

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

17 October 2012, 10:00 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting via a teleconference on 17 October 2012 at 10:00 hours, at Travis AFB, California. Attendees included:

- Mark Smith Travis AFB
- Glenn Anderson Travis AFB
- Lonnie Duke Travis AFB
- Gregory Parrott Travis AFB
- Adriana Constantinescu California Regional Water Quality Control Board
(via phone) (RWQCB)
- Jose Salcedo (via phone) California Department of Toxic Substances Control
(DTSC)
- Nadia Hollan Burke United States Environmental Protection Agency
(via phone) (USEPA)
- Mary Snow (via phone) Techlaw, Inc
- Rachel Hess (via phone) ITSI Gilbane
- Mike Wray CH2M HILL
- Tricia Carter (via phone) 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 (September 2012)
- Attachment 4 CGWTP Monthly Data Sheet (September 2012)
- Attachment 5 NGWTP Monthly Data Sheet (September 2012)
- Attachment 6 ST018GWTP Monthly Data Sheet (September 2012)
- Attachment 7 Presentation: Program Update: Activities Completed, In Progress and Upcoming

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 19 September 2012 RPM meeting minutes were approved and finalized as written.

B. Action Item Review.

Action items from September were reviewed.

Action item one still open: Travis AFB to research beneficial reuse of treated water. AFCEE is in agreement with treated water reuse using Defense Environmental Restoration Account (DERA) funds under the authority of a “net-zero policy” for the Air Force. Mr. Smith suggested that the due date be changed from TBD to February 2013.

Action item two still open: Give a Groundwater ROD presentation to the Regulatory agencies. Changed invitees from EPA to The Regulatory Agencies. This presentation will be given at the January 2013 RPM meeting.

Action item three still open: EPA and DTSC to provide feedback on the completeness of the 5-Year Review site list. The due date was revised to 31 October 2012.

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 14 November 2012 at 0930 hours. Mr. Smith will provide a 2013 RPM schedule and email to the regulators by 31 October 2012 for their review.

Travis AFB Master Document Schedule

— Proposed Plan (PP): No change to the schedule. The Proposed Plan is final. Paper copies will be provided at the meeting tomorrow, and copies will also be distributed to local libraries.

— Groundwater Record of Decision (ROD): The draft was scheduled to be distributed to the agencies on 12 October 2012. Travis AFB is still developing the document. The Draft to Agencies date will be updated at the next RPM meeting. Mr. Salcedo acknowledged his agreement with the document sequencing for the Proposed Plan closing prior to the Draft ROD submission to the agencies. Ms. Burke concurred with this also and confirmed with Mr.

Anderson that the draft ROD would not be completed prior to the RPM meeting scheduled for 14 November 2012.

- 3rd Five-Year Review: No change to the schedule.
- Potrero Hills Annex: (FS, PP, and ROD): No change to schedule. Mr. Anderson gave Ms. Constantinescu a brief history on Potrero Hills Annex and the chemical of concern (COC). The property is currently under regulatory oversight by California Regional Water Quality Control Board (CRWQCB), and will stay under their oversight until the site has been cleaned up. Kent Aui with CRWQCB expects the responsible parties to investigate the extent of the contamination. A field investigation was conducted that shows perchlorate (COC) has migrated and has a concentration that is ten times higher than originally thought. A work plan (WP) was provided to the CRWQCB that states fieldwork will begin next month; starting with soil borings and groundwater sampling, the fieldwork will continue during the winter months. Mr. Anderson said that he and Mr. Duke plan on showing up at Potrero Hills during the fieldwork because Travis AFB is a little concerned that the fieldwork will be conducted during the winter months. Ms. Constantinescu agreed that it is a concern conducting fieldwork during winter months with the possibility of storm water runoff. Ms. Burke asked for documentation supporting when this site was transferred from the CERCLA process and to CRWQCB oversight. EPA's database still has this site as being under the CERCLA process and it is listed as an action for Ms. Burke. Mr. Smith said it is located in the WABOU ROD. Mr. Anderson said he will email Ms. Burke a link where she can find supporting documentation.
- Old Skeet Range Engineering Evaluation/Cost Analysis: The date was changed to reflect the actual date the Final was mailed to the Agencies. Ms. Burke said she has not received the final document and requested Travis AFB send an informational email to precede a document mailing as a "heads up".
- Vapor Intrusion Update Technical Memorandum: Dates were not updated to reflect the actual date the Draft went out to Agencies, 18 September 2012. Mr. Anderson asked the agencies if they thought they would have comments. Ms. Burke/EPA said she does not know if she will have comments. Mr. Salcedo/DTSC said he did not think he would. Ms Constantinescu said RWQCB had no comments. The subsequent due dates will be updated accordingly.
- Quarterly Newsletter (September 2012): The date will be changed to reflect the actual date the newsletter went final.
- 2011 Groundwater Treatment RPO Annual Report: The date will be changed to reflect the actual date the report went final.
- 2012 Groundwater Sampling and Analysis Program Technical Memorandum: No change to schedule.
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes: Moved to history.

— FT005 Remedial Action Completion Report: Moved to history.

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 3.3 million gallons of groundwater were extracted and treated during the month of September 2012. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 75.4 gallons per minute (gpm). Electrical power usage was 10,620 kWh and approximately 14,549 pounds of CO₂ were created (based on DOE calculation). Approximately 1.7 pounds of volatile organic compounds (VOCs) were removed in September. The total mass of VOCs removed since startup of the system is 429 pounds.

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

Central Groundwater Treatment Plant (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 98.8% uptime with approximately 1.7 million gallons of groundwater extracted and treated during the month of September 2012. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 39.6 gpm. Electrical power usage was 2,551 kWh for all equipment connected to the Central plant, and approximately 3,495 pounds of CO₂ were generated. Approximately 5.76 pounds of VOCs were removed from groundwater in September. The total mass of VOCs removed since the startup of the system is 11,295 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 September.

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

North Groundwater Treatment Plant (see Attachment 5)

The North Groundwater Treatment Plant (NGWTP) performed at 53.7% uptime with approximately 38,070 gallons of groundwater extracted and treated during the month of September 2012. The average flow rate at the NGWTP, while operating, was 1.6 gpm and electrical power use was 579 kWh for all the equipment connected to the

North plant; approximately 793 pounds of CO₂ was generated. Approximately 1.5x10⁻³ pounds of VOCs were removed from the groundwater in September. The total mass of VOCs removed since the startup of the system is 174.3.

An aquifer test was performed at Site LF007C, which is part of the NGWTP, in September 2012 which resulted in a larger than typical volume of water treated during the reporting period. Detailed results of this test will be presented in the October 2012 monthly data sheet.

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

Site ST018 Groundwater (MTBE) Treatment Plant (see Attachment 6)

The Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 95.4% uptime with approximately 144 thousand gallons of groundwater extracted and treated during the month of September 2012. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 3.38 gpm. Electrical power usage for the month was 100 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 137 pounds of CO₂. Approximately 0.59 pounds of BTEX, MTBE and TPH were removed from groundwater in September. The total BTEX, MTBE and TPH mass removed since the startup of the system is 19.2 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 September.

3. Presentations

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

Mr. Wray did not have a report available but will email Mr. Smith a Program Update. Update will be included in the final October RPM meeting minutes:

4. New Action Item Review

No new action items.

5. PROGRAM/ISSUES/UPDATE

No new issues/updates.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Research beneficial reuse of treated water and give update. Update (13 June 2012): AFCEE is in agreement with treated water reuse using Defense Environmental Restoration Account (DERA) funds under the authority of a “net-zero policy” for the Air Force. Update (15 August 2012): Mr. Duke reported that irrigation lines were destroyed by a communications contractor and not repaired because the system was inactive. Travis AFB will get the system design information to determine if the trunk line is still intact and repairs can be made to get the system running.	February 2013	Open
2.	Travis AFB	Give a Groundwater ROD presentation to EPA.	TBD	Open
3.	EPA & DTSC	Provide feedback on the completeness of the 5-Year Review site list.	10-31-12	Open

TRAVIS AFB RPM TELECONFERENCE AGENDA

17 October 2012, 10:00 A.M.

To:	EPA	Nadia Burke
	DTSC	Jose Salcedo
	RWQCB	Adriana Constantinescu
	CH2M Hill	Mike Wray
	ITSI	Rachel Hess

The RPM teleconference is scheduled for 10:00 am on 17 Oct 2012. Call-in number is (707) 424-8811. Topics for the teleconference include:

- ❖ Previous Meeting Minutes (All)
- ❖ Action Item Review (All)
- ❖ Master Meeting and Document Schedule Review (Mark)
- ❖ Treatment Plant Operation and Maintenance Update (Lonnie)
- ❖ Program Update (Mike)
- ❖ New Action Item Review (All)

Participants:

TRAVIS	ERP Staff	(707) 424-3062
DTSC	Jose Salcedo	(916) 255-3741
RWQCB	Adriana Constantinescu	(510) 622-2352
EPA	Nadia Burke	(415) 972-3187
USACE	Dezso Linbrunner	(402)238-8846
CH2M Hill	Mike Wray	(916) 286-0243
ITSI	Rachel Hess	(925) 946-3105

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 10:00 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)	10-17-12	10-18-12
11-14-12	—	—
—	—	—

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	Basewide Groundwater		
	Proposed Plan Travis, Glenn Anderson CH2M HILL, Tricia Carter	Record of Decision Travis, Glenn Anderson CH2M HILL, Leah Waller	3rd Five-Year Review Travis AFB, Glenn Anderson J.C. Palomar, Chris Bason
Scoping Meeting	NA	01-24-07 (11-30-11)	NA
Predraft to AF/Service Center	10-06-11	08-23-12	02-18-13
AF/Service Center Comments Due	11-05-11	10-04-12	03-04-13
Draft to Agencies	05-09-12	10-12-12	03-18-13
Draft to RAB	05-09-12	10-12-12	03-18-13
Agency Comments Due	06-15-12	12-12-12	04-15-13
Response to Comments Meeting	08-15-12	01-09-13	04-29-13
Public Comment Period	10-10-12 to 11-09-12	NA	NA
Public Meeting	10-18-12	NA	NA
Response to Comments Due	09-10-12	01-16-13	05-13-13
Draft Final Due	09-10-12	01-16-13	06-03-13
Final Due	10-10-12	02-18-13	07-03-13

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
Life Cycle	Potrero Hills Annex Travis, Glenn Anderson		
	FS	Proposed Plan	ROD
Scoping Meeting	180 days after Water Board Order Rescinded	+470 days	+735 days
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
Response to Comments Meeting	+ 405 days	+665 days	+ 1110 days
Agency Concurrence with Remedy	NA	NA	+ 1130 days
Public Comment Period	NA	+735 to 765 days	NA
Public Meeting	NA	+745 days	NA
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

SECONDARY DOCUMENTS		
Life Cycle	MMRP Old Skeet Range Engineering Evaluation/Cost Analysis ¹ Travis AFB, Glenn Anderson Baywest, Steve Thornton	Vapor Intrusion Update Technical Memorandum Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer
Scoping Meeting	NA	NA
Predraft to AF/Service Center	07-18-11	08-14-12
AF/Service Center Comments Due	08-03-11	08-28-12
Draft to Agencies	09-29-11	09-11-12
Draft to RAB	09-29-11	09-11-12
Agency Comments Due	10-31-11	10-11-12
Response to Comments Meeting	TBD (Teleconference)	10-18-12
Response to Comments Due	NA	11-01-12
Draft Final Due	NA	NA
Final Due	10-12-12	11-01-12
Public Comment Period	NA	NA
Public Meeting	NA	NA

¹ Note: The EE/CA has been downgraded from a Primary to a Secondary document after internal legal review.

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	Quarterly Newsletters (September 2012; Proposed Plan Edition) Travis, Glenn Anderson	2011 Groundwater Treatment RPO Annual Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick	2012 Groundwater Sampling and Analysis Program Technical Memorandum Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	NA	02-22-12	09-24-12
AF/Service Center Comments Due	NA	03-05-12	10-01-12
Draft to Agencies	07-03-12	04-19-12	10-15-12
Draft to RAB	NA	04-19-12	10-15-12
Agency Comments Due	07-17-12	05-21-12	11-14-12
Response to Comments Meeting	TBD	06-13-12	11-14-12
Response to Comments Due	07-24-12	06-27-12	11-28-12
Draft Final Due	NA	NA	NA
Final Due	TBD	TBD	11-28-12
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

HISTORICAL		
Life Cycle	Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer	FT005 Remedial Action Completion Report Travis AFB, Lonnie Duke ITSI, Rachel Hess
Scoping Meeting	NA	NA
Predraft to AF/Service Center	05-18-12	06-04-12
AF/Service Center Comments Due	06-01-12	06-22-12
Draft to Agencies	06-15-12	07-20-12
Draft to RAB	06-15-12	07-20-12
Agency Comments Due	07-16-12	08-24-12
Response to Comments Meeting	08-15-12	09-19-12
Response to Comments Due	09-05-12	09-28-12
Draft Final Due	NA	NA
Final Due	09-05-12	09-28-12
Public Comment Period	NA	NA
Public Meeting	NA	NA

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 145

Reporting Period: 31 August 2012 – 30 September 2012

Date Submitted: 16 October 2012

This monthly data sheet presents information regarding the South Base Boundary Groundwater Treatment Plant (SBBGWTP) and associated remedial process optimization (RPO) activities.

System Metrics

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

Table 1 – Operations Summary – September 2012

Operating Time: SBBGWTP: 739 hours	Percent Uptime: SBBGWTP: 100 %	Electrical Power Usage: SBBGWTP: 10,620 kWh (14,549 lbs CO₂ generated^a)
Gallons Treated: 3.3 million gallons	Gallons Treated Since July 1998: 806 million gallons	
Volume Discharged to Union Creek: 3.3 million gallons		
VOC Mass Removed: 1.7 lbs^b	VOC Mass Removed Since July 1998: 429 lbs	
Rolling 12-Month Cost per Pound of Mass Removed: \$5,084 ^c		
Monthly Cost per Pound of Mass Removed: \$2,355		

lbs = pounds

^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.

^b Calculated using September 2012 EPA Method SW8260B analytical results.

^c 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.

Table 2 – SBBGWTP Average Flow Rate (gpm)^a							
FT005^b				SS029		SS030	
EW01x05	1.2	EW736x05	Offline	EW01x29	4.6	EW01x30	5.5
EW02x05	1.7	EW737x05	Offline	EW02x29	6.1	EW02x30	2.1
EW03x05	Offline	EW742x05	Offline	EW03x29	3.2	EW03x30	Offline
EW731x05	Offline	EW743x05	Offline	EW04x29	7.5	EW04x30	Offline
EW732x05	Offline	EW744x05	Offline	EW05x29	8.4	EW05x30	12.3
EW733x05	Offline	EW745x05	Offline	EW06x29	11.6	EW06x30	Dry
EW734x05	4.4	EW746x05	Offline	EW07x29	3.9	EW711x30	16.3
EW735x05	12.5						
FT005 Total:		19.8		SS029 Total:		45.3	
				SS030 Total:		36.2	
SBBGWTP Average Monthly Flow^c: 75.4 gpm							
^a Extraction well flow rates are based on end-of-month readings. ^b Most extraction wells at FT005 were taken offline in accordance with the <i>2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant</i> . ^c 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.

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

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 11 September 2012. Sample results are presented in Table 4. The total VOC concentration (60.4 µg/L) in the influent sample has increased since the August 2012 sample (46.9 µg /L) was collected. Figure 1 presents a plot of influent concentrations at the SBBGWTP over the past twelve (12) months.

Concentrations of 1,2-Dichloroethane, cis-1,2-DCE, and TCE were detected at the influent and midpoint sample locations in September 2012. Concentrations of 1,2-Dichloroethane and cis-1,2-DCE were also measured at the effluent sample location.

At the influent sample location, 1,2-Dichloroethane, cis-1,2-DCE, and TCE were measured at concentrations of 0.47 J, 2.7 and 46.2 µg/L. At the GAC midpoint sample location, 1,2-Dichloroethane, cis-1,2-DCE, and TCE were measured at concentrations of 0.6, 3.5, and 6.3 µg/L. At the effluent sample location, 1,2-Dichloroethane and cis-1,2-DCE were measured at concentrations of 0.26 J and 0.42 J µg/L. TCE was not detected at the effluent sample location. The concentrations of cis-1,2-DCE and 1,2-DCA detected at the effluent sampling location were both below their respective effluent limitations (5 µg/L each). A carbon change out for the SBBGWTP is currently being scheduled and is expected to take place in October 2012.

Extraction well pumps EW03x30 and EW04x30 were discovered off line on 24 August 2012, at which time troubleshooting efforts were initiated. Motor ground faults were discovered on both pumps. Two replacement pumps were ordered in September 2012 and are expected to be installed in October 2012. Both wells will be brought back on line following pump replacement, which is expected in October 2012.

Optimization Activities

No optimization activities were performed in September 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 bioreactors and EVO injection well networks.

Figure 2 presents the historical GHG production from the SBBGWTP. The SBBGWTP produced approximately 14,459 pounds of GHG during September 2012. GHG production has increased (from 13,810 pounds) since September 2012. 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 September 2012 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	11 September 2012 (µg/L)		
				Influent	Midpoint	Effluent
Halogenated Volatile Organics						
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	ND	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	0.47 J	0.6	0.26 J
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	2.7	3.5	0.42 J
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	46.2	6.3	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND
Non-Halogenated Volatile Organics						
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
Other						
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	11 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

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

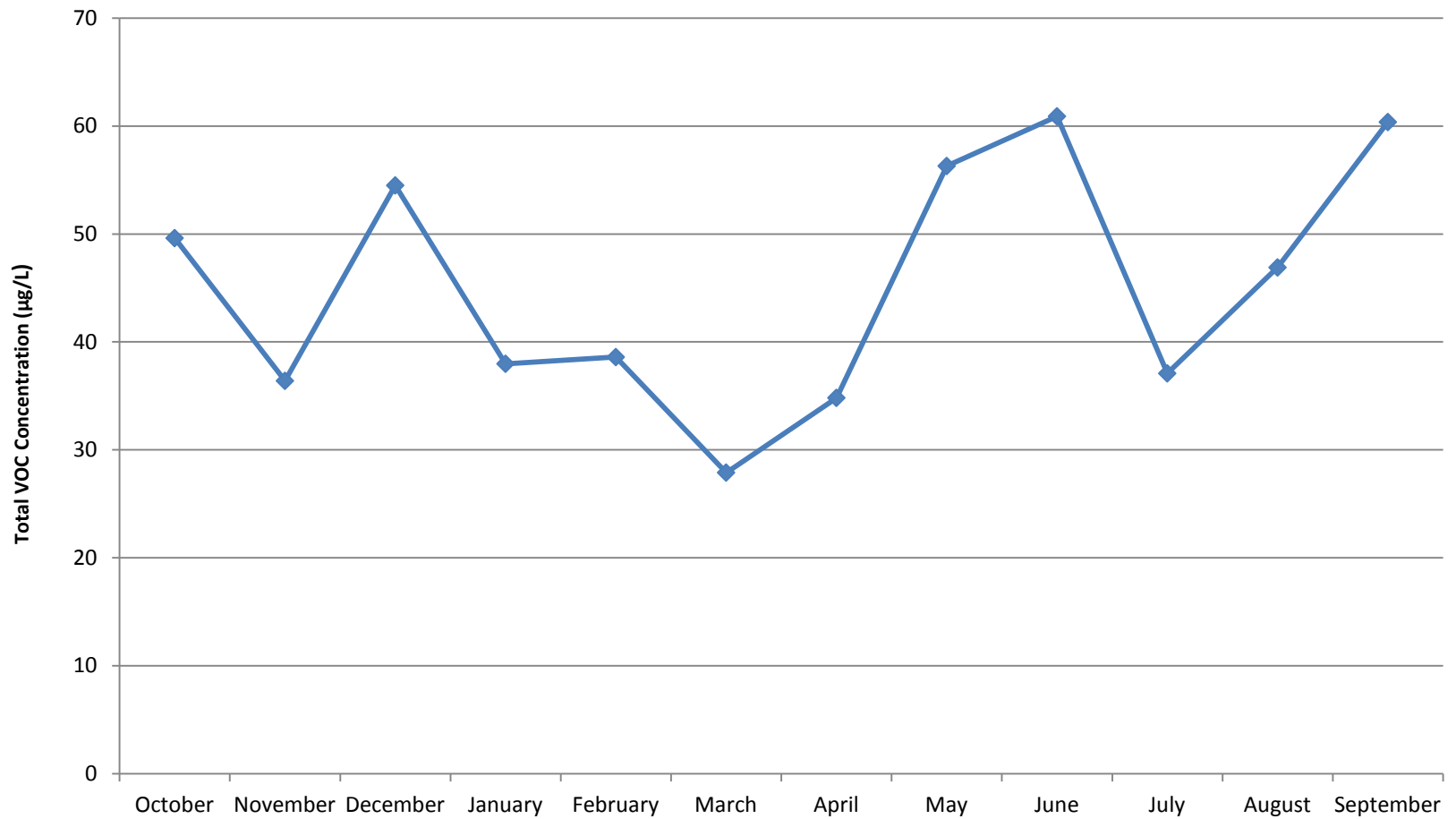
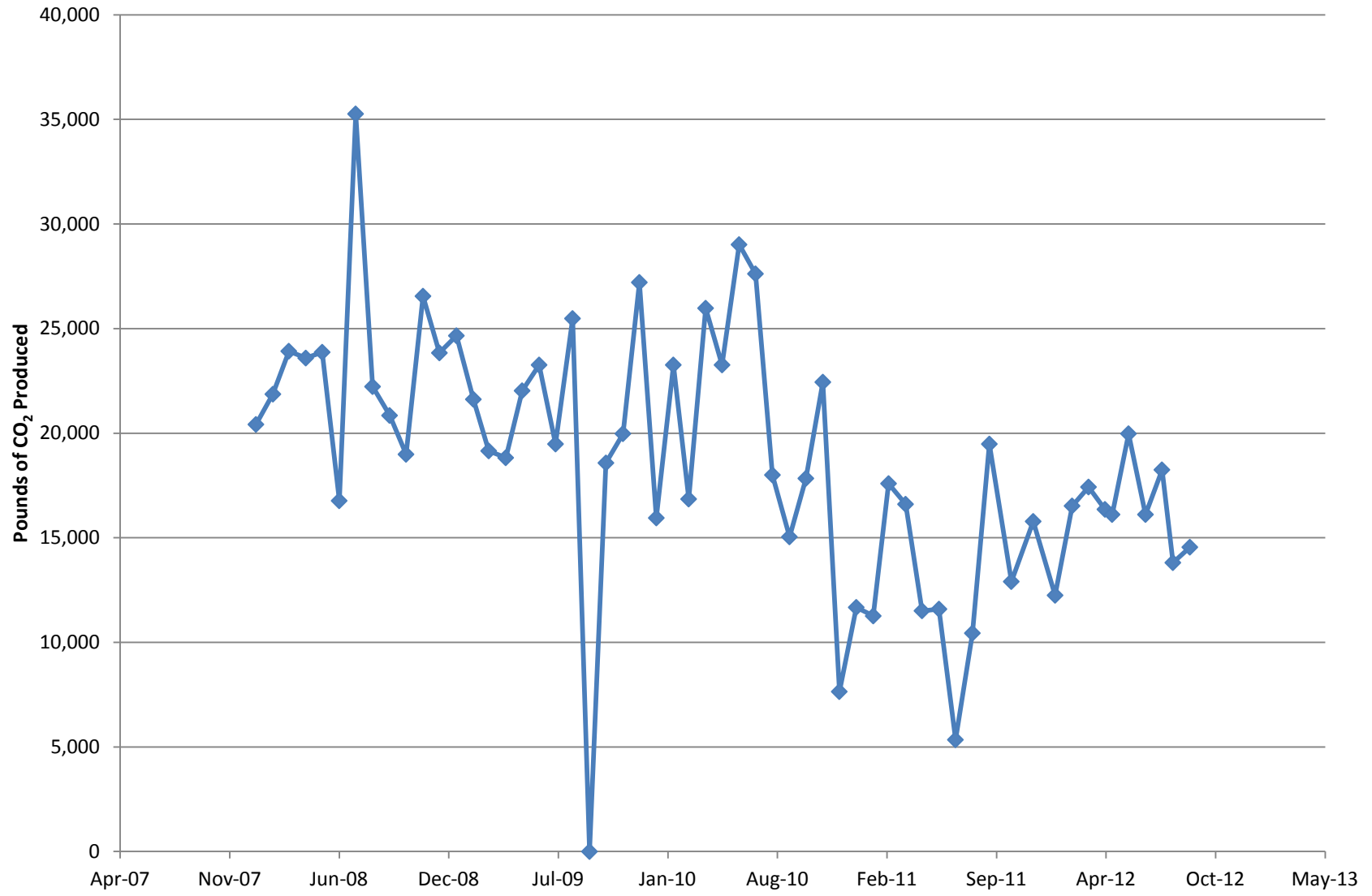


Figure 2

Equivalent Pounds of CO₂ Produced by the South Base Boundary Groundwater Treatment Plant



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 158

Reporting Period: 31 August 2012 – 30 September 2012

Date Submitted: 16 October 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 September 2012 reporting period.

Table 1 – Operations Summary – September 2012		
Operating Time:	Percent Uptime:	Electrical Power Usage:
CGWTP: 730 hours	CGWTP: 98.8%	CGWTP: 2,551 kWh (3,495 lbs CO ₂ generated ^a)
WTTP: Water: 0 hours Vapor: 0 hours	WTTP: Water: 0% Vapor: 0%	WTTP: 0 kWh
Gallons Treated: 1.7 million gallons	Gallons Treated Since January 1996: 469 million gallons	
VOC Mass Removed:	VOC Mass Removed Since January 1996:	
5.76 lbs^b (groundwater only) 0 lbs (vapor only)	2,609 lbs from groundwater 8,686 lbs from vapor	
Rolling 12-Month Cost per Pound of Mass Removed: \$1,090 ^c		
Monthly Cost per Pound of Mass Removed: \$590		
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG. ^b Calculated using September 2012 EPA Method SW8260B analytical results. ^c 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.

Table 2 – CGWTP Average Flow Rates^a		
Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)^b
EW01x16	21.2	Offline
EW02x16	7.2	Offline
EW03x16	0.1 ^c	Offline
EW605x16	7.2	Offline
EW610x16	3.2	Offline
CGWTP	39.6	--
WTPP	-- ^b	Offline

^a Flow rates calculated by dividing total gallons processed by system operating time for the month.
^b No vapor or groundwater was treated in September 2012.
^c 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.

Table 3 – Summary of System Shutdowns					
Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater)					
	None	NA	None	NA	
WTPP					
	None	NA	None	NA	

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

Summary of O&M Activities

Monthly groundwater samples at the CGWTP were collected on 11 September 2012. Sample results are presented in Table 4. The total VOC concentration (398 µg/L) in the influent sample has increased slightly since the August 2012 sample (331 µg/L) was collected. Concentrations of 1,1-Dichloroethene (0.92 µg/L), cis-1,2-DCE (78.7 µg/L), MTBE (0.96 µg/L), Tetrachloroethene (0.56 µg/L), trans-1,2-Dichloroethene (3.5 µg/L), and TCE (313 µg/L) were detected at the influent sampling location. None of these contaminants were detected in the system effluent.

Vinyl chloride was detected at the influent sampling location again this month (0.33 µg/L). It was not detected at the effluent sampling location. Travis Air Force Base will continue to monitor vinyl chloride and other contaminant concentrations at CGWTP for breakthrough in the primary vessel, as vinyl chloride is frequently detected in the influent sample.

The detected concentration of cis-1,2-DCE at the After Carbon 1 Effluent sampling location (7.4 µg/L) is approximately 10 percent of the cis-1,2-DCE influent concentration of 78.7 µg/L. Small detections of cis-1,2-DCE have been detected after the first carbon vessel fairly consistently in 2012 with the September 2012 detection being the highest of the year. A carbon change out of the primary (first) carbon vessel is currently being scheduled and is expected to be completed in October 2012.

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 amounts of total organic carbon being produced within the bioreactor. The Site DP039 bioreactor configuration was modified in August 2012 by moving the extraction well pump from EW782x39 to MW750x39. The pulsed mode operation was modified as well, moving to a 2-week on and 2-week off operational cycle. The bioreactor was brought back online on 5 September 2012 and operated until 16 September 2012. It was then down for approximately two weeks before again being brought online on 28 September 2012. The pump is scheduled to be taken off line on 12 October 2012.

Optimization Activities

No optimization activities occurred at CGWTP in September 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 bioreactors and EVO injection well networks.

Figure 2 presents the historical GHG production from the systems associated with the CGWTP. The CGWTP produced approximately 3,495 pounds of GHG during September 2012. This is an increase from the amount produced in August 2012 (approximately 2,582 pounds) and can be attributed to increased operation time.

TABLE 4

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

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	11 September 2012 (µg/L)			
				Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
1,2-Dibromoethane	5.0	0.11	0	ND	ND	ND	ND
2-Hexanone	5.0	0.48	0	ND	ND	ND	ND
4-Methyl-2-Pentanone	5.0	1.0	0	ND	ND	ND	ND
Bromoform	5.0	0.19	0	ND	ND	ND	ND
MTBE	1.0	0.5	0	0.96 J	0.83 J	ND	ND
Bromobenzene	5.0	0.21	0	ND	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
Chloroethane	5.0	0.72	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	0.92	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	78.7	7.4	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.5	ND	ND	ND
Bromomethane	5.0	0.43	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.56	ND	ND	ND
trans-1,3-Dichloropropene	5.0	0.3	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.2	0	ND	ND	ND	ND
Trichloroethene	5.0	0.19	0	313	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	0.33 J	0.52	0.41 J	ND
Non-Halogenated Volatile Organics							
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	ND	ND	ND	ND
Total Xylenes	5.0	0.23 – 0.5	0	ND	ND	ND	ND
Other							
Total Dissolved Solids (mg/L)	NA	10	0	NM	NM	764	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.

Table 5 – Summary of DP039 Bioreactor “Pulsed Mode” Operations		
Location	Pulse On Start Date	Pulse Off Start Date
EW782x39	20 December 2011	30 December 2011
	30 January 2012	20 February 2012
	20 March 2012	13 April 2012
	27 April 2012	11 May 2012
	11 June 2012	25 June 2012
	20 July 2012	3 August 2012
MW750x39	5 September 2012	16 September 2012
	28 September 2012	

CGWTP = Central Groundwater Treatment Plant
 EW = Extraction Well

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

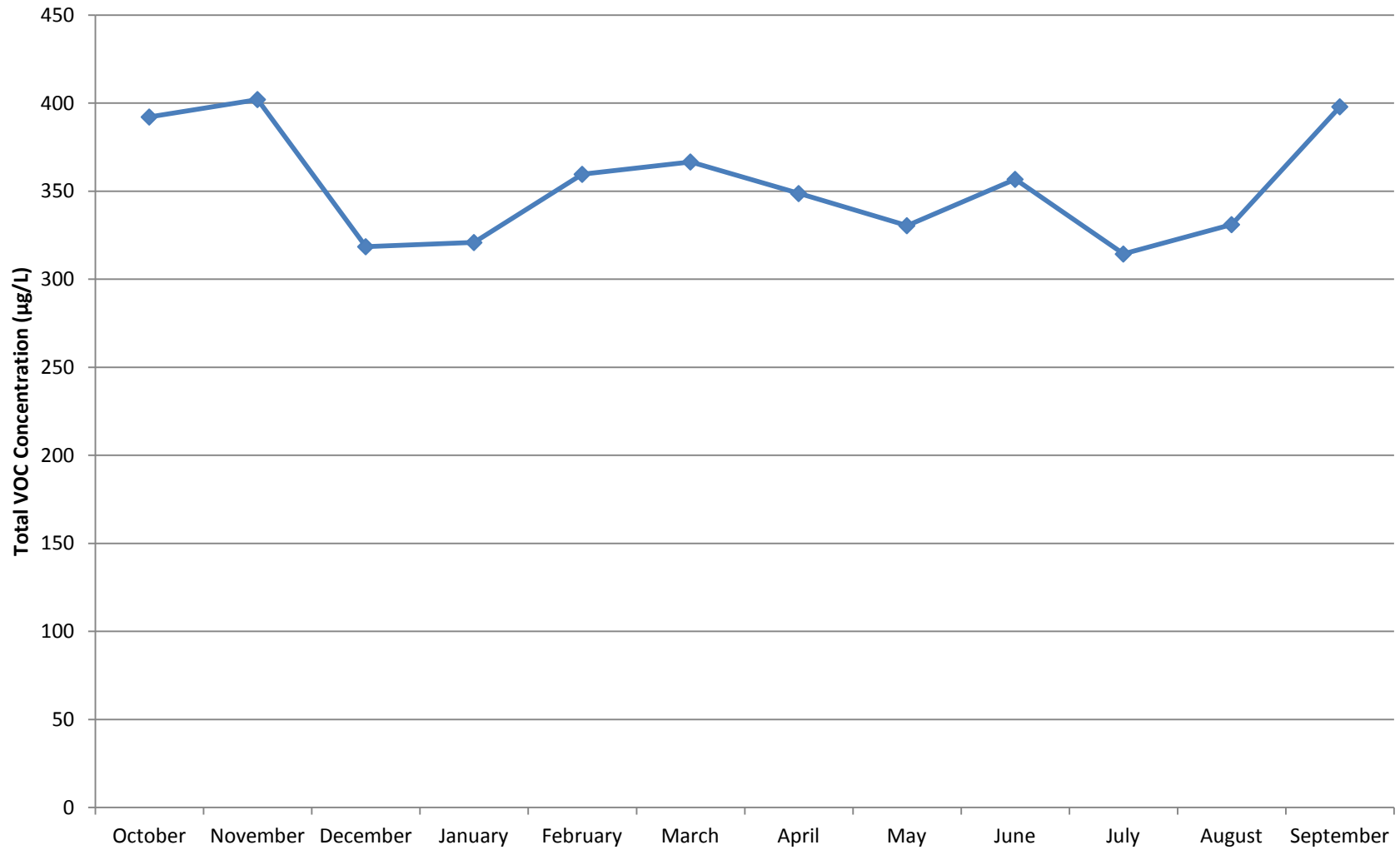
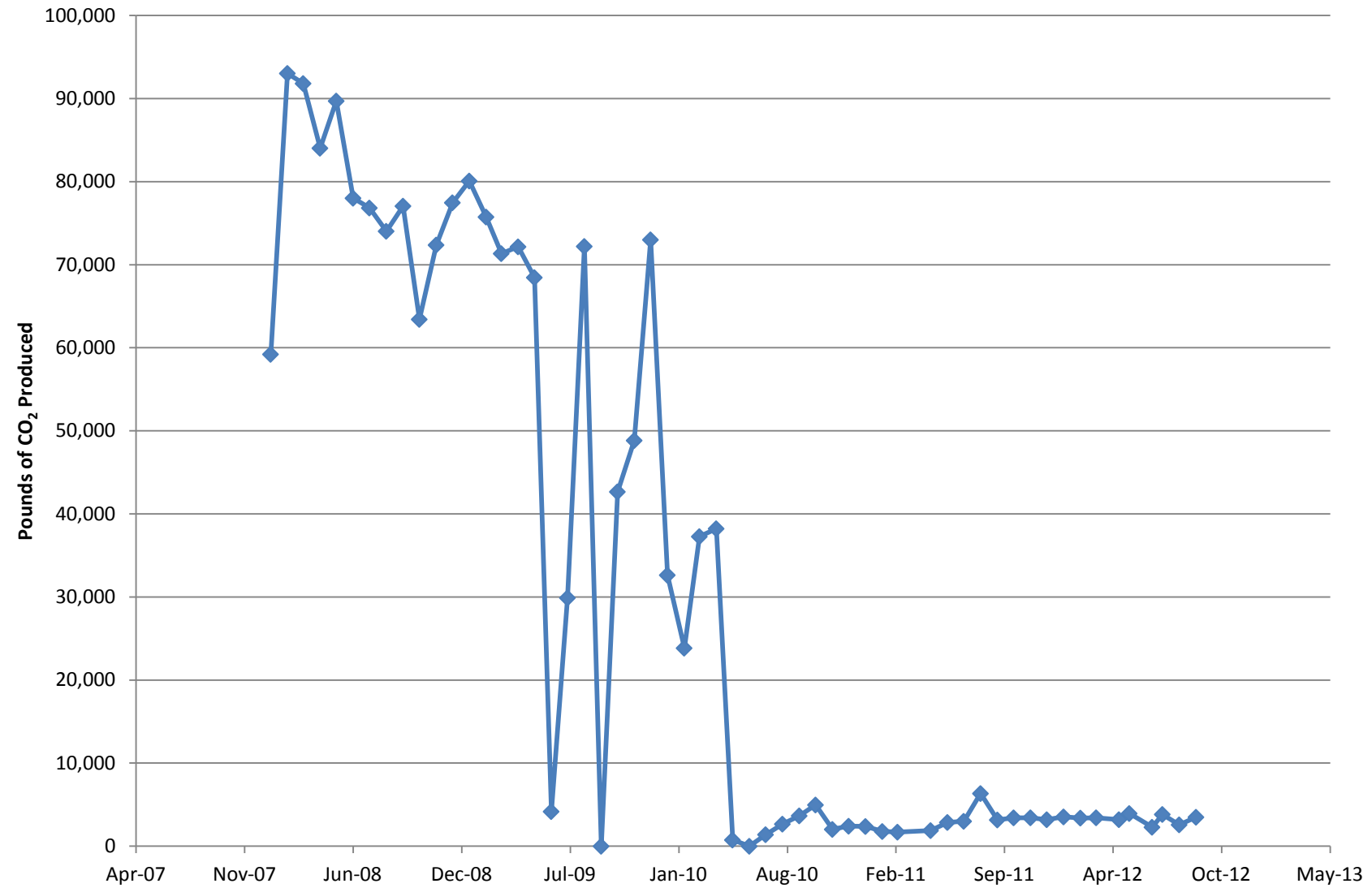


Figure 2
Equivalent Pounds of CO₂ Produced by the Central Groundwater Treatment Plant



North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 128

Reporting Period: 31 August 2012 – 30 September 2012

Date Submitted: 16 October 2012

This monthly data sheet presents information regarding the North Groundwater Treatment Plant (NGWTP) and associated remedial process optimization (RPO) activities.

System Metrics

Table 1 presents operational data from the September 2012 reporting period:

Table 1 – Operations Summary – September 2012		
Operating Time: NGWTP: 396 hours	Percent Uptime: NGWTP: 53.7%	Electrical Power Usage: NGWTP: 579 kWh (793 lbs CO ₂ generated ^a)
Gallons Treated: 38,070 gallons	Gallons Treated Since March 2000: 82.7 million gallons	
Volume Discharged to Duck Pond: 38,070 gallons	Volume Discharge to Storm Drain: 0 gallons	
VOC Mass Removed: 1.5 x 10⁻³ pounds^b	VOC Mass Removed Since March 2000: 174.3 pounds (Groundwater)	
Rolling 12-Month Cost per Pound of Mass Removed: Not Measured^c		
Monthly Cost per Pound of Mass Removed: Not Measured^d		
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG. ^b VOCs from September 2012 influent sample detected by EPA Method SW8260B. ^c Value not calculated since measurement does not accurately represent the cost effectiveness of the system. ^d Value not calculated since measurement does not accurately represent the potential effectiveness of the system. O&M costs are low, but very little contaminant mass is being treated.		

Table 2 presents individual extraction well flow rates during the monthly reporting period.

Table 2 – NGWTP Average and Total Flow Rates – September 2012		
Location	Average Flow Rate (gpm) ^a	Total Gallons Processed (gallons)
EW614x07	1.2	28,450
EW615x07	0.4	10,160
NGWTP	1.6	38,070
^a Average flow rate calculated by dividing the total gallons processed collected from wellhead totalizers by the reporting period operating time. The total gallons processed are determined by readings collected at wellhead and system influent totalizers. The discrepancy between the sum of both wells and the NGWTP influent can be attributed to the piping between the wells and the NGWTP, which has to be filled before flow registers at the NGWTP. gpm = gallons per minute		

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

Table 3 – Summary of System Shutdowns					
Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
NGWTP	9/15/12	16:00			The NGWTP was shutdown in preparation for an aquifer test in September 2012. This test began on 17 September 2012. The Site LF007C extraction pumps will be brought back on line following completion of the pumping test.

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Analytical data from the 11 September 2012 sampling event are presented in Table 4. Concentration of cis-1,2-Dichloroethene and TCE (0.53 J and 4.4 µg/L) were detected in the influent sample. The contaminant concentrations detected in the influent process stream are less than the respective effluent limits (5.0 µg/L).

An aquifer test was performed for the NGWTP in September 2012. This test lasted thirty-six (36) hours from 17 September 2012 through 20 September 2012 and resulted in a larger than typical volume of water treated during the reporting period. Detailed results of this test will be presented in the October 2012 monthly data sheet.

Figure 1 presents a chart of influent concentrations (total VOCs) at the NGWTP versus time for the past twelve (12) months. Analytical data (Table 4) continue to indicate effective treatment of the influent process stream with only two (2) operating GAC drums online. A spare GAC drum is available if analytical data indicate a third GAC drum should be brought back on line.

Optimization Activities

No optimization activities occurred in September 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.

Figure 2 presents the historical GHG production from the systems associated with the NGWTP. The NGWTP is off line (“System Shutdown”) when vernal pools are present at Site LF007C. The NGWTP used 579 kWh, which calculates to approximately 793 pounds of GHG generation, in September 2012. This is more than August 2012 when the NGWTP used 570 kWh of electricity. The increase of electricity usage can be attributed to a greater volume of water 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 September 2012 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	11 September 2012 (µg/L)		
				Influent	After Carbon 1	Effluent
Halogenated Volatile Organics						
Bromodichloromethane	5.0	0.15	0	ND	ND	ND
Bromoform	5.0	0.19	0	ND	ND	ND
Carbon Tetrachloride	0.5	0.14	0	ND	ND	ND
Chloroform	5.0	0.16	0	ND	ND	ND
Dibromochloromethane	5.0	0.13	0	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.15	0	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	ND	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	0.53 J	ND	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	0.2	0	ND	ND	ND
Trichloroethene	5.0	0.19	0	4.4	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND
Non-Halogenated Volatile Organics						
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
Other						
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	NM	NM	ND
Total Dissolved Solids (mg/L)	NA	10	0	NM	NM	2700

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

Notes:

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

ND = not detected

NM = not measured

µg/L = micrograms per liter

mg/L = milligrams per liter

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

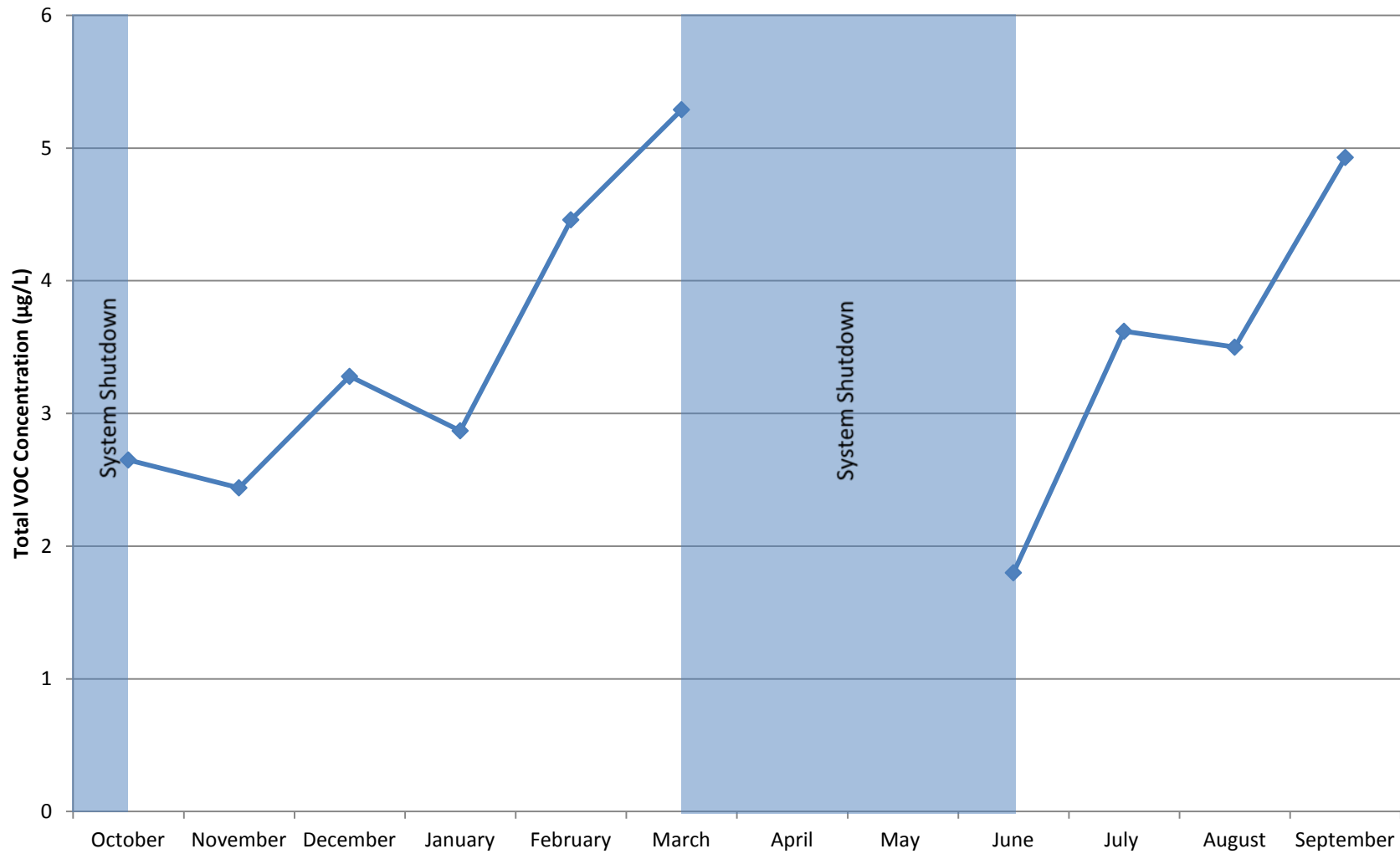
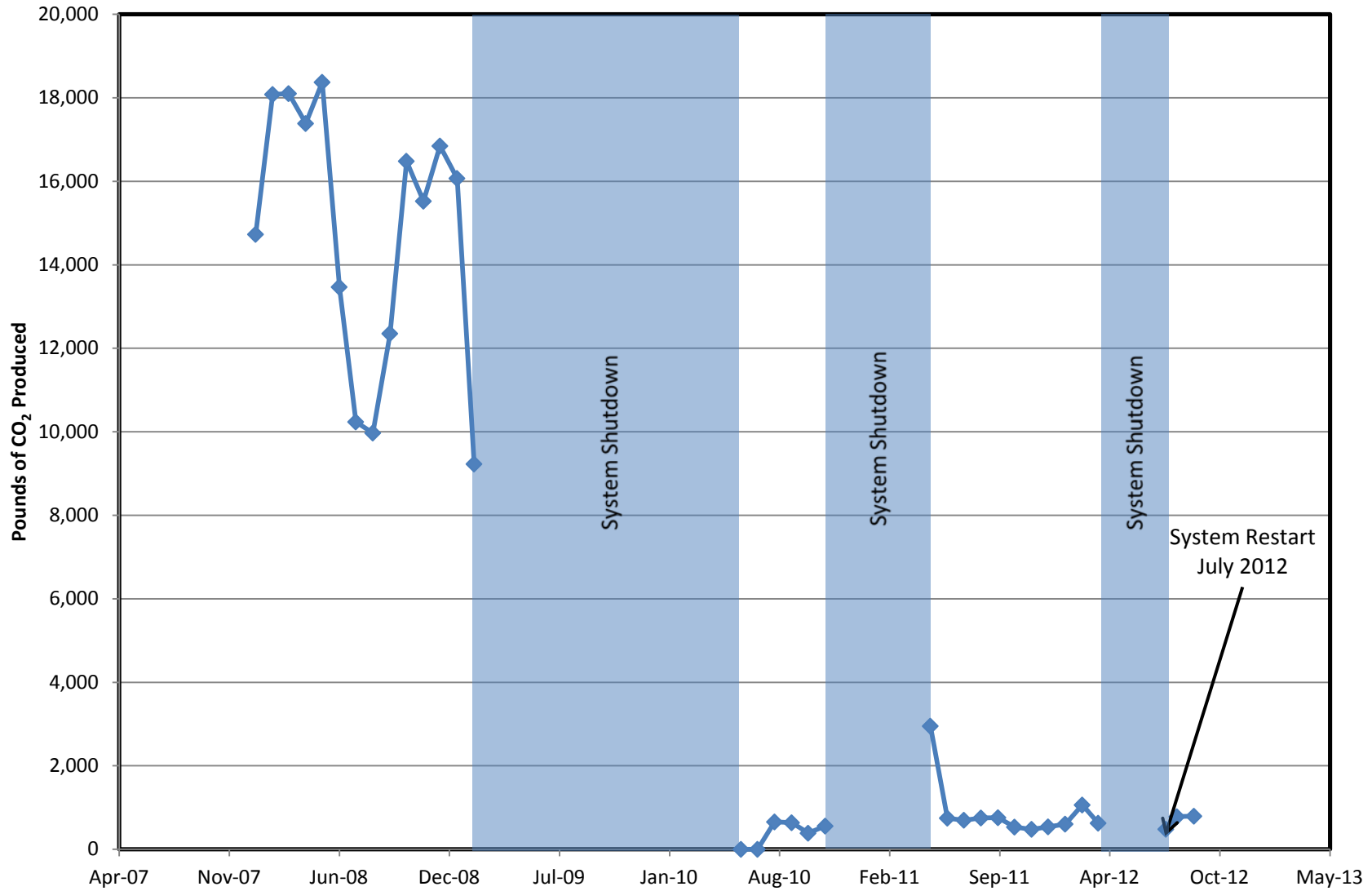


Figure 2
Equivalent Pounds of CO₂ Produced by the North Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 019

Reporting Period: 31 August 2012 – 30 September 2012

Date Submitted: 16 October 2012

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

System Metrics

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

Table 1 – Operations Summary – September 2012		
Operating Time: S18GWTP: 711 hours	Percent Uptime: S18GWTP: 95.4%	Electrical Power Usage: S18GWTP: 100 kWh (137 lbs CO ₂ generated ^a)
Gallons Treated: 144 thousand gallons	Gallons Treated Since March 2011: 2.78 million gallons	
Volume Discharged to Union Creek: 144 thousand gallons		
BTEX, MTBE, TPH Mass Removed: 0.59 lbs^b		BTEX, MTBE, TPH Mass Removed Since March 2011: 19.2 lbs
Rolling 12-Month Cost per Total Pounds of Mass Removed: \$7,997 ^c		
Monthly Cost per Pound of Mass Removed: \$5,501		
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG. ^b Calculated using July 2012 (influent) and September 2012 (effluent) EPA Method SW8260B analytical results. Influent samples are collected on a quarterly basis. ^c Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system. lbs = pounds		

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

Table 2 – S18GWTP Average Flow Rates ^a	
Location	Average Flow Rate Groundwater (gpm)
EW2014x18	1.97
EW2016x18	Offline ^b
EW2019x18	2.4
Site ST018 GWTP	3.38

^a Flow rates calculated by dividing total gallons processed, from the totalizer at each location, by system operating time for the month.
^b EW2016x18 off line due to battery failures at the EW2016x18 control panel.
gpm = gallons per minute
S18GWTP = Site ST018 Groundwater Treatment Plant

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

Table 3 – Summary of System Shutdowns					
Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
	9/5/12	00:00 ^a	9/6/12	10:00	System shut down due to influent high pressure alarm.

^aShutdown times are estimated based on the start of the day.
S18GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Groundwater samples were collected at the S18GWTP on 11 September 2012. Sample results from the September sampling event are presented in Table 4. No contaminant concentrations were measured at the midpoint and effluent sampling locations in September 2012.

The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (3Q12) influent sample was 487 µg/L, which is a significant decrease from the previous (2Q12) influent concentration of 1,658 µg/L. This concentration more closely reflects the first quarter (1Q12) influent concentration of 455 µg/L. Figure 1 presents a plot of influent quarterly total VOC (TPHg, TPHd, MTBE, and BTEX) and MTBE concentrations at the S18GWTP versus time.

The ST018 treatment plant shutdown again this month as a result of high pressure. The system was brought back on line on 6 September 2012. Extraction wells EW2014x18 and EW2016x18 both experienced periods of inconsistent operation during September 2012, both due to battery failures in the control panels for each well. The failed battery associated with the EW2014x18 control panel was switched with a working battery in the EW2016x18 control panel, thus returning EW2014x18 to service and taking EW2016x18 off line. New batteries were ordered and are expected to be replaced in October 2012. Extraction well EW2016x18 will be brought back on line once the replacement batteries are installed.

Optimization Activities

No optimization activities were performed in September 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 100 pounds of GHG during September 2012. This is an increase from August 2012 (71 pounds). This is due to increased operating time and an increased number of gallons treated in September 2012. Figure 2 presents the historical GHG production from the S18GWTP. 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 September 2012 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum ^a (µg/L)	Detection Limit (µg/L)	N/C	11 September 2012 (µg/L)		
				Influent ^b	After Carbon 2	System Effluent
Fuel Related Constituents						
MTBE	5	0.5	0	124	ND	ND
Benzene	5	0.17	0	5.3	ND	ND
Ethylbenzene	5	0.22	0	2.4	ND	ND
Toluene	5	0.14	0	0.44 J	ND	ND
Total Xylenes	5	0.23 – 0.5	0	4.38	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	230	ND	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	120	ND	ND
Total Petroleum Hydrocarbons – Motor Oil	--	160	--	ND	ND	ND

^a In accordance with the National Pollutant Discharge Elimination System (NPDES) Effluent Limitations^b Values taken from July 2012 (3Q12) 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

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

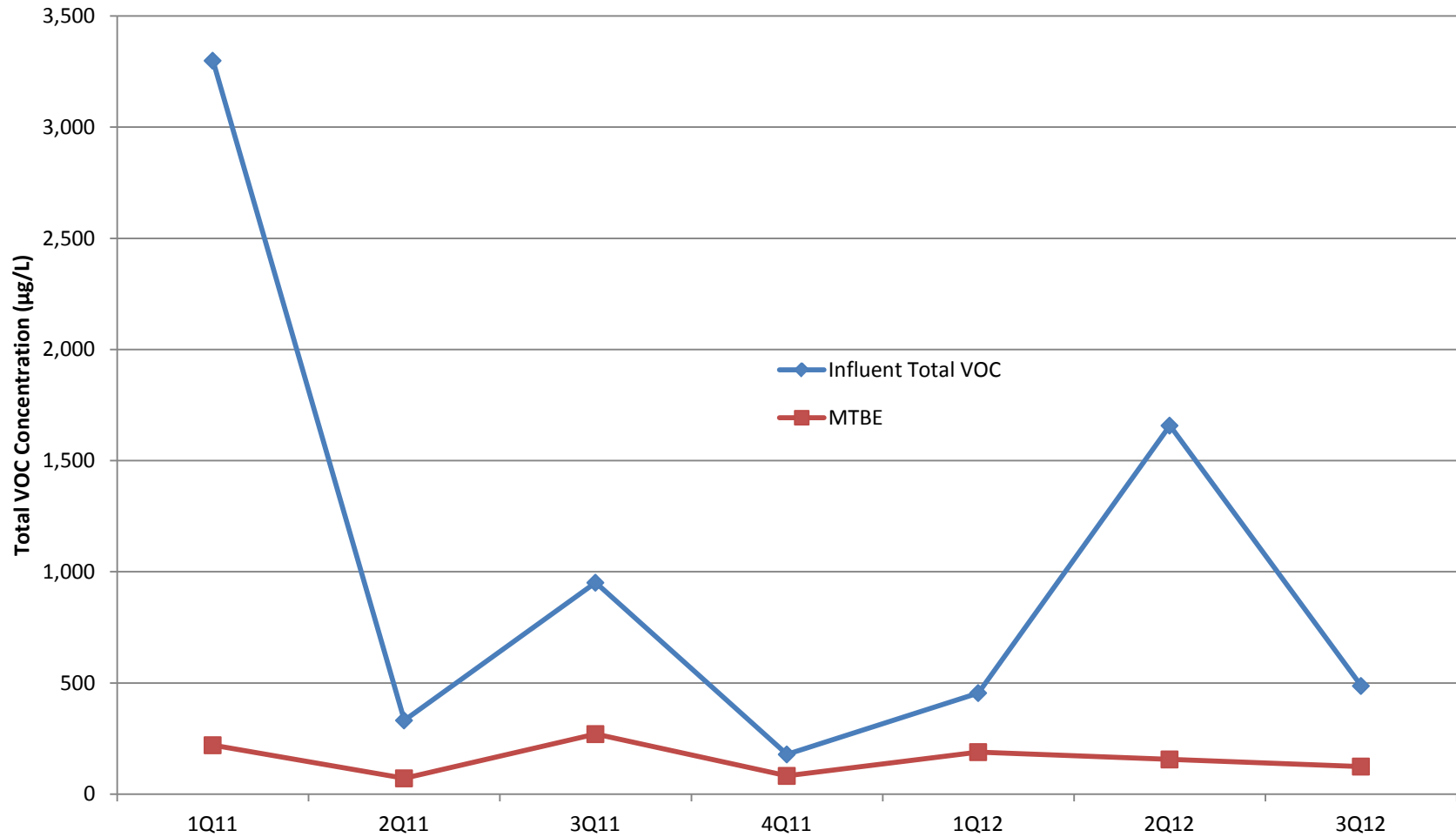
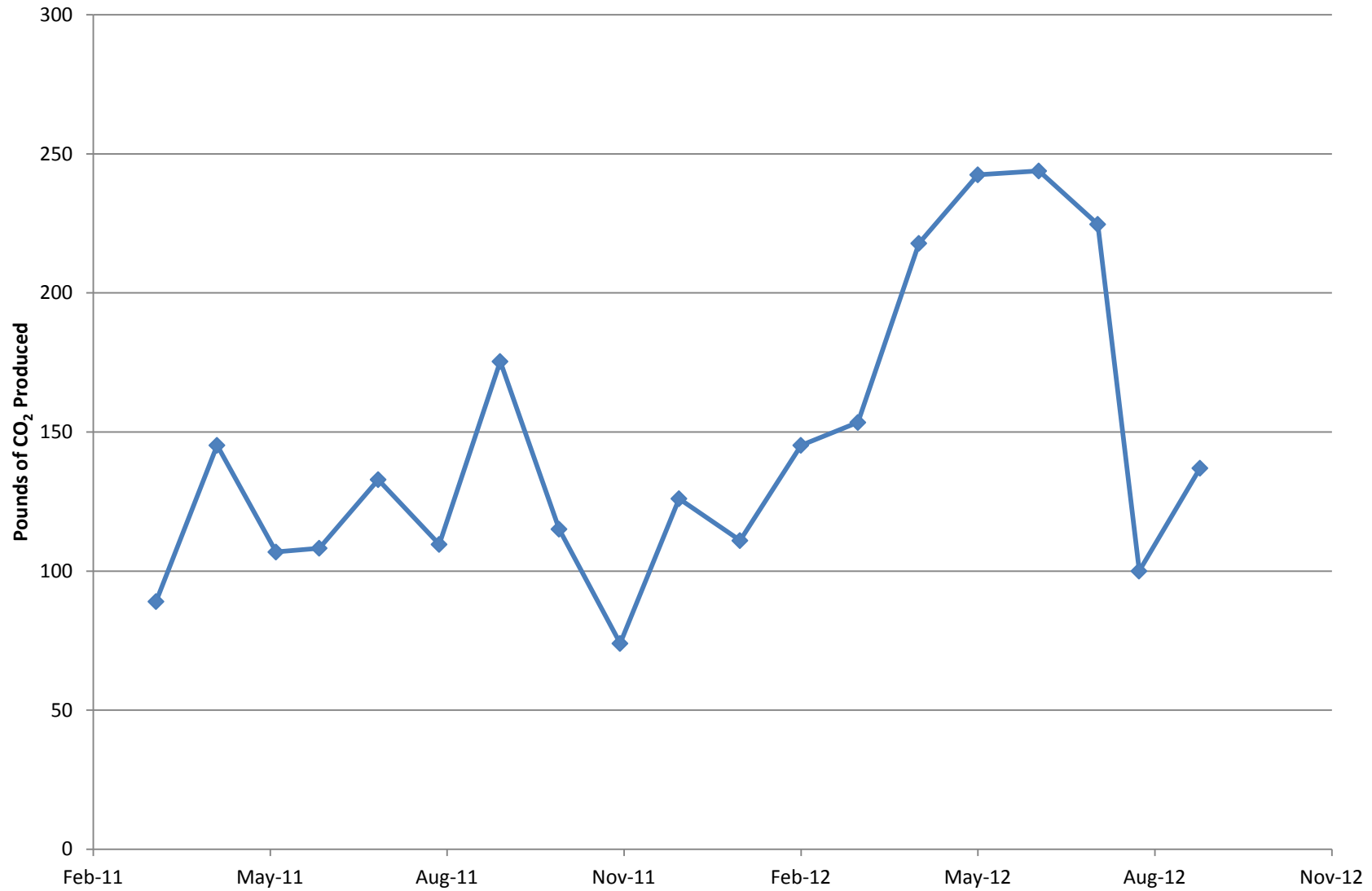


Figure 2
Equivalent Pounds of CO₂ Produced by the Site ST018 Groundwater Treatment Plant



Travis AFB Restoration Program

Program Overview

RPM Meeting
October 17, 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
- 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

Completed Documents (cont'd)

- 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)
- 2011 CAMU Annual Report
- Technical and Economic Feasibility Analysis (TEFA)
- Work Plan for RPO of Sites SS016 and SS029
- Site LF007C Data Gaps Investigation Technical Memorandum
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- ***Old Skeet Range Engineering Evaluation/Cost Analysis***
- ***2011 Groundwater Treatment RPO Annual Report***
- ***Proposed Plan (PP)***
- ***FT005 Remedial Action Completion Report***

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 (2nd 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
- 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

Completed Field Work (cont'd)

- 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 (4th Quarterly event)
- Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes (Feb 21-22)
- 2012 Annual GSAP Sampling
- CAMU Lysimeter Removal
- ***LF007C GET System Optimization***

In-Progress Documents & Field Work

Documents

- Vapor Intrusion Update Tech Memo
- ***2012 GSAP Technical Memorandum***

Field Work

- SS029/SS016 System Optimization Analysis

Upcoming Documents

- Travis Air Force Base Groundwater Record of Decision TBD
- 3rd Five-Year Review Mar 2013

Upcoming Field Work

- GSAP Semiannual Sampling Event Nov 2012

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