

**Travis Air Force Base  
Environmental Restoration Program  
Restoration Program Manager's  
Meeting Minutes  
18 August 2021, 0930 Hours**

Mr. Lonnie Duke of the Air Force Civil Engineer Center (AFCEC) Restoration Installation Support Section (ISS) conducted the Restoration Program Manager's (RPM) teleconference on 18 August at 0930 hours.

The 60 AMW/CC at Travis Air Force Base (AFB) has directed Health Protection Condition (HPCON) Bravo + (changed from HPCON Bravo) in response to the evolving COVID-19 public health situation in the local area. Masks are required on-base, regardless of vaccination status. The base continues to encourage teleworking and virtual meetings in place of in-person meetings. Essential missions will continue, and visitors are permitted with an approved base pass.

**All attendees participated via telephone or Microsoft TEAMS due to increased teleworking measures meant to reduce the number of employees on the base at one time. Attendees included:**

Lonnie Duke	AFCEC/CZOW
Chet Storrs	AFCEC/CZOW
Mobashir Ahmad	AFCEC/CZOW
Angel Santiago	AFCEC/CZOW
Dave Leeson	AFCEC/CZRW
Kurt Grunawalt	Travis AFB 60 AMW/JA
Louis Briscese	Travis AFB 60 AMW/PA
Rich Anderson	USACE-Omaha
Jessica Faragalli	USACE-Sacramento
Brian Boccellato	USACE-Omaha
Paul Gedbaw	USACE-Omaha
Alan Soicher	USACE-Omaha
Nadia Hollan Burke	EPA
Adriana Constantinescu	RWQCB
Kimiye Touchi	DTSC
David Kremer	DTSC
Megan Duley	SRS
Diane Escobedo	SRS
Leslie Royer	CH2M/Jacobs
Mike Bedan	CH2M/Jacobs
Jill Dunphy	CH2M/Jacobs

Handouts distributed prior to the meeting included:

Attachment 1	Meeting Agenda
Attachment 2	Master Meeting and Document Schedule
Attachment 3	SBBGWTP Monthly Data Sheet (July 2021)
Attachment 4	CGWTP Monthly Data Sheet (July 2021)
Attachment 5	LF007C GWTP Monthly Data Sheet (July 2021)
Attachment 6	ST018 GWTP Monthly Data Sheet (July 2021)
Attachment 7	Presentation: Program Update (August 2021)
Attachment 8	Travis AFB LUC Sites Update (August 2021)
Attachment 9	Travis AFB PFOS/PFOA Update (August 2021)
Attachment 10	Presentation: Phase 1 Remedial Investigation of AFFF Areas (August 2021)

## **I. JACOBS PBR CONTRACT UPDATES**

### **A. ADMINISTRATIVE**

#### **1. Agenda and Introductions**

Mr. Duke reviewed the agenda for the meeting.

Mr. Duke introduced Mr. Anderson of the USACE Omaha, who is filling in for Ms. Miller for the remainder of the PBR.

Mr. Duke also introduced Ms. Faragalli of the USACE Sacramento, who will be the Project Manager for the upcoming Optimized Remediation Contract (ORC). Ms. Faragalli said that she is excited to be working with everyone and that the ORC should be awarded in early September.

#### **2. Previous Meeting Minutes**

There were no Department of Toxic Substances Control (DTSC) comments on the content of the July 2021 RPM Meeting Minutes. Ms. Burke of the Environmental Protection Agency (EPA) requested that in the discussion of the 2020 Annual Site LF007 Corrective Action Management Unit (CAMU) Monitoring Report discussion under the Master Meeting and Document Schedule (MMDS), the sentence be

changed to “Ms. Burke noted that she has deferred EPA review to DTSC in the past, but still requires a copy of the Draft and Final, and may review the document this time.” Ms. Constantinescu of the Regional Water Quality Control Board said she would provide comments on the July RPM Meeting Minutes by email by the next business day.

### **3. Action Item Review**

Action Item 1: Ms. Royer will provide the most recent treatment plant O&M manuals to the EPA for their document repository by the end of the PBC POP. August 2021 update: This will be completed before the end of the PBR contract. This action item remains open.

Action Item 2: Mr. Storrs will add Ms. Burke and Ms. Constantinescu to the distribution list for the 2020 Annual Site LF007 CAMU Monitoring Report, and will send the draft to them via DoDSAFE with an updated cover letter. August 2021 update: Ms. Burke and Ms. Constantinescu received the subject document. This action item is now closed.

Action Item 3: The Air Force will indicate that Northgate Pond is formerly known as the Duck Pond in the next several Site LF007C Monthly Data Sheets. August 2021 update: The Site LF007 Monthly Data Sheet has been updated as requested. This action item is now closed.

Action Item 4: Ms. Royer will look at established background concentration values for metals at the South Base Boundary GWTP in the Remedial Investigation Report for comparison to occasional exceedances in the effluent samples. August 2021 update: Going forward, a column indicating background values for metals will be added to the analytical results table in the monthly data sheet during the months when metals are included in the analysis. Because a few metals exceeded discharge limits in the June 2021 samples collected at the South Base Boundary GWTP, Table 5 of the June 2021 monthly data sheet will be updated with the background metals concentrations and source citation. The revised data sheet will be included with the final July RPM meeting minutes. This action item remains open.

Action Item 5: Ms. Constantinescu will follow up with the RWQCB NPDES staff regarding metals exceedances in the effluent samples from the SBBGWTP. August 2021 update: Going forward, a column indicating background values for metals will be added to the analytical results table in the monthly data sheet during the months when metals are included in the analysis. If there is a metals discharge exceedance, Ms. Constantinescu will confer with the RWQCB NPDES staff, taking background concentrations into consideration, to evaluate if further action is needed. This action item is now closed.

#### **4. 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 is scheduled for 0930 on 15 September 2021. It will be held as a teleconference as scheduled, via MSTeams.

Mr. Duke proposed cancelling the October Restoration Advisory Board (RAB) meeting due to the increase in COVID 19 cases in the local community and Air Force personnel, and frequently changing guidance in response to the increased case counts. He added that the ORC contractor will not have had adequate time to prepare for the meeting, and that the upcoming Community Relations Plan update survey will identify how to best reinvigorate the RAB, which may help guide how future RAB meetings are advertised and held. Mr. Storrs also noted that RAB members have not been retrieving their documents from DoDSAFE, another indication that the RAB needs some reinvigoration. Mr. Duke stated that he proposes holding two RAB meetings in 2022, in April and October, instead. He added that he had conferred with one RAB member, who concurred with canceling the meeting, particularly since the RAB, if it did convene, would not have a quorum. The regulators agreed; therefore, the October 2021 RAB meeting is officially cancelled. The October RPM meeting will remain at the scheduled day and time of October 21 at 1400, but will be held via MSTeams considering the evolving COVID 19 situation.

The 2022 Schedule was presented and includes alternating in-person and MSTeams teleconferences. If the team needs to switch back to monthly teleconferences in the future due to increased COVID precautions, the team will be notified, and the schedule will be updated accordingly. As mentioned earlier, the 2022 schedule also includes RAB meetings in April and October.

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

There is limited capability for producing document hard copies and CDs due to ongoing COVID-19 restrictions. For now, electronic versions of small documents will be emailed, and larger versions will be distributed via DOD SAFE. Hard copies and CDs cannot be made at the present time due to the CH2M/Jacobs offices being closed for COVID-19, with no access to reproduction equipment.

— Travis AFB AFFF Remedial Investigation Work Plan: The Final due date was changed to TBD. With regulatory concurrence, the

AFCEC/USACE and Oneida team is able to proceed with fieldwork with red line strike out (RLSO) Draft Final Work Plan. Mr. Storrs noted that AFCEC is working on response to comments to distribute within the next 10 business days.

- Travis AFB AFFF Remedial Investigation Quality Assurance Program Plan (QAPP): The Final due date was changed to TBD. With regulatory concurrence, the AFCEC/USACE and Oneida team is able to proceed with fieldwork with red line strike out (RLSO) Draft Final QAPP. Mr. Storrs noted that AFCEC is working on response to comments to distribute within the next 10 business days.
- Quarterly Newsletter (October 2021): There was no change to the schedule.
- 2020 Annual Groundwater Remedy Implementation Status Report (GRISR): The Response to Comments and Final due dates were changed to 31 August 2021.
- Technology Demonstration Technical Memorandum: There was no change to the schedule.
- Vapor Intrusion Assessment Report: There was no change to the schedule.
- 2020 Annual Site LF007 CAMU Monitoring Report: There was no change to the schedule. Ms. Burke said that while she has deferred comment to the DTSC in the past, she would be providing comments on this version. Mr. Duke and Ms. Royer requested that she provide them within a day or two, since the Final document is due at the end of the PBR contract. Ms. Burke provided comments during one of the breaks. Ms. Touchi added that she will be providing comments by the end of the next business day.
- Site SD031B POCO Additional Site Investigation Report: The Response to Comments and Final due dates were changed to 28 July 2021.
- Potrero Hills Annex (FS, PP, and ROD): There were no updates to the schedule.
- Community Relations Plan (CRP) Update: There was no change to the schedule. This document will be updated as a priority in the upcoming Optimized Remediation Contract, and the survey will aid in assessing how best to reinvigorate the RAB ahead of future meetings and activities/events.

— MOVED TO HISTORY:

— Site SD031 and FT004 Groundwater Sampling Results Technical Memorandum

## **B. CURRENT PROJECTS**

### **1. Treatment Plant Operation and Maintenance Update**

#### **South Base Boundary Groundwater Treatment Plant, July 2021 (Attachment 3)**

The South Base Boundary Groundwater Treatment Plant (SBBGWTP) performed at 99.8% uptime, and 5.224 million gallons of groundwater were extracted and treated in July 2021. All treated water was discharged to Union Creek. The average flow rate for the SBBGWTP was 126.1 gallons per minute (gpm). Electrical power usage was 15,976 kilowatt hours (kWh), and approximately 13,416 pounds of CO<sub>2</sub> were created (based on DOE calculation). Approximately 1.42 pounds of volatile organic compounds (VOCs) were removed in July. The total mass of VOCs removed since startup of the system is 539.9 pounds.

The SBBGWTP was shut down on 6 July 2021 for approximately an hour to update the programmable logic controller, and was restarted without issue.

In July 2021 troubleshooting was performed on two extraction wells:

- EW2785x05 – The pump motor was replaced on 6 July; the well is currently online.
- EW03x30 – The pressure transducer was replaced on 29 July; the well is currently offline.

No optimization activities were conducted in July 2021.

#### **Central Groundwater Treatment Plant, July 2021 (Attachment 4)**

The Central Groundwater Treatment Plant (CGWTP) performed at 100% uptime with approximately 828,320 gallons of groundwater extracted and treated in July 2021. All treated water was discharged to the storm sewer system which discharges to Union Creek. The average flow rate for the CGWTP was 20.0 gpm. Electrical power usage was 1,060 kWh for all equipment connected to the Central Plant, and approximately 1,672 pounds of CO<sub>2</sub> were generated. Approximately 1.16 pounds of VOCs were removed from groundwater by the treatment plant in July. The total mass of VOCs removed since the startup of the system is 11,572 pounds.

As part of the KC-46 hangar construction, two extraction wells were offline during the beginning of July during construction of extraction well vaults to avoid spills of extracted groundwater. They were restarted in mid-July, although the exact date of the restart is not known.

No optimization activities were conducted in July 2021.

#### **LF007C Groundwater Treatment Plant, July 2021 (Attachment 5)**

The Subarea LF007C Groundwater Treatment Plant (LF007C GWTP) performed at 99.6% uptime with approximately 125,531 gallons of groundwater extracted and treated in July 2021. All treated water was discharged to Northgate Pond (formerly known as the Duck Pond) for beneficial reuse. The average flow rate was 3.0 gpm. Approximately  $7.80 \times 10^{-4}$  of a pound of VOCs was removed from groundwater by the treatment plant in July. The total mass of VOCs removed since the startup of the system is 174.4 pounds. There was no electrical power usage statistics because this plant operates on solar power only.

On 19 July 2021, the system was shut down for approximately 2.5 hours to install an air vent on the GAC vessels and to install a new lid on the 55-gallon GAC drum. The system was restarted without issue.

No optimization activities were conducted in July 2021.

#### **ST018 Groundwater (MTBE) Treatment Plant, July 2021 (Attachment 6)**

Site ST018 (MTBE) Treatment Plant (ST018 GWTP) performed at 100% uptime with approximately 82,800 gallons of groundwater extracted in July 2021. All groundwater was discharged to the Fairfield – Suisun Sewer District. The average flow rate for the ST018 GWTP was 2.1 gpm. Electrical power usage for the month was 50 kWh for all equipment connected to the ST018 GWTP. The total CO<sub>2</sub> discharge equivalent equates to approximately 37 pounds. Approximately 0.03 of a pound of MTBE, BTEX, VOCs, and TPH was removed in July by the treatment plant, and 0.01 of a pound of MTBE-only was removed from groundwater. The total BTEX, MTBE and TPH mass removed since the startup of the system is 50.1 pounds, and the total MTBE mass removed since startup of the system is 12.2 pounds.

Note: Electrical power use at the ST018 GWTP is only for the alarm system and a pump that pushes influent tank water to the Fairfield-Suisun Sanitary Sewer line. The four groundwater extraction pumps in the system are all solar powered.

No optimization activities were conducted in July 2021.

**C. PRESENTATIONS**

**1. Presentation: Program Update (see Attachment 7)**

Ms. Royer reported on the status of fieldwork and documents that have been completed, are in progress, or are upcoming. Please refer to Attachment 7 for the full briefing.

**D. PROGRAM ISSUES/UPDATE**

Mr. Duke commended the overall success of the PBR contract over its lifetime. He added that he looks forward to the ORC contract and is confident that it will be equally as successful.

**E. NEW ACTION ITEM REVIEW**

No new action items identified.

**F. ACTION ITEMS**

Item #	Responsible	Action Item Description	Due Date	Status
1.	Ms. Royer	Ms. Royer will provide the most recent treatment plant O&M manuals to the EPA for their document repository by the end of the PBC POP.	30 September 2021	Open
2.	Ms. Royer	Ms. Royer will look at established background concentration values for metals at the South Base Boundary GWTP in the Remedial Investigation Report for comparison to occasional exceedances in the effluent samples.	18 August 2021	Open



## **II. TRAVIS AFB UPDATES**

### **A. Land Use Control Sites, August 2021 (Attachment 8)**

Mr. Duke reported on the status of the LUC sites at Travis AFB. Please refer to Attachment 8 for the full briefing.

### **B. PFOS/PFOA PROGRAM STATUS, August 2021 (Attachment 9)**

Mr. Storrs reported on the status of the PFOS/PFOA Program at Travis AFB. Please see Attachment 9 for the full briefing. He recognized that the regulators requested information about the locations of the private wells that had been sampled as part of this effort. He reported that the publicly identifiable information for those wells cannot be included in the Expanded Site Inspection Report, so if the agencies wish to know that information, they will have to request it and sign a non-disclosure statement, adding that it will require legal coordination.

## **III. SRS PFOS/PFOA CONTRACT**

### **A. ADMINISTRATIVE**

All administrative topics were discussed earlier in the RPM meeting.

### **B. PRESENTATIONS**

#### **1. Travis AFB Phase I RI of AFFF Sites (Attachment 10)**

Ms. Duley presented slides providing an update on the Phase I RI of AFFF sites. Please refer to Attachment 10 for the full briefing. The initial groundwater sampling event at recommended existing monitoring wells is scheduled for 23 August 2021 – 3 September 2021. The field effort will begin with a kick-off meeting, safety briefings, and in-person environmental awareness training. The field effort will be executed using two teams of two personnel and a sample coordinator supporting both teams and overall coordination. Ms. Duley will be onsite with the team on Thursday / Friday of each week. The team continues coordination efforts for logistical considerations and work sequencing.

The Oneida team will work with biological subcontractor, Sequoia, to provide biological monitoring and Base- and Service-Approved

Biologists. A field kickoff meeting was completed with AFCEC, Oneida, and Sequoia field team, and a base biologist on 5 August 2021.

The Oneida team will collect influent and effluent samples from all of the treatment systems (SBBGWTP, CGWTP, and LF007CGWTP) per RWQCB request. Mr. Duke noted that Travis AFB received concurrence from AFCEC to collect samples at the three treatment systems at the request of the regulators, but that no follow-up action can be taken under this current contract. The agencies concurred with this approach.

Mr. Storrs asked if any of the agencies anticipated coming to the site(s) during fieldwork. Agency team members did not have availability/ability to attend. Ms. Burke requested the team take as many photos as possible for this project fieldwork. Mr. Storrs noted there are restrictions on the airfield and near aircraft, but the team would take photos at acceptable locations.

Ms. Duley clarified with the team that, as previously discussed, daily reports or field forms would be provided in a report. Ms. Duley said she would send an overview at the end of each field week to provide an update to the team on progress, any issues, observations, etc.

**C. PROGRAM ISSUES/UPDATE**

None

**D. NEW ACTION ITEM REVIEW**

No new action items identified.

**E. ACTION ITEMS**

Item #	Responsible	Action Item Description	Due Date	Status
1	Megan Duley/Diane Escobedo	Send meeting minutes to Travis AFB.	25 August 2021	Attached

TRAVIS AIR FORCE BASE  
ENVIRONMENTAL RESTORATION PROGRAM  
RESTORATION PROGRAM MANAGER'S MEETING

The RPM Meeting is scheduled for 9:30 AM PST on 18 August 2021. **The call-in number will be provided in the MS Teams meeting invite and also in the same email that the meeting materials are provided in. If you are able to participate via MS Teams meeting, you will see the shared documents that will be viewable by all participants.**

AGENDA

**A. JACOBS PBR CONTRACT**

1. ADMINISTRATIVE

- a. INTRODUCTIONS
- b. PREVIOUS MEETING MINUTES
- c. ACTION ITEM REVIEW
- d. MASTER MEETING AND DOCUMENT SCHEDULE REVIEW

2. CURRENT PROJECTS

TREATMENT PLANT OPERATION AND MAINTENANCE UPDATE

3. PRESENTATIONS

- a. 2022 MEETING SCHEDULE
- b. PROGRAM UPDATE:  
DOCUMENTS & ACTIVITIES COMPLETED, IN PROGRESS & PLANNED

4. NEW ACTION ITEM REVIEW

5. PROGRAM/ISSUES/UPDATE

**B. TRAVIS UPDATES**

1. CURRENT PROJECTS

- c. LUC SITES
- d. PFOS / PFOA

## **C. SRS PFAS RI CONTRACT**

### **1. ADMINISTRATIVE**

- a. INTRODUCTIONS
- b. PREVIOUS MEETING MINUTES
- c. ACTION ITEM REVIEW
- d. MASTER MEETING AND DOCUMENT SCHEDULE REVIEW

### **2. CURRENT PROJECTS**

PHASE 1 REMEDIAL INVESTIGATION OF AFFF AREAS

### **3. PRESENTATIONS**

PROGRAM UPDATE

### **4. NEW ACTION ITEM REVIEW**

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

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

**2021**  
**Annual Meeting and Teleconference Schedule**

Monthly RPM Meeting <sup>1</sup> (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.)
—	01-20-21	—
—	02-17-21	—
—	03-17-21	—
—	04-15-21 (Thursday 2:00 PM)	—
—	05-19-21	—
—	06-16-21	—
—	07-21-21	—
08-18-21	—	—
—	09-15-21	—
10-21-21 (Thursday 2:00 PM)	—	10-21-21
—	11-17-21	—
—	—	—

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

**2022**  
**Annual Meeting and Teleconference Schedule**

<b>Monthly RPM Meeting<sup>1</sup></b> <b>(Begins at time noted)</b>	<b>RPM Teleconference</b> <b>(Begins at time noted)</b>	<b>Restoration Advisory Board</b> <b>Meeting</b> <b>(Begins at 7:00 p.m.)</b> <b>(Poster Session at 6:30 p.m.)</b>
—	01-19-22	—
02-16-22		—
—	03-16-22	—
04-21-22 (Thursday 2:00 PM)		04-21-22
—	05-18-22	—
06-15-22		—
—	07-20-22	—
08-17-22	—	—
—	09-21-22	—
10-20-22 (Thursday 2:00 PM)	—	10-20-22
—	11-16-22	—
—	—	—

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

## Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS		
Life Cycle	Travis AFB AFFF RI Work Plan <sup>2</sup> Travis AFB, Chet Storrs SRS, Megan Duley	Travis AFB AFFF RI QAPP <sup>2</sup> Travis AFB, Chet Storrs SRS, Megan Duley
<b>Scoping Meeting</b>	NA	NA
Predraft to AF/Service Center	10-27-20	10-27-20
AF/Service Center Comments Due	12-08-20	12-08-20
Draft to Agencies / RAB	03-26-21	03-26-21
<b>Agency Comments Due</b>	<b><u>05-26-21</u></b>	<b><u>05-26-21</u></b>
<b>Response to Comments Meeting</b>	06-16-21	06-16-21
Agency Concurrence with Remedy	NA	NA
Public Comment Period	NA	NA
<b>Public Meeting</b>	<b>NA</b>	<b>NA</b>
Response to Comments Due	06-30-21	06-30-21
Draft Final Due	06-30-21	06-30-21
Final Due	07-30-21 (TBD)	07-30-21 (TBD)

<sup>2</sup> Note: SRS documents will be discussed during the afternoon meeting session.

## Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS			
Life Cycle	Quarterly Newsletter (October 2021) Travis, Lonnie Duke	2020 Annual GRISR Travis AFB, Mobashir Ahmad CH2M, Levi Pratt	Technology Demonstration Technical Memorandum Travis AFB, Lonnie Duke CH2M, Tony Chakurian
<b>Scoping Meeting</b>	NA	NA	NA
Predraft to AF/Service Center	08-31-21	04-27-21	01-13-21
AF/Service Center Comments Due	09-03-21	05-27-21	03-02-21
Draft to Agencies / RAB	09-07-21	06-11-21	03-16-21
Agency Comments Due	09-21-21	07-12-21	04-15-21
<b>Response to Comments Meeting</b>	<b>09-28-21</b>	07-21-21	<b>05-28-21</b>
Response to Comments Due	09-28-21	08-31-21	06-14-21 (07-23-21)
Draft Final Due	NA	NA	NA
Final Due	10-07-21	08-31-21	06-14-21 (07-23-21)
Public Comment Period	NA	NA	NA
<b>Public Meeting</b>	NA	NA	NA



## Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS		
Life Cycle	Vapor Intrusion Assessment Report Travis AFB, Chet Storrs CH2M, Stephanie Curtis	2020 Annual Site LF007 CAMU, Monitoring, and Maintenance Report Travis AFB, Mobashir Ahmad CH2M HILL, Levi Pratt
<b>Scoping Meeting</b>	NA	NA
Predraft to AF/Service Center	07-14-21	06-03-21
AF/Service Center Comments Due	07-28-21	07-06-21
Draft to Agencies / RAB	08-11-21	07-19-21
Agency Comments Due	08-25-21	08-18-21
<b>Response to Comments Meeting</b>	<b>09-08-21</b>	<b>09-02-21</b>
Response to Comments Due	09-22-21	09-16-21
Draft Final Due	NA	NA
Final Due	09-22-21	09-16-21
Public Comment Period	NA	NA
<b>Public Meeting</b>	NA	NA

## Travis AFB Master Meeting and Document Schedule

INFORMATIONAL DOCUMENTS	
Life Cycle	SD031B POCO Additional Site Investigation Report Travis AFB, Chet Storrs CH2M, Levi Pratt
<b>Scoping Meeting</b>	NA
Predraft to AF/Service Center	01-28-21
AF/Service Center Comments Due	03-17-21
Draft to Agencies / RAB	04-21-21
Agency Comments Due	06-21-21
<b>Response to Comments Meeting</b>	<b>07-21-21</b>
Response to Comments Due	08-04-21 (07-28-21)
Draft Final Due	NA
Final Due	08-04-21 (07-28-21)
Public Comment Period	NA
<b>Public Meeting</b>	NA

## Travis AFB Master Meeting and Document Schedule

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

[https://geotracker.waterboards.ca.gov/profile\\_report.asp?global\\_id=SL20299915](https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=SL20299915)

## Travis AFB Master Meeting and Document Schedule

PRIMARY DOCUMENTS	
Life Cycle	Community Relations Plan Update <sup>3</sup> Travis AFB,TBD ORC Contractor TBD
<b>Scoping Meeting</b>	NA
Predraft to AF/Service Center	08-23-16
AF/Service Center Comments Due	09-07-16
Draft to Agencies / RAB	09-28-16 (03-22-18)
Agency Comments Due	10-28-16 (04-27-18)
<b>Response to Comments Meeting</b>	<b>TBD</b>
Agency Concurrence with Remedy	NA
Public Comment Period	NA
<b>Public Meeting</b>	<b>NA</b>
Response to Comments Due	TBD
Draft Final Due	TBD
Final Due	TBD

<sup>3</sup> Note: The Community Relations Plan Update will be finalized in the first year of the ORC contract.

## Travis AFB Master Meeting and Document Schedule

<b>HISTORY - INFORMATIONAL DOCUMENTS</b>	
<b>Life Cycle</b>	<b>Site SD031 and FT004 Groundwater Sampling Results Technical Memorandum Travis AFB, Chet Storrs CH2M, Tony Chakurian</b>
<b>Scoping Meeting</b>	<b>NA</b>
Predraft to AF/Service Center	01-22-21
AF/Service Center Comments Due	03-10-21
Draft to Agencies / RAB	04-14-21
Agency Comments Due	05-14-21
<b>Response to Comments Meeting</b>	<b>05-19-21</b>
Response to Comments Due	06-16-21 (07-21-21)
Draft Final Due	NA
Final Due	06-16-21 (07-21-21)
Public Comment Period	NA
<b>Public Meeting</b>	<b>NA</b>

# South Base Boundary Groundwater Treatment Plant

## Monthly Data Sheet

Report Number: 249

Reporting Period: 30 June 2021 – 29 July 2021

Date Submitted: 13 August 2021

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

## System Metrics

Table 1 presents operational data from the July 2021 reporting period.

Table 1 – Operations Summary – July 2021				
Initial Data Collection:		6/30/2021 14:30	Final Data Collection:	7/29/2021 12:45
Operating Time:		Percent Uptime:	Electrical Power Usage:	
SBBGWTP:	693 hours	SBBGWTP:	99.8%	SBBGWTP: 15,967 kWh (13,416 lbs CO <sub>2</sub> generated <sup>a</sup> )
Gallons Treated: <b>5.244 million gallons</b>			Gallons Treated Since July 1998: <b>1.271 billion gallons</b>	
Volume Discharged to Union Creek: <b>5.244 million gallons</b>			Gallons Treated from Other Sources: <b>0 gallons</b>	
VOC Mass Removed: <b>1.42 lbs<sup>b</sup></b>			VOC Mass Removed Since July 1998: <b>539.9 lbs</b>	
Rolling 12-Month Cost per Pound of Mass Removed: <b>\$21,940<sup>c</sup></b>				
Monthly Cost per Pound of Mass Removed: <b>\$18,234<sup>c</sup></b>				
lbs = pounds				
<sup>a</sup> SiteWise™ estimate that 1 kilowatt hour generated produces 0.74 pounds of GHG. Value also includes approximately 1,600 pounds of GHG from GAC change out services averaged to a per month basis.				
<sup>b</sup> Calculated using July 2021 EPA Method SW8260C analytical results.				
<sup>c</sup> Costs include operations and maintenance, 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) – July 2021							
FT005				SS029		SS030	
EW01x05	Offline <sup>a</sup>	EW743x05	Offline <sup>a</sup>	EW01x29	Offline <sup>c</sup>	EW01x30	Offline <sup>d</sup>
EW02x05	Offline <sup>a</sup>	EW744x05	Offline <sup>d</sup>	EW02x29	7.7	EW02x30	Offline <sup>d</sup>
EW03x05	Offline <sup>a</sup>	EW745x05	9.3	EW03x29	18.7	EW03x30	Offline
EW731x05	Offline <sup>b</sup>	EW746x05	Offline <sup>a</sup>	EW04x29	5.5	EW04x30	9.1
EW732x05	Offline <sup>a</sup>	EW2291x05	Offline <sup>b</sup>	EW05x29	4.5	EW05x30	6.7
EW733x05	Offline <sup>a</sup>	EW2782x05	5.7	EW06x29	13.8	EW2174x30	4.5
EW734x05	3.7	EW2783x05	1.3	EW07x29	7.4	EW711x30	Offline <sup>d</sup>
EW735x05	6.5	EW2784x05	9.5				
EW736x05	Offline <sup>a</sup>	EW2785x05	16.3				
EW737x05	Offline <sup>a</sup>	EW2786x05	9.0				
EW742x05	Offline <sup>a</sup>						
FT005 Total: 61.3				SS029 Total: 57.6		SS030 Total: 20.3	
SBBGWTP Average Monthly Flow <sup>e</sup> : 126.1 gpm							
<sup>a</sup> Extraction wells at FT005 were taken offline in accordance with the 2008 Annual Remedial Process Optimization Report for the Central Groundwater Treatment Plant, North Groundwater Treatment Plant, and South Base Boundary Groundwater Treatment Plant.							
<sup>b</sup> Extraction well was taken offline because the Site FT005 TD has concluded and COCs no longer exceed cleanup goals in this extraction area.							
<sup>c</sup> Extraction well taken offline because of persistent fouling of the well pump and associated discharge piping.							
<sup>d</sup> Extraction well was operational; however, well was recharging.							
<sup>e</sup> The average SBBGWTP groundwater flow rate was calculated using the Union Creek Discharge Totalizer and dividing it by the total time the system was operational.							
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 <sup>a</sup>		Restart <sup>a</sup>		Cause
	Date	Time	Date	Time	
SBBGWTP	6 July 2021	9:30	6 July 2021	10:45	Update PLC.
<sup>a</sup> Shutdown and restart times estimated based on field notes SBBGWTP = South Base Boundary Groundwater Treatment Plant					

## Summary of O&M Activities

Monthly groundwater treatment samples were collected at the SBBGWTP on 1 July 2021. Sample results are presented in Table 4. The total VOC concentration (32.5 µg/L) in the influent sample increased from the June 2021 sample results (30.1 µg/L). TCE was the primary VOC detected in the influent sample at a concentration of 30 µg/L. Cis-1,2-DCE and 1,2-DCA was detected in the midpoint sampling location. No VOCs were detected in the effluent sampling location. The effluent sample was analyzed for TPH-g, TPH-d, and TPH-mo, and no TPH was detected.

Figure 1 presents a plot of influent VOC concentrations and average flow at the SBBGWTP over the past twelve (12) months. VOC concentrations have been seasonally variable; however, over the last 12 months the trend has increased. An overall decreasing flow rate trend was also observed in the past 12 months.

On 6 July 2021, the SBBGWTP was shut down for approximately an hour because to make updates to the PLC. The treatment system was restarted without issue.

In July 2021 troubleshooting was performed on two extraction wells. The following list presents the maintenance activities and status of those extraction wells:

- EW2785x05 – The pump motor was replaced on July 6. Well is currently online.
- EW03x30 – The pressure transducer was replaced on 29 July. Well is currently offline.

## Optimization Activities

No optimization activities occurred at the SBBGWTP in July 2021.

## 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 offline that are no longer necessary for contaminant plume capture.

Figure 2 presents the historical GHG production from the SBBGWTP. In July 2021, the SBBGWTP produced approximately 13,416 pounds of GHG, which includes approximately 1,600 pounds of GHG generated from GAC change out services averaged to a per month basis.



TABLE 4

Summary of Groundwater Analytical Data for July 2021 – South Base Boundary Groundwater Treatment Plant

Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	1 July 2021 (µg/L)		
				Influent	Midpoint	Effluent <sup>b</sup>
Halogenated Volatile Organics						
Acetone	NA	1.9	0	ND	ND	ND
Bromodichloromethane	NA	0.17	0	ND	ND	ND
Chloroform	1.9	0.16	0	ND	ND	ND
Chloromethane	NA	0.30	0	ND	ND	ND
1,1-Dichloroethane	0.50	0.22	0	ND	ND	ND
1,2-Dichloroethane	0.50	0.13	0	0.25 J	0.40 J	ND
1,1-Dichloroethene	0.50	0.23	0	ND	ND	ND
cis-1,2-Dichloroethene	0.50	0.15	0	2.2	0.35 J	ND
trans-1,2-Dichloroethene	0.50	0.11	0	ND	ND	ND
Dichlorodifluoromethane	NA	0.31	0	ND	ND	ND
Tetrachloroethene	0.50	0.20	0	ND	ND	ND
1,1,1-Trichloroethane	0.50	0.16	0	ND	ND	ND
1,1,2-Trichloroethane	0.50	0.27	0	ND	ND	ND
Trichloroethene	0.65	0.16	0	30	ND	ND
Vinyl Chloride	0.90	0.10	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	0.50	0.13	0	ND	ND	ND
Ethylbenzene	0.50	0.15	0	ND	ND	ND
Toluene	0.50	0.25	0	ND	ND	ND
Xylenes	0.50	0.10 – 0.18	0	ND	ND	ND
Other						
Total Petroleum Hydrocarbons – Gasoline	50	10	0	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel	50	25	0	NM	NM	ND
Total Petroleum Hydrocarbons – Motor Oil	100	32	0	NM	NM	ND

<sup>a</sup> In accordance with current National Pollutant Discharge Elimination System permit number CAG912002, Order number R2-2017-0048.

<sup>b</sup> Concentrations in **bold** exceeded discharge limits.

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

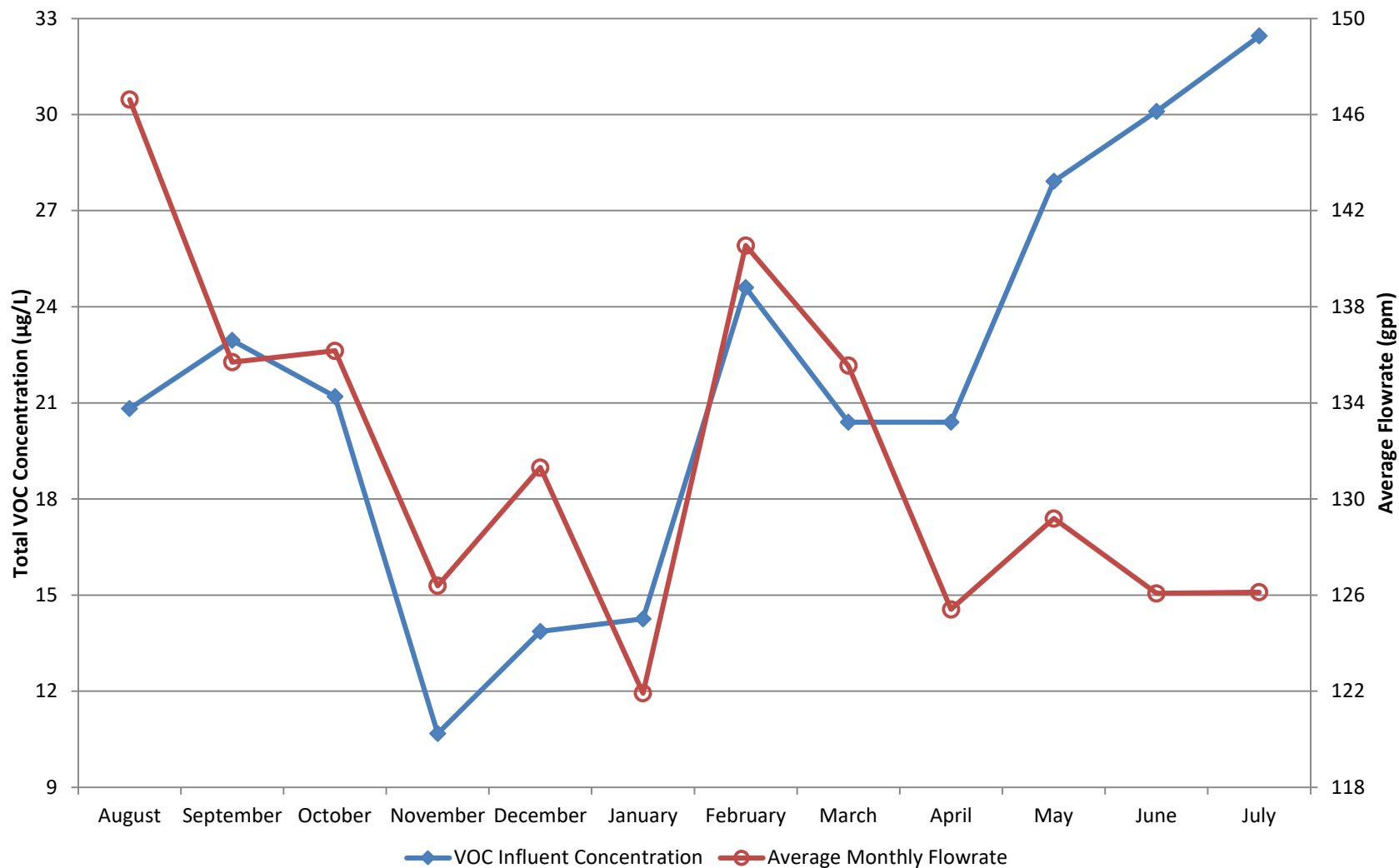
N/C = number of samples out of compliance with discharge limits.

ND = not detected

NM = not measured

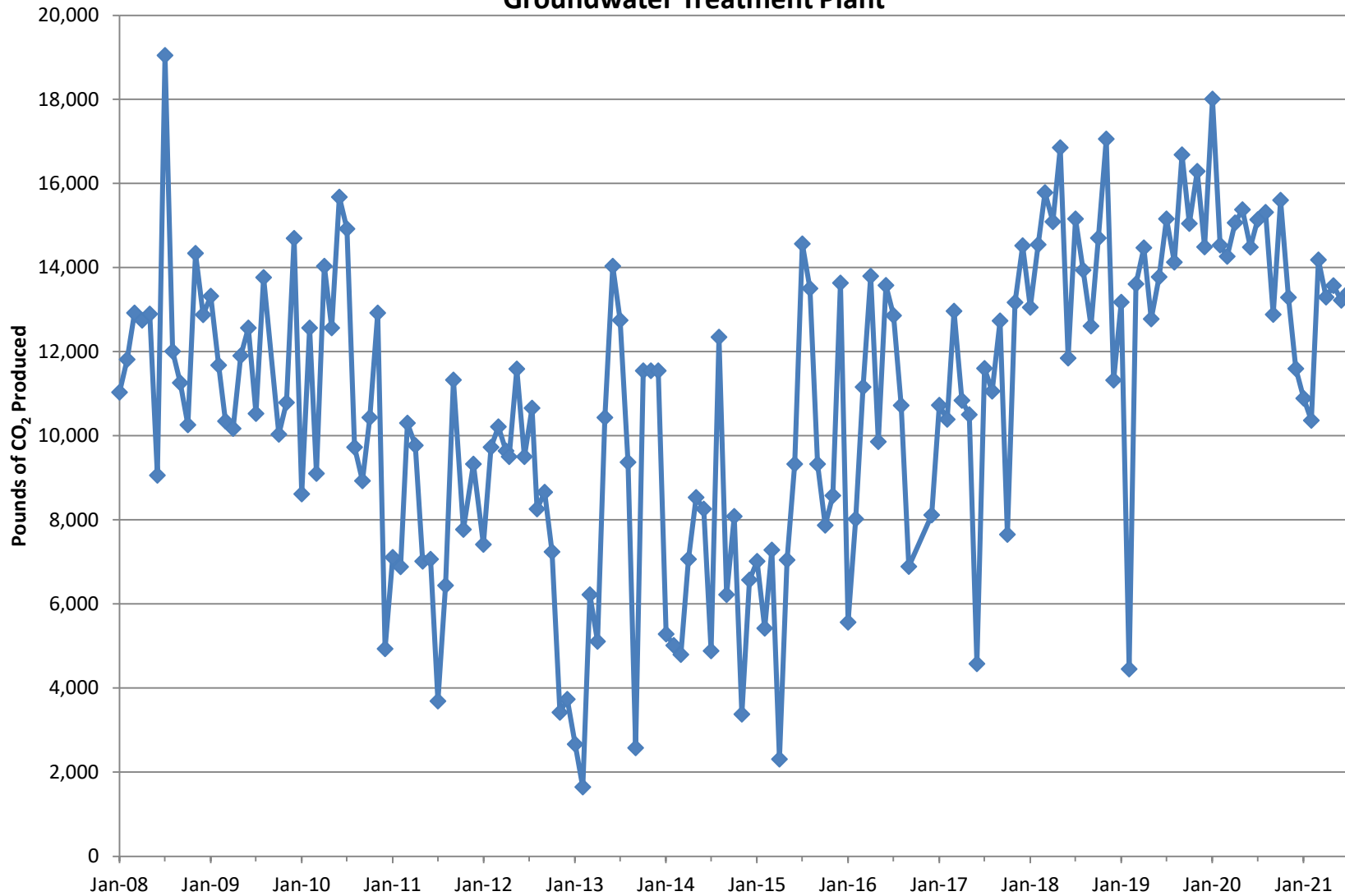
µg/L = micrograms per liter

**Figure 1**  
**SBBGWTP Total VOC Influent Concentrations and Average Flowrate Twelve Month History**



**Figure 2**

**Equivalent Pounds of Carbon Dioxide Produced by the South Base Boundary  
Groundwater Treatment Plant**



# Central Groundwater Treatment Plant Monthly Data Sheet

Report Number: 264

Reporting Period: 30 June 2021 – 29 July 2021

Date Submitted: 13 August 2021

This monthly data sheet presents information regarding the Central Groundwater Treatment Plant (CGWTP) and its associated bioreactors (Sites DP039 and SS016).

## System Metrics

Table 1 presents operational data from the July 2021 reporting period.

Table 1 – Operations Summary – July 2021			
Initial Data Collection:		6/30/2021 14:00	
Final Data Collection:		7/29/2021 9:30	
Operating Time:		Percent Uptime:	
CGWTP: 691.5 hours		CGWTP: 100%	
		Electrical Power Usage:	
		CGWTP: 1,060 kWh (1,672 lbs CO <sub>2</sub> generated <sup>a</sup> )	
Gallons Treated (discharge to storm sewer): 828,320 gallons		Gallons Treated Since January 1996: 593.7 million gallons	
VOC Mass Removed from groundwater:		VOC Mass Removed Since January 1996:	
1.16 lbs <sup>b</sup>		2,886 lbs from groundwater	
		8,686 lbs from vapor	
Rolling 12-Month Cost per Pound of Mass Removed: \$3,001 <sup>c</sup>			
Monthly Cost per Pound of Mass Removed: \$4,207 <sup>c</sup>			
<sup>a</sup> SiteWise™ estimate that 1 kilowatt hour generated produces 0.74 pounds of GHG. Value also includes approximately 888 pounds of GHG from GAC change out services averaged to a per month basis.			
<sup>b</sup> Calculated using July 2021 EPA Method SW8260C analytical results.			
<sup>c</sup> Costs include operations and maintenance, 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 during the monthly reporting period.

Table 2 – CGWTP Average Flow Rates <sup>a</sup> – July 2021	
Location	Average Flow Rate Groundwater (gpm)
EW001x16	9.7
EW002x16	5.5
EW003x16 <sup>b</sup>	0.0
EW605x16	3.5
EW610x16	1.0
CGWTP	20.0
<sup>a</sup> Flow rates calculated by dividing total gallons processed by system operating time for the month or the average of the instantaneous readings.	
<sup>b</sup> Extracted groundwater from EW003x16 had been treated in Site SS016 bioreactor until November 2020 when it was taken offline and decommissioned. The well replacing EW003x16 (EW003Ax16) has been installed but is not yet online.	
gpm = gallons per minute	
NM = not measured	

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

<b>Table 3 – Summary of System Shutdowns</b>					
<b>Location</b>	<b>Shutdown<sup>a</sup></b>		<b>Restart</b>		<b>Cause</b>
	<b>Date</b>	<b>Time</b>	<b>Date</b>	<b>Time</b>	
CGWTP	None	--	--	--	
-- = Date/Time not recorded <sup>a</sup> Shutdown and restart times estimated based on field notes CGWTP = Central Groundwater Treatment Plant					

## Summary of O&M Activities

Monthly groundwater treatment samples were collected at the CGWTP on 1 July 2021. Sample results are presented in Table 4. The total VOC concentration (168.5 µg/L) in the July 2021 influent sample has decreased from the June 2021 sample (220.8 µg/L). The cause of the decrease is likely because EW605x16 and EW610x16 were offline when the monthly samples were collected. TCE was the primary VOC detected in the influent sample at a concentration of 110 µg/L. No VOCs were detected in the samples collected after the first and second carbon vessels and in the effluent sample. The July effluent sample was analyzed for TPH-g, TPH-d, and TPH-mo, and no TPH was detected.

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 influent concentrations have been seasonally variable; however, over the last 12 months the trend has increased. An overall decreasing flow rate trend was observed in the past 12 months.

The Site SS016 subgrade biogeochemical reactor (SBGR), also known as the bioreactor, and the Site DP039 bioreactor both continued operating in July 2021. The Site SS016 bioreactor was offline between November 2020 and March 2021 because EW003x16, which fed the bioreactor, was offline. EW003x16 has since been decommissioned, and a replacement horizontal extraction well (EW003Ax16) has been installed but has not yet been brought online. On 20 April 2021, the Site SS016 bioreactor began receiving groundwater from a pump installed in a nearby monitoring well, MW2022x16, located near the northwest corner of the bioreactor. In July 2021, the Site SS016 bioreactor continued receiving approximately 6-10 gallons of groundwater from MW2022x16 per day.

A 3-bay aircraft hangar is being constructed over much of the Oil Spill Area (OSA) source area (former Buildings 16 and 18 area). This project is scheduled to be constructed over at least the next year or so. Every attempt will be made to keep all extraction wells and the Site SS016 bioreactor in operation. However, there may be times when extraction needs to be shutdown to avoid spills of extracted groundwater or to change out electrical equipment. EW605x16 and EW610x16 were offline during the beginning of July during construction on the extraction well vaults. They were restarted in mid-July, though the exact date of the restart is not known.

## Optimization Activities

No optimization activities occurred at the CGWTP in July 2021.

## 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 1,672 pounds of GHG during July 2021.

TABLE 4

Summary of Groundwater Analytical Data for July 2021 – Central Groundwater Treatment Plant

				1 July 2021 (µg/L)			
Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	Influent	After Carbon 1 Effluent	After Carbon 2 Effluent	System Effluent <sup>b</sup>
Halogenated Volatile Organics							
Acetone	NA	1.9 – 3.8	0	ND	ND	ND	ND
Bromomethane	NA	0.21 – 0.42	0	ND	ND	ND	ND
Carbon disulfide	NA	0.17	0	ND	ND	ND	ND
Chloroform	1.9	0.16 – 0.32	0	ND	ND	ND	ND
Chloromethane	NA	0.30 – 0.60	0	ND	ND	ND	ND
1,2-Dichlorobenzene	NA	0.15 – 0.30	0	ND	ND	ND	ND
1,3-Dichlorobenzene	NA	0.13 – 0.26	0	0.40 J	ND	ND	ND
1,4-Dichlorobenzene	NA	0.16 – 0.32	0	ND	ND	ND	ND
1,1-Dichloroethane	0.50	0.22 – 0.44	0	ND	ND	ND	ND
1,2-Dichloroethane	0.50	0.13 – 0.26	0	ND	ND	ND	ND
1,1-Dichloroethene	0.50	0.23 – 0.46	0	ND	ND	ND	ND
cis-1,2-Dichloroethene	0.50	0.15 – 0.30	0	55	ND	ND	ND
trans-1,2-Dichloroethene	0.50	0.15 – 0.30	0	3.1 J	ND	ND	ND
Tetrachloroethene	0.50	0.20 – 0.40	0	ND	ND	ND	ND
1,1,1-Trichloroethane	0.50	0.16 – 0.32	0	ND	ND	ND	ND
1,1,2-Trichloroethane	0.50	0.27 – 0.54	0	ND	ND	ND	ND
Trichloroethene	0.65	0.16 – 0.32	0	110	ND	ND	ND
Vinyl Chloride	0.90	0.10 – 0.20	0	ND	ND	ND	ND
Non-Halogenated Volatile Organics							
Benzene	0.50	0.16 – 0.32	0	ND	ND	ND	ND
Ethylbenzene	0.50	0.16 – 0.32	0	ND	ND	ND	ND
Toluene	0.50	0.17 – 0.34	0	ND	ND	ND	ND
Total Xylenes	0.50	0.15 – 0.38	0	ND	ND	ND	ND
Other							
Total Petroleum Hydrocarbons – Gasoline (C6 – C10)	50	10	0	NM	NM	NM	ND
Total Petroleum Hydrocarbons – Diesel (C10 – C28)	50	24 – 27	0	NM	NM	NM	ND
Total Petroleum Hydrocarbons – Motor Oil (C28 – C40)	100	24 – 27	0	NM	NM	NM	ND

<sup>a</sup> In accordance with current National Pollutant Discharge Elimination System permit number CAG912002, Order number R2-2017-0048.

<sup>b</sup> Concentrations in **bold** exceeded discharge limits

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

**Figure 1**

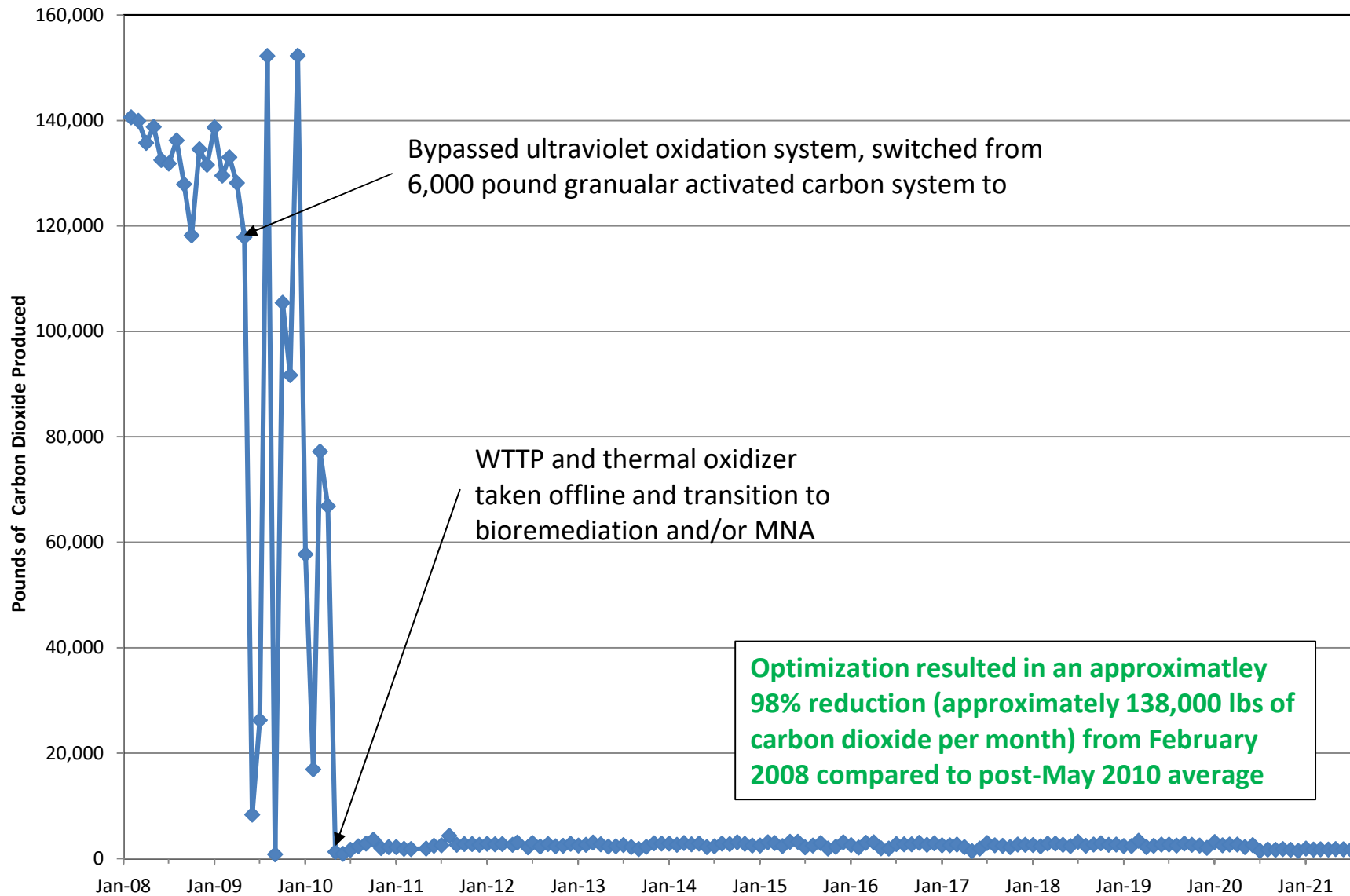
**CGWTP Total VOC Influent Concentrations and Average Flowrate Twelve Month History**





**Figure 2**

**Equivalent Pounds of Carbon Dioxide Produced by the Central Groundwater Treatment Plant**



# Subarea LF007C Groundwater Treatment Plant

## Monthly Data Sheet

Report Number: 203

Reporting Period: 30 June 2021 – 29 July 2021

Date Submitted: 13 August 2021

This monthly data sheet presents information regarding the Subarea LF007C Groundwater Treatment Plant (LF007C GWTP).

### System Metrics

Table 1 presents operational data from the July 2021 reporting period:

Table 1 – Operations Summary – July 2021				
Initial Data Collection:		6/30/2021 13:30	Final Data Collection:	7/29/2021 14:00
Operating Time:		Percent Uptime:		Electrical Power Usage <sup>a</sup> :
LF007C GWTP:	694 hours	LF007C GWTP	99.6%	LF007C GWTP: 0 kWh
Gallons Treated: <b>125,531 gallons</b>			Gallons Treated Since March 2000: <b>92.0 million gallons</b>	
Volume Discharged to Northgate Pond (formerly the Duck Pond): <b>125,531 gallons</b>				
VOC Mass Removed: <b>7.80 x 10<sup>-4</sup> pounds<sup>b</sup></b>			VOC Mass Removed Since March 2000: <b>174.4 pounds (Groundwater)</b>	
Rolling 12-Month Cost per Pound of Mass Removed: <b>Not Measured<sup>c</sup></b>				
Monthly Cost per Pound of Mass Removed: <b>Not Measured<sup>c</sup></b>				
<sup>a</sup> The LF007C GWTP operates on solar power only.				
<sup>b</sup> VOCs from July 2021 influent sample detected by EPA Method SW8260C.				
<sup>c</sup> Value not calculated since measurement does not accurately represent the cost effectiveness of the system.				

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

Table 2 – LF007C GWTP Average and Total Flow Rates – July 2020		
Location	Average Flow Rate (gpm) <sup>a</sup>	Total Gallons Processed (gallons)
EW614x07	2.7	112,639
EW615x07	0.6	25,266
LF007C GWTP	3.0	125,531
<sup>a</sup> 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 <sup>a</sup>		Restart <sup>a</sup>		Cause
	Date	Time	Date	Time	
LF007C GWTP	19 July 2021	10:00	19 July 2021	12:30	Installed air vent on GAC vessel. Installed a new lid on the carbon drum.
-- = Time not recorded					
<sup>a</sup> Shutdown and restart times estimated based on field notes					
LF007C GWTP = Subarea LF007C Groundwater Treatment Plant					

## Summary of O&M Activities

Monthly groundwater treatment samples were collected at the LF007C GWTP on 1 July 2021. Sample results are presented in Table 4. The total VOC concentration in the July 2021 influent sample was 0.75 J µg/L. TCE was the only VOC detected at the influent sample location. No VOCs were detected in the midpoint sample location. Acetone (6.7 J µg/L) and 2-butanone (2.1 J µg/L) were detected in the effluent sampling location. Both detections are likely due to lab contamination. Neither acetone or 2-butanone have effluent discharge limits.

On 19 July 2021, the LF007C GWTP was shut down for approximately 2.5 hours to install an air vent on the GAC vessels and to install a new lid on the 55-gallon GAC drum. The system was restarted without issue.

Figure 1 presents a chart of influent concentrations (total VOCs) at the LF007C GWTP versus time for the past twelve (12) months. VOC concentrations, primarily TCE, have been shown to be seasonally variable; however, over the last 12 months the trend has decreased. The average flow rate through the LF007C GWTP has gradually increased over the last 12 months due to typical seasonal variation.

## Optimization Activities

No optimization activities occurred at the LF007C GWTP in July 2021.

## 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 and LF007C GWTP. The LF007C GWTP is a solar-only operated treatment system and does not generate GHG, with exception of a small amount of GHG generated from changing out the GAC averaged to a per month basis.

TABLE 4

Summary of Groundwater Analytical Data for July 2021 – Subarea LF007C Groundwater Treatment Plant

Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	1 July 2021 (µg/L)		
				Influent	After Carbon 1	Effluent <sup>b</sup>
Halogenated Volatile Organics						
Acetone	NA	1.9	0	ND	ND	6.7 J
Bromodichloromethane	NA	0.17	0	ND	ND	ND
Bromoform	NA	0.46	0	ND	ND	ND
2-Butanone	NA	2.0	0	ND	ND	2.1 J
Carbon Tetrachloride	NA	0.19	0	ND	ND	ND
Chloroform	1.9	0.16	0	ND	ND	ND
Chloromethane	NA	0.30	0	ND	ND	ND
Dibromochloromethane	NA	0.17	0	ND	ND	ND
1,3-Dichlorobenzene	NA	0.13	0	ND	ND	ND
1,4-Dichlorobenzene	NA	0.16	0	ND	ND	ND
1,1-Dichloroethane	0.50	0.22	0	ND	ND	ND
1,2-Dichloroethane	0.50	0.13	0	ND	ND	ND
1,1-Dichloroethene	0.50	0.23	0	ND	ND	ND
cis-1,2-Dichloroethene	0.50	0.15	0	ND	ND	ND
trans-1,2-Dichloroethene	0.50	0.15	0	ND	ND	ND
Methylene Chloride	NA	0.94	0	ND	ND	ND
Tetrachloroethene	0.50	0.20	0	ND	ND	ND
1,1,1-Trichloroethane	0.50	0.16	0	ND	ND	ND
1,1,2-Trichloroethane	0.50	0.27	0	ND	ND	ND
Trichloroethene	0.65	0.16	0	0.75 J	ND	ND
Vinyl Chloride	0.90	0.10	0	ND	ND	ND
Non-Halogenated Volatile Organics						
Benzene	0.50	0.16	0	ND	ND	ND
Ethylbenzene	0.50	0.16	0	ND	ND	ND
Toluene	0.50	0.17	0	ND	ND	ND
Xylenes	0.50	0.15 – 0.19	0	ND	ND	ND

<sup>a</sup> In accordance with current National Pollutant Discharge Elimination System permit number CAG912002, Order number R2-2017-0048.<sup>b</sup> Concentrations in **bold** exceeded discharge limits

## 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

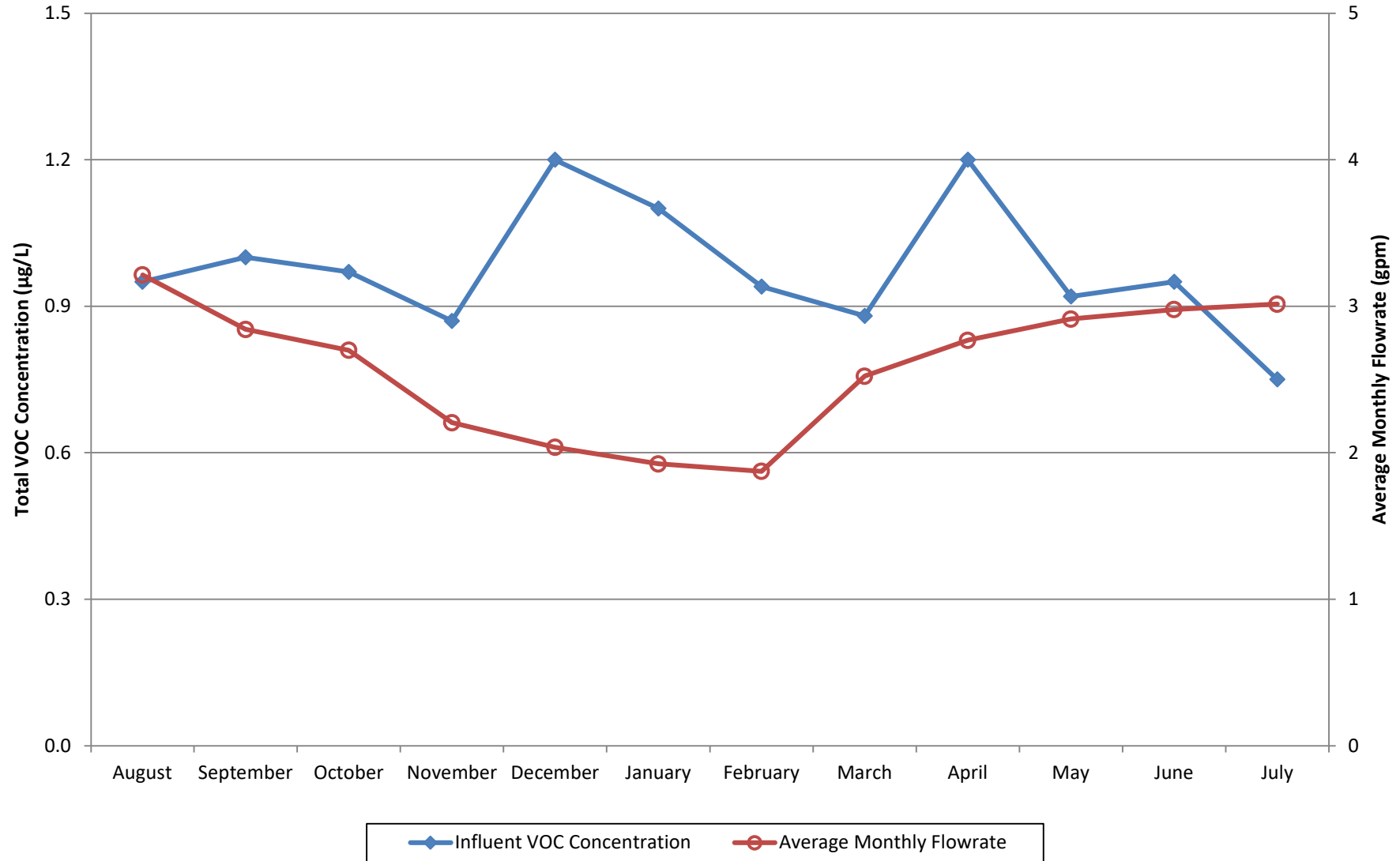
N/C = number of samples out of compliance with discharge limits.

ND = not detected

µg/L = micrograms per liter

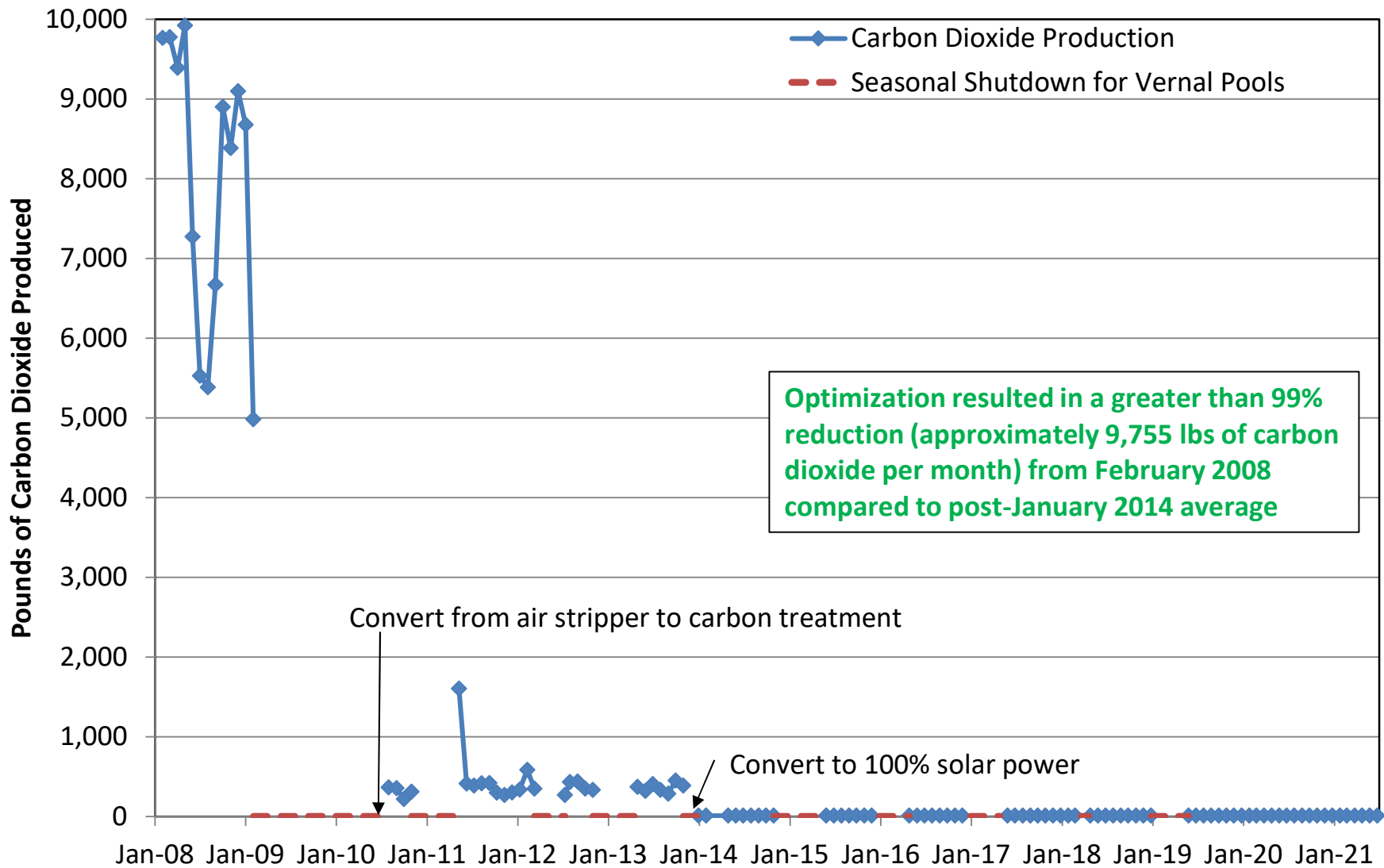
**Figure 1**

**LF007CGWTP Total VOC Influent Concentrations and Average Flowrate Twelve Month History**



**Figure 2**

**Equivalent Pounds of Carbon Dioxide Produced by the NGWTP/LF007C GWTP**



Note: Dashed line represents seasonal shutdowns due to the presence of vernal pools at Site LF007C during which no carbon dioxide production occurred.

# Site ST018 Groundwater Treatment Plant

## Monthly Data Sheet

Report Number: 125

Reporting Period: 1 July 2021 – 29 July 2021

Date Submitted: 13 August 2021

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

### System Metrics

Table 1 presents operation data from the July 2021 reporting period.

Table 1 – Operations Summary – July 2021			
<b>Initial Data Collection:</b> 7/1/2021 12:30		<b>Final Data Collection:</b> 7/29/2021 9:00	
Operating Time:		Percent Uptime:	
<b>ST018GWTP:</b> 669 hours		<b>ST018GWTP:</b> 100%	
		<b>ST018GWTP:</b> 50 kWh (37 lbs CO <sub>2</sub> generated <sup>a</sup> )	
Gallons Extracted: <b>82,800 gallons</b>		Gallons Extracted Since March 2011: <b>20.4 million gallons</b>	
Volume Discharged to Sanitary Sewer: <b>82,800 gallons</b>		Final Totalizer Reading: <b>20,403,349 gallons</b>	
Cumulative Volume Discharged to Sanitary Sewer since 1 November 2014: <b>13.9 million gallons</b>			
MTBE, BTEX, VOC, TPH Mass Removed: <b>0.03 lbs<sup>b</sup></b>		MTBE, BTEX, VOC, TPH Mass Removed Since March 2011: <b>50.1 lbs</b>	
MTBE (Only) Removed: <b>0.01 lbs<sup>b</sup></b>		MTBE (Only) Mass Removed Since March 2011: <b>12.2 lbs</b>	
Rolling 12-Month Cost per Total Pounds of Mass Removed: \$86,391 <sup>bc</sup>			
Monthly Cost per Pound of Mass Removed: \$141,408 <sup>bc</sup>			
<sup>a</sup> SiteWise™ estimate that 1 kilowatt hour generated produces 0.74 pounds of GHG.			
<sup>b</sup> Calculated using July 2021 EPA Method SW8260C and SW8015B analytical results.			
<sup>c</sup> 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.

<b>Table 2 – ST018GWTP Average Flow Rates – July 2021</b>		
<b>Location</b>	<b>Average Flow Rate Groundwater (gpm)<sup>a</sup></b>	<b>Hours of Operation</b>
EW2014x18	1.3	669
EW2016x18	0.9	669
EW2019x18	0.0	Offline <sup>b</sup>
EW2333x18	1.8	669
ST018GWTP	2.1	669
<sup>a</sup> Flow rates calculated by dividing total gallons processed by amount of operating time of the pump/system. The extraction pumps take in air from the subsurface, which alters the flow and totalizer. <sup>b</sup> Extraction well was turned off with regulatory approval on 25 November 2019 because of low MTBE concentrations. gpm = gallons per minute ST018GWTP = Site ST018 Groundwater Treatment Plant		

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

<b>Table 3 – Summary of System Shutdowns</b>					
<b>Location</b>	<b>Shutdown<sup>a</sup></b>		<b>Restart<sup>a</sup></b>		<b>Cause</b>
	<b>Date</b>	<b>Time</b>	<b>Date</b>	<b>Time</b>	
ST018GWTP	None	--	--	--	
-- = Time not recorded <sup>a</sup> Shutdown and restart times estimated based on field notes ST018GWTP = Site ST018 Groundwater Treatment Plant					

## Summary of O&M Activities

Monthly groundwater discharge samples were collected at the ST018GWTP on 1 July 2021. Because the extracted groundwater is no longer treated with carbon prior to discharge to the sanitary sewer, only discharge samples are now collected, rather than influent and effluent samples. Results are presented in Table 4. The complete July 2021 laboratory data report is available upon request. The MTBE discharge concentration during the July 2021 sampling event was 13 µg/L, which is a decrease from the June 2021 sample result of 16 µg/L. TPH-d and 1,2-DCA were also detected in the system discharge sample and are listed in Table 4.

The Fairfield-Suisun Sewer District does not currently have a discharge limit for MTBE, but a limit of 6,400 µg/L is advised based on worker health and safety. Travis AFB will continue to monitor discharge contaminant concentrations to maintain compliance with the Fairfield-Suisun Sewer District discharge permit.

Figure 1 presents plots of the average flow rate and total extracted contaminants (MTBE, TPH-g, TPH-d, TPH-mo, BTEX, and VOCs) and extracted MTBE concentrations at the ST018GWTP over the past twelve (12) months. The average flow rate through the ST018GWTP has been cyclical with typical flow rates decreasing during the dry season (summer and fall) and increasing during the rainy season (winter and spring). The overall average flow rates in the past 12 months show a slight increasing trend. The extracted MTBE concentrations and extracted total concentrations have exhibited overall slightly increasing and decreasing trend, respectively, over the past 12 months.



## Optimization Activities

No optimization activities occurred at the ST018GWTP in July 2021.

## 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 a majority of the ST018GWTP system.

Figure 2 presents the historical GHG production from the ST018GWTP. The ST018GWTP produced 37 pounds of GHG during July 2021 and removed 82,800 gallons of water. The amount of GHG produced is directly attributed to the amount of water removed through the system because the only line-power electrical use is for a transfer pump to push the water from the system to the sanitary sewer.

TABLE 4

Summary of Groundwater Analytical Data for July 2021 – Site ST018 Groundwater Treatment Plant

Summary of Groundwater Analytical Data for July 2021 Site C-1010 Groundwater Treatment Plant				
Constituent	Instantaneous Maximum <sup>a</sup> (µg/L)	Detection Limit (µg/L)	N/C	1 July 2021 (µg/L)
				System Discharge <sup>b</sup>
Fuel Related Constituents				
Methyl tert-Butyl Ether	6,400	0.25	0	13
Benzene	25,000 <sup>c</sup>	0.16	0	ND
Ethylbenzene	25,000 <sup>c</sup>	0.16	0	ND
Toluene	25,000 <sup>c</sup>	0.17	0	ND
Total Xylenes	25,000 <sup>c</sup>	0.19 – 0.34	0	ND
Total Petroleum Hydrocarbons – Gasoline	50,000 <sup>d</sup>	10	0	ND
Total Petroleum Hydrocarbons – Diesel	50,000 <sup>d</sup>	15	0	36 J
Total Petroleum Hydrocarbons – Motor Oil	100,000	160	0	ND
Other				
Acetone	NA	1.9	0	ND
Bromomethane	NA	0.21	0	ND
2-Butanone (MEK)	NA	2.0	0	ND
1,2-Dichloroethane	20	0.13	0	0.42 J
Isopropylbenzene	NA	0.19	0	ND
Naphthalene	NA	0.22	0	ND
N-Propylbenzene	NA	0.16	0	ND

<sup>a</sup> In accordance with the Fairfield-Suisun Sewer District Discharge Limitations<sup>b</sup> Concentrations in **bold** exceeded discharge limits<sup>c</sup> The limit of 25,000 µg/L is a combined limit for BTEX.<sup>d</sup> The limit of 50,000 µg/L is a combined limit for TPH-g and TPH-d.

µg/L = micrograms per liter

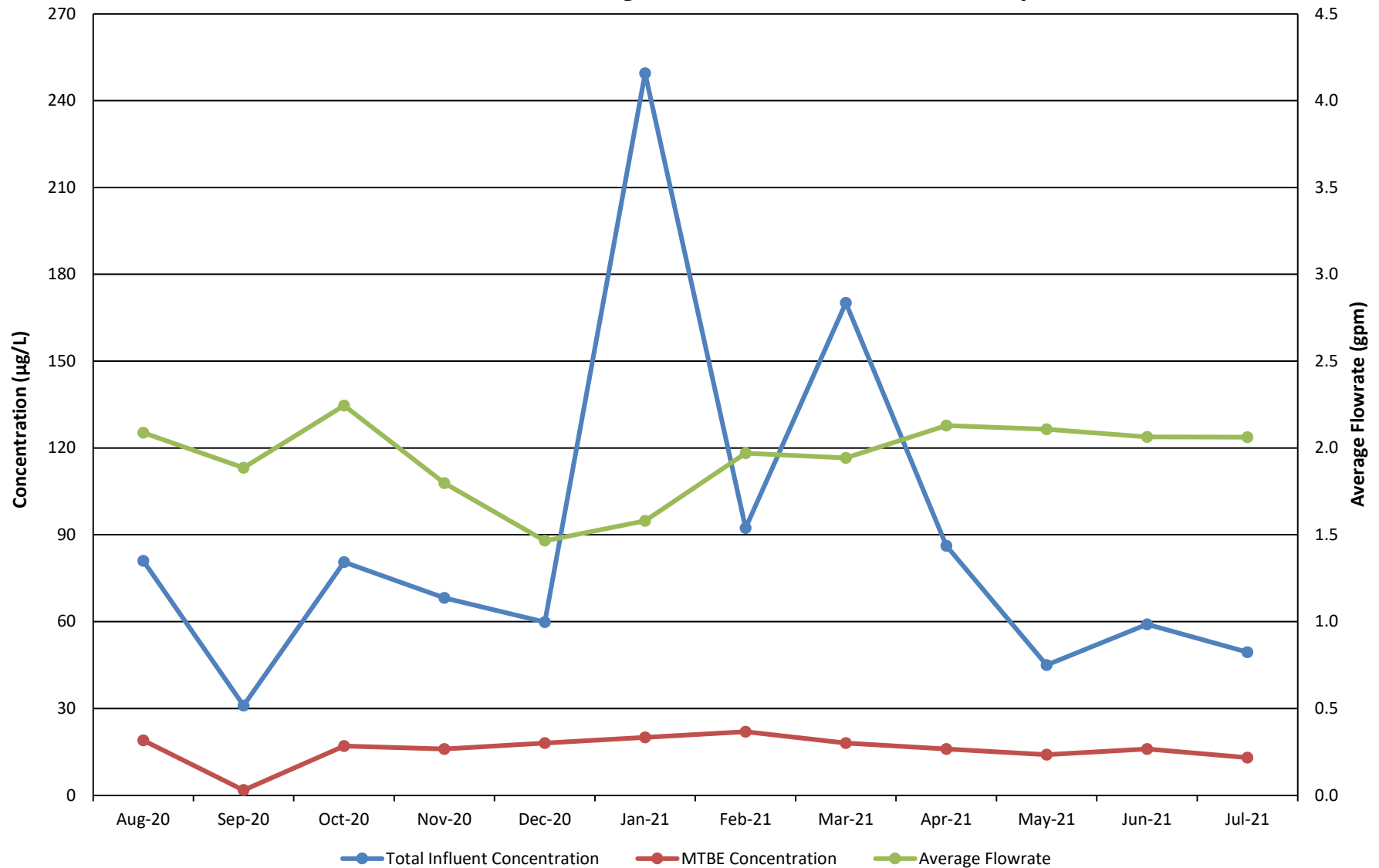
J = analyte concentration is considered an estimated value due to a detected concentration value between the reporting limit and method detection limit for the contaminant.

NA = not applicable

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

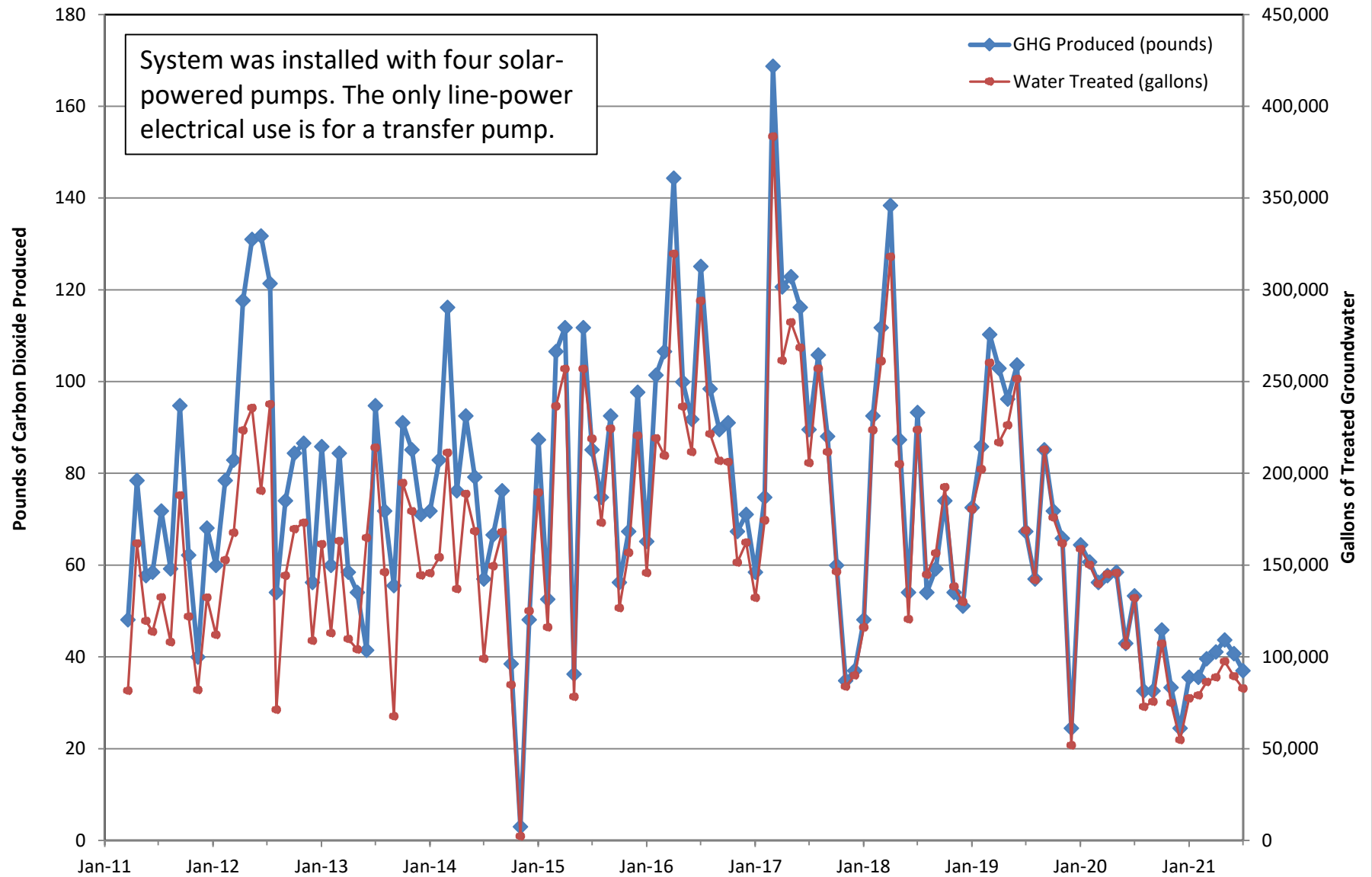
ND = not detected above method detection limit.

**Figure 1**  
**ST018GWTP Total Influent and MTBE Concentrations**  
**and Average Flowrate Twelve Month History**



**Figure 2**

**Equivalent Pounds of Carbon Dioxide Produced by the Site ST018 Groundwater Treatment Plant**



# Travis AFB Restoration Program

## Program Update

*RPM Meeting August 18, 2021*

# Completed Documents (1)

- Vapor Intrusion Assessment Update Technical Memorandum
- 2012 CAMU Annual Report
- Old Skeet Range Action Memorandum
- 3<sup>rd</sup> 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 (2)

- 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
- Site CG508 Well Decommissioning Work Plan

# Completed Documents (3)

- Data Gap Investigation TM for Soil Sites SD033, SD043, & SS046
- Site FT004 Technology Demonstration Construction Completion Report
- Site SD031 Soil Remedial Investigation Work Plan
- Corrective Action Plan for DERA-Funded Oil Water Separators
- Site ST032 POCO Completion Report
- Site ST028 POCO Completion Report
- 2015 Annual CAMU Monitoring Report
- Site SD031 Remedial Investigation Work Plan
- Site SD034 Technology Demonstration Work Plan
- Site SS016 Soil Data Gaps Investigation Work Plan
- Multi-Site Bioaugmentation Technology Demonstration Work Plan
- Sites ST028 and ST032 POCO Well Decommissioning Work Plan
- Site TS060 Action Memorandum
- 2015 Annual GRISR
- FT005 Technology Demonstration Construction Completion Report
- Site CG508 POCO Well Decommissioning and Site Closeout Technical Memorandum
- Site DP039 Remedial Action Construction Completion Report
- ST028 POCO Well Decommissioning/Site Closeout Technical Memorandum
- Site TS060 Removal Action Work Plan



# Completed Documents (4)

- Multisite Technology Demonstration Construction Completion Report
- SS014 POCO Technology Demonstration Construction Completion Report
- Site LF044 Investigation Work Plan
- Site FT004 POCO Soil Data Gap Investigation Work Plan
- SD034 Technology Demonstration Construction Completion Report
- POCO Evaluation/Closeout Report for DERA-funded oil/water separators OW051, OW053, and OW054
- ST032 POCO Well Decommissioning and Site Closeout Technical Memorandum
- 2016 Annual CAMU Monitoring Report
- Work Plan for Fourth Five-year Review
- 2016 Annual GRISR
- Data Gap Investigation Results, Technical Memorandum for Soil, Sites SD033, SD043, SS046
- TS060 Removal Action Completion Report
- SS035 Site Closure Report
- AOC TA500 Data Gaps Investigation and Closure Report
- Site TS060 No Further Action Proposed Plan
- POCO Evaluation/Closure Report for DERA-funded Oil/Water Separators OW040, OW047, OW048, OW049, OW050, OW052, OW055, OW056, and OW057

# Completed Documents (5)

- Data Gap Investigation Results, Technical Memorandum for Soil Site SS016
- LF006, SS030, SD031 Aquifer Test Activities Technical Memorandum
- SS015 Soil Sampling Plan
- Monitoring Well Installation Tech Memo for Site DP039, Addendum to the RACCR
- FT005 Extraction System Optimization Tech Memo
- 2017 Annual CAMU Monitoring Report
- LF044 Sediment Sampling Report
- SD043 RD/RA Work Plan
- SS046 RD/RA Work Plan
- Amendment to the WABOU Soil ROD for sites DP039, SD043, and SS046
- EVO Sites FT004, SS015, SD031, & SD036 Optimization Injections Tech Memo
- LF006 Technology Demonstration Work Plan
- AOC TA500 Well Decommissioning and Site Closeout Tech Memo
- SS015 Soil Sampling Results Tech Memo
- LF006 Technology Demonstration Construction Completion Report
- Subarea LF007C TPH Chromatogram Review TM
- 2017 Annual GRISR
- SS014 POCO Subsites 2, 4, and 5 Closure Evaluation Report
- Addendum to the Site SS016 Groundwater RD/RA Work Plan

# Completed Documents (6)

- SD043 Remedial Action Completion Report
- NFA ROD for Old Skeet Range (TS060/TS060A MRA)
- 2018 Annual GRISR
- SS046 Remedial Action Completion Report and Well Decommissioning Work Plan
- 2018 LF007 CAMU Inspection, Monitoring, and Maintenance Report
- Amendment to the NEWIOU Soil ROD for Sites SS016 and SD033
- SS016 RD/RA Work Plan
- 4<sup>th</sup> Five Year Review Report for Multiple Groundwater, Soil, and Sediment Sites
- SD043 Site Closure Report
- SS046 Well Decommissioning and Site Closeout Tech Memo
- LF008 Remedial Action Evaluation Report
- SD031B POCO Additional Site Investigation Work Plan
- Initial Passive Vent Systems Sampling Work Plan Tech Memo
- Optimization Activities Tech Memo for SD034 and SD037
- SD043 Well Decommissioning and Site Closeout Tech Memo
- FT004 POCO Corrective Action Plan
- 2019 GRISR
- 2019 CAMU Monitoring Report
- SD031 Soil RI/FS

# Completed Documents (7)

- SS016 Soil RACR
- Addendum to the Initial Passive Vent System Sampling Work Plan
- Site LF008 Remedial Infrastructure Decommissioning TM
- Site FT004 POCO Soil Corrective Action Completion Report
- Technology Demonstration TM
- Site SD031 and FT004 Groundwater Sampling Results TM
- ***Site SD031B POCO Additional Site Investigation Report***

# Completed Field Work (1)

- 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 (2)

- 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
- FT005 EVO Injection
- 2016 Q2 GRIP Sampling
- Data Gap Inv. for Soil Sites (SD043, SS046)
- SD031 Remedial Investigation Step-out Sampling (2<sup>nd</sup> round)
- DP039 EVO Injection
- CG508 Well Decommissioning
- SD033 Soil Sampling
- Multi-site Bioaugmentation Well Installation
- SD034 Technology Demonstration Well Installation
- SS014 Bioreactor Installation
- ST028 & ST032 Well Decommissioning

# Completed Field Work (3)

- SS016 Soil Data Gaps Investigation
- SD031 Remedial Investigation Soil Sampling (3<sup>rd</sup> round)
- Oil Water Separators Step-out Drilling
- OW055 Close-in-place
- Q4 2016 GRIP Sampling
- OW040 Soil Excavation/Surface Restoration
- OW057 Soil Excavation/Surface Restoration
- Multi-site Bioaugmentation & EVO Injection
- SD034 Technology Demonstration Bioreactor Installation
- OW050 Soil Sampling at Former Location of OWS
- OW055 Sidewalk Repairs
- SD031 Finish Soil Delineation (NE portion of site)
- Q2 2017 GRIP Sampling Event
- SS015 Optimization: Injection Well Installation
- DP039 Down-gradient Monitoring Well Installation (1<sup>st</sup> round)
- SD036 Optimization: Injection Well Installation
- SD031 Optimization: Injection Well Installation
- OW056 Site Excavation/Closure
- Well Re-development
- TS060 Removal Action

# Completed Field Work (4)

- FT004 POCO Soil Data Gaps Investigation
- LF044 Sediment Sampling
- FT004 EVO Optimization
- DP039 Install downgradient monitoring wells (2<sup>nd</sup> round)
- FT005 – Install Extraction Wells
- DP039 Repair SBGR distribution headers
- Q4 2017 GRIP Sampling
- SD036 EVO Optimization
- SS015 EVO Optimization
- SD031 EVO Optimization
- FT005 Installation of Pumps and Controls in 5 New Extraction Wells
- Q1 2018 GRIP Sampling
- SD037 EVO reinjection
- Q2 2018 GRIP Sampling
- SS015 Soil sampling
- TA500 Well Decommissioning
- FT005 EVO injection
- FT004 POCO Soil Investigation
- 3Q 2018 GRIP Sampling
- LF006 Well Installations and Injections
- 4Q 2018 GRIP Sampling
- SD043 Soil excavation
- 1Q 2019 GRIP Sampling
- 2019 Annual LUC Inspections
- SS046 Soil excavation
- 2Q 2019 GRIP Sampling Event
- Well Re-development (11 wells)
- SD037 Injection Well Installation
- SS046 Well Decommissioning



# Completed Field Work (5)

- 3<sup>rd</sup> Quarter 2019 GRIP Sampling
- SD034 O<sub>2</sub> Enhancement
- SS016 SBGR Repairs
- SD037 EVO Re-injection
- 4<sup>th</sup> Quarter 2019 GRIP Sampling
- SD031B POCO Additional Investigation (Gore Sorber Round 1)
- SD043 Well and GETS Decommissioning
- SS016 Soil excavation
- SS015 SPOC system installation
- SD031B POCO Additional Investigation (Gore Sorber Round 2)
- Annual CAMU Gas Monitoring
- SS015 SPOC Sampling
- 2Q20 GRIP Sampling
- DP039 Bioreactor Rejuvenation
- SD031B Phase 2 Soil, Vapor, & Groundwater Sampling
- DP039 Phytoremediation Trench extension
- Sampling Offbase LF007C wells
- LF008 Well Decommissioning
- Passive Vent Systems Sampling
- FT004 Soil Excavation
- SD031B Phase 3 MW Installation & GW Sampling
- PFAS Pilot Test

# Completed Field Work (6)

- 4Q20 GRIP
- CAMU Topographic Survey
- SBBGWTP SCADA Upgrade
- Winter 2021 Vapor Intrusion Sampling Event
- 2Q GRIP Event
- Summer 2021 VI Sampling Event

# Documents In-Progress

## CERCLA Draft Docs

- 2020 GRISR
- 2020 CAMU Report
- ***Vapor Intrusion Assessment Report***

## POCO Draft Docs

None

# Field Work In-Progress

CERCLA

None

POCO

None

# Documents Planned

CERCLA

None

POCO

None

# Field Work Planned

CERCLA

None

POCO

None

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

# Completed Documents (Historical 1)

- 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 Memorandum20



# Completed Field Work (Historical 1)

- ST027B Gore Sorber Survey–Phase 1
- ST027B Field Sampling – Phase 2
- GSAP 2008 Semi-annual Event
- ST027B Installation of Wells – Phase 3
- SS014 Site Characterization
- LF008 Rebound Study
- GSAP Annual Sampling Event - 2009
- SS030 Site Characterization–Phase 1
- ST027 Site Characterization -Phase 3
- ST014 Monitor Well Install - Subsite 3
- SD001/SD033 Sediment RA
- SS016 Site Characterization (OSA source area)
- ST018 Site Characterization
- SS030 Site Characterization (Off-base VOC Plume)
- DP039 Site Characterization (for Biobarrier Placement)
- SS014 & ST032 Q1 2010 MNA Sampling (2<sup>nd</sup> of 4 quarterly events)
- SD036 Additional Site Characterization (north & east)
- Therm/Ox System Removal
- SS016 Monitoring Well Installation
- SD037 EVO Injection Well Installation
- DP039 Monitoring Well & Injection Well Installation
- DP039 EVO Injection
- SD037 Monitoring Well Installation
- GSAP 2010 Annual Sampling Event
- SD037 EVO Injection
- 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 (4<sup>th</sup> 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

# **Travis AFB RPM Meeting 18 August 2021**

Land Use Control Sites  
Status/Update



**Travis Air Force Base**  
Environmental Restoration Program

<http://www.travis.af.mil/About-Us/Environment>

# Projects on Sites with LUCs Will Start Documenting in Annual Report

Site #	Project Description	Date Discussed/Approved	Additional Information
SS016	KC-46 Hangar and Fuel System Project	Starting in 2018 with approval and following up during construction	Regulators provided input from the beginning of the design of this project
SD037	New Material Handling System at Bldg. 977	January 2019 and August 2020	Soil impacted with TPH from old hydraulic rams will be sampled and properly disposed of.
LF044	Concrete Batch Plant	Discussed during May 2021 RPM meeting	Soil and or debris scraped up during ground preparation will be sampled and properly disposed of.
SS016/SS029/ST032	Runway Replacement	May-21	EA submitted to regulators on June 8



# LUC Sites

- SS016 KC-46 Hangar
  - EW605 and EW610 are both on line and we are still waiting for the contractor to schedule the pump test for EW003Ax16
- Runway 03L/21R Replacement
  - All comments on the EA have been received and are currently under evaluation
- Concrete Batch Plant LF044
  - Still being set up, nothing significant to report



# PFOS/PFOA Updates



# Off-Base Point-Of-Entry-Treatment-Systems

- Data from the 19 Jul sampling event (30-days post system monitoring) is under going validation.
- 20 Sep 2021 90-day sample post system monitoring sample collected.
- Quarterly sampling thereafter.

## Expanded Site Inspection

- The Draft Expanded Site Inspection evaluating off-base drinking water sources (within four miles of the Base) is complete and under internal review.



# AFFF RI Updates





# Air Force Civil Engineer Center

---

## Travis Air Force Base Phase I Remedial Investigation of AFFF Areas



Presented by  
Megan Duley, PE



18 August 2021

# Planning Document Update

---

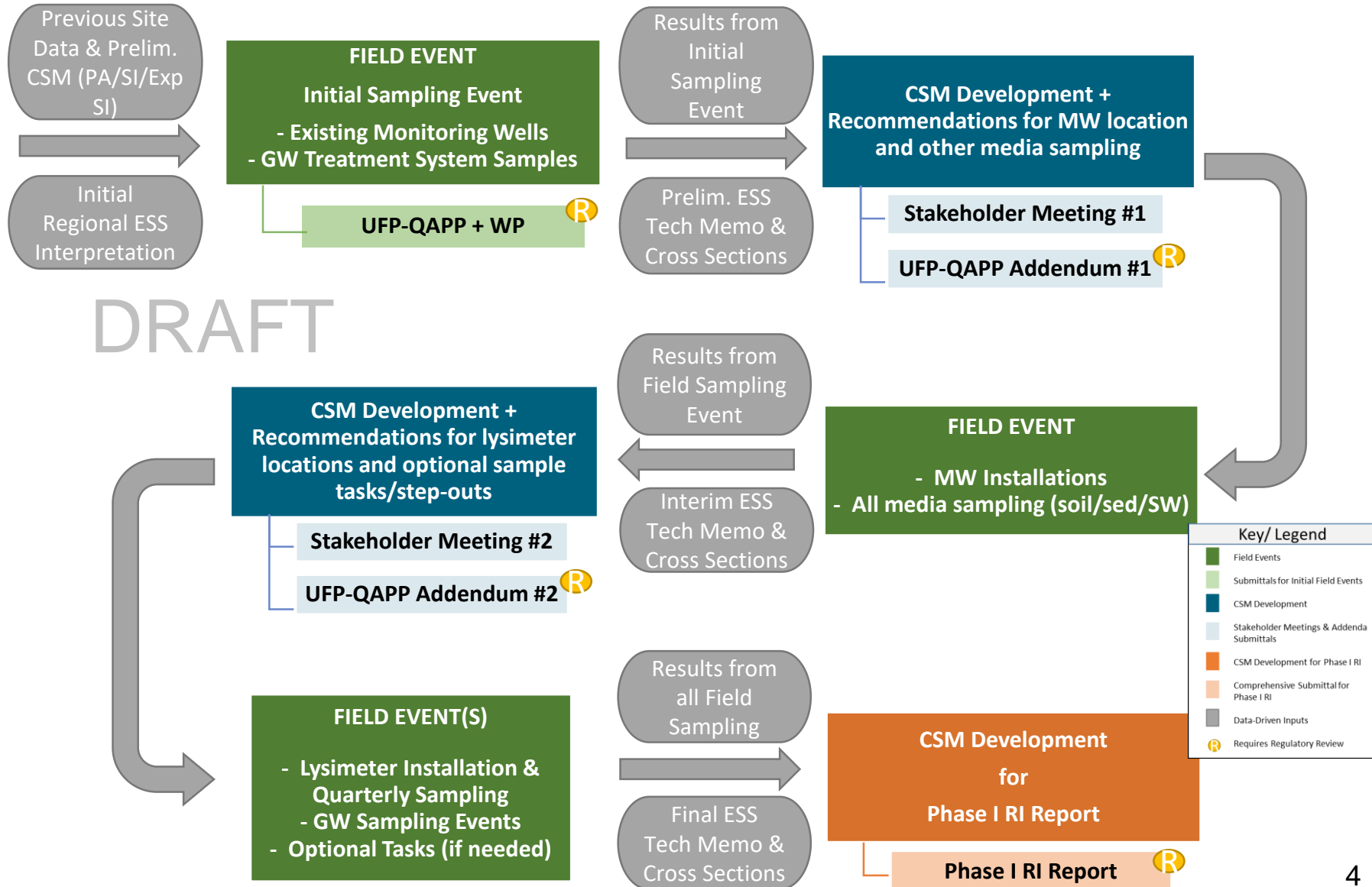
- Phase I RI WP and UFP-QAPP Introduction Meeting held 25 March 2021.
- Draft documents submitted electronically 26 March 2021.
- Regulatory comments received by 26 May 2021.
- Comment discussion/resolution meeting held 16 June 2021.
- Draft Final documents submitted 30 June 2021.
- Regulatory concurrence on the Draft-Final documents for initial sampling and additional Agency concerns received by 30 July 2021.
- *Response to additional Agency comments are currently being developed.*

# Field Sampling Event Update

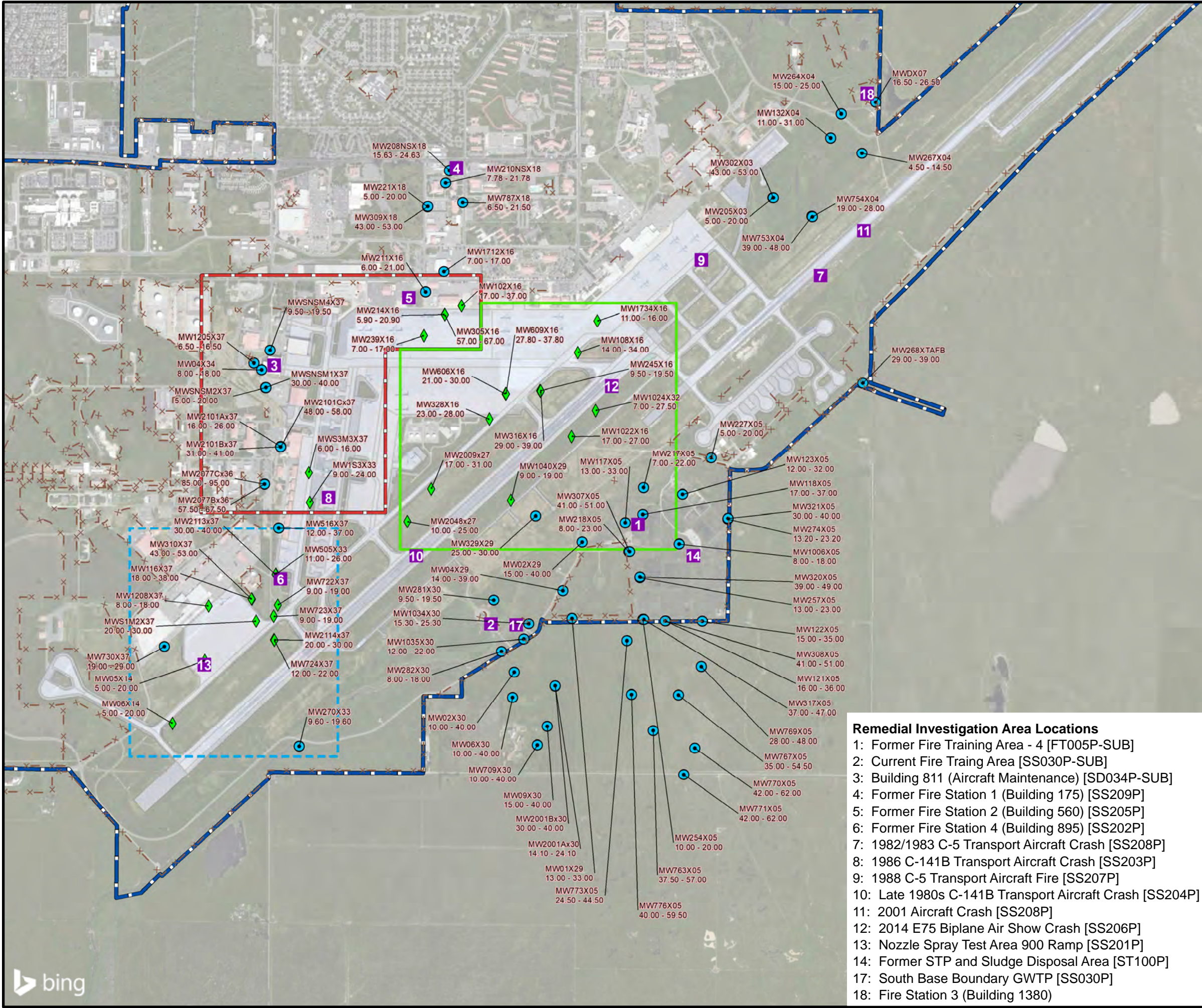
---

- Initial field event schedule for 23 AUG – 3 SEPT 2021
  - Regulatory/AF/USACE agree to perform initial sampling activities while additional comments are being resolved.
  - Groundwater sampling at ~100 existing monitoring wells.
  - SBBGWTP influent and effluent samples will be collected during this first sampling event.
  - Natural resource training and monitoring will be performed in accordance with the Travis AFB INRMP and PBO following the Project Analysis for the GRIP.

# Phase I Remedial Investigation Data-Driven Process







Groundwater Sampling Locations  
at Existing Monitoring Wells  
On Airfield Surface

Overview  
Travis AFB

Phase I Remedial Investigation of AFFF Areas  
at Travis Air Force Base  
Solano County, California



U.S. Army Corps of Engineers  
Albuquerque District  
for  
Air Force Civil Engineer Center

Legend

Recommended Initial Sampling Locations (~100 wells)

- Not on Airfield
- On Airfield
- Remedial Investigation Area
- Fence
- Airfield Surface
- Travis AFB Installation Boundary

Sampling Day

- Thursday August 26th
- Friday August 27th
- Monday August 30th

Note

Well labels include the well ID and screen interval in depth (feet below ground surface). Labels highlighted in salmon color are proposed for sampling during the Phase I RI. Some offsite wells outside of the base boundaries are displayed on this figure.

Service Layer Credits: © 2021 Microsoft Corporation © 2021 Maxar ©CNES (2021) Distribution Airbus DS

Contract #W912PP-20-C-0014

By: NMS

8/5/2021

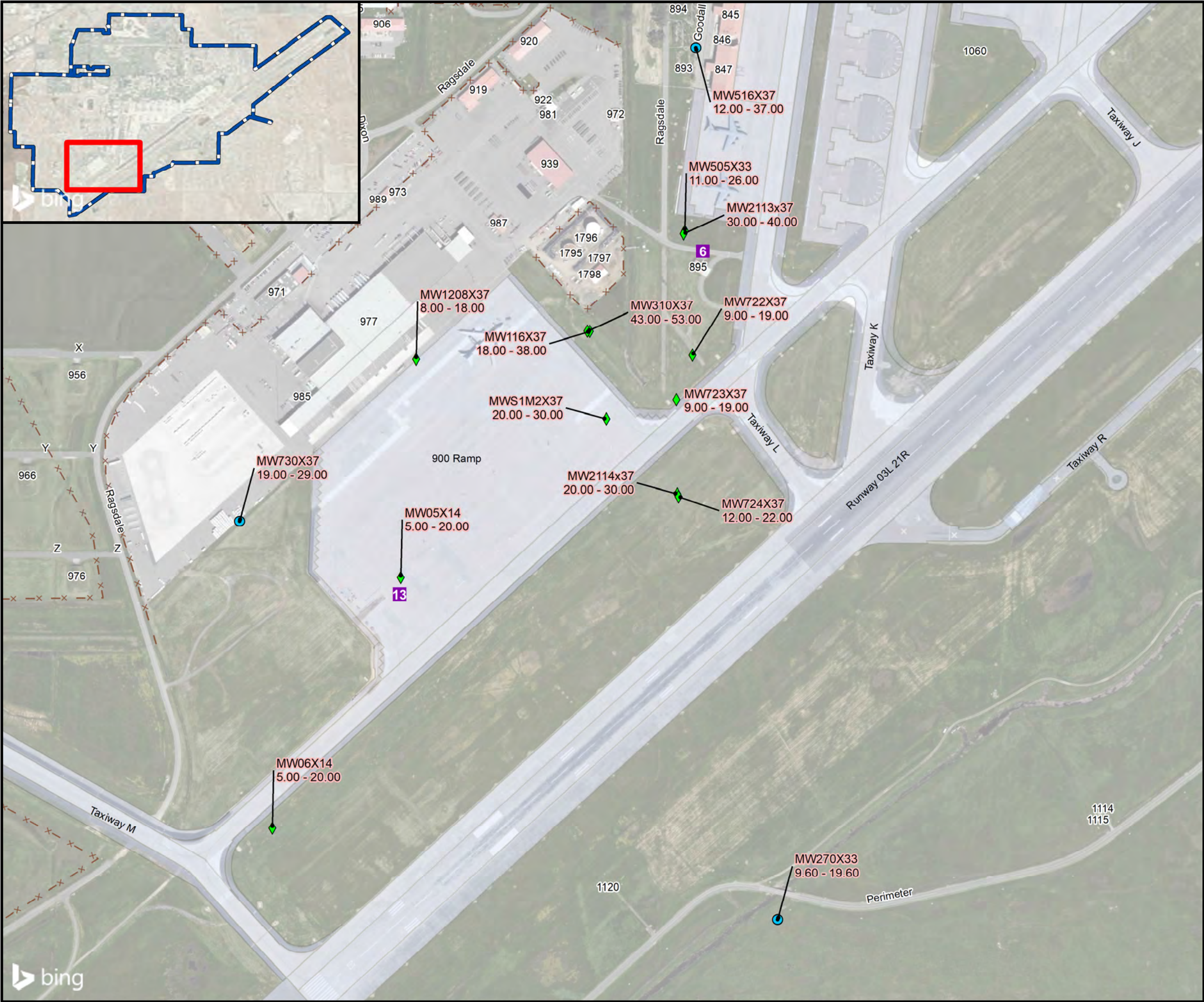


0 1,500 3,000  
Feet

Remedial Investigation Area Locations

- Former Fire Training Area - 4 [FT005P-SUB]
- Current Fire Training Area [SS030P-SUB]
- Building 811 (Aircraft Maintenance) [SD034P-SUB]
- Former Fire Station 1 (Building 175) [SS209P]
- Former Fire Station 2 (Building 560) [SS205P]
- Former Fire Station 4 (Building 895) [SS202P]
- 1982/1983 C-5 Transport Aircraft Crash [SS208P]
- 1986 C-141B Transport Aircraft Crash [SS203P]
- 1988 C-5 Transport Aircraft Fire [SS207P]
- Late 1980s C-141B Transport Aircraft Crash [SS204P]
- 2001 Aircraft Crash [SS208P]
- 2014 E75 Biplane Air Show Crash [SS206P]
- Nozzle Spray Test Area 900 Ramp [SS201P]
- Former STP and Sludge Disposal Area [ST100P]
- South Base Boundary GWTP [SS030P]
- Fire Station 3 (Building 1380)





**Figure 1**  
**900 Ramp**  
**Thursday August 26th**

**Airfield Wells**  
**Travis AFB**

*Phase I Remedial Investigation of AFFF Areas  
at Travis Air Force Base  
Solano County, California*



**U.S. Army Corps of Engineers**  
**Albuquerque District**  
*for*  
**Air Force Civil Engineer Center**

**Legend**

**Recommended Initial Sampling Locations (~100 wells)**

- Not on Airfield
- On Airfield
- Remedial Investigation
- Fence
- Airfield Surface
- Travis AFB Installation Boundary

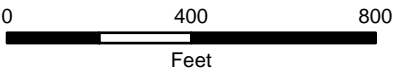
**Note**  
Well labels include the well ID and screen interval in depth (feet below ground surface).  
Labels highlighted in **salmon color** are proposed for sampling during the Phase I RI.  
Some offsite wells outside of the base boundaries are displayed on this figure.

Service Layer Credits: © 2021 Microsoft Corporation © 2021 Maxar ©CNES  
(2021) Distribution Airbus DS  
© 2021 Microsoft Corporation Earthstar Geographics SIO

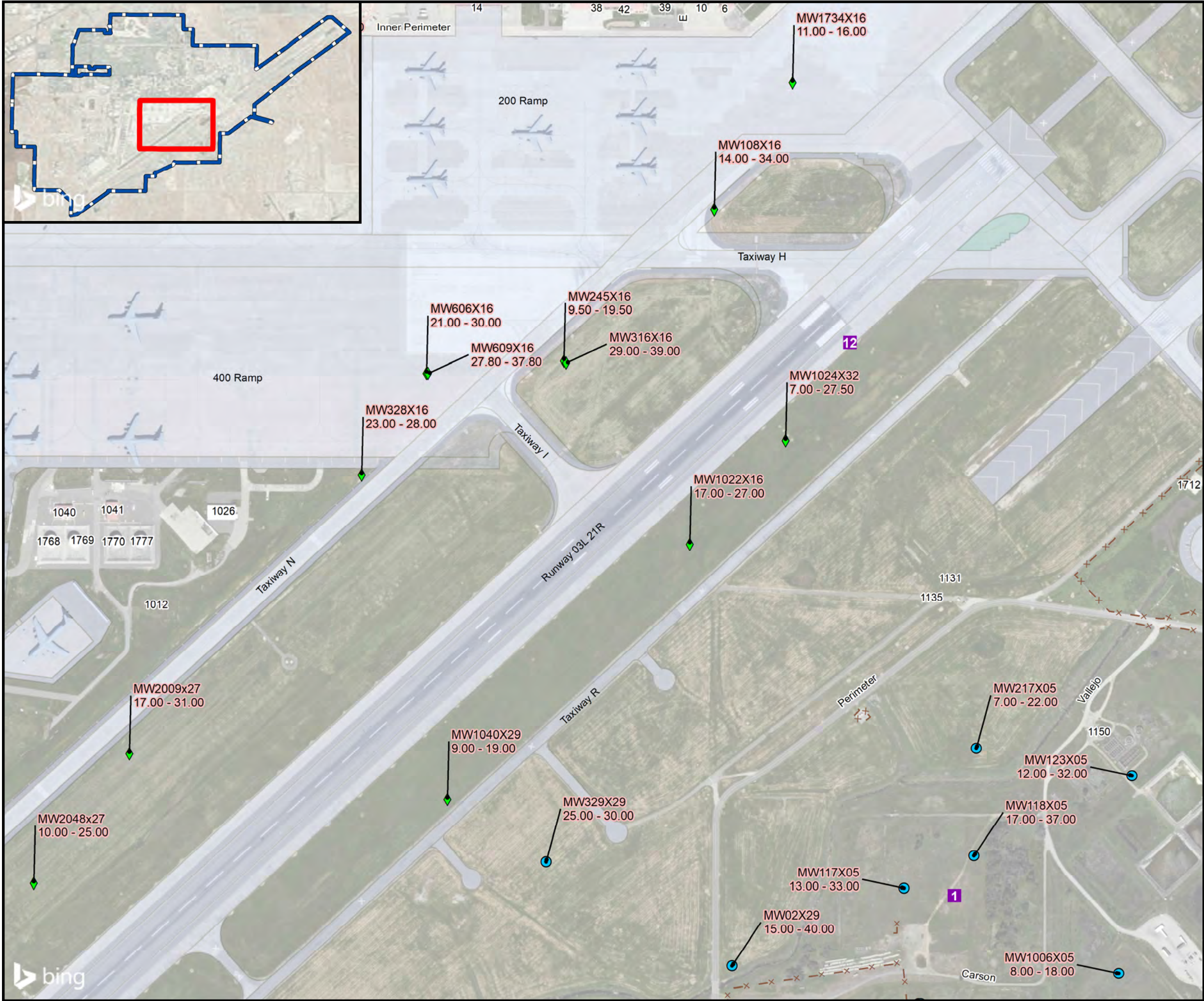
**Contract #W912PP-20-C-0014**

**By: NMS**

**8/5/2021**







**Figure 2**  
**Runway 03L 21R**  
**Friday August 27th**

**Airfield Wells**  
**Travis AFB**

*Phase I Remedial Investigation of AFFF Areas  
at Travis Air Force Base  
Solano County, California*



**U.S. Army Corps of Engineers**  
**Albuquerque District**  
*for*  
**Air Force Civil Engineer Center**

**Legend**

**Recommended Initial Sampling Locations (~100 wells)**

- Not on Airfield
- On Airfield
- Remedial Investigation
- Fence
- Airfield Surface
- Travis AFB Installation Boundary

**Note**  
Well labels include the well ID and screen interval in depth (feet below ground surface).  
Labels highlighted in **salmon color** are proposed for sampling during the Phase I RI.  
Some offsite wells outside of the base boundaries are displayed on this figure.

Service Layer Credits: © 2021 Microsoft Corporation © 2021 Maxar ©CNES  
(2021) Distribution Airbus DS  
© 2021 Microsoft Corporation Earthstar Geographics SIO

**Contract #W912PP-20-C-0014**

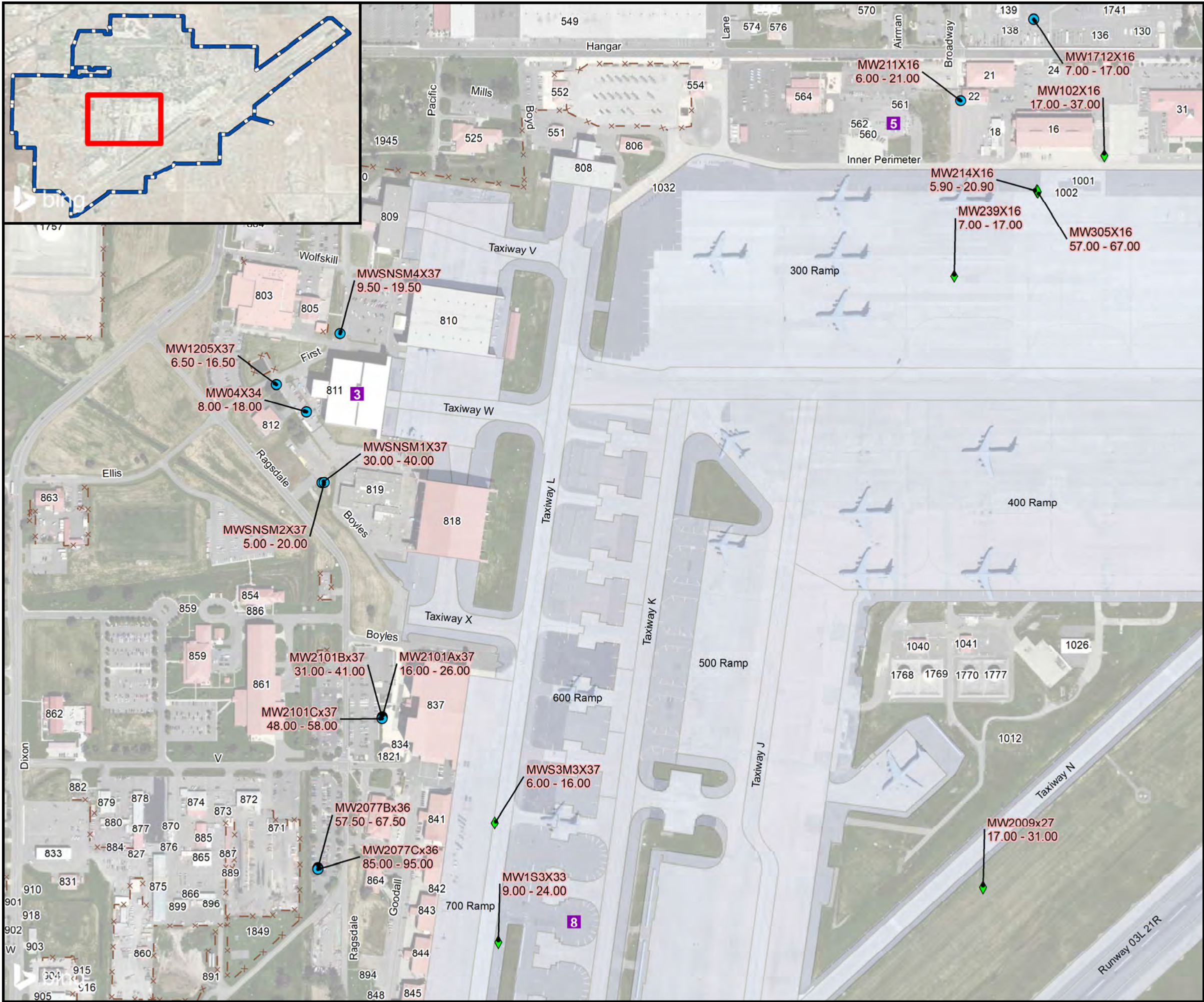
**By: NMS**

**8/5/2021**



0 400 800  
Feet





**Figure 3**  
**300-700 Ramps**  
**Monday August 30th**

**Airfield Wells**  
**Travis AFB**

*Phase I Remedial Investigation of AFFF Areas  
at Travis Air Force Base  
Solano County, California*



**U.S. Army Corps of Engineers**  
**Albuquerque District**  
for  
**Air Force Civil Engineer Center**

**Legend**

**Recommended Initial Sampling Locations (~100 wells)**

- Not on Airfield
- On Airfield
- Remedial Investigation
- Fence
- Airfield Surface
- Travis AFB Installation Boundary

**Note**

Well labels include the well ID and screen interval in depth (feet below ground surface). Labels highlighted in **salmon color** are proposed for sampling during the Phase I RI. Some offsite wells outside of the base boundaries are displayed on this figure.

Service Layer Credits: © 2021 Microsoft Corporation © 2021 Maxar ©CNES (2021) Distribution Airbus DS © 2021 Microsoft Corporation Earthstar Geographics SIO

**Contract #W912PP-20-C-0014**

**By: NMS**

**8/5/2021**



0 400 800  
Feet



