical and Economic Feasibility Analysis (TEFA): The Response to Comments due date has been changed to 04 May 2012 to reflect the actual submittal date. The Final due date is scheduled for 31 May 2012.
- Site LF007C Data Gaps Investigation Technical Memorandum: No change to schedule.
- FT005 Remedial Action Completion Report: No change to schedule.
- Quarterly Newsletter (July 2012): Dates have been populated to reflect Q3 schedule. Mr. Anderson said his goal is to promote the PP in this quarterly newsletter. It will be contingent on the progress on responding to regulatory comments on the PP.
- 2011 Groundwater Treatment RPO Annual Report: Draft to agencies date changed to 19 April 2012 to reflect the actual date the report went out. The rest of the document submittal dates were changed accordingly.
- 2011 CAMU Annual Report: No change to schedule. Mr. Friedman indicated that the Water Board has no comments on this report.
- Old Skeet Range Engineering Evaluation/Cost Analysis: No change to schedule.

## 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 100% uptime, and 4.6 million gallons of groundwater were extracted and treated during the month of April 2012. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 113 gallons per minute (gpm). Electrical power usage was 11,760 kWh and approximately 16,111 pounds of CO<sub>2</sub> were created (based on DOE calculation). Approximately 1.3 pounds of volatile organic compounds (VOCs) were removed in April. The total mass of VOCs removed since startup of the system is 419 pounds.

Optimization Activities: No optimization activities to report for the month of April.

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

The Central Groundwater Treatment Plant (CGWTP) performed at 99.4% uptime with approximately 1.6 million gallons of groundwater extracted and treated during the month of April 2012. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 39.5 gpm. Electrical power usage was 2,338

kWh for all equipment connected to the Central plant, and approximately 3,203 pounds of CO<sub>2</sub> were created. Approximately 4.6 pounds of VOCs were removed from groundwater in April. The total mass of VOCs removed since the startup of the system is 11,278 pounds.

Optimization Activities for WTTP: The WTTP remains off line since it was shut down in April 2010 for the ongoing rebound study. No additional optimization activities to report for the month of April.

Optimization Activities for CGWTP: No optimization activities to report for the month of April.

### **North Groundwater Treatment Plant (no Attachment)**

Mr. Duke said the North Plant is still shut down, but will be turned back on soon, as the vernal pool is drying up.

### **Site ST018 Groundwater (MTBE) Treatment Plant (see Attachment 5)**

The Site ST018 (MTBE) Treatment Plant (S18GWTP) performed at 100% uptime with approximately 223 thousand gallons of groundwater extracted and treated during the month of April 2012. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 5.52 gpm. Electrical power usage for the month was 159 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 218 pounds of CO<sub>2</sub>. Approximately 3.09 pounds of BTEX, MTBE and TPH were removed from groundwater in April. The total BTEX, MTBE and TPH mass removed since the startup of the system is 11.8 pounds.

Note: electrical power use is for the alarm system and a pump that pushes water through the GAC. The other pumps in the system are all solar powered.

Optimization Activities: No optimization activities to report for the month of April.

## **3. Presentations**

### **Combining the GSAP and RPO Annual Reports (see Attachment 6)**

Ms. Royer reported on combining the GSAP and RPO Annual Reports into one annual report. See attachment 6 for details. The intent would be to combine the reports that cover 4Q2011, and all of calendar year 2012. Highlights included:

The annual RPO report includes the treatment plant performance and the remedial enhancement performance information. The GSAP report presents the groundwater base-wide monitoring program information. When these reports are submitted separately, there is

overlapping and repetition of several topics, such as rebound studies, capture zone analysis, and performance monitoring.

The advantages of combining the two annual reports include:

- Ease of use by having one comprehensive reference document for ERP groundwater sites.
- Less confusing reporting time frames (the RPO report follows a calendar year schedule, and the GSAP report takes data from the 4<sup>th</sup> quarter of one year and 2<sup>nd</sup> quarter of the following year). The combined reports will follow the calendar year.
- Combining the reports will reduce report review requirements

One difficulty with the first year of combining the reports is that wells to be sampled in the 4Q12 GSAP event (semiannual event) would normally be determined by the 2011-2012 Annual GSAP Report. However, since that report will not be prepared until after the 4Q12 semiannual event is already completed, another mechanism will need to be implemented to determine the sampling schedule.

A brief tech memo can be used to document the selection of 4Q12 GSAP event wells to bridge the gap to incorporate wells for the 2013 GSAP event. All wells requiring semiannual sampling frequency based on data trends and the “decision tree” would be sampled in 4Q12.

The tech memo would provide a list of wells and analytes to be sampled in 4Q12, a reason the wells were selected, updated time series plots, and Mann-Kendall trend analyses. A CD containing data and graphics would be provided for the agencies to review the wells selected. The tech memo is needed as a bridge to combine the two reports and would not be needed beyond 2012. The combined 2012 RPO/GSAP Annual Report would specify sampling for the entire 2013 calendar year.

Ms. Royer provided a graph of the current schedule and the proposed schedule changes that is included in the attachment.

Mr. Friedman, Mr. Salcedo and Ms. Burke all agreed combining these documents is a good idea.

### **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. Highlights included:

Field Work In Progress: 2012 Annual GSAP Sampling

Upcoming Documents include the Site LF007C Data Gaps Investigation Technical Memorandum, Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes, and FT005 Remedial Action Completion Report.

Upcoming Fieldwork includes SS029/SS016 System Optimization Analysis, FT005 Additional Soil Removal, CAMU Lysimeter Removal, and LF007C GET System Optimization.

#### **FT005 Soil Removal Action Schedule (no attachment)**

Ms. Hess gave a brief presentation on the FT005 Soil Removal Action Schedule.

Ms. Hess said the start date is contingent on getting the dig permit approved; tentatively the soil removal is scheduled to start mid week of 14 May 2012 or the following week. Ms. Hess will follow up with Mr. Duke to confirm the start date and to inform the regulators as to when the excavation will begin. The removal is approximately 420 cubic yards of remaining soil that exceeds residential standards for dioxins; the Air Force decided to try to attain residential standards. The PAHs, TPH and PCBs clean-up conducted last year all meet residential standards for those compounds. The intent is to utilize the same quarry for the backfill, direct-load the excavation, line the excavation with plastic after taking confirmation samples, and then backfill. No holes will be left open and the plastic will be there to demarcate the excavation areas in case the analytical results are above residential levels.

The lysimeter removal from the CAMU was approved by the State. The mobilization to the CAMU will follow the FT005 soil excavation. Different types of equipment are needed for the Lysimeter removal. Also, the Lysimeter location is on the opposite side of the runway from FT005. While waiting for the analytical results for the FT005 soil, the lysimeter excavation will be backfilled with approximately 100 cubic yards of clean soil. The soil is being tested for geotechnical and other requirements. Mr. Librunner asked how long it will take to remove the Lysimeter. Ms. Hess said it should probably be done in a week or two, to allow for the mobilization, demobilization and site restoration.

Mr. Linbrunner wanted it noted that this is the benefit of a Performance Based Contract (PBC). Originally the intention was to clean up to industrial standards, which would require this site to have land use controls. But because the contractor did such an outstanding job at management of resources, they had additional funds to conduct further cleanup to meet residential standards. It is a result of exceptional use of funding and efficient work by their field team.

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

None.

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

## 6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Research beneficial reuse of treated water and give update. Mr. Smith will contact the Project Manager at AFCEE to discuss this issue, and give an update at the 13 June RPM meeting.	TBD	Open



TRAVIS AIR FORCE BASE  
ENVIRONMENTAL RESTORATION PROGRAM  
REMEDIAL PROGRAM MANAGER'S MEETING  
BLDG 570, Main Conference Room  
16 May 2012, 9:30 A.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)

3. PRESENTATIONS

- A. COMBINED GSAP/RPO REPORT
- B. PROGRAM UPDATE: ACTIVITIES COMPLETED, IN PROGRESS AND UPCOMING

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

NOTE: WE HAVE ALSO SET ASIDE THE 12:30 TO 2:30 TIMEFRAME AFTER THE RPM MEETING TO DISCUSS THE WORK PLAN FOR REMEDIAL PROCESS OPTIMIZATION OF SS016 AND SS029 AND THE CAMU ANNUAL REPORT.

## Travis AFB Master Meeting and Document Schedule

(2012)

### 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.)
01-18-12	—	—
02-22-12	—	—
03-21-12	—	—
04-19-12 (2:00 PM)	—	04-19-12
05-16-12	—	—
06-13-12	—	—
07-18-12	—	—
08-15-12	—	—
09-19-12	—	—
10-18-12 (1:00 PM)	—	10-18-12
11-14-12	—	—
—	—	—

## Travis AFB Master Meeting and Document Schedule

<b>PRIMARY DOCUMENTS</b>		
<b>Life Cycle</b>	<b>Basewide Groundwater</b>	
	<b>Proposed Plan Travis, Glenn Anderson CH2M HILL, Loren Krook</b>	<b>Record of Decision Travis, Glenn Anderson CH2M HILL, Leah Waller</b>
<b>Scoping Meeting</b>	NA	<b>01-24-07 (11-30-11)</b>
Predraft to AF/Service Center	10-06-11	06-04-12
AF/Service Center Comments Due	11-05-11	08-28-12
Draft to Agencies	05-09-12	08-31-12
Draft to RAB	05-09-12	08-31-12
Agency Comments Due	06-15-12	10-30-12
<b>Response to Comments Meeting</b>	*06-18-12	<b>11-14-12</b>
Public Comment Period	08-06-12 to 09-05-12	NA
<b>Public Meeting</b>	08-15-12	NA
Response to Comments Due	06-20-12	11-28-12
Draft Final Due (CD)	06-27-12	11-28-12
Final Due	07-27-12	12-27-12

\* Teleconference if necessary

## Travis AFB Master Meeting and Document Schedule

<b>PRIMARY DOCUMENTS</b>			
<b>Life Cycle</b>	<b>Potrero Hills Annex Travis, Glenn Anderson</b>		
	<b>FS</b>	<b>Proposed Plan</b>	<b>ROD</b>
<b>Scoping Meeting</b>	<b>180 days after Water Board Order Rescinded</b>	<b>+470 days</b>	<b>+735 days</b>
Predraft to AF/Service Center	+ 270 days	+530 days	+ 915 days
AF/Service Center Comments Due	+ 300 days	+560 days	+ 975 days
Draft to Agencies	+330 days	+590 days	+ 1035 days
Draft to RAB	+ 330 days	+590 days	+ 1035 days
Agency Comments Due	+390 days	+650 days	+ 1095 days
<b>Response to Comments Meeting</b>	<b>+ 405 days</b>	<b>+665 days</b>	<b>+ 1110 days</b>
Agency Concurrence with Remedy	NA	NA	+ 1130 days
Public Comment Period	NA	+735 to 765 days	NA
<b>Public Meeting</b>	<b>NA</b>	<b>+745 days</b>	<b>NA</b>
Response to Comments Due	+430 days	+695days	+ 1190 days
Draft Final Due	+430 days	+695 days	+ 1190 days
Final Due	+460 days	+725 days	+ 1250 days

## Travis AFB Master Meeting and Document Schedule

<b>SECONDARY DOCUMENTS</b>			
<b>Life Cycle</b>	<b>Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer</b>	<b>Work Plan for Remedial Process Optimization of Sites SS016 and SS029 at Travis AFB Travis AFB, Lonnie Duke Tri-Hydro, Glenn Leong</b>	<b>Technical and Economic Feasibility Analysis Travis AFB, Glenn Anderson CH2M HILL, Loren Krook</b>
<b>Scoping Meeting</b>	NA	NA	<b>07-20-11</b>
Predraft to AF/Service Center	05-18-12	01-06-12	10-13-11
AF/Service Center Comments Due	06-01-12	01-20-12	10-31-11
Draft to Agencies	06-15-12	02-22-12	12-15-11
Draft to RAB	06-15-12	02-22-12	12-15-11
Agency Comments Due	07-16-12	04-02-12	01-30-12
<b>Response to Comments Meeting</b>	<b>07-18-12</b>	<b>05-16-12</b>	<b>04-19-12</b>
Response to Comments Due	08-06-12	TBD	05-04-12
Draft Final Due	NA	NA	NA
Final Due	08-06-12	TBD	05-31-12
Public Comment Period	NA	NA	NA
<b>Public Meeting</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>

## Travis AFB Master Meeting and Document Schedule

<b>SECONDARY DOCUMENTS</b>		
<b>Life Cycle</b>	<b>Site LF007C Data Gaps Investigation Technical Memorandum  Travis AFB, Lonnie Duke CH2M HILL, Tony Chakurian</b>	<b>FT005 Remedial Action Completion Report  Travis AFB, Lonnie Duke ITSI, Rachel Hess</b>
<b>Scoping Meeting</b>	NA	NA
Predraft to AF/Service Center	05-03-12	06-04-12
AF/Service Center Comments Due	05-17-12	06-22-12
Draft to Agencies	05-31-12	07-09-12
Draft to RAB	05-31-12	07-09-12
Agency Comments Due	07-02-12	08-10-12
<b>Response to Comments Meeting</b>	<b>07-18-12</b>	<b>08-15-12</b>
Response to Comments Due	08-01-12	08-24-12
Draft Final Due	NA	NA
Final Due	08-01-12	09-14-12
Public Comment Period	NA	NA
<b>Public Meeting</b>	NA	NA

## Travis AFB Master Meeting and Document Schedule

<b>INFORMATIONAL DOCUMENTS</b>			
<b>Life Cycle</b>	<b>Quarterly Newsletters (July 2012) Travis, Glenn Anderson</b>	<b>2011 Groundwater Treatment RPO Annual Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick</b>	<b>2011 CAMU Annual Report Travis AFB, Lonnie Duke ITSI, Rachel Hess</b>
<b>Scoping Meeting</b>	NA	NA	NA
Predraft to AF/Service Center	NA	02-22-12	04-06-12
AF/Service Center Comments Due	NA	03-05-12	04-12-12
Draft to Agencies	07-03-12	04-19-12	04-13-12
Draft to RAB	NA	04-19-12	04-13-12
Agency Comments Due	07-17-12	05-21-12	05-14-12
<b>Response to Comments Meeting</b>	<b>TBD</b>	<b>06-13-12</b>	<b>05-16-12</b>
Response to Comments Due	07-24-12	06-27-12	05-18-12
Draft Final Due	NA	NA	NA
Final Due	07-31-12	06-27-12	05-18-12
Public Comment Period	NA	NA	NA
<b>Public Meeting</b>	NA	NA	NA

## Travis AFB Master Meeting and Document Schedule

<b>INFORMATIONAL DOCUMENTS</b>	
<b>Life Cycle</b>	<b>Old Skeet Range Engineering Evaluation/Cost Analysis Travis AFB, Glenn Anderson Baywest, Steve Thornton</b>
<b>Scoping Meeting</b>	<b>NA</b>
Predraft to AF/Service Center	07-18-11
AF/Service Center Comments Due	08-03-11
Draft to Agencies	09-29-11
Draft to RAB	09-29-11
Agency Comments Due	10-31-11
<b>Response to Comments Meeting</b>	<b>TBD (Teleconference)</b>
Agency Concurrence with Remedy	NA
Public Comment Period	TBD
<b>Public Meeting</b>	<b>NA</b>
Response to Comments Due	TBD
Draft Final Due	TBD
Final Due	<b>TBD</b>



## Travis AFB Master Meeting and Document Schedule

<b>HISTORICAL</b>		
<b>Life Cycle</b>	<b>RPO Baseline Implementation Report Travis AFB, Lonnie Duke CH2M HILL, Tony Chakurian</b>	<b>2010/2011 GSAP Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer</b>
<b>Scoping Meeting</b>	NA	NA
Predraft to AF/Service Center	08-02-11	10-20-11
AF/Service Center Comments Due	08-16-11	10-30-11
Draft to Agencies	09-16-11	12-07-11
Draft to RAB	09-16-11	12-07-11
Agency Comments Due	10-31-11	02-05-12
<b>Response to Comments Meeting</b>	<b>02-22-12</b>	<b>02-22-12</b>
Response to Comments Due	02-28-12	02-27-12
Draft Final Due	NA	NA
Final Due	03-28-12	04-11-12
Public Comment Period	NA	NA
<b>Public Meeting</b>	NA	NA

# South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 140

Reporting Period: 31 Mar 2012 – 30 Apr 2012

Date Submitted: 16 May 2012

This monthly data sheet presents information regarding the South Base Boundary Groundwater Treatment Plant (SBBGWTP).

## System Metrics

Table 1 presents operation data from the April 2012 reporting period.

**Table 1 – Operations Summary – April 2012**

Operating Time: <b>SBBGWTP: 670 hours</b>	Percent Uptime: <b>SBBGWTP: 100 %</b>	Electrical Power Usage: <b>SBBGWTP: 11,760 kWh (16,111 lbs CO<sub>2</sub> generated<sup>a</sup>)</b>
Gallons Treated: <b>4.6 million gallons</b>	Gallons Treated Since July 1998: <b>782 million gallons</b>	
Volume Discharged to Union Creek: <b>4.6 million gallons</b>		
VOC Mass Removed: <b>1.3 lbs<sup>b</sup></b>	VOC Mass Removed Since July 1998: <b>419 lbs</b>	
Rolling 12-Month Cost per Pound of Mass Removed: \$6,781 <sup>c</sup>		
Monthly Cost per Pound of Mass Removed: \$4,785		

lbs = pounds

<sup>a</sup> Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.

<sup>b</sup> Calculated using April 2012 EPA Method SW8260B analytical results.

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

Table 2 presents individual extraction well flow rates along with the average system flow during the monthly reporting period.

<b>Table 2 – SBBGWTP Average Flow Rate (gpm)<sup>a</sup></b>							
<b>FT005<sup>b</sup></b>				<b>SS029</b>		<b>SS030</b>	
EW01x05	Offline <sup>c</sup>	EW736x05	Offline	EW01x29	7.3	EW01x30	8.6
EW02x05	0.6	EW737x05	Offline	EW02x29	4.6	EW02x30	0.1
EW03x05	Offline	EW742x05	Offline	EW03x29	3.0	EW03x30	2.4
EW731x05	Offline	EW743x05	Offline	EW04x29	9.6	EW04x30	22.5
EW732x05	Offline	EW744x05	Offline	EW05x29	9.6	EW05x30	11.2
EW733x05	Offline	EW745x05	Offline	EW06x29	1.0	EW06x30	Dry
EW734x05	11.0	EW746x05	Offline	EW07x29	7.2	EW711x30	16.7
EW735x05	5.8						
<b>FT005 Total:</b>		<b>17.4</b>		<b>SS029 Total:</b>		<b>42.3</b>	
				<b>SS030 Total:</b>		<b>61.5</b>	
<b>SBBGWTP Average Monthly Flow<sup>d</sup>: 113 gpm</b>							
<sup>a</sup> Extraction well flow rates are based on end-of-month readings. <sup>b</sup> Most extraction wells at FT005 were taken offline 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>c</sup> Wiring troubleshooting began in March 2012 at EW01x05. The extraction well is expected to be brought back online in May 2012. <sup>d</sup> The average groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the operating time of the plant. Flow rates listed for each well are instantaneous flow rates and may differ from the average monthly flow due to well recharge. gpm – gallons per minute Recharge –not pumping while the well recharges. SBBGWTP – South Base Boundary Groundwater Treatment Plant							

Table 3 presents a summary of system shutdowns during the monthly reporting period.

<b>Table 3 – Summary of System Shutdowns</b>					
<b>Location</b>	<b>Shutdown</b>		<b>Restart</b>		<b>Cause</b>
	<b>Date</b>	<b>Time</b>	<b>Date</b>	<b>Time</b>	
	None		NA		NA
SBBGWTP = South Base Boundary Groundwater Treatment Plant					

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## Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 4 April 2012. Sample results are presented in Table 4. The total VOC concentration (34.8 µg/L) in the influent sample has increased since the March 2012 sample (27.9 µg /L) was collected. Figure 1 presents a plot of influent concentrations at the SBBGWTP over the past twelve (12) months.

Concentrations of TCE, cis-1,2-DCE, and 1,2-DCA were detected at concentrations of 32.4, 2.0, and 0.42 J µg/L at the influent sample location in April 2012. While TCE was not detected in samples collected at the GAC midpoint sampling location, 1,2-DCA, chloroform, and cis-1,2-DCE were detected at this midpoint location at concentrations of 0.53, 0.2 J, and 2.0 µg/L, respectively. No contaminants were detected in the effluent process stream. Travis AFB will continue to monitor for evidence of breakthrough of the primary carbon vessel, though the SBBGWTP did recently undergo a carbon change out of 6,000 pounds (the current lag vessel) in the GAC treatment stream.

On 2 March 2012, troubleshooting activities indicated that extraction well EW01x05 was inoperable due to a pump motor ground short. This pump was replaced in March 2012, but additional troubleshooting activities have been ongoing to resolve other electrical issues at EW01x05 including a potentially faulty signal wire connection between the motor control center and the well head. This extraction well pump is expected to be brought back on line and fully operational in May 2012.

## Optimization Activities

No optimization activities were performed in April 2012.

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## Sustainability

Travis AFB is committed to decreasing the amount of GHG produced directly (waste streams discharging GHG) or indirectly (GHG produced as related to electrical energy consumption) from all systems across Travis AFB. Travis AFB continues to optimize each treatment plant to reduce the amount of electrical energy consumed, and to implement sustainable treatment plant optimization programs, such as bioreactors and EVO injection well networks.

Figure 2 presents the historical GHG production from the SBBGWTP. The SBBGWTP produced approximately 16,111 pounds of GHG during April 2012. GHG production has decreased (from 16,358 pounds) since March 2012 as a result of decreased SBBGWTP operating time. The overall energy consumption levels remain consistent with the general decrease in energy demand since the air stripper was bypassed, and the GAC system was brought online.

TABLE 4

Summary of Groundwater Analytical Data for April 2012 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	4 April 2012 (µg/L)		
				Influent	Midpoint	Effluent
<b>Halogenated Volatile Organics</b>						
Bromodichloromethane	5.0	0.15	0	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	ND	0.2 J	ND
Dibromochloromethane	5.0	0.13	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.50	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	0.42 J	0.53	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	2.0	2.0	ND
trans-1,2-Dichloroethene	5.0	0.33	0	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.20	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	32.4	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND
<b>Non-Halogenated Volatile Organics</b>						
Benzene	1.0	0.17	0	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND
Toluene	5.0	0.14	0	ND	ND	ND
Xylenes	5.0	0.23 – 0.5	0	ND	ND	ND
<b>Other</b>						
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	NM	NM	ND
Total Suspended Solids (mg/L)	NE	1.0	0	51 J-	NM	NM

\* In accordance with Appendix B of the Travis AFB South Base Boundary Groundwater Treatment Plant Operations and Maintenance Manual (CH2M HILL, 2004).

## Notes:

J = analyte concentration is considered an estimated value

J- = analyte concentrations is considered and estimated value with a low bias

mg/L = milligrams per liter

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

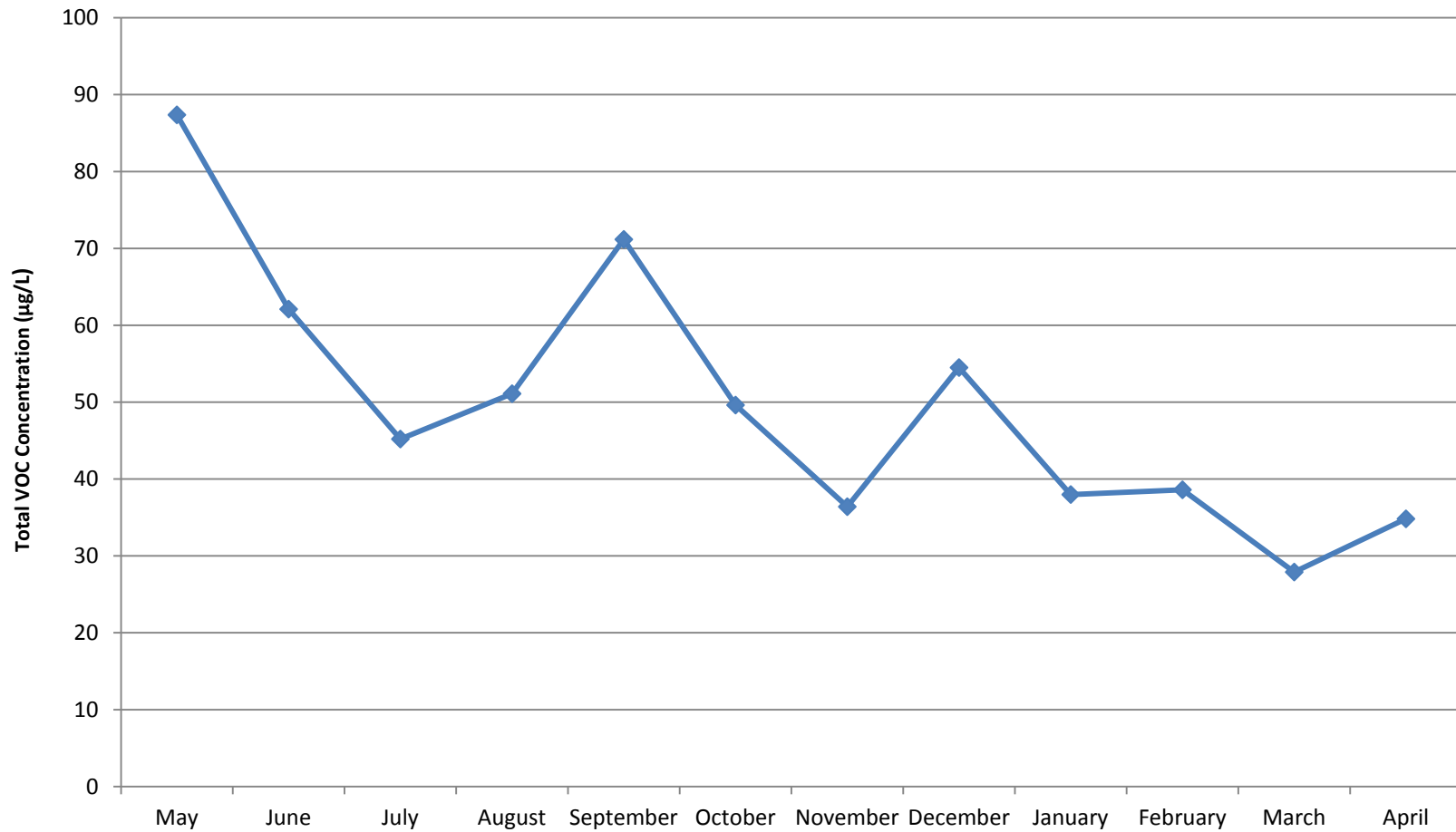
ND = not detected

NE = not established

NM = not measured

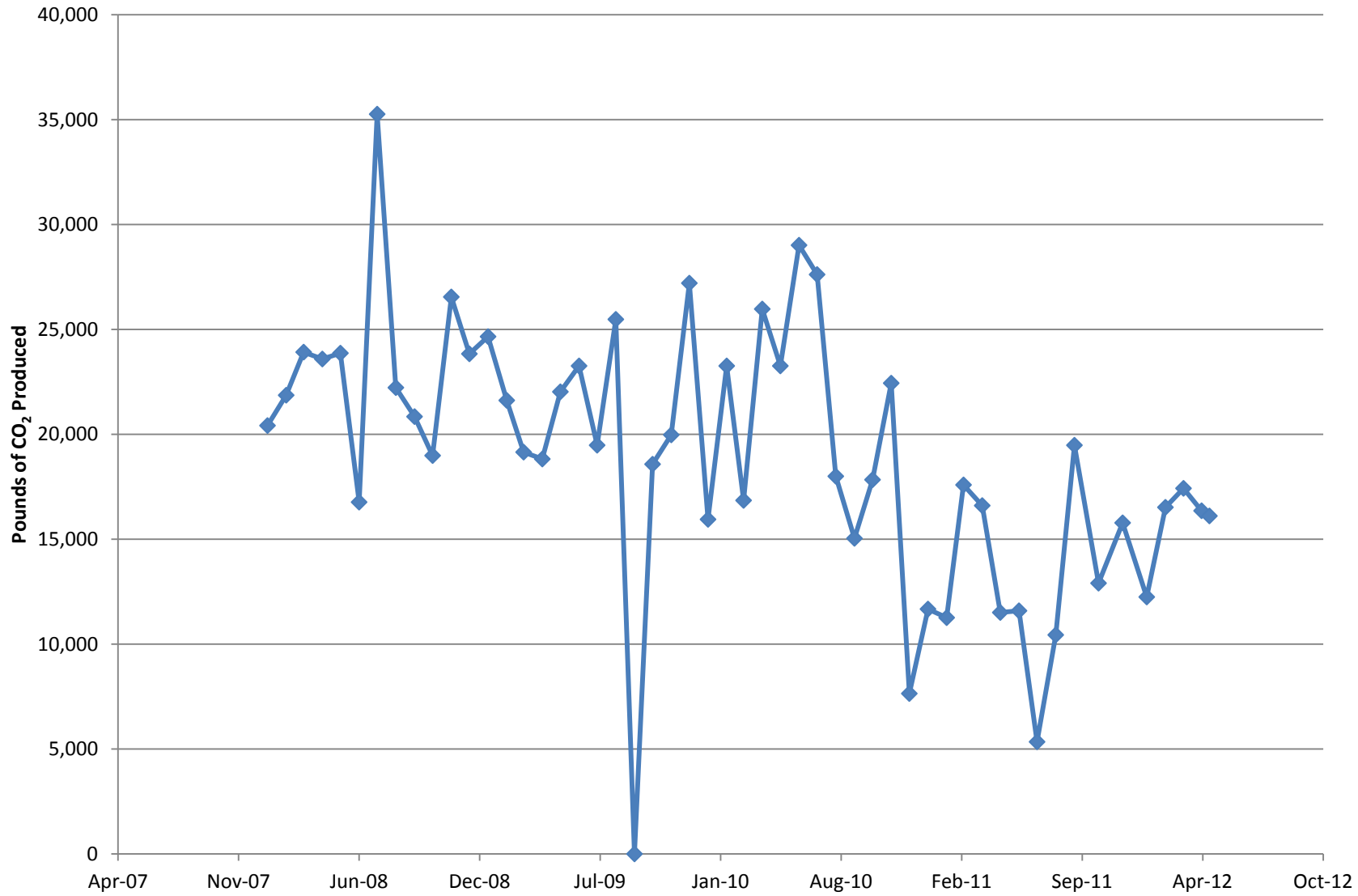
µg/L = micrograms per liter

**Figure 1**  
**SBBGWTP Total VOC Influent Concentrations - Twelve Month History**  
**Travis Air Force Base, California**



### Figure 2

#### Equivalent Pounds of CO<sub>2</sub> Produced by the South Base Boundary Groundwater Treatment Plant





# Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 153

Reporting Period: 31 Mar 2012 – 30 Apr 2012

Date Submitted: 16 May 2012

This monthly data sheet presents information regarding the Central Groundwater Treatment Plant (CGWTP) and its associated technology demonstrations. The ongoing technology demonstrations related to the CGWTP include various emulsified vegetable oil (EVO) injections, two (2) bioreactor treatability studies, and various rebound studies.

## System Metrics

Table 1 presents operational data from the April 2012 reporting period.

Table 1 – Operations Summary – April 2012		
Operating Time:	Percent Uptime:	Electrical Power Usage:
<b>CGWTP:</b> 671 hours	<b>CGWTP:</b> 99.4%	<b>CGWTP:</b> 2,338 kWh (3,203 lbs CO <sub>2</sub> generated <sup>a</sup> )
<b>WTTP:</b> Water: 0 hours Vapor: 0 hours	<b>WTTP<sup>b</sup>:</b> Water: 0% Vapor: 0%	<b>WTTP:</b> 0 kWh
Gallons Treated: <b>1.6 million gallons</b>	Gallons Treated Since January 1996: <b>461 million gallons</b>	
VOC Mass Removed:	VOC Mass Removed Since January 1996:	
<b>4.6 lbs<sup>b</sup> (groundwater only)</b> <b>0 lbs (vapor only)</b>	<b>2,592 lbs from groundwater</b> <b>8,686 lbs from vapor</b>	
Rolling 12-Month Cost per Pound of Mass Removed: \$1,448 <sup>c</sup>		
Monthly Cost per Pound of Mass Removed: \$1,228		
<sup>a</sup> Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG. <sup>b</sup> Calculated using April 2012 EPA Method SW8260B analytical results. <sup>c</sup> Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the CGWTP.		

Table 2 presents individual extraction well flow rates during the monthly reporting period. All WIOU extraction wells continue to remain off line for the WIOU rebound study.

<b>Table 2 – CGWTP Average Flow Rates<sup>a</sup></b>		
<b>Location</b>	<b>Average Flow Rate</b>	
	<b>Groundwater (gpm)</b>	<b>Soil Vapor (scfm)<sup>b</sup></b>
EW01x16	20.5	Offline
EW02x16	7.3	Offline
EW03x16	0.8 <sup>c</sup>	Offline
EW605x16	6.9	Offline
EW610x16	4.4	Offline
CGWTP	39.5	--
WTTP	Offline <sup>b</sup>	Offline

<sup>a</sup> All flow rates calculated by dividing total gallons processed by system operating time for the month.  
<sup>b</sup> No vapor was treated in April 2012.  
<sup>c</sup> Water discharged to Site SS016 bioreactor – flow rate taken from wellhead Flow Totalizer divided by operating time during the month.  
gpm = gallons per minute  
-- = not applicable/not available  
scfm = standard cubic feet per minute

Table 3 presents average a summary of shutdowns during the monthly reporting period.

<b>Table 3 – Summary of System Shutdowns</b>					
<b>Location</b>	<b>Shutdown</b>		<b>Restart</b>		<b>Cause</b>
	<b>Date</b>	<b>Time</b>	<b>Date</b>	<b>Time</b>	
<b>CGWTP (Groundwater)</b>					
CGWTP	NA	NA	13 April 2012	0905	System offline due to a computer system reboot, likely due to a power outage.
<b>WTTP</b>					
	System down for rebound study		NA		NA

CGWTP = Central Groundwater Treatment Plant  
WTTP = West Transfer Treatment Plant

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## Summary of O&M Activities

Monthly groundwater samples at the CGWTP were collected on 4 April 2012. Sample results are presented in Table 4. The total VOC concentration (349 µg/L) in the influent sample has decreased slightly since the March 2012 sample (367 µg/L) was collected. Concentrations of cis-1,2-DCE (63.5 µg/L) and TCE (280 µg/L) were detected at the influent sampling location, and cis-1,2-DCE (0.38 J µg/L) was detected between the primary and secondary vessels. No contaminants were detected at the effluent sampling location.

Vinyl chloride was also detected at the influent sampling location, but was not detected at the system effluent sampling location. The vinyl chloride concentration increased slightly through the primary GAC vessel from 0.37 J µg/L to 0.41 J µg/L. Vinyl chloride was not detected at the sampling location following the secondary GAC vessel, or at the effluent sample location.

Travis Air Force Base will continue to monitor vinyl chloride and other contaminant concentrations at CGWTP for breakthrough in the primary vessel, as this is the fourth consecutive month that the primary vessel has not significantly reduced the influent vinyl chloride concentration.

Figure 1 presents a plot of influent concentrations (total VOCs) at the CGWTP versus time for the past twelve (12) months.

The Site DP039 bioreactor has transitioned to a “pulsed mode” operation in order to improve the rate of remediation and to preserve the small amounts of total organic carbon being produced within the bioreactor. On 13 April 2012, the extraction pump at well EW782x39 (the Site DP039 bioreactor recirculation well) was shutdown as part of the pulsed operation for a period of approximately four (2) weeks. The pump was brought back on line on 27 April 2012 and will continue to operate into May 2012. Future pulsed operation will consist of operating the pump for approximately two (2) weeks, then taking it off line for approximately four (4) weeks.

## Optimization Activities

No optimization activities occurred at CGWTP in April 2012.

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## Sustainability

Travis AFB is committed to decreasing the amount of GHG produced directly (waste streams discharging GHG) or indirectly (GHG produced as related to electrical energy consumption) from all systems across Travis AFB. Travis AFB continues to optimize each treatment plant to reduce the amount of electrical energy consumed, and to implement sustainable treatment plant optimization programs, such as bioreactors and EVO injection well networks.

Figure 2 presents the historical GHG production from the systems associated with the CGWTP. The CGWTP produced approximately 3,203 pounds of GHG during April 2012. This is a slight decrease from the amount produced in March 2012 (approximately 3,430 pounds).

TABLE 4

Summary of Groundwater Analytical Data for April 2012 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	4 April 2012 (µg/L)			
				Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
<b>Halogenated Volatile Organics</b>							
Bromodichloromethane	5.0	0.15	0	ND	ND	ND	ND
Carbon Disulfide	1.0	0.19	0	ND	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND	ND
MTBE	1.0	0.5	0	0.52 J	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.25	0	0.31 J	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.15	0	ND	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	ND	ND	ND	ND
1,1-Dichloroethane	5.0	0.5	0	ND	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	0.64	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	63.5	0.38 J	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.3	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.58	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.14	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND	ND
Trichloroethene	5.0	0.19	0	280	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	0.37 J	0.41 J	ND	ND
<b>Non-Halogenated Volatile Organics</b>							
Benzene	1.0	0.17	0	ND	ND	ND	ND
Ethylbenzene	5.0	0.22	0	ND	ND	ND	ND
Toluene	5.0	0.14	0	0.15 J	ND	ND	ND
Total Xylenes	5.0	0.23 – 0.5	0	ND	ND	ND	ND
<b>Other</b>							
Total Dissolved Solids (mg/L)	NA	10	0	NM	NM	NM	NM

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

Notes:

J = analyte concentration is considered an estimated value

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

ND = not detected

µg/L = micrograms per liter

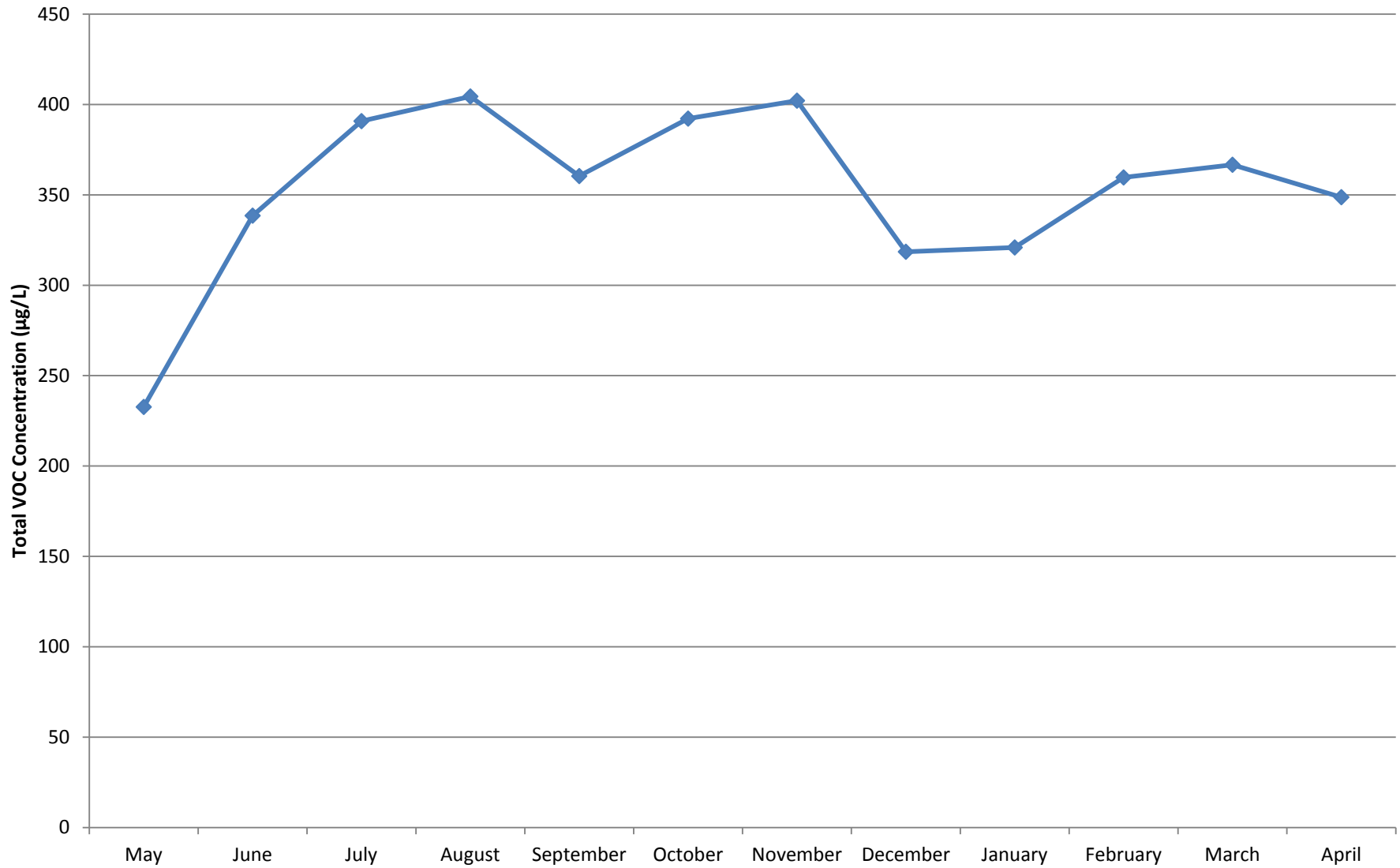
mg/L = milligrams per liter

Table 5 presents the Site DP039 bioreactor recirculation well pulsing dates.

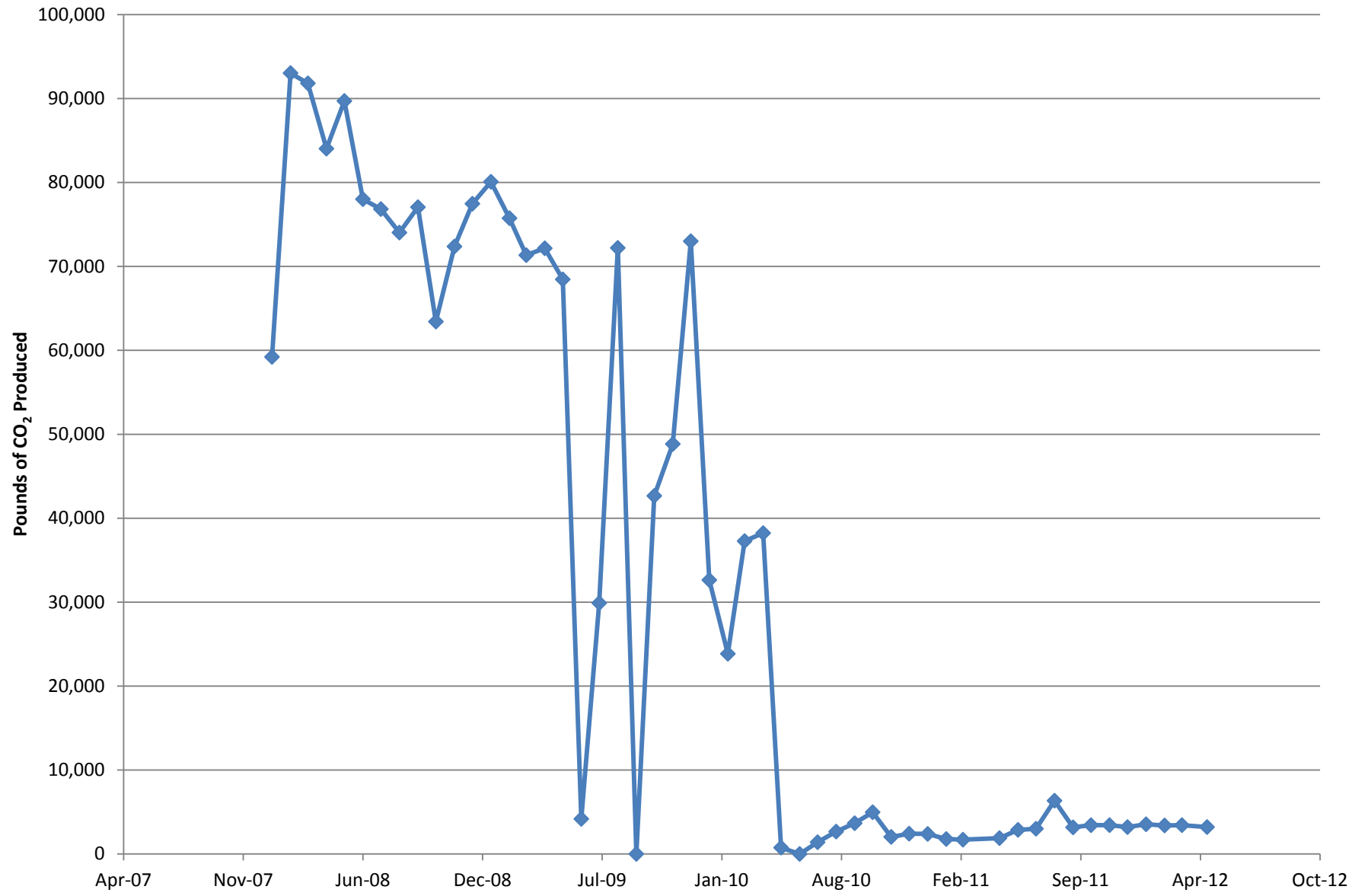
<b>Table 5 – Summary of DP039 Bioreactor “Pulsed Mode” Operations</b>		
<b>Location</b>	<b>Pulse On Start Date</b>	<b>Pulse Off Start Date</b>
EW782x39	20 December 2011	30 December 2011
	30 January 2012	20 February 2012
	20 March 2012	13 April 2012
	27 April 2012	

CGWTP = Central Groundwater Treatment Plant  
EW = Extraction Well

**Figure 1**  
**CGWTP Total VOC Influent Concentrations - Twelve Month History**  
**Travis Air Force Base, California**



**Figure 2**  
**Equivalent Pounds of CO<sub>2</sub> Produced by the Central Groundwater Treatment Plant**





# Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 014

Reporting Period: 31 Mar 2012 – 30 Apr 2012

Date Submitted: 16 May 2012

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (S18GWTP).

## System Metrics

Table 1 presents operation data from the April 2012 reporting period.

<b>Table 1 – Operations Summary – April 2012</b>		
Operating Time:	Percent Uptime:	Electrical Power Usage:
<b>S18GWTP:</b> 674 hours	<b>S18GWTP:</b> 100%	<b>S18GWTP:</b> 159 kWh (218 lbs CO <sub>2</sub> generated <sup>a</sup> )
Gallons Treated: <b>223 thousand gallons</b>	Gallons Treated Since March 2011: <b>1.90 million gallons</b>	
Volume Discharged to Union Creek: <b>223 thousand gallons</b>		
BTEX, MTBE, TPH Mass Removed: <b>3.09 lbs<sup>b</sup></b>	BTEX, MTBE, TPH Mass Removed Since March 2011: <b>11.8 lbs</b>	
Rolling 12-Month Cost per Total Pounds of Mass Removed: \$8,155 <sup>c</sup>		
Monthly Cost per Pound of Mass Removed: \$3,692		
Lbs = pounds		
<sup>a</sup> Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.		
<sup>b</sup> Calculated using April 2012 (influent) and April 2012 (effluent) EPA Method SW8260B analytical results. Influent samples are collected on a quarterly basis.		
<sup>c</sup> Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system. The cost of the 17 February, 2012 carbon change out is also reflected in the April 2012 costs.		

Table 2 presents individual extraction well flow rates along with the average system flow during the monthly reporting period.

<b>Table 2 – S18GWTP Average Flow Rates<sup>a</sup></b>	
<b>Location</b>	<b>Average Flow Rate Groundwater (gpm)</b>
EW2014x18	1.93
EW2016x18	2.00
EW2019x18	1.92
Site ST018 GWTP	5.52

<sup>a</sup> All flow rates calculated by dividing total gallons processed by system operating time for the month.  
gpm = gallons per minute  
S18GWTP = Site ST018 Groundwater Treatment Plant

Table 3 presents a summary of system shutdowns during the monthly reporting period.

<b>Table 3 – Summary of System Shutdowns</b>					
<b>Location</b>	<b>Shutdown</b>		<b>Restart</b>		<b>Cause</b>
	<b>Date</b>	<b>Time</b>	<b>Date</b>	<b>Time</b>	
	None		NA		NA
S18GWTP = Site ST018 Groundwater Treatment Plant					

## Summary of O&M Activities

Groundwater samples were collected at the S18GWTP on 5 April 2012. Sample results from the April sampling event are presented in Table 4. No contaminant concentrations were detected in the midpoint or effluent samples in April 2012. The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (2Q12) influent sample was 1,658 µg/L, which is a significant increase from the previous (1Q12) influent concentration of 455 µg/L. This increase is likely due to more consistent operation of extraction well EW2014x18, located immediately behind the Base Exchange Service Station. In addition, this increase is due to increased operation following battery replacements during the February and March 2012 reporting periods. The Site ST018 GWTP was primarily installed to address MTBE contamination at Site ST018, so Figure 1 presents a plot of influent quarterly total VOC (TPHg, TPHd, MTBE, and BTEX) and MTBE concentrations at the S18GWTP versus time.

In January 2012, sample results from the annual S18GWTP sampling event identified trigger compound exceedances for copper, zinc, cadmium, and nickel. A trigger compound exceedance is not an effluent violation, but additional influent, effluent, and outfall samples are required for collection during the following three (3) consecutive sampling events. The first trigger study sampling event took place in March 2012 during the monthly S18GWTP sampling event. As required by the NPDES permit, two additional influent and effluent samples must be collected and analyzed for copper, zinc, cadmium, and nickel in both April and May 2012. Trigger study sample results are presented in Table 5. Full details regarding this trigger study, along with all other sample results will be presented in the 1Q12 and 2Q12 NPDES quarterly S18GWTP reports.

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The initial trigger study samples collected in March 2012 showed concentrations of copper and zinc to be in excess of the trigger level, while none of the constituents exceeded their respective trigger limits in samples collected during April 2012. The trigger study (system influent and effluent samples) will conclude in May 2012, at which time further action will be determined according to the guidance presented in the NPDES permit (e.g., additional sampling frequency). Trigger study analytical results from the May 2012 sampling event will be presented in the May 2012 monthly Data Sheet.

A DC to DC charge converter (from 48 VDC to 24 VDC) was installed in each extraction well control panel on 4 April, 2012. The installation of these converters will allow for more consistent operation of each extraction well in the Site ST018 extraction well network associated with the S18GWTP.

## Optimization Activities

No optimization activities were performed in April 2012.

## Sustainability

Travis AFB is committed to decreasing the amount of GHG produced directly (waste streams discharging GHG) or indirectly (GHG produced as related to electrical energy consumption) from all systems across Travis AFB. Travis AFB continues to optimize each treatment plant to reduce the amount of electrical energy consumed, and to implement sustainable treatment plant optimization programs, such as the solar arrays employed to power the system.

As a result of the solar arrays at S18GWTP, the system produced approximately 218 pounds of GHG during April 2012. This is an increase from March 2012 (153 pounds) which is primarily due to the increase in gallons treated. The overall GHG generation remains considerably lower than traditional GWTPs since the system is predominantly powered by solar arrays.

TABLE 4  
Summary of Groundwater Analytical Data for April 2012 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	5 April 2012 (µg/L)		
				Influent <sup>b</sup>	After Carbon 2	System Effluent
<b>Fuel Related Constituents</b>						
MTBE	5	0.5	0	156	ND	ND
Benzene	5	0.17	0	20.6	ND	ND
Ethylbenzene	5	0.22	0	37.3	ND	ND
Toluene	5	0.14	0	2.6	ND	ND
Total Xylenes	5	0.23 – 0.5	0	61.1	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	1100	ND	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	280	ND	ND
Total Petroleum Hydrocarbons – Motor Oil	--	160	0	ND	ND	ND

<sup>a</sup> In accordance with the National Pollutant Discharge Elimination System (NPDES) Effluent Limitations

<sup>b</sup> Values taken from April 2012 (2Q12) sample data. Influent sampling is conducted on a quarterly basis.

Notes:

µg/L = micrograms per liter

ND = not detected above method detection limit

NM = not measured this month

Table 5  
Summary of Trigger Study Analytical Data– Site ST018 Groundwater Treatment Plant

Constituent	Trigger Limits <sup>a</sup> (µg/L)	22 March 2012 (µg/L)		5 April 2012 (µg/L)	
		Influent	Effluent	Influent	Effluent
Cadmium	1.1	0.12 J	0.15 J	0.11 J	0.089 J
Copper	5.9	14	<b>20</b>	5.5	2.5
Nickel	30.0	52	28	49	16
Zinc	86.0	100	<b>170</b>	79	36

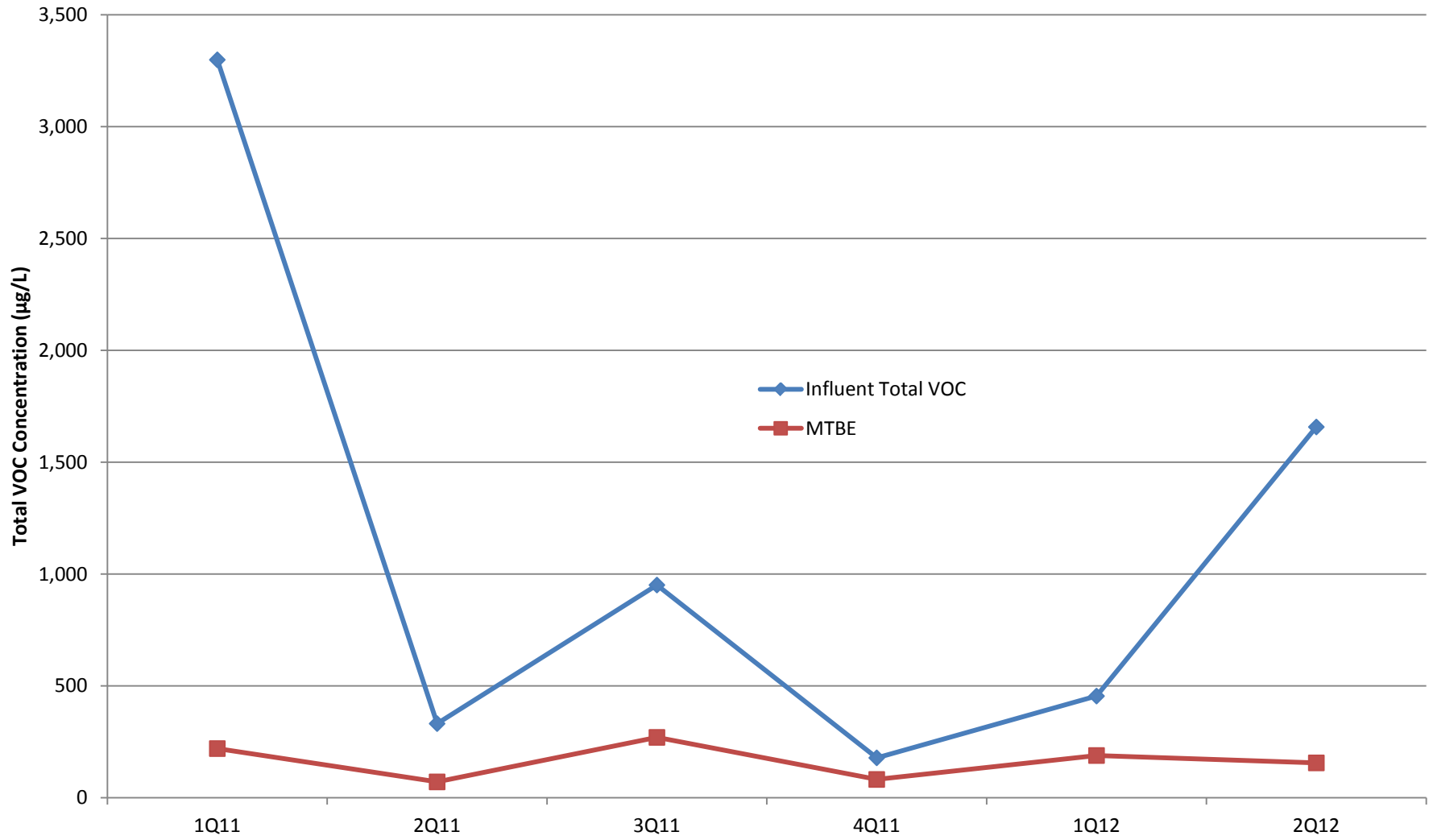
<sup>a</sup> As listed in the National Pollutant Discharge Elimination System (NPDES) permit under which the S18GWTP operates.

Notes:

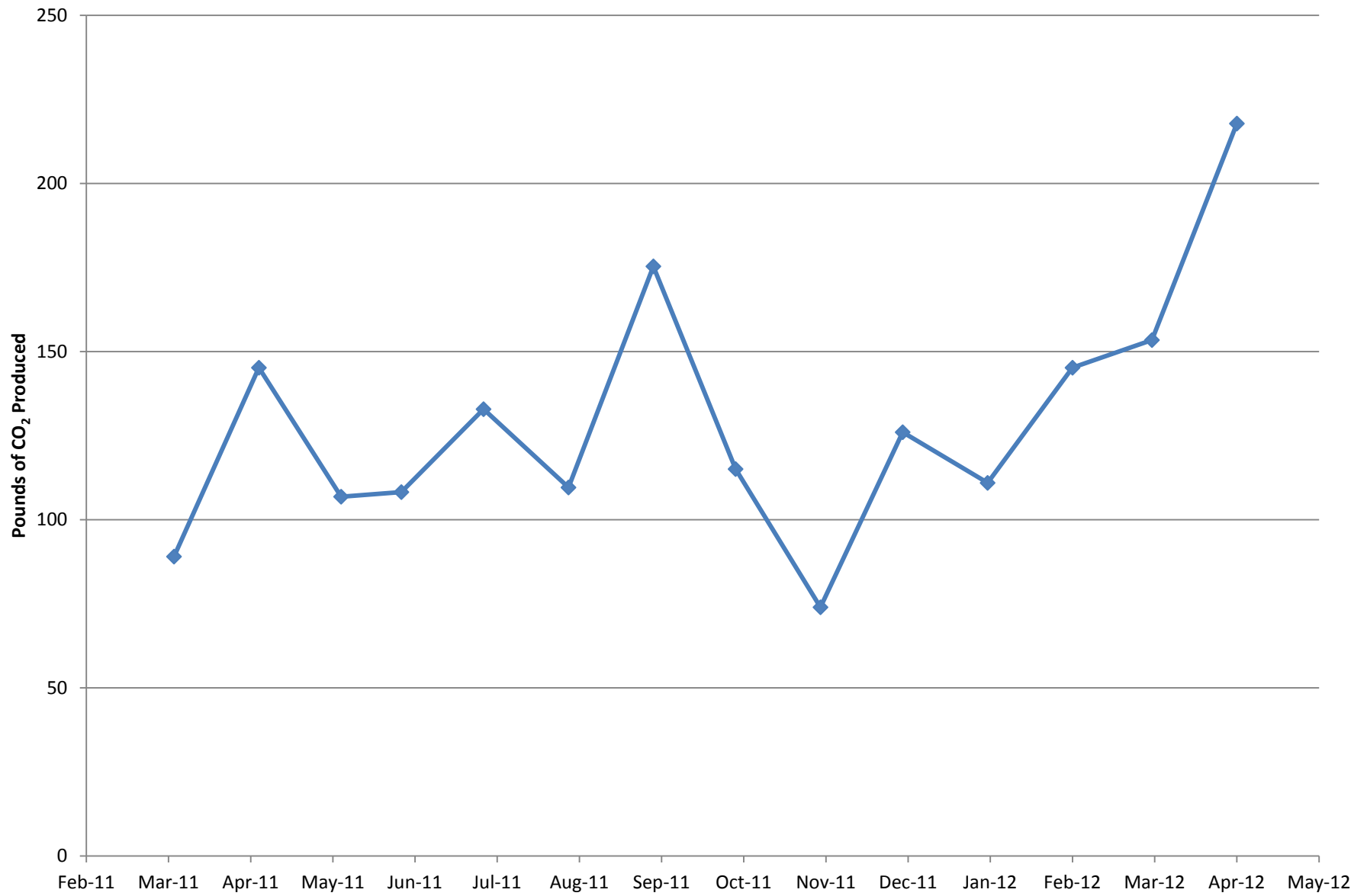
Values in bold indicate a trigger level exceedance.

µg/L = micrograms per liter

**Figure 1**  
**S18GWTP Total VOC and MTBE Influent Concentrations**  
**(Benzene, Toluene, Ethylbenzene, Xylenes, MTBE, TPH)**  
**Travis Air Force Base, California**



**Figure 2**  
**Equivalent Pounds of CO<sub>2</sub> Produced by the Site ST018 Groundwater Treatment Plant**



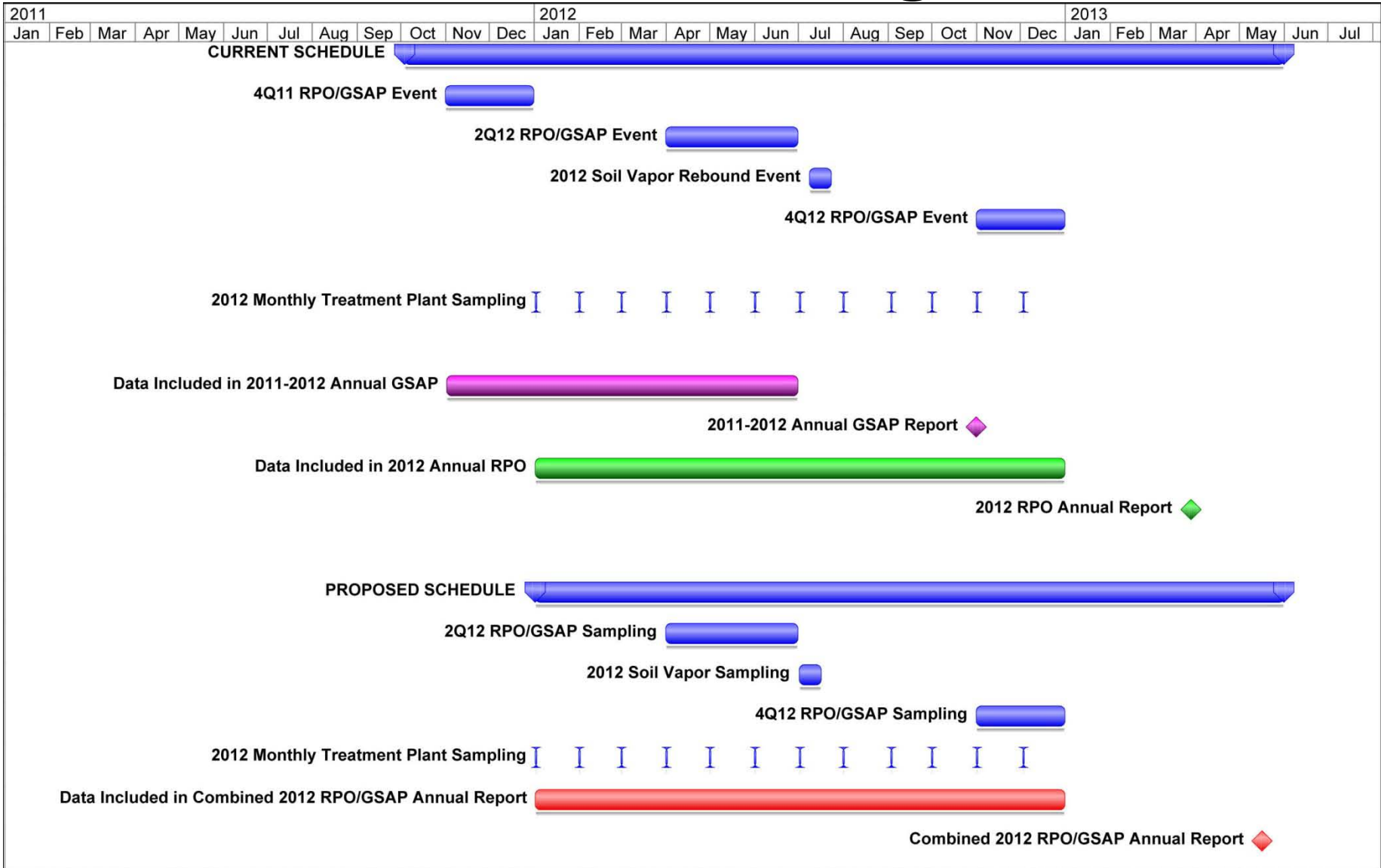
# Combining the GSAP and RPO Annual Reports

# Advantages

- Reduction in document review workload
- Elimination of overlap and repetition
- Ease of use- one comprehensive reference document for ERP groundwater sites
- Less confusing reporting time frames (follow the RPO calendar year schedule)
- Reduction in reporting costs



# Schedule Changes



# 4Q12 Semiannual GSAP Event

- The 4Q12 event is the smaller, semiannual event
- Following the current schedule, 4Q12 GSAP Event would be determined by the 2011-2012 Annual GSAP Report
- Following the revised schedule, the combined Final 2012 RPO/GSAP Annual Report would be submitted after the 4Q12 GSAP (May 2013)
- A brief tech memo can be used to document the selection of 4Q12 GSAP Event wells
- 4Q12 Event expected to be similar to the 4Q11 GSAP Event

# GSAP 4Q12 Event Tech Memo

- Data through 2Q12 reviewed for trends
- Apply GSAP sampling decision tree to determine sampling frequency
- All wells requiring semiannual sampling frequency based on data trends and the decision tree would be sampled in 4Q12

# GSAP 4Q12 Event Tech Memo, Cont.

- Tech Memo would provide
  - list of wells and analytes to be sampled in 4Q12
  - reason well was selected for sampling
  - updated time-series plots and Mann-Kendall analyses (on CD)
- Tech memo would not be needed beyond 2012.
- The combined 2012 RPO/GSAP Annual Report would specify sampling for the entire 2013 calendar year.

Comments and Suggestions?

# Travis AFB Restoration Program

## Program Overview

*RPM Meeting*

*May 16, 2012*

# Completed 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 Work Plan
- ST027B Site Characterization Work Plan
- 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 Work Plan
- Phytostabilization Demonstration Technical Memo
- Model QAPP
- LF008 Rebound Test Technical Memo
- 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, Second , & Third Site DP039 Sustainable Bioreactor Demonstration Progress Reports
- DP039 RPO Work Plan
- SD036/SD037 RPO Work Plan

# Completed Documents (cont'd)

- ST027B Site Characterization Report
- 2009 GWTP RPO Annual Report Natural Attenuation Assessment Report (NAAR)
- Union Creek Sites SD001 & SD033 Remedial Action Report
- CAMU 2008-2009 Monitoring Annual Report
- Phytostabilization Study Report
- 2009/2010 Annual GSAP Report
- SS015 Remedy Optimization Field Implementation Plan
- Sites SS014 and ST032 Tier 1 POCO Evaluation Report
- SD036 Remedy Optimization Field Implementation Plan
- 2010 Annual CAMU Inspection Report
- Site ST018 POCO Baseline Implementation Report
- FT005 Data Gaps Investigation Report
- Comprehensive Site Evaluation Phase II Report
- 2010 Groundwater RPO Annual Report
- Focused Feasibility Study (FFS)
- Site ST027-Area B Human Health Risk Assessment
- Site ST027-Area B Ecological Risk Assessment
- Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- 2010/2011 Annual GSAP Report
- Baseline Implementation Report (Sites SS015, SS016, SD036, SD037, and DP039)



# Completed Field Work

- ST027B Gore Sorber Survey – Phase 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 – Phase 1
- ST027 Site Characterization - Phase 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
- DP039 Monitoring Well & Injection Well Installation
- DP039 EVO Injection
- SD037 Monitoring Well Installation
- GSAP 2010 Annual Sampling Event
- SD037 EVO Injection

# Completed Field Work (cont'd)

- SS015 Site Characterization
- South Plant GAC Change-out
- FT005 Data Gap Investigation
- SS016 Position Survey of EW03
- SS016 Bioreactor Installation
- SS016 Bioreactor Baseline Sampling
- DP039 Biobarrier Quarterly Performance Sampling
- DP039 Bioreactor Quarterly Performance Sampling
- SD037 EVO Quarterly Performance Sampling
- SS015 EVO Baseline Sampling
- SD036 EVO Baseline Sampling
- SS016 Bioreactor Startup
- SD036 Injection Wells Installation
- SS015 Injection Wells Installation
- ST018 GETS Installation
- SD036 EVO Injection
- 2010 Semiannual GSAP
- SS015 EVO Injection
- Quarterly RPO Performance Monitoring (Feb 2011)
- ST018 GETS Startup
- Quarterly RPO Performance Monitoring (May 2011)
- 2011 Annual GSAP Sampling
- SS029 GET Shutdown Test (System Optimization analysis)
- Quarterly RPO Performance Monitoring (Aug 2011)
- Quarterly RPO Performance Monitoring (Nov 2011)
- 2011 Semiannual GSAP Sampling
- LF007C Site Characterization (Wetlands)
- FT005 Soil Remedial Action
- Performance Monitoring SS015 (4<sup>th</sup> Quarterly event)
- Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes (Feb 21-22)

# In-Progress Documents & Field Work

## Documents

- Technical and Economic Feasibility Analysis (TEFA)
- Work Plan for RPO of Sites SS016 and SS029
- Old Skeet Range Engineering Evaluation/Cost Analysis
- 2011 CAMU Annual Report
- 2011 Groundwater Treatment RPO Annual Report
- ***Proposed Plan (PP)***

## Field Work

- 2012 Annual GSAP Sampling

# Upcoming Documents

- Site LF007C Data Gaps Investigation Technical Memorandum May
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes June
- FT005 Remedial Action Completion Report July

# Upcoming Field Work

- SS029/SS016 System Optimization Analysis Summer 2012
- FT005 Additional Soil Removal Summer 2012
- CAMU Lysimeter Removal Summer 2012
- **LF007C GET System Optimization Summer 2012**

*Note: Travis will try to notify regulatory agencies via email approximately one week in advance of planned field work*