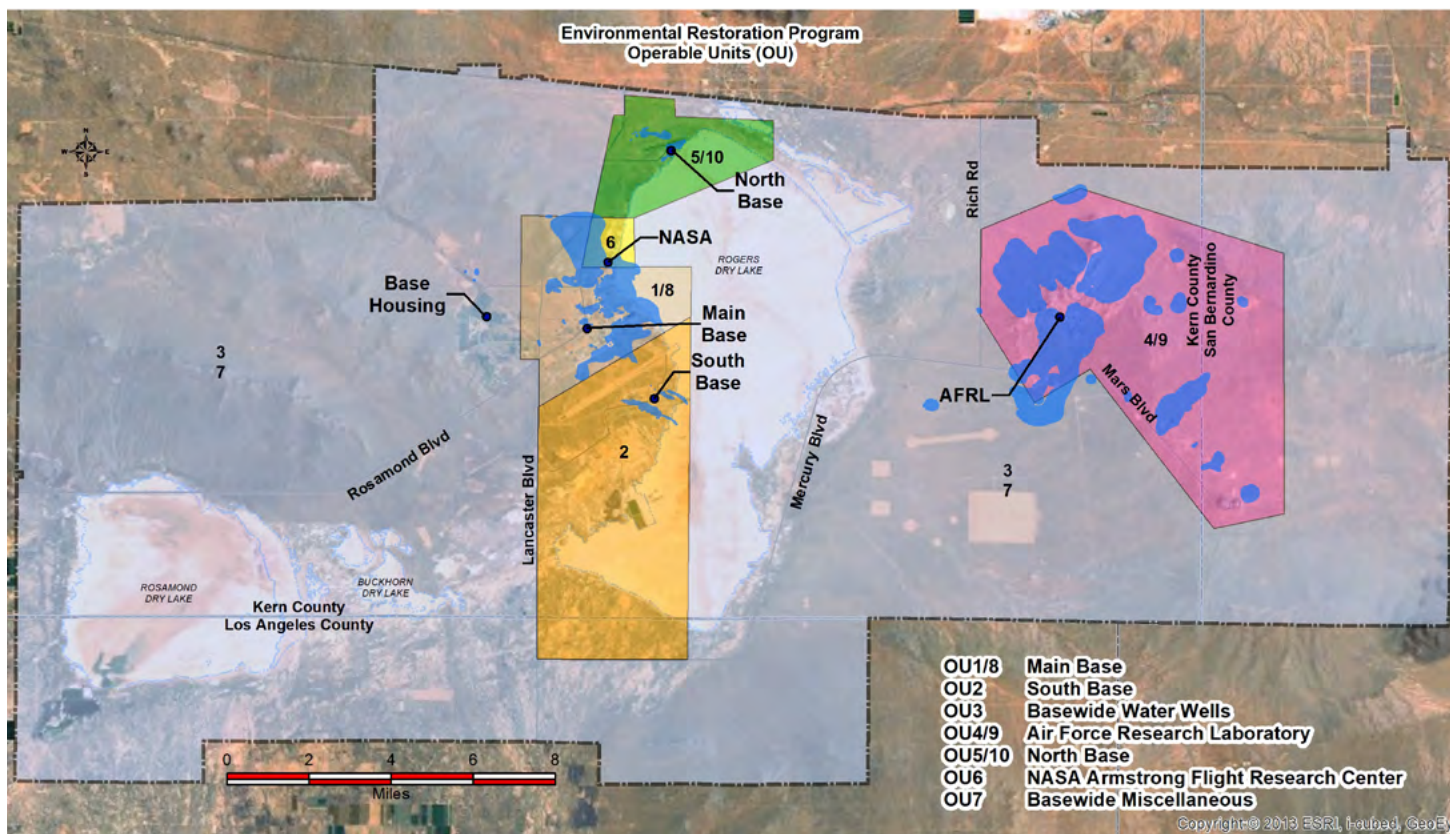




RAB Fact Sheet



This fact sheet covers environmental restoration activities that have occurred at Edwards AFB, California, since the November 2019 Restoration Advisory Board meeting and planned future activities. Because of COVID-19, this fact sheet is being issued in lieu of the November 2020 RAB meeting.



An overview map of Edwards identifies environmental cleanup areas known as Operable Units or OUs. Groundwater contaminant plumes are depicted in blue and the black dashed line represents the base boundary. Close-up views of each OU are attached to the back of this fact sheet.

S elected by a majority vote of Restoration Advisory Board public representatives, Victor Yaw became the RAB Public Co-Chair in September. Representing the community of Mojave on the RAB since 1997, Yaw will share chairmanship duties with Colonel Randel Gordon, 412th Test Wing Vice Commander and RAB Air Force Co-Chair.

The board also gained Raj Malhi and Darrell Dorris as the primary and alternate Lancaster public representatives, respectively. Vacancies

remain open for Boron, NASA Armstrong, North Edwards, North Base and South Base. Anyone who lives or works in these communities is welcome to apply to be a representative.

New Contracts Awarded

Edwards environmental restoration program managers worked to secure two new contracts, both awarded in late September. One contract covers basewide groundwater monitoring and operations and maintenance activities for three years, with a fourth year included

to complete document reporting. Optimization of treatment systems will also be addressed under the basewide contract.

The second contract is to conduct the first phase of a Remedial Investigation into emerging contaminants called perfluorooctane sulfate/perfluorooctanoic acid, or PFOS/PFOA for short. The first phase of the RI will consist of collecting site data necessary to understand the extent of contamination, which will then be used to perform risk assessments for the second phase of the RI.



Clockwise from left: As part of the base's ongoing groundwater monitoring efforts, a field member unlocks Monitoring Well 58-MW08 in OU1/8 Main Base to check on an installed pressure transducer. A drill rig similar to the one depicted in the photo was used to install six new monitoring wells at OU2 South Base Site 5 to help delineate a carbon tetrachloride plume. At the northern boundary of Edwards, a field crew sets up to collect groundwater samples as part of an expanded Site Inspection for PFOS/PFOA contamination.

PFOS/PFOA

A draft report was submitted to regulatory agencies in May that summarized the results of a phased groundwater sampling effort conducted as part of an expanded Site Inspection. The expanded SI concentrated on three areas to determine whether there were any complete pathways to drinking water receptors. In addition to PFOS/PFOA,

the Air Force also sampled for perfluorobutane sulfonic acid, or PFBS. The Air Force is currently working to resolve regulatory comments on the draft document and a final version is expected to be issued in December/January.

The Air Force also plans to conduct stakeholder involvement in the Relative Risk Site Evaluation or RRSE process. The RRSE is a standard method by which

Department of Defense components evaluate the relative risk posed by a site in relation to other sites.

Regulatory and public input is part of the RRSE process, which means Edwards environmental restoration officials plan to hold a 30-day comment period that is anticipated to start in December/January. The start of the comment period will be announced in local newspapers and on the



A groundwater extraction and treatment system at OU2 South Base Site 14 acts to prevent migration of groundwater contaminants as part of the final cleanup remedy for Sites 5 and 14. A basewide contract awarded in September will address optimization of the Site 14 treatment system as well as other treatment systems throughout Edwards.

Edwards public website and RAB Facebook page. Currently, officials are drafting an RRSE package that will be uploaded to the Edwards Administrative Record website during the public comment period.

AFRL Arroyos Dispute

The Senior Executive Committee met in October and early November to discuss dispute issues that the Air Force and regulatory agencies agreed to elevate. Each agency submitted individual position statements to facilitate the SEC discussion.

In February, the Air Force collected vapor intrusion samples from five Air Force Research Laboratory, Detachment 7, Arroyos buildings. Results were presented in a draft report submitted to the regulatory agencies in August. The sampling results will determine whether continued VI sampling is necessary in the AFRL Arroyos Record of Decision.

OU1/8 Main Base

The Air Force continues to host Technical Working Group teleconferences to resolve issues on the Operable Unit 1/8 Feasibility Study Addendum with regula-

tory agencies. Issues include topics such as vapor intrusion evaluation of buildings, groundwater modeling and plume stability.

Indoor air sampling of Building 1807 moved to a semiannual schedule starting in November 2019. Results from the November 2019 and May 2020 sampling events confirmed that indoor air trichloroethene levels remain below all action levels with the new heating, ventilation and air conditioning system operating continuously. A revised draft report documenting vapor intrusion investigation efforts conducted at Building 1807 from November 2009 through July 2019 was submitted to the regulatory agencies for review in August.

OU2 South Base

Groundwater treatment systems continue to operate at Sites 5, 14, 76 and 86, with annual reports submitted to the regulators and published in the Edwards Administrative Record. In October, the Air Force installed six new wells to further delineate the carbon tetrachloride plume at Site 5.

The Site 29 Explanation of Significant Differences was signed into effect and is being prepared for public distribution. The ESD documents minor changes that were made to the 2009 Record of Decision cleanup remedy for the site.

Former skeet target debris Sites 81 and 102 were covered with crushed concrete and native seed was spread in specific locations to help revegetate the area. The sites were covered to eliminate a pathway for graveling birds to ingest skeet and lead-shot debris.

OU4/9 AFRL

A revised draft final version of the South AFRL ESD was submitted to the regulators in May. The Air Force submitted a second addendum to the Final South AFRL Remedial Action Work Plan Version 2 for regulatory review in early November. The second addendum will address the installation of two new groundwater monitoring wells and vapor intrusion sampling at three South AFRL buildings. Groundwater monitoring continues throughout AFRL and Land Use Controls are in place at South AFRL and

AFRL Soil and Debris Sites. Annual status reports on these activities can be found in the Edwards Administrative Record.

OU5/10 North Base

The Site 285 groundwater extraction and treatment system, an interim system that addresses perchlorate in groundwater, is expected to be evaluated for optimization thanks to the basewide contract awarded in September. A draft vapor intrusion work plan for OU5/10 is expected to be submitted to the regulatory agencies for review in November. A revised draft Feasibility Study is now scheduled to be submitted in December 2022.

OU6 NASA Armstrong

The annual OU6 groundwater monitoring event is expected to occur this fall, with *in situ* chemical oxidation treatment to take place at Site N3 in March 2021. The ISCO treatment will add chemical components to the groundwater to help break down contaminants. The Third Five-Year Review of OU6 is due in late 2021, which will determine whether the 2006 cleanup remedy in place continues to be protective of human health and the environment.

OU7 Basewide Miscellaneous

A draft Proposed Plan for Sites 267, 269, 272, 280, 292, 294 and 339 is expected to be submitted to the regulatory agencies for review in March 2021.

OU7 Site 3

The installation of the last portion of the Site 3 landfill cap/cover will begin as soon as an on-base soil source is identified and approved.

OU7 Chemical Warfare Materiel Site 442

Annual status reports on Site 442 continue to be submitted to the regulatory agencies and published in the Edwards Administrative Record.

Multisite Five-Year Review Report

The document reviewed cleanup remedies in place at Sites 3, 5, 14, 76, 86 and 442. As reported at the November 2019 RAB meeting, the U.S. EPA concurred with protectiveness in the short term and the Air Force will address FYR recommendations to ensure protectiveness in the long term. Because of funding/contract restraints, the FYR was not published until mid-October.

The document is available on the base public website and Administrative Record website.

Site 25

The Air Force is working on several fieldwork efforts to collect data that will be incorporated into a revised Feasibility Study for Site 25. In November/December, base officials expect to restart a soil vapor extraction treatability study in the Site 25 source area, with the addition of air sparging. The treatability study is expected to provide useful information for future remedial action design at Site 25.

MMRP

In September, two Military Munitions Response Program documents were finalized: Supplemental Comprehensive Site Evaluation, Phase II for AL505-3 and AL505-5; and Remedial Investigation/Feasibility Study Report for AL501A, AL504, AL505-2 and AL505-4. The recently awarded basewide contract includes tasks to develop the MMRP Proposed Plan and a letter of findings for off-base property owners that summarizes the Air Force's investigative efforts.

MORE INFORMATION AVAILABLE

The Air Force invites the public to gain a more complete understanding of the base cleanup areas and activities that have been conducted. Documents related to environmental restoration investigation and mitigation at Edwards AFB are in the Administrative Record. To view the full record, you may contact Gary Hatch, 412th Test Wing Public Affairs, by:

- **Mail:** 412 TW/PA, 305 E. Popson Ave., Edwards AFB, CA 93524
- **Phone:** (661) 277-8707 • **E-mail:** 412tw.pae@us.af.mil

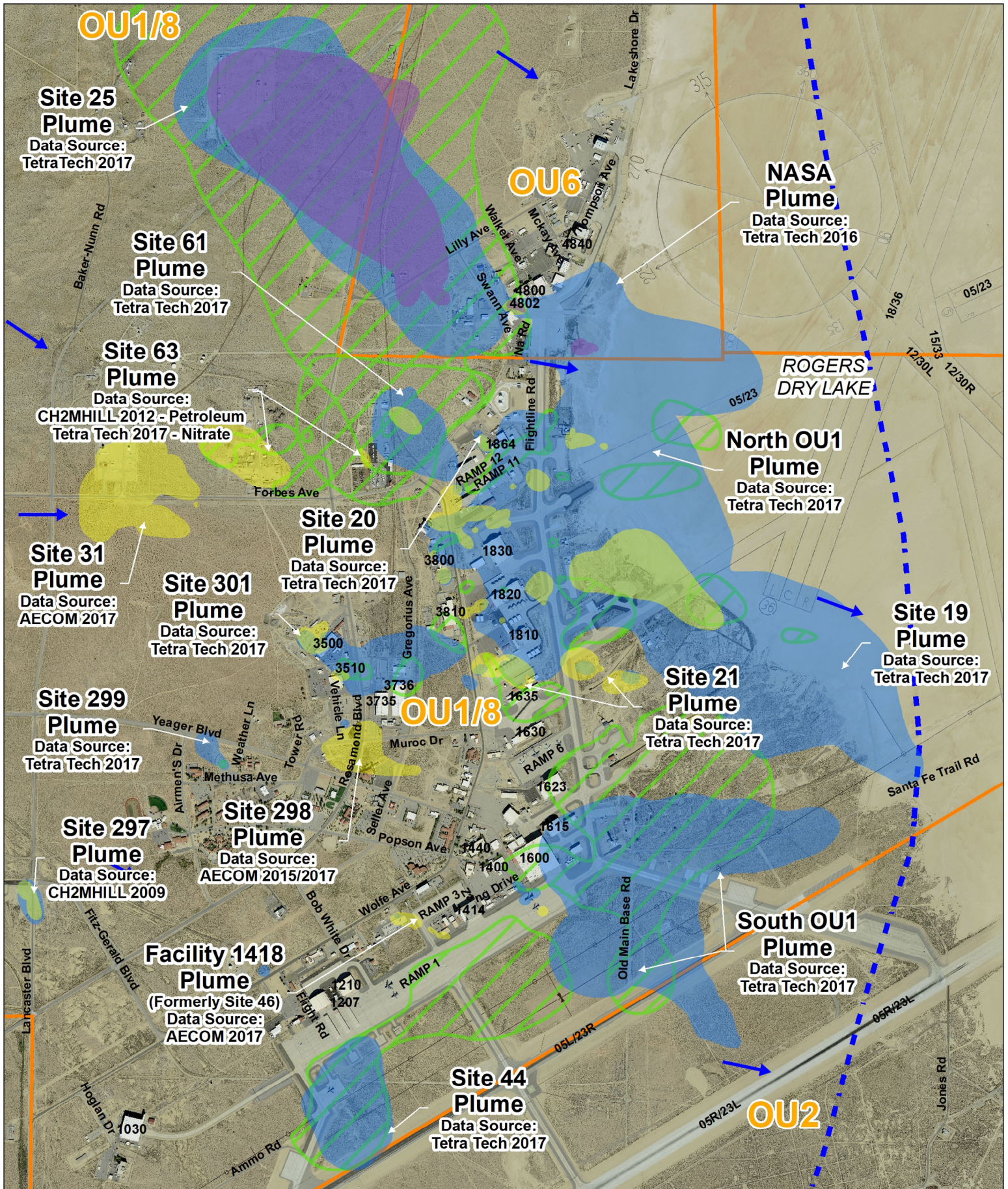
Administrative Record documents also may be found online at <https://ar.afcec-cloud.af.mil>. On the website, select "Edwards AFB, CA" from the Installation List and use the Search function to find cleanup documents related to the base. To view a subset of decision documents, you may also visit one of the Information Repository locations listed below.

Information Repositories:

Edwards AFB Library
5 W. Yeager Blvd.
Edwards AFB, CA
(661) 275-2665

Kern County Public Library
3611 Rosamond Blvd.
Rosamond, CA
(661) 256-3236

Los Angeles County Public Library
601 W. Lancaster Blvd.
Lancaster, CA
(661) 948-5029

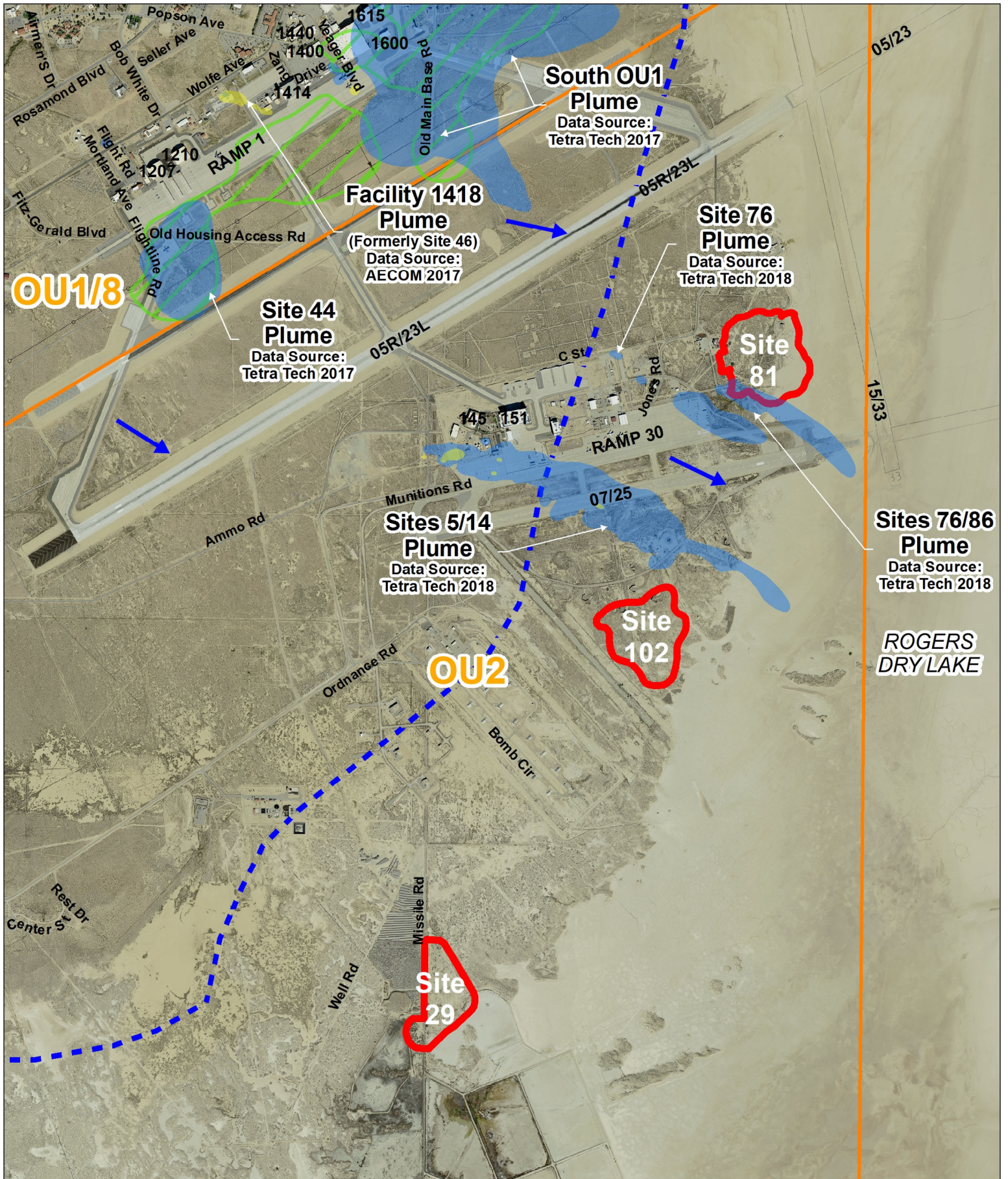


Legend

- NDMA Related Plume Extent
- Petroleum Related Plume Extent
- Solvent Related Plume Extent
- Nitrate Related Plume Extent
- Groundwater Subbasin
- Operable Unit Boundary
- Generalized Groundwater Gradient

**OU1/8
Groundwater Plume Map**

Created By: 413 CBG/CBYA, GIS
Printed: 05/29/20



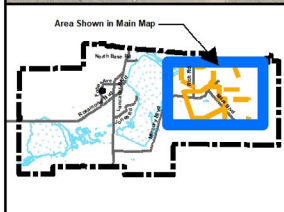
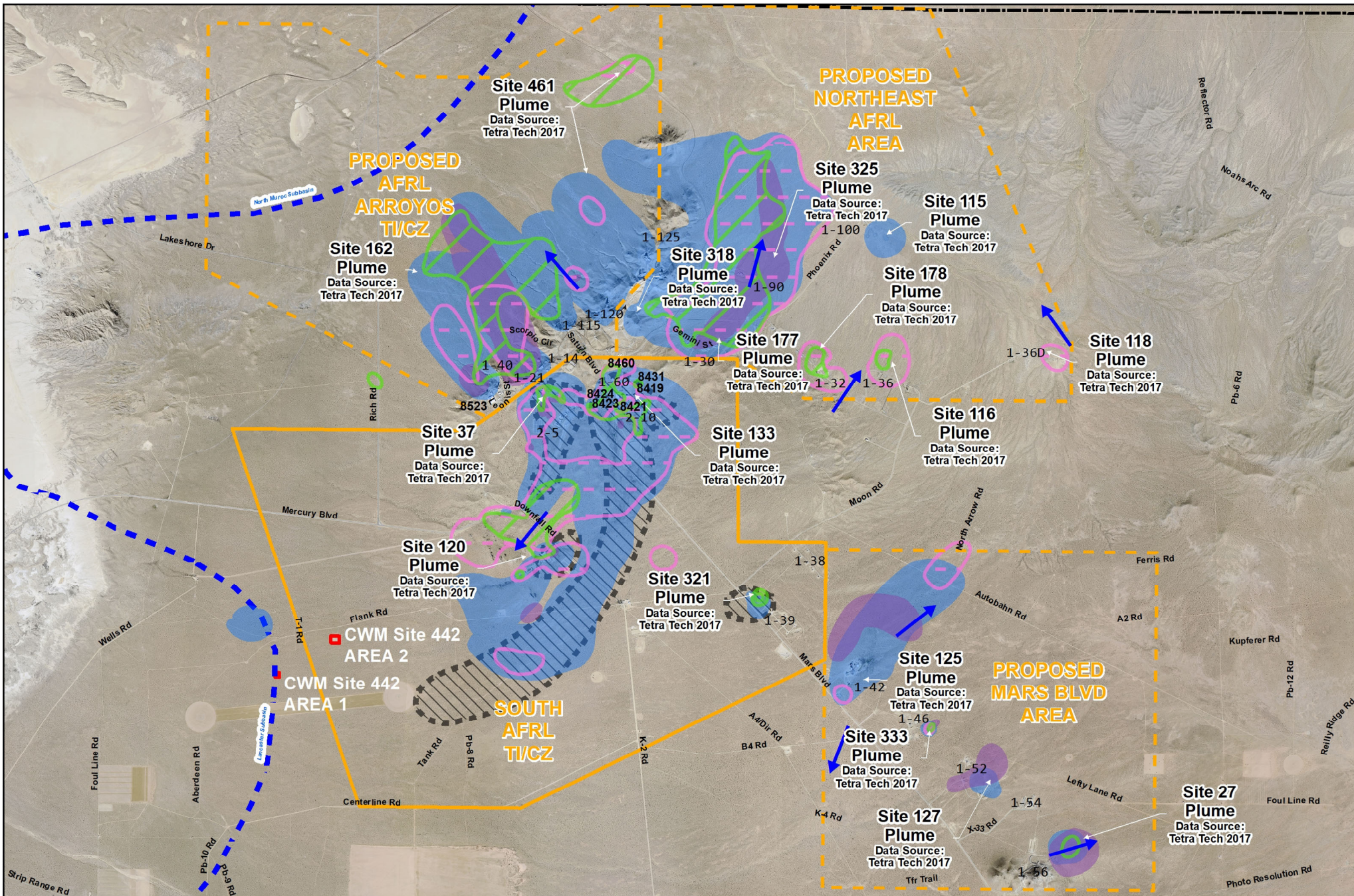
Legend

- Petroleum Related Plume Extent
- Solvent Related Plume Extent
- Nitrate Related Plume Extent
- Groundwater Subbasin
- ERP Sites 29, 81, and 102
- Operable Unit Boundary
- Generalized Groundwater Gradient

OU2 Groundwater Plume Map

Scale: 0 to 0.5 Miles

Created By: 412 CRG/CEVA, GIS
Printed on: 09/09/20



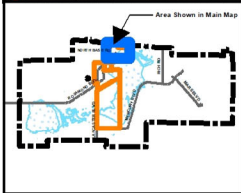
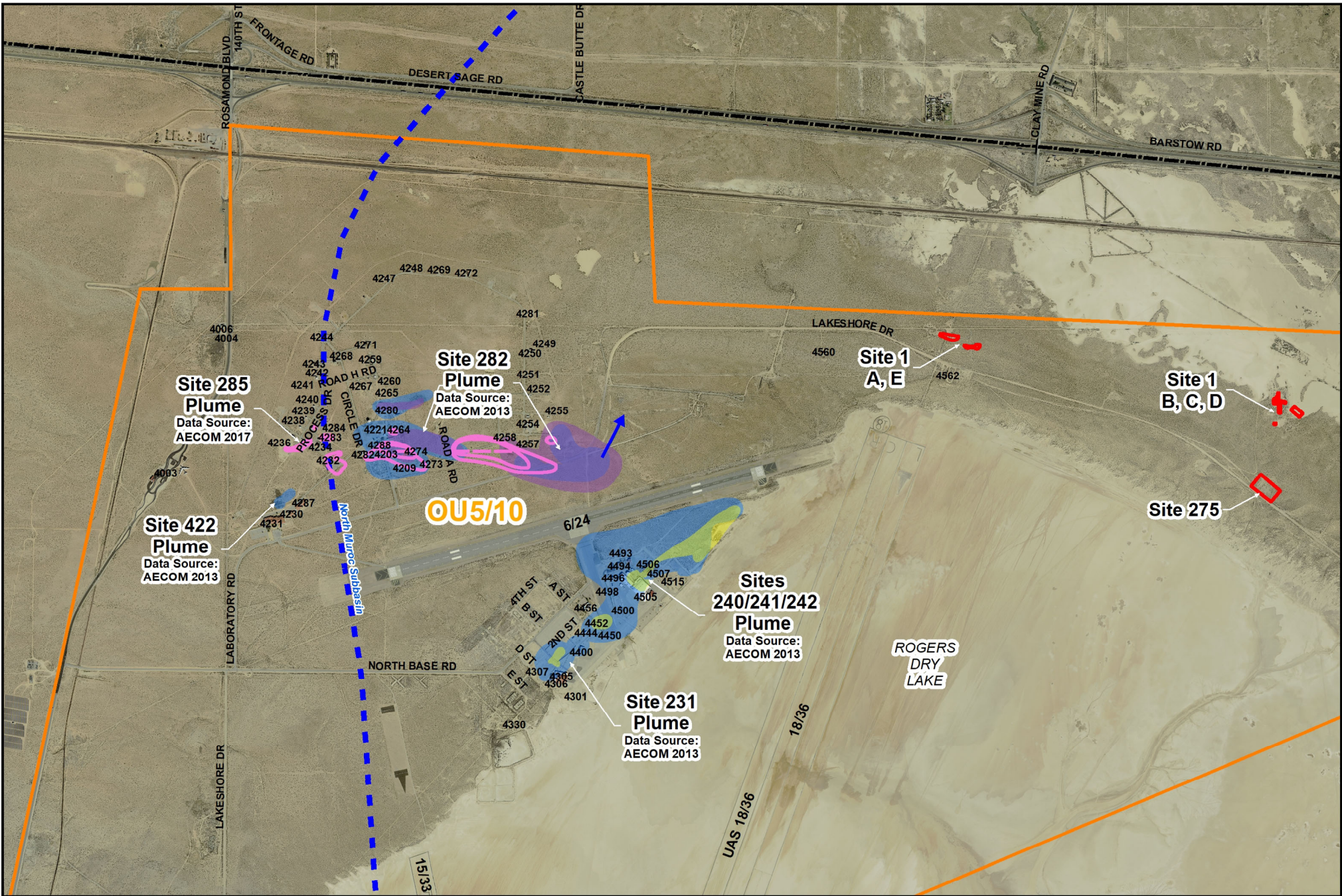
Legend

	Official TI/CZ Boundary		Solvent Related Plume Extent
	Proposed TI/CZ Boundary		Vapor Intrusion Boundary
	Nitrate Related Plume Extent		Groundwater Subbasin
	Perchlorate Related Plume Extent		ERP CWM Site 442
	NDMA Related Plume Extent		Edwards AFB Boundary

Generalized Groundwater Gradient

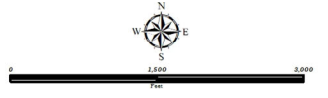
**AFRL
Groundwater Plume Map**

0 1 Miles
Created By: 412 CBG/CEVA, GIS
Printed on: 05-28-20

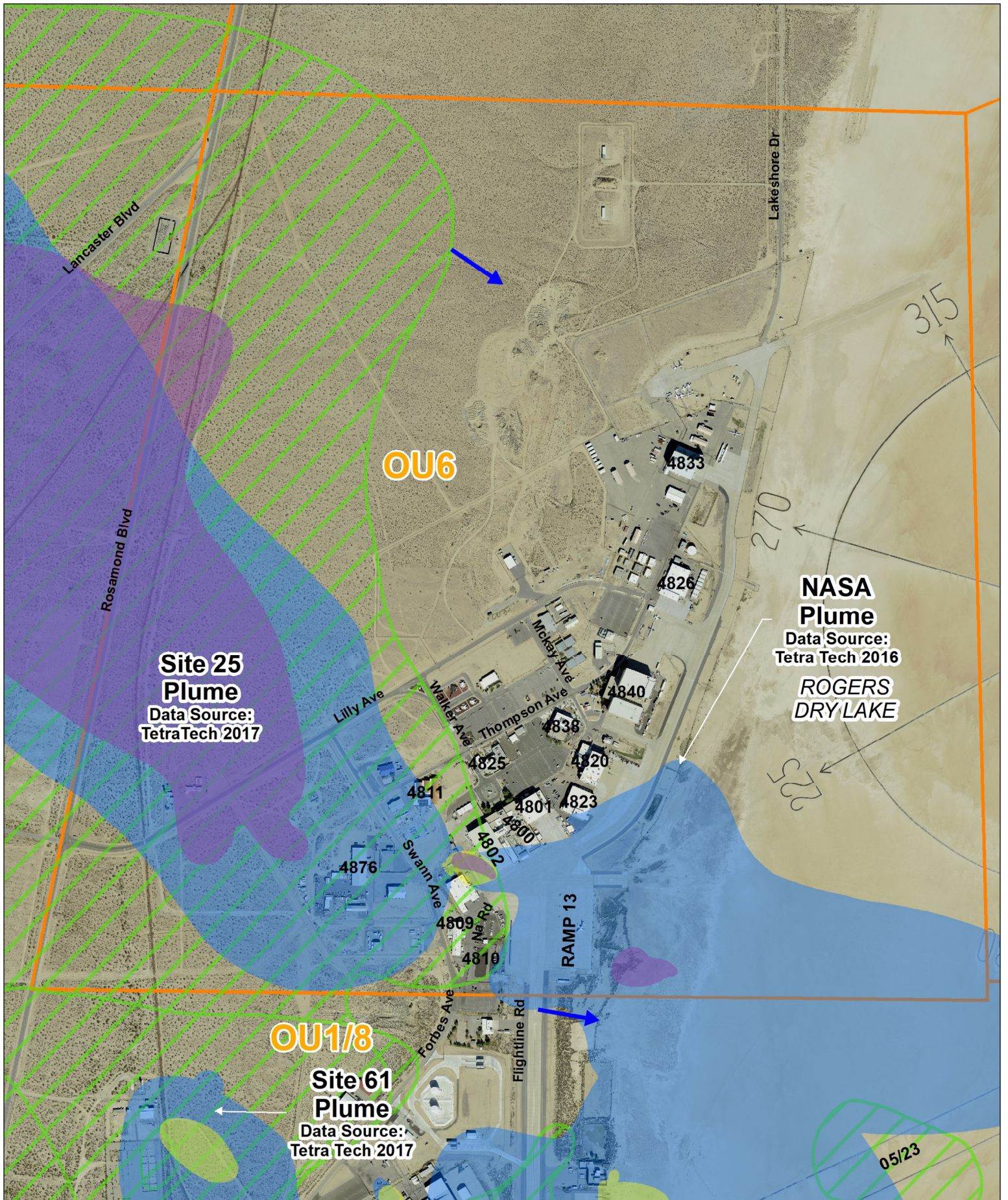


- Legend**
- █ Perchlorate Related Plume Extent
 - █ NDMA Related Plume Extent
 - █ Solvent Related Plume Extent
 - █ Petroleum Related Plume Extent
 - "P" Sites 1 and 275
 - Operable Unit Boundary
 - Groundwater Subbasin
 - Generalized Groundwater Gradient

**OU5/10
Groundwater Plume Map**



Created By: 412 CE/CEVA, GIS
Created: 05/09/15

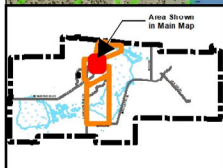


**Site 25
Plume**
Data Source:
TetraTech 2017

OU6

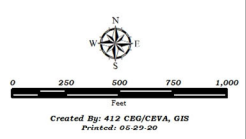
**NASA
Plume**
Data Source:
Tetra Tech 2016
**ROGERS
DRY LAKE**

OU1/8
**Site 61
Plume**
Data Source:
Tetra Tech 2017



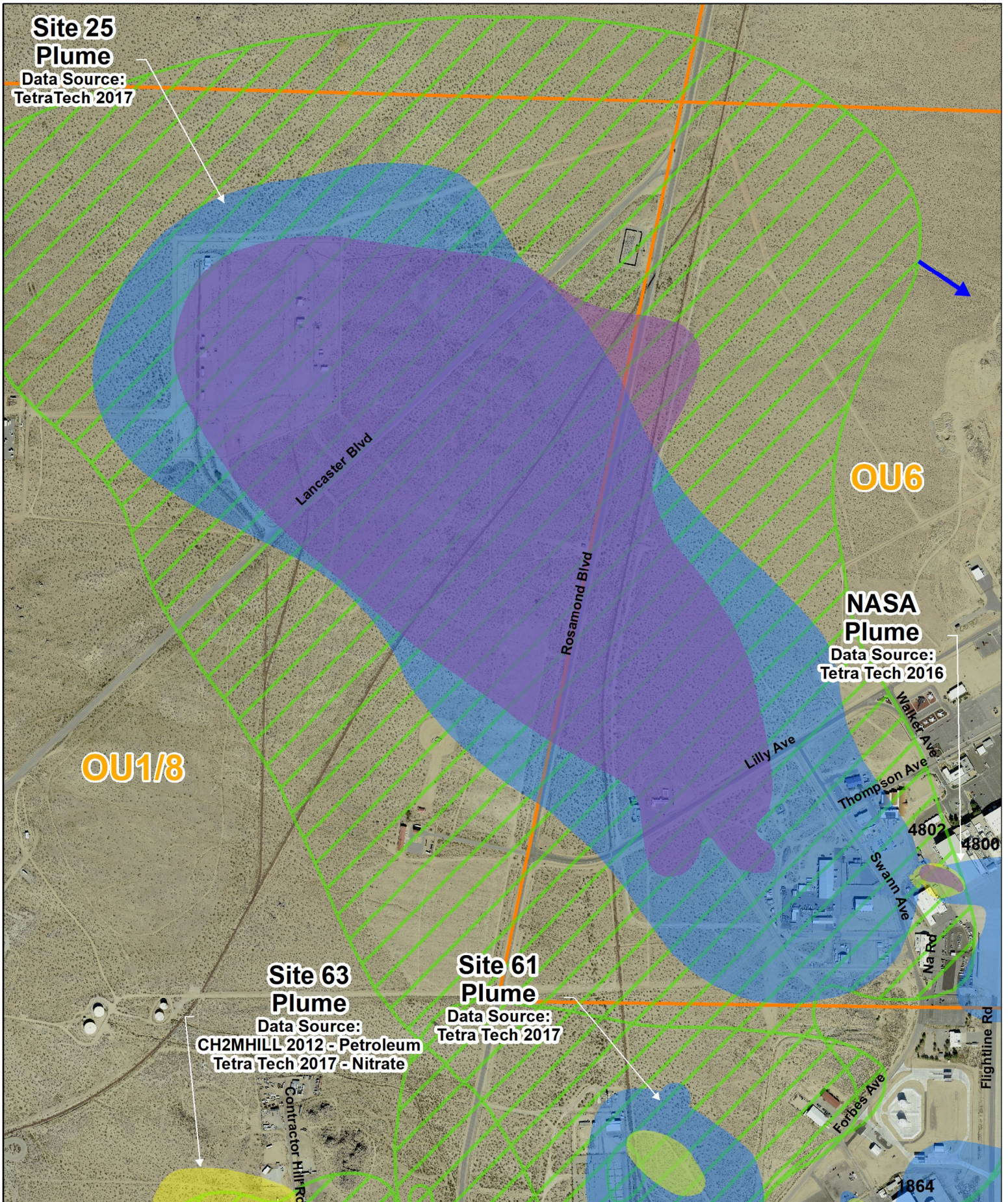
- Legend**
- NDMA Related Plume Extent
 - Nitrate Related Plume Extent
 - Petroleum Related Plume Extent
 - Solvent Related Plume Extent
 - Operable Unit Boundary
 - Generalized Groundwater Gradient

**OU6
Groundwater Plume Map**



Site 25 Plume

Data Source:
TetraTech 2017



OU1/8

OU6

NASA
Plume

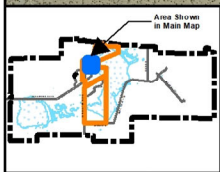
Data Source:
Tetra Tech 2016

Site 63
Plume

Data Source:
CH2MHILL 2012 - Petroleum
Tetra Tech 2017 - Nitrate

Site 61
Plume

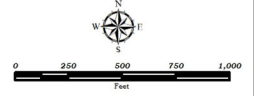
Data Source:
Tetra Tech 2017



Legend

- NDMA Related Plume Extent
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Site 25 Groundwater Plume Map



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Printed: 05.29.20

Edwards AFB Military Munitions Response Program

