

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

16 March 2016, 0930 Hours

Mr. Mark Smith, of the Air Force Civil Engineer Center (AFCEC) Restoration Installation Support Team (IST) conducted the Restoration Program Manager's (RPM) teleconference meeting on 16 March 2016 at 0930 hours in Building 248 at Travis AFB, California. Attendees included:

- Mark Smith AFCEC/CZOW
- Glenn Anderson AFCEC/CZOW
- Lonnie Duke AFCEC/CZOW
- Angel Santiago Jr. AFCEC/CZOW
- Carol Gaudette AFCEC/ZOW
- Merrie Schilter-Lowe Travis AFB 60 AMW/PA
- William Hall AFCEC/CZRW
(via telephone)
- Dezso Linbrunner USACE-Omaha
- Michael Riggle USACE-Omaha
- Michelle Lordemann USACE-Omaha
- Jennifer Musilek USACE Omaha
- Adriana Constantinescu California Regional Water Quality Control Board
(via telephone) (RWQCB)
- Ben Fries California Department of Toxic Substances Control
(via telephone) (DTSC)
- Nadia Hollan Burke United States Environmental Protection Agency
(USEPA)
- Indira Balkissoon Techlaw, Inc
(via telephone)
- Mike Wray CH2M
- Bob Driscoll CH2M
- Tom O'Hara CH2M
- Renee Delisle CH2M
- Tony Chakurian CH2M

Handouts distributed at the meeting, discussions and presentations included:

- Attachment 1 Meeting Agenda
- Attachment 2 Master Meeting and Document Schedule

- Attachment 3 SBBGWTP Monthly Data Sheet (February 2016)
- Attachment 4 CGWTP Monthly Data Sheet (February 2016)
- Attachment 5 ST018 Monthly Data Sheet (February 2016)
- Attachment 6 Presentation: Data Gap Investigation Technical Memo for Soil Sites SD033, SD043 and SS046
- Attachment 7 Presentation: Program Update
- Attachment 8 RAB questionnaire

1. ADMINISTRATIVE

A. Previous Meeting Minutes

The 17 February 2016 RPM meeting minutes were approved and finalized as written.

B. Action Item Review.

Action items from February 2016 were reviewed.

Action item 1 is ongoing: Mr. Smith to provide updates on PFOS and PFOA as he becomes aware of them. 16 March 2016: No updates.

C. Master Meeting and Document Schedule Review (see Attachment 2)

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

Travis AFB Annual Meeting and Teleconference Schedule

The next RPM meeting will be a face to face meeting at Travis AFB, held on Thursday, 21 April 2016, at 1400.

Travis AFB Master Document Schedule

- Community Involvement Plan: Draft to Agencies date changed to 15 April 2016, the rest of the dates were changed accordingly.
- Site SD031 Remedial Investigation Work Plan: No change to the schedule. Travis AFB received comments from DTSC and EPA. Ms. Constantinescu said that the RWQCB will submit their comments on 17 March 2016.
- Site SS016 Remedial Design/Remedial Action Soil Work Plan: No change made to the schedule.

- Action Memorandum Non-Time Critical Removal Action at Site TS060: New document populated with new dates.
- Potrero Hills Annex (FS, PP, and ROD): No change to the schedule. Mr. Anderson said that he spoke with the contractor representative that has been conducting the investigation work and he indicated they are currently active with the groundwater sampling program.
- Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046: No changes made to the schedule.
- Corrective Action Plan for DERA-Funded Oil Water Separators (POCO): Draft to Agencies was changed to 31 March 2016, the rest of the dates were changed accordingly. Ms. Constantinescu requested a hard copy of the draft document.
- Site CG508 Well Decommissioning Work Plan Technical Memorandum: No change made to the schedule.
- Site SD034 Technology Demonstration Work Plan: Predraft to AF/Service Center was changed to 21 March 2016, the rest of the dates were changed accordingly.
- Site TS060 Removal Action Work Plan: Predraft to AF/Service Center was changed to 13 April 2016, the rest of the dates were changed accordingly.
- Multi-Site Bioaugmentation Technology Demonstration Work Plan: Sites ST027 and SD036. New document, populated with new dates. Ms. Burke requested a presentation.
- Quarterly Newsletter (April 2016): No change made to the schedule.
- 2014 Annual GRISR: No change made to the schedule. Document went final.
- 2015 Annual GRISR: No change made to the schedule. Mr. Linbrunner said that the GRISR is a milestone payment for the contractor and a delay in the document review affects the payment to the contractor. If the review goes past the due date the contractor can submit a request for the milestone payment and Mr. Linbrunner said he will approve the request.
- Site ST032 POCO Completion Report: Draft to Agencies was changed to 25 March 2016, the rest of the dates were changed accordingly.
- Site FT004 Groundwater Technology Demonstration Construction Completion Report: No change made to the schedule.
- Site ST028 POCO Completion Report: Predraft to AF/Service Center date was changed to 24 February 2016 to reflect the actual date. The rest of the dates were changed accordingly.
- 2015 Annual CAMU Monitoring Report: No change made to the schedule.
- Site FT005 Technology Demonstration Construction Completion Report: No change made to the schedule.
- Site DP039 Remedial Action Construction Completion Report: No change made to the schedule

— Site SS015 Remedial Action Construction Completion Report: Moved to History.

2. CURRENT PROJECTS

Treatment Plant Operation and Maintenance Update

South Base Boundary Groundwater Treatment Plant, February 2016 (see Attachment 3)

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 99.6% uptime, and 3.56 million gallons of groundwater were extracted and treated during the month of February 2016. All of the treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 96.2 gallons per minute (gpm). Electrical power usage was 14,640 kWh, and approximately 20,057 pounds of CO₂ were created (based on DOE calculation). Approximately 1.0 pounds of volatile organic compounds (VOCs) were removed in February. The total mass of VOCs removed since startup of the system is 473.3 pounds.

Optimization Activities for SBBGWTP: No optimization activities reported for the month of February 2016.

Central Groundwater Treatment Plant, February 2016 (see Attachment 4)

The Central Groundwater Treatment Plant (CGWTP) performed at 98.8% uptime with approximately 1.12 million gallons of groundwater extracted and treated during the month of February 2016. All treated water was discharged to the storm drain. The average flow rate for the CGWTP was 26.1 gpm. Electrical power usage was 1,643 kWh for all equipment connected to the Central Plant, and approximately 2,251 pounds of CO₂ were generated. Approximately 2.43 pounds of VOCs were removed from groundwater by the treatment plant in February. The total mass of VOCs removed since the startup of the system is 11,426 pounds.

Optimization Activities for CGWTP: No optimization activities are reported for the month of February 2016.

LF007C Groundwater Treatment Plant

The LF007C Groundwater Treatment Plant was taken offline as of 24 December 2015, in accordance with the USFWS, due to the presence of standing water in the vernal pools.

ST018 Groundwater (MTBE) Treatment Plant, February 2016 (see Attachment 5)

Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 86.8% uptime with approximately 219,100 gallons of groundwater extracted and treated during the month of February 2016. All treated water was diverted to the sanitary sewer. The average flow rate for the ST018 GWTP was 5.8 gpm. Electrical power usage for the month was 137 kWh for all equipment connected to the ST018 GWTP, which equates to approximately 188 pounds of CO₂. Approximately 0.56 pounds of BTEX, MTBE and TPH was removed from groundwater in February by the treatment plant. Approximately 0.19 pounds of MTBE was removed from groundwater. The total BTEX, MTBE and TPH mass removed since the startup of the system is 35.2 pounds, and the total MTBE mass removed since startup of the system is 8.5 pounds.

Note: Electrical power use at the ST018 GWTP is only for the alarm system and a pump that pushes water through the GAC vessels for treatment. The extraction pumps in the system are all solar powered.

Optimization Activities for ST018GWTP: No optimization activities to report for the month of February 2016.

Presentations:

Presentation: Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046 (see Attachment 6)

Ms. Delisle presented on the Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046. For details, including maps and figures, see attachment 6.

Ms. Delisle covered the following topics in the presentation: the purpose of the data gap investigation; site SD033 background and data gap; site SD043 background and data gap; Site SS046 background and data gap; the conceptual design, necessary soil sampling, the potential ROD amendment, and report.

Purpose of Data Gap Investigation (DGI):

- Reassess the need to conduct additional remedial actions at Sites SD033, SD043, and SS046, in order to remove current land use controls (LUC).
- Collect additional soil samples at these three sites to evaluate the extent of the soil contamination and support reevaluation of human health risks under a residential exposure scenario.

Site SD033 Background:

- Site SD033 includes the western branch of Union Creek, parts of the Storm Sewer II, Facilities 810 and 1917, the area around the South Gate, and Outfall III.

- The results of the remedial investigation for SD033 is documented in the Final West Industrial Operable Unit (WIOU) Remedial Investigation (RI) Report; and the selected remedial actions for SD033 are documented in the North/East/West Industrial Operable Unit Soil, Sediment, and Surface Water Record of Decision (NEWIOU SSSW ROD; URS, 2006).
- The remedial actions included a sediment excavation in the west branch of Union Creek and LUCs for cadmium and benzo(a)pyrene-contaminated soil at facility 810. In 2009 a sediment remedial action was successfully carried out and documented in the Sites SD001 and SD033 Remedial Action Report (ITSI 2010).
- Facility 810 at site SD033 was constructed in 1955 and is currently used for aircraft refurbishing. A former OWS was located on the west side of the facility. Waste generated at the facility included PD-680, paints, solvents, lubricants, PCBs, and fuels.
- During the previous investigations, surface soil samples were collected from 2 locations, and subsurface soil samples were collected from 13 locations in 1992 and 1996. Subsurface soil samples were collected from 8 locations in 2015.

Site SD033 Data Gap:

- There are two main data gaps at site SD033. The benzo(a)pyrene detection limits for several historical samples exceed the current residential risk based screening level (RBSL), therefore, the extent of the benzo(a)pyrene in the soil is ambiguous. During the WIOU RI, only 2 surface soil samples were collected from this site. Additional surface soil samples for analysis of cadmium and benzo(a)pyrene are needed to identify the extent of the surface soil contamination.

Ms. Constantinescu said that she remembered from the site history that samples were analyzed for solvents, fuels, as well as VOCs. She asked if there has been a connection with the soil and the groundwater plume for VOCs, and stated that if higher levels of VOCs are detected in the groundwater as a COC, the VOCs in the groundwater can “off gas” in time. Mr. Chakurian replied that this portion of site SD033 is currently not monitored as part of the GRIP for solvents, because the plume is not located at this site.

Site SD043 Background:

- Building 916 is an emergency power generator facility located in the west-central portion of the WABOU.
- In 1992 an electrical transformer staged on a concrete pad along the southwest corner of building 916 leaked PCB-laden oil into the surface soil. The transformer and concrete pad were removed in 1993.
- The results of the remedial investigation for SD043 were documented in the Final West/Annexes/Basewide Operable Unit (WABOU) RI Report, and the selected remedial action for Site SD043 is LUC and access restrictions, which is documented in the WABOU Soil ROD.

- The soil COC at Site SD043 is PCB-1254.
- In 2003 a new concrete pad was constructed and a large generator installed in the vicinity of the spill area, increasing the footprint of the LUC at this site.

Site SD043 Data Gap:

- There are two main data gaps at Site SD043. During the initial RI, surface and subsurface samples were collected and analyzed for PCBs using an immunoassay field screening method. The detection limit of this field screening method was inadequate for comparison to the current residential RBSL (0.22 mg/kg). Only six soil boring samples were analyzed at an offsite laboratory.
- Construction of a new concrete pad took place after the WABOU Soil ROD was finalized and may have displaced some of the contaminated soil, therefore the current extent of the PCB-1254 in the soil is unknown.

Mr. Anderson said that the soil was removed from where the concrete pad was placed, but never left the site, adding he assumes the soil was spread throughout the area of SD043.

Site SS046 Background:

- Site SS046 is the Railhead Munitions Staging Area located in the north-central portion of the WABOU. This site formerly served as the railhead at the south terminus for a spur off the Northern Sacramento Railroad, and from 1953 to 1962 this site also served as a weapons handling facility.
- The results of the remedial investigation for SS046 are documented in the Final WABOU RI Report, and the selected remedial action for Site SS046 is documented in the WABOU Soil ROD. The remedial action selected at Site SD043 is LUC and access restrictions for contaminated soil at facility 916.
- The soil COCs at this site are benzo(a)pyrene, benzo(b)fluoranthene, benzo(a)anthracene, and benzo(k)fluoranthene.

Site SS046 Data Gap:

- There is one main data gap at Site SS046. Historical soil data collected from 7 borings for COCs did not adequately delineate the extent of the soil PAH contamination to current residential RBSLs. Additional surface and subsurface soil samples are needed to support an evaluation of the extent of the soil contamination.

The Approach and Conceptual Design:

- The conceptual design and approach for the soil data gap investigation is to collect additional soil samples to support an evaluation of the extent of soil contamination at Sites SD033, SD043, and SS046 for residential RBSL. (See attached 6 for details)

Soil Sampling:

- Site SD033 Soil Sampling Plan: Collect samples from 2 new soil borings at four different depths, and 7 surface samples. The surface samples will be analyzed for cadmium; the boring samples will be analyzed for cadmium and benzo(a)pyrene.
- Site SD043 Soil Sampling Plan: Collect samples from 2 new soil borings at three different depths, and 5 surface samples. The 2 soil borings are positioned to collect samples on the east and west sides of SB05. In order to sample to the east of SB05, the emergency generator adjacent to Building 916 will need to be removed, or an angled boring will need to be drilled from the southwest corner of the concrete pad. All samples will be analyzed for PCB-1254.

Mr. Duke said that the generator and concrete pad are scheduled to be removed, however if they are not moved when the investigation begins, then an angled boring will be drilled. Note: slide #19 (map) has been revised per Ms. Burke's suggestion. The angle boring entry point was moved to the actual location where the sample will be collected.

- Site SS046 Soil Sampling Plan: Collect samples from four new soil boring locations at four different depths. All samples will be analyzed for benzo(a)pyrene, benzo(b)fluoranthene, benzo(a)anthracene, and benzo(k)fluoranthene. (See attachment 6, table 1, for RSL and ESL values)

ROD Amendment:

- Upon completion of the data gap investigation results, the Air Force will update the risk assessment calculations that supported the selected remedies.
- The new calculations under a residential scenario will be used to determine whether additional actions at these sites would support the removal of the current LUCs.
- If the Air Force decides to conduct additional remedial actions beyond the ROD selected remedy, then the sites will be included in an amendment to the applicable ROD.
- Results of the data gap investigation and the updated human health risk assessment (HHRA) calculations for the residential scenario will be reported in a technical memorandum following the field activities.

Ms. Burke questioned if the technical memorandum should be considered a primary document, because it includes a risk assessment. Mr. Anderson said that the focus is on just one medium of concern, and the supplemental data gap data updates the previous risk assessment. This secondary document will serve as a feeder document to the ROD amendment. Ms. Burke will check with EPAs attorney or Risk Assessor.

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

Mr. Wray reported on the status of field work and documents which are completed, in progress, and upcoming. Updates from the briefing this month included:

Newly Completed Documents: 2014 Annual GRISR.

Newly Completed Field Work: None.

In-Progress Documents (CERCLA): Site SD031 Soil Remedial Investigation Work Plan; Data Gap Investigation Technical Memorandum for oil Sites SD033, SD043, and SS046; Site CG508 Well Decommissioning Work Plan; Site FT004 Technical Demonstration Completion Report.

In-Progress Documents (POCO): Corrective Action Plan for DERA-Funded Oil Water Separators.

In-Progress Field Work: FT005 EVO Injection, DP039 EVO Injection.

Upcoming Documents (CERCLA): Community Involvement Plan (April); 2015 Annual CAMU Monitoring Report (March); Site TS060 Action Memorandum (March); Site SD034 Technology Demonstration Work Plan (April); Site TS060 Removal Action Work Plan (April); Multi-Site Bioaugmentation Technology Demonstration Work Plan (May); 2015 Annual GRISR (June); Site FT005 Technology Demonstration Construction Completion Report (TBD); Site DP039 RD/RA Construction Completion Report (TBD); and Site SS016 RD/RA Soil Work Plan (TBD).

Upcoming Documents (POCO): Site ST032 POCO Completion Report (March) and Site ST028 POCO Completion Report (March).

Field Work Planned (CERCLA): SD031 Soil Remedial Investigation (May); SD034 Technology Demonstration Well Installation (June); TS060 Removal Action (June); Data Gap Investigation for Soil Sites (SD033, SD043, and SS046) (June); and Site SD034 Technology Demonstration Bioreactor Installation (July).

Field Work Planned (POCO): Oil Water Separators Step Out Drilling (June); Oil Water Separators (12) Removal (June); CG508 Well Decommissioning (June); and Site SS014 Bioreactor Installation (August).

4. New Action Item Review

None.

5. PROGRAM/ISSUES/UPDATE

Mr. Smith mailed a RAB questionnaire to the regulators and RAB members to inquire what their concerns and/or suggestions are regarding Travis AFB cleanup, and solicit their opinion on how to garner interest from the public to participate in the Environmental Restoration Program. (See attachment 8 for details)

Mr. Smith announced his retirement to start on 1 April 2016 and that this will be his last RPM meeting. Mr. Smith thanked the regulators, Mr. Hall, and Mr. Linbrunner for their support to the Travis AFB restoration program. Mr. Linbrunner said that the Travis AFB group has been a great team for the past 8 years, and that Mr. Smith was an important part of that team and he will definitely be missed.

6. Action Items

Item #	Responsible	Action Item Description	Due Date	Status
1.	Lonnie Duke	Mr. Duke to provide updates on PFOS and PFOA as he becomes aware of them. Update: Mr. Smith stated that a kickoff meeting for a follow on extended SI took place the week of 25 January. EPA asked if the intent was to sample GWTP effluent. Mr. Smith said that the treatment plants effluent will not be sampled during the SI, however, sample collections will take place at the outfalls and at the Union Creek discharge points. Mr. Smith learned in the kick off meeting that if PFOS and PFOA were reaching the treatment plants, they would be removed by the carbon.	Ongoing	Open

TRAVIS AFB RPM TELECONFERENCE AGENDA
16 March 2016, 09:30 A.M. (PST)

To: EPA	Nadia Burke
DTSC	Ben Fries
RWQCB	Adriana Constantinescu
AFCEC	William Hall
USACE	Dezso Linbrunner
CH2M	Mike Wray

The RPM teleconference is scheduled for 9:30 PST on 16 March 2016. **The call-in number is 1-866-203-7023. Enter the Participation code 5978-75-9736 then enter #.**

Topics for the teleconference include:

- ❖ Previous Meeting Minutes (All)
- ❖ Action Item Review (All)
- ❖ Master Meeting and Document Schedule Review (Glenn, Lonnie)
- ❖ Treatment Plant Operation and Maintenance Update (Lonnie)
- ❖ Data Gap Investigation TM for Soil Sites 33, 43 & 46 (Renee)
- ❖ Program Update (Mike)
- ❖ RAB Questionnaire Summary (Mark)
- ❖ New Action Item Review (All)

Participants:

TRAVIS	ERP Staff	(707) 424-3062
DTSC	Ben Fries	(916) 255-3667
RWQCB	Adriana Constantinescu	(510) 622-2353
EPA	Nadia Burke	(415) 972-3187
USACE	Dezso Linbrunner	(402) 238-8846
AFCEC	William Hall	(210) 259-3252
CH2M	Mike Wray	(916) 715-0949

NOTES: AFTER THE RPM TELECONFERENCE, BASED ON THE DISCUSSION DURING THE REVIEW OF THE MASTER MEETING AND DOCUMENT SCHEDULE, WE ALLOW TIME TO HOLD A SEPARATE TELECONFERENCE, IF NEEDED, TO DISCUSS THE RESPONSES TO AGENCY COMMENTS ON THOSE DOCUMENTS THAT ARE IN PROGRESS. ALL PARTICIPANTS ARE WELCOME TO PARTICIPATE.

(2016)
Annual Meeting and Teleconference Schedule

Monthly RPM Meeting ¹ (Begins at time noted)	RPM Teleconference (Begins at time noted)	Restoration Advisory Board Meeting (Begins at 7:00 p.m.) (Poster Session at 6:30 p.m.)
—	01-20-16	—
02-17-16	—	—
—	03-16-16	—
04-21-16 (Thursday 2:00 PM)	—	04-21-16
—	05-18-16	—
06-15-16	—	—
—	07-20-16	—
08-17-16	—	—
—	09-21-16	—
10-20-16 (Thursday 2:00 PM)	—	10-20-16 ²
—	11-16-16	—
—	—	—

¹ Note: Meetings and teleconferences will be held at 09:30 AM on the third Wednesday of each month unless otherwise noted.

² Note: Tentative RAB tour date in lieu of RAB meeting.

Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS				
Life Cycle	Community Involvement Plan Travis AFB, Glenn Anderson CH2M HILL, Tricia Carter	Site SD031 Remedial Investigation Work Plan Travis AFB, Lonnie Duke CH2M HILL, Tony Chakurian	Site SS016 Remedial Design/Remedial Action Soil Work Plan Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick CAPE, Meg Greenwald	Action Memorandum Non-Time Critical Removal Action at Site TS060 Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick CAPE, Meg Greenwald
Scoping Meeting	NA	NA	NA	NA
Predraft to AF/Service Center	NA	01-13-16	TBD	03-29-16
AF/Service Center Comments Due	NA	01-28-16	TBD	04-12-16
Draft to Agencies	04-15-16	02-10-16	TBD	04-26-16
Draft to RAB	04-15-16	02-10-16	TBD	04-26-16
Agency Comments Due	05-16-16	03-14-16	TBD	05-26-16
Response to Comments Meeting	05-18-16	03-16-16	TBD	06-15-16
Agency Concurrence with Remedy	NA	NA	TBD	NA
Public Comment Period	NA	NA	TBD	NA
Public Meeting	NA	NA	TBD	NA
Response to Comments Due	06-03-16	03-30-16	TBD	06-30-16
Draft Final Due	06-03-16	03-30-16	TBD	06-30-16
Final Due	07-07-16	04-29-16	TBD	07-01-16

Travis AFB Master Meeting and Document Schedule

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

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046 Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer	Corrective Action Plan for DERA-Funded Oil Water Separators Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick	Site CG508 Well Decommissioning Work Plan Technical Memorandum Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	01-15-16	02-10-16	02-01-16
AF/Service Center Comments Due	02-01-16	02-25-16	02-16-16
Draft to Agencies	02-17-16	03-31-16	03-01-16
Draft to RAB	02-17-16	03-31-16	03-01-16
Agency Comments Due	03-18-16	05-02-16	03-31-16
Response to Comments Meeting	04-21-16	05-18-16	04-21-16
Response to Comments Due	05-06-16	06-01-16	05-09-16
Draft Final Due	NA	NA	NA
Final Due	05-06-16	06-01-16	05-09-16
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

SECONDARY DOCUMENTS			
Life Cycle	Site SD034 Technology Demonstration Work Plan Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt	Site TS060 Removal Action Work Plan Travis AFB, Glenn Anderson CH2M HILL, Doug Berwick CAPE, Meg Greenwald	Multi-Site Bioaugmentation Technology Demonstration Work Plan Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	03-21-16	04-13-16	04-12-16
AF/Service Center Comments Due	04-04-16	05-04-16	04-26-16
Draft to Agencies	04-19-16	05-18-16	05-10-16
Draft to RAB	04-19-16	05-18-16	05-10-16
Agency Comments Due	05-19-16	06-20-16	06-10-16
Response to Comments Meeting	06-15-16	06-27-16	06-15-16
Response to Comments Due	06-29-16	07-12-16	07-01-16
Draft Final Due	NA	NA	NA
Final Due	06-29-16	07-12-16	07-01-16
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	Quarterly Newsletters (April 2016) Travis, Glenn Anderson	2014 Annual GRISR Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer	2015 Annual GRISR Travis AFB, Lonnie Duke CH2M HILL, Leslie Royer
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	NA	04-24-15	04-26-16
AF/Service Center Comments Due	NA	05-22-15	05-26-16
Draft to Agencies	03-29-16	06-10-15	06-10-16
Draft to RAB	NA	06-10-15	06-10-16
Agency Comments Due	04-12-16	09-08-15	07-11-16
Response to Comments Meeting	TBD	09-16-15	07-20-16
Response to Comments Due	04-13-16	09-30-15 (03-03-16)	08-03-16
Draft Final Due	NA	NA	NA
Final Due	04-15-16	09-30-15 (03-03-16)	08-03-16
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	Site ST032 POCO Completion Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick CAPE, Meg Greenwald	Site FT004 Groundwater Technology Demonstration Construction Completion Report Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt	Site ST028 POCO Completion Report Travis AFB, Lonnie Duke CH2M HILL, Doug Berwick CAPE, Meg Greenwald
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	01-25-16	02-16-16	02-24-16
AF/Service Center Comments Due	02-08-16	03-01-16	03-09-16
Draft to Agencies	03-25-16	03-15-16	04-13-16
Draft to RAB	03-25-16	03-15-16	04-13-16
Agency Comments Due	04-25-16	04-14-16	05-13-16
Response to Comments Meeting	05-18-16	04-21-16	05-18-16
Response to Comments Due	06-02-16	05-10-16	06-07-16
Draft Final Due	NA	NA	NA
Final Due	06-02-16	05-10-16	06-07-16
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	2015 Annual CAMU Monitoring Report Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt	Site FT005 Technology Demonstration Construction Completion Report Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt	Site DP039 Remedial Action Construction Completion Report Travis AFB, Lonnie Duke CH2M HILL, Levi Pratt
Scoping Meeting	NA	NA	NA
Predraft to AF/Service Center	02-26-16	TBD	TBD
AF/Service Center Comments Due	03-11-16	TBD	TBD
Draft to Agencies	03-29-16	TBD	TBD
Draft to RAB	03-29-16	TBD	TBD
Agency Comments Due	04-28-16	TBD	TBD
Response to Comments Meeting	05-18-16	TBD	TBD
Response to Comments Due	06-01-16	TBD	TBD
Draft Final Due	NA	NA	NA
Final Due	06-01-16	TBD	TBD
Public Comment Period	NA	NA	NA
Public Meeting	NA	NA	NA

Travis AFB Master Meeting and Document Schedule

HISTORY	
Life Cycle	Site SS015 Remedial Action Construction Completion Report Travis AFB, Glenn Anderson CH2M HILL, Leslie Royer
Scoping Meeting	NA
Predraft to AF/Service Center	09-02-15
AF/Service Center Comments Due	09-17-15
Draft to Agencies	09-25-15
Draft to RAB	09-25-15
Agency Comments Due	10-28-15
Response to Comments Meeting	11-05-15
Response to Comments Due	11-19-15 (01-22-16)
Draft Final Due	NA
Final Due	11-19-15 (01-22-16)
Public Comment Period	NA
Public Meeting	NA

South Base Boundary Groundwater Treatment Plant Monthly Data Sheet

Report Number: 186

Reporting Period: 27 January 2016 – 22 February 2016

Date Submitted: 14 March 2016

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

System Metrics

Table 1 presents operational data from the February 2016 reporting period.

Table 1 – Operations Summary – February 2016			
Initial Data Collection:	1/27/2016 16:10	Final Data Collection:	2/22/2016 11:10
Operating Time:	Percent Uptime:	Electrical Power Usage:	
SBBGWTP: 616 hours	SBBGWTP: 99.6%	SBBGWTP: 14,640 kWh (20,057 lbs CO₂ generated^a)	
Gallons Treated: 3.56 million gallons		Gallons Treated Since July 1998: 924 million gallons	
Volume Discharged to Union Creek: 3.56 million gallons		Gallons Treat From Other Sources: 0 gallons^b	
VOC Mass Removed: 1.0 lbs^c		VOC Mass Removed Since July 1998: 473.3 lbs	
Rolling 12-Month Cost per Pound of Mass Removed: \$3,232 ^d			
Monthly Cost per Pound of Mass Removed: \$7,808 ^d			
lbs = pounds			
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.			
^b Decontamination water from investigation activities, processed through the SBBGWTP from the external settling tank			
^c Calculated using February 2016 EPA Method SW8260C analytical results.			
^d 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 – February 2016							
FT005 ^b				SS029		SS030	
EW01x05	0.3	EW736x05	Offline	EW01x29	2.7	EW01x30	7.7
EW02x05	0.3	EW737x05	Offline	EW02x29	1.7	EW02x30	4.3
EW03x05	Offline	EW742x05	Offline	EW03x29	5.7	EW03x30	2.3
EW731x05	Offline	EW743x05	Offline	EW04x29	7.6	EW04x30	34.7
EW732x05	Offline	EW744x05	Offline	EW05x29	9.0	EW05x30	0.6
EW733x05	Offline	EW745x05	Offline	EW06x29	4.5	EW2174x30	11.0
EW734x05	1.1	EW746x05	Offline	EW07x29	13.1	EW711x30	2.3
EW735x05	0.0 ^c						
FT005 Total:	1.7			SS029 Total:	44.3	SS030 Total:	52.7
SBBGWTP Average Monthly Flow^d: 86.1 gpm							
^a Flow rates presented are instantaneous measurements taken at the end of the reporting period. ^b Most extraction wells at FT005 were taken offline in accordance with the <i>2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant</i> . ^c The extraction well is operational but the flow rate is not registering on the SCADA. ^d The average SBBGWTP groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the total time in the reporting period.							
gpm – gallons per minute 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 ^a		Restart ^a		Cause
	Date	Time	Date	Time	
SBBGWTP	8 February 2016	10:18	8 February 2016	11:20	Collect carbon sample from lead GAC vessel.
SBBGWTP	22 February 2016	09:15	22 February 2016	11:00	Collect carbon sample from lead GAC vessel.
^a Shutdown and restart times estimated based on field notes. NA = not applicable SBBGWTP = South Base Boundary Groundwater Treatment Plant					

Summary of O&M Activities

Analytical data from the 3 February 2016 sampling event are presented in Table 4. The total VOC concentration (33.74 µg/L) in the influent sample has slightly decreased from the January 2016 sample results (34.22 µg/L). TCE (31.3 µg/L), cis-1,2-DCE (1.94 µg/L), 1,2-DCA (0.34 J µg/L), and chloroform (0.16 J µg/L) were detected at the influent sampling location. TCE (7.43 µg/L), cis-1,2-DCE (3.31 µg/L), 1,2-DCA (0.44 J µg/L), and chloroform (0.22 J µg/L) were detected at the midpoint location. Chloromethane (0.34 J µg/L) was the only VOC detected at the effluent sampling location.

The two shutdowns at SBBGWTP in February were to collect carbon samples from the lead GAC vessel. The lead granular activated carbon (GAC) vessel is nearly spent, and a change out of the carbon is being arranged. To facilitate this change out, two (2) carbon samples were collected in order to complete a non-hazardous waste profile, which would allow for transport of the spent carbon to a reactivation facility. A carbon change out of the primary GAC vessel is expected to be completed in March 2016.

Figure 1 presents a plot of influent concentrations and average flow at the SBBGWTP over the past twelve (12) months. An overall slight increase in the flow rate has been observed in the past twelve months. The average flow rate at the SBBGWTP increased in February 2016 to 96.2 gpm from the January 2016 flow rate of 86.1 gpm.

Optimization Activities

No optimization activities occurred at the SBBGWTP in February 2016.

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 taking extraction pumps off line that are no longer necessary for contaminant plume capture.

Figure 2 presents the historical GHG production from the SBBGWTP. The SBBGWTP produced approximately 20,057 pounds of GHG during February 2016.

TABLE 4

Summary of Groundwater Analytical Data For February 2016 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	3 February 2016 (µg/L)		
				Influent	Midpoint	Effluent
Halogenated Volatile Organics						
Carbon Tetrachloride	0.5	0.15	0	ND	ND	ND
Chloroform	5.0	0.15	0	0.16 J	0.22 J	ND
Chloromethane	5.0	0.15	0	ND	ND	0.34 J
1,1-Dichloroethane	5.0	0.15	0	ND	ND	ND
1,2-Dichloroethane	0.5	0.15	0	0.34 J	0.44 J	ND
1,1-Dichloroethene	5.0	0.15	0	ND	ND	ND
cis-1,2-Dichloroethene	5.0	0.15	0	1.94	3.31	ND
trans-1,2-Dichloroethene	5.0	0.15	0	ND	ND	ND
Methylene Chloride	5.0	0.15	0	ND	ND	ND
Tetrachloroethene	5.0	0.15	0	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.15	0	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.15	0	ND	ND	ND
Trichloroethene	5.0	0.15	0	31.3	7.43	ND
Vinyl Chloride	0.5	0.15	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	1.0	0.15	0	ND	ND	ND
Ethylbenzene	5.0	0.15	0	ND	ND	ND
Toluene	5.0	0.15	0	ND	ND	ND
Xylenes	5.0	0.15 – 0.30	0	ND	ND	ND
Other						
Total Suspended Solids (mg/L)	NE	0.6	0	ND	NM	NM
Total Petroleum	50	30	0	NM	NM	ND
Hydrocarbons – Gasoline						
Total Petroleum	50	29	0	NM	NM	ND
Hydrocarbons – Diesel						

* 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 due to a detected concentration value between the reporting limit and method detection limit for the contaminant

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 and Average Flowrate
Twelve Month History
Travis Air Force Base, California

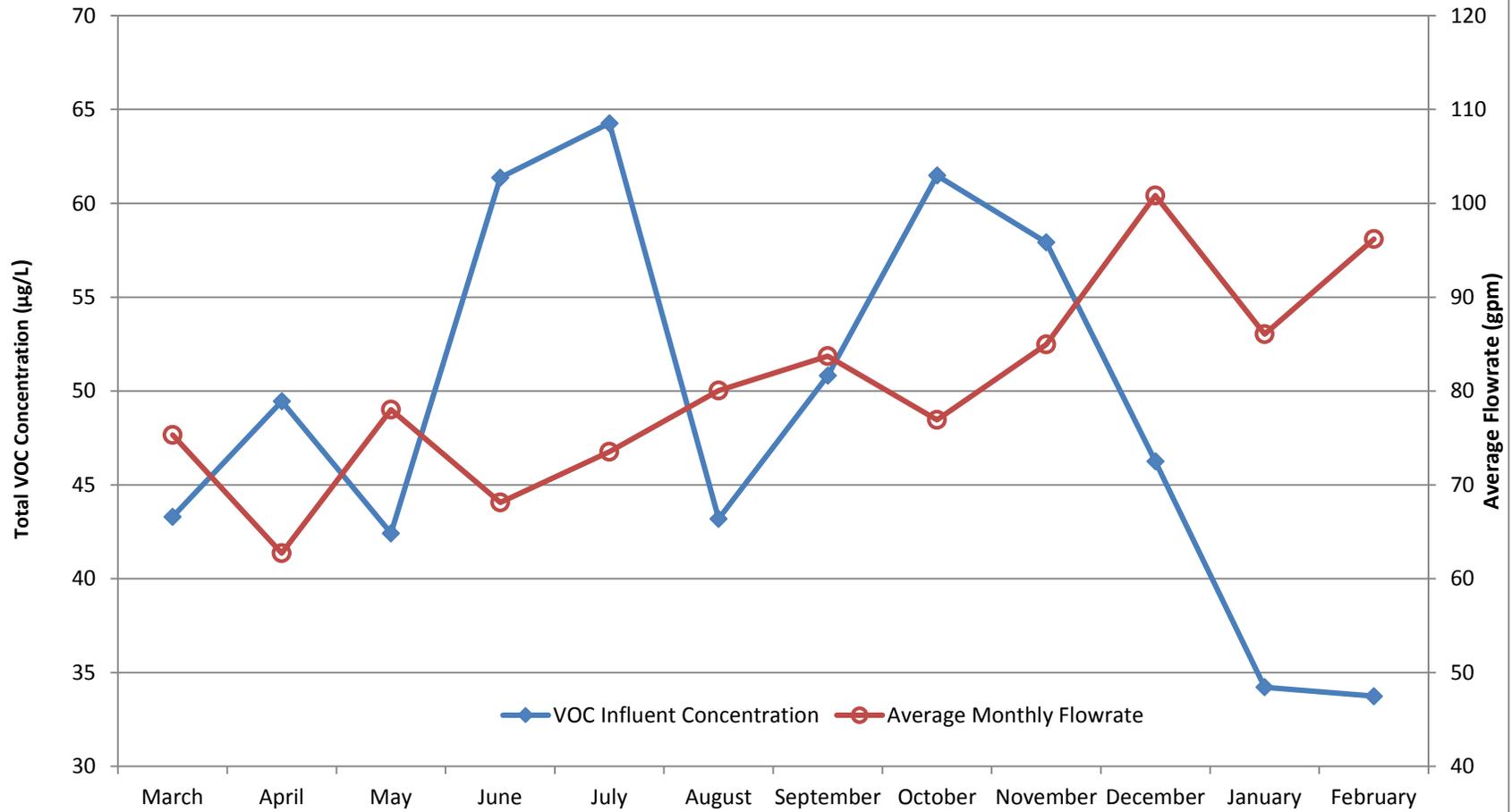
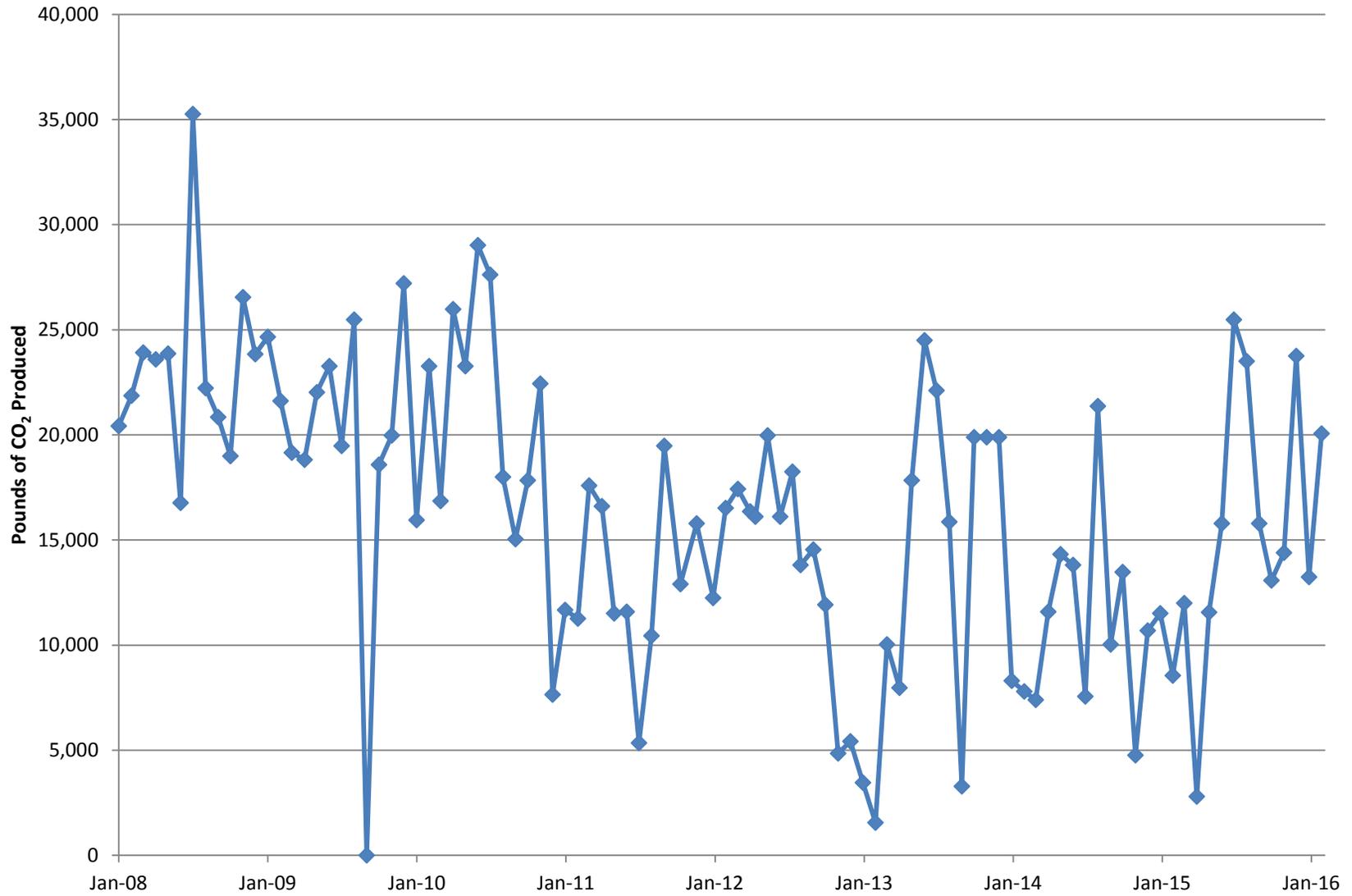


Figure 2

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



Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 199

Reporting Period: 27 January 2016 – 26 February 2016

Date Submitted: 14 March 2016

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

System Metrics

Table 1 presents operational data from the February 2016 reporting period.

Table 1 – Operations Summary – February 2016			
Initial Data Collection:	1/27/2016 13:35	Final Data Collection:	2/26/2016 13:30
Operating Time:		Percent Uptime:	Electrical Power Usage:
CGWTP:	711.5 hours	CGWTP:	98.8%
		CGWTP:	1,643 kWh (2,251 lbs CO ₂ generated ^a)
Gallons Treated: 1,115,400 gallons		Gallons Treated Since January 1996: 522.1 million gallons	
VOC Mass Removed from groundwater:		VOC Mass Removed Since January 1996:	
2.43 lbs^b		2,740 lbs from groundwater	
		8,686 lbs from vapor	
Rolling 12-Month Cost per Pound of Mass Removed: \$1,502 ^c			
Monthly Cost per Pound of Mass Removed: \$2,833 ^c			
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.			
^b Calculated using February 2016 EPA Method SW8260C 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 during the monthly reporting period.

Table 2 – CGWTP Average Flow Rates^a – February 2016	
Location	Average Flow Rate Groundwater (gpm)
EW001x16	14.4
EW002x16	6.8
EW003x16	0.14
EW605x16	5.8
EW610x16	2.9
CGWTP	26.1

^a Flow rates calculated by dividing total gallons processed by system operating time for the month or the average of the instantaneous readings.
gpm = gallons per minute

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

Table 3 – Summary of System Shutdowns					
Location	Shutdown^a		Restart^a		Cause
	Date	Time	Date	Time	
CGWTP	22 February 2016	11:56	22 February 2016	13:41	Phase interruption.
CGWTP	25 February 2016	11:30	25 February 2016	14:50	Install new check valve.
CGWTP	26 February 2016	09:57	26 February 2016	13:20	Perform routine maintenance on system.

^a Shutdown and restart times estimated based on field notes
CGWTP = Central Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater samples were collected at the CGWTP on 3 February 2016. Sample results are presented in Table 4. The total VOC concentration (261.9 µg/L) in the February 2016 influent sample has increased from the January 2016 sample (196.8 µg/L). TCE was detected in the influent sample at a concentration of 221 µg/L. Chloromethane and vinyl chloride were detected in samples after the carbon vessels at low concentrations; however, they were not detected in the effluent sample. Travis AFB will continue to monitor influent, midpoint, and effluent concentrations at the CGWTP for carbon breakthrough, though the carbon treatment remained effective in February 2016. Total petroleum hydrocarbons were not detected in the effluent sample.

Figure 1 presents a plot of influent concentrations (total VOCs) and the influent flow rate at the CGWTP versus time for the past twelve (12) months. The overall flow rate through the treatment plant has decreased slightly over the past 12 months. A slow and steady decrease in the EW001x16 flow rate has been observed.

The CGWTP was shut down in February three times for various reasons. On 22 February, the CGWTP was shut down for approximately 1.5 hours because of a power-phase interruption. On 25 February, the CGWTP was shut down for approximately 3 hours to install a new check valve prior to the filter assembly and bypass the secondary transfer pump. The secondary transfer pump is designed to assist the main transfer pump during periods of high influent flow (~100 gpm or more), which the CGWTP no longer experiences. On 26 February, the CGWTP was shut down for approximately 3 hours to perform routine maintenance.

The Site DP039 bioreactor continues to operate in a “pulsed mode” in order to improve the rate of remediation and to preserve the amount of total organic carbon being produced within the bioreactor. The “pulsed mode” operation continued on a two (2) week transition schedule in February 2016. The bioreactor was taken off line on 1 February, brought back on line on 12 February, and taken off line on 26 February. The bioreactor is scheduled to continue the 2-week operating schedule.

Optimization Activities

No optimization activities occurred at the CGWTP in February 2016.

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 2,251 pounds of GHG during February 2016. This is a decrease from the January 2016 amount of 3,135 pounds.

TABLE 4

Summary of Groundwater Analytical Data for February 2016 – Central Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	3 February 2016 (µg/L)			
				Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent
Halogenated Volatile Organics							
Carbon Tetrachloride	0.5	0.15	0	ND	ND	ND	ND
Chloroform	5.0	0.15	0	ND	ND	ND	ND
Chloromethane	5.0	0.15	0	0.39 J	0.57	0.16 J	ND
cis-1,2-Dichloroethene	5.0	0.15	0	36.4	ND	ND	ND
1,2-Dichlorobenzene	5.0	0.15	0	0.27 J	ND	ND	ND
1,3-Dichlorobenzene	5.0	0.15	0	0.25 J	ND	ND	ND
1,4-Dichlorobenzene	5.0	0.15	0	0.15 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	0.15	0	0.71	ND	ND	ND
Methylene Chloride	5.0	0.15	0	ND	ND	ND	ND
Methyl tert-Butyl Ether	1.0	0.15	0	ND	ND	ND	ND
Tetrachloroethene	5.0	0.15	0	0.49 J	ND	ND	ND
1,1,1-Trichloroethane	5.0	0.15	0	ND	ND	ND	ND
1,1,2-Trichloroethane	5.0	0.15	0	ND	ND	ND	ND
Trichloroethene	5.0	0.15 – 1.5	0	221	ND	ND	ND
trans-1,2-Dichloroethene	5.0	0.15	0	2.09	ND	ND	ND
Vinyl Chloride	0.5	0.15	0	0.18 J	ND	0.29 J	ND
Non-Halogenated Volatile Organics							
Benzene	1.0	0.15	0	ND	ND	ND	ND
Ethylbenzene	5.0	0.15	0	ND	ND	ND	ND
Toluene	5.0	0.15	0	ND	ND	ND	ND
Total Xylenes	5.0	0.15 – 0.30	0	ND	ND	ND	ND
Other							
Total Suspended Solids (mg/L)	NA	0.6	0	10.6	NM	NM	NM
Total Petroleum Hydrocarbons – Gasoline	50	30	0	NM	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	29	0	NM	NM	NM	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 due to a detected concentration value between the reporting limit and method detection limit for the contaminant

NA = not applicable

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

ND = not detected

NM = not measured

µg/L = micrograms per liter

mg/L = milligrams per liter

Table 5 presents a twelve month summary of the Site DP039 bioreactor recirculation well pulsing dates.

Table 5 – Summary of DP039 Bioreactor “Pulsed Mode” Operations		
Location	Pulse On Start Date	Pulse Off Start Date
MW750x39	13 February 2015	27 March 2015
	10 April 2015	24 April 2015
	8 May 2015	22 May 2015
	5 June 2015	19 June 2015
	3 July 2015	17 July 2015
	31 July 2015	14 August 2015
	28 August 2015	11 September 2015
	1 October 2015	9 October 2015
	23 October 2015	6 November 2015
	20 November 2015	8 December 2015
	21 December 2015	31 December 2015
	15 January 2016	1 February 2016
	12 February 2016	26 February 2016

MW = Monitoring Well

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

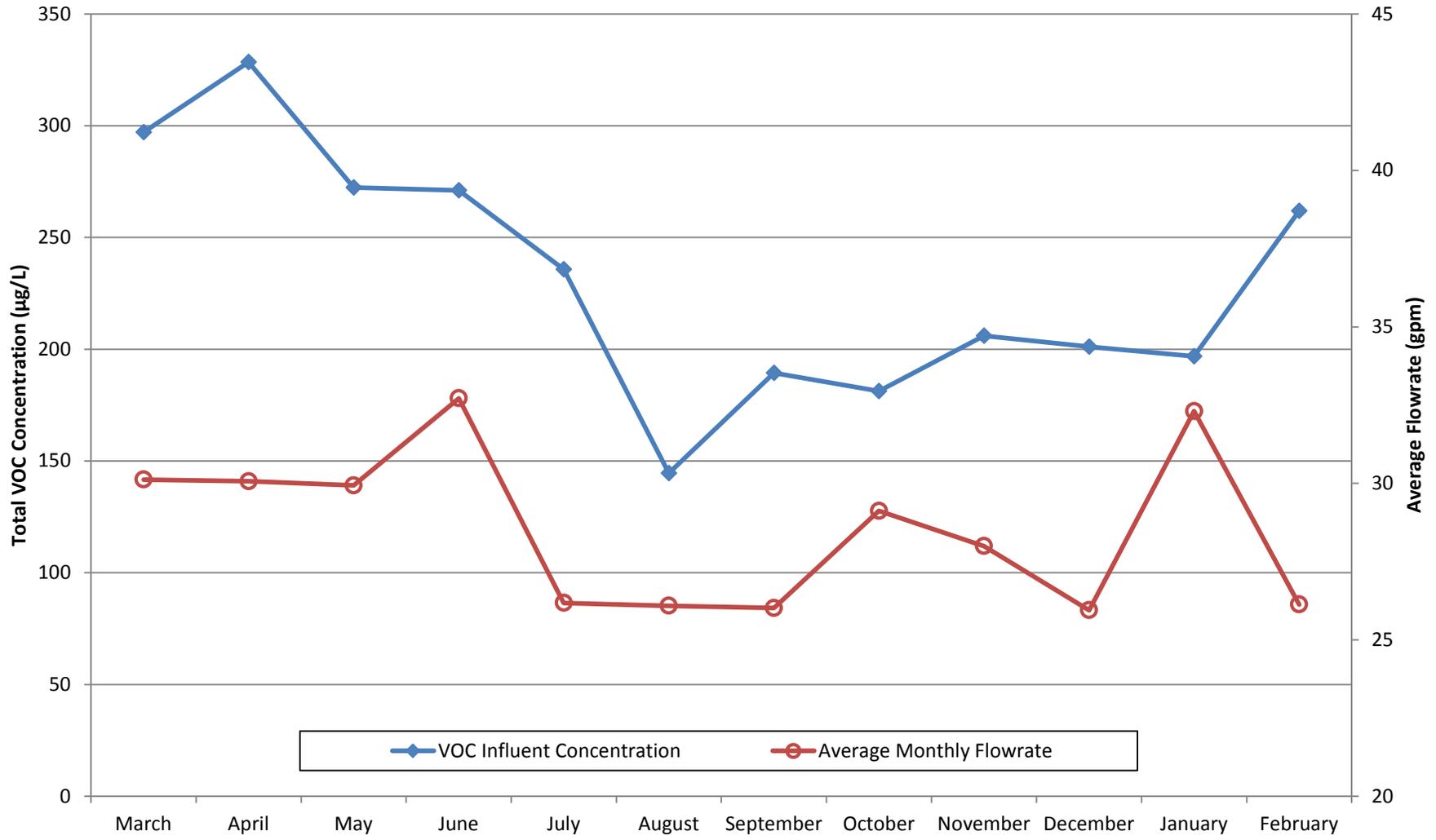
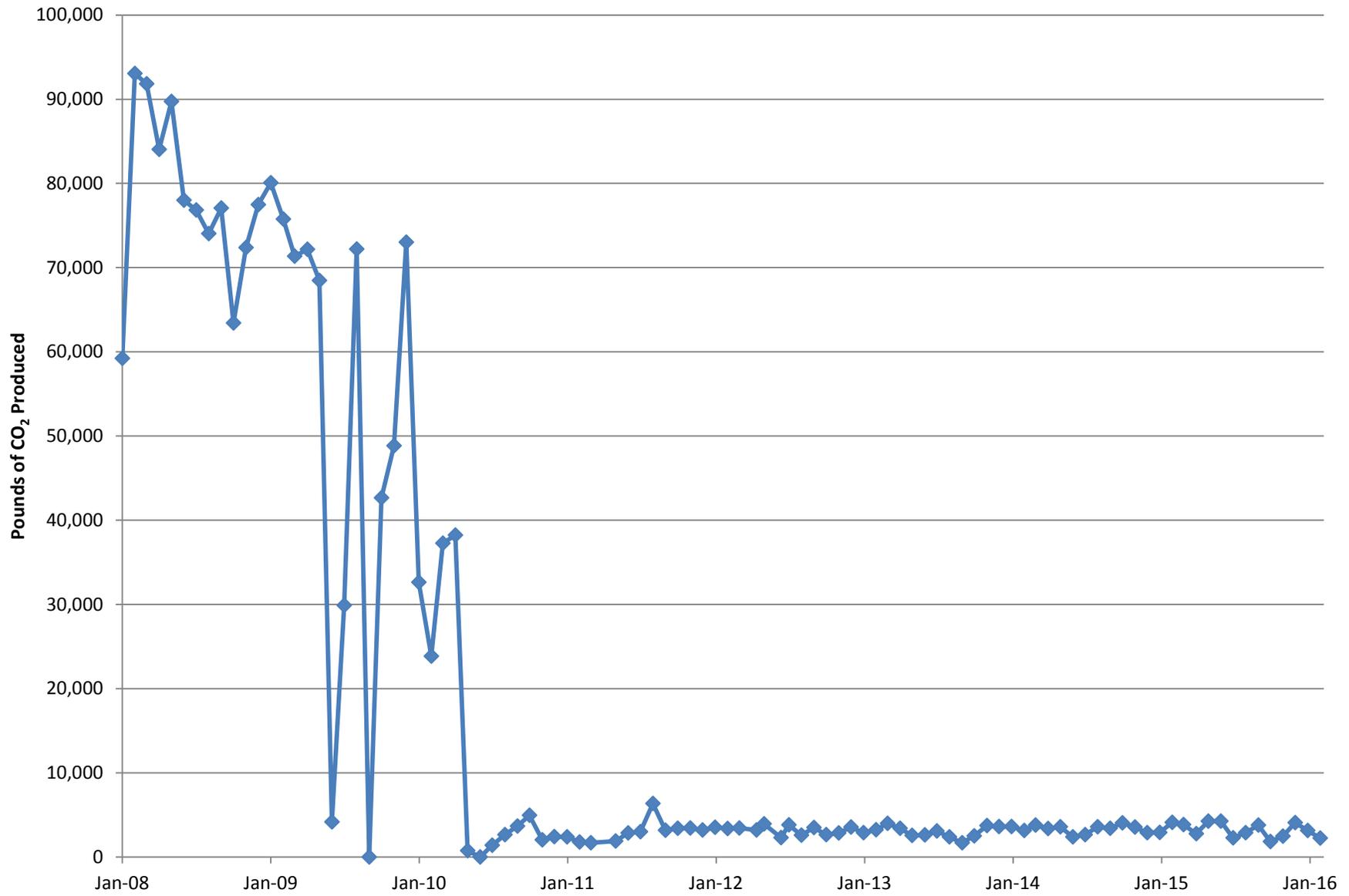


Figure 2

Equivalent Pounds of CO2 Produced by the Central Groundwater Treatment Plant



Site ST018 Groundwater Treatment Plant Monthly Data Sheet

Report Number: 060

Reporting Period: 27 January 2016 – 26 February 2016

Date Submitted: 14 March 2016

This monthly data sheet presents information regarding the Site ST018 Groundwater Treatment Plant (ST018GWTP).

System Metrics

Table 1 presents operation data from the February 2016 reporting period.

Table 1 – Operations Summary – February 2016			
Initial Data Collection:	1/27/2016 14:10	Final Data Collection:	2/26/2016 14:00
Operating Time:		Percent Uptime:	Electrical Power Usage:
ST018GWTP: 625 hours		ST018GWTP: 86.8%	ST018GWTP: 137 kWh (188 lbs CO₂ generated^a)
Gallons Treated: 219,100 gallons		Gallons Treated Since March 2011: 9.24 million gallons	
Volume Discharged to Sanitary Sewer: 219,100 gallons		Final Totalizer Reading: 9,242,489 gallons	
Cumulative Volume Discharged to Sanitary Sewer since 1 November 2014: 2,746,300 gallons			
MTBE, BTEX, VOC, TPH Mass Removed: 0.56 lbs^b		MTBE, BTEX, VOC, TPH Mass Removed Since March 2011: 35.2 lbs	
MTBE (Only) Removed: 0.19 lbs^b		MTBE (Only) Mass Removed Since March 2011: 8.5 lbs	
Rolling 12-Month Cost per Total Pounds of Mass Removed: \$10,158 ^{bc}			
Monthly Cost per Pound of Mass Removed: \$12,040 ^{bc}			
^a Based on Department of Energy estimate that 1 kilowatt hour generated produces 1.37 pounds of GHG.			
^b Calculated using February 2016 EPA Method SW8260C and SW8015B analytical results.			
^c Costs include operations and maintenance, reporting, analytical laboratory, project management, and utility costs related to operation of the system.			
kWh = kilowatt hour			
lbs = pounds			

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

Table 2 – ST018GWTP Average Flow Rates – February 2016		
Location	Average Flow Rate Groundwater (gpm)^a	Hours of Operation
EW2014x18	1.1	623
EW2016x18	1.2	625
EW2019x18	1.5	599
EW2333x18	1.8	619
Site ST018 GWTP	5.8	625

^a Flow rates calculated by dividing total gallons processed by amount of operating time of the pump/system.
gpm = gallons per minute
ST018GWTP = Site ST018 Groundwater Treatment Plant

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

Table 3 – Summary of System Shutdowns					
Location	Shutdown^a		Restart^a		Cause
	Date	Time	Date	Time	
ST018GWTP	19 February 2016	09:30	--	--	Tank Hi Hi alarm
ST018GWTP	23 February 2016	09:10	23 February 2016	10:45	Control problems
ST018GWTP	24 February 2016	09:20	24 February 2016	10:45	Control problems

-- = Time not recorded
^a Shutdown and restart times estimated based on field notes
ST018GWTP = Site ST018 Groundwater Treatment Plant

Summary of O&M Activities

Monthly groundwater treatment samples were collected at the ST018GWTP on 3 February 2016. Results are presented in Table 4. The complete February 2016 laboratory data report is available upon request.

The influent concentration for MTBE during the January 2016 sampling event was 102 µg/L, which is an increase from the January 2016 sample result of 49.7 µg/L. TPH-d (73.5 J µg/L), TPH-g (91.6 J µg/L), and benzene (1.68 µg/L) are a few of the other contaminants detected in the influent sample. No TPH contaminant concentrations were detected after the first carbon vessel. MTBE was detected after the second carbon vessel at a concentration of 4.59 µg/L. No contaminant concentrations were detected at the effluent sampling location, except for chloromethane (0.41 J µg/L). All detected concentrations of TPH are well below the Fairfield-Suisun Sewer District effluent limitation for TPH of 50,000 µg/L. Travis AFB will continue to monitor effluent contaminant concentrations and evaluate the condition of the carbon filter beds.

Figure 1 presents plots of the flow rate and influent total contaminant (TPH-g, TPH-d, MTBE, BTEX, and VOCs) and MTBE concentrations at the ST018GWTP over the past twelve (12) months. As shown on Figure 1, the total influent concentration has decreased to levels within the range of the past twelve months. The

average flow rate through the ST018GWTP has been seasonally variable with a slight decreasing trend. The February 2016 flow rate of 5.8 gpm has increased since the January 2016 flow rate of 3.6 gpm.

Between 19 and 24 February 2016, the ST018GWTP shutdown several times because of a tank Hi Hi alarm and control problems.

Optimization Activities

No optimization activities occurred at the ST018GWTP in February 2016.

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 ST018GWTP system.

The ST018GWTP produced 188 pounds of GHG during February 2016 and treated 219,100 gallons of water, which was an increase from the amount of GHG produced during January 2016 (121 pounds, treating 145,700 gallons). Figure 2 presents the historical GHG production from the ST018GWTP. The overall GHG generation has been decreasing since a 2012 peak, and remains considerably lower than traditional GWTPs since the system is predominantly powered by solar arrays. The previous increasing GHG production reflected an inverse relationship between solar exposure in the fall and winter relative to GHG production.

TABLE 4

Summary Of Groundwater Analytical Data for January 2016 – Site ST018 Groundwater Treatment Plant

Constituent	Instantaneous Maximum* (µg/L)	Detection Limit (µg/L)	N/C	3 February 2016 (µg/L)			
				Influent	After Carbon 1	After Carbon 2	System Effluent
Fuel Related Constituents							
Methyl tert-Butyl Ether	6,400	0.15	0	102	NM	4.59	ND
Benzene	25,000 ^a	0.15	0	1.68	NM	ND	ND
Ethylbenzene	25,000 ^a	0.15	0	0.83	NM	ND	ND
Toluene	25,000 ^a	0.15	0	0.18 J	NM	ND	ND
Total Xylenes	25,000 ^a	0.15 – 0.30	0	2.01	NM	ND	ND
Total Petroleum Hydrocarbons – Gasoline	50,000 ^b	30	0	91.6 J	ND	NM	ND
Total Petroleum Hydrocarbons – Diesel	50,000 ^b	28.3	0	73.5 J	ND	NM	ND
Total Petroleum Hydrocarbons – Motor Oil	100,000	29	0	36.0 J	ND	NM	ND
Other							
Chloromethane	5.0	0.15	0	ND	NM	0.47 J	0.41 J
1,2-Dichloroethane	0.5	0.15	0	1.35	NM	ND	ND
Trichloroethene	5.0	0.15	0	0.27 J	NM	ND	ND

* In accordance with the Fairfield-Suisun Sewer District Effluent Limitations Laboratory data available on request.

a – The limit of 25,000 µg/L is a combined limit for BTEX.

b – The limit of 50,000 µg/L is a combined limit for TPH-g and TPH-d

µg/L = micrograms per liter

J = analyte concentration is considered an estimated value due to a detected concentration value between the reporting limit and method detection limit for the contaminant

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

ND = not detected above method detection limit

NM = not measured this month

Figure 1
ST018GWTP Total VOC and MTBE Influent Concentrations
and Average Flowrate Twelve Month History
Travis Air Force Base, California

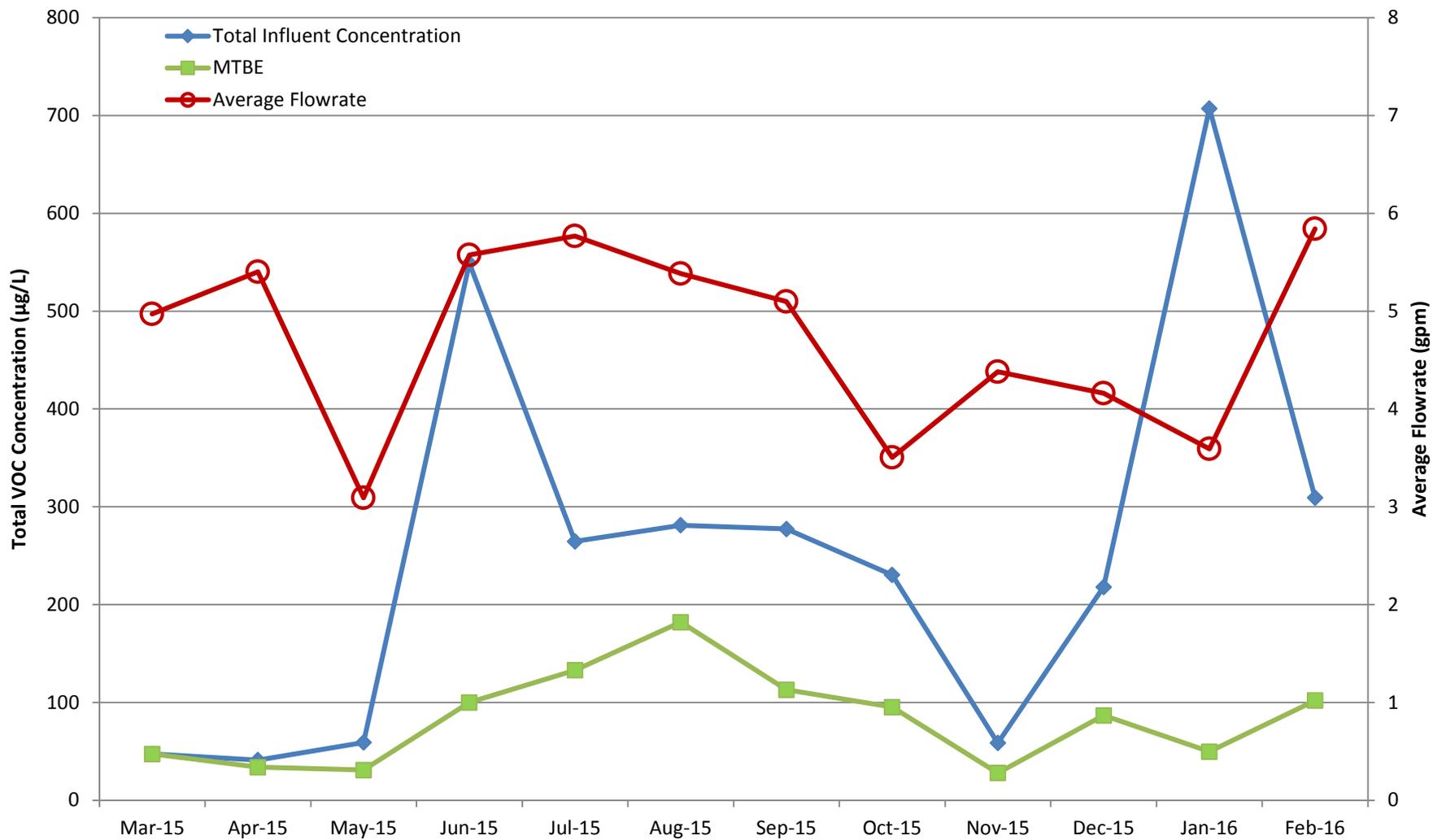
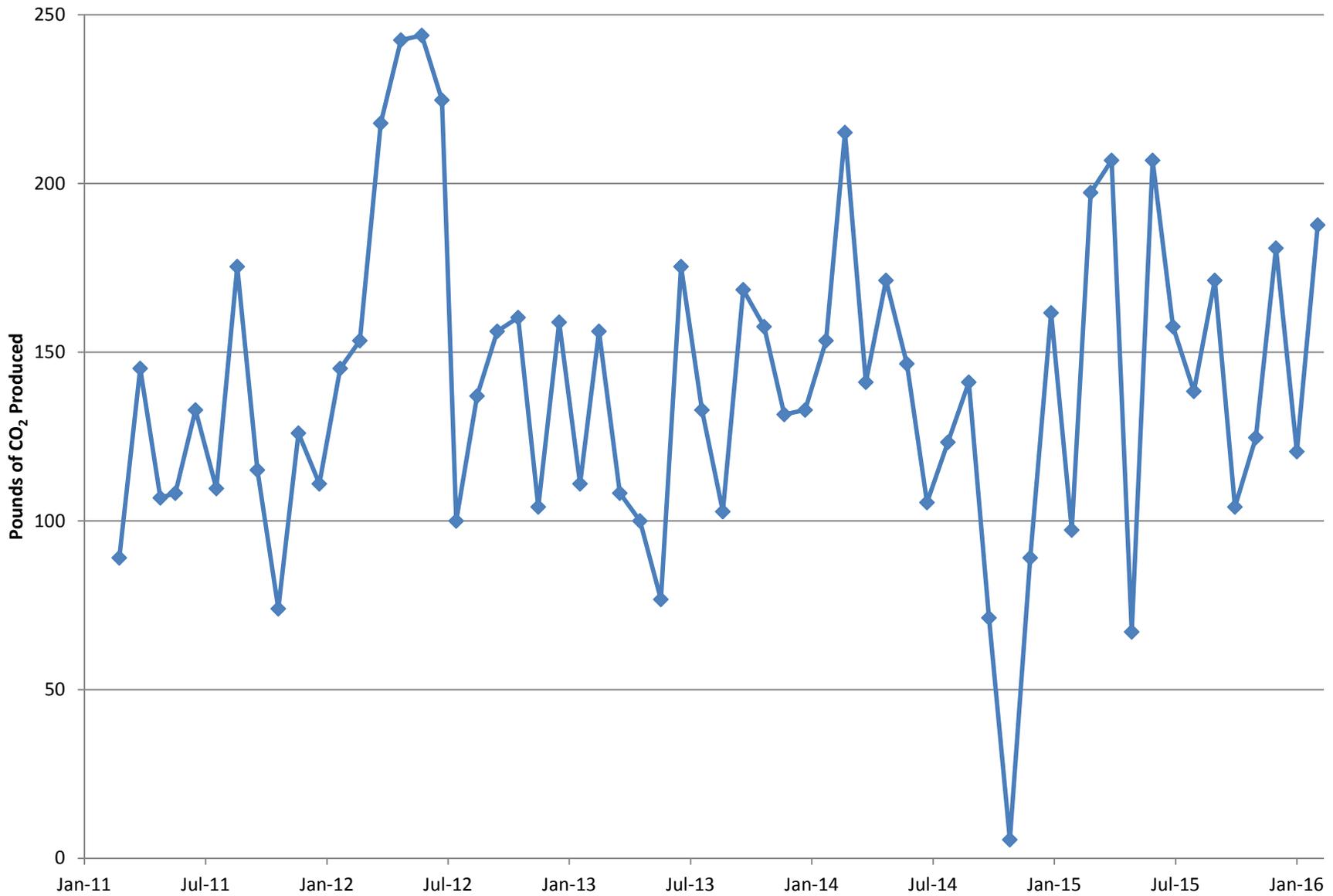


Figure 2
Equivalent Pounds of CO₂ Produced by the Site ST018 Groundwater Treatment Plant



Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046

RPM Meeting
March 16, 2016

Agenda

- Purpose of DGI
- Site SD033 Background
- SD033 Data Gap
- Site SD043 Background
- SD043 Data Gap
- Site SS046 Background
- SS046 Data Gap
- Conceptual Design
- Soil Sampling
- ROD Amendment
- Reporting

Purpose of Data Gap Investigation (DGI)

- Reassess the need to conduct additional remedial actions at Sites SD033, SD043, and SS046, in order to remove current land use controls (LUCs).
- Collect additional soil samples at these three (3) sites to evaluate the extent of soil contamination and support reevaluation of human health risks under a residential exposure scenario.
- Previous remedial investigations and human health risk assessments identified soil chemicals of concern (COCs)
 - SD033 – *West Industrial Operable Unit Remedial Investigation Report* (WIOU RI; Radian, 1996)
 - SD043 & SS046 – *West/Annexes/Basewide Operable Unit Remedial Investigation Report* (WABOU RI; CH2M HILL, 1997)

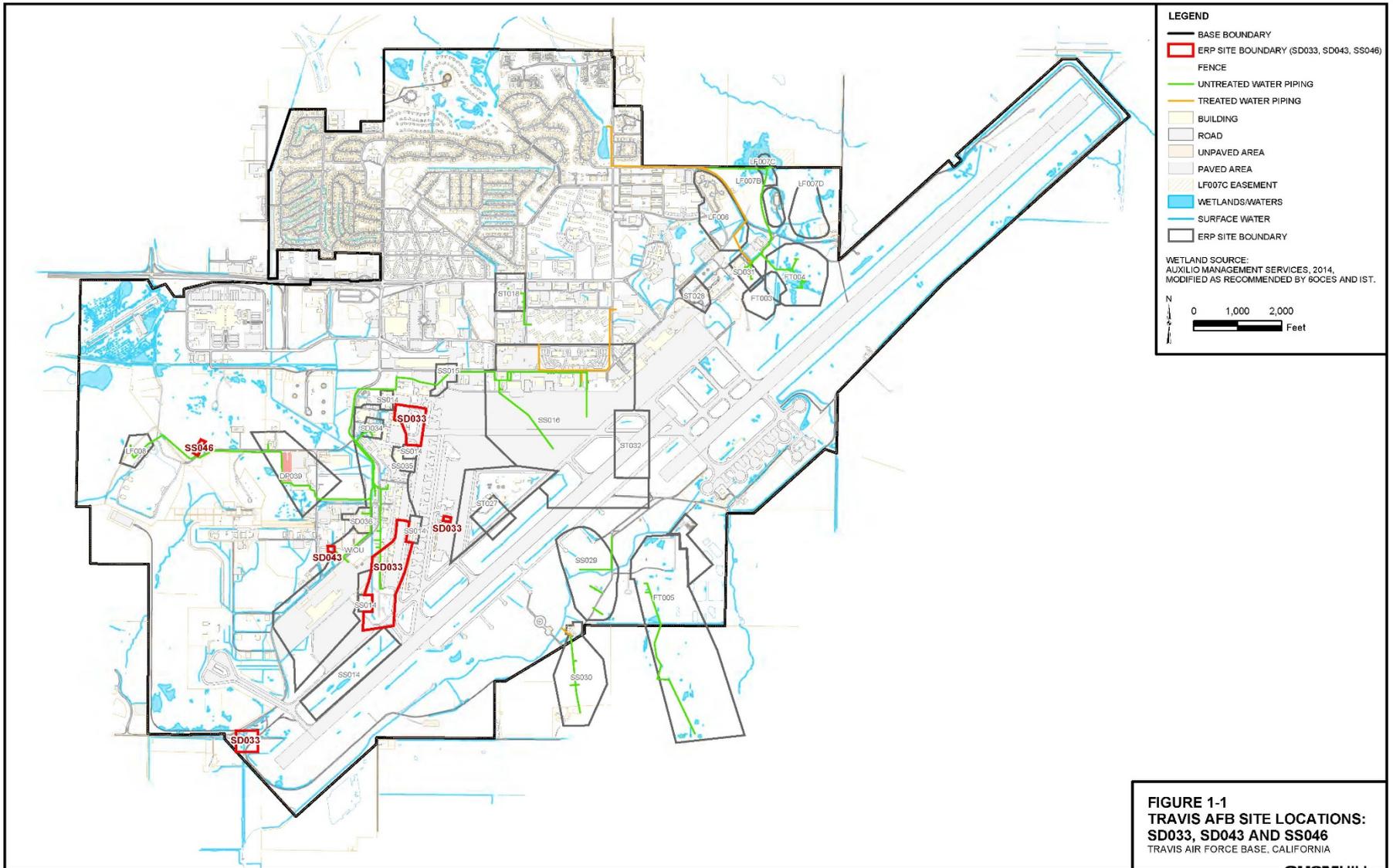


FIGURE 1-1
TRAVIS AFB SITE LOCATIONS:
SD033, SD043 AND SS046
 TRAVIS AIR FORCE BASE, CALIFORNIA

Site SD033 Background

- Site SD033 includes the west branch of Union Creek, parts of Storm Sewer II, Facilities 810 and 1917, the area around the South Gate, and Outfall III
- Site investigations are documented in the Final WIOU RI Report; and the selected remedial action for Site SD033 is documented in the *North/East/West Industrial Operable Unit Soil, Sediment, and Surface Water Record of Decision* (NEWIOU SSSW ROD; URS, 2006)
- Remedial action included a sediment excavation of the west branch of Union Creek and LUCs for cadmium- and benzo(a)pyrene-contaminated soil at Facility 810.
 - In 2009 sediment remedial action was successfully carried out and documented in the *Sites SD001 and SD033 Remedial Action Report* (ITSI, 2010)

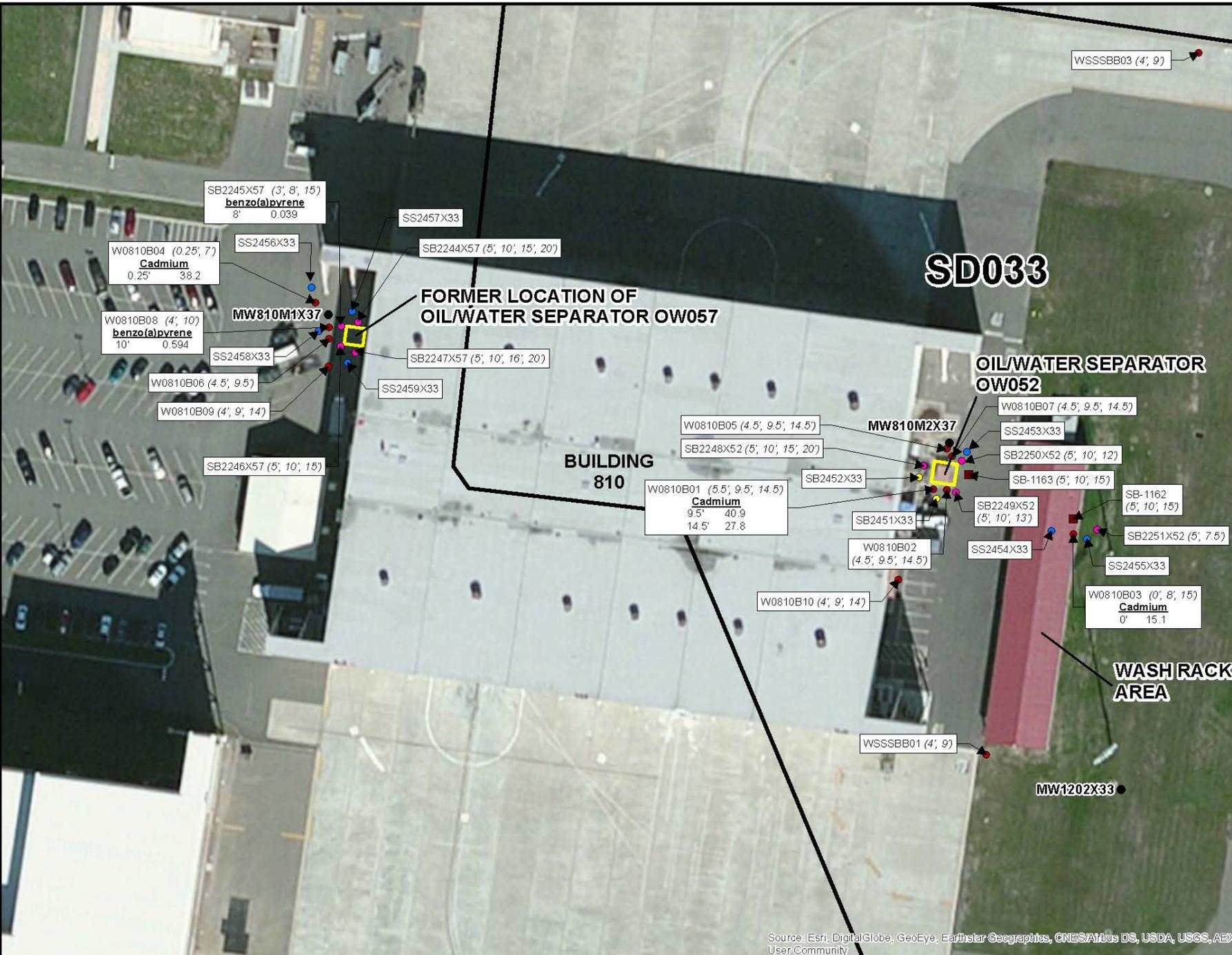
Site SD033 Background

- Facility 810 at Site SD033 was constructed in 1955 and is currently used for aircraft refurbishing activities. A former OWS (OW057) was located on the west side of the facility and an OWS (OW052) still exists on the east side of the facility. Waste generated at the facility included PD-680, paints, solvents, lubricants, PCBs, and fuels.
- Soil COCs at Facility 810 are benzo(a)pyrene and cadmium.
- Previous soil samples collected at Facility 810 include:
 - Surface soil samples collected from 2 locations and subsurface soil samples collected from 13 locations in 1992 and 1996 (RCRA Facility Assessment [Weston, 1992]; and WIOU RI [Radian, 1996])
 - Subsurface soil samples collected from 8 locations during the 2015 OW052 and OW057 DGI (CH2M HILL, 2015)

Site SD033 Data Gap

There are two (2) main data gaps at Site SD033:

1. The benzo(a)pyrene detection limits for several historical samples exceed the current residential risk-based screening level (RBSL); therefore, the extent of benzo(a)pyrene in soil is uncertain.
2. During the WIOU RI, only two (2) surface soil samples were collected from Site SD033. Additional surface soil samples for analysis of cadmium and benzo(a)pyrene are needed to support an evaluation of the extent of surface soil contamination.



LEGEND

- MONITORING WELL
- 1992 SOIL SAMPLE [Weston]
- 1996 RADIUM SAMPLE [Radon]
- 2015 DEPTH SOIL SAMPLE (Depth)
- 2016 DEPTH SAMPLE
- 2016 DEPTH BORING

NOTE:
 All soil samples for metals. Soil COC exceeding RBSL below RBSL (not benzo(a)pyrene and 1996 exceed PAH = Polynuclear Aromatic Hydrocarbons
 RBSL = Risk Based Soil Level
 Results in mg/kg



FIGURE 1
SITE SOIL DATA
 MEMORANDUM
 SD043
 TRAVIS

Site SD043 Background

- Building 916 (Site SD043) is an emergency power generator facility located in the west-central portion of the WABOU.
- In 1992, an electrical transformer staged on a concrete pad along the southwest corner of Building 916 leaked PCB-laden oil into the surface soil. The transformer and concrete pad were removed in 1993.
- Site investigations are documented in the Final WABOU RI Report; and the selected remedial action for Site SD043 is documented in the *WABOU Soil ROD* (Travis AFB, 2002).
- Remedial action selected for soil at Site SD043 is land use and access restrictions for contaminated soil at Facility 916.
- The soil COC at Site SD043 is PCB-1254.
- In 2003, a new concrete pad with a generator was constructed in the vicinity of the spill area, increasing the footprint of the LUC at SD043.

Site SD043 Data Gap

There are two (2) main data gaps at Site SD043:

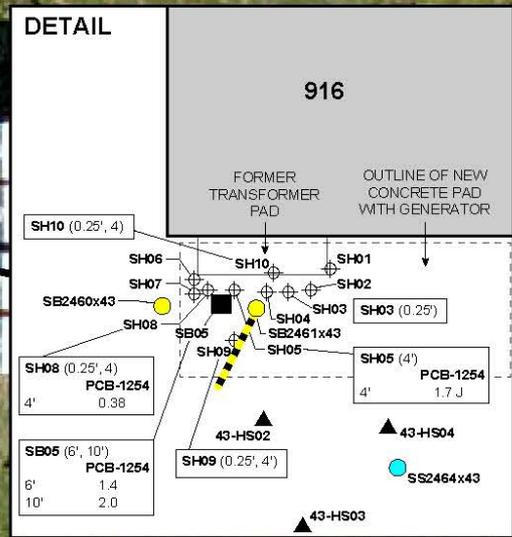
1. During the initial RI surface and subsurface samples were collected and analyzed for PCBs using immunoassay field screening methods. The detection limit of this field screening method was not sufficiently sensitive for comparison against the current residential RBSL (0.22 mg/kg) and only six (6) soil boring samples were analyzed at an offsite laboratory.
2. Construction of a new concrete pad after the WABOU Soil ROD was finalized may have displaced contaminated soil; therefore the current extent of PCB-1254 in soil is uncertain.



LEGEND

- GROUNDWATER MONITORING WELL
- 2016 DATA GAP INVESTIGATION SURFACE SOIL SAMPLE LOCATION
- 2016 DATA GAP INVESTIGATION SOIL BORING LOCATION
- ⊕ HISTORICAL SOIL SAMPLE LOCATION
- PIEZOMETER
- ▲ SCAPS PIEZOMETER
- RI IN-SITU SAMPLE
- FENCE
- ANGLD SOIL BORING TRAJECTORY
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- ▭ ERP SITE BOUNDARY

NOTE: SH01 THROUGH SH07 WERE SCREENED IN THE FIELD USING IMMUNOASSAY TESTING THAT INDICATED WHERE PCB CONCENTRATIONS WERE > OR < 1. ONLY SAMPLES INDICATED ON "DETAIL" BLOWOUT WERE ANALYZED IN AN OFFSITE LABORATORY FOR PCBs (METHOD SW8080). SOIL COCs WITH POSITIVE DETECTIONS EXCEEDING RBSLS ARE POSTED. ALL OTHER DETECTIONS WERE BELOW RBSLS (REFER TO TABLE 3).



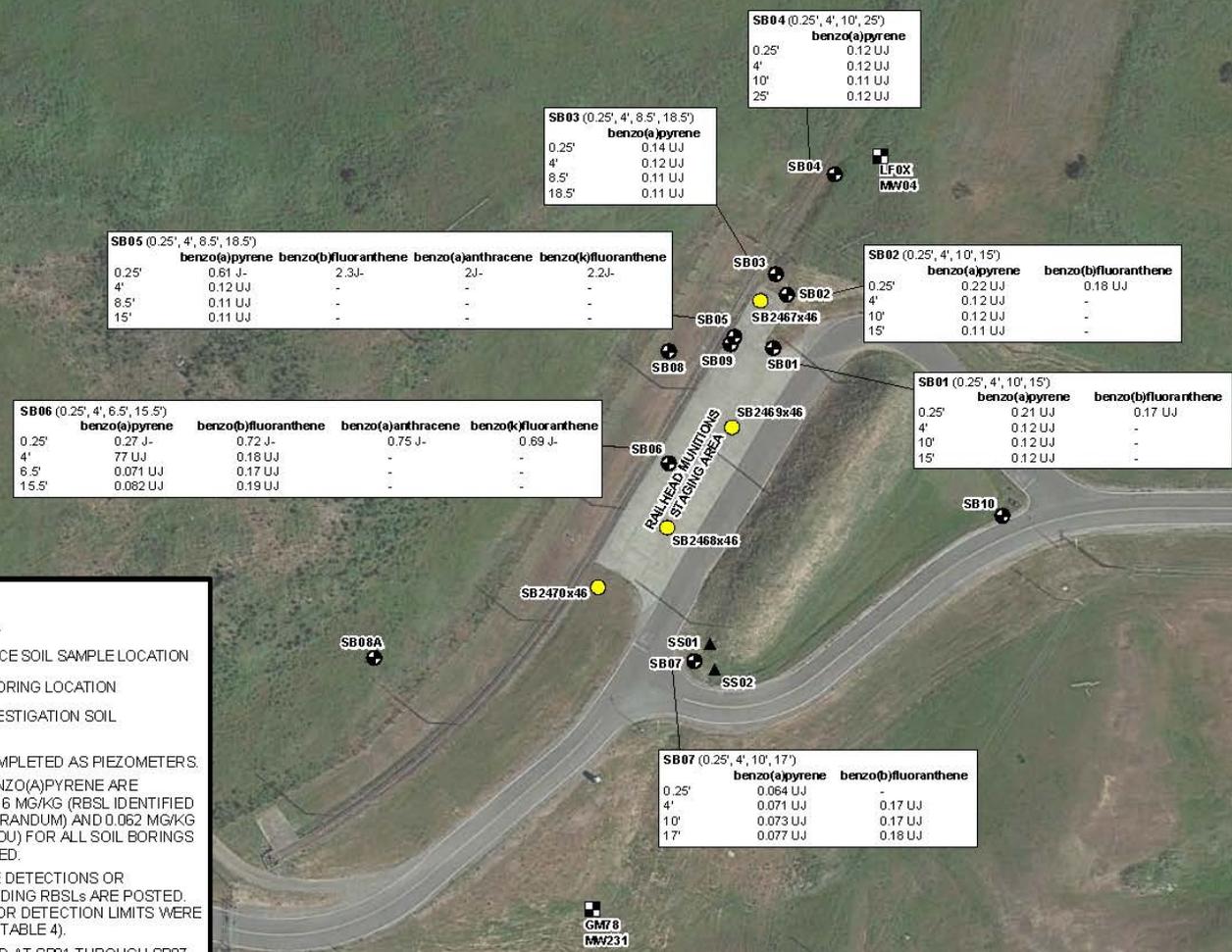
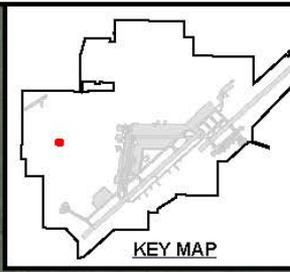
Site SS046 Background

- Site SS046, the Railhead Munitions Staging Area, is located in the north-central portion of the WABOU.
- The site formerly served as the railhead at the south terminus for a spur off the Northern Sacramento Railroad, and from 1953 to 1962 Site SS046 also served as a weapons-handling facility.
- Site investigations are documented in the Final WABOU RI Report; and selected remedial action for Site SS046 is documented in the *WABOU Soil ROD* (Travis AFB, 2002).
- Remedial action selected for soil at Site SD043 is land use and access restrictions for contaminated soil at Facility 916.
- The soil COCs at Site SS046 are benzo(a)pyrene, benzo(b)fluoranthene, benzo(a)anthracene, and benzo(k)fluoranthene.

Site SS046 Data Gap

There is one (1) main data gap at Site SS046:

1. Historical soil data collected from seven (7) borings for site COCs did not adequately delineate the extent of soil PAH contamination to current residential RBSLs. Additional surface and subsurface soil samples are needed to support an evaluation of the extent of soil contamination.



MONITORING WELL
 HISTORICAL SURFACE SOIL SAMPLE LOCATION
 HISTORICAL SOIL BORING LOCATION
 DATA GAP INVESTIGATION SOIL BORING LOCATION
 SB02 AND SB10 COMPLETED AS PIEZOMETERS.
 DETECTION LIMITS OF BENZO(A)PYRENE ARE LOWER THAN BOTH 0.016 MG/KG (RBSL IDENTIFIED IN WABOU) AND 0.062 MG/KG (RBSL IDENTIFIED IN WABOU) FOR ALL SOIL BORINGS BY DEPTH ANALYZED.
 SAMPLES WITH POSITIVE DETECTIONS OR DETECTION LIMITS EXCEEDING RBSLS ARE POSTED.
 OTHER DETECTIONS OR DETECTION LIMITS WERE NOT POSTED (REFER TO TABLE 4).
 SAMPLES COLLECTED AT SB01 THROUGH SB07 WERE ANALYZED FOR SVOCs (SW6270), METALS (SW6010), AND PCBs (SW7421).
 SOIL SAMPLES (SS01 AND SS02) WERE ANALYZED FOR PCBs.
 DETECTION LIMITS ARE BASED ON THE RISK BASED SCREENING LEVEL (RBSL).
 ESTIMATED VALUE, LOW
 ESTIMATED VALUE, HIGH
 NOT-DETECT, ESTIMATED VALUE
 CONCENTRATION IN MG/KG



Aerial courtesy of Google™ Earth Pro. Image ©2015, Google.

FIGURE 3
SITE SS046 MAP WITH SOIL SAMPLE LOCATIONS
 DATA GAP INVESTIGATION TECHNICAL MEMORANDUM FOR SOIL SITES SD033, SD043, AND SS046
 TRAVIS AIR FORCE BASE, CALIFORNIA

Approach/Conceptual Design

- The conceptual design and approach for the soil data gap investigation is to collect additional soil samples to support an evaluation of the extent of soil contamination at Sites SD033, SD043, and SS046 under a residential scenario.

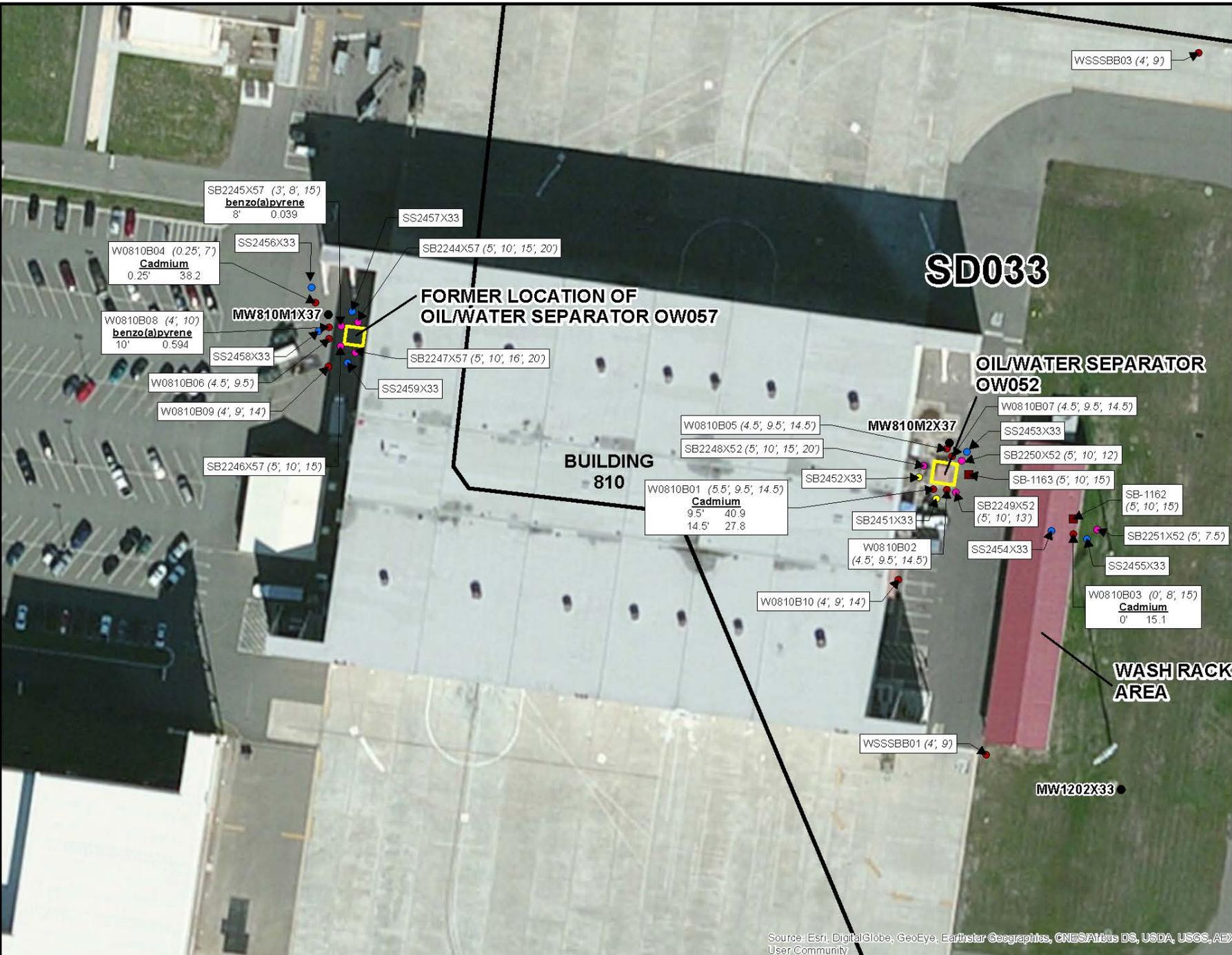
TABLE 1 Current Soil Residential Risk-based Screening Levels for Site COCs Data Gap Investigation Technical Memorandum for Soil Sites SD033, SD043, and SS046, Travis Air Force Base California						
COC	EPA Residential RSL ^a (mg/kg)		DTSC Residential Recommended SL ^b (mg/kg)	Water Board Residential ESLs ^c (mg/kg)		Residential RBSL (mg/kg)
	1 × 10 ⁻⁶ Cancer Risk	Chronic HQ = 1		Shallow Soil (< 3 m bgs)	Deeper Soil (> 3 m bgs)	
Benzo(a)pyrene	0.016	-	-	0.038	0.038	0.016
Benzo(b)fluoranthene	0.16	-	-	0.38	0.38	0.16
Benzo(a)anthracene	0.16	-	-	0.38	0.38	0.16
Benzo(k)fluoranthene	1.6	-	-	0.38	0.38	0.38
Cadmium	2,100	71	5.2	12	78	5.2
PCB-1254	0.24	1.2	-	0.22	0.22	0.22

^a 2015 EPA Residential RSLs (EPA, 2015)
^b DTSC Recommended Screening Levels for Soil, HHRA Note 3 (OEHHA, 2015)
^c ESLs (Water Board, 2013)

Notes:
bgs = below ground surface
HQ = hazard quotient
m = meter(s)
mg/kg = milligram(s) per kilogram
RSL = regional screening level
SL = screening level

Soil Sampling

- Site SD033 Soil Sampling Plan:
 - Soil samples will be collected from two (2) new soil borings (from 0 to 0.5', 4' to 5', 9' to 10', and 14' to 15' bgs) and seven (7) new surface soil samples (from 0 to 0.5', from the top of native soil beneath any cover material).
 - All soil samples will be analyzed for site soil COCs, cadmium (Method SW6010C) and benzo(a)pyrene (Method SW8270SIM), except surface soil samples beneath asphalt, which will only be analyzed for cadmium.



WSSSB03 (4', 9')

SB2245X57 (3', 8', 15')
benzo(a)pyrene
8' 0.039

W0810B04 (0.25', 7')
Cadmium
0.25' 38.2

W0810B08 (4', 10')
benzo(a)pyrene
10' 0.594

W0810B06 (4.5', 9.5')

W0810B09 (4', 9', 14')

SB2246X57 (5', 10', 15')

SS2457X33

SB2244X57 (5', 10', 15', 20')

FORMER LOCATION OF OIL/WATER SEPARATOR OW057

SB2247X57 (5', 10', 16', 20')

SS2459X33

BUILDING 810

W0810B01 (5.5', 9.5', 14.5')
Cadmium
9.5' 40.9
14.5' 27.8

W0810B05 (4.5', 9.5', 14.5')
SB2248X52 (5', 10', 15', 20')

W0810B02 (4.5', 9.5', 14.5')

W0810B10 (4', 9', 14')

WSSSB01 (4', 9')

SD033

OIL/WATER SEPARATOR OW052

W0810B07 (4.5', 9.5', 14.5')

SS2453X33

SB2250X52 (5', 10', 12')

SB-1163 (5', 10', 15')

SS2454X33

SB2249X52 (5', 10', 13')

SB-1162 (5', 10', 15')

SB2251X52 (5', 7.5')

SS2455X33

W0810B03 (0', 8', 15')
Cadmium
0' 15.1

WASH RACK AREA

MW1202X33

WSSSB02

LEGEND

- MONITORING POINT
- 1992 Soil Sample [Weston]
- 1996 Radon Sample [Radon]
- 2015 D Soil Sample [Depth]
- 2016 D Soil Sample
- 2016 D Boring

NOTE:
All soil samples for metals. Soil COC values exceeding RBSL (Risk Based Screening Levels) below RBSLs (for benzo(a)pyrene and 1996 exceedance).
PAH = Polynuclear Aromatic Hydrocarbons
RBSL = Risk Based Screening Level
Results in mg/kg



FIGURE 1
SITE SOIL DATA
MEMORANDUM
SD033
TRAVIS

Soil Sampling

- Site SD043 Soil Sampling Plan

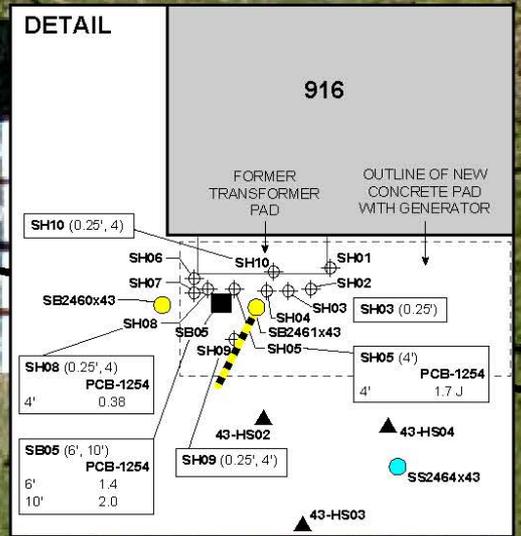
- Soil samples will be collected from two (2) new soil borings (from 0 to 0.5', 4' to 5', and 9' to 10' bgs) and five (5) new surface soil samples (from 0 to 0.5').
- All soil samples will be analyzed for site soil COC PCB-1254 (Method SW8082A)
- The two soil borings are positioned to collect samples on the east and west sides of SB05, the soil boring samples during the WABOU RI with the highest concentrations of PCBs. In order to sample to the east of SB05, the emergency generator adjacent to Building 916 will need to be removed, or an angled boring will need to be drilled from the southwest corner of the concrete pad.



LEGEND

- GROUNDWATER MONITORING WELL
- 2016 DATA GAP INVESTIGATION SURFACE SOIL SAMPLE LOCATION
- 2016 DATA GAP INVESTIGATION SOIL BORING LOCATION
- ⊕ HISTORICAL SOIL SAMPLE LOCATION
- PIEZOMETER
- ▲ SCAPS PIEZOMETER
- RI IN-SITU SAMPLE
- FENCE
- ANGLD SOIL BORING TRAJECTORY
- APPROXIMATE GROUNDWATER FLOW DIRECTION
- ▭ ERP SITE BOUNDARY

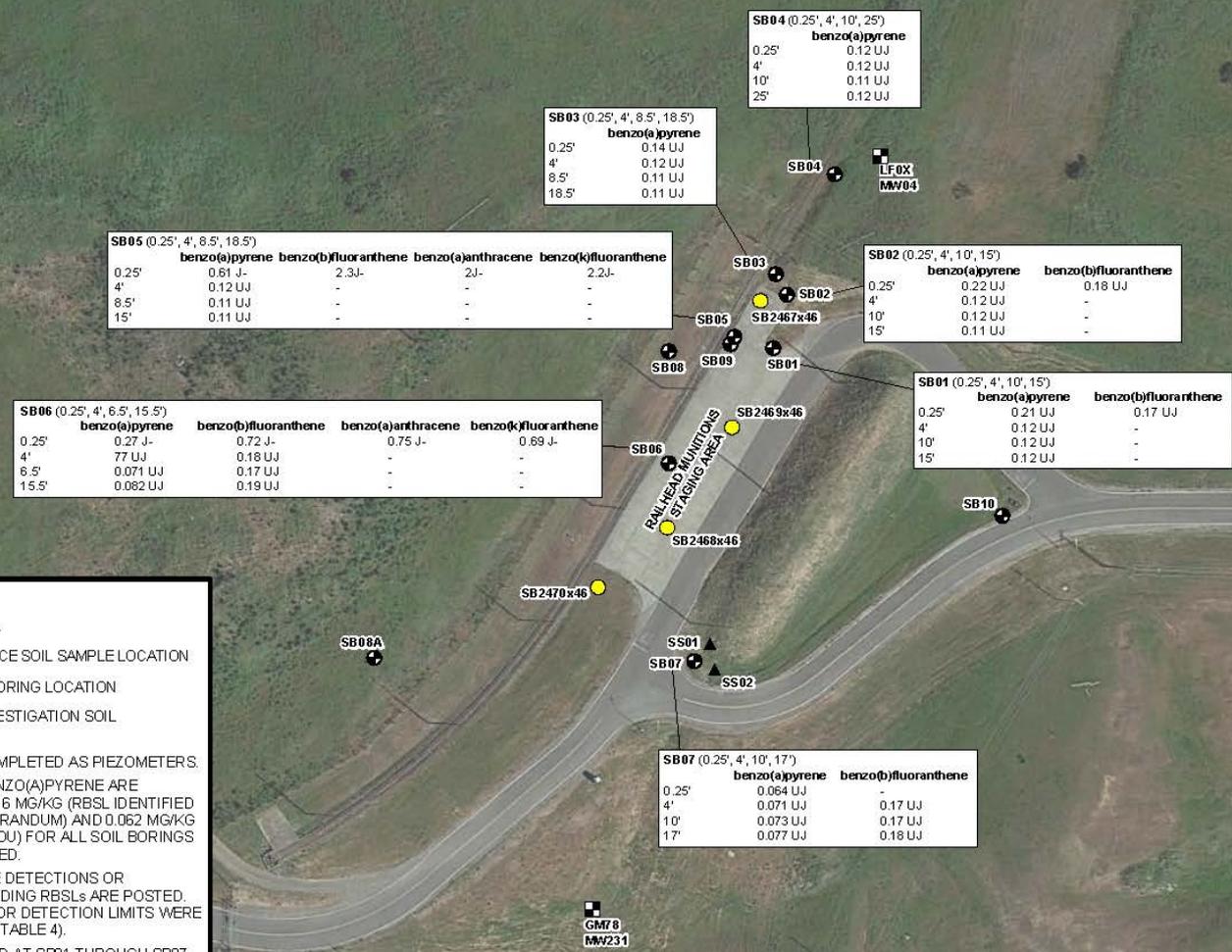
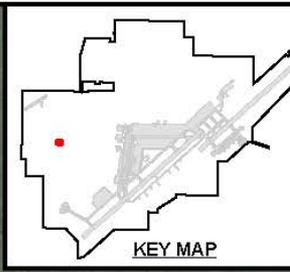
NOTE: SH01 THROUGH SH07 WERE SCREENED IN THE FIELD USING IMMUNOASSAY TESTING THAT INDICATED WHERE PCB CONCENTRATIONS WERE > OR < 1. ONLY SAMPLES INDICATED ON "DETAIL" BLOWOUT WERE ANALYZED IN AN OFFSITE LABORATORY FOR PCBs (METHOD SW8080). SOIL COCs WITH POSITIVE DETECTIONS EXCEEDING RBSLs ARE POSTED. ALL OTHER DETECTIONS WERE BELOW RBSLs (REFER TO TABLE 3).



Soil Sampling

- Site SS046 Soil Sampling Plan

- Soil samples will be collected from four (4) new soil borings (from 0 to 0.5', 4' to 5', 9' to 10', and 14' to 15' bgs).
- All soil samples will be analyzed for site soil COCs, benzo(a)pyrene, benzo(b)fluoranthene, benzo(a)anthracene, and benzo(k)fluoranthene (Method SW8270C-SIM)



MONITORING WELL
 HISTORICAL SURFACE SOIL SAMPLE LOCATION
 HISTORICAL SOIL BORING LOCATION
 DATA GAP INVESTIGATION SOIL BORING LOCATION
 SB02 AND SB10 COMPLETED AS PIEZOMETERS.
 DETECTION LIMITS OF BENZO(A)PYRENE ARE LOWER THAN BOTH 0.016 MG/KG (RBSL IDENTIFIED IN WABOU) AND 0.062 MG/KG (RBSL IDENTIFIED IN WABOU) FOR ALL SOIL BORINGS BY DEPTH ANALYZED.
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 SAMPLES COLLECTED AT SB01 THROUGH SB07 AND FOR SVOCs (SW6270), METALS (SW6010), AND PCBs (SW7421).
 SOIL SAMPLES (SS01 AND SS02) WERE ANALYZED FOR PCBs.
 DETECTION LIMITS BASED SCREENING LEVEL (RBSL) ESTIMATED VALUE, LOW
 DETECTION LIMITS BASED SCREENING LEVEL (RBSL) ESTIMATED VALUE, HIGH
 DETECTION LIMITS BASED SCREENING LEVEL (RBSL) NOT-DETECT, ESTIMATED VALUE
 CONCENTRATIONS IN MG/KG



Aerial courtesy of Google™ Earth Pro. Image ©2015, Google.

FIGURE 3
SITE SS046 MAP WITH SOIL SAMPLE LOCATIONS
 DATA GAP INVESTIGATION TECHNICAL MEMORANDUM FOR SOIL SITES SD033, SD043, AND SS046
 TRAVIS AIR FORCE BASE, CALIFORNIA

ROD Amendment

- Upon completion of the data gap investigation, the Air Force will update the risk assessment calculations that supported the selected remedies.
- The new calculations under a residential scenario will be used to determine whether additional actions at these sites would support the removal of current LUCs.
- If the Air Force decides to conduct additional remedial actions beyond the ROD-selected remedy, then the sites will be included in an amendment to the applicable ROD.

Reporting

- Results of the data gap investigation and the updated human health risk assessment (HHRA) calculations for the residential scenario will be reported in a technical memorandum following the field activities.

Questions?

Travis AFB Restoration Program

Program Update

RPM Meeting

March 16, 2016

Completed Documents

- Vapor Intrusion Assessment Update Technical Memorandum
- 2012 CAMU Annual Report
- Old Skeet Range Action Memorandum
- 3rd Five-Year Review
- 2012 Annual Groundwater Remediation Implementation Status Report (GRISR)
- Subarea LF007C and Site SS030 Remedial Process Optimization Work Plan
- Pre-Design Site Characterization of SS029 Report
- Old Skeet Range Removal Action Work Plan
- 2013 CAMU Inspection Annual Report
- Groundwater Record of Decision (ROD)
- CG508 POCO Work Plan
- 2013 Annual GRISR
- FT004 Technology Demonstration Work Plan
- Kinder Morgan LF044 Land Use Control Report
- SD031 Technology Demonstration Work Plan
- TA500 Data Gap Investigation Work Plan
- ST018 POCO Work Plan Addendum
- SD037 GW RD/RA Work Plan
- Travis AFB UFP-QAPP
- DP039 Lead Excavation Technical Memo

Completed Documents (cont'd)

- Proposed Plan for ROD Amendment to WABOU Soil ROD
- Proposed Plan for ROD Amendment to NEWIOU Soil, Sediment, & Surface Water ROD
- SD034 Data Gap Investigation Work Plan
- POCO Investigation Work Plan for Oil-Water Separators
- ST032 POCO Soil Excavation Work Plan
- SD036 GW RD/RA Work Plan
- SS016 GW RD/RA Work Plan
- SS015 GW RD/RA Work Plan
- FT005 Technology Demonstration Work Plan
- 2014 Annual CAMU Monitoring Report
- Old Skeet Range PAH Delineation Report
- ST028 POCO Work Plan
- SS014 POCO TD Work Plan
- CG508 Site Investigation/Site Closure Request Report
- 2014 Annual CAMU Monitoring Report
- DP039 GW RD/RA Work Plan
- SD031 TDCCR
- ST018 POCO CCR
- Site SS030 Groundwater RA CCR
- Sites SD036 and SD037 Groundwater RACCR
- Site SS016 Groundwater RACCR
- Site SS015 Groundwater RACCR
- **2014 Annual GRISR**

Completed Field Work

- Replace battery banks at ST018 Groundwater Treatment Plant
- Annual Groundwater Remediation Implementation Program (GRIP) Sampling event
- Well Decommissioning (9 Wells)
- Electrical repairs to FT005 extraction system (well EW01x05)
- Electrical repairs to Site SS029 extraction system
- Site ST018 carbon vessels upgrade
- 2014 GRIP Semiannual Sampling Event
- Pump repairs to Site SS016 well (EW610x16)
- Subsite LF007C optimization upgrades
- 2014 Annual GRIP Sampling Event
- Biological Resource Assessment
- Site CG508 Site Investigation
- Old Skeet Range Characterization Sampling
- 4Q Semiannual GRIP Sampling Event
- SD031 Technology Demonstration Well Installation
- SD037 Well Installation
- SD031 Trench/Conveyance/Power Installation
- SD031 EVO Injection
- ST018 Well Installation
- SS015 Well Installation
- SS016 Well Installation
- Well Development (SD036, SD037)
- ST018 Trench/Conveyance/Power Installation
- SD036 EVO Injection
- Well Development (SS015, SS016)
- Baseline Sampling (SS015, SS016)
- SS014 Data Gap Investigation
- SS016 EVO Injection
- TA500 Data Gaps Investigation

Completed Field Work

- 2015 Annual GRIP Sampling
- SD037 EVO Injection
- SD034 Data Gaps Investigation
- SS015 EVO Injection
- FT005 Injection Well Installation
- OWS 47, 48, 49 Site Investigations
- SS030 Trench/Conveyance/Power Installation
- FT005 Trench Installation
- FT005 Well Development
- FT004 Well Installation, Well Development, Baseline Sampling
- FT005 Baseline Sampling
- DP039 Well Installation, Well Development, Baseline Sampling
- FT004 EVO Injection
- FT004 Trench/Conveyance/Power Installation
- DP039 Infiltration Trench Installation
- TA500 Groundwater Sampling

Documents In-Progress

CERCLA

- Site SD031 Soil Remedial Investigation Work Plan
- Data Gap Investigation TM for Soil Sites SD033, SD043, & SS046
- Site CG508 Well Decommissioning Work Plan
- Site FT004 TD Construction Completion Report

Documents In-Progress

POCO

- Corrective Action Plan for DERA-Funded Oil Water Separators

Field Work In-Progress

- FT005 EVO Injection
- DP039 EVO Injection

Documents Planned

CERCLA

- Community Involvement Plan Mar
- 2015 Annual CAMU Monitoring Report Mar
- Site TS060 Action Memorandum Mar
- Site SD034 Technology Demonstration Work Plan Apr
- Site TS060 Removal Action Work Plan Apr
- Multi-Site Bioaugmentation Technology Demonstration Work Plan May
- 2015 Annual GRISR Jun
- Site FT005 Technology Demonstration Construction Completion Report TBD
- Site DP039 RD/RA Construction Completion Report TBD
- Site SS016 RD/RA Soil Work Plan TBD

Documents Planned

POCO

- Site ST032 POCO Completion Report Mar
- Site ST028 POCO Completion Report Mar

Field Work Planned

CERCLA

- SD031 Soil Remedial Investigation May
- SD034 Technology Demonstration Well Installation Jun
- TS060 Removal Action Jun
- Data Gap Inv. for Soil Sites (SD033, SD043, SS046) Jun
- SD034 Technology Demonstration Bioreactor Installation Jul

Note: Contact Lonnie Duke if you would like to observe planned field work events

Field Work Planned

POCO

- Oil Water Separators Step-out Drilling Jun
- Oil Water Separators (12) Removal Jun
- CG508 Well Decommissioning Jun
- SS014 Bioreactor Installation Aug

Note: Contact Lonnie Duke if you would like to observe planned field work events

Completed Documents (Historical1)

- Basewide Health & Safety Plan (HSP)
- Action Plan
- 2007/2008 GSAP Annual Report
- LF007C RPO Work Plan
- LF008 Rebound Study Work Plan
- SS014 Tier 1 POCO Evaluation Work Plan
- ST027B Site Characterization Work Plan
- SS030 RPO Work Plan
- ST032 POCO Technical Memo
- DP039 Bioreactor Work Plan
- 2008 Annual GWTP RPO Report
- Passive Diffusion Bag (PDB) Technical Memo
- RD/RA QAPP Update
- ST032 Tier 1 POCO Evaluation Work Plan
- Phytostabilization Demonstration Technical Memo
- Model QAPP
- LF008 Rebound Test Technical Memo
- Comprehensive Site Evaluation Phase II Work Plan
- Field Sampling Plan (FSP)
- SS016 RPO Work Plan
- ST018 POCO RA Work Plan
- Vapor Intrusion Assessment Report
- GSAP 2008/2009 Annual Report
- FT005 Data Gap Work Plan
- First, Second, & Third Site DP039 Sustainable Bioreactor Demonstration Progress Reports
- DP039 RPO Work Plan
- SD036/SD037 RPO Work Plan
- ST027B Site Characterization Report
- 2009 GWTP RPO Annual Report
- Natural Attenuation Assessment Report (NAAR)
- Union Creek Sites SD001 & SD033 Remedial Action Report
- CAMU 2008-2009 Monitoring Annual Report

Completed Documents (Historical 2)

- Phytostabilization Study Report
- 2009/2010 Annual GSAP Report
- SS015 Remedy Optimization Field Implementation Plan
- Sites SS014 and ST032 Tier 1 POCO Evaluation Report
- SD036 Remedy Optimization Field Implementation Plan
- 2010 Annual CAMU Inspection Report
- Site ST018 POCO Baseline Implementation Report
- FT005 Data Gaps Investigation Report
- Comprehensive Site Evaluation Phase II Report
- 2010 Groundwater RPO Annual Report
- Focused Feasibility Study (FFS)
- Site ST027-Area B Human Health Risk Assessment
- Site ST027-Area B Ecological Risk Assessment
- Work Plan for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- 2010/2011 Annual GSAP Report
- Baseline Implementation Report (Sites SS015, SS016, SD036, SD037, and DP039)
- 2011 CAMU Annual Report
- Technical and Economic Feasibility Analysis (TEFA)
- Work Plan for RPO of Sites SS016 and SS029
- Site LF007C Data Gaps Investigation Technical Memorandum
- Technical Memorandum for Assessment of Aerobic Chlorinated Cometabolism Enzymes
- Old Skeet Range Engineering Evaluation/Cost Analysis
- 2011 Groundwater Treatment RPO Annual Report
- Groundwater Proposed Plan (PP)
- FT005 Remedial Action Completion Report
- 2012 GSAP Technical Memorandum¹⁴

Completed Field Work (Historical1)

- ST027B Gore Sorber Survey–Phase 1
- ST027B Field Sampling – Phase 2
- GSAP 2008 Semi-annual Event
- ST027B Installation of Wells – Phase 3
- SS014 Site Characterization
- LF008 Rebound Study
- GSAP Annual Sampling Event - 2009
- SS030 Site Characterization–Phase 1
- ST027 Site Characterization -Phase 3
- ST014 Monitor Well Install - Subsite 3
- SD001/SD033 Sediment RA
- SS016 Site Characterization (OSA source area)
- ST018 Site Characterization
- SS030 Site Characterization (Off-base VOC Plume)
- DP039 Site Characterization (for Biobarrier Placement)
- SS014 & ST032 Q1 2010 MNA Sampling (2nd of 4 quarterly events)
- SD036 Additional Site Characterization (north & east)
- Therm/Ox System Removal
- SS016 Monitoring Well Installation
- SD037 EVO Injection Well Installation
- DP039 Monitoring Well & Injection Well Installation
- DP039 EVO Injection
- SD037 Monitoring Well Installation
- GSAP 2010 Annual Sampling Event
- SD037 EVO Injection
- SS015 Site Characterization
- South Plant GAC Change-out
- FT005 Data Gap Investigation
- SS016 Position Survey of EW03
- SS016 Bioreactor Installation
- SS016 Bioreactor Baseline Sampling
- DP039 Biobarrier Quarterly Performance Sampling

Completed Field Work (Historical 2)

- DP039 Bioreactor Quarterly Performance Sampling
- SD037 EVO Quarterly Performance Sampling
- SS015 EVO Baseline Sampling
- SD036 EVO Baseline Sampling
- SS016 Bioreactor Startup
- SD036 Injection Wells Installation
- SS015 Injection Wells Installation
- ST018 GETS Installation
- SD036 EVO Injection
- 2010 Semiannual GSAP
- SS015 EVO Injection
- Quarterly RPO Performance Monitoring (Feb 2011)
- ST018 GETS Startup
- Quarterly RPO Performance Monitoring (May 2011)
- 2011 Annual GSAP Sampling
- SS029 GET Shutdown Test (System Optimization analysis)
- Quarterly RPO Performance Monitoring (Aug 2011)
- Quarterly RPO Performance Monitoring (Nov 2011)
- 2011 Semiannual GSAP Sampling
- LF007C Site Characterization (Wetlands)
- FT005 Soil Remedial Action
- Performance Monitoring SS015 (4th Quarterly event)
- Sampling for Assessment of Aerobic Chlorinated Cometabolism Enzymes (Feb 21-22)
- 2012 Annual GSAP Sampling
- CAMU Lysimeter Removal
- LF007C GET System Optimization
- SS029/SS016 System Optimization Analysis
- GSAP Semiannual Sampling Event
- Replace electrical wiring for well field at Site SS030

	Community Involvement Plan Questionnaire	Summary of Responses
1.	How long have you lived in this community?	Range from 20 to 50 years.
2.	What environmental issues are you most interested/concerned with? Let me know if you have spoken to anyone about your issues/concerns and when.	Surface water and groundwater, fuel spills and delivery, preservation of habitat and wetlands, Environmental Stewardship and being a good neighbor.
3.	Are you aware of any activities that are currently underway to clean up environmental contamination at Travis AFB? If so, do you feel these activities are adequate?	Aware of cleanup and feel efforts are adequate.
4.	Do you believe that your health could be affected by contamination or cleanup activities at Travis AFB? Do you believe that these cleanup activities have an impact on the local economy? If so, is it positive, negative, or both?	Not concerned with a negative impact on their health and feel the cleanup is good for the economy.
5.	Do you think residents in the community believe that their health could be affected by contamination or cleanup activities at Travis AFB? Do you think residents and/or businesses in the community believe that these cleanup activities have an impact on the local economy? If so, is it positive, negative, or both?	Varies - Some feel the community is confident they are safe from contamination on Travis and that cleanup is helping the community. Others felt that most people are unaware of contamination, and don't have an opinion on whether their health is affected or not or if the cleanup efforts are impacting the economy.
6.	Do you believe that the public has confidence in the performance of the Air Force environmental cleanup program to address contamination on Travis AFB and perform cleanup correctly and completely?	Those that are aware of such activities probably have confidence, especially if they know EPA and DTSC are involved in overseeing the effort. Others felt that the public is generally unaware of the work being done at Travis but if they were to read about it, they would feel confident that the work is beneficial. The takeaway would be positive.
7.	Do you have confidence in the Environmental Protection Agency and the State's ability to assess potential impacts associated with the cleanup at Travis AFB?	Yes
8.	Have you attended any community Restoration Advisory Board (RAB) meetings or tours regarding the cleanup activities at Travis AFB? If so, how effective do you feel these community meetings/tours have been? Is there any additional training you feel you may need that you do not think you will receive from the RAB meetings and tours?	RAB meetings attended, newspapers not sharing the good news, no additional training needed. RAB tours will help.
9.	Travis AFB provides various avenues of communication to the public via a newsletter (The Guardian), the public website, RAB meetings, and access to an online Administrative Record. To continue to strengthen these avenues, what aspects do you think the Air Force could improve in providing the community with information about Travis AFB's cleanup program? If you feel more outreach is necessary, would you be willing to inform others of Travis' progress by speaking at events or other meeting opportunities?	Newspapers could help with improving outreach. More articles in local newspapers. Most would be willing to speak at events to spread the news.
10.	What type of additional information or articles would you like to see presented in the Travis AFB newsletter (The Guardian) and/or how can we better inform you about the cleanup activities at Travis AFB in this publication? What would you change in the newsletter? Would you be interested in contributing to the newsletter as a contributing author or an editorial?	No recommended improvements to newsletter and no response on contributing to future articles.