Final

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

19 April 2012, 1400 Hours

Mr. Mark Smith, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 19 April 2012 at 1400 hours, at Travis AFB, California. Attendees included:

• Mark Smith	Travis AFB
• Glenn Anderson	Travis AFB
• Lonnie Duke	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)
• Nadia Hollan Burke	United States Environmental Protection Agency (USEPA)
• Mary Snow	Techlaw, Inc
• Mike Wray	CH2M HILL
• Tricia Carter	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 (March 2012)
• Attachment 4	CGWTP Monthly Data Sheet (March 2012)
• Attachment 5	NGWTP Monthly Data Sheet (March 2012)
• Attachment 6	Site ST018 Monthly Data Sheet (March 2012)
• Attachment 7	Presentation: Program Overview

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 21 March 2012 RPM meeting minutes were approved and finalized as written.

B. Action Item Review.

Action items from March were reviewed.

Action item one closed: petition to have the Lysimeter removed.

Action item two still open: Travis AFB to research beneficial reuse of treated water. No change.

Action item three closed: Revise 21 March 2012 RPM Agenda and MMDS to reflect that the meeting was a teleconference.

Action item four closed: Confirm if start time of 1400 hours for April's RPM meeting will work for Mr. Friedman.

Action item five closed: Travis AFB to contact Ms. Gavlak at Fairfield-Suisun Unified School District to coordinate the use of a local school to hold the Proposed Plan Public Meeting.

Action item six closed: ITSI to provide best dates possible for FT005 Remedial Action Completion Report.

Action item seven closed: CH2M HILL to provide regulators with a table for Site SS015 to explain the strategy of the removal of wells from the performance monitoring network.

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 16 May 2012 at 0930 hours.

Travis AFB Master Document Schedule

— Proposed Plan (PP): Draft to Agencies new date 04 May 2012. PP Public Meeting is tentatively scheduled for 08 August 2012. The rest of the document submittal dates have changed accordingly.

— Groundwater Record of Decision (ROD): Draft to Agencies date has been pushed back to 31 August 2012. The rest of the document submittal dates have changed accordingly.

— Potrero Hills Annex: (FS, PP, and ROD): No change. The site investigation draft report has been submitted to the RWQCB. Mr. Friedman will try and talk with Mr. Kent Aue regarding the status of the review on the draft report. Mr. Anderson said if Mr. Kent Aue wants more investigation work this summer, then all parties need to be informed of planned actions as soon as possible.

— Work plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB: Document was submitted Final. Will be moved to history.

— Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes: Predraft to AF/Service Center new date is 01 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 will be changed to 16 May 2012. The rest of the document submittal dates will be changed accordingly.

— RPO Baseline Implementation Report: Has been submitted Final. Will be moved to history.

— Technical and Economic Feasibility Analysis (TEFA): The Response to Comments Meeting date has been changed to 19 April 2012. The Final due date is scheduled for 27 April 2012.

— Site LF007C Data Gaps Investigation Technical Memorandum: No change to schedule.

— FT005 Remedial Action Completion Report: Dates have been populated. Document submittal dates are scheduled to coincide with the Lysimeter removal and the CAMU report final date. Ms. Burke said that the scheduled submittal date for the Final of 14 September 2012 is acceptable for EPA.

— Quarterly Newsletter (April 2012): No change. Mr. Anderson said he received a phone call from a Rio Vista City Council member, Ms. Janith Norman, stating she did not receive a copy of the Guardian this quarter, and requested a copy. Ms. Norman agreed to start receiving the Guardian electronically at Mr. Anderson's suggestion.

— 2010/2011 Annual GSAP Report: Final Due was changed to 11 April 2012 to reflect the date the document went final. Will be moved to history.

— 2011 Groundwater Treatment RPO Annual Report: Draft to agencies date changed to 18 April 2012. The CD was handed out to the agencies in today's meeting. The rest of the document submittal dates were changed accordingly.

— 2011 CAMU Annual Report: All new document submittal dates have been populated.

— Old Skeet Range Engineering Evaluation/Cost Analysis: No change. Mr. Smith said Travis AFB is working with the Army Corps of Engineers to prepare a response to EPA's comments. Mr. Smith said he received a directive

from AFCEE to proceed with the removal action. He further stated that Travis AFB could still conduct confirmation sampling as EPA has requested, at a later date and under a separate contract. The other option is to wait until the active firing range is closed before conducting the removal. Mr. Linbrunner asked Mr. Smith to expound on confirmation sampling. Mr. Smith said that the EPA risk assessors said sampling had not been conducted sufficiently enough to adequately characterize the amount of lead in the soil. Mr. Linbrunner suggested adding a line in the work plan that states "x" number of confirmation samples will be collected for lead and PAHs on the skeet range. Ms. Burke said the removal is limited to the area of the elevated PAHs and that EPA would like confirmation of the entire area. Mr. Smith said that it is outside the scope of the current contract. Ms. Burke asked that Travis AFB include how they will address lead in the future in the work plan.

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 99.3% uptime, and 4.8 million gallons of groundwater were extracted and treated during the month of March 2012. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 116 gallons per minute (gpm). Electrical power usage was 11,940 kWh and approximately 16,358 pounds of CO_2 were created (based on DOE calculation). Approximately 1.1 pounds of volatile organic compounds (VOCs) were removed in March. The total mass of VOCs removed since startup of the system is 417 pounds.

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

Central Groundwater Treatment Plant (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.6 million gallons of groundwater extracted and treated during the month of March 2012. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 39.2 gpm. Electrical power usage was 2,504 kWh for all equipment connected to the Central plant, and approximately 3,430 pounds of CO_2 were created. Approximately 5 pounds of VOCs were removed from groundwater in March. The total mass of VOCs removed since the startup of the system is 11,273 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 March.

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

North Groundwater Treatment Plant (see Attachment 5)

The North Groundwater Treatment Plant (NGWTP) performed at 66.7% uptime with approximately 11,830 gallons of groundwater extracted and treated during the month of March 2012. The reduced uptime was due to shutting the system off as required when seasonal vernal pools form over the extraction system. The average flow rate of the NGWTP, while operating, was 0.41 gpm and electrical power use was 457 kWh for all the equipment connected to the North plant. Approximately 626 pounds of CO_2 was created. Approximately 0 pounds of VOCs were removed from the groundwater in March. The total mass of VOCs removed since the startup of the system is 174.3 pounds.

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

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

The Site ST018 (MTBE) Treatment Plant (S18GWTP) performed at 100% uptime with approximately 167 thousand gallons of groundwater extracted and treated during the month of March 2012. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 4.01 gpm. Electrical power usage for the month was 112 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 153 pounds of CO_2. Approximately 0.64 pounds of BTEX, MTBE and TPH were removed from groundwater in March. The total BTEX, MTBE and TPH mass removed since the startup of the system is 8.7 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 March.

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:

Completed Documents include the 2010/2011 Annual GSAP Report and Baseline Implementation Report (Sites SS015, SS016, SD036, SD037, and DP039).

Field Work In Progress: 2012 Annual GSAP Sampling

Upcoming Documents includes addition of the 2011 CAMU Annual Report, and 2011 Groundwater Treatment RPO Annual Report.

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

4. New Action Item Review

None.

5. PROGRAM/ISSUES/UPDATE

Ms. Burke indicated that Mr. David Cooper, EPAs community involvement person, has a limited role to Travis AFB due to other duties assigned. Ms. Burke will speak with her management regarding a replacement. Mr. Anderson suggested Ms Viola Cooper as a possible replacement since she is local to the area and familiar with the Travis AFB program.

Mr. Smith announced that his work with AFCEE is continuing, regarding the next large Performance Based Contract. Project estimates have been completed and signed. The next step is to complete the statement of objectives so we can offer a request for proposal to potential bidders. The current PBC contract ends in 2014 and the new contract will begin in 2013 so there will be some overlap, although the new contract will start on work in 2013 that isn't in the current contract.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Petition to have the Lysimeter removed.	N/A	Closed
2.	Travis AFB	Research beneficial reuse of treated water and give update.	TBD	Open
3.	CH2M HILL	Revise 21 March 2012 RPM Agenda, and MMDS to reflect that today's meeting was a teleconference.	N/A	Closed

4.	Mr. Friedman	Confirm if the start time of 1400 hours for RPM 19 April 2012 RPM meeting will work for him to attend.	N/A	Closed
5.	Travis AFB	Contact Ms. Gavlak for coordination for use of a local school to hold the PP Public Meeting that provides audio and visual technology.	N/A	Closed
6.	ITSI	Provide best dates possible for FT005 Remedial Action Completion Report.	N/A	Closed
7.	CH2M HILL	Provide regulators with Site SS015 table explaining the strategy of the removal of wells from the performance monitoring network	N/A	Closed

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
REMEDIAL PROGRAM MANAGER'S MEETING
BLDG 570, Main Conference Room
19 April 2012, 2:00 P.M.
AGENDA

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)

3. PRESENTATIONS

   A. PROGRAM UPDATE: ACTIVITIES COMPLETED, IN PROGRESS AND UPCOMING

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

NOTE: THE TRAVIS RESTORATION ADVISORY BOARD MEETING WILL BE HELD AT THE NORTHERN SOLANO COUNTY ASSOCIATION OF REALTORS OFFICE. PREPARATIONS FOR THE RAB MEETING WILL BEGIN AT 4:30 PM.

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

PRIMARY DOCUMENTS		
	Basewide Groundwater	
Life Cycle	Proposed Plan Travis, Glenn Anderson CH2M HILL, Loren Krook	Record of Decision Travis, Glenn Anderson CH2M HILL, Tony Jaegel
Scoping Meeting	**NA**	**01-24-07 (11-30-11)**
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	05-04-12	08-31-12
Draft to RAB	05-04-12	08-31-12
Agency Comments Due	06-04-12	10-30-12
Response to Comments Meeting	**06-13-12**	**11-14-12**
Public Comment Period	07-27-12 to 08-27-12	NA
Public Meeting	**08-08-12**	**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

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS			
	Potrero Hills Annex Travis, Glenn Anderson		
Life Cycle	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	**Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB** **Travis AFB, Glenn Anderson** **CH2M HILL, Leslie Royer**	**Work Plan for Remedial Process Optimization of Sites SS016 and SS029 at Travis AFB** **Travis AFB, Lonnie Duke** **Tri-Hydro, Glenn Leong**	**RPO Baseline Implementation Report** **Travis AFB, Lonnie Duke** **CH2M HILL, Tony Chakurian**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	05-01-12	01-06-12	08-02-11
AF/Service Center Comments Due	05-15-12	01-20-12	08-16-11
Draft to Agencies	05-29-12	02-22-12	09-16-11
Draft to RAB	05-29-12	02-22-12	09-16-11
Agency Comments Due	06-28-12	04-02-12	10-31-11
Response to Comments Meeting	**07-18-12**	**04-19-12**	**02-22-12**
Response to Comments Due	08-06-12	04-26-12	02-28-12
Draft Final Due	NA	NA	NA
Final Due	08-06-12	04-26-12	03-28-12
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	**Technical and Economic Feasibility Analysis** **Travis AFB, Glenn Anderson** **CH2M HILL, Loren Krook**	**Site LF007C Data Gaps Investigation Technical Memorandum** **Travis AFB, Lonnie Duke** **CH2M HILL, Tony Chakurian**	**FT005 Remedial Action Completion Report** **Travis AFB, Lonnie Duke** **ITSI, Rachel Hess**
Scoping Meeting	**07-20-11**	**NA**	**NA**
Predraft to AF/Service Center	10-13-11	05-03-12	06-04-12
AF/Service Center Comments Due	10-31-11	05-17-12	06-22-12
Draft to Agencies	12-15-11	05-31-12	07-09-12
Draft to RAB	12-15-11	05-31-12	07-09-12
Agency Comments Due	01-30-12	07-02-12	08-10-12
Response to Comments Meeting	**04-19-12**	**07-18-12**	**08-15-12**
Response to Comments Due	04-27-12	08-01-12	08-24-12
Draft Final Due	NA	NA	NA
Final Due	04-27-12	08-01-12	09-14-12
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS				
Life Cycle	**Quarterly Newsletters (April 2012) Travis, Glenn Anderson**	**2010/2011 GSAP Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer**	**2011 Groundwater Treatment RPO Annual Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick**	**2011 CAMU Annual Report Travis AFB, Lonnie Duke ITSI, Rachel Hess**
Scoping Meeting	**NA**	**NA**	**NA**	**NA**
Predraft to AF/Service Center	NA	10-20-11	02-22-12	04-06-12
AF/Service Center Comments Due	NA	10-30-11	03-05-12	04-12-12
Draft to Agencies	03-19-12	12-07-11	04-18-12	04-13-12
Draft to RAB	NA	12-07-11	04-18-12	04-13-12
Agency Comments Due	04-02-12	02-05-12	05-18-12	05-14-12
Response to Comments Meeting	**TBD**	**02-22-12**	**06-13-12**	**05-16-12**
Response to Comments Due	04-06-12	02-27-12	06-27-12	05-18-12
Draft Final Due	NA	NA	NA	NA
Final Due	04-09-12	04-11-12	06-27-12	05-18-12
Public Comment Period	NA	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS	
Life Cycle	**Old Skeet Range Engineering Evaluation/Cost Analysis** **Travis AFB, Glenn Anderson** **Baywest, Steve Thornton**
Scoping Meeting	**NA**
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
Response to Comments Meeting	**TBD (Teleconference)**
Agency Concurrence with Remedy	NA
Public Comment Period	TBD
Public Meeting	**NA**
Response to Comments Due	TBD
Draft Final Due	TBD
Final Due	**TBD**

Travis AFB Master Meeting and Document Schedule

HISTORICAL	
Life Cycle	Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer
Scoping Meeting	**NA**
Predraft to AF/Service Center	08-09-11
AF/Service Center Comments Due	08-19-11
Draft to Agencies	09-29-11
Draft to RAB	09-29-11
Agency Comments Due	11-14-11
Response to Comments Meeting	**11-30-11**
Response to Comments Due	11-17-11
Draft Final Due	NA
Final Due	02-24-12
Public Comment Period	NA
Public Meeting	**NA**

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 138 **Reporting Period: 29 Feb 2012 – 31 Mar 2012** **Date Submitted: 18 April 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 March 2012 reporting period.

Table 1 – Operations Summary – March 2012

Operating Time:	Percent Uptime:	Electrical Power Usage:
SBBGWTP: 698 hours	**SBBGWTP:** 99.3 %	**SBBGWTP:** 11,940 kWh (16,358 lbs CO_2 generated[a])

Gallons Treated: **4.8 million gallons**

Gallons Treated Since July 1998: **778 million gallons**

Volume Discharged to Union Creek: **4.8 million gallons**

VOC Mass Removed: **1.1 lbs**[b]

VOC Mass Removed Since July 1998: **417 lbs**

Rolling 12-Month Cost per Pound of Mass Removed: $6,436[c]

Monthly Cost per Pound of Mass Removed: $10,265

lbs = pounds

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

[b] Calculated using March 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	Offline[c]	EW736x05	Offline	EW01x29	7.7	EW01x30	4.5
EW02x05	0.4	EW737x05	Offline	EW02x29	4.9	EW02x30	0.2
EW03x05	Offline	EW742x05	Offline	EW03x29	2.9	EW03x30	2.5
EW731x05	Offline	EW743x05	Offline	EW04x29	8.7	EW04x30	24.7
EW732x05	Offline	EW744x05	Offline	EW05x29	9.8	EW05x30	12.0
EW733x05	Offline	EW745x05	Offline	EW06x29	7.3	EW06x30	Dry
EW734x05	11.0	EW746x05	Offline	EW07x29	7.5	EW711x30	15.5
EW735x05	5.9						
FT005 Total:	**17.3**			**SS029 Total:**	**48.8**	**SS030 Total:**	**59.4**
SBBGWTP Average Monthly Flow[d]: 116 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 *2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant.*
[c] Wiring troubleshooting began in March 2012 at EW01x05. The extraction well is expected to be brought back online in April 2012.
[d] 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	
SBBGWTP	14 March 2012	0900	14 March 2012	1400	System shut down to clean control room.

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 15 March 2012. Sample results are presented in Table 4. The total VOC concentration (27.9 µg/L) in the influent sample has decreased since the February 2012 sample (38.6 µg /L) was collected. Figure 1 presents a plot of influent concentrations at the SBBGWTP over the past twelve (12) months.

Concentrations of TCE and cis-1,2-DCE were detected at concentrations of 26.5 and 1.4 µg/L at the influent sample location in March 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 0.46 J, 0.22 J, and 1.3 µg/L. 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 one of the vessels (6,000 pounds) 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. The EW01x05 pump and pump motor were replaced on 6 March with a spare unit, and upon startup, the replaced pump was inoperable due to a (different) ground short indicated by the VFD. Further investigation revealed a ground fault within the spliced wire connection in a pull box between the motor control center and the wellhead. This wiring was repaired. Additional troubleshooting activities have indicated that there may be a faulty signal wire connection between the motor control center and the well head, so this well continues to remain off line until the problem can be isolated and remedied. This well is expected to be brought back on line in April 2012.

Optimization Activities

No optimization activities were performed in March 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 16,358 pounds of GHG during March 2012. GHG production has decreased (from 17,426 pounds) since February 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 March 2012 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	15 March 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	0.22 J	ND
Dibromochloromethane	5.0	0.13	0	ND	ND	ND
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	ND	0.46 J	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	1.4	1.3	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	26.5	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 Suspended Solids (mg/L)	NE	1.0	0	18 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

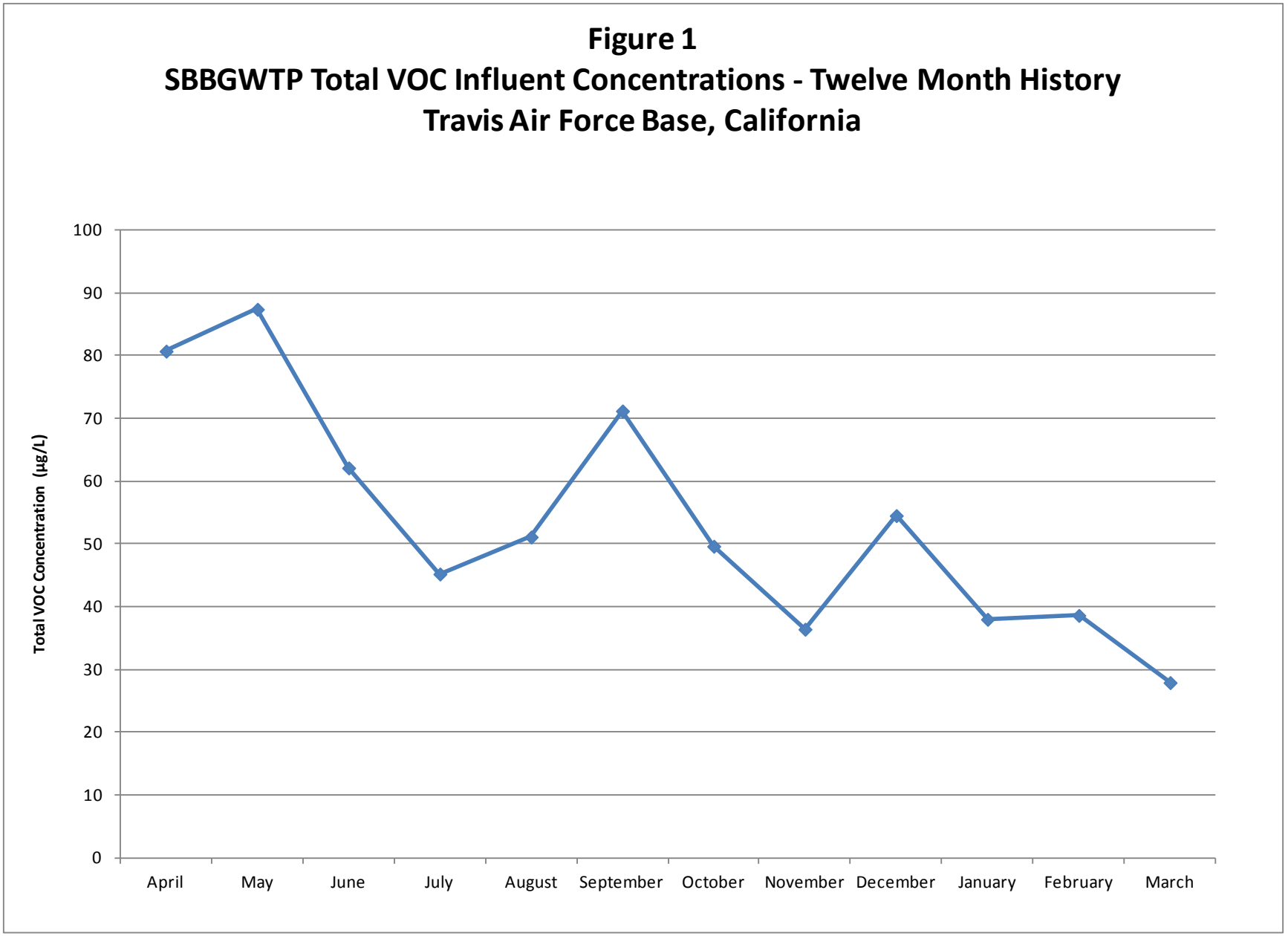
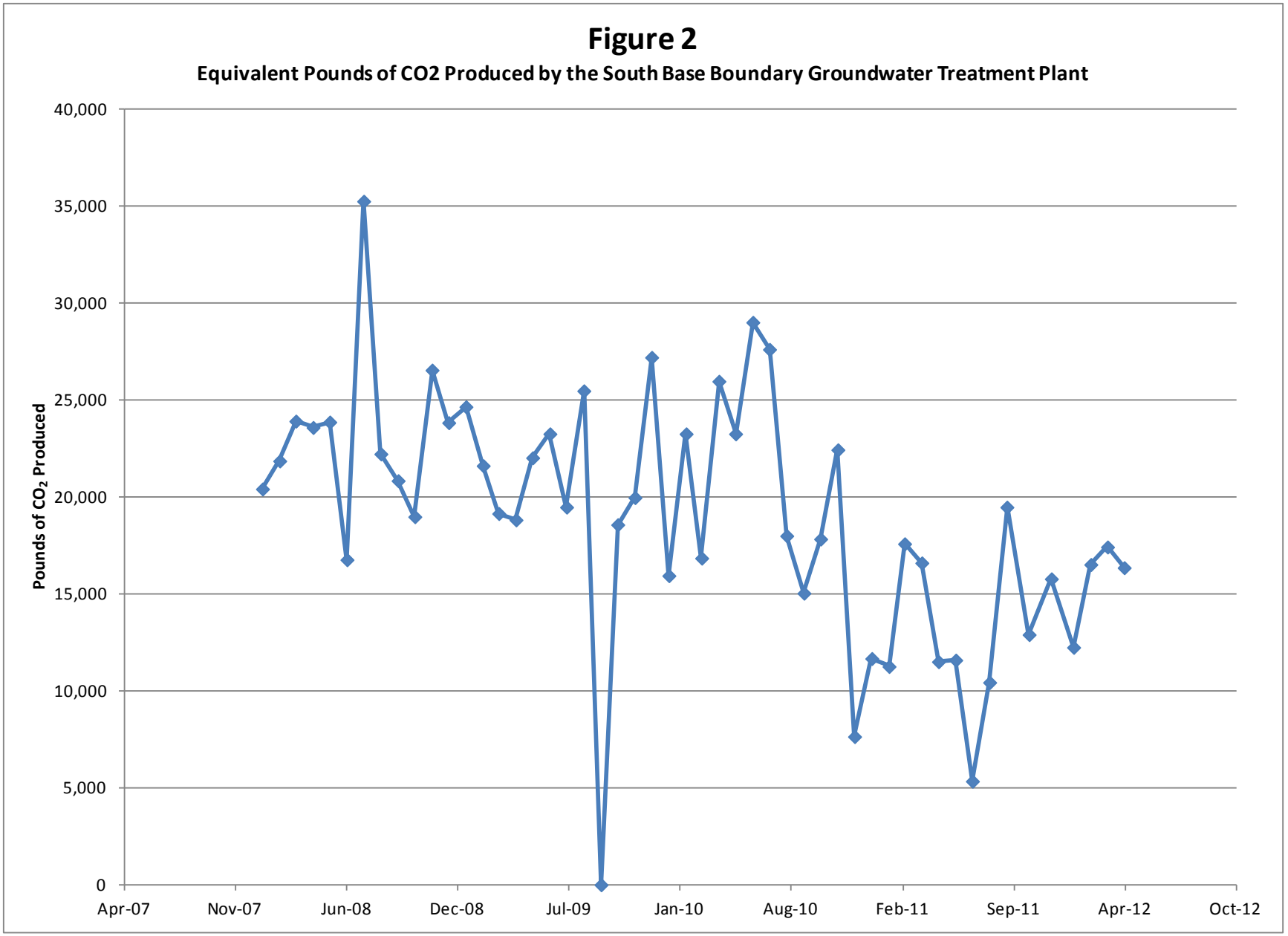


Figure 2

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



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 152 **Reporting Period: 29 Feb 2012 – 31 Mar 2012** **Date Submitted: 18 April 2012**

This monthly data sheet presents information regarding all systems and associated remedial process optimization (RPO) activities to the Central Groundwater Treatment Plant (CGWTP). The ongoing studies related to the CGWTP network of treatment systems include various emulsified vegetable oil (EVO) injection and two (2) bioreactor treatability studies, and various rebound studies.

System Metrics

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

Table 1 – Operations Summary – March 2012

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	698 hours	**CGWTP:**	100%	**CGWTP:**	2,504 kWh (3,430 lbs CO_2 generated[a])
WTTP:	Water: 0 hours Vapor: 0 hours	**WTTP[b]:**	Water: 0% Vapor: 0%	**WTTP:**	0 kWh

Gallons Treated: **1.6 million gallons**

Gallons Treated Since January 1996: **459 million gallons**

VOC Mass Removed:

5.0 lbs[b] (groundwater only)

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,587 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $1,510[c]

Monthly Cost per Pound of Mass Removed: $710

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

[b] Calculated using March 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	20.1	Offline
EW02x16	7.3	Offline
EW03x16	0.9[c]	Offline
EW605x16	6.9	Offline
EW610x16	4.5	Offline
CGWTP	39.2	--
WTTP	Offline[b]	Offline

[a] All flow rates calculated by dividing total gallons processed by system operating time for the month.
[b] No vapor or groundwater was treated in March 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		NA
WTTP					
	System down for rebound study		NA		NA

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

Summary of O&M Activities

Monthly groundwater samples at the CGWTP were collected on 15 March 2012. Sample results are presented in Table 4. The total VOC concentration (367 µg/L) in the influent sample has increased slightly since the February 2012 sample (360 µg/L) was collected. Concentrations of cis-1,2-DCE (77.8 µg/L) and TCE (283 µg/L) were detected at the influent sampling location, and cis-1,2-DCE (0.27 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. Vinyl chloride concentration increased slightly through the primary GAC vessel from 0.5 µg/L to 0.54 µg/L, however the concentration decreased through the secondary GAC vessel to 0.22 J µg/L, which is less than the instantaneous maximum effluent limit (0.5 µg/L). Vinyl chloride was not detected 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 third 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. Pulsed operation consists of operating the pump for approximately two (2) weeks, then taking it off line for approximately four (4) weeks. On 20 February 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 (4) weeks. The pump was brought back on line on 20 March 2012 and will continue to operate into April 2012.

Optimization Activities

No optimization activities occurred at CGWTP in March 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 3,430 pounds of GHG during March 2012. This is a slight increase from the amount produced in February 2012 (approximately 3,393 pounds).

TABLE 4
Summary of Groundwater Analytical Data for March 2012 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	15 March 2012 (µg/L) Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
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	0.37 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	0.15	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	0.67	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	77.8	0.27 J	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	3.1	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.68	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	283	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	0.50	0.54	0.22 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	0.5 – 0.23	0	ND	ND	ND	ND
Other							
Total Dissolved Solids (mg/L)	NA	10	0	NM	NM	NM	854

* In accordance with Appendix G of the T*ravis 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	

CGWTP = Central Groundwater Treatment Plant
EW = Extraction Well

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

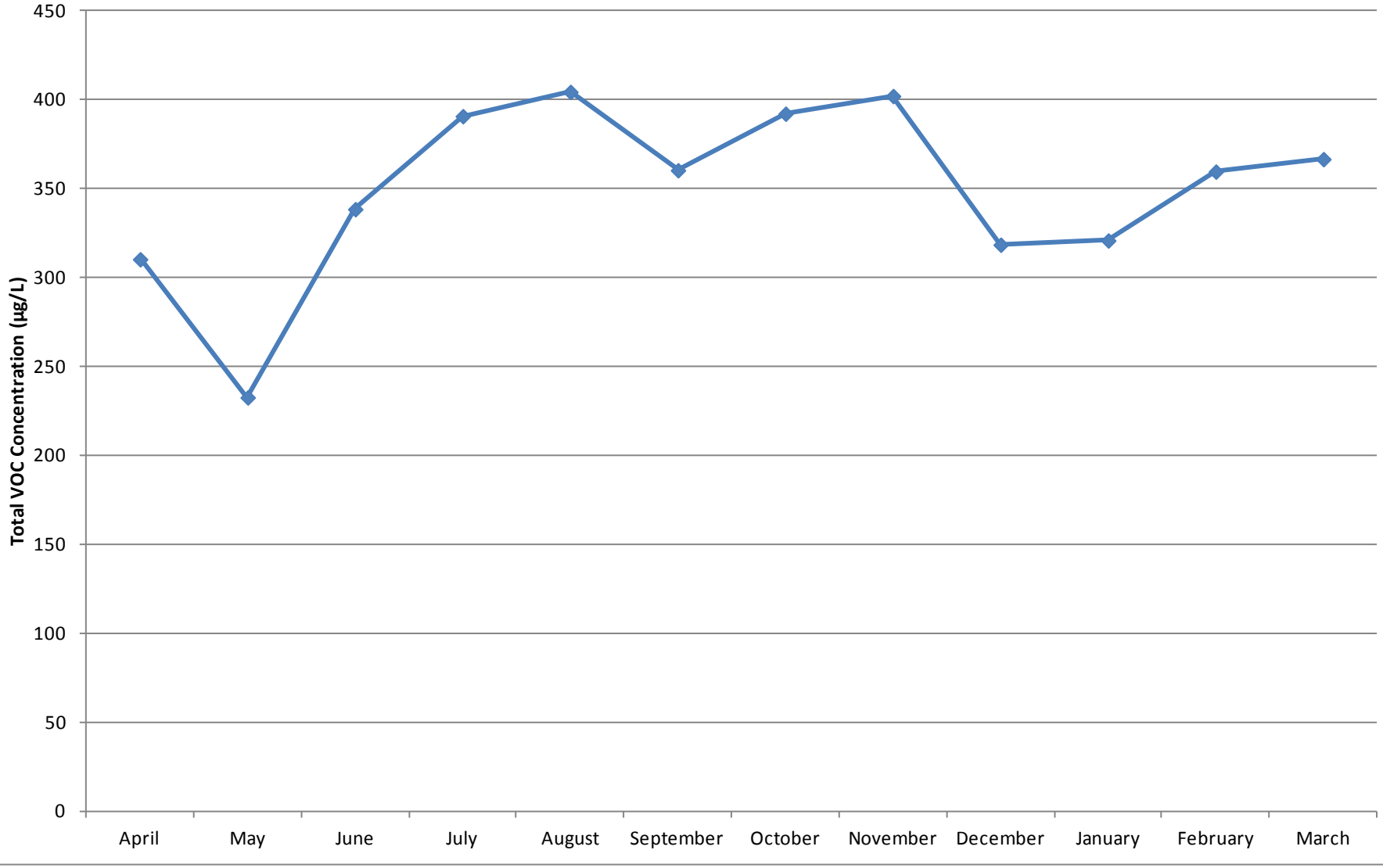
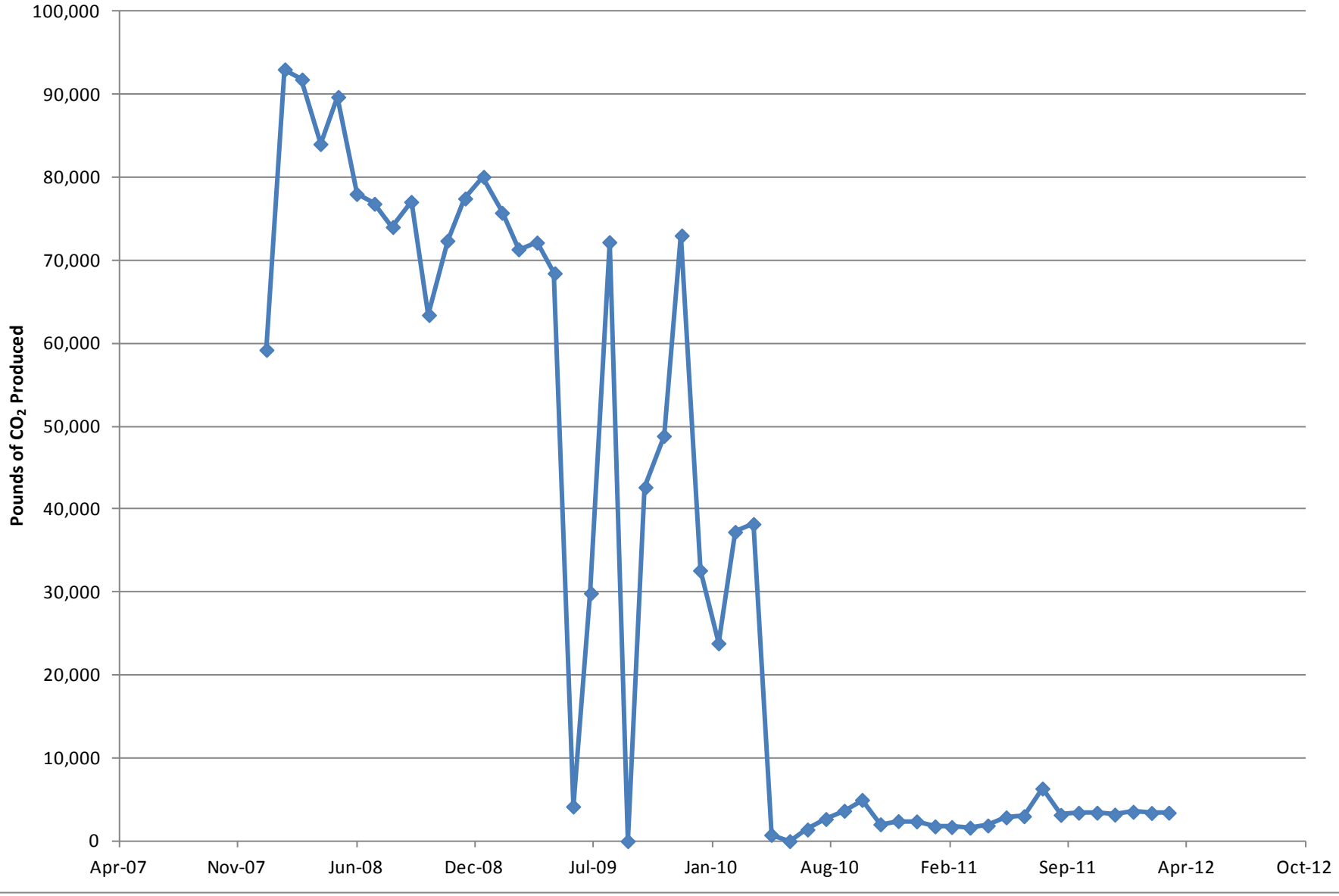


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 124 **Reporting Period: 29 Feb 2012 – 31 Mar 2012** **Date Submitted: 18 April 2012**

This monthly data sheet presents information regarding the North Groundwater Treatment Plant (NGWTP) and associated remedial process optimization (RPO) activities. On 21 March 2012, ponded water was observed in seasonal vernal pools at Site LF007C. As required by US Fish and Wildlife Service (USFWS), extraction wells EW614x07 and EW615x07 were turned off and NGWTP was shutdown. Site LF007C groundwater remediation operations will resume when the seasonal vernal pools are dry.

System Metrics

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

Table 1 – Operations Summary – March 2012

Operating Time:	Percent Uptime:	Electrical Power Usage:
NGWTP: 480 hours[a]	**NGWTP:** 66.7%	**NGWTP:** 457 kWh (626 lbs CO_2 generated[b])

Gallons Treated: **11,830 gallons**

Gallons Treated Since March 2000: **82.7 million gallons**

Volume Discharged to Duck Pond **11,830 gallons**

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

VOC Mass Removed: **5.0×10^{-4} pounds**[c]

VOC Mass Removed Since March 2000: **174.3 pounds (Groundwater)**

Rolling 12-Month Cost per Pound of Mass Removed: **Not Measured**[d]

Monthly Cost per Pound of Mass Removed: **Not Measured**[e]

[a] Reduced operating hours and accompanying energy usage, gallons treated, and VOC mass removed reflect system shutdown on 21 March 2012.
[b] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] VOCs from March 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 – March 2012

Location	Average Flow Rate (gpm) [a]	Total Gallons Processed (gallons)
EW614x07	0.26	7,390
EW615x07	0.18	5,180
NGWTP	0.41	11,830

[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	21 March 2012	14:30	TBD		Seasonal vernal pools at Site LF007C contain ponded water. System will resume operation when the vernal pools are dry.

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Analytical data from the 15 March 2012 sampling event are presented in Table 4. Concentrations of TCE (4.7 µg/L) and cis 1,2-DCE (0.59 J µg/L) were detected in the influent sample. TCE has been detected in the influent sample for seven (7) consecutive months. This is the third consecutive month that cis 1,2-DCE has been detected in the influent sample. Contaminant concentrations detected in the influent process stream are less than their respective effluent limits (5.0 µg/L for TCE and cis 1,2-DCE). Contaminant concentrations were not detected between the primary and secondary vessels or at the effluent sampling location.

Figure 1 presents a chart of influent concentrations (total VOCs) at the NGWTP versus time for the past twelve (12) months. As required by US Fish and Wildlife Service (USFWS), the NGWTP was taken off line ("System Shutdown") on 21 March, 2012 when vernal pools had formed at Site LF007C. The NGWTP will resume operation when the vernal pools no longer contain standing water.

Groundwater volumes (total gallons processed) for each Site LF007C extraction well along with the NGWTP are collected from wellhead and treatment plant flow totalizers on a weekly basis. The monthly accumulation of these data are presented in Table 2.

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 March 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 457 kWh which calculates to approximately 626 pounds of GHG generation during March 2012. This is a decrease from February 2012 when the NGWTP used 775 kWh of electricity. The decrease of electricity usage can be attributed to a decrease in monthly operation time and gallons treated caused by mid-month system shutdown due to the presence of vernal pools. 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 March 2012 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	15 March 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	0.59 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	4.7	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	2,480

* 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

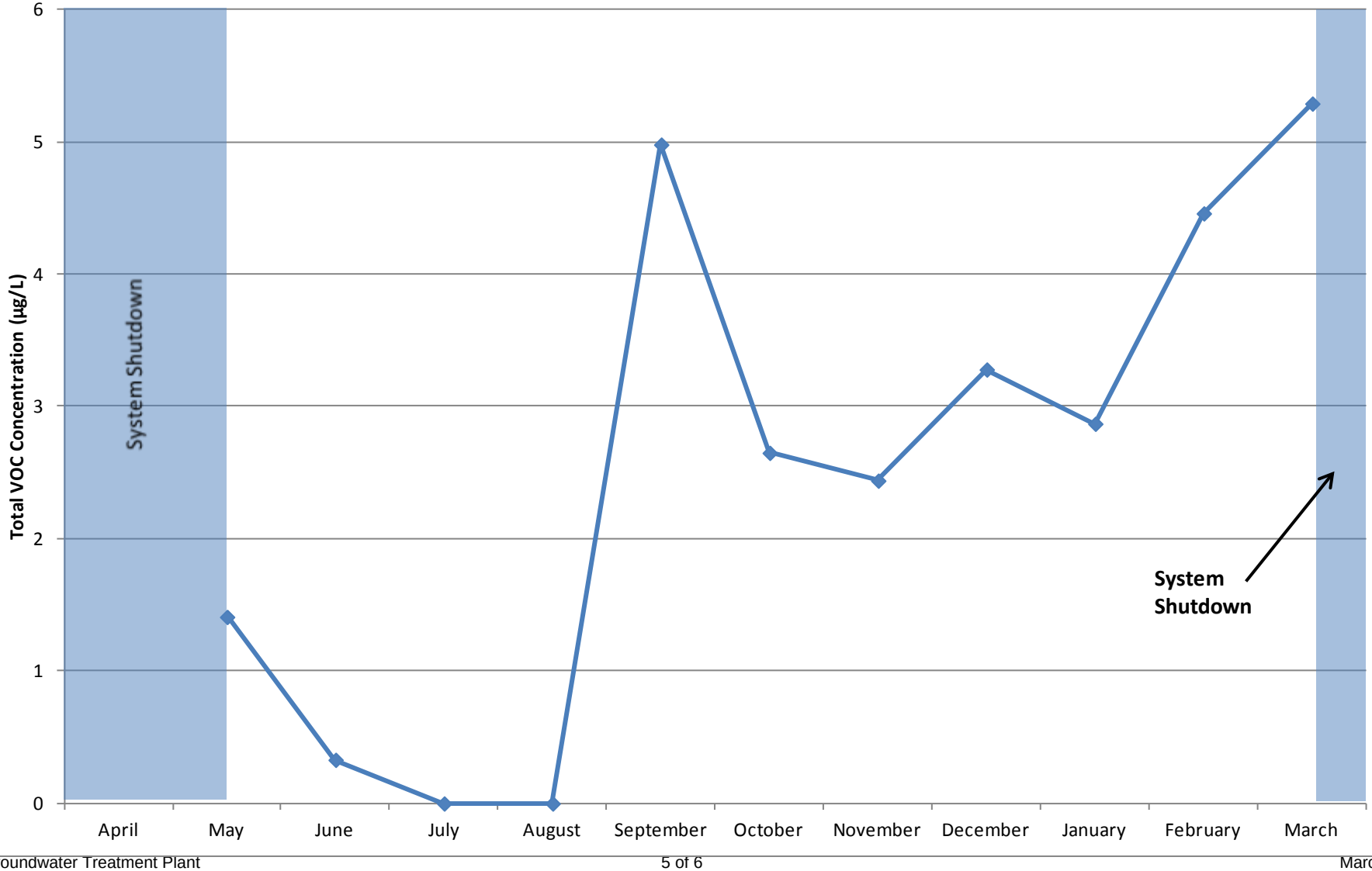
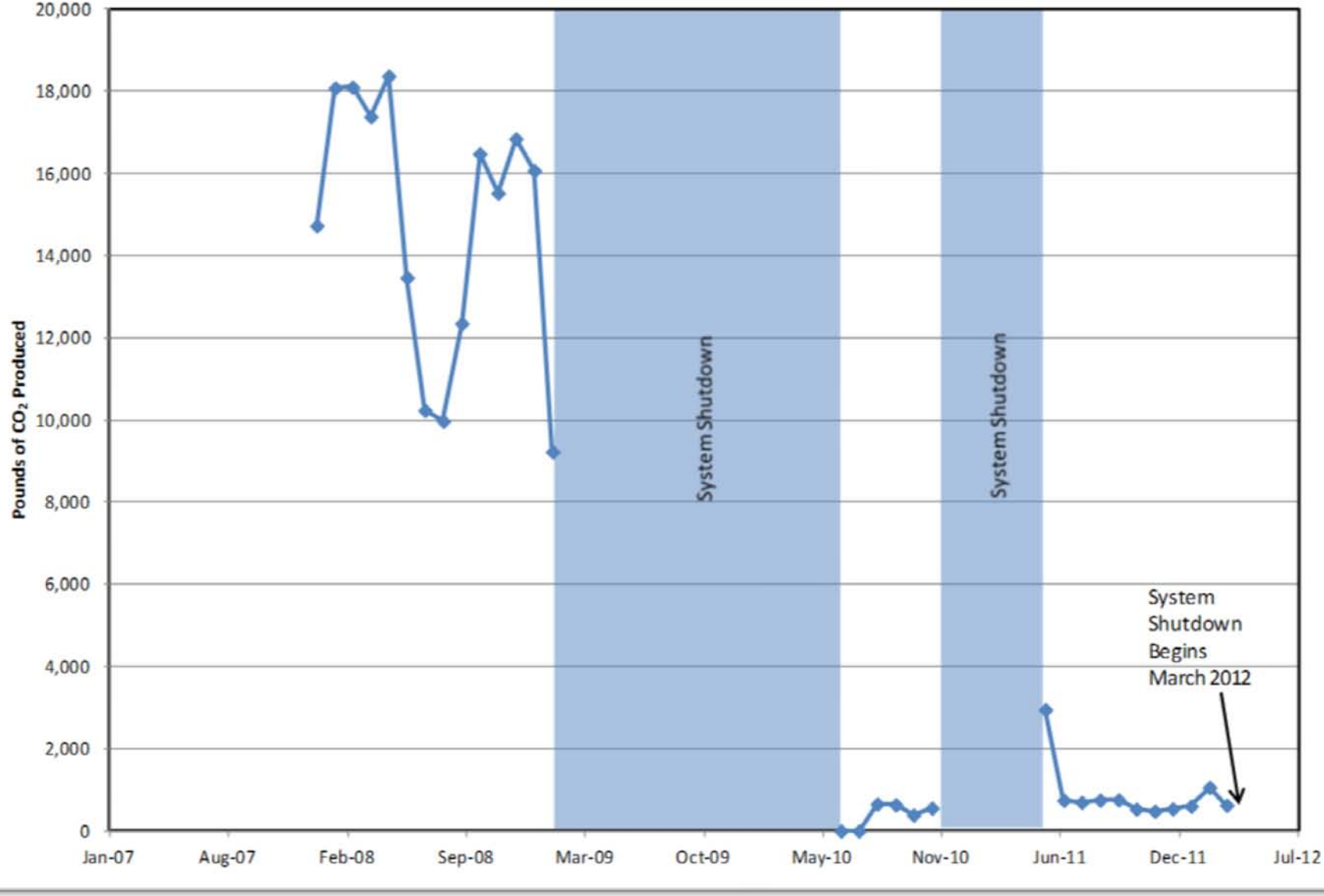


Figure 2

Equivalent Pounds of CO2 Produced by the North Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 013 **Reporting Period: 29 Feb – 31 Mar 2012** **Date Submitted: 18 April 2012**

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

System Metrics

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

Table 1 – Operations Summary – March 2012

Operating Time:	Percent Uptime:	Electrical Power Usage:
S18GWTP: 697 hours	**S18GWTP:** 100%	**S18GWTP:** 112 kWh (153 lbs CO_2 generated[a])

Gallons Treated: **167 thousand gallons** Gallons Treated Since March 2011: **1.67 million gallons**

Volume Discharged to Union Creek: **167 thousand gallons**

BTEX, MTBE, TPH Mass Removed: **0.64 lbs**[b] BTEX, MTBE, TPH Mass Removed Since March 2011: **8.7 lbs**

Rolling 12-Month Cost per Total Pounds of Mass Removed: $9,736 [c]

Monthly Cost per Pound of Mass Removed: $14,796

Lbs = pounds

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

[b] Calculated using January 2012 (influent) and March 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.

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	1.39
EW2016x18	1.58
EW2019x18	1.41
Site ST018 GWTP	4.01

[a] 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.

Table 3 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
S18GWTP	23 March 2012	13:00	26 March 2012	09:30	Only wells EW2014x18 and EW2016x18 were taken off line. Two (2) EW2014x18 batteries were undercharged (<10 V) which caused the well to shut down. The two batteries were fully re-charged and returned to service.

S18GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Groundwater samples were collected at the S18GWTP on 22 March 2012. Sample results from the March sampling event are presented in Table 4. No contaminant concentrations were detected in the midpoint or effluent samples in March 2012. The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (1Q12) influent sample was 455 µg/L, which is a significant increase from the previous (4Q11) influent concentration of 179 µg/L. This increase is likely due to more consistent operation of extraction well EW2014x18, located immediately behind the Base Exchange Service Station. 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. Analytical results from this initial trigger study sampling event have not yet been completed. As required by the NPDES permit, two additional influent and effluent samples will be collected and analyzed for copper, zinc, cadmium, and nickel in both April and May 2012. Trigger study sample results will be presented in the April and May 2012 S18GWTP Data Sheets. Full details regarding this

trigger study, along with all other sample results will be presented in the 1Q12 NPDES quarterly S18GWTP report.

Four batteries associated with extraction wells EW2014x18 and EW2016x18 were replaced in February 2012. On 22 March, it was discovered that well EW2014x18 was without power. Troubleshooting indicated that the source of the shutdown was lack of voltage (<10 volts, direct current [VDC])) from the EW2014x18 battery bank. Each extraction well system requires 48 VDC to operate. On 23 March, two (2) EW2014x18 batteries were switched with two fully charged batteries from well EW2016x18, and both extraction well pumps were turned off to allow for a full recharge. On 26 March, all batteries at wells EW2016x18 and EW2014x18 were fully charged, and both extraction wells were returned to service following the full recharge.

Additionally, the current arrangement of control equipment (charge controller, pump controller, control relay) within each wells' control panel may be improperly discharging the battery bank. To alleviate this condition, a DC to DC charge converter (from 48 VDC to 24 VDC) was purchased for each extraction well control panel. These converters will be installed in each extraction well control panel in April 2012.

Optimization Activities

No optimization activities were performed in March 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 153 pounds of GHG during March 2012. This is an increase from February 2012 (145 pounds) which is primarily due to the increase in operation hours and 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 March 2012 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	22 March 2012 (µg/L)		
				Influent[b]	After Carbon 2	System Effluent
Fuel Related Constituents						
MTBE	5	0.5	0	189	ND	ND
Benzene	5	0.17	0	10.7	ND	ND
Ethylbenzene	5	0.22	0	6.7	ND	ND
Toluene	5	0.14	0	0.86	ND	ND
Total Xylenes	5	0.73	0	10.4	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	8.5	0	170	ND	ND
Total Petroleum Hydrocarbons – Diesel	50	50	0	67	ND	ND
Total Petroleum Hydrocarbons – Motor Oil	--	56	0	ND	ND	ND

[a] In accordance with the National Pollutant Discharge Elimination System (NPDES) Effluent Limitations

[b] Values taken from January 2012 (1Q12) 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

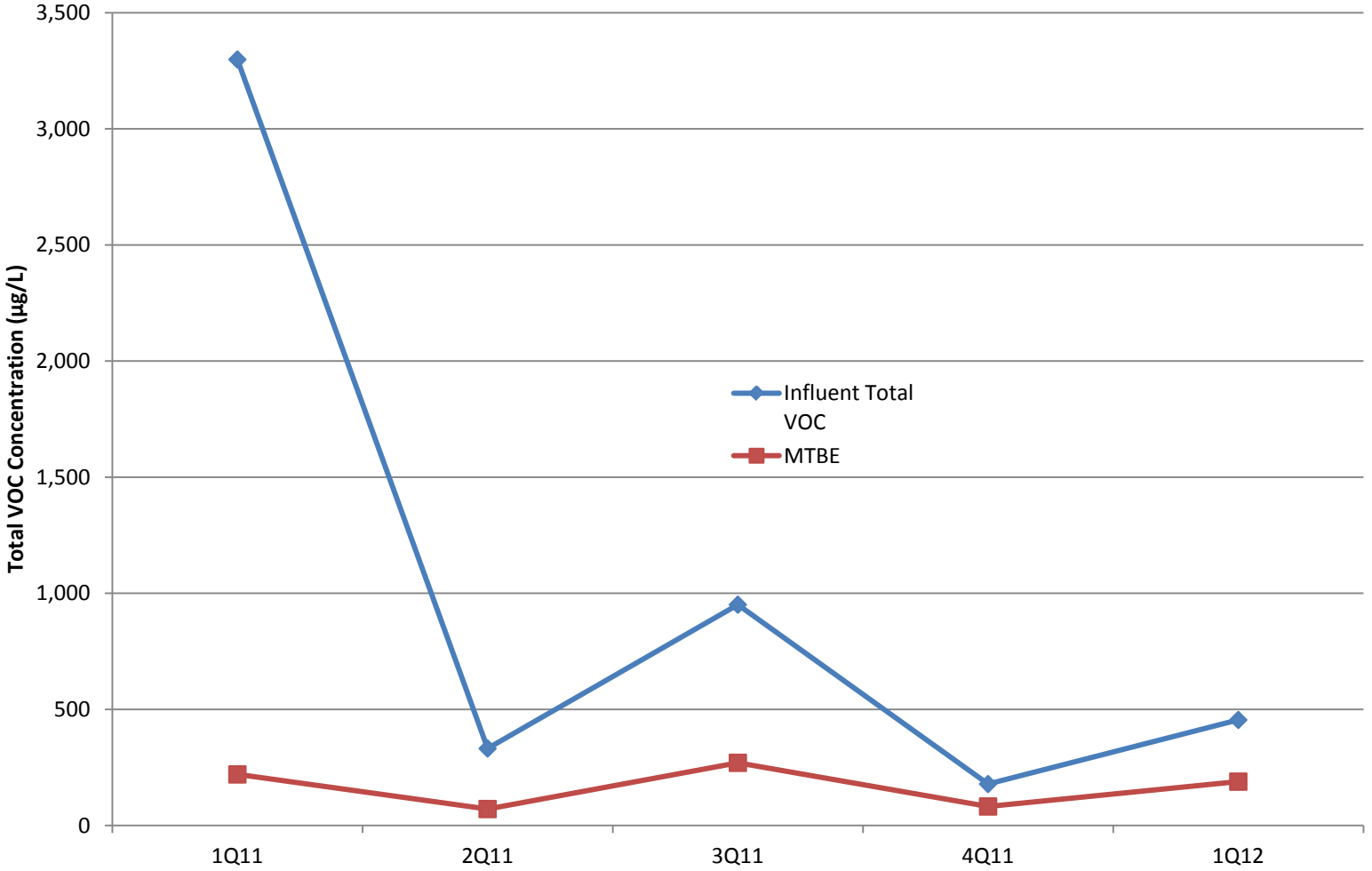
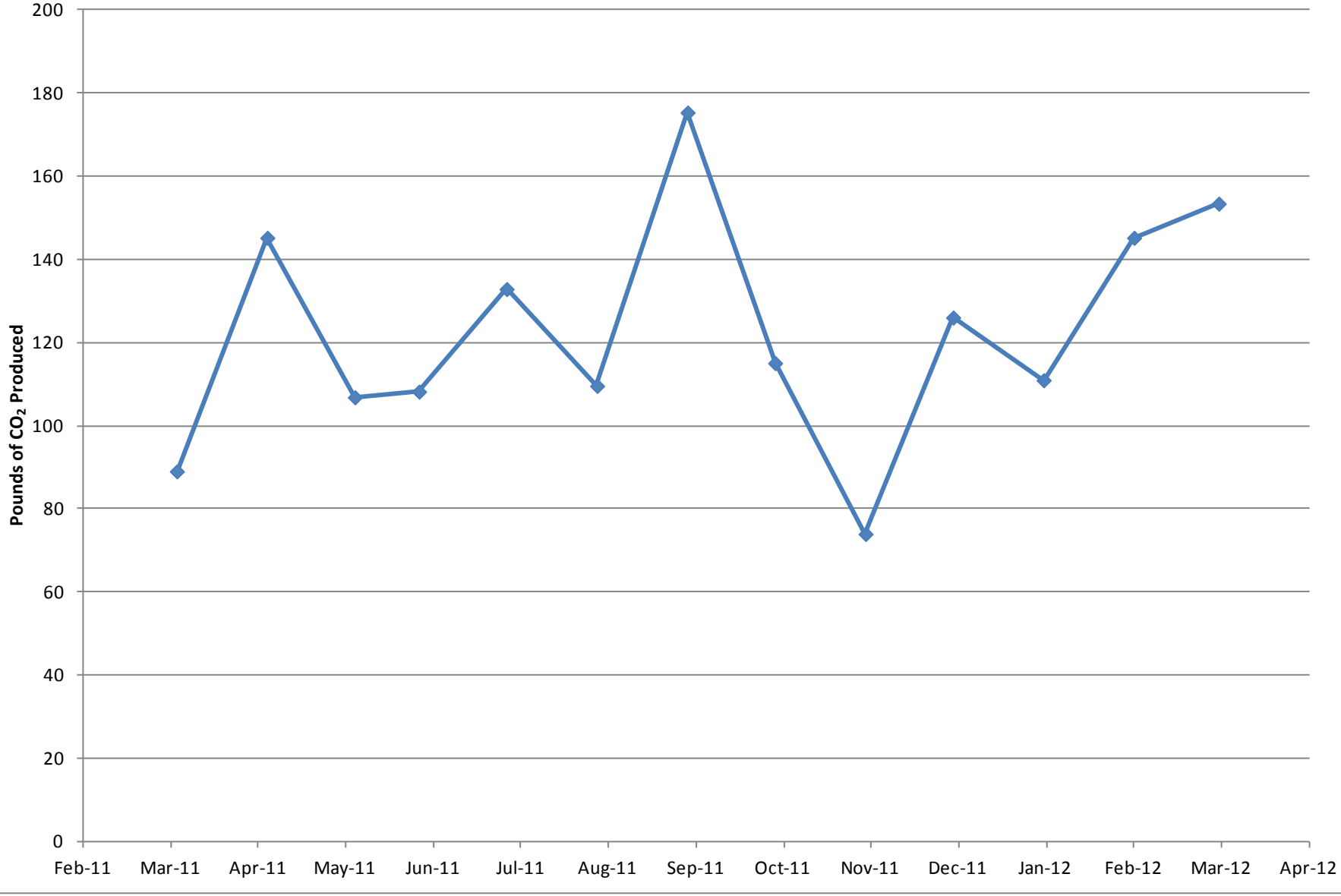


Figure 2

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



Travis AFB
Restoration Program

Program Overview

RPM Meeting

April 19, 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 (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

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^{th} 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***

Field Work

- 2012 Annual GSAP Sampling

Upcoming Documents

- Proposed Plan (PP) — May
- Site LF007C Data Gaps Investigation Technical Memorandum — May
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes — May
- FT005 Remedial Action Completion Report — TBD

Upcoming Field Work

- SS029/SS016 System Optimization Analysis — Summer 2012
- FT005 Additional Soil Removal — Summer 2012
- CAMU Lysimeter Removal — Summer 2012

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