



**DEPARTMENT OF THE AIR FORCE
AIR FORCE CIVIL ENGINEER CENTER
INSTALLATION SUPPORT SECTION
EDWARDS AIR FORCE BASE, CALIFORNIA**

16 November 2023

MEMORANDUM FOR DISTRIBUTION

FROM: AFCEC/CZOW

120 North Rosamond Boulevard
Edwards Air Force Base, California 93524

SUBJECT: Edwards AFB Restoration Advisory Board (RAB) Meeting Minutes – 18 May 2023

1. Time: 5:30 p.m.
2. Place: California City Arts and Community Center, 10400 Heather Ave., California City, CA 93505
3. Chairman: Mr. Victor Yaw, Public Co-Chair and Mojave Public Representative
4. The following RAB members were present:

<u>Name</u>	<u>Position</u>
Col Matthew Caspers	Air Force Co-Chair
Mr. Kevin Depies	California Environmental Protection Agency (Cal/EPA) Department of Toxic Substances Control (DTSC) RPM
Mr. Ethan Finkel	United States Environmental Protection Agency (U.S. EPA) RPM
Mr. Mohamed Ibrahim	U.S. EPA RPM
Mr. Alonzo Poach	Cal/EPA Lahontan Regional Water Quality Control Board (LRWQCB) Remedial Project Manager (RPM)
Mr. Paul Schiff	Edwards AFB RPM
Mr. David Soltis	Base Housing Public Representative
Mr. Toufic Zeidan	Cal/EPA LRWQCB RPM

5. The following RAB members were absent:

<u>Name</u>	<u>Position</u>
Mr. Darrell Dorris	Alternate Lancaster Public Representative
Mr. William Gaddis	Rosamond Public Representative
Mr. Bruce Lewis	Cal/EPA DTSC RPM
Dr. Joseph Mabry	Air Force Research Laboratory (AFRL) Public Representative
Mr. Raj Malhi	Primary Lancaster Public Representative
Mr. Dante Rodriguez	U.S. EPA RPM
Ms. Alexia Svejda	California City Public Representative
Mr. Otto Zahn	Main Base Test Wing Public Representative
Vacant	Boron Public Representative
Vacant	Edwards AFB North Base Public Representative
Vacant	Edwards AFB South Base Public Representative
Vacant	National Aeronautics and Space Administration (NASA) Armstrong Public Representative
Vacant	North Edwards Public Representative

6. The following advisors were present:

<u>Name</u>	<u>Organization</u>
Ms. Claudia Basura	Air Force Civil Engineer Center (AFCEC)/Environmental Management Directorate, Operations Division, West Branch (CZOW)
Mr. Joe Dunwoody	AFCEC/CZOW
Mr. Gary Hatch	412th Test Wing Public Affairs
Mr. Gregory Neate	AFCEC/CZOW
Ms. Leilani Richardson	AFCEC/CZOW
Ms. Julia Tseng	AFCEC/CZOW
Ms. Jeanette Van Norden	AFCEC/CZOW

7. Others present were as follows:

<u>Name</u>	<u>Organization</u>
Capt Margaux Curcuru	412th Test Wing Judge Advocate
Mr. Joshua Cunningham	Media Fusion
Mr. Dan Hansen	Public
Ms. Martha Holden	Public
Ms. Lindsey Iniguez	Media Fusion
Ms. Isabel Kirsch	BB&E
Ms. Alexis McCadney	BB&E (Recorder)
Ms. Pam Neate	Public
Mr. Terry Neate	Public
Mr. Tom Rademacher	412 CEG/CEVA
Ms. Minako Takehashi	Public

8. Mr. Yaw introduced the new Water Board RPM, Mr. Zeidan. He called the meeting to order and read the *Statement of Purpose and Conduct*.

9. Mr. Yaw presented the 17 November 2022 RAB Meeting Minutes for acceptance. The RAB members accepted the minutes as presented.

10. New Business – Environmental Restoration Program (ERP) Update (see attachment).

a. Mr. Schiff provided an overview of the ERP activities that occurred at Edwards AFB since the November 2022 RAB Meeting.

(1) Mr. Schiff discussed the Community Involvement Plan (CIP). A public review and comment period for the CIP started on 27 April 2023 and will end 30 May 2023. A draft preview of the CIP is available for review on the Administrative Record (AR) and at Information Repositories. Mr. Schiff stated that the public could also mail written copies to the base. A final CIP is expected to be published in the fall of this year.

(2) Mr. Schiff discussed perfluoroalkyl and polyfluoroalkyl substances (PFAS) and the Remedial Investigation (RI) efforts underway for aqueous film-forming foam (AFFF) areas. On 12 November 2021, field event #1 was completed, groundwater monitoring sampling was performed at 162 existing monitoring wells; on 18 May 2022, a meeting was held with agency stakeholders to present field event #1 results, and recommendations for field event #2; and, on 16 June 2022 the final Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP) Addendum #1 for field event #2 was submitted. From October 2022 to May 2023 field event #2 was conducted, which included: monitoring well installation, source area sampling, and groundwater monitoring sampling at 290 monitoring wells.

(3) Mr. Schiff stated that Operable Unit (OU) 1/8 Main Base is in the pre-Record of Decision (ROD) phase. OU1/8 Technical Working Group (TWG) meetings are being held to resolve issues for incorporation into the

Feasibility Study Addendum which include reviewing: vapor intrusion (VI) reports and risk assessment; groundwater modeling and plume stability; groundwater and soil data gaps; and restoration potential and remediation technologies.

(a) Mr. Schiff said the Air Force received semi-annual indoor air sampling results from November 2022 for Building 1807 and those results confirmed that trichloroethene (TCE) levels are below all action levels with the heating, ventilation and air conditioning (HVAC) operating continuously. An indoor air sampling event was completed on 3 November 2022 and the Building 1807 VI Investigation Summary for November 2021 through May 2022 was finalized in December 2022. Mr. Schiff stated that the next sampling event is scheduled for May 2023.

(4) Mr. Schiff reviewed activities from OU2 South Base.

(a) Sites 81 and 102 are former skeet sites that have been covered with crushed concrete; native seed regeneration is being monitored and expected to be supplemented.

(b) The groundwater extraction and treatment system (GETS) and bio-sparging (PHOSter™) system continues to operate at Sites 5/14; sampling for PFAS will be continued at the Site 14 GETS.

(c) Mr. Schiff said the Sites 5/14 Annual Remedial Action Status Report (ARASR) is being finalized. The in situ chemical oxidation (ISCO) treatment process at Site 76 continues to operate, and the bio-sparging (PHOSter™) system at Site 86 continues to operate. Mr. Schiff stated a Draft Site 86 ARASR was submitted to the regulatory agencies in January 2023.

(d) For Site 29, Mr. Schiff said that the Final Remedial Action Work Plan, which will include cap design drawings, is pending submission to regulatory agencies.

(5) Mr. Schiff stated the Air Force, regulatory agency staff and legal counsels met on 23 March 2023 and 19 April 2023 and resolved most items of disagreement for the anticipated OU4/9 AFRL Arroyos ROD. One additional meeting is expected and once all parties come to an agreement the Air Force will prepare and publish a new AFRL Arroyos Proposed Plan (PP). The Air Force will then announce the availability of the PP and conduct a PP public meeting. Those public comments will be incorporated into the final ROD. From November 2022 to January 2023, 11 new groundwater monitoring wells were installed within the AFRL Arroyos area; Mr. Schiff said that two additional wells will be installed in May/June 2023 and that these wells will provide data to better understand downgradient plume boundaries. Mr. Schiff said that annual groundwater monitoring continues in all AFRL groundwater areas and that Land Use Controls are in place for post-ROD areas South AFRL and AFRL Soil and Debris Sites.

(a) At South AFRL, Mr. Schiff stated the soil vapor extraction (SVE) system continued to operate near Building 8595 to mitigate potential vapor intrusion. Two boreholes were drilled in January 2023 and there are plans to install five groundwater monitoring wells by October 2023 to address well network data gaps identified by the TWG.

(6) Mr. Schiff said OU5/10 is pre-ROD. In January 2023, a monitoring well was converted into an extraction well at Site 285. In fall 2023, a Revised Draft OU5/10 Feasibility Study is expected to be submitted to regulatory agencies.

(7) Mr. Schiff stated there have been new well installations at the OU6 NASA Armstrong area to address data gaps identified in the Third Five-Year-Review-Report (FYRR.). In October 2022, three groundwater monitoring wells were installed in the Site N3 source area to better delineate the plume. In the March 2023 and April 2023 timeframe, one shallow and one deep groundwater monitoring well were installed to better delineate the extent of the plume on the lakebed.

(8) Mr. Schiff stated the Air Force is developing a soil gas sampling work plan for the OU7 Basewide Miscellaneous area. Comments for the work plan have been received from regulatory agencies. Mr. Schiff said the soil gas data will inform the proposed remedies for the draft PP, which will be submitted to the regulatory agencies for review.

(a) On 28 November 2022, Mr. Schiff said the Final Remedial Action Work Plan Addendum for OU7 Site 3 has been submitted to regulatory agencies and a landfill cap is being constructed for the area. On 11 April 2023, the U.S. EPA performed a site visit with plans to revisit in June to observe the cap construction progress at Site 3. Mr. Schiff stated the U.S. EPA observed the geotechnical measurements that took place in the field and viewed the soil borrow source being used for the landfill cap.

(b) Mr. Schiff explained as of May 2023, vegetation at OU7 Chemical Warfare Materiel (CWM) Site 442 has been identified as stressed or dead during the semiannual inspection for multiple years. Re-seeding and revegetation efforts were performed in December 2022 at Site 442 Areas 1, 2 and 3, and Mr. Schiff stated some growth was observed in late-March 2023 during a site visit. Mr. Schiff said periodic monitoring will continue; however, per the Site 442 Operations and Maintenance (O&M) Plan Addendum, there is no anticipation of achieving 50 percent vegetative coverage.

(9) Mr. Schiff explained the Second Multisite FYRR was signed in December 2022, but issues with document uploads to the AR website delayed publication until February 2023. Notifications of the FYRR's availability ran in three local newspapers in early March 2023. Mr. Schiff said the U.S. EPA concurred with remedy protectiveness in the short term for 18 of the 19 sites, with the cleanup remedy for Site 29 expected to be protective upon completion. Mr. Schiff said the Air Force will address FYRR recommendations to ensure protectiveness in the long term.

(10) Mr. Schiff said the Draft Site 25 Feasibility Study/Technical Impracticability Report was submitted to the regulatory agencies in July 2022 and comments were received in January 2023. Mr. Schiff explained the Air Force is addressing those comments and plans to submit the draft final report in the third quarter of 2023. The Air Force is still conducting a phytoremediation treatability study that uses poplar trees to break down contaminants from extracted groundwater. Mr. Schiff explained that to re-establish the study, an additional 60 poplar trees were replanted in March 2023 and up to nine trees that were planted in September 2022 are still alive. Monitoring is ongoing.

(11) Mr. Schiff concluded by stating the Military Munitions Response Program (MMRP) ROD for Sites AL501A, AL504, AL505-2 and AL505-4 is expected to be submitted to the regulatory agencies by the end of May 2023. Mr. Schiff said a solar farm is expected to be established in AL505-2, near Boron. More information on this is expected to be presented at the November 2023 RAB meeting.

(12) Mr. Schiff asked the RAB members whether there were any questions or comments. None of the members had questions or comments.

11. Opportunity for Public Comment – Mr. Gary Hatch reported no public comments or questions had been submitted.

12. Old Business – Status of RAB Vacancies.

a. Mr. Hatch reported there are five public representative vacancies. Two vacancies are for the off-base communities of Boron and North Edwards, while three are for the on-base communities of NASA Armstrong, South Base and North Base. Mr. Hatch said vacancy notices are advertised periodically in local newspapers.

13. Reports from Public Representatives.

a. Mr. Soltis, Base Housing, had no updates.

b. Mr. Yaw, Mojave, suggested Edwards AFB host a tour for RAB members and increase efforts in advertising for RAB positions, especially for finding representatives for North Base and South Base.

14. Reports from RPMs.

a. Mr. Ibrahim, U.S. EPA, commented that he has been with the U.S. EPA for 11 months now, and while he didn't have anything to report, he wanted to commend Mr. Schiff and his team of program managers for the environmental work performed at Edwards AFB.

b. Mr. Finkel, U.S. EPA, had a few comments. He noted that the PFAS RI at Edwards AFB is specific to AFFF and the Air Force is starting to examine non-AFFF sources of PFAS. He explained PFAS had other potential sources, aside from AFFF, so this is the Air Force's way of ensuring that a comprehensive examination is performed on all potential releases of PFAS. Mr. Finkel said the U.S. EPA recently proposed a draft Maximum Contaminant Level for select PFAS constituents; the draft is currently out for public review and comment until the end of May 2023, and once finalized, that will provide a target cleanup level that can be used for cleanup efforts.

c. Mr. Poach, Water Board, had no comments other than to welcome Mr. Zeidan to the RAB meeting.

d. Mr. Zeidan, Water Board, had no comments.

e. Mr. Depies, DTSC, expanded on Mr. Finkel's comment and Mr. Schiff's presentation. He stated that where there was an AFFF release, there was almost always PFAS in the environment. However, the PFAS detections are usually local, meaning they are contained and not found in any drinking water or production wells on base.

f. Col Caspers, Air Force Co-Chair, thanked Mr. Schiff for the presentation and stated that this community forum overall underscores the commitment of the Air Force to the environmental cleanup at Edwards AFB. Col Caspers also welcomed Mr. Zeidan and circled back to the discussion of advertising RAB positions and recruiting from Main Base and other communities. He asked Mr. Schiff to reach out for anything needed to support sites tours for RAB members.

g. Mr. Schiff, Edwards AFB, stated more information regarding non-AFFF sources is expected to be presented during the next RAB meeting. He also recommended a RAB tour be conducted in the fall of 2023 to avoid the summer heat.

15. The next RAB meeting is proposed for 16 November 2023 in Boron, California.

16. The meeting was adjourned at 6:35 p.m.

//Original signed by//

MATTHEW S. CASPERS, Colonel, USAF
Air Force Co-Chair
Restoration Advisory Board

//Original signed by//

VICTOR YAW
Public Co-Chair
Restoration Advisory Board

Attachment:

Environmental Restoration Program Update for Edwards AFB, California, 18 May 2023

DISTRIBUTION:

AFCEC

412 TW/CV/JA/PA/SE

412 OMRS/SGPB

AFRL

RAB Members

Cal/EPA DTSC

Cal/EPA LRWQCB

U.S. EPA

Air Force Installation & Mission Support Center



Environmental Restoration Program Update for Edwards AFB, California

Paul Schiff
AFCEC/CZOW
18 May 2023



List of Acronyms



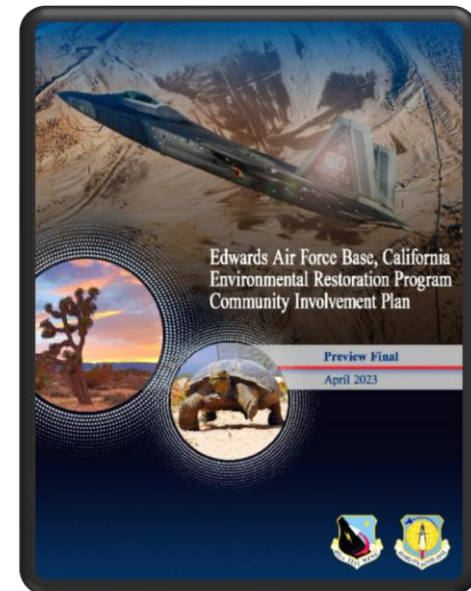
- **3Rs = Recognize, Retreat, Report**
- **AFFF = Aqueous Film Forming Foam**
- **AR = Administrative Record**
- **AFRL = Air Force Research Laboratory, Detachment 7**
- **ARASR = Annual Remedial Action Status Report**
- **CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act**
- **CIP = Community Involvement Plan**
- **ERP = Environmental Restoration Program**
- **FS = Feasibility Study**
- **FYR = Five-Year Review**
- **GETS = groundwater extraction and treatment system**
- **ITIR = Informal Technical Information Report**
- **MMRP = Military Munitions Response Program**
- **OU = Operable Unit**
- **PFBS = perfluorobutane sulfonic acid**
- **PFOS/PFOA = perfluorooctane sulfonate/perfluorooctanoic acid**
- **RAB = Restoration Advisory Board**
- **RI = Remedial Investigation**
- **ROD = Record of Decision**
- **RRSE = Relative Risk Site Evaluation**
- **SI = Site Inspection**
- **SVE = soil vapor extraction**
- **TCE = trichloroethene**
- **TS = Treatability Study**
- **TWG = technical working group**
- **VI = vapor intrusion**



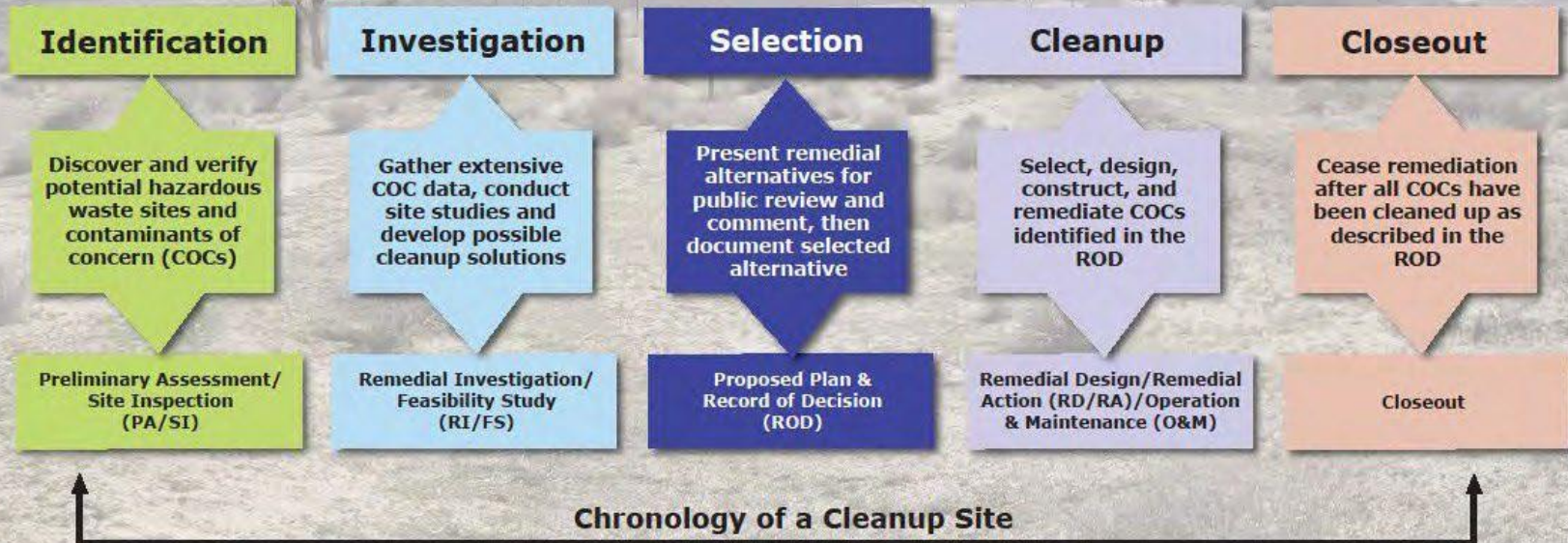
Community Involvement Plan (CIP) Update



- Public review and comment period started 27 April and runs until 30 May
 - The plan is available for review online at <https://www.edwards.af.mil/About/Environment> and at our Information Repositories (Lancaster, Rosamond and Main Base libraries)
 - Written comments can be mailed to: Gary Hatch, 305 E. Popson Ave., Edwards AFB, CA 93524. Electronic comments can be emailed to 412tw.pae@us.af.mil
- Final expected to be published by the fall of 2023



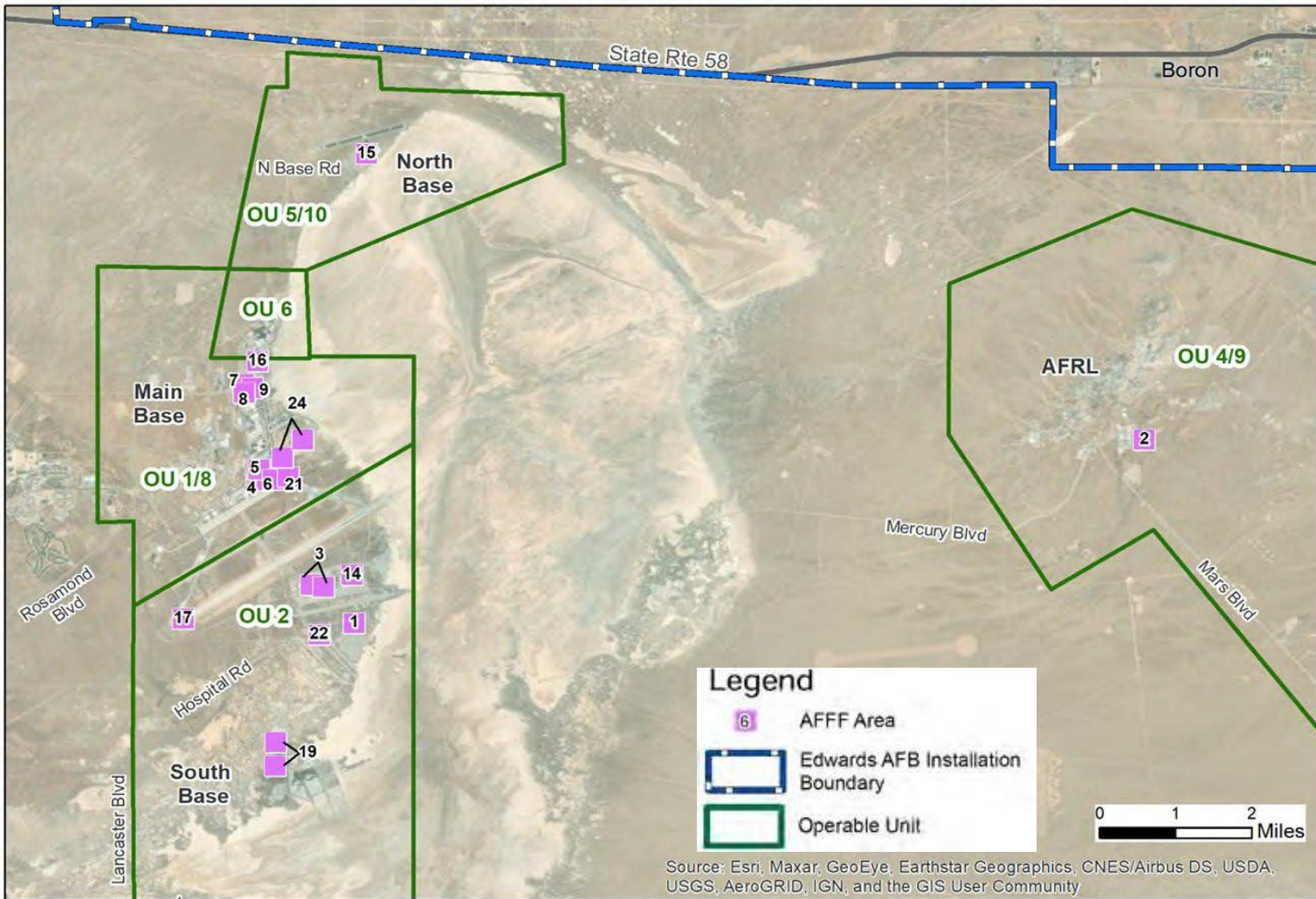
Phases of the Superfund (CERCLA) Process



CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act



Edwards AFB Phase I RI of AFFF Areas



AFFF Area Index

- 1 AFFF Area 1 : ERP Site 14 (Former/Current FTA)
- 2 AFFF Area 2 : ERP Site 26 (Former AFRL FTA)
- 3 AFFF Area 3 : Hangar Buildings 151/160
- 4 AFFF Area 4 : Hangar Building 1600
- 5 AFFF Area 5 : Hangar Building 1608
- 6 AFFF Area 6 : Hangar Building 1624
- 7 AFFF Area 7 : Hangar Building 1870
- 8 AFFF Area 8 : Hangar Building 1874
- 9 AFFF Area 9 : Hangar Building 1881
- 14 AFFF Area 14 : Fire Station #3 (Building 250)
- 15 AFFF Area 15 : Fire Station #5 (Building 4456)
- 16 AFFF Area 16 : Former Fire Station (Building 1850)
- 17 AFFF Area 17 : 1970 Aero Spacelines 377MGT
- 19 AFFF Area 19 : Former Main Base Sewage Treatment Plant
- 21 AFFF Area 21 : Former Nozzle Spray Test Area
- 22 AFFF Area 22 : Refractometer Spray Test Area
- 24 Former AFFF Area 24 : Pad 7 Outfall and Stormwater Detention Pond



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

Phase I Remedial Investigation of AFFF Areas
Edwards Air Force Base
California



*AFFF = aqueous film forming foam



Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)



- **Remedial Investigation (RI) effort underway**
 - **12 November 2021: Field Event #1 completed, groundwater sampling performed at 162 existing monitoring wells**
 - **18 May 2022: Meeting with agency stakeholders to present Field Event #1 results and recommendations for Field Event #2**
 - **16 June 2022: Submitted Final UFP-QAPP Addendum No. 1 for Field Event #2**
 - **October 2022 – May 2023: Conducting Field Event #2, monitoring well installation, source area soil sampling, and groundwater sampling at 290 monitoring wells**



Field Event #2 Activities: Groundwater and Soil Boring



Field Team gauging an existing well
AFFF Area 7, 8, 9, 2022



Field Team logging a soil boring in
AFFF Area 22, 2023



Field Event #2 Activities: Drilling and Installing 50 New Wells



Field Team overseeing HSA drill rig at AFFF Area 1, December 2022



Well installation at AFFF Area 1, 2023

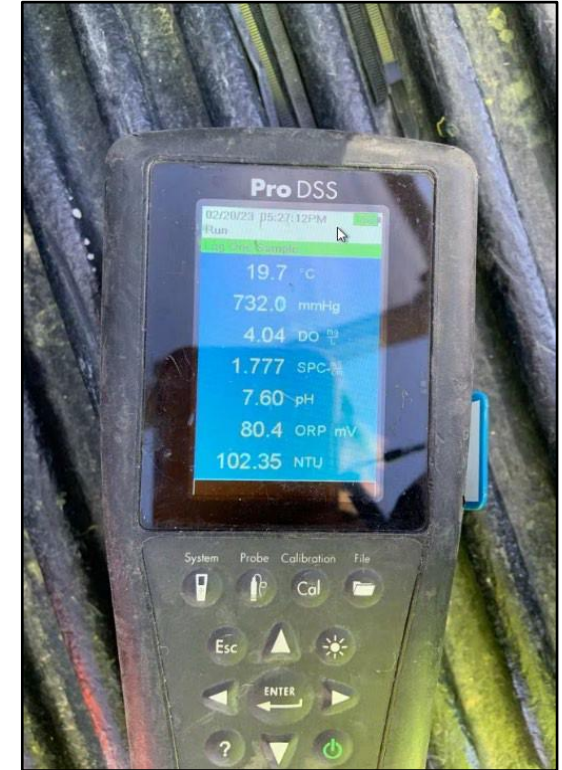
Field Event #2 Activities: Groundwater Sampling



Field Team collecting a water sample from Monitoring Well-03B, 2023



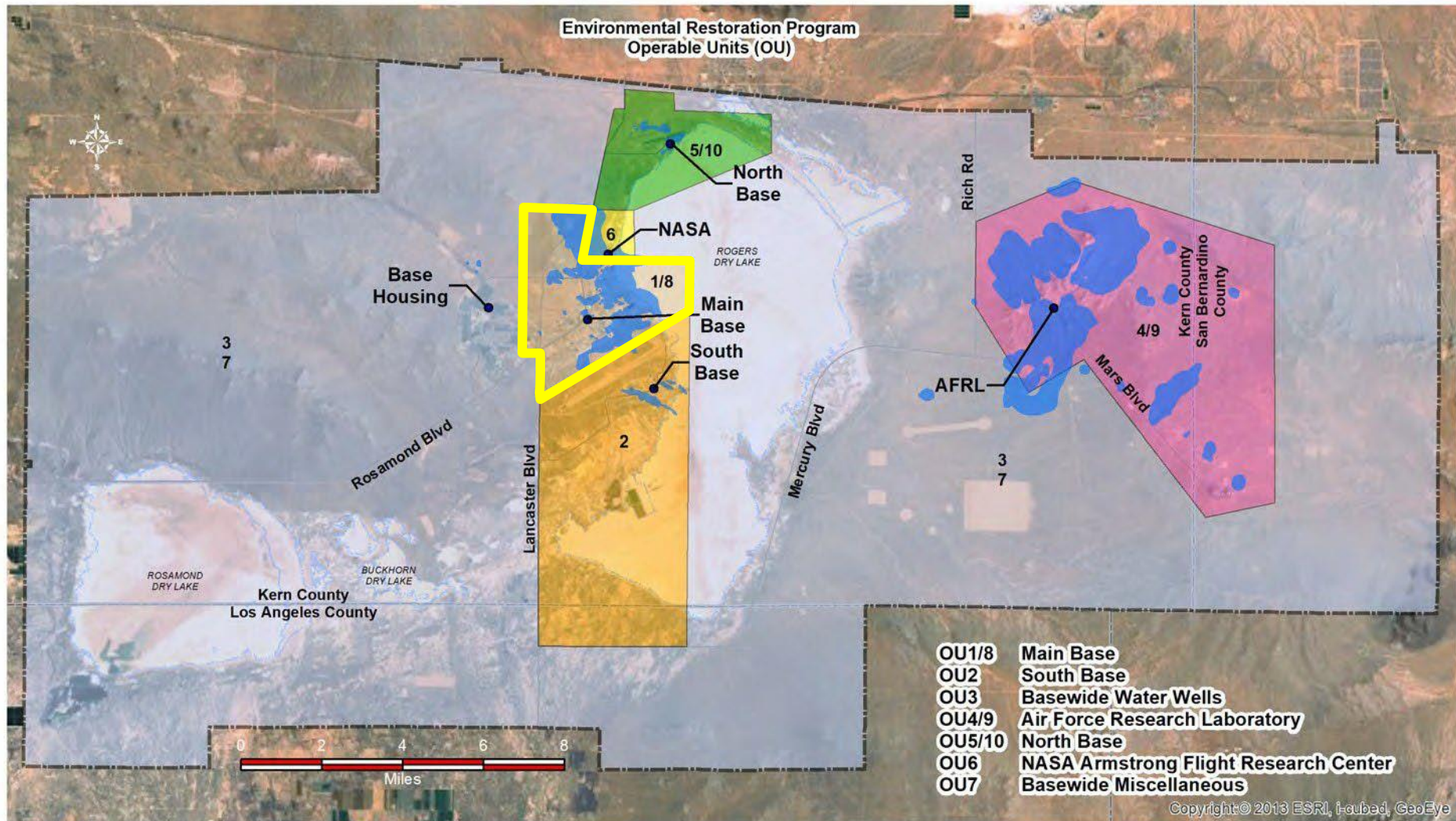
A view inside the monitoring well while extracting the sample



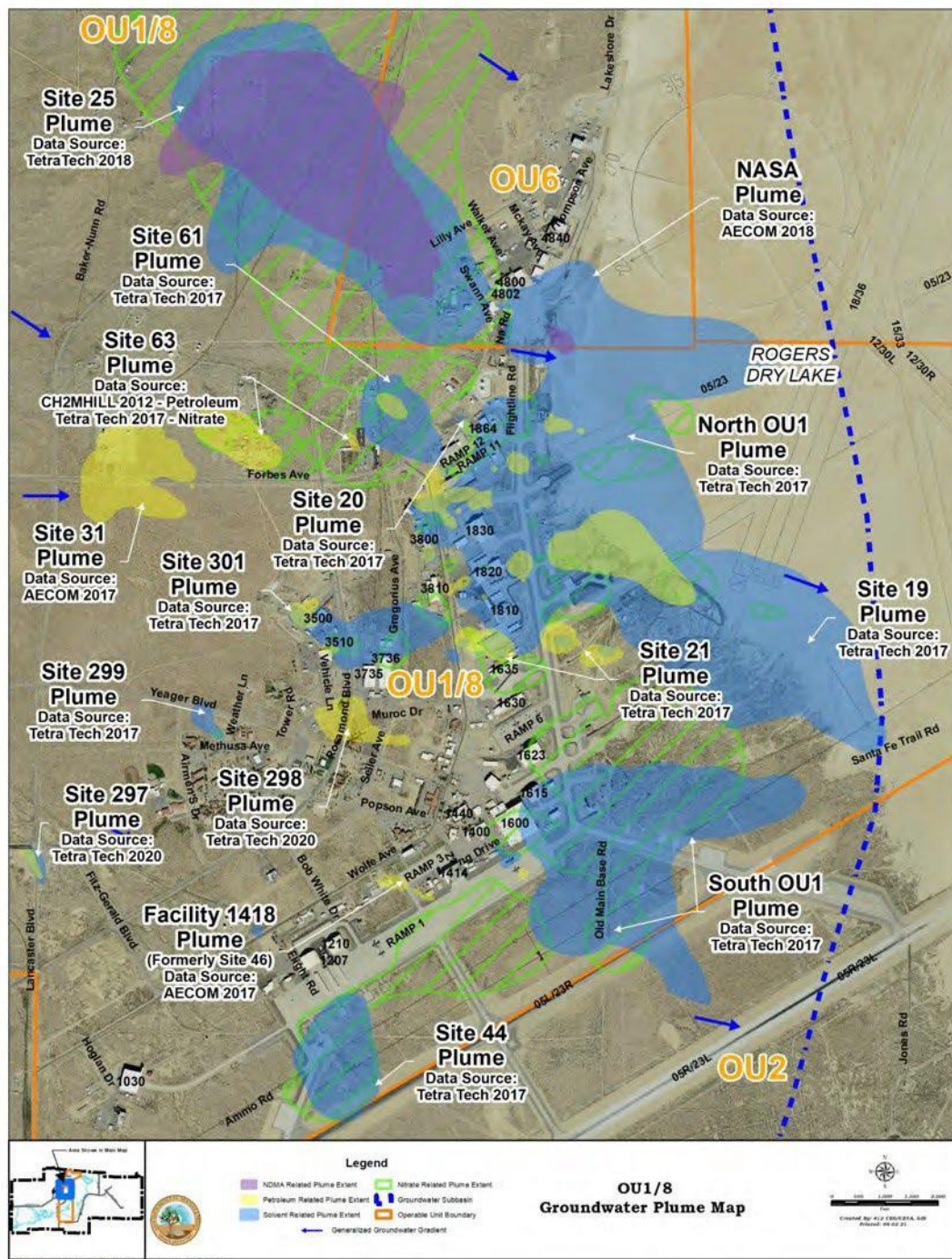
Basic water quality parameters measured



OU1/8 Main Base (Pre-ROD)



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OU1/8 Main Base (Pre-ROD)



- **Continue OU1/8 Technical Working Group (TWG) meetings to resolve issues for incorporation into the Feasibility Study (FS) Addendum**
 - Review VI reports/risk assessment
 - Groundwater modeling/plume stability
 - Groundwater and soil data gap
 - Restoration potential and remediation technologies



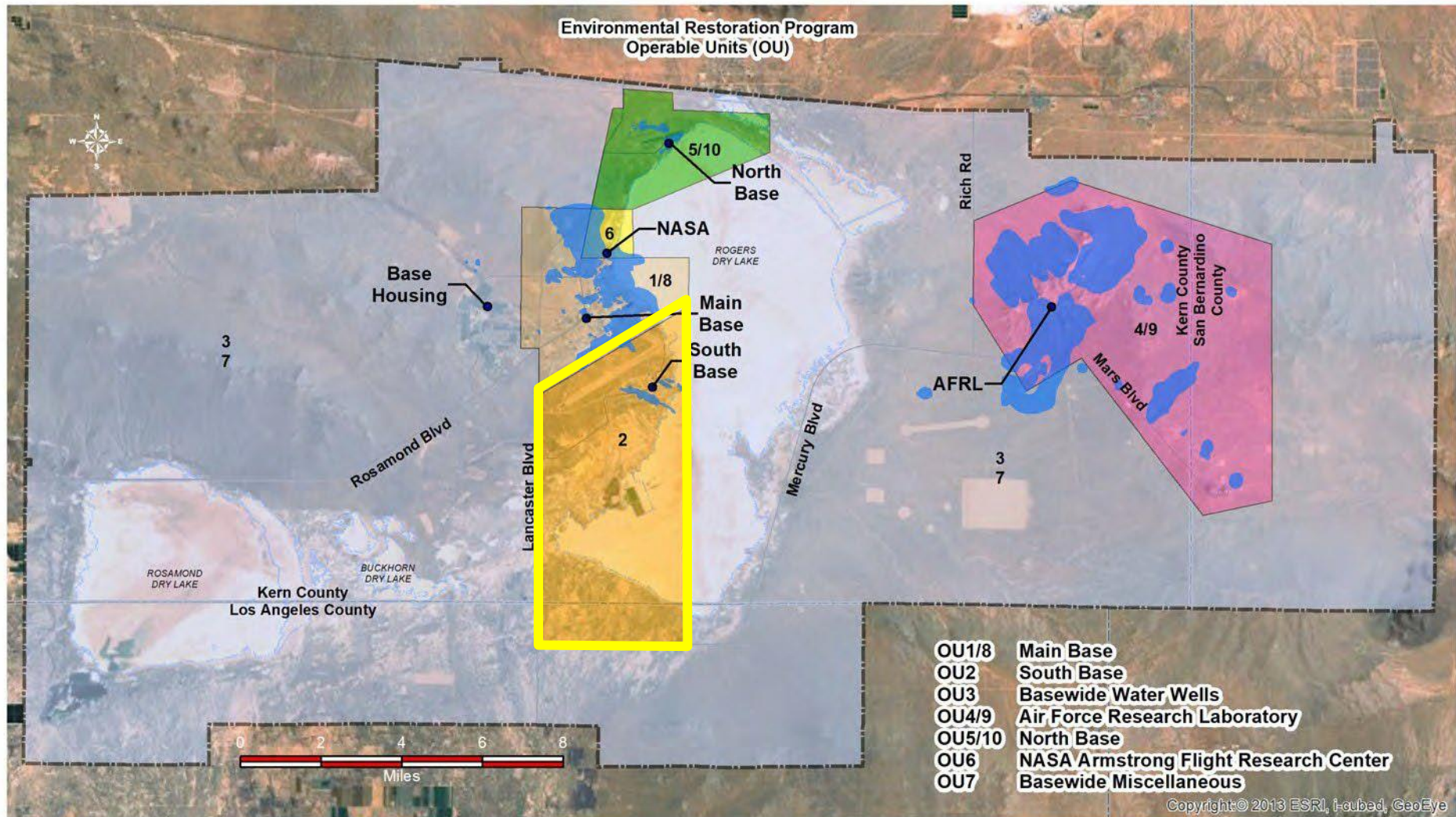
OU1/8 Main Base (Pre-ROD)



- **Building 1807**
 - Semiannual indoor air sampling results from November 2022 confirmed that trichloroethene (TCE) levels are below all action levels with new heating, ventilation and air conditioning operating continuously (i.e., 24/7)
 - Completed indoor air sampling event on 3 November 2022
 - Bldg. 1807 VI Investigation Summary for November 2021 through May 2022 completed in December 2022
 - Next event scheduled for May 2023



OU2 South Base (Pre- and Post-ROD)







OU2 South Base (Pre-ROD)



- **Sites 81 and 102**
 - The former skeet sites have been covered with crushed concrete and native seed regeneration is being monitored and will be supplemented



OU2 South Base (Post-ROD)



- **Sites 5/14**
 - **Groundwater extraction and treatment system (GETS) continues to operate**
 - **Bio-Sparging (pHoster) system continues to operate**
 - **Continue sampling for PFAS at the Site 14 GETS**
 - **Sites 5/14 Draft Annual Remedial Action Status Report (ARASR) being finalized**



OU2 South Base (Post-ROD)



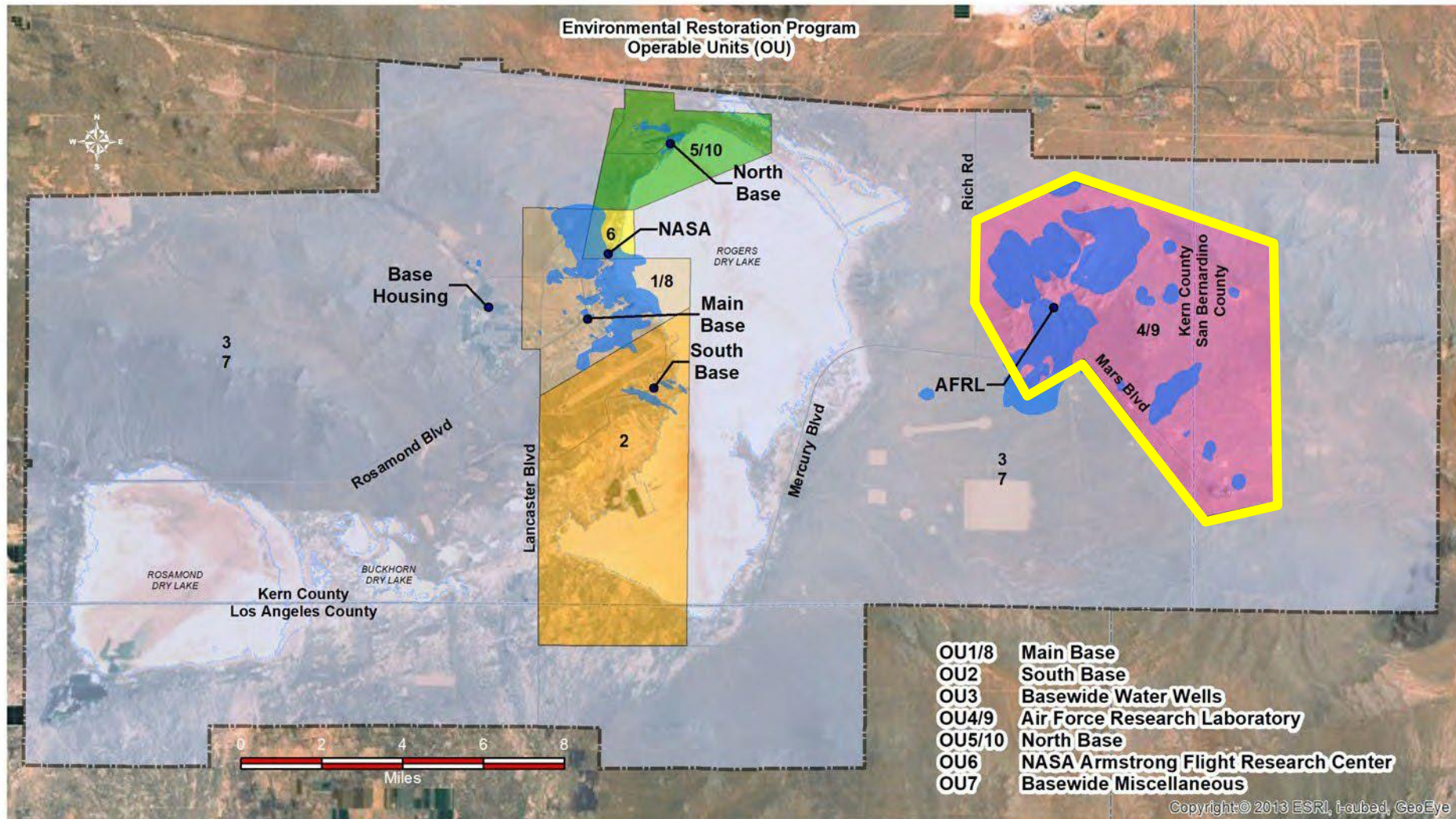
- **Site 76**
 - In situ chemical oxidation (ISCO) treatment process continues operating
- **Site 86**
 - Bio-Sparging (pHoster) system continues to operate
 - Site 86 Draft ARASR submitted to agencies in January 2023

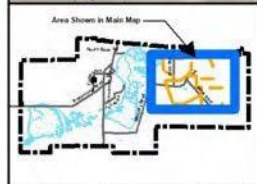
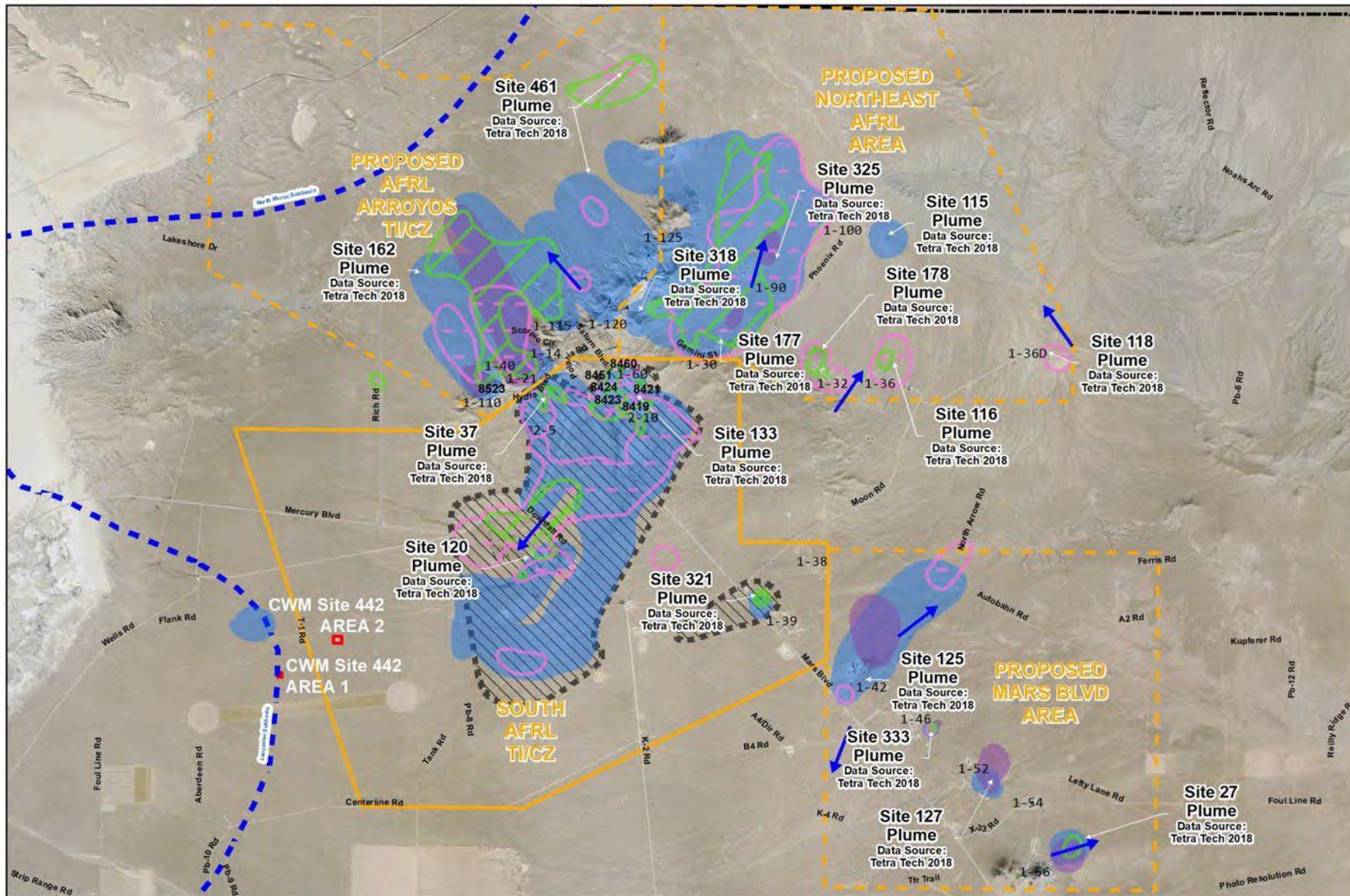
- **Site 29**
 - **Final Remedial Action Work Plan to include cap design drawings for the inactive landfill to be submitted**



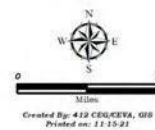


OU4/9 AFRL (Pre- and Post-ROD)





AFRL Groundwater Plume Map





OU4/9 AFRL Arroyos (Pre-ROD)



- **Air Force Research Laboratory, Detachment 7 (AFRL) Arroyos Record of Decision (ROD)**
 - Air Force and regulatory agency staff and legal counsels met on 23 March and 19 April and resolved most items of disagreement
 - One additional meeting anticipated





OU4/9 AFRL Arroyos (Pre-ROD)



- **Arroyos ROD (cont.)**
 - When a Draft Final ROD is agreed-to by all parties, Air Force will:
 - Prepare and publish a new AFRL Arroyos Proposed Plan (PP), announce availability of the PP for public comment, and conduct a PP public meeting
 - Incorporate public comments into and submit the Final AFRL Arroyos ROD



1962 F-1 engine test at Test Stand 1A



OU4/9 AFRL Arroyos (Pre-ROD)



- **November 2022 – January 2023, installed 11 new groundwater monitoring wells within the AFRL Arroyos groundwater management area**
- **Two additional wells will be installed in May – June 2023**
- **Wells will provide data to better understand downgradient plume boundaries**





OU4/9 AFRL (Pre- and Post-ROD)

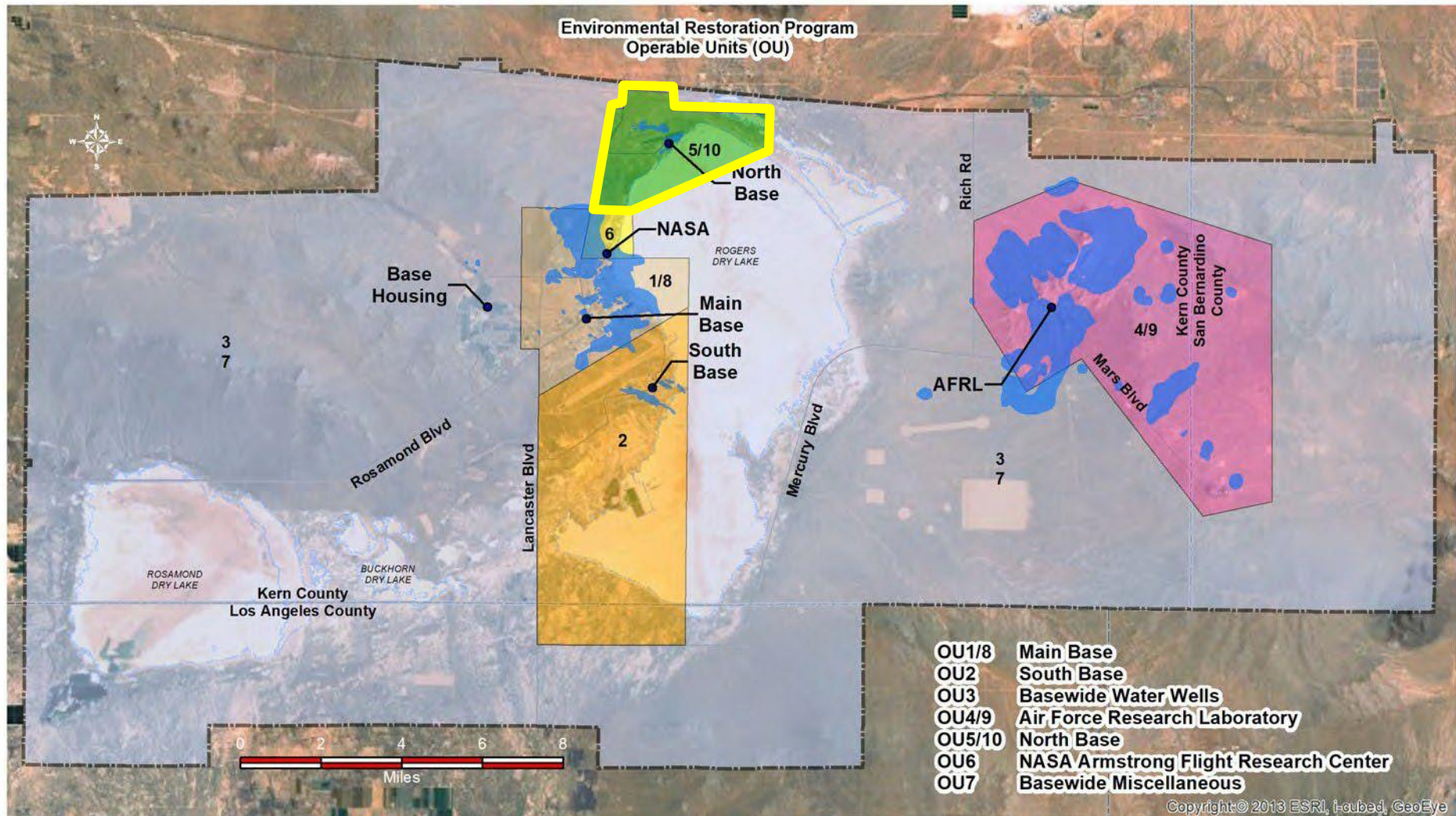


- **Annual groundwater monitoring in all areas**
- **Land Use Controls in place for post-ROD areas
South AFRL and AFRL Soil and Debris Sites**
- **South AFRL**
 - **Soil vapor extraction (SVE) system continues operating near Building 8595 to mitigate potential vapor intrusion**
 - **Drilled two boreholes in January 2023 and plan to install five groundwater monitoring wells by October 2023 to address well network data gaps identified by the TWG**

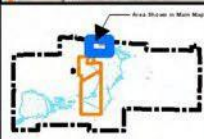
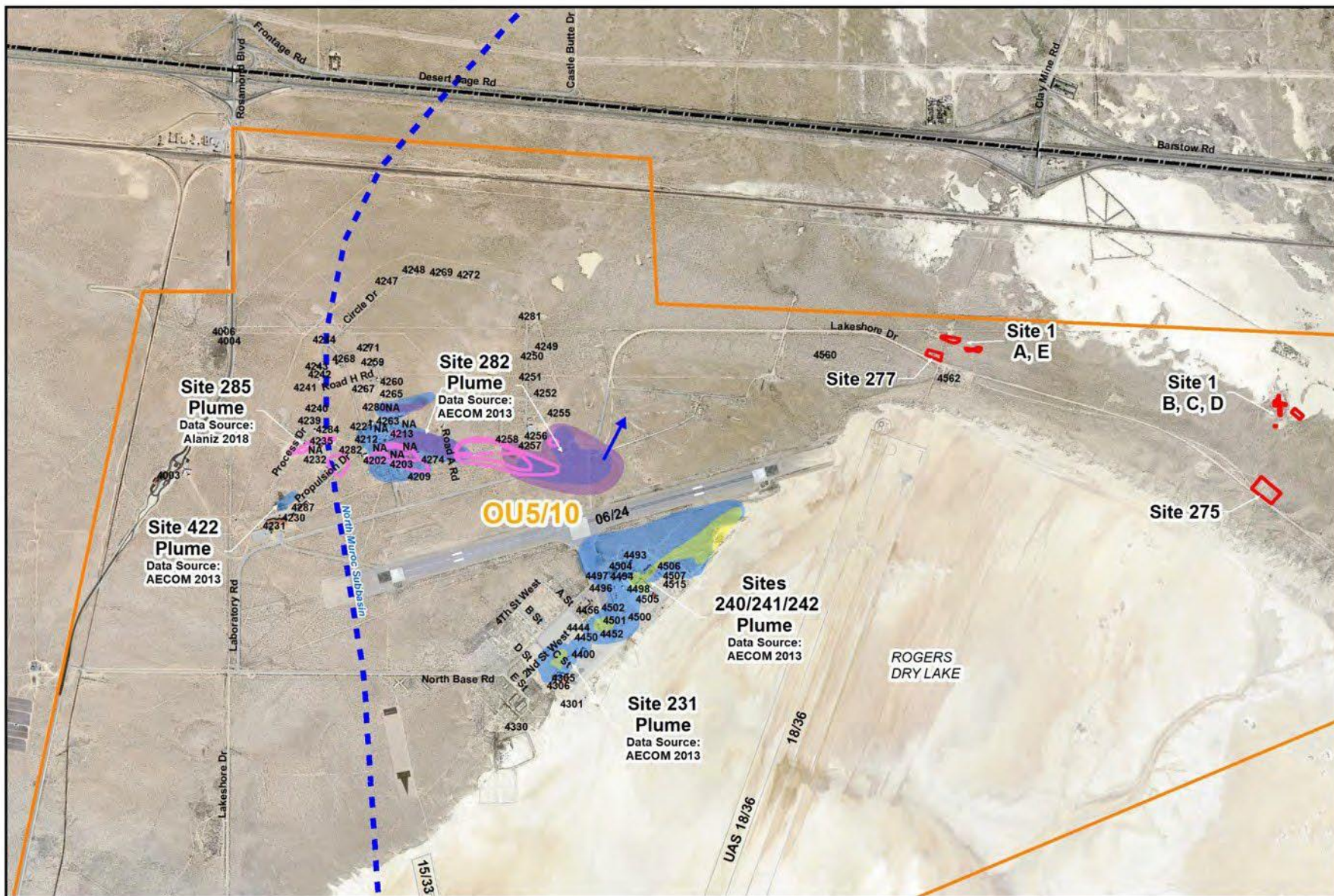




OU5/10 North Base (Pre-ROD)



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Legend

- Perchlorate Related Plume Extent
- NMMA Related Plume Extent
- Solvent Related Plume Extent
- Petroleum Related Plume Extent
- "TP" Sites 1, 275, and 277
- Operable Unit Boundary
- Groundwater Subbasin
- Generalized Groundwater Gradient

OU5/10 Groundwater Plume Map



Created By: CJ2 CR/CE/DA, GBR
Created: 06-02-21



OU5/10 North Base (Pre-ROD)

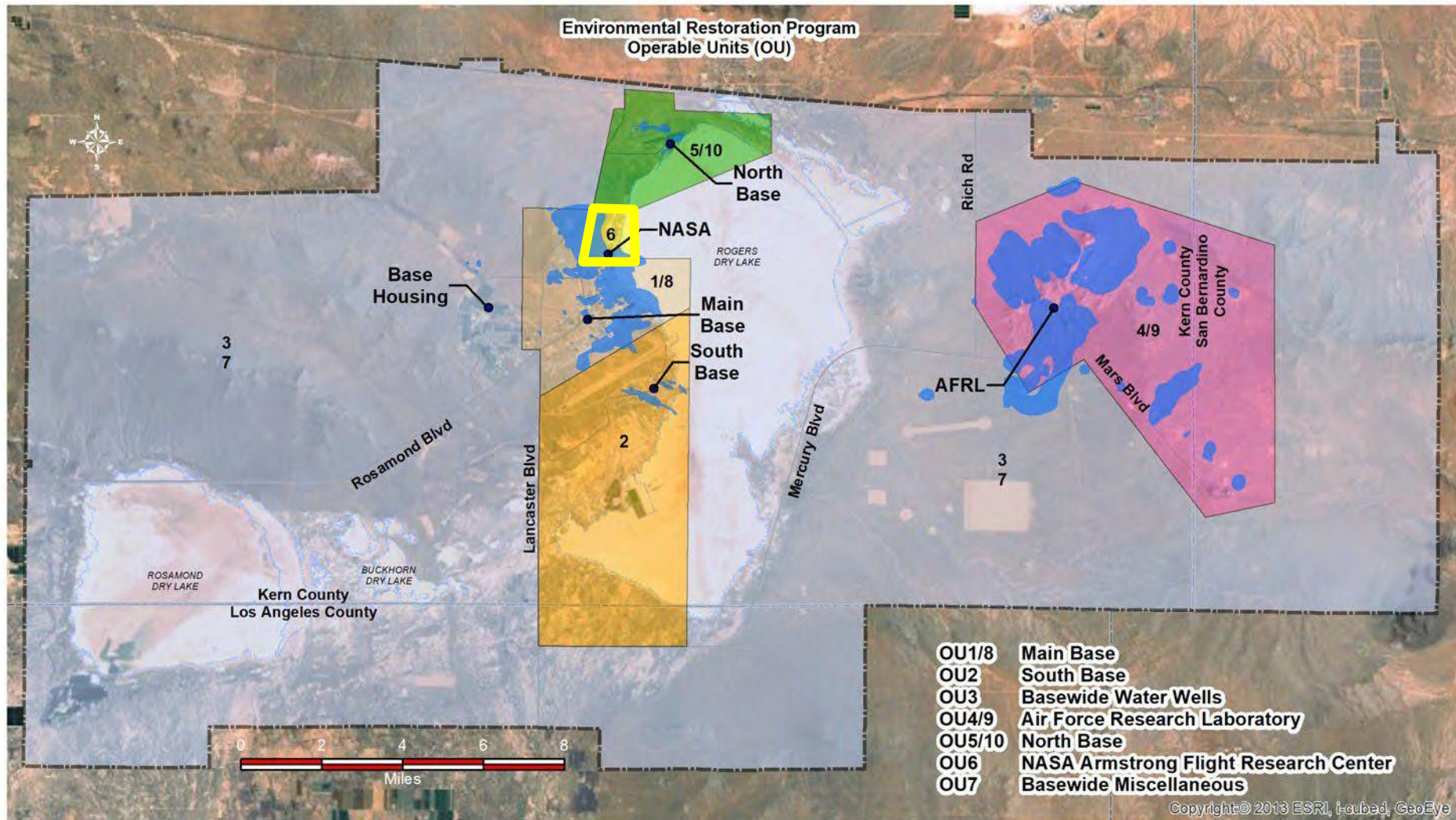


- **January 2023: Site 285 Monitoring well conversion to extraction well complete**
- **Fall 2023: Revised Draft OU5/10 FS expected to be submitted to regulatory agencies**

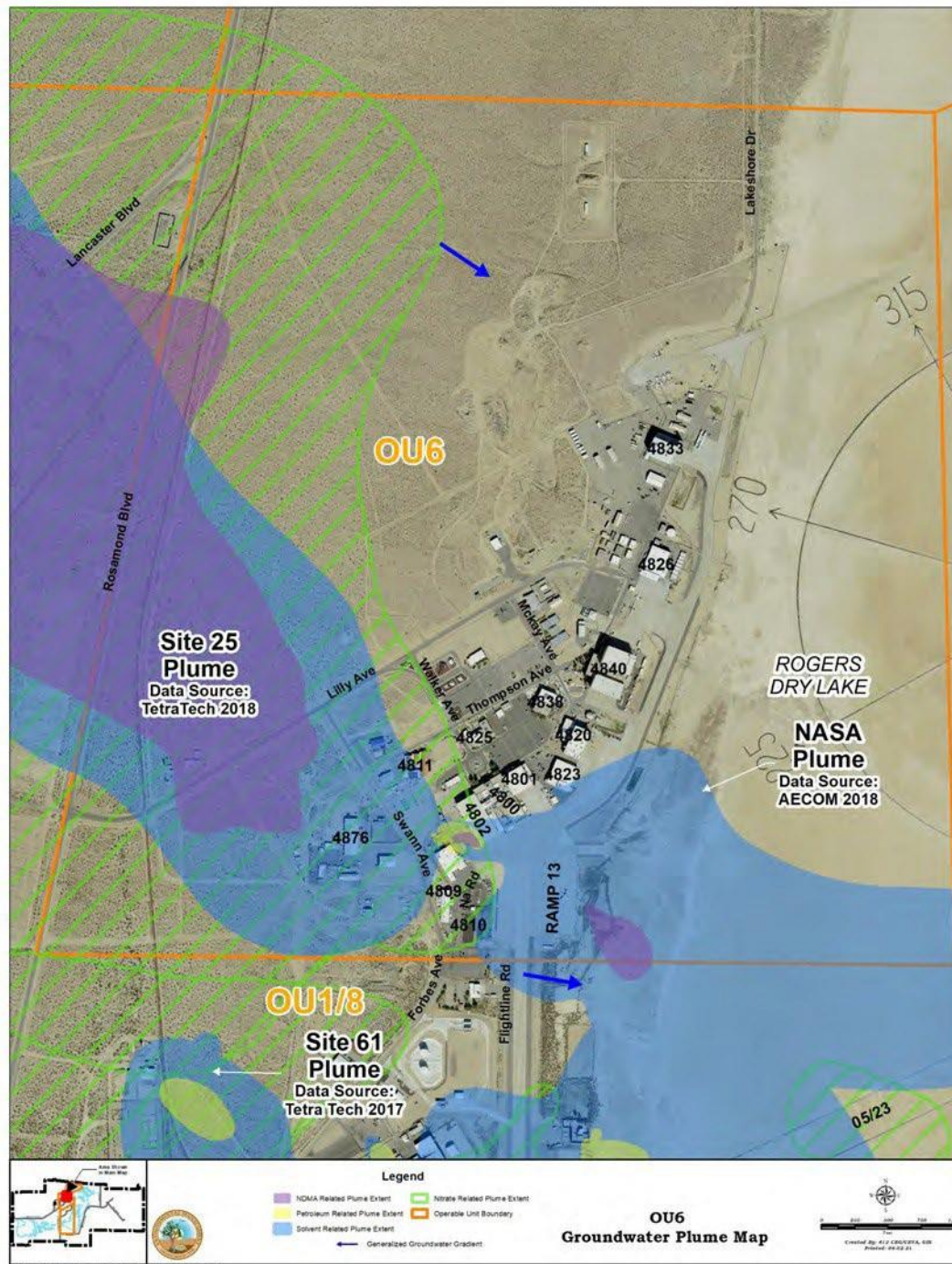




OU6 NASA Armstrong (Post-ROD)



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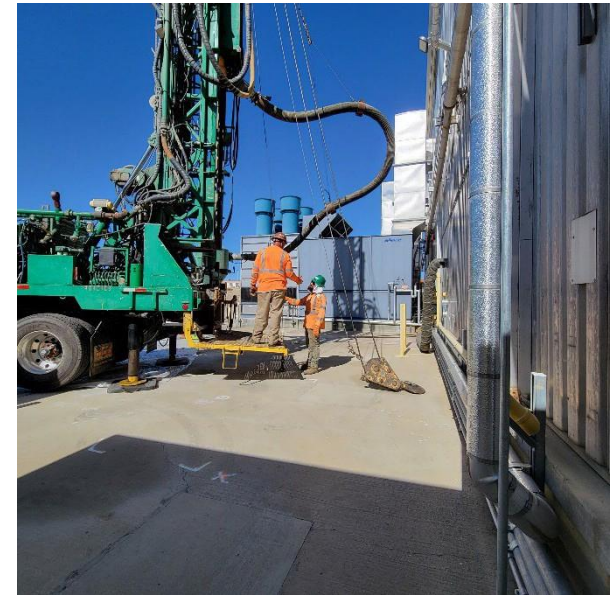




OU6 NASA Armstrong (Post-ROD)



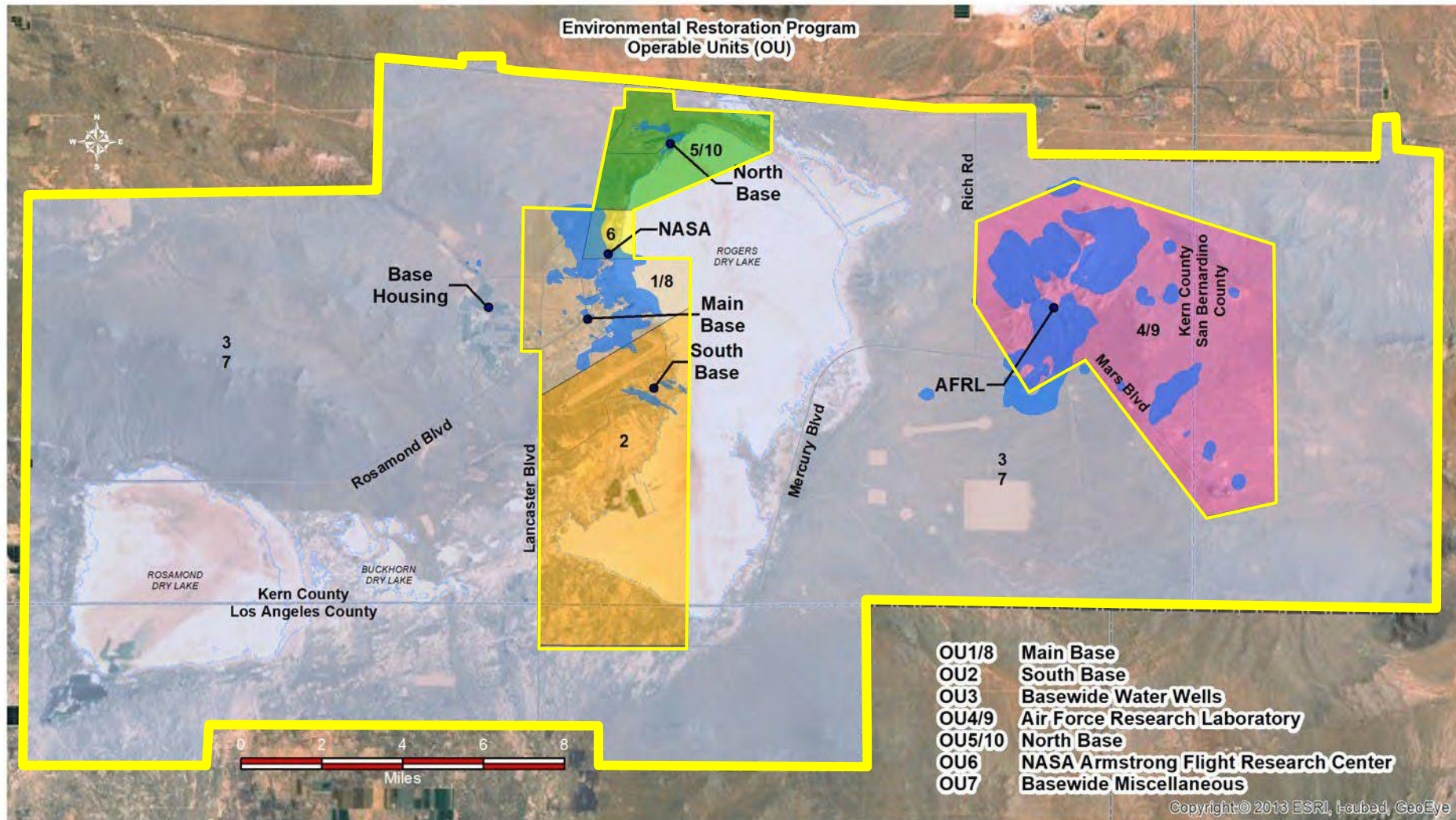
- **Well installations to address data gaps identified in Third Five-Year Review**
 - **October 2022: Three groundwater monitoring wells installed in Site N3 source area to better delineate plume**
 - **March/April 2023: One shallow and one deep groundwater monitoring well installed to better delineate the extent of the plume on the lakebed**



Setup for a well installation with an Air Rotary Casing Hammer rig up against one of Armstrong's main hangars (4802)



OU7 Basewide Miscellaneous (Pre-ROD)



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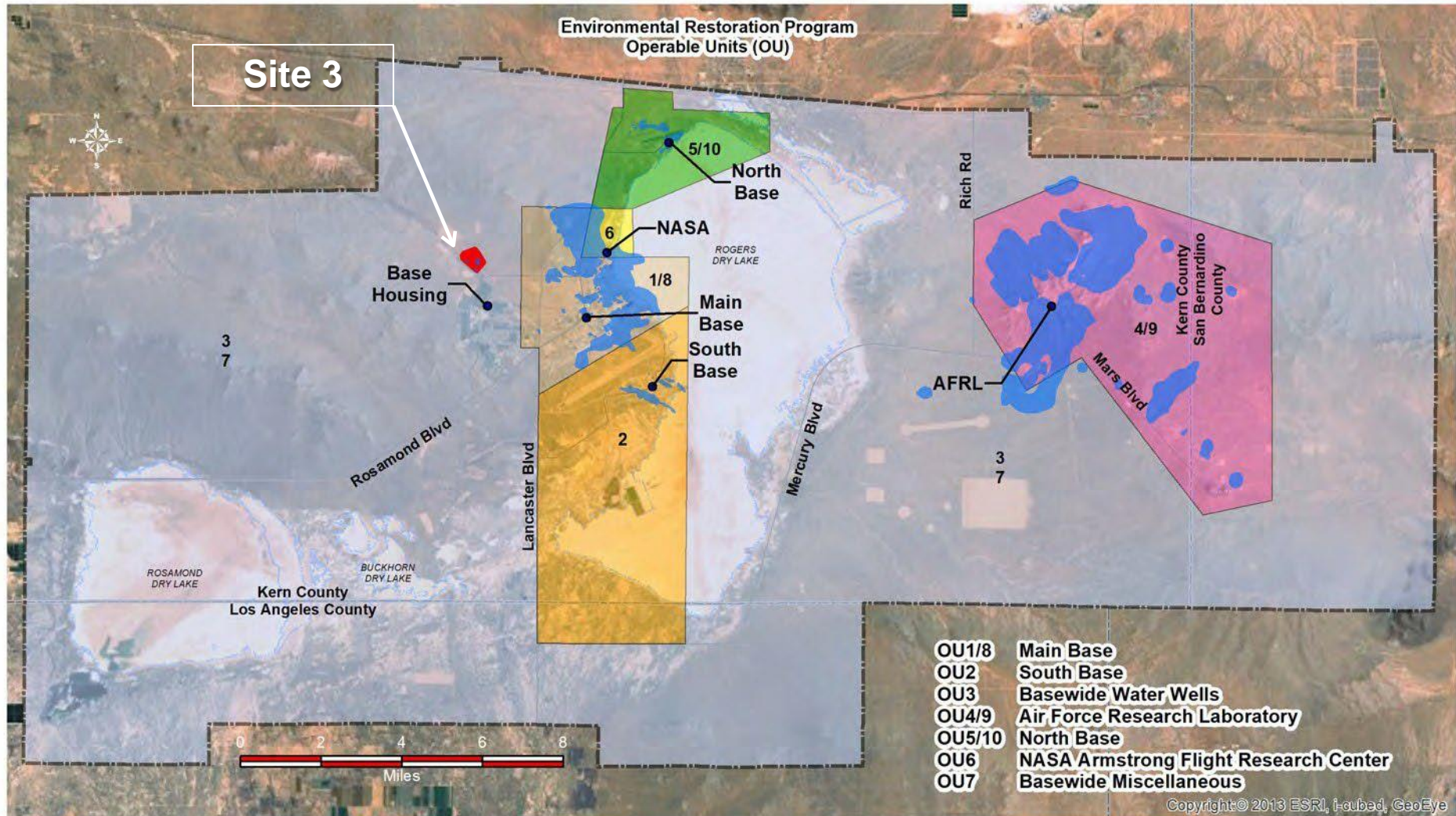
OU7 Basewide Miscellaneous (Pre-ROD)



- **Air Force is developing a soil gas sampling work plan**
 - **Comments have been received from the regulatory agencies**
 - **Soil gas data will inform the proposed remedies for the draft Proposed Plan, which will be submitted to the regulatory agencies for review**



OU7 Site 3 (Post-ROD)







OU7 Site 3 (Post-ROD)



- **28 November 2022: Final Remedial Action Work Plan Addendum submitted**
- **Currently constructing landfill cap**
- **U.S. EPA Site Visit 11 April 2023. Revisit in June to observe cap construction progress**
- **U.S. EPA observed that geotechnical measurements were taking place and viewed the soil borrow source being used**





OU7 Site 3 (Post-ROD)

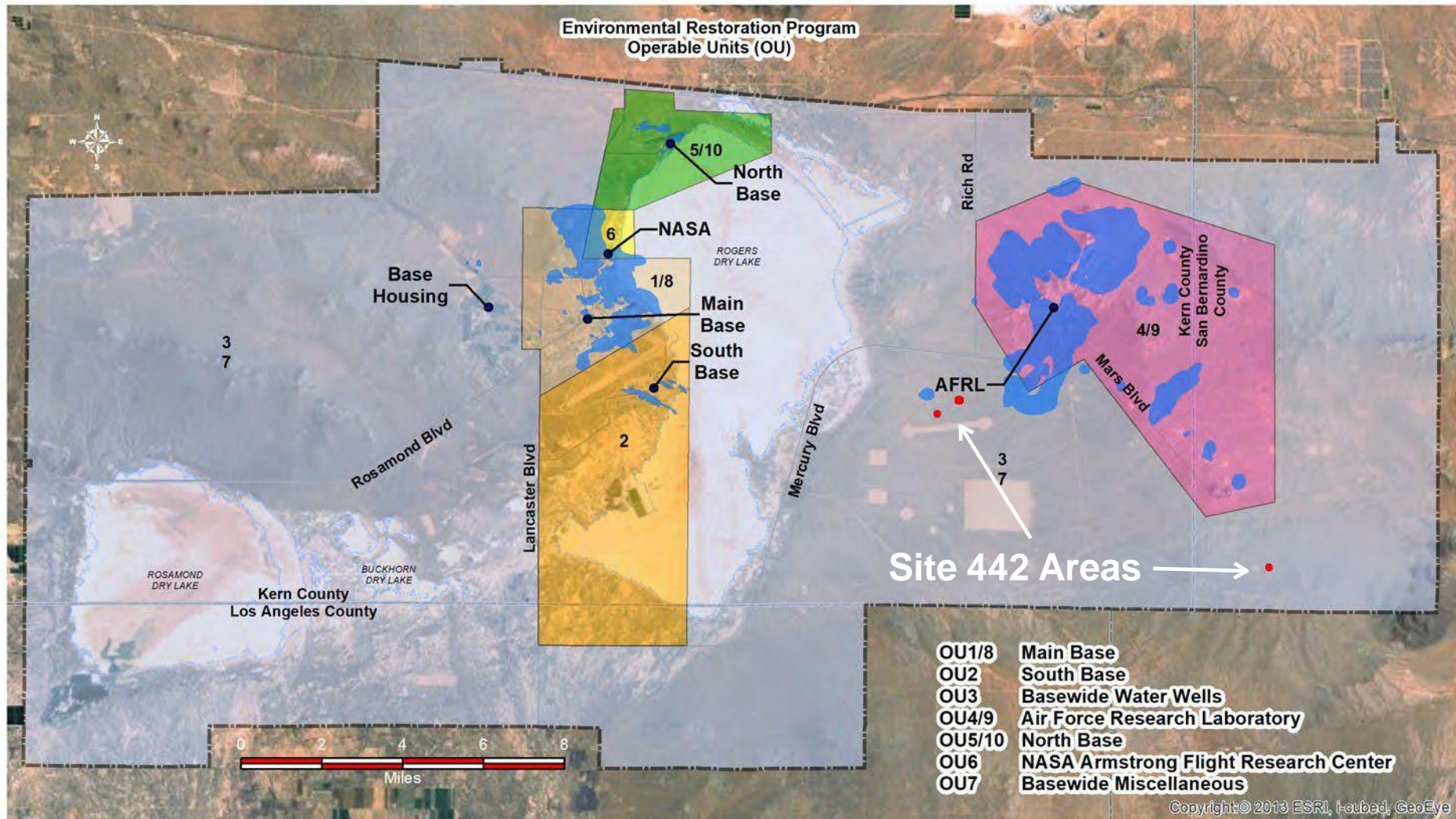


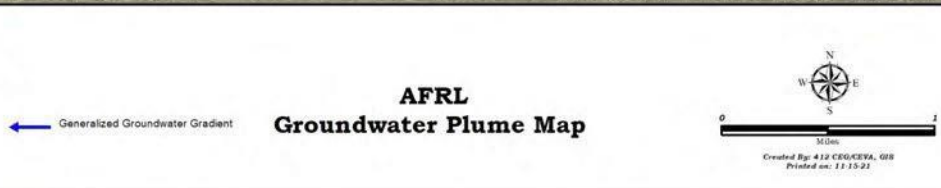
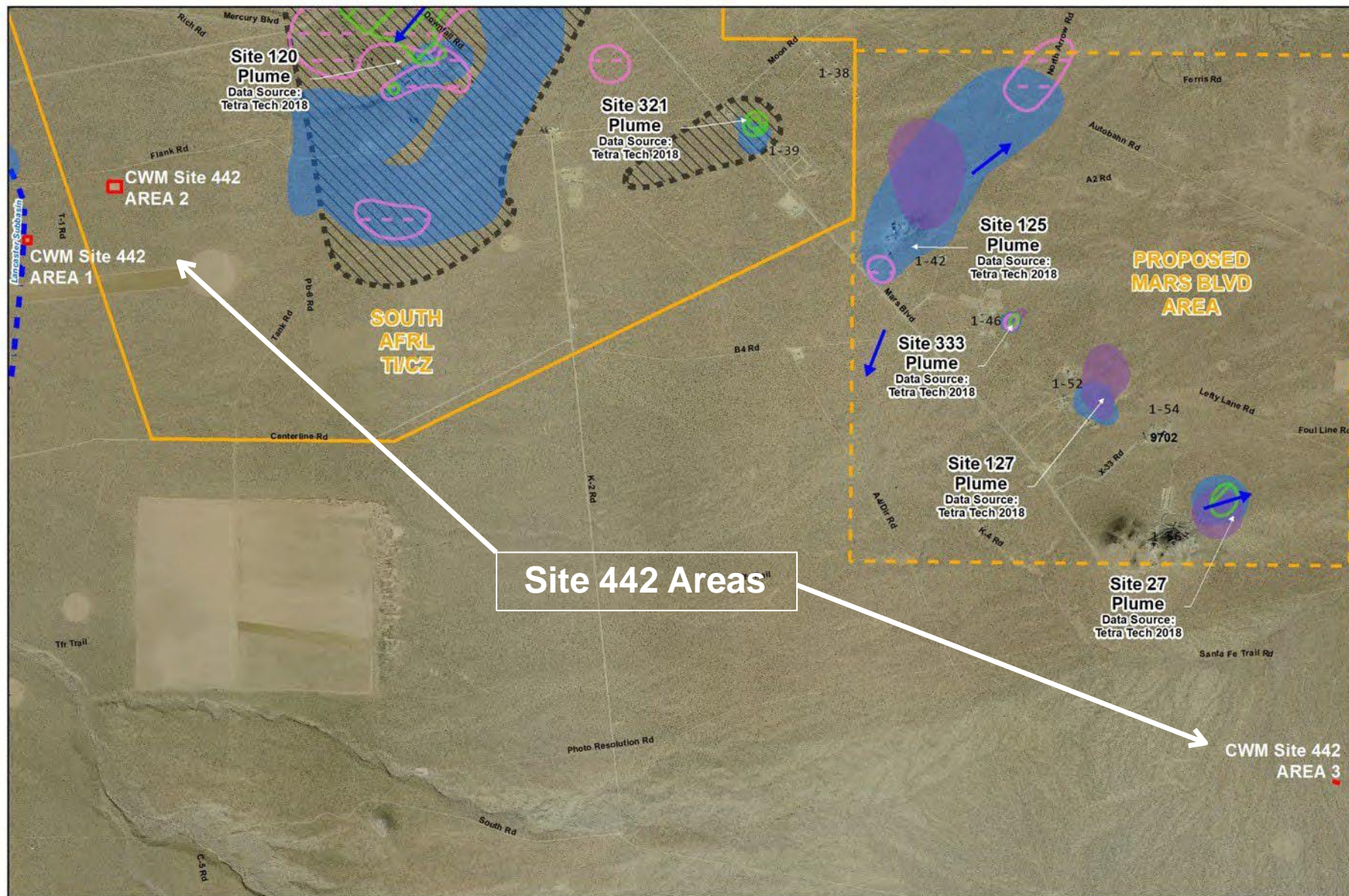
- 11 April 2023 Site 3 landfill visit





OU7 Chemical Warfare Materiel (Post-ROD)







OU7 Chemical Warfare Materiel (Post-ROD)



- **May 2023 Update:**
 - **Vegetation has been identified as “stressed or dead” during the semiannual inspection for multiple years**
 - **Re-seeding/revegetation effort performed in December 2022 at Site 442 Areas 1, 2, and 3**
 - **Some growth observed in late-March during site visit**
 - **Periodic monitoring will continue, but not anticipated to achieve 50 percent vegetative coverage per O&M Plan Addendum**



OU7 Chemical Warfare Materiel (Post-ROD)



View to East of plowed and
seeded rows – Area 2
21 December 2022



View to West of plowed rows
for re-seeding – Area 3
21 December 2022



OU7 Chemical Warfare Materiel (Post-ROD)



View to SE of vegetation growth and coverage after seeding event at Area 2

23 March 2023

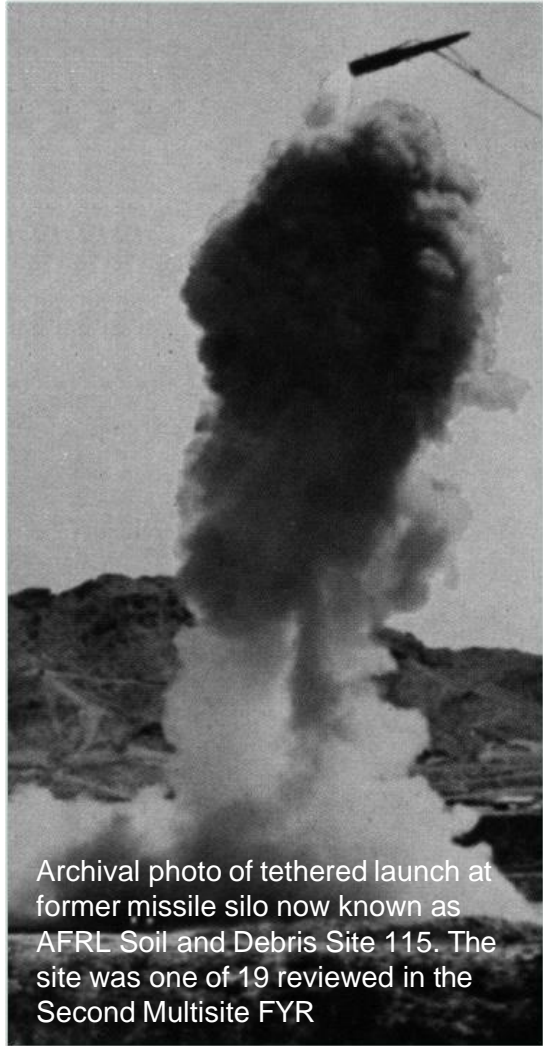


View to W of vegetation growth 3 months after seeding event at Area 3

23 March 2023



Second Multisite Five-Year Review (FYR)

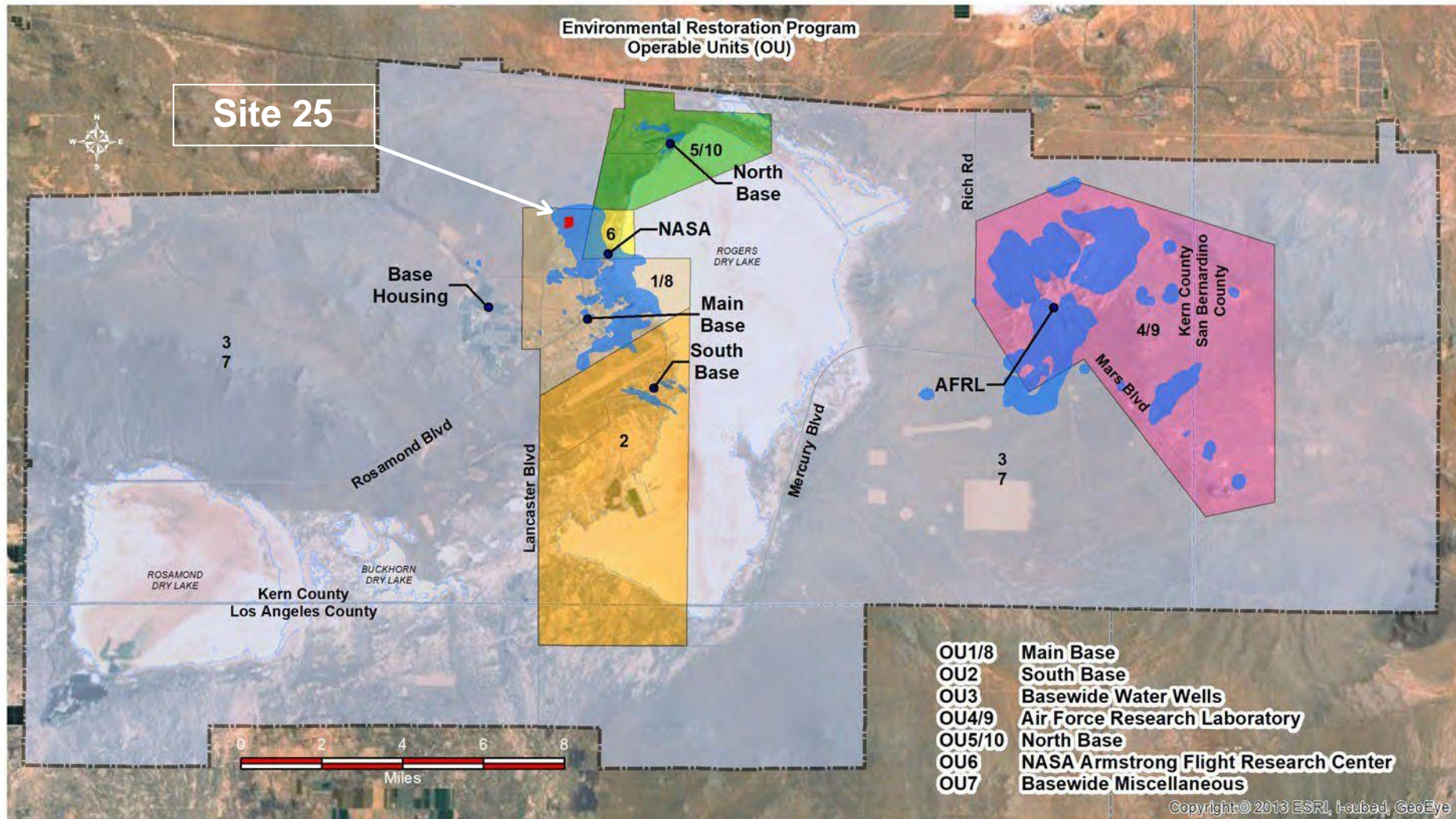


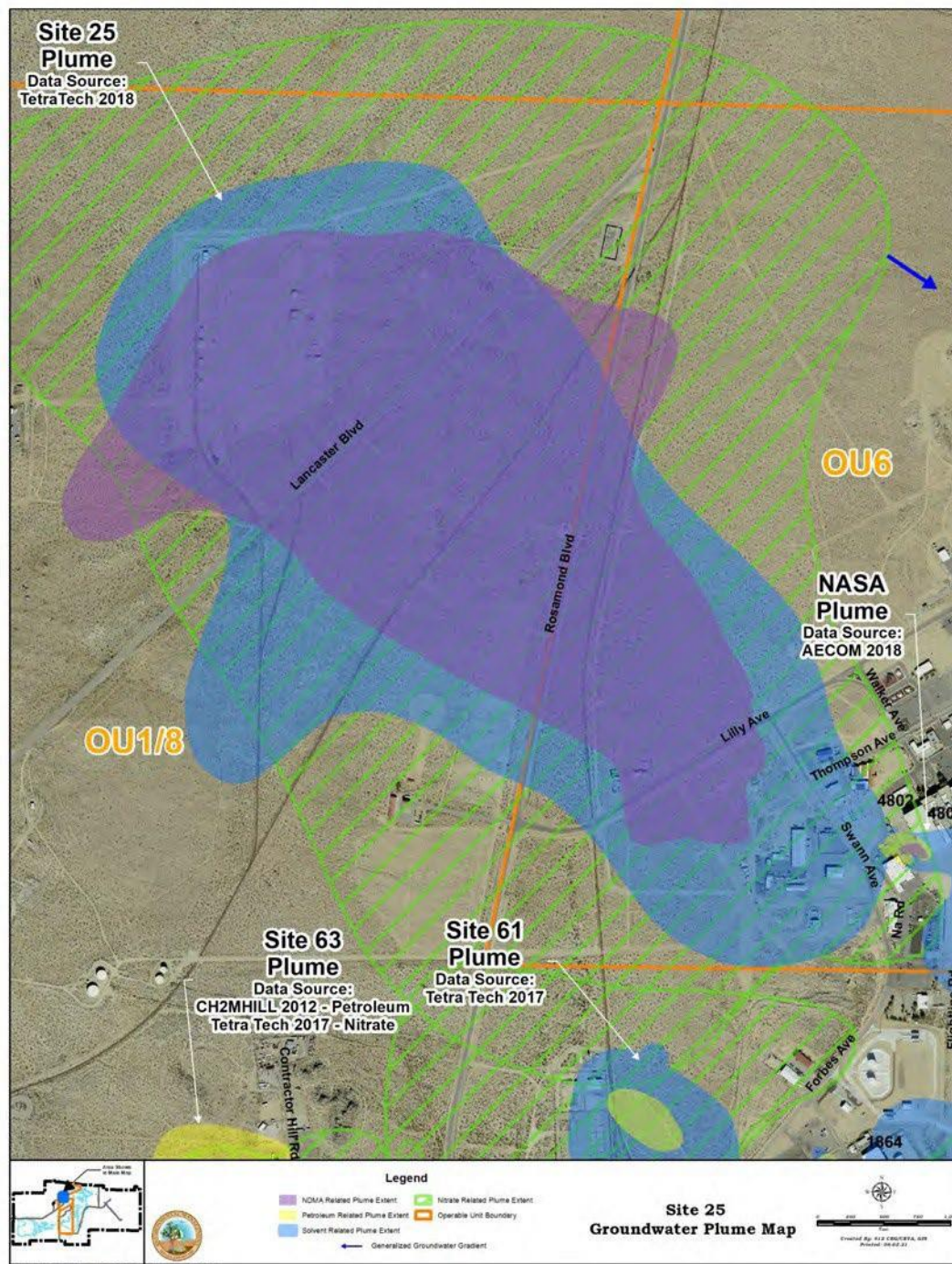
Archival photo of tethered launch at former missile silo now known as AFRL Soil and Debris Site 115. The site was one of 19 reviewed in the Second Multisite FYR

- Report was signed in December 2022 but issues with uploading files to the Administrative Record delayed publication until February 2023
 - Edwards AR# 6184 on <https://ar.afcec-cloud.af.mil>
 - Notification ran in three local newspapers in early March 2023
- Based on review, U.S. EPA Region 9 concurred with remedy protectiveness in the short term for 18 of the 19 sites
 - Cleanup remedy for Site 29 (former South Base landfill) expected to be protective upon completion
 - The Air Force will address FYRR recommendations to ensure protectiveness in the long term



Site 25 (Pre-ROD)





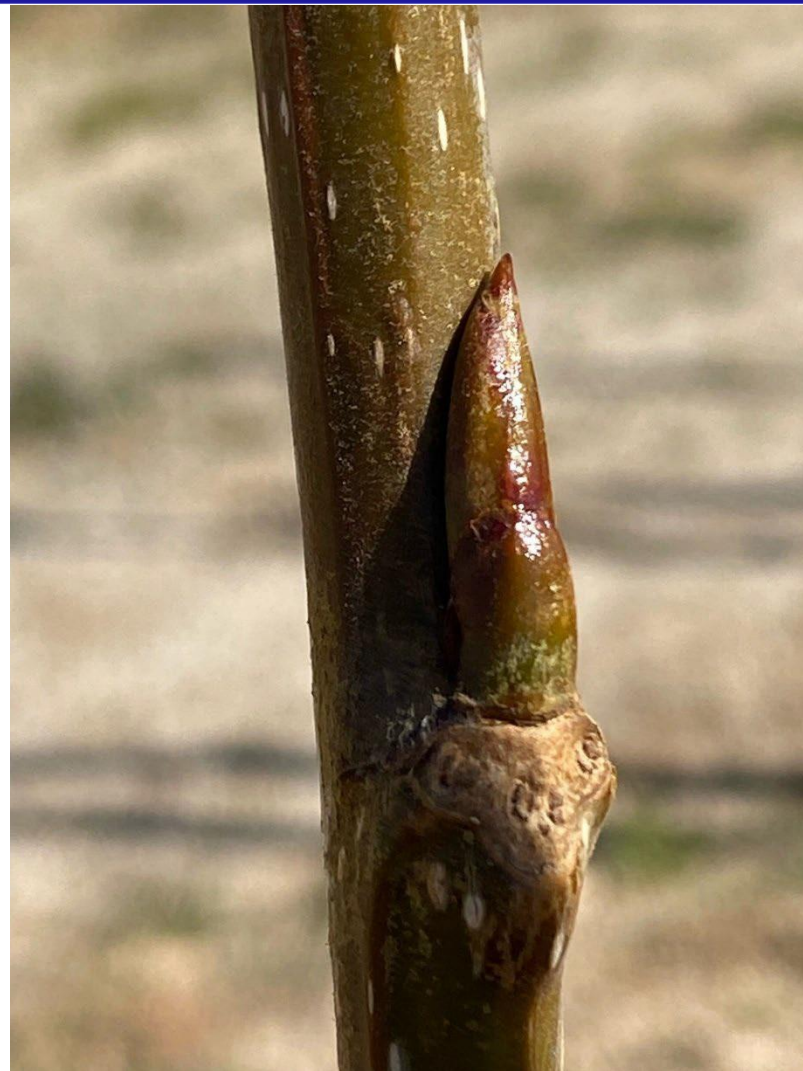


Site 25 (Pre-ROD)



- **Draft Site 25 Feasibility Study/Technical Impracticability Report was submitted in July 2022. Air Force received the regulatory agency comments in January 2023. Currently, Air Force is addressing the comments and planning to submit the draft final report in the third quarter 2023**
- **Air Force is conducting a phytoremediation treatability study by utilizing poplar trees to break down contaminants from extracted groundwater**
 - **To re-establish the study, additional 60 poplar trees were replanted in March 2023 with up to 9 trees planted in September 2022 still alive**
 - **Monitoring ongoing**

Site 25 (Phytoremediation)



March 2023



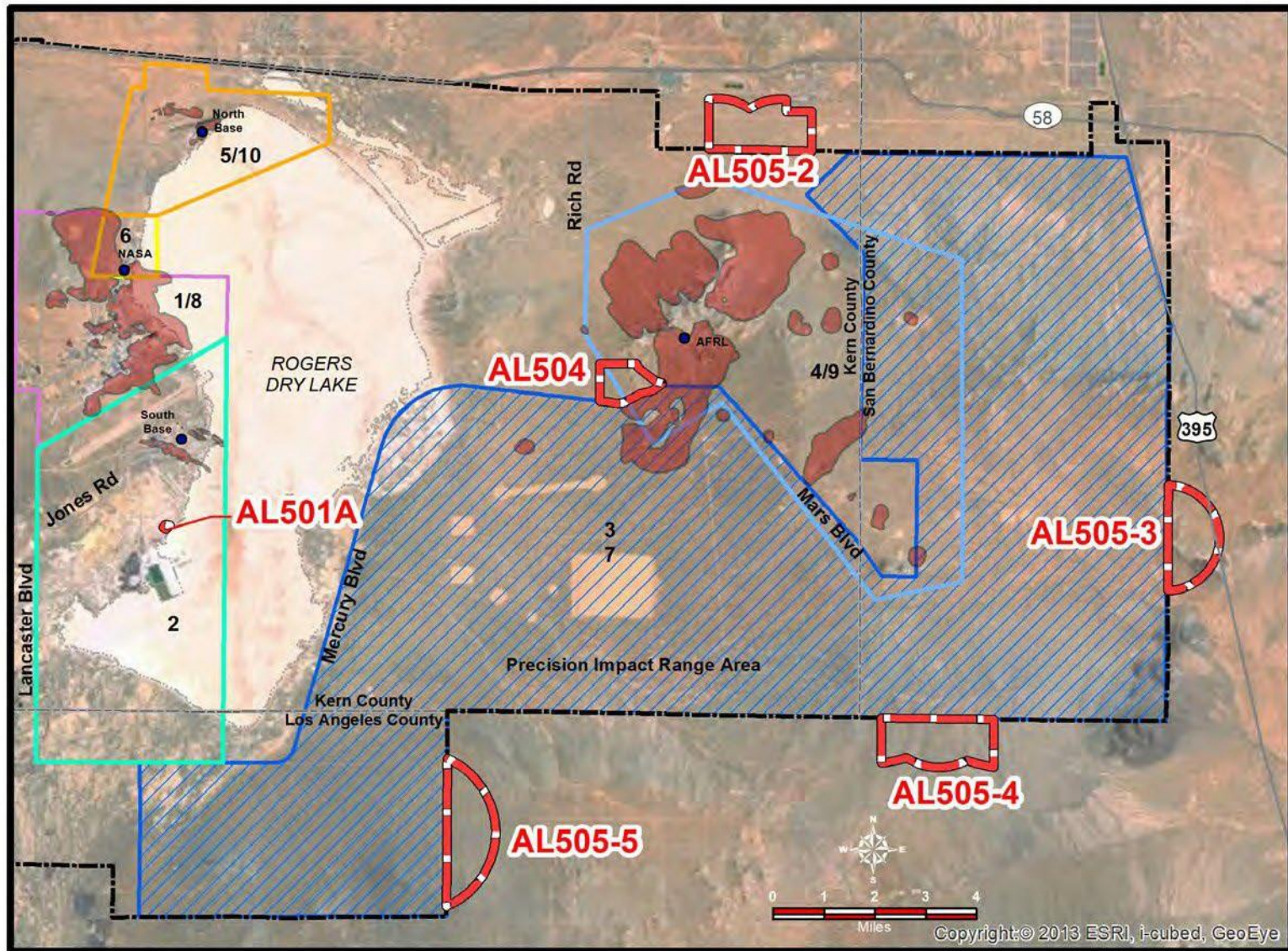
Site 25 (Phytoremediation)



March 2023



Military Munitions Response Program (MMRP) (Pre-ROD)





- **May 2023: Draft MMRP ROD expected to be submitted to regulatory agencies**
 - **Munition Response Sites AL501A, AL504, AL505-2, AL505-4**



**Example of a solar farm,
expected to be developed within AL505-2**



Follow the 3Rs of Explosives Safety:

- **Recognize:**
when you may have encountered a munition and that munitions are dangerous.
- **Retreat:**
do not approach, touch, move or disturb it, but carefully leave the area.
- **Report:**
call 911 and advise the police of what you saw and where you saw it.

Questions?

