Final

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

18 January 2012, 0930 Hours

Mr. Lonnie Duke, Travis Air Force Base (AFB), conducted the Remedial Program Manager's (RPM) meeting on 18 January 2012 at 0930 in the Main Conference Room, Building 570, Travis AFB, California. Attendees included:

• Glenn Anderson	Travis AFB
• Lonnie Duke	Travis AFB
• Gregory Parrott	Travis AFB
• Merrie Schilter-Lowe	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
• Rachel Hess	ITSI
• Mike Wray	CH2M HILL (via telephone)
• Loren Krook	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 (November/December 2011)
- Attachment 4 CGWTP Monthly Data Sheet (November/December 2011)
- Attachment 5 NGWTP Monthly Data Sheet (November/December 2011)
- Attachment 6 Site ST018 Monthly Data Sheet (November/December 2011)
- Attachment 7 Presentation: Management Overview Briefing
- Attachment 8 Presentation: 2012 Field Schedule
- Attachment 9 Presentation: Proposed Plan

- Attachment 10 Presentation: Yonkers Policy

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 30 November 2011 RPM meeting minutes were approved and finalized as written, with the following exceptions. Ms. Burke requested all of the following changes/corrections be made (changes are in bold).

i. On page three, paragraph two, eighth sentence, change "it will come up in a five-year reviews which will evaluate any changes to MCLs" to "**all sites** will come up in **the** five-year reviews **and** will evaluate any changes to MCLs".

ii. On page four, paragraph eight, fifth sentence, change "rational" to "**rationale**".

iii. On page five, first sentence, change "Mr. Linbrunner said the CERCLA process is basically the same for all Air Force bases" to "Mr. Linbrunner said the **MMRP follows the CERCLA** process, and it is basically the same for all Air Force bases."

iv. On page seven, paragraph three, last sentence, change "Ms. Hess said she did not have that data with her." to "Ms. Hess said she did not have that data with her; **it will be provided in the final report**."

v. On page four, last paragraph, fourth and fifth sentence, correct acronym from "CERLA" to "**CERCLA**".

B. Action Item Review.

Action items from November were reviewed.

Action item one still open. No change.

Action item two still open. No change.

Action item three is closed. Ms. Burke said EPA does not need closure reports for each site; EPA will need the closure report for site FT005 Soil Remediation. Mr. Anderson said we can revisit site closure reports in the five-year reviews.

Action item four is closed: It was collectively decided to use the 2012 Field Schedule for upcoming fieldwork to notify the regulators. Mr. Linbrunner asked Mr. Wray to include a notation at the bottom of the 2012 Field Schedule, stating that when a work action has been confirmed, an email will be sent to the regulators one week prior of the start of fieldwork.

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 February RPM meeting has been changed to 22 February 2012 due to the Air Force environmental training symposium which conflicts with the original schedule date of 15 February 2012.

Travis AFB Master Document Schedule

— Focused Feasibility Study (FFS): Moved to history.

— Proposed Plan (PP): The draft to agencies date has been pushed back. The pre-draft is still being reviewed by the Air Force (Legal Operations) in San Antonio. The reviewer has been ill which delayed the review. Mr. Anderson said he suspects the dates will be extended again and will be reflected in the MMDS presented in February. Ms. Burke asked if Travis will still be requesting a thirty day review time, adding that EPA Headquarters and risk assessors will need to review. Ms. Burke said with all the EPA staff needing to review the PP she will need more than thirty days. Mr. Anderson said they would like to stick to the thirty day review time, and if you need more time let Travis know. Mr. Anderson questioned risk assessors reviewing the PP; he thought Mr. David Cooper was going to be the primary review for the PP. Ms. Burke said they do now; her management is requesting it. Ms. Burke asked when Travis was going to provide the new dates. Mr. Anderson said he couldn't commit to a date at this point, and that the TEFA is holding up this document. Travis wants the Public Meeting and the RAB to be combined to have the RAB members present when the Air Force presents its proposed groundwater remedies to the public.

— Groundwater Record of Decision (ROD): No change.

— Potrero Hills Annex: (FS, PP, and ROD): No change. Camp Dresser and McKee (CDM) now known as CDM Smith (CDMS) is the current consultant on the project. CDMS conducted additional fieldwork and indicated that perchlorate concentrations were generally higher than seen historically. Mr. Anderson said Travis is waiting for the predraft report to see what the actual concentration levels are before moving forward. Mr. Friedman said someone else at RWQCB is assigned to this case but he does hear about it on occasion, and further, CDMS needs to take action to find the source. Mr. Anderson indicated that if the report does not outline any action, Travis does not have regulatory authority but can at least start discussions with CDMS about potential cleanup activities. Mr. Friedman said you have the authority as well as the responsibility to assure that there is a cleanup. Mr. Parrott said the base has authority under the expired lease that requires the former tenants of the Annex to clean it up. It is not a regulatory requirement but a lease requirement. Mr. Parrott asked if they know where the source is located. Mr.

Anderson said they thought it was a sole source from one location, an enclosure that was dug in the side of the hill and a conex box placed there to store the perchlorate product. Mr. Salcedo asked if there was a work plan for this additional fieldwork. Mr. Anderson replied that CDMS had submitted a work plan that was approved by the Water Board.

— Site ST027-Area B Human Health Risk Assessment: Final document went out on 19 December 2012. Will move this document to history for the next RPM meeting.

— Site ST027-Area B Ecological Risk Assessment: Final document went out on 19 December 2012. Will move this document to history for the next RPM meeting.

— Work plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB: The Final Due date was changed to TBD. Travis is working on a secondary set of EPA comments.

— Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes: All dates have been changed to TBD. The fieldwork has not been conducted yet. Ms. Burke asked if Travis missed the window for sample collection and analysis. Mr. Anderson said the schedule delay was the result of a lab issue. Mr. Wray said the lab is requiring CH2M HILL to have a contract with them. The terms and conditions that the lab sent are problematic and our attorneys are working on those terms and conditions, which need to be reviewed by DOE as well. The lab is putting liability on CH2M HILL even if the lab makes an error. It is a federal lab and they won't negotiate contract terms.

— FT005 Remedial Action Completion Report: The dates have been added to the MMDS. The draft to agencies is scheduled to go out on 01 March 2012.

— RPO Baseline Implementation Report: The Response to Comments due has been changed to 31 January 2012. Travis has comments drafted in response to EPA comments and they are going through internal review.

— Technical and Economic Feasibility Analysis (TEFA): The Agency Comments due date was changed to 30 January 2012. The subsequent due dates were changed accordingly. A discussion is schedule after today's RPM meeting to work through some issues that the Water Board had identified.

— Site LF007C Data Gaps Investigation Technical Memorandum: Dates are still TDB. No change.

— Quarterly Newsletter (January 2012): Draft to Agencies date was changed to 12 January 2012, when the newsletter went out for review. The subsequent dates were changed accordingly.

— 2010/2011 GSAP: Response to Comments Meeting was changed to 22 February 2012. Travis is working on the agency comments. The subsequent dates were changed accordingly.

— 2011 Groundwater Treatment RPO Annual Report: No change.

— Old Skeet Range Engineering Evaluation/Cost Analysis: Response to Comments Due was changed to 09 January 2012. Mr. Anderson said if you need more than thirty days to review to let him know. Ms. Burke said she will look at the response to comments to see if a teleconference needs to be scheduled. Mr. Duke said the goal is to have this finalized in order to get out in the field this year.

Ms. Burke asked that on the final documents does Travis need a formal letter/email from EPA stating they approved the documents. Mr. Duke said no, the response to comments reviews capture that.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

Mr. Duke reported on the treatment plant status. Note: since the last RPM meeting was held on 30 November, there was not enough time for the November treatment plant reports to be completed in time for the meeting. Therefore, the November reports are presented at the RPM meeting today.

South Base Boundary Groundwater Treatment Plant (see Attachment 3)

November: The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 100% uptime, and 4.5 million gallons of groundwater were extracted and treated during the month of November 2011. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 97.6 gallons per minute (gpm). Electrical power usage was 11,520 kWh and approximately 15,782 pounds of CO_2 were created (based on DOE calculation). Approximately 1.36 pounds of volatile organic compounds (VOCs) were removed in November. The total mass of VOCs removed since startup of the system is 412 pounds.

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

Mr. Duke pointed out that TCE and 1,2-DCA were detected at concentrations at 33.5 and 1.1 µg/L at the influent sample location and the concentrations of 7.4 and 0.89 µg/L between the primary and secondary carbon vessels. There were no contaminants detected in the effluent. As a result, the carbon in the primary vessel will be changed out. Ms. Burke asked what Travis' trigger is for turning on the Air Stripper when seeing high concentrations. Mr. Duke said they would weigh the concentration levels and cost of the frequency of changing out the carbon versus electrical use of the air stripper; it would be an internal management decision.

December: The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 99.4% uptime, and 3.4 million gallons of groundwater were extracted and treated during the month of December 2011. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 84.2 gallons per minute (gpm). Electrical power usage was 8,940 kWh and approximately 12,248 pounds of CO_2 were created (based on DOE calculation). Approximately 1.53

pounds of volatile organic compounds (VOCs) were removed in December. The total mass of VOCs removed since startup of the system is 413 pounds.

Mr. Duke said, as mentioned in November report, the carbon has been changed out, and Travis will continue to monitor the concentrations.

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

Central Groundwater Treatment Plant (see Attachment 4)

November: The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.7 million gallons of groundwater extracted and treated during the month of November 2011. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 36.7 gpm, and electrical power usage was 2,503 kWh for all equipment connected to the Central plant; approximately 3,429 pounds of CO_2 were created. Approximately 5.67 pounds of VOCs were removed from groundwater in November. The total mass of VOCs removed since the startup of the system is 11,254 pounds.

Mr. Duke said the performance sampling was conducted in November 2011 for sites DP039 (bioreactor and biobarrier), SD036, SD037, SS015, and SS016. Once the data has been validated, a RPM meeting presentation from CH2M HILL will describe the results.

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 November.

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

December: The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 1.5 million gallons of groundwater extracted and treated during the month of December 2011. All treated water was diverted to the storm drain. The average flow rate for the CGWTP was 37.6 gpm, and electrical power usage was 2,335 kWh for all equipment connected to the Central plant; approximately 3,199 pounds of CO_2 were created. Approximately 4.01 pounds of VOCs were removed from groundwater in December. The total mass of VOCs removed since the startup of the system is 11,258 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 December.

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

Mr. Salcedo questioned the MTBE hit, and said he does not recall seeing this reported for the CGWTP. Mr. Duke said they have occasionally seen MTBE hits; it could be a

surface fuel spill, and it has happened from time to time. Mr. Salcedo said the cis-1,2 and vinyl chloride "the daughter products" are breaking down pretty quickly, and asked if they analyze for ethene. Mr. Wray said ethene/ethane would not show up, they are so volatile. Mr. Anderson added that ethene and ethane in small concentrations are very short lived.

North Groundwater Treatment Plant (see Attachment 5)

November: The North Groundwater Treatment Plant (NGWTP) performed at 77.73% uptime with approximately 3,660 gallons of groundwater extracted and treated during the month of November 2011. The average flow rate of the NGWTP, while operating, was 0.10 gpm and electrical power use was 350 kWh for all the equipment connected to the North plant; approximately 480 pounds of CO_2 was created. Approximately 0 pounds of VOCs were removed from the groundwater in November. The total mass of VOCs removed since the startup of the system is 174.3 pounds.

Mr. Duke said concentrations of TCE and cis-1,2 DCE were detected below their respective MCLs in the influent sample for the seventh consecutive month this year. Mr. Krook said CH2M HILL will be conducting investigations over the next couple of months to see how to pump more groundwater out of those extraction wells. Pumping tests previously conducted suggest we should be getting more flow. Mr. Duke said this information will be in the LF007C site characterization report.

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

December: The North Groundwater Treatment Plant (NGWTP) performed at 85.01% uptime with approximately 7,512 gallons of groundwater extracted and treated during the month of December 2011. The average flow rate of the NGWTP, while operating, was 0.22 gpm and electrical power use was 393 kWh for all the equipment connected to the North plant; approximately 538 pounds of CO_2 was created. Approximately 0 pounds of VOCs were removed from the groundwater in December. 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 December.

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

November: The Site ST018 (MTBE) Treatment Plant (S18GWTP) performed at 100% uptime with approximately 82,000 gallons of groundwater extracted and treated during the month of November 2011. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 2.84 gpm. Electrical power usage for the month was 54 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 74 pounds of CO_2.

Approximately 0.12 pounds of BTEX, MTBE and TPH were removed from groundwater in November. The total BTEX, MTBE and TPH mass removed since the startup of the system is 6.9 pounds.

Mr. Duke said that due to the heavier hydrocarbons that are entering the influent carbon vessel, its contents will be changed out from a coconut based carbon to a coal based carbon. The mid-point and effluent carbon vessels will remain coconut based.

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 November.

December: The Site ST018 (MTBE) Treatment Plant (S18GWTP) performed at 100% uptime with approximately 132,000 gallons of groundwater extracted and treated during the month of December 2011. All treated water was diverted to the storm drain. The average flow rate for the ST018 GWTP was 2.36 gpm. Electrical power usage for the month was 92 kWh for all equipment connected to the ST018 GWTP plant, which equates to the creation of approximately 126 pounds of CO_2. Approximately 0.20 pounds of BTEX, MTBE and TPH were removed from groundwater in December. The total BTEX, MTBE and TPH mass removed since the startup of the system is 7.1 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 December.

3. Presentations

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

Mr. Krook reported on the status of field work and documents which are completed, in progress, and upcoming. See Attachment 7 for detail.

Highlights included:

Completed Documents include the Site ST027 Area B Human Health Risk Assessment and the Site ST027Area B Ecological Risk Assessment.

Completed Fieldwork includes the FT005 Soil Remedial Action.

In-Progress Documents and Fieldwork include the Technical and Economic Feasibility Analysis (TEFA) and the 2010/2011 Annual GSAP Report.

Field Work In Progress includes the SS015 Performance Sampling (4th Quarterly).

Upcoming Field Work includes the Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes, the SS029 System Optimization Analysis, and the 2012 Annual GSAP Sampling.

Mr. Krook deferred to Mr. Duke on updates regarding the Tri-hydro operation for sites SS029 and SS016. Mr. Duke said the Work Plan (WP) is in a pre-draft stage and should be ready for regulatory review soon. The goal of the work is to optimize sites SS029 and SS016. The plan is to collect soil and groundwater samples to determine how they interact with ZVI. Mr. Linbrunner provided additional background information that came from the USACE ZVI subject matter experts. Travis requested more site characterization, which was above and beyond what CH2M HILL had in their PBC contract. Mr. Linbrunner said that Tri-hydro is utilizing CH2M HILL's investigative work to supplement their background work.

Ms. Burke said Mr. Duke mentioned site SS016 as well as a part of SS029. Mr. Duke said the two plumes are merging or have merged under the runway.

Field Schedule (see Attachment 8)

Mr. Krook reported on the 2011/2012 field schedule. See Attachment 8 for details.

Proposed Plan (PP) (Attached 9)

Mr. Anderson gave a brief update on the Proposed Plan (PP).

Mr. Anderson conveyed the highlights of the PP. Mr. Anderson said the reason he is presenting is because he wrote the majority of the PP, and also was involved in getting the PP through Air Force legal reviewers.

Current layout will include:

- Introduction – common information typically in all PPs
- Site Background – common information typically in all PPs
- Site Nomenclature – added new nomenclature to identify site locations on Travis (i.e. LF007C or SS029, etc.)
- Site Characteristics – common information in all PPs
- The Interim Approach – added new section, to explain the process and progress that has been made on carrying out cleanup activity during the interim period
- Summary of Site Risks - common information typically in all PPs
- The path to Final Remedies – added new section that is very Travis specific
- Remedial Action Objectives - common information typically in all PPs, taken from information in the Focused Feasibility Study (FFS)

- The Cleanup Standards - common information typically in all PPs
- The Cleanup Alternatives – this was taken from information in the FFS
- The Alternatives Evaluation - common information typically in all PPs
- The Preferred Alternatives - common information typically in all PPs
- Land Use Controls – common information typically in all PPs
- The Final Decision – common information typically in all PPs.
- Included a section titled “What Can I do”?
- Glossary - common information typically in all PPs

List of Tables:

- Table 1 – Summary of Groundwater Sites and interim Remedies
- Table 2 – Evaluation Criteria for Superfund Remedial Alternatives
- Table 3 – Summary of Potential Alternatives and Applicable Restoration Sites
- Table 4 – Comparison of Potential Alternatives to EPA Cleanup Criteria
- Table 5 – Summary of Interim Actions and Preferred Alternatives

Proposed Plan Schedule: A greater level of effort spent on the FFS delayed the issuance of the draft PP last year. The predraft PP has been reviewed by the AFCEE legal team. We are awaiting word on whether our revisions to the PP are adequate. Travis is in the queue for review with other Air Force bases. The TEFA completion and new Air Force policy (Yonkers memo that promotes accelerated site completion) may be causing an additional delay.

Proposed Plan Promotion and Distribution: Once final, we will place the PP on the Travis public website, in three local libraries, at the Chamber of Commerce offices, and other government facilities. This complies with Executive Order 13589 (promoting efficient spending). A PP fact sheet will be included in the April 2012 Guardian and will promote the availability of the PP.

Ms. Burke asked if Travis has an email distribution list and is it updated regularly. Mr. Anderson said the list is updated every quarter, and generally there are more losses than gains. Ms. Burke asked if Travis could implement a more proactive plan, like actually going out to schools, churches or libraries. Mr. Anderson said they send PP to schools, pastors at local churches, even the President of the United States, as well as to Senators and Congressmen.

Mr. Anderson said the predraft will be in a very rough format, the concentration initially is

on its content. Travis is also asking the agencies to provide comments/ideas on the graphics during the first pass to keep the review time down to a minimum.

4. New Action Item Review

None.

5. PROGRAM/ISSUES/UPDATE (attachment 10)

Mr. Duke discussed the "Yonkers Policy" (see attachment 10 for details)

Mr. Duke explained that Mr. Smith is absent because he is in San Antonio/AFCEE, meeting about the Yonkers Policy. This policy is intended to refocus the Air Force Environmental Restoration Program. Mr. Duke reminded the group that Mr. Smith was in San Antonio in November 2011 for the Program Requirements Development (PRD) meetings. The premise of the PRD is to capture all the liabilities for the restoration program and estimate all future costs. In the BRAC program the Air Force has too many sites where the choice of remedies will prevent unconstrained use of transferred property and continue the perpetual legacy of Land use Controls (LUC). Too many of our DERP and BRAC program dollars are expended on overhead/administrative functions with too few dollars going to actual cleanup.

The Yonkers Policy directs the Air Force to refocus on the cleanup program from process and study to results; the following policies and goals will apply:

Cleanup objective and efforts will focus on the broadest possible (fence-to-fence) accelerated site completion at an installation, as opposed to the previous focus of achieving "remedies-in-place" and individual site remediation. Accelerated Site Completion (ASC) is achieved at the point at which the Air Force will make essentially no additional appreciable investments of time or money. In other words, Mr. Yonkers wants sites closed and infrastructure removed, including the treatments plants, extractions wells, monitoring wells, piping, documentations done, and no one left in the program. The primary contract mechanism to be used to achieve the ASC objectives will be Performance Based Cleanup (PBC) agreements.

The goals of the ASC are:

BRAC: Accelerated completion of 75% of all sites by the end of 2012; 90% by the end of 2015. For sites not yet completed, ensure 75% are under a PBC contract by the end of FY11, and 95% by the end of 2014.

Non-BRAC: Accelerate completion of 50% of all sites by the end of FY12; 75% by the end of 2015. For sites not yet completed, ensure 60% are under a PBC contract by the end of FY12, 90% by the end of 2015. Travis falls under Non-BRAC.

Travis awarded the current PBC 'five year contract' in FY08 and it goes through FY13. In FY13 a new PBC will be awarded with the new accelerated cleanup requirements. Another

objective is to reduce management and overhead cost to no more than 10% of the total program cost as soon as practicable. Accordingly, 4,500 civilians will be leaving this year (Air Force wide). Technical assistance site visits are being conducted to collect all the technical data so they can provide that as government furnished information to the contractors, who in turn will propose how they are going to meet the new requirements. Ms. Burke asked if the new PBC contract will go through cleanup, which could take thirty years. Mr. Duke said no, the goal is cleanup in nine years. Ms. Burke said it is not likely to be able to cleanup groundwater in nine years. Mr. Anderson said that is the policy, and the challenge will be to apply it to real world conditions. Mr. Duke said they are aware that some sites cannot meet this timeframe requirement. Mr. Anderson said he believes the policy may help installations to improve their remediation efforts. Ms. Snow asked if this new contract will incorporate soil remediation. Mr. Duke said yes. Mr. Anderson said this will affect our Groundwater Record of Decision (ROD), because we will have to incorporate the new ASC policy.

General Discussion

Mr. Duke said that Mr. Smith conveyed EPA's meta-data policy. Travis talked to CH2M HILL and they have no problems using the policy. Meta-data is basically adding the background data, author, and dates in the PDF files. It helps with searching for documents by using keywords. Mr. Salcedo agrees that having the meta-data would make it easier to search for documents, due to the size of the databases. Mr. Linbrunner said his concern is when the author of a document is no longer with the agency/company or has a replacement, which would make a document search by author difficult.

7. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Travis AFB	Petition to have the Lysimeter removed.	TBD	Open
2.	Travis AFB	Research beneficial reuse of treated water and give update.	TBD	Open
3.	Travis AFB and EPA	Review past site closure completion reports to determine if future site closure reports are necessary.	N/A	Closed

4.	Travis AFB	Travis AFB is to advise Regulatory Agencies when remedial actions/fieldwork are scheduled at Travis AFB so a site visit can be planned.	N/A	Closed

TRAVIS AIR FORCE BASE
ENVIRONMENTAL RESTORATION PROGRAM
REMEDIAL PROGRAM MANAGER'S MEETING
BLDG 570, Main Conference Room
18 January 2012, 9:30 P.M.
AGENDA

1. ADMINISTRATIVE

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

2. CURRENT PROJECTS

   A. TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE (LONNIE)

3. PRESENTATIONS

   A. PROGRAM UPDATE: ACTIVITIES COMPLETED, IN PROGRESS AND UPCOMING
   B. 2012 FIELD SCHEDULE
   C. PROPOSED PLAN

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE
   A. EPA META DATA POLICY

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 (1:00 PM)	—	04-19-12
05-16-12	—	—
06-20-12	—	—
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		
Life Cycle	**Basewide Groundwater**	
	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	03-14-12
AF/Service Center Comments Due	11-05-11	03-24-12
Draft to Agencies	01-18-12	04-06-12
Draft to RAB	01-18-12	04-06-12
Agency Comments Due	02-17-12	05-12-12
Response to Comments Meeting	**02-22-12**	**05-23-12**
Agency Concurrence with Remedy	NA	06-12-12
Public Comment Period	04-05-12 to 05-05-12	NA
Public Meeting	**04-19-12**	**NA**
Response to Comments Due	02-28-12	07-02-12
Draft Final Due (CD)	02-28-12	07-02-12
Final Due	04-05-12	08-01-12

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		
	Site ST027-Area B Human Health Risk Assessment **Travis AFB, Glenn Anderson** **CH2M HILL, Gavan Heinrich** ***Formerly included as Appendix G in the draft FFS**	**Site ST027-Area B Ecological Risk Assessment** **Travis AFB, Glenn Anderson** **CH2M HILL, Gavan Heinrich** ***Formerly included as Appendix G in the draft FFS**
Life Cycle	**Report**	**Report**
Scoping Meeting	**03-30-10**	**03-30-10**
Predraft to AF/Service Center	12-30-10	12-30-10
AF/Service Center Comments Due	01-13-11	01-13-11
Draft to Agencies	01-27-11 *	01-27-11 *
Draft to RAB	01-27-11	01-27-11
Agency Comments Due	03-31-11	03-31-11
Response to Comments Meeting	**08-17-11**	**08-17-11**
Agency Concurrence with Remedy	NA	NA
Public Comment Period	NA	NA
Public Meeting	**NA**	**NA**
Response to Comments Due	10-04-11	10-04-11
Draft Final Due	10-04-11 (CD)	10-04-11 (CD)
Final Due	12-19-11	12-19-11

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	**Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes at Travis AFB** **Travis AFB, Glenn Anderson** **CH2M HILL, Leslie Royer**	**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	08-09-11	TBD	02-06-12
AF/Service Center Comments Due	08-19-11	TBD	02-21-12
Draft to Agencies	09-29-11	TBD	03-01-12
Draft to RAB	09-29-11	TBD	03-01-12
Agency Comments Due	11-14-11	TBD	04-02-12
Response to Comments Meeting	**11-30-11**	TBD	**04-19-12**
Response to Comments Due	11-17-11	TBD	04-26-12
Draft Final Due	NA	**NA**	NA
Final Due	TBD	TBD	05-16-12
Public Comment Period	NA	**NA**	
Public Meeting	**NA**	**NA**	

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	**RPO Baseline Implementation Report Travis AFB, Lonnie Duke CH2M HILL, Tony Chakurian**	**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**
Scoping Meeting	**NA**	**07-20-11**	**NA**
Predraft to AF/Service Center	08-02-11	10-13-11	**TBD**
AF/Service Center Comments Due	08-16-11	10-31-11	**TBD**
Draft to Agencies	09-16-11	12-15-11	**TBD**
Draft to RAB	09-16-11	12-15-11	**TBD**
Agency Comments Due	10-31-11	01-30-12	**TBD**
Response to Comments Meeting	**11-30-11**	**01-18-12**	**TBD**
Response to Comments Due	01-31-12	02-13-12	**TBD**
Draft Final Due	NA	NA	**NA**
Final Due	01-31-12	02-13-12	**TBD**
Public Comment Period	NA	NA	**NA**
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	**Quarterly Newsletters (January 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**
Scoping Meeting	**NA**	**NA**	**NA**
Predraft to AF/Service Center	NA	10-20-11	01-25-12
AF/Service Center Comments Due	NA	10-30-11	02-04-12
Draft to Agencies	01-12-12	12-07-11	02-17-12
Draft to RAB	NA	12-07-11	02-17-12
Agency Comments Due	01-26-12	02-05-12	03-18-12
Response to Comments Meeting	**TBD**	**02-22-12**	**03-21-12**
Response to Comments Due	01-28-12	03-06-12	04-03-12
Draft Final Due	NA	NA	NA
Final Due	02-02-12	03-06-12	04-03-12
Public Comment Period	NA	NA	NA
Public Meeting	**NA**	**NA**	**NA**

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS	
	Old Skeet Range Engineering Evaluation/Cost Analysis **Travis AFB, Glenn Anderson** **Baywest, Steve Thornton**
Life Cycle	**Report**
Scoping Meeting	
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	03-15-12 to 04-16-12
Public Meeting	**NA**
Response to Comments Due	01-09-12
Draft Final Due	02-08-12
Final Due	03-08-12

Travis AFB Master Meeting and Document Schedule

HISTORICAL	
	Basewide Groundwater
Life Cycle	**Focused Feasibility Study** **Travis, Glenn Anderson** **CH2M Hill, Loren Krook**
Scoping Meeting	**03-30-10**
Predraft to AF/Service Center	12-30-10
AF/Service Center Comments Due	01-13-11
Draft to Agencies	01-27-11
Draft to RAB	01-27-11
Agency Comments Due	03-31-11
Response to Comments Meeting	**08-17-11**
Agency Concurrence with Remedy	NA
Public Comment Period	NA
Public Meeting	**NA**
Response to Comments Due	09-13-11

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 135 **Reporting Period: 31 Oct – 30 Nov 2011** **Date Submitted: 19 December 2011**

This monthly data sheet presents information regarding the South Base Boundary Groundwater Treatment Plant (SBBGWTP) and associated remedial process optimization (RPO) activities. Analytical data show VOC breakthrough at the SBBGWTP primary granulate activated carbon (GAC) vessel; therefore, a carbon change out is scheduled in December 2011.

System Metrics

Table 1 presents operation data from the November 2011 reporting period.

Table 1 – Operations Summary – November 2011

Operating Time:	Percent Uptime:	Electrical Power Usage:
SBBGWTP: 768 hours	**SBBGWTP:** 100%	**SBBGWTP:** 11,520 kWh (15,782 lbs CO_2 generated[a])

Gallons Treated: **4.5 million gallons**

Gallons Treated Since July 1998: **760 million gallons**

Volume Discharged to Union Creek: **4.5 million gallons**

VOC Mass Removed: **1.36 lbs**[b]

VOC Mass Removed Since July 1998: **412 lbs**

Rolling 12-Month Cost per Pound of Mass Removed: $4,948[c]

Monthly Cost per Pound of Mass Removed: $1,914

lbs = pounds

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

[b] Calculated using November 2011 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	EW736x05	Offline	EW01x29	7.4	EW01x30	3.4
EW02x05	1.2	EW737x05	Offline	EW02x29	4.3	EW02x30	0.5
EW03x05	Offline	EW742x05	Offline	EW03x29	Offline[c]	EW03x30	1.7
EW731x05	Offline	EW743x05	Offline	EW04x29	4.0	EW04x30	23.1
EW732x05	Offline	EW744x05	Offline	EW05x29	10.1	EW05x30	Offline[d]
EW733x05	Offline	EW745x05	Offline	EW06x29	0.6	EW06x30	Dry
EW734x05	11.0	EW746x05	Offline	EW07x29	7.0	EW711x30	15.3
EW735x05	6.0						
FT005 Total:	**18.2**			**SS029 Total:**	**33.4**	**SS030 Total:**	**44.0**

SBBGWTP Average Monthly Flow[e]: 97.6 gpm

[a] Extraction well flow rates are based on the monthly 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] EW03x29 is expected to be brought back online in January 2012.

[d] On 26 November the SCADA system reported a pump failure at EW05x30. Troubleshooting will begin in December 2011 to bring the well online.

[e] The average groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the operating time of the plant

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	None				

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 9 November 2011. Sample results are presented in Table 4. The total VOC concentration (36.4 µg/L) in the influent sample has decreased since the October 2011 sample (49.62 µg /L) was collected. Figure 1 presents a plot of influent concentrations at the SBBGWTP over the past twelve (12) months.

TCE and 1,2-DCA were detected at concentrations of 33.5 and 1.1 µg/L at the influent sample location and concentrations of 7.4 and 0.89 µg/L between the primary and secondary carbon vessels. These mid-point concentrations are greater than the TCE and 1,2-DCA effluent limitations (5 and 0.5 µg/L); however, no contaminants were detected in the effluent process stream. The TCE concentration between the primary and secondary carbon vessels has increased since the September 2011 monthly sampling event was collected (0.5 µg/L), indicating breakthrough in the primary carbon vessel. Cis 1,2-DCE was also detected (3.7 µg/L) between the primary and secondary carbon vessels, but at a concentration less than the effluent limitation (5 µg/L). As a result, the carbon will be changed out.

Contaminant breakthrough past the primary carbon vessel has been increasing over the past few months. In November 2011, the midpoint concentrations of 1,2-DCA, cis-1,2-DCE, and TCE were all greater than 10 percent of their respective influent concentrations. Therefore, the primary GAC vessel was scheduled for carbon replacement in November 2011, and the change out will take place in December 2011.

A new pump was installed at EW734x05 in October 2011. The pump faulted on 3 November 2011 Due to motor lead and flow meter shorts. The wiring was immediately respliced and brought back online the same day.

On 26 November 2011, the Site SS030 SCADA system reported a pump failure at EW05x30. Troubleshooting will begin in December 2011 to make the necessary repairs and bring the well back on line.

Troubleshooting with the Site SS029 SCADA communication programming to extraction well EW03x29 continued in November 2011. EW03x29 is expected to be brought back online in January 2012.

November 2011 also marks the third consecutive month that 1,2-DCA has been detected in the influent process stream. Over the past three (3) months, influent concentrations of 1,2-DCA have increased, going from 0.17 J µg/L in September 2011, to 0.42 J µg/L in October 2011, to November's influent concentration of 1.1 µg/L. 1,2-DCA was also detected at the midpoint sample location for the first time in November 2011. A carbon change for the primary GAC vessel is scheduled for early December 2011. Travis AFB will continue to monitor influent 1,2-DCA concentrations and consider bringing the air stripper back on line if influent 1,2-DCA concentrations continue to be present or increase.

Optimization Activities

No optimization activities occurred at the SBBGWTP in November 2011.

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 15,782 pounds of GHG during November 2011. GHG production has increased slightly (12,905 pounds) since October 2011 as a result of increased 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 November 2011 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	9 November 2011 (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	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	1.1	0.89	ND
1,1-Dichloroethene	5.0	0.19	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	1.8	3.7	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	33.5	7.4	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	43	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

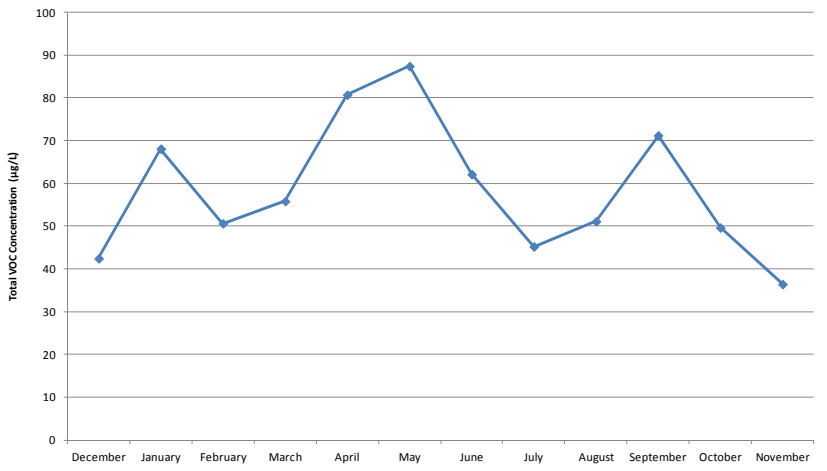
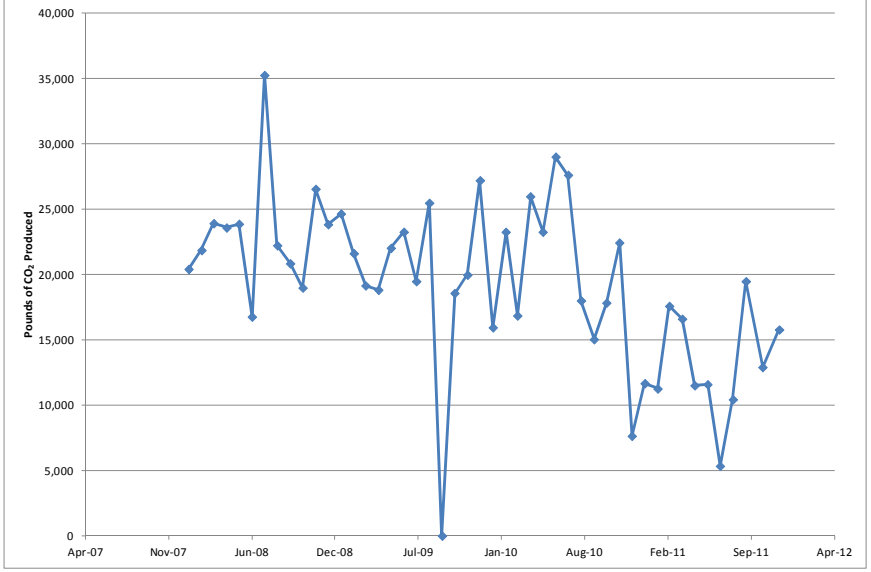


Figure 2

Equivalent Pounds of CO_2 Produced by the South Base Boundary Groundwater Treatment Plant



South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 136 **Reporting Period: 30 Nov – 31 Dec 2011** **Date Submitted: 10 January 2012**

This monthly data sheet presents information regarding the South Base Boundary Groundwater Treatment Plant (SBBGWTP) and associated remedial process optimization (RPO) activities. A carbon change out was completed on 8 December 2011 at the SBBGWTP. In addition to the monthly data sheets, the RPO 2011 Annual Report is scheduled to be released.

System Metrics

Table 1 presents operation data from the December 2011 reporting period.

Table 1 – Operations Summary – December 2011

Operating Time:	Percent Uptime:	Electrical Power Usage:
SBBGWTP: 667 hours	**SBBGWTP:** 99.4%	**SBBGWTP:** 8,940 kWh (12,248 lbs CO_2 generated[a])
Gallons Treated: **3.4 million gallons**	Gallons Treated Since July 1998: **763 million gallons**	
Volume Discharged to Union Creek: **3.4 million gallons**		
VOC Mass Removed: **1.53 lbs**[b]	VOC Mass Removed Since July 1998: **413 lbs**	
Rolling 12-Month Cost per Pound of Mass Removed: $5,792[c]		
Monthly Cost per Pound of Mass Removed: $16,536		

lbs = pounds

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

[b] Calculated using December 2011 EPA Method SW8260B analytical results.

[c] Costs include operations and maintenance, including carbon change out, 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	EW736x05	Offline	EW01x29	8.0	EW01x30	10.1
EW02x05	0.1	EW737x05	Offline	EW02x29	4.6	EW02x30	2.4
EW03x05	Offline	EW742x05	Offline	EW03x29	Offline[c]	EW03x30	2.4
EW731x05	Offline	EW743x05	Offline	EW04x29	8.4	EW04x30	24.1
EW732x05	Offline	EW744x05	Offline	EW05x29	10.2	EW05x30	Offline[d]
EW733x05	Offline	EW745x05	Offline	EW06x29	5.9	EW06x30	Dry
EW734x05	9.8	EW746x05	Offline	EW07x29	7.2	EW711x30	15.9
EW735x05	6.0						
FT005 Total:	**15.9**			**SS029 Total:**	**44.3**	**SS030 Total:**	**54.9**

SBBGWTP Average Monthly Flow[e]: 84.2 gpm

[a] Extraction well flow rates are based on the monthly 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] EW03x29 is expected to be brought back online in January 2012.

[d] In November 2011 the SCADA system reported a pump failure at EW05x30. A short to ground was discovered in the motor wiring. The well is expected to be brought back online in January 2012.

[e] The average groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the operating time of the plant.

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

	Shutdown		Restart		
Location	**Date**	**Time**	**Date**	**Time**	**Cause**
SBBGWTP	8 December 2011	0830	8 December 2011	1200	System shutdown for primary vessel carbon change out.

SBBGWTP = South Base Boundary Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples at the SBBGWTP were collected on 14 December 2011. Sample results are presented in Table 4. The total VOC concentration (54.5 µg/L) in the influent sample has increased since the November 2011 sample (36.4 µg /L) was collected. Figure 1 presents a plot of influent concentrations at the SBBGWTP over the past twelve (12) months.

TCE and cis 1,2-DCE were detected at concentrations of 51.4 and 3.1 µg/L at the influent sample location. Cis 1,2-DCE was also detected at a concentration of 0.37 J µg/L between the primary and secondary carbon vessels. TCE was not detected between the primary and secondary carbon vessels. The cis 1,2-DCE concentration is less than the cis 1,2-DCE effluent limitation (5 µg/L). No contaminants were detected in the effluent process stream.

Contaminant breakthrough past the primary carbon vessel had been increasing over the past few months in 2011. In November 2011, midpoint concentrations of 1,2-DCA, cis-1,2-DCE, and TCE were all greater than 10 percent of their respective influent concentrations. As a result, carbon in the primary GAC vessel was replaced on 8 December 2011.

In November 2011, the Site SS030 SCADA system reported a pump failure at EW05x30. Troubleshooting in December 2011 revealed a short to ground in the pump motor. Access to the EW03x30 pump vault was restricted due to the presence of a bull in the offsite area of the well. Once the bull was removed from the pump vault location, the existing (malfunctioning) pump was removed, and a new pump was ordered. EW05x30 is expected to be brought back online in January 2012.

Troubleshooting at Site SS029 revealed a frozen check valve and pipe section at extraction well EW03x29 in December 2011. The piping and check valves were repaired. EW03x29 is expected to be brought back online in January 2012.

Optimization Activities

No optimization activities occurred at SBBGWTP in November 2011.

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 12,248 pounds of GHG during December 2011. GHG production has decreased (15,782 pounds) since November 2011 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 December 2011 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	14 December 2011 (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	0.15	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	3.1	0.37 J	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	51.4	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 Suspended Solids (mg/L)	NE	1.0	0	42	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

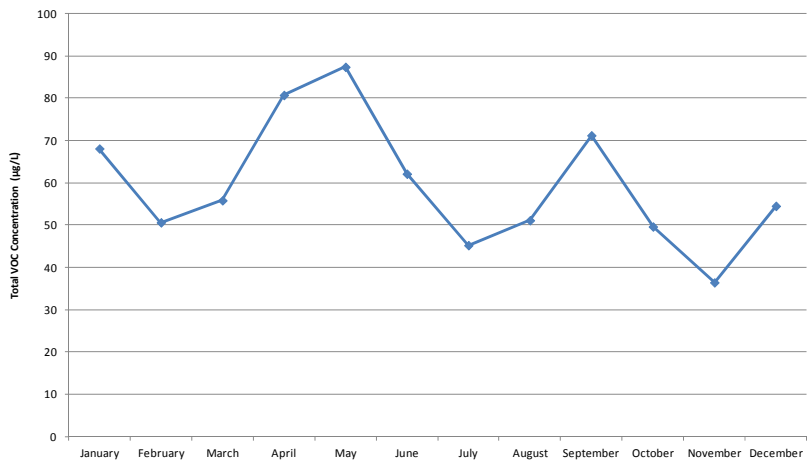
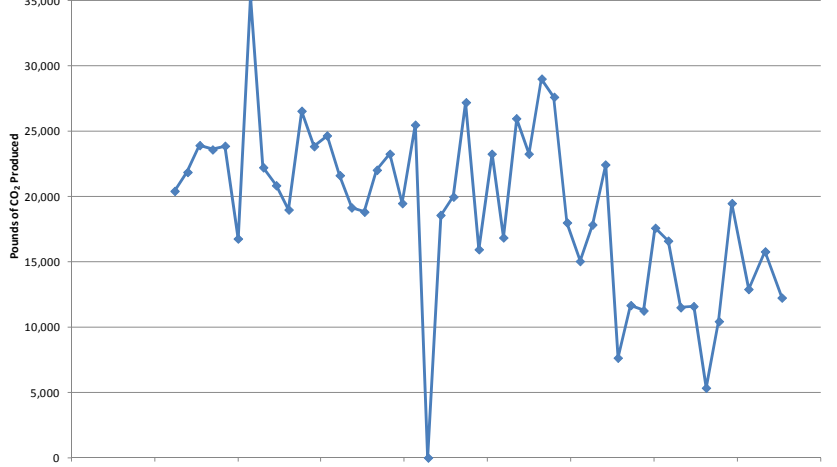


Figure 2
Equivalent Pounds of CO2 Produced by the South Base Boundary Groundwater Treatment Plant



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 148 **Reporting Period: 31 Oct – 30 Nov 2011** **Date Submitted: 19 December 2011**

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

System Metrics

Table 1 presents operational data from the November 2011 reporting period.

Table 1 – Operations Summary – November 2011

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	769 hours	**CGWTP:**	100%	**CGWTP:**	2,503 kWh (3,429 lbs CO_2 generated[a])
WTTP:	Water: 0 hours Vapor: 0 hours	**WTTP[b]:**	Water: 0% Vapor: 0%	**WTTP:**	0 kWh

Gallons Treated: **1.7 million gallons**

Gallons Treated Since January 1996: **453 million gallons**

VOC Mass Removed:

5.67 lbs[b] (groundwater only)

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,568 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $1,635[c]

Monthly Cost per Pound of Mass Removed: $667

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] Calculated using November 2011 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.

Table 2 – CGWTP Average Flow Rates[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)[b]
EW01x16	19.5	Offline
EW02x16	7.4	Offline
EW03x16	0.93[c]	Offline
EW605x16	5.5	Offline
EW610x16	4.5	Offline
CGWTP	36.7	--
WTTP	Offline[b]	Offline

[a] Measured by the total gallons recorded at each totalizer (well head, CGWTP) divided by the operating time during the month.
[b] No soil vapor was treated in November 2011.
[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 flow rate values from the West Industrial Operable Unit (WIOU) extraction wells.

Table 3 – Average Flow Rate from the WIOU Extraction Wells[a] (gpm)

SD037/ SD043				SD033/SD034		SD036	
EW599x37	Offline	EW705x37	Offline	EW501x33	Offline	EW593x36	Offline
EW700x37[b]	Offline	EW706x37	Offline	EW503x33	Offline	EW594x36	Offline
EW701x37	Offline	EW707x37	Offline	EW01x34	Offline	EW595x36	Offline
EW702x37	Offline	EW510x37	Offline	EW03x34	Offline		
EW703x37	Offline	EW511x37	Offline				
EW704x37[b]	Offline	EW555x43	Offline				

[a] Extraction wells are offline due to the ongoing rebound study in the WIOU.
gpm – gallons per minute

Table 4 presents average a summary of shutdowns during the monthly reporting period.

Table 4 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater)					
WTTP					

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

Summary of O&M Activities

Monthly groundwater samples at the CGWTP were collected on 9 November 2011. Sample results are presented in Table 5. The total VOC concentration (402 µg/L) in the influent sample has increased slightly since the October 2011 sample (392 µg/L) was collected. No contaminants were detected in the effluent process stream. Figure 1 presents a plot of influent concentrations at the CGWTP versus time for the past twelve (12) months.

In recent months (August through October 2011), the concentration of vinyl chloride at the midpoint of the granular activated carbon (GAC) vessels has been similar to the vinyl chloride concentration at the influent sampling location (before treatment). However, vinyl chloride concentrations have not been detected following the second (final) GAC vessel, or at the system effluent sampling location. In November 2011, vinyl chloride was not detected in any samples collected at the CGWTP. Travis Air Force Base will continue to monitor VOC concentrations for breakthrough in the primary vessel.

On 16 November 2011, extraction well EW782x39, which pumps groundwater to the DP039 Bioreactor, was "ON" even though the pump was not pumping groundwater to the bioreactor. Troubleshooting activities indicated that the intake screen was clogged. After removing the debris, the pump remained not fully operational. Further troubleshooting of the extraction pump is ongoing, and the pump is expected to be operational by mid-December 2011.

The Site DP039 Bioreactor was transitioned to pulsed mode operation in November 2011 based on performance monitoring data presented in the July 2011 Monthly Data Sheets. Pulsed mode operation will consist of operating the Site DP039 bioreactor for one (1) week and taking it off line for four (4) weeks. Operating the bioreactor in this fashion will help conserve the small amounts of total organic carbon being generated by the bioreactor. The Site DP039 bioreactor is scheduled to be brought back on line in December 2011.

Optimization Activities

On 7 November 2011, the UV/Ox system (UV bulbs only) was brought back on line to test system operation after having been taken off line in May 2009. The UV/Ox system ran for 4 hours and operated without issues.

The artificial grass cover on the Site SS016 bioreactor was replaced on 16 November 2011. The original cover became worn and tattered from UV exposure and near-constant windy conditions.

Performance sampling activities were performed in November 2011 for Sites DP039 (bioreactor and permeable reactive biobarrier), SD036, SD037, SS015, and SS016. An analysis of these performance sampling data will be presented in the CGWTP Monthly Data Sheet when the data have been validated.

No additional optimization activities occurred at the CGWTP in November 2011.

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 3,429 pounds of GHG during November 2011. This is a slight increase from the amount produced in September 2011 (approximately 3,425 pounds). The increase in GHG is likely attributed to the increase in CGWTP monthly operating time.

TABLE 5
Summary of Groundwater Analytical Data for November 2011 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	9 November 2011 (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	0.95 J	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.25	0	0.57	ND	ND	ND
1.3-Dichlorobenzene	5.0	0.15	0	0.75	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	0.95	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	98.1	0.4 J	ND	ND
trans-1,2-Dichloroethene	5.0	0.33	0	4.2	ND	ND	ND
Methylene Chloride	5.0	0.66	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.21	0	0.77	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	294	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	ND	ND	ND	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

* 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

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

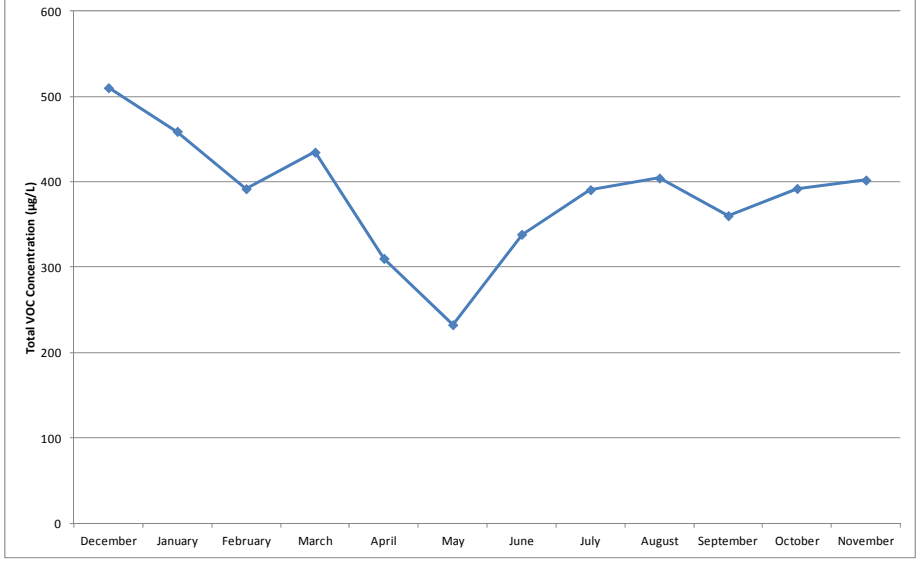
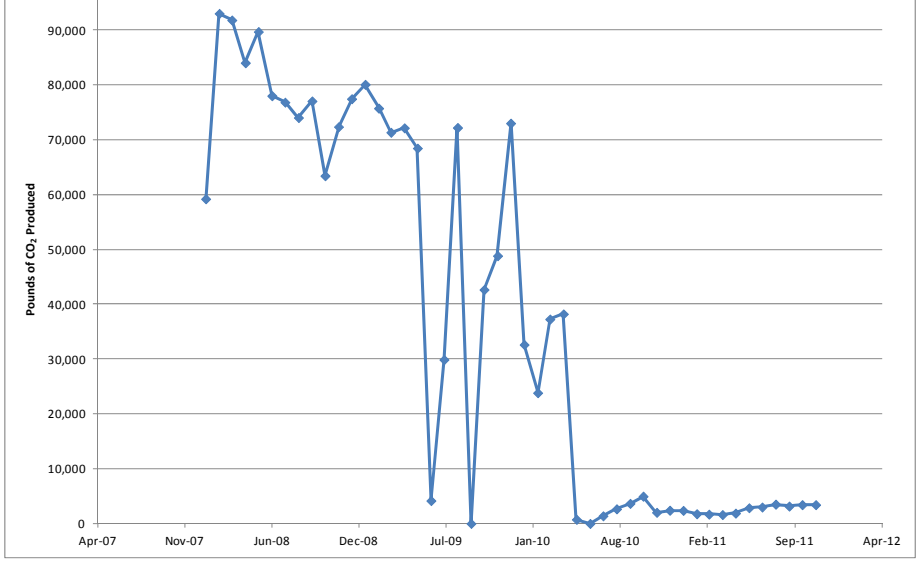


Figure 2
Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 149 **Reporting Period: 30 Nov – 31 Dec 2011** **Date Submitted: 10 January 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 systems associated with the CGWTP include the CGWTP and the West Treatment and Transfer Plant (WTTP). The RPOs related to the CGWTP network of treatment systems include various emulsified vegetable oil (EVO) injection sites, two (2) bioreactors, and various rebound studies. In addition to the monthly data sheets, the RPO 2011 Annual Report is scheduled to be released, which provides evaluations of all remediation processes at Travis AFB. Information regarding the latest round of performance sampling will be presented in the 2011 Annual RPO Report, currently in the process of being completed.

System Metrics

Table 1 presents operational data from the December 2011 reporting period.

Table 1 – Operations Summary – December 2011

Operating Time:		Percent Uptime:		Electrical Power Usage:	
CGWTP:	669 hours	**CGWTP:**	100%	**CGWTP:**	2,335 kWh (3,199 lbs CO_2 generated[a])
WTTP:	Water: 0 hours Vapor: 0 hours	**WTTP[b]:**	Water: 0% Vapor: 0%	**WTTP:**	0 kWh

Gallons Treated: **1.5 million gallons**

Gallons Treated Since January 1996: **454 million gallons**

VOC Mass Removed:

4.01 lbs[b] (groundwater only)

0 lbs (vapor only)

VOC Mass Removed Since January 1996:

2,572 lbs from groundwater

8,686 lbs from vapor

Rolling 12-Month Cost per Pound of Mass Removed: $1,688[c]

Monthly Cost per Pound of Mass Removed: $1,021

[a] Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.
[b] Calculated using December 2011 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.

Table 2 – CGWTP Average Flow Rates[a]

Location	Average Flow Rate	
	Groundwater (gpm)	Soil Vapor (scfm)[b]
EW01x16	19.7	Offline
EW02x16	7.3	Offline
EW03x16	2.1[c]	Offline
EW605x16	5.9	Offline
EW610x16	3.5	Offline
CGWTP	37.6	--
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 December 2011.
[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 flow rate values from the West Industrial Operable Unit (WIOU) extraction wells.

Table 3 – Average Flow Rate from the WIOU Extraction Wells[a] (gpm)

SD037/ SD043				SD033/SD034		SD036	
EW599x37	Offline	EW705x37	Offline	EW501x33	Offline	EW593x36	Offline
EW700x37	Offline	EW706x37	Offline	EW503x33	Offline	EW594x36	Offline
EW701x37	Offline	EW707x37	Offline	EW01x34	Offline	EW595x36	Offline
EW702x37	Offline	EW510x37	Offline	EW03x34	Offline	Ew2014x18	
EW703x37	Offline	EW511x37	Offline				
EW704x37	Offline	EW555x43	Offline				

[a] Extraction wells are offline due to the ongoing rebound study in the WIOU.
gpm—gallons per minute

Table 4 presents average a summary of shutdowns during the monthly reporting period.

Table 4 – Summary of System Shutdowns

Location	Shutdown		Restart		Cause
	Date	Time	Date	Time	
CGWTP (Groundwater)					
WTTP					

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

Summary of O&M Activities

Monthly groundwater samples at the CGWTP were collected on 14 December 2011. Sample results are presented in Table 5. The total VOC concentration (319 µg/L) in the influent sample has decreased since the November 2011 sample (402 µg/L) was collected. No contaminants were detected in the effluent process stream. Vinyl chloride was not detected at the midpoint of the granular activated carbon (GAC) vessels or at the system effluent sampling locations indicating no breakthrough in the primary vessel. Figure 1 presents a plot of influent concentrations at the CGWTP versus time for the past twelve (12) months.

On 20 December 2011, the extraction pump at well EW782x39 (the Site DP039 bioreactor recirculation well) was replaced since the existing pump had stopped operating. The Site DP039 bioreactor has transitioned to a "pulsed mode" operation in order to optimize the effectiveness of the bioreactor.

Following pump replacement, the Site DP039 bioreactor was brought back on line for approximately two (2) weeks, at which time the pump was taken off line on 30 December, 2011. The Site DP039 bioreactor will begin another pulse of operation on 16 January, 2012. Pulsed operation consists of operating the pump for two (2) weeks, then taking it off line for four (4) weeks.

Optimization Activities

The Site DP039 bioreactor continued its pulsed mode operation in December 2011.No other optimization activities occurred at CGWTP in December 2011.

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 3,199 pounds of GHG during December 2011. This is a decrease from the amount produced in November 2011 (approximately 3,429 pounds). The decrease in GHG is likely attributed to the decrease in CGWTP monthly operating time and gallons treated.

TABLE 5
Summary of Groundwater Analytical Data for December 2011 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	14 December 2011 (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	0.72 J	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.25	0	0.48 J	ND	ND	ND
1.3-Dichlorobenzene	5.0	0.15	0	0.7	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	0.35 J	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	0.85	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.19	0	75.1	0.25 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	0.54	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	236	ND	ND	ND
Vinyl Chloride	0.5	0.18	0	0.67	ND	ND	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

* 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

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

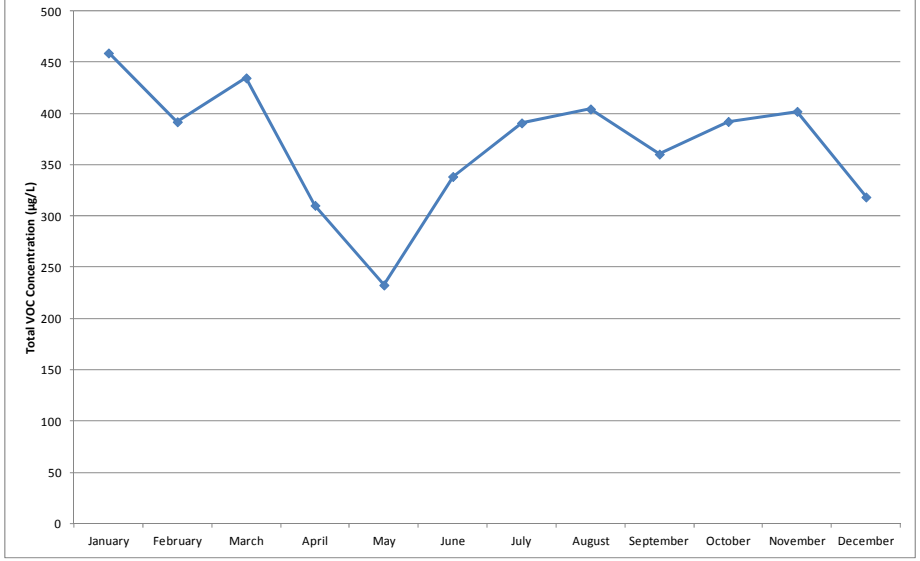
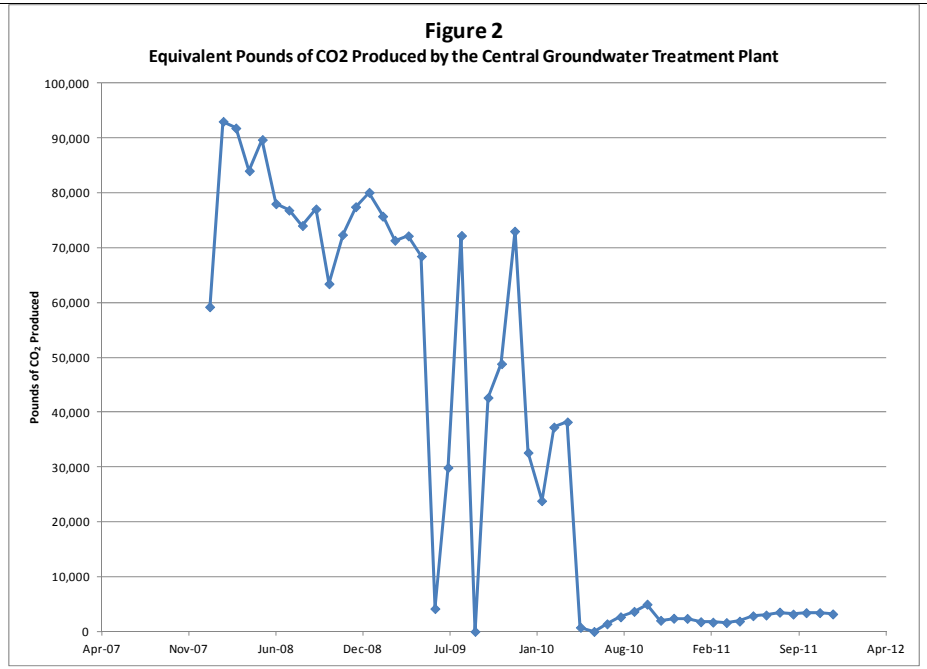


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 120 **Reporting Period: 31 Oct – 30 Nov 2011** **Date Submitted: 19 December 2011**

This monthly data sheet presents information regarding the North Groundwater Treatment Plant (NGWTP) and associated remedial process optimization (RPO) activities. The NGWTP was shut down for the first six days of November to accommodate pumping tests in the four new monitoring wells at Site LF007C.

System Metrics

Table 1 presents operational data from the November 2011 reporting period:

Table 1 – Operations Summary – November 2011

Operating Time:	Percent Uptime:	Electrical Power Usage:
NGWTP: 597 hours	**NGWTP:** 77.73%	**NGWTP:** 350 kWh (480 lbs CO_2 generated[a])

Gallons Treated: **3,660 gallons**

Gallons Treated Since March 2000: **82.6 million gallons**

Volume Discharged to Duck Pond: **3,660 gallons**

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

VOC Mass Removed: **7.4×10^{-5} 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 November 2011 influent sample detected by EPA Method SW8260B.
[c] Value not calculated since measurement does not accurately represent the cost effectiveness of the system. The system was removing minimal mass from December 2010 to May 2011, but operating costs were incurred.
[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 Flow Rates

Location	Average Flow Rate (gpm)
EW614x07	0.05[a]
EW615x07	0.05[a]
NGWTP	0.10[b]

[a] Estimated to be 50 percent of total NGWTP flow rate.
[b] Average flow rate calculated by dividing the total NGWTP gallons treated by the reporting period operating time.

gpm = gallons per minute

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

Table 3 – Summary of System Shutdowns

	Shutdown		Restart		
Location	Date	Time	Date	Time	Cause
NGWTP	October 28, 2011	1600	November 7, 2011	1430	Collected water level measurements at Site LF007C and conducted pumping tests at various wells throughout Site LF007C.
	November 2011		November 2011		System was shut off for 30 minute intervals intermittently throughout the month while EW614x07 and EW615x07 troubleshooting occurred. Total shutdown time is estimated at 3 hours.

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Analytical data from the 9 November 2011 sampling event are presented in Table 4. Concentrations of TCE (2.2 µg/L) and cis-1,2 DCE (0.24 J µg/L) were detected below their respective MCLs in the influent sample for the seventh consecutive month this year. Contaminant concentrations detected in the influent process stream are less than their respective effluent limits (5.0 µg/L for each of these contaminants). Contaminant concentrations were not detected between the primary and secondary vessels and in the effluent process stream. Figure 1 presents a plot of influent concentrations at the NGWTP versus time for the past year. As required by US Fish and Wildlife Service (USFWS), the NGWTP is taken off line ("System Shutdown") when vernal pools are present at Site LF007C. As of the end of November, the vernal pools have not yet formed, and the extraction system is in operation.

On 7 November 2011 the NGWTP was brought online after successful completion of aquifer pumping tests conducted at the four new monitoring wells beginning on 28 October 2011 throughout Site LF007C. The wells tested include MW2163x07, MW2169x07, MW2170x07 and MW2171x07.

When the NWGWTP was brought online after site pumping tests, the influent flow measured at the plant was not equal to the sum of the flows measured at the wellheads. For short intervals in November 2011, the NWGWTP was shutdown to allow for troubleshooting of EW614x07 and EW615x07 flow rates.

In October 2011, one of the three granular activated carbon (GAC) drums was taken off line due to a leak caused by corrosion on the lower half of the vessel (55-gallon drum). The system is currently operating with two GAC drum in series. Analytical data (Table 4) continues to indicate effective treatment of the influent process stream with only two (2) operating GAC drums online. A new GAC drum is scheduled to be delivered in December 2011. This new GAC drum will not be added to the two (2) existing GAC drums in series since influent concentrations continue to be relatively low, and there is no indication of breakthrough past the primary carbon vessel.

Due to the small amount of mass removed at the NGWTP, cost assessments per unit mass removed are not a useful measurement in gauging performance of the system.

Optimization Activities

Following installation of the eleven (11) temporary piezometers and four (4) monitoring wells in October 2011 at Site LF007C, pump tests were conducted at wells MW2163x07, MW2169x07, MW2170x07 and MW2171x07. The NGWTP was off line until 7 November 2011 while the pump tests were being conducted.

Further details regarding Site LF007C characterization activities, groundwater surveys, and subsequent pumping tests will be provided in the upcoming Site LF007C characterization report.

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 used 350 kWh which calculates to approximately 480 pounds of GHG generation during November 2011. This is a decrease from October 2011 when the NGWTP used 389 kWh of electricity. The decrease of electricity usage can be attributed to a decrease in monthly operation time 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 November 2011 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	9 November 2011 (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	0.24 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	2.2	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

* 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

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

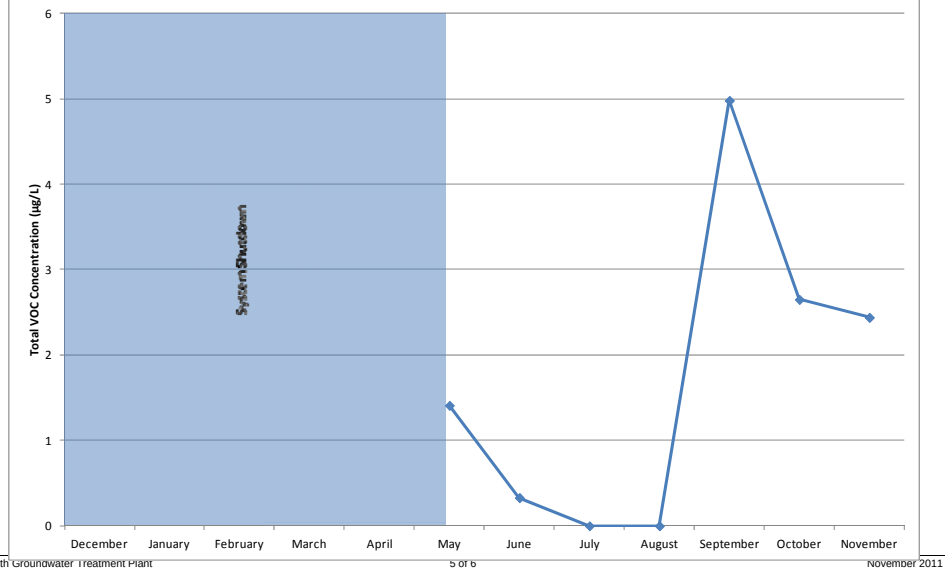
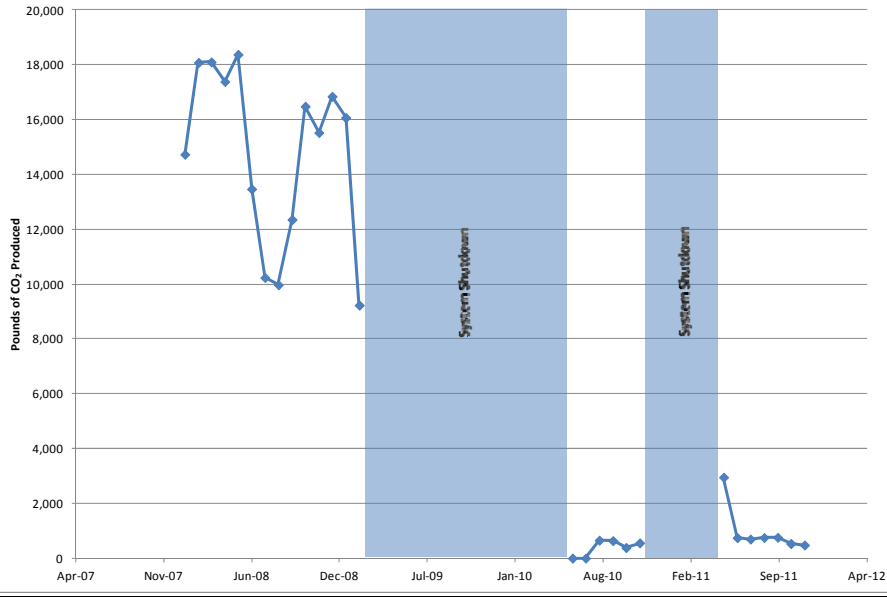


Figure 2
Equivalent Pounds of CO_2 Produced by the North Groundwater Treatment Plant



North Groundwater Treatment Plant Monthly Data Sheet

Report Number: 121 **Reporting Period: 30 Nov – 31 Dec 2011** **Date Submitted: 10 January 2012**

This monthly data sheet presents information regarding the North Groundwater Treatment Plant (NGWTP) and associated remedial process optimization (RPO) activities. A pipe leak on the Site LF007 conveyance piping was discovered and repaired in December 2011, which led to approximately four (4) days of NGWTP shutdown. A technical memorandum submitted on 15 December 2011 provides further details into the leak.

System Metrics

Table 1 presents operational data from the December 2011 reporting period:

Table 1 – Operations Summary – December 2011

Operating Time:	Percent Uptime:	Electrical Power Usage:
NGWTP: 567 hours	**NGWTP:** 85.01%	**NGWTP:** 393 kWh (538 lbs CO_2 generated[a])

Gallons Treated: **7,512 gallons**

Gallons Treated Since March 2000: **82.6 million gallons**

Volume Discharged to Duck Pond: **7,512 gallons**

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

VOC Mass Removed: **1.9×10^{-4} 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 December 2011 influent sample detected by EPA Method SW8260B.
[c] Value not calculated since measurement does not accurately represent the cost effectiveness of the system. The system was removing minimal mass from December 2010 to May 2011, but operating costs were incurred.
[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 Flow Rates

Location	Average Flow Rate (gpm) [a]
EW614x07	0.11
EW615x07	0.10
NGWTP	0.22

[a] Average flow rate calculated by dividing the total gallons processed by the reporting period operating time.

gpm = gallons per minute

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

Table 3 – Summary of System Shutdowns

	Shutdown		Restart		
Location	Date	Time	Date	Time	Cause
NGWTP	6 December 2011	-	9 December 2011	-	A leak was detected in the NGWTP conveyance line. NGWTP was immediately shutoff. The line was repaired and the system was brought back online. For further details, please refer to the "Pipe Leak, LF007C Technical Memorandum" (15 December 2011).

NGWTP = North Groundwater Treatment Plant

Summary of O&M Activities

Analytical data from the 14 December 2011 sampling event are presented in Table 4. Concentrations of TCE (2.6 µg/L) and toluene (0.68 µg/L) were detected in the influent sample. TCE has been detected in the influent sample for four consecutive months. This is the first month toluene has been detected in the influent sample. In both cases, the contaminants detected in the influent process stream are less than their respective effluent limits (5.0 µg/L for each of these contaminants). Contaminant concentrations were not detected between the primary and secondary vessels. Toluene was detected at a very low concentration in the effluent process stream (0.21 J µg/L). The concentration of toluene detected in the effluent process stream was much less than the toluene effluent limitation of 5.0 µg/L. Travis Air Force Base will continue to monitor toluene and other constituent concentrations at the NGWTP effluent process stream to determine break though in primary and/or secondary carbon vessels. Figure 1 presents a plot of influent concentrations at the NGWTP versus time for the past year. As required by US Fish and Wildlife Service (USFWS), the NGWTP is taken off line ("System Shutdown") when vernal pools are present at Site LF007C. But since there has been very little precipitation to date this season, the extraction system remains operational.

On 6 December 2011 a pipe leak was discovered in the NGWTP conveyance line. The NGWTP was immediately taken off line, and the pipe leak was repaired on 9 December 2011. Further details regarding the leak are presented in the "Pipe Leak, LF007C Technical Memorandum," which was submitted to the agencies on 15 December 2011.

In October 2011, one of the three granular activated carbon (GAC) drums was taken off line due to a leak caused by corrosion on the lower half of the vessel (55-gallon drum). The system is currently operating with two GAC drum in series. Analytical data (Table 4) continue to indicate effective treatment of the influent process stream with only two (2) operating GAC drums online. A new GAC drum (spare) was delivered to the NGWTP in December 2011.

Due to the small amount of mass removed at the NGWTP, cost assessments per unit mass removed are not a useful measurement in gauging performance of the system.

Optimization Activities

No optimization activities occurred in December 2011.

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 393 kWh which calculates to approximately 538 pounds of GHG generation during December 2011. This is an increase from November 2011 when the NGWTP used 350 kWh of electricity. The increase of electricity usage can be attributed to an increase in monthly operation time 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 December 2011 – North Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	14 December 2011 (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	ND	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	2.6	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	0.68	ND	0.21 J
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

* 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

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

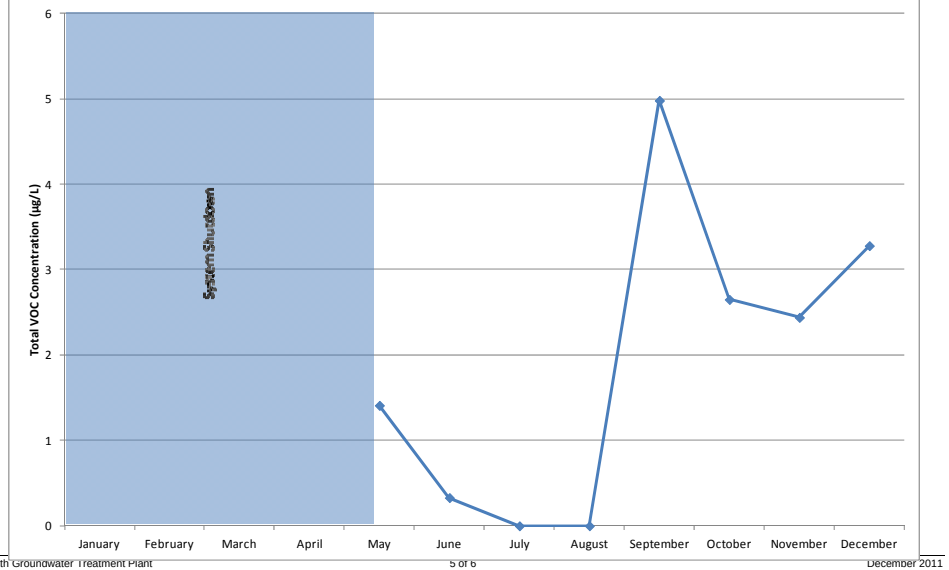
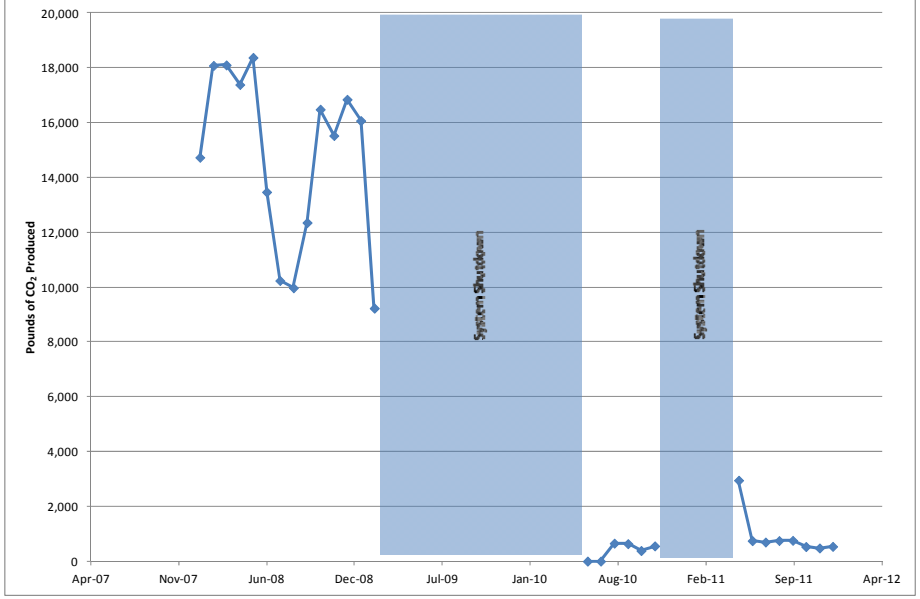


Figure 2
Equivalent Pounds of CO2 Produced by the North Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 009 **Reporting Period: 31 Oct – 30 Nov 2011** **Date Submitted: 19 December 2011**

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (S18GWTP). S18GWTP was operational throughout November 2011. However, the operational parameters were last collected in November 2011 on 21 November (instead on the last day of the month). The shortened monitoring period is reflected in decreased electrical power usage, and subsequent GHG generation, gallons treated and contaminant mass removed. As a result, data presented in the December 2011 Monthly Data sheet will include operational parameters from 22 November through 30 November in addition to December 2011 parameters.

System Metrics

Table 1 presents operation data from the November 2011 reporting period.

Table 1 – Operations Summary – November 2011

Operating Time:	Percent Uptime:	Electrical Power Usage:
S18GWTP: 503 hours	**S18GWTP:** 100%	**S18GWTP:** 54 kWh (74 lbs CO_2 generated[a])

Gallons Treated: **82 thousand gallons**

Gallons Treated Since March 2011: **1.11 million gallons**

Volume Discharged to Union Creek: **82 thousand gallons**

BTEX, MTBE, TPH Mass Removed: **0.12 lbs**[b]

BTEX, MTBE, TPH Mass Removed Since March 2011: **6.9 lbs**

Rolling 12-Month Cost per Total Pounds of Mass Removed[c]: $6,330

Monthly Cost per Pound of Mass Removed: $44,410

Lbs = pounds

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

[b] Calculated using October 2011 (influent) and November 2011 (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; however the system is only in its sixth month of operation.

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	0.62
EW2016x18	0.71
EW2019x18	1.4
Site ST018 GWTP	2.84

[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	None				

S18GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples (ST018GWTPWBC2 and ST018GWTPWEFF) at the S18GWTP were collected on 10 November 2011. Sample results are presented in Table 4. No contaminant concentrations were detected in the effluent sample. The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (4Q11) influent sample was 179 µg/L. 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 and MTBE concentrations at the S18GWTP versus time.

Due to the amount of heavier (TPH-diesel) hydrocarbons in the influent process stream, the primary GAC vessel will be changed out from coconut-based carbon, which is primarily used to extract smaller compounds, such as MTBE, to coal-based carbon. The final two GAC vessels in series will remain coconut-based for lighter VOC and BTEX contaminants, including MTBE. The GAC vessel change out is expected to occur in December 2011.

Optimization Activities

No optimization activities occurred at the S18GWTP in November 2011.

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 74 pounds of GHG from 31 October to 21 November 2011. This is a decrease from October 2011 (115 pounds) and is due to the decrease in the monitoring period. 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 November 2011 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	10 November 2011 (µg/L)		
				Influent[b]	After Carbon 2	System Effluent
Fuel Related Constituents						
MTBE	5	0.1	0	82	ND	ND
Benzene	5	0.1	0	0.2 J	ND	ND
Ethylbenzene	5	0.1	0	0.2 J	ND	ND
Toluene	5	0.1	0	ND	ND	ND
Total Xylenes	5	0.1	0	0.2 J	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	6.0	0	ND	ND	ND
Total Petroleum Hydrocarbons – Diesel	50	7.5	0	96	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 October 2011 (4Q11) 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

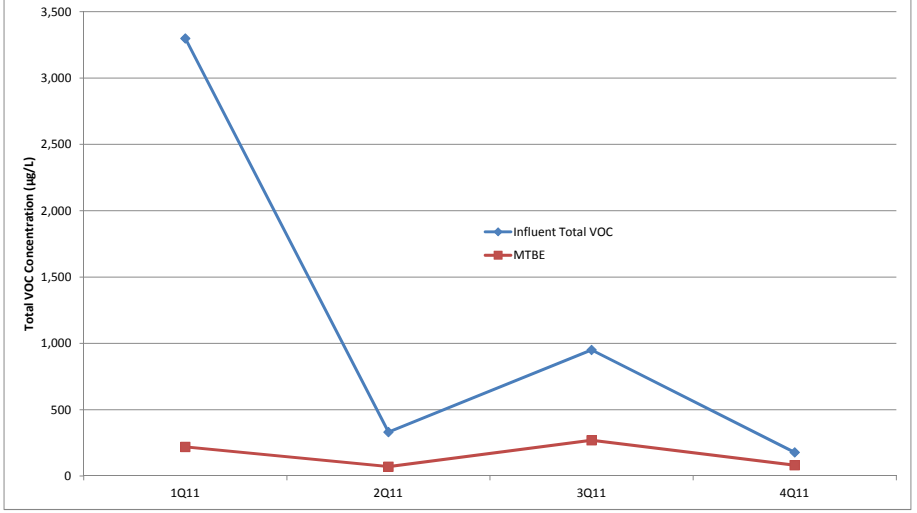
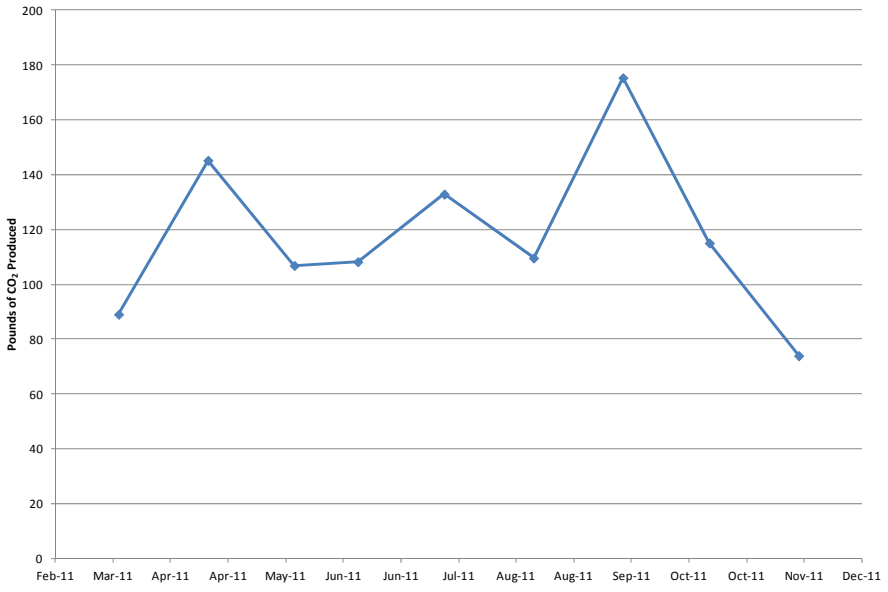


Figure 2
Equivalent Pounds of CO_2 Produced by the Site ST018 Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 010 **Reporting Period: 30 Nov – 31 Dec 2011** **Date Submitted: 10 January 2011**

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (S18GWTP). The December operation period accounts for operation from 22 November through 31 December, 2011. This is reflected in increased electrical power usage, subsequent GHG generation, total gallons treated, and contaminant mass removed.

System Metrics

Table 1 presents operation data from the December 2011 reporting period.

Table 1 – Operations Summary – December 2011

Operating Time:		Percent Uptime:		Electrical Power Usage:	
S18GWTP:	936 hours	**S18GWTP:**	100%	**S18GWTP:**	92 kWh (126 lbs CO_2 generated[a])

Gallons Treated: **132 thousand gallons** Gallons Treated Since March 2011: **1.24 million gallons**

Volume Discharged to Union Creek: **132 thousand gallons**

BTEX, MTBE, TPH Mass Removed: **0.20 lbs**[b] BTEX, MTBE, TPH Mass Removed Since March 2011: **7.1 lbs**

Rolling 12-Month Cost per Total Pounds of Mass Removed: $7,548[c]

Monthly Cost per Pound of Mass Removed: $50,089[d]

Lbs = pounds

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

[b] Calculated using October 2011 (influent) and December 2011 (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; however the system is only in its tenth month of operation.

[d] This increased monthly cost per pound of mass removed is a result of the new pump installation at EW2014x18, and the small amount of total mass removed (0.20 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	0.51
EW2016x18	0.61
EW2019x18	1.26
Site ST018 GWTP	2.36

[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	None				

S18GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples (ST018GWTPWBC2 and ST018GWTPWEFF) at the S18GWTP were collected on 14 December 2011. Sample results are presented in Table 4. No contaminant concentrations were detected in the effluent sample. The total influent concentration (benzene, toluene, ethylbenzene, total xylenes, MTBE, TPH-gas, TPH-diesel, and TPH-motor oil) in the quarterly (4Q11) influent sample was 179 µg/L. 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 and MTBE concentrations at the S18GWTP versus time.

Due to the amount of heavier (TPH-diesel) hydrocarbons in the influent process stream, the primary GAC vessel will be changed out from coconut-based carbon, which is primarily used to extract smaller compounds, such as MTBE, to coal-based carbon. The final two GAC vessels in series will remain coconut-based for lighter VOC and BTEX contaminants, including MTBE. The GAC vessel change out is expected to occur in January 2012.

A new pump was ordered and installed at EW2014x18 in an effort to increase the extraction rate from this well. The total flow from EW2014x18 during November (17,770 gallons) and December (28,522 gallons) were lower over the course of their respective monthly monitoring periods than in the past (e.g., 52,287 in July 2011), and lower than the total gallons processed by wells EW2016x18 (34,154 gallons) and EW2019x18 (70,887 gallons) during the December 2011 monitoring period.

Troubleshooting efforts in December 2011 determined that the equipment within the well control panel is operating correctly, so a new pump was ordered and installed to determine if well production has decreased due to other factors, such as high solids content within the well causing intake screen fouling.

Travis AFB will continue to monitor and optimize flow rate production from this new pump, in addition to the other two (2) extraction well pumps at Site ST108.

Optimization Activities

No optimization activities occurred at S18GWTP in December 2011.

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 126 pounds of GHG from 22 November to 31 December 2011. This is an increase from November 2011 (74 pounds) which is primarily due to the increase in operation hours. 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 December 2011 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum[a] (µg/L)	Detection Limit (µg/L)	N/C	14 December 2011 (µg/L)		
				Influent[b]	After Carbon 2	System Effluent
Fuel Related Constituents						
MTBE	5	0.1	0	82	ND	ND
Benzene	5	0.1	0	0.2 J	ND	ND
Ethylbenzene	5	0.1	0	0.2 J	ND	ND
Toluene	5	0.1	0	ND	ND	ND
Total Xylenes	5	0.1	0	0.2 J	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50	6.0	0	ND	ND	ND
Total Petroleum Hydrocarbons – Diesel	50	7.5	0	96	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 October 2011 (4Q11) 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

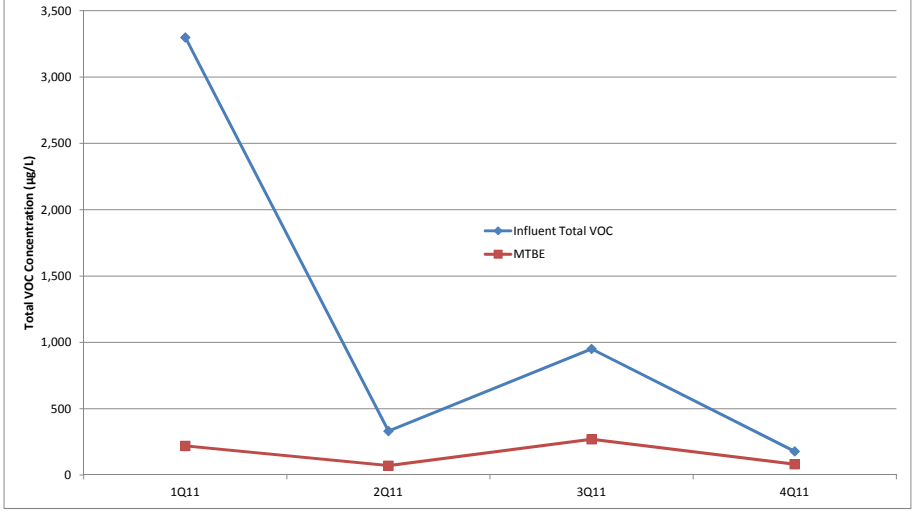
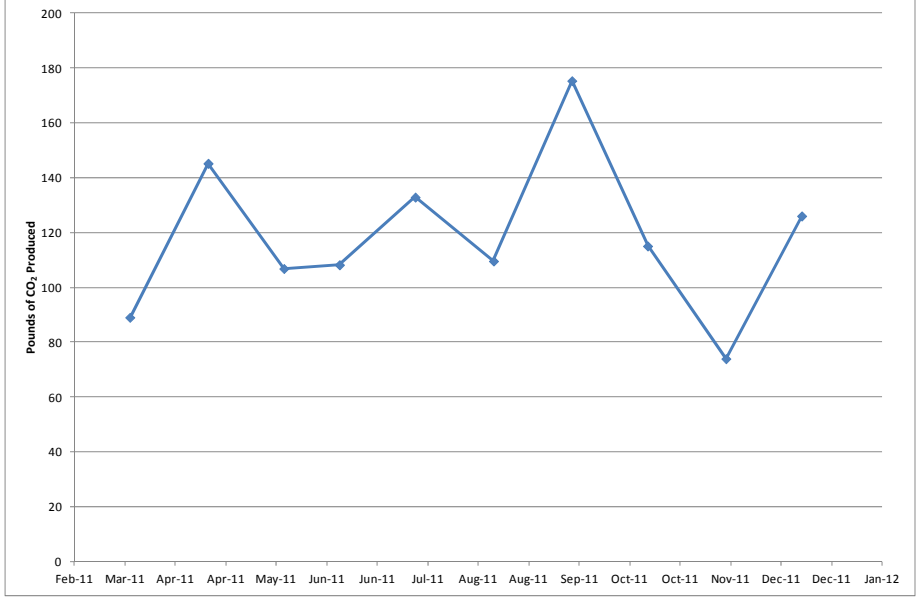


Figure 2

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



Travis AFB
Restoration Program

Management Overview Briefing

RPM Meeting

January 18, 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***

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***

In-Progress Documents & Field Work

Documents

- Baseline Implementation Report – BIR (Sites SS015, SS016, SD036, SD037, and DP039)
- Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- Old Skeet Range Engineering Evaluation/Cost Analysis
- ***Technical and Economic Feasibility Analysis (TEFA)***
- ***2010/2011 Annual GSAP Report***

Field Work

- None

Upcoming Documents

- Proposed Plan (PP) — Jan
- 2011 Groundwater Treatment RPO Annual Report — Feb
- Site LF007C Data Gaps Investigation Technical Memorandum — TBD
- Work Plan for Site SS029 System Optimization Analysis — TBD
- FT005 Remedial Action Completion Report — March
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes — ***TBD***

Upcoming Field Work

- Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes — TBD
- SS029 System Optimization Analysis — Summer 2012
- ***Performance Monitoring SS015 (4Q)*** — ***Feb***
- 2012 Annual GSAP Sampling — Apr

Travis AFB
Field Schedule –2012

RPM Meeting

January 18, 2012

2012 Field Schedule

- Performance Monitoring SS015 (4Q) Feb
- 2012 Annual GSAP Sampling Apr
- Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes TBD
- Site SS029 System Optimization Analysis Investigation Summer 2012

Travis AFB
Restoration Program

Travis AFB GW Proposed Plan

RPM Meeting

January 18, 2012

Current Layout

- Introduction
- Site Background
- Site Nomenclature
- Site Characteristics
- The Interim Approach
- Summary of Site Risks
- The Path to Final Remedies
- Remedial Action Objectives
- The Cleanup Standards
- The Cleanup Alternatives
- The Alternatives Evaluation
- The Preferred Alternatives
- Land Use Controls
- The Final Decision
- What Can I Do?
- Glossary

List of Tables

Proposed Plan Schedule

- A greater level of effort on the Focused Feasibility Study delayed the issuance of the draft Plan last year.
- The pre-draft Plan was reviewed by the AFCEE legal team. We await word on whether our revisions to the Plan are adequate.
- The TEFA completion and new Air Force policy (Yonkers memo that promotes accelerated site completion) may be causing an additional delay.

Plan Promotion and Distribution

- Once final, we will place the Plan on the Travis public website, in three local libraries, and other government facilities.
  - This complies with Executive Order 13589 (Promoting Efficient Spending)
  - Section 5 (Printing) – "Agencies are encouraged to limit the publication and printing of hard copy documents and to presume that information should be provided in an electronic form, whenever practicable, permitted by law, and consistent with applicable records retention requirements."
- A Proposed Plan Fact Sheet (April Guardian) will promote the availability of the Plan.

Questions?

DEPARTMENT OF THE AIR FORCE

WASHINGTON DC

FEB 24 2011

OFFICE OF THE ASSISTANT SECRETARY

MEMORANDUM FOR AF/A4/7
SAF/IEI
SAF/IEE

FROM: SAF/IE

SUBJECT: Policy for Refocusing the Air Force Environmental Restoration Program

In 1980 the U.S. Congress passed the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) to address the cleanup of past contamination sites in order to protect human health and the environment. In 1984 the Department of Defense (DoD) put into place the Defense Environmental Restoration Program (DERP), to address the "worst first" sites (those presenting the greatest risk to human health and the environment).

DoD's metrics for the DERP and Base Realignment and Closure (BRAC) environmental cleanup programs have evolved since 1984. One "key" metric that provides for initial protection of human health and the environment is achievement of "remedy-in-place" (RIP) for individual sites. At thousands of sites, the Air Force is well on its way to achieving those RIP goals. However, RIP accomplishes only part of what is necessary to fully clean up contaminated sites. After nearly 30 years, the Air Force still has many sites that require final cleanup and closure.

In our BRAC program, we have too many sites where our choice of remedies will prevent unconstrained use of transferred property and continue the perpetual legacy of land use controls and operation and maintenance expenditures. Moreover, too many of our DERP and BRAC program dollars are expended on overhead and administrative functions with too few dollars going to actual groundwater, surface water, or soil cleanup.

Therefore, I am directing you to refocus the Air Force's cleanup program from process and study to results; the following policies and goals will apply:

1) Cleanup objectives and efforts will focus on the broadest possible (fence-to-fence) accelerated site completion at an installation, as opposed to the previous focus of achieving "remedies-in-place" and individual site remediation. "Accelerated site completion" (ASC) is achieved at the point at which Air Force will make essentially no additional appreciable investments of time or money.[1]
2) The primary contract mechanism to be used to achieve the ASC objectives will be Performance-Based Cleanup (PBC) agreements.

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[1] That point is reached: a) For active sites -- when response action has resulted in allowing unrestricted use and unlimited exposure, if cost effective from a life cycle cost standpoint, and no further response action is necessary other than to document the closure; and b) For properties where AF will transfer a significant real property interest outside of the federal government -- when Air Force demonstrates it has minimized its long-term cleanup responsibilities and associated costs to the greatest degree feasible (for example, by cleaning up to unrestricted use and unlimited exposure standards; or transferring cleanup responsibilities together with the real property interest; or negotiating a privatized cleanup).

3) For remedy selection decisions, program managers will perform a cost/benefit analysis of the total life cycle costs of alternative cleanup objectives with overall ASC as the expected end point (e.g., sites such as landfills). Such analyses will be made an integral part of AF "requests for proposals." A remedial action objective other than ASC must be justified.
4) The Remedial Optimization Program should focus on the most efficient and effective means of achieving ASC at the broadest range of sites across an installation instead of optimizing remedy efficiency (e.g., reducing samples, wells, and energy use) and reducing O&M costs of remedies-in-place at individual sites. For transferred properties, the program should also consider Air Force versus third-party responsibilities and costs, to minimize Air Force risk and expenditure of resources.
5) Performance objectives in contracts must comply with existing agreements and regulations and protect or maintain protection of human health and the environment while encouraging innovation to achieve accelerated site completion.

The following objectives and targets will be applied to meet these goals:

BRAC
1. Accelerated completion of 75% of all sites by the end of 2012; 90% by the end of 2015
2. For sites not yet completed, ensure 75% are under a PBC contract by the end of FY11; 95% by the end of 2014

Non-BRAC
1. Accelerate completion of 50% of all sites by the end of FY12; 75% by the end of 2015
2. For sites not yet completed, ensure 60% are under a PBC contract by the end of FY12; 90% by the end of 2015

In addition, I am establishing an objective to reduce management and overhead cost to no more than 10 percent of total program cost as soon as practicable. I am directing a program-wide assessment by March 31, 2011 to demonstrate how we can achieve this last objective while meeting our regulatory responsibilities and the other goals, objectives and targets above.

This policy memorandum supersedes the interim policy memorandum (same title) dated December 23, 2010 and is effective immediately.

TERRY A. YONKERS
Assistant Secretary
(Installations, Environment, and Logistics)

cc:

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