



95 ABW

Reports from Environmental Program Managers

Environmental Restoration Program
Edwards AFB, CA

Paul Schiff, Rebecca Hobbs, Patrice Hallman, Bruce
Oshita, Tom Merendini, and Joe Dunwoody

17 February 2011



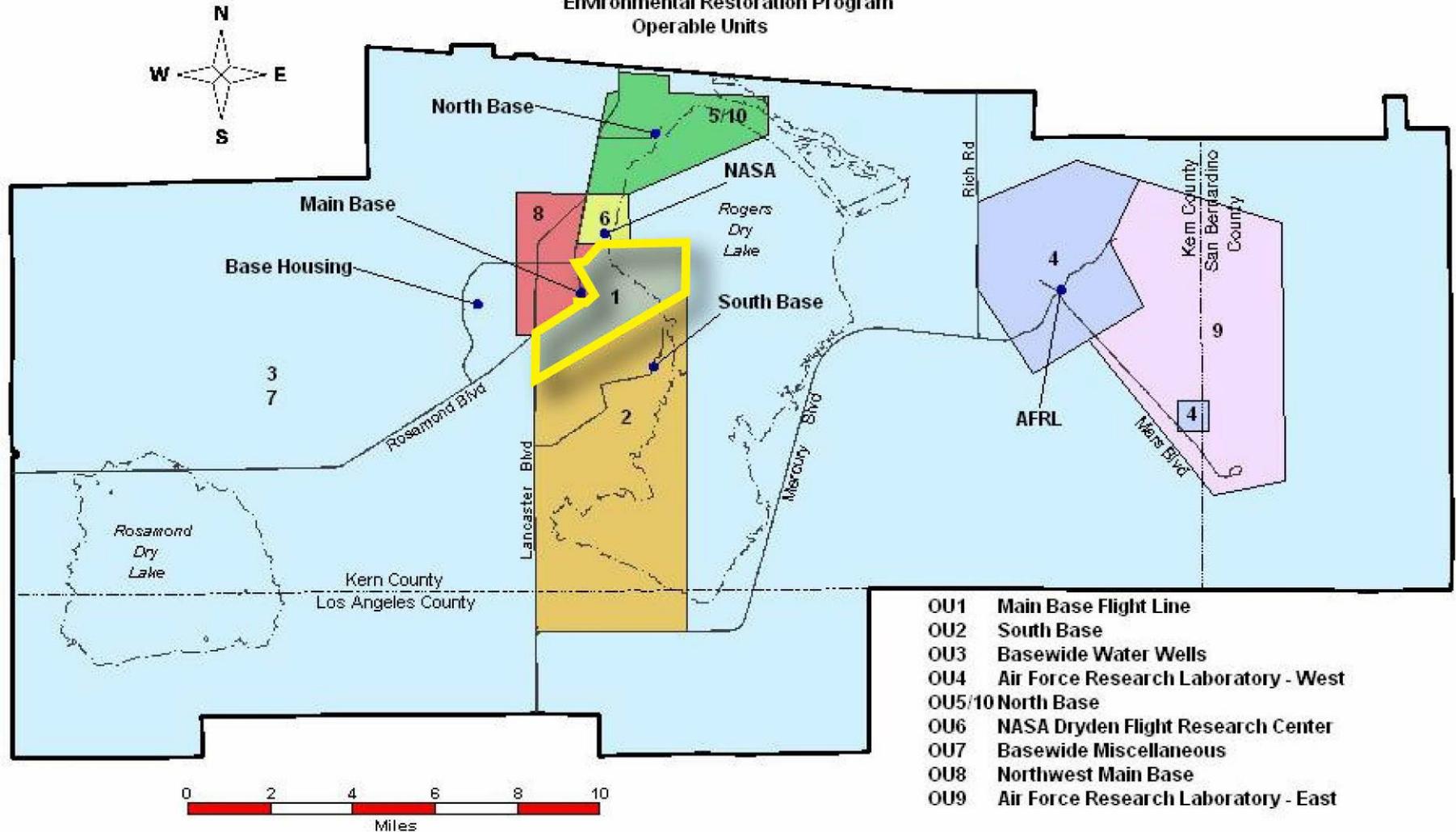


Operable Unit (OU) 1 Main Base Flightline



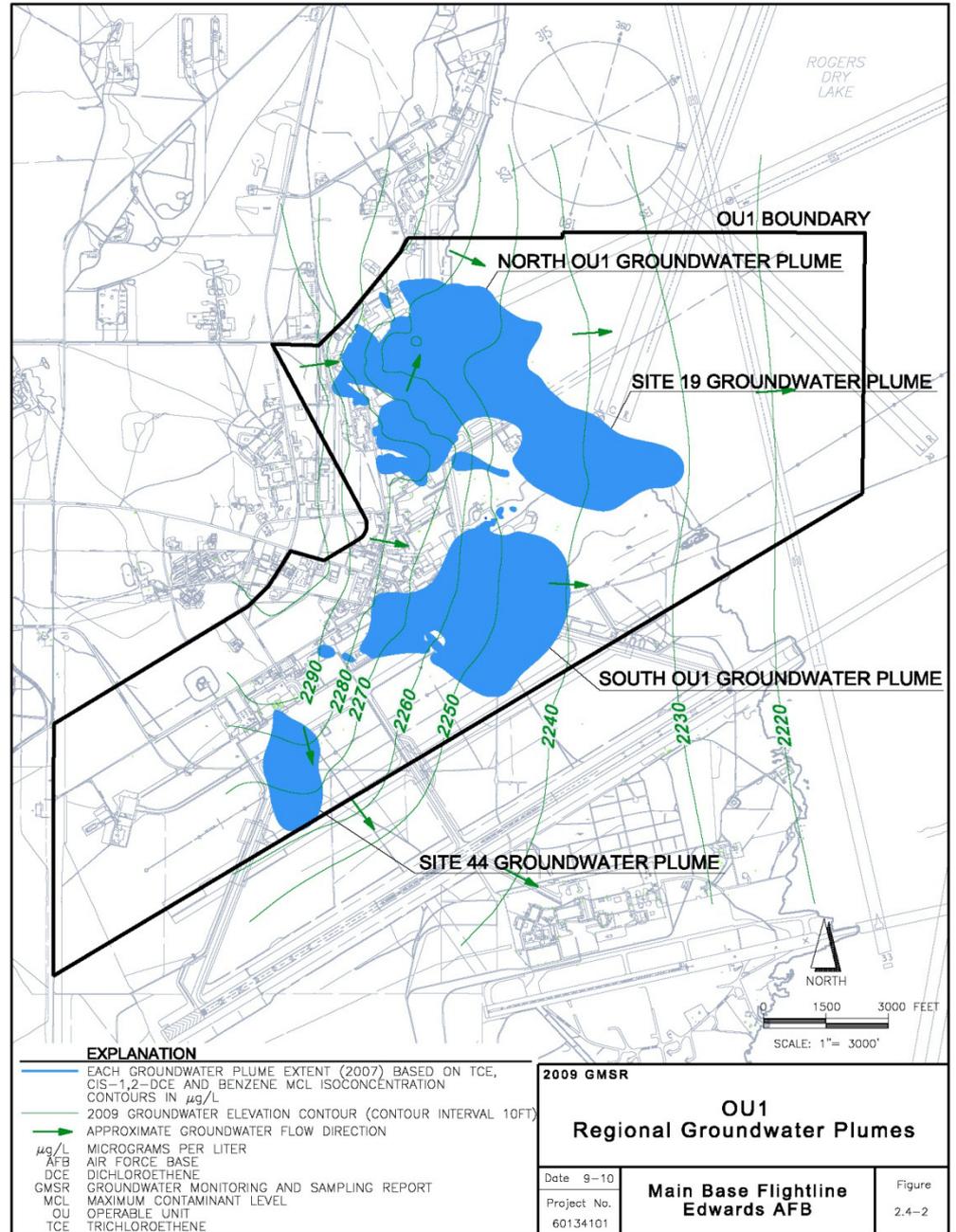
95 ABW

Environmental Restoration Program Operable Units



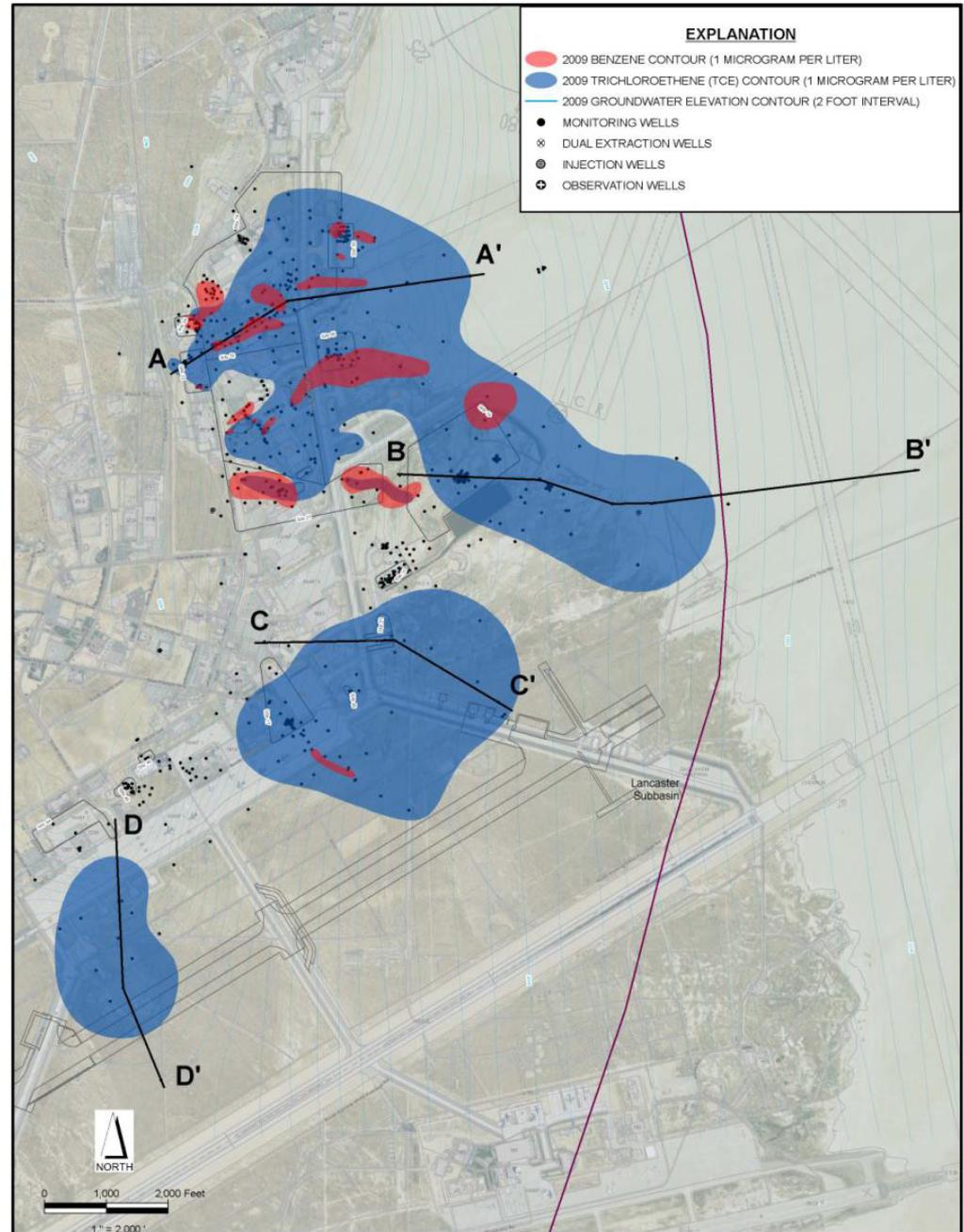


OU1 Main Base Flightline





OU1 Main Base Flightline





OU1

Main Base Flightline



95 ABW

- **OU1 Proposed Plan (PP)**
 - Revised Draft Final PP to be issued Summer 2011
 - Finalizing development of a revised OU1 groundwater model, to support remedy selection
- **OU1 public comment period Fall 2011**



OU1

Main Base Flightline



95 ABW

- **OU1 *Comprehensive Environmental Response, Compensation, and Liability Act of 1990 (CERCLA) Interim Treatment Systems Status***
 - Site 18 dual extraction system (DES) operating
 - Site 58 soil vapor extraction (SVE) treatment system operating



OU1

Main Base Flightline



95 ABW

- **Vapor Intrusion Pathway (VIP) Assessments**
 - Final VIP Monitoring Work Plan for Bldgs 1807 and 1830 issued January 2011
 - Bldg 1830 sampling completed December 2010
 - No elevated concentrations in indoor or subslab samples
 - Draft VIP Assessment Report Spring 2011
 - Additional buildings within OU1 planned for 2011
 - VIP assessments necessary to establish VIP requirements in OU1 ROD



95 ABW

Questions or Comments?



Military Munitions Response Program (MMRP)



95 ABW

- **Non-Time Critical Removal Action (NTCRA) for Munitions Response Sites (MRSs) AL504, AL505-2, and AL505-4**
 - Engineering Evaluation/Cost Analysis (EE/CA) public comment period ended 17 January
 - No comments received from the public
 - Draft Action Memorandum (AM) and a draft work plan will be issued for regulatory review in February
 - Right of Entry (ROE) requests in progress for landowners in off-base MRSs
 - Surface Clearances anticipated to begin in Summer 2011



95 ABW

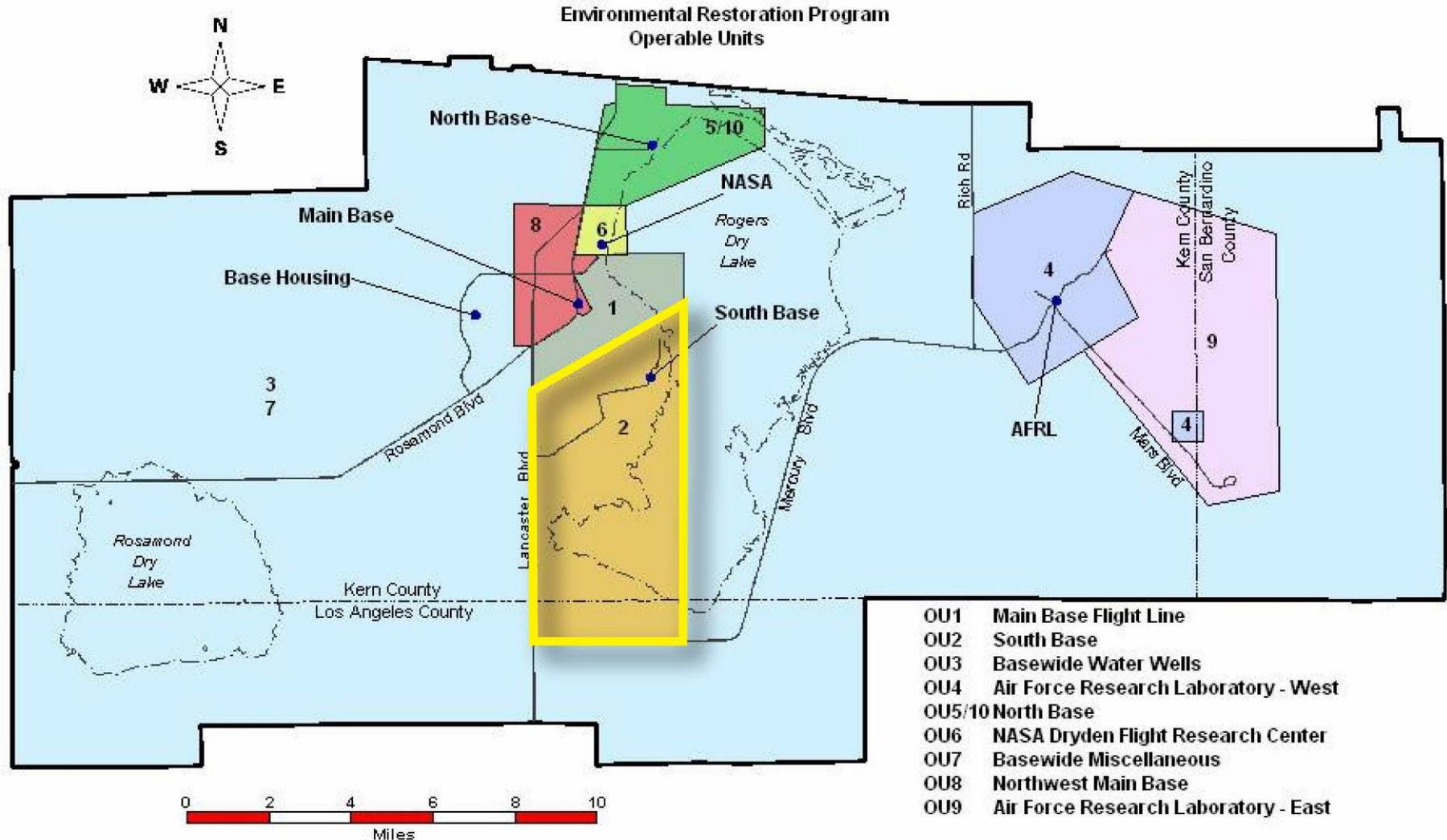
Questions or Comments?



OU2 South Base



95 ABW

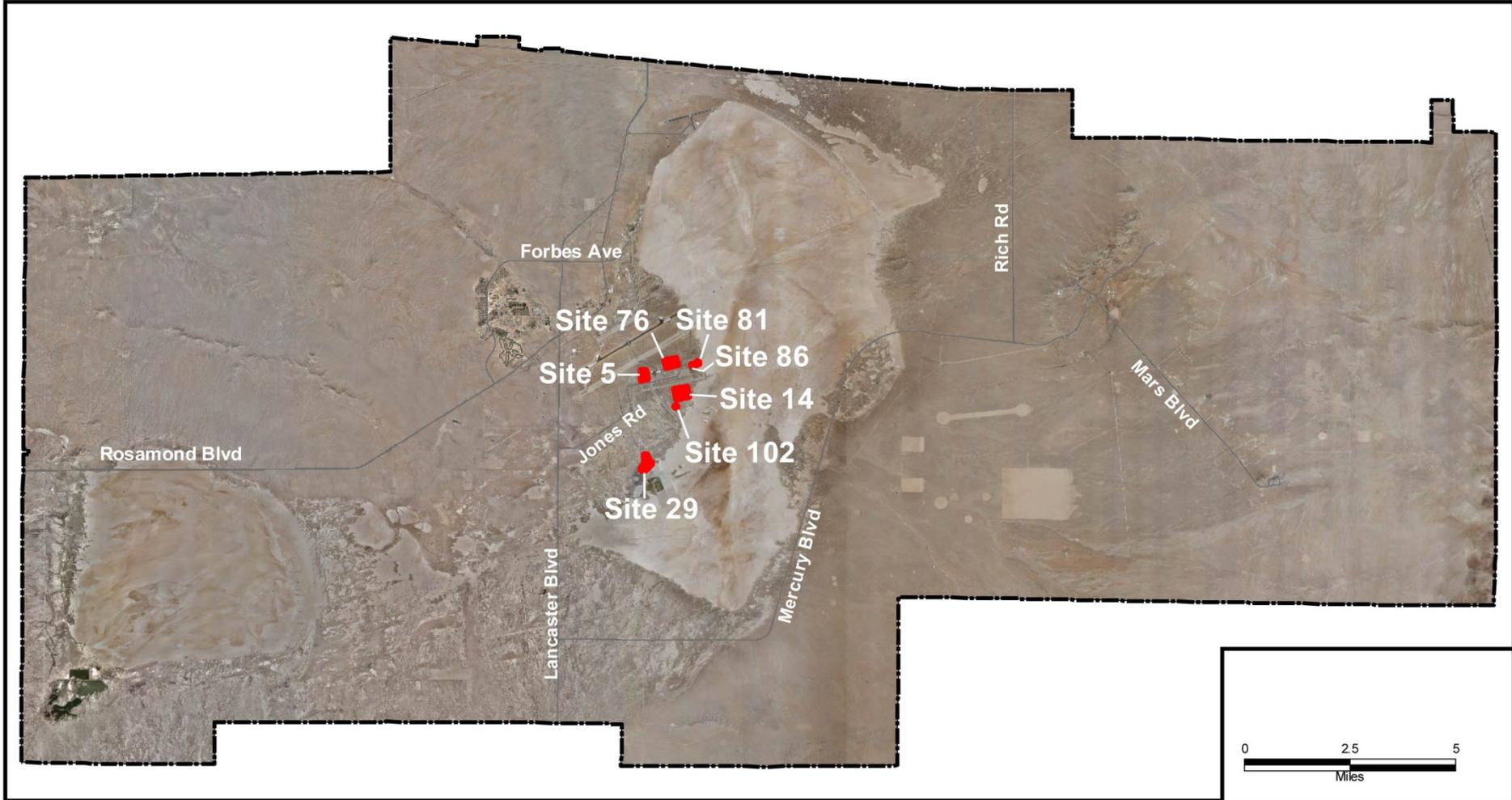




OU2 South Base



95 ABW





OU2

South Base



95 ABW

- **Final Remedies being implemented**
 - Sites 5/14 – vertical wells being installed for *in situ* bioremediation (gaseous nutrient injection) and horizontal wells for *in situ* chemical oxidation (potassium permanganate injection)
 - Site 76 – vertical wells being installed for *in situ* chemical oxidation (potassium permanganate injection)
 - Site 86 – vertical wells being installed for *in situ* bioremediation (gaseous nutrient injection)



OU2

South Base



95 ABW

- **Final Site 29 Proposed Plan (Revised) submitted**
 - Proposes clean closure of the landfill
 - Test pit results indicate only 21,700 cubic yards of debris remain buried at the site
- **Site 29 Public Comment Period:
12 January – 28 February 2011**
- **Public meetings on-base and off-base:
9 February 2011**



95 ABW

Questions or Comments?



OU7 Site 3



95 ABW





OU7 Site 3 Landfill



95 ABW

- **Site 3 Record of Decision (ROD) in Remedial Project Manager (RPM) Review**
 - Resolving RPM comments on Site 3 ROD
 - ROD will be presented to the Water Board in early March 2011
 - After Water Board meeting, the ROD will be presented to the Air Force and U.S. EPA for signature
 - California EPA (Cal/EPA) Dept. of Toxic Substances Control (DTSC) and Water Board signatures will be requested after U.S. EPA signature



95 ABW

Questions or Comments?



OU7 Chemical Warfare Materiel



95 ABW





OU7

Chemical Warfare Materiel



95 ABW

- **Field work put on hold while Air Force prepares an Explosive Safety Submission**
- **Field work anticipated to resume in March 2011**



95 ABW

Questions or Comments?



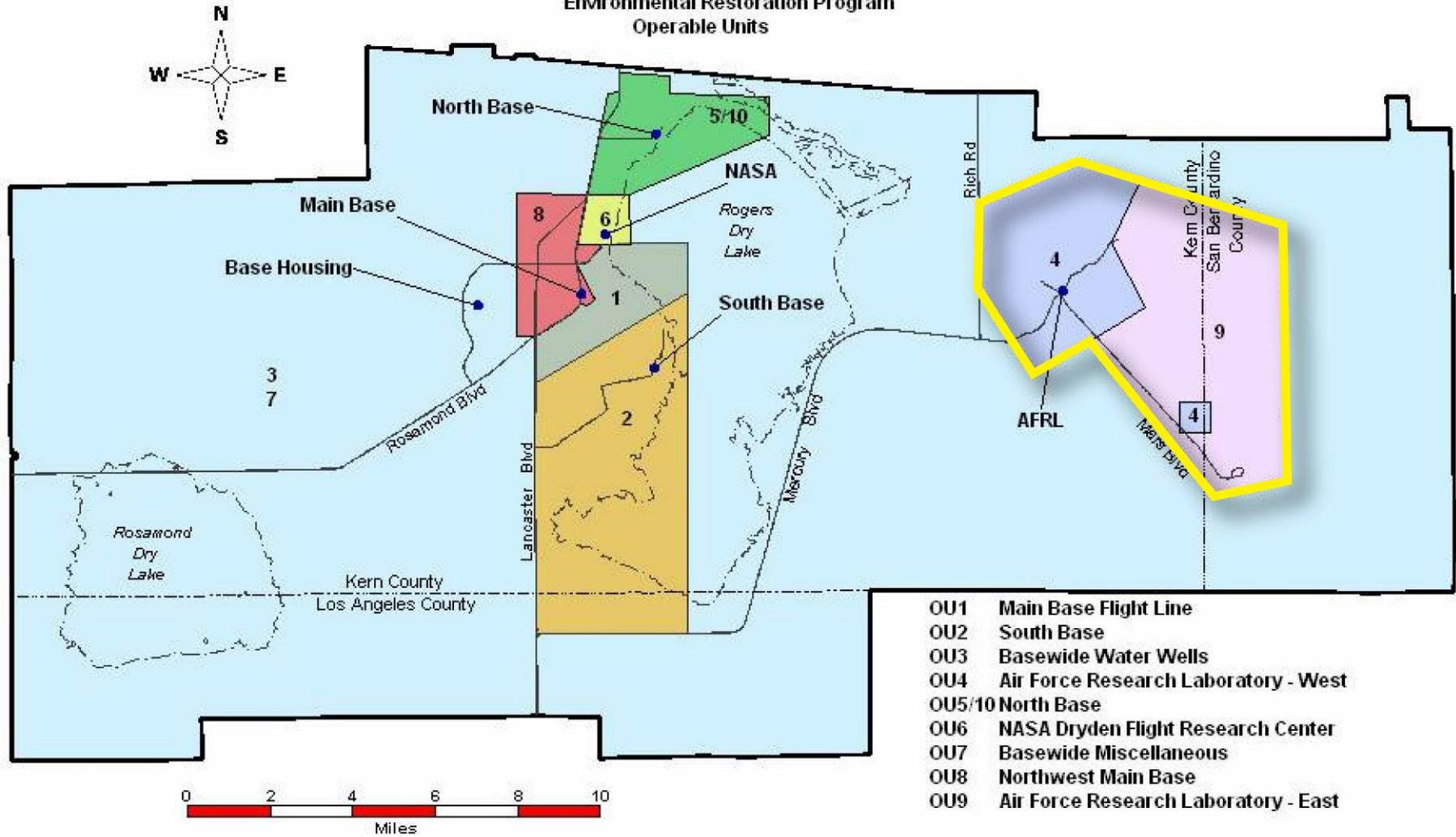
OUs 4 & 9

Air Force Research Laboratory



95 ABW

Environmental Restoration Program Operable Units





Operable Units 4 & 9 (AFRL)



95 ABW

- **Reports**
 - AFRL Arroyos Record of Decision – Draft Final
 - Groundwater Modeling Report for Northeast AFRL – Draft
 - Basewide Site Conceptual Model – Draft
- **Work Plans**
 - Geophysical Survey Work Plan – Preview Draft
 - Habitat Restoration Work Plan – Draft
 - Site 333 Tank Removal Work Plan – Final

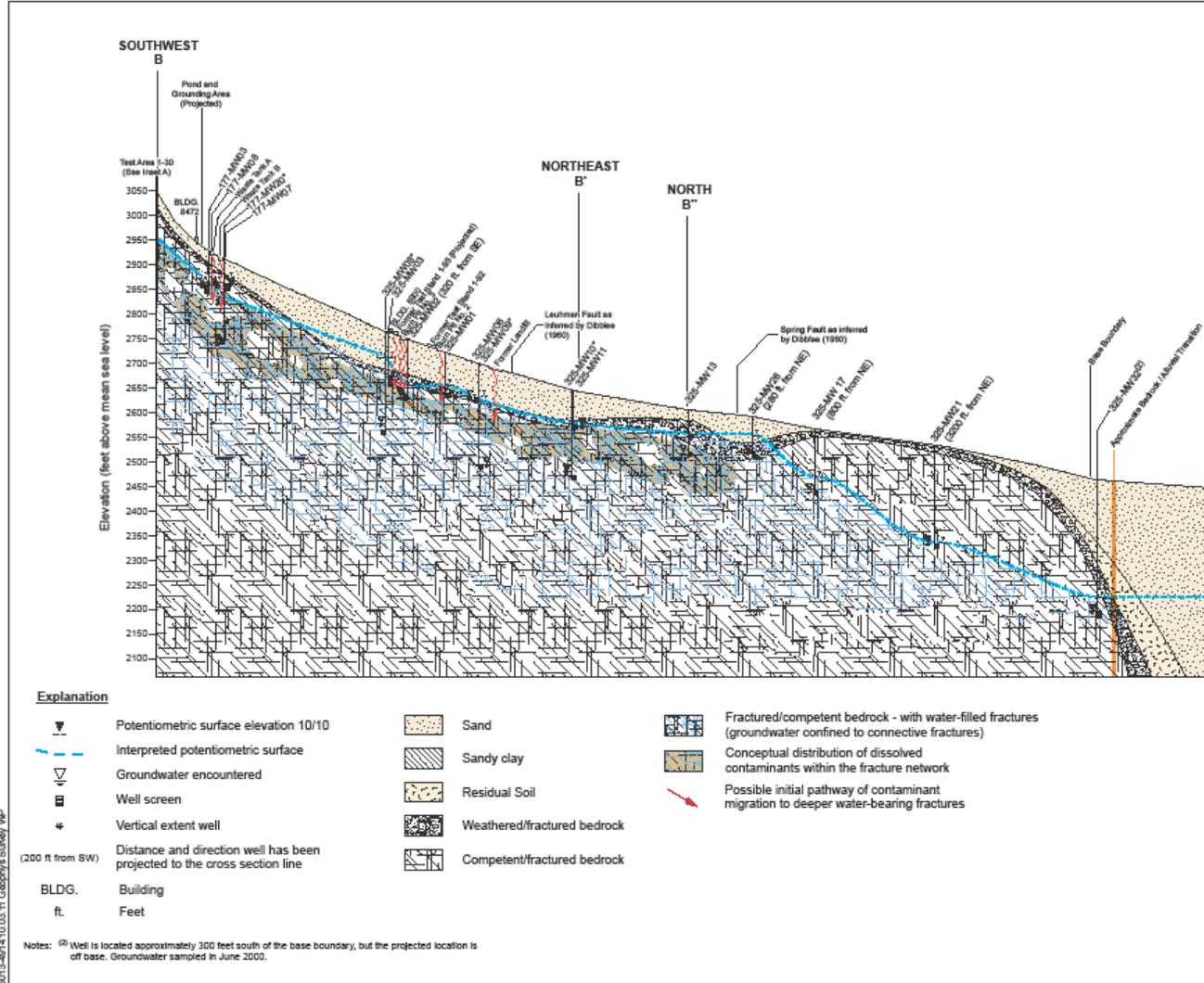


Operable Units 4 & 9 (AFRL)



95 ABW

A GEOLOGIC X-SECTION SHOWING ALLUVIUM-BED ROCK TRANSITION



6/13/04 10:03:11 Geophysics Survey WP



Revegetation at Edwards AFB



95 ABW





Recent Field Activities



95 ABW

- **South AFRL**
 - Indoor air sampling in Bldgs 8403 and 8595
 - Continued Site 37 soil vapor extraction system operation and maintenance
 - Removed 42 near-slab vapor wells
- **Northeast AFRL/Mars Blvd. Areas & Arroyos**
 - Sampled 27 wells as part of long-term monitoring program
 - Installed 4 new groundwater monitoring wells
 - Conducted downhole geophysics in 5 wells
 - Organized a field visit for regulators



95 ABW

Questions or Comments?

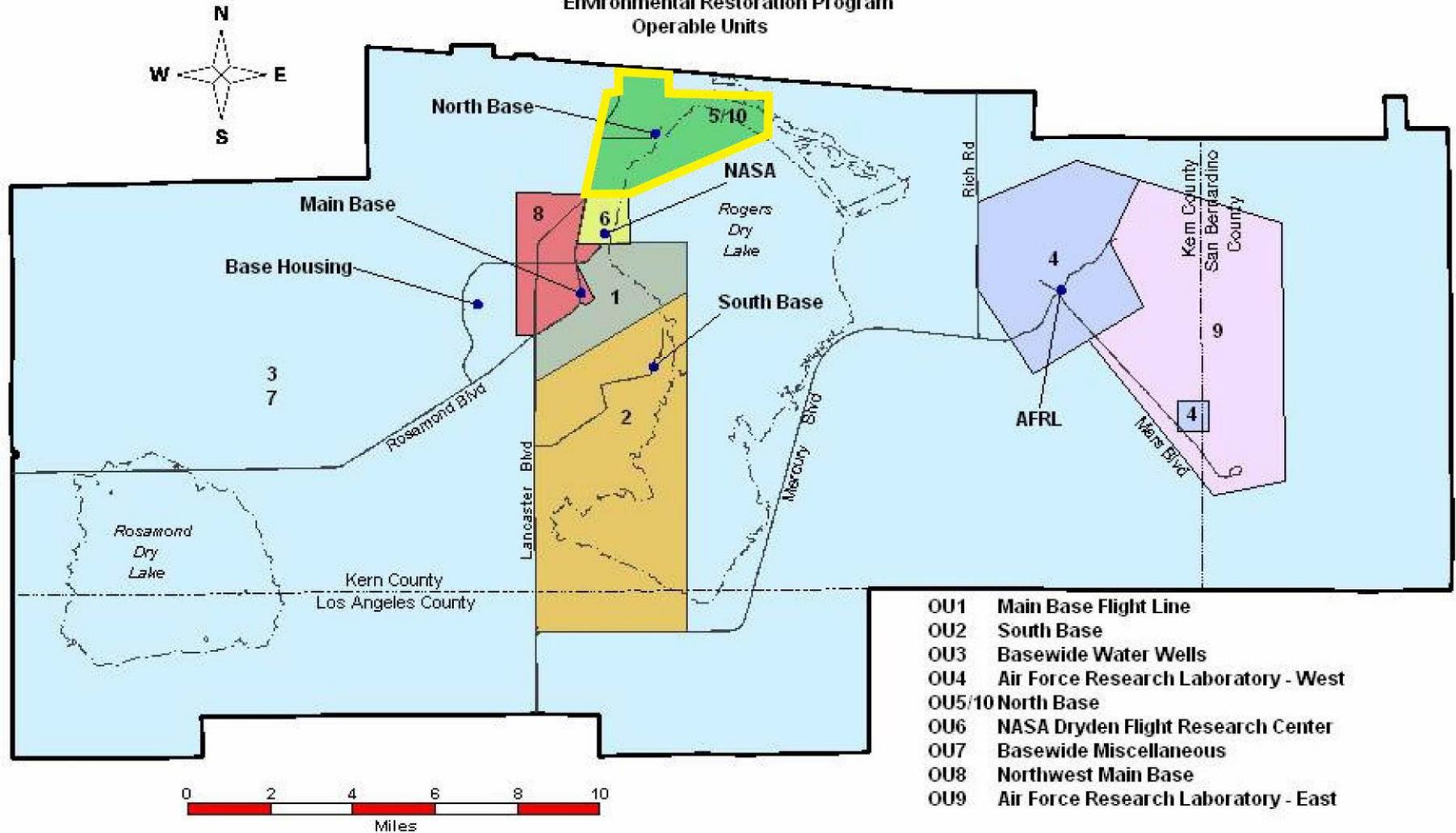


OU5/10 North Base



95 ABW

Environmental Restoration Program Operable Units



- OU1 Main Base Flight Line
- OU2 South Base
- OU3 Basewide Water Wells
- OU4 Air Force Research Laboratory - West
- OU5/10 North Base
- OU6 NASA Dryden Flight Research Center
- OU7 Basewide Miscellaneous
- OU8 Northwest Main Base
- OU9 Air Force Research Laboratory - East



Site 231 Soil Gas Assessment



95 ABW

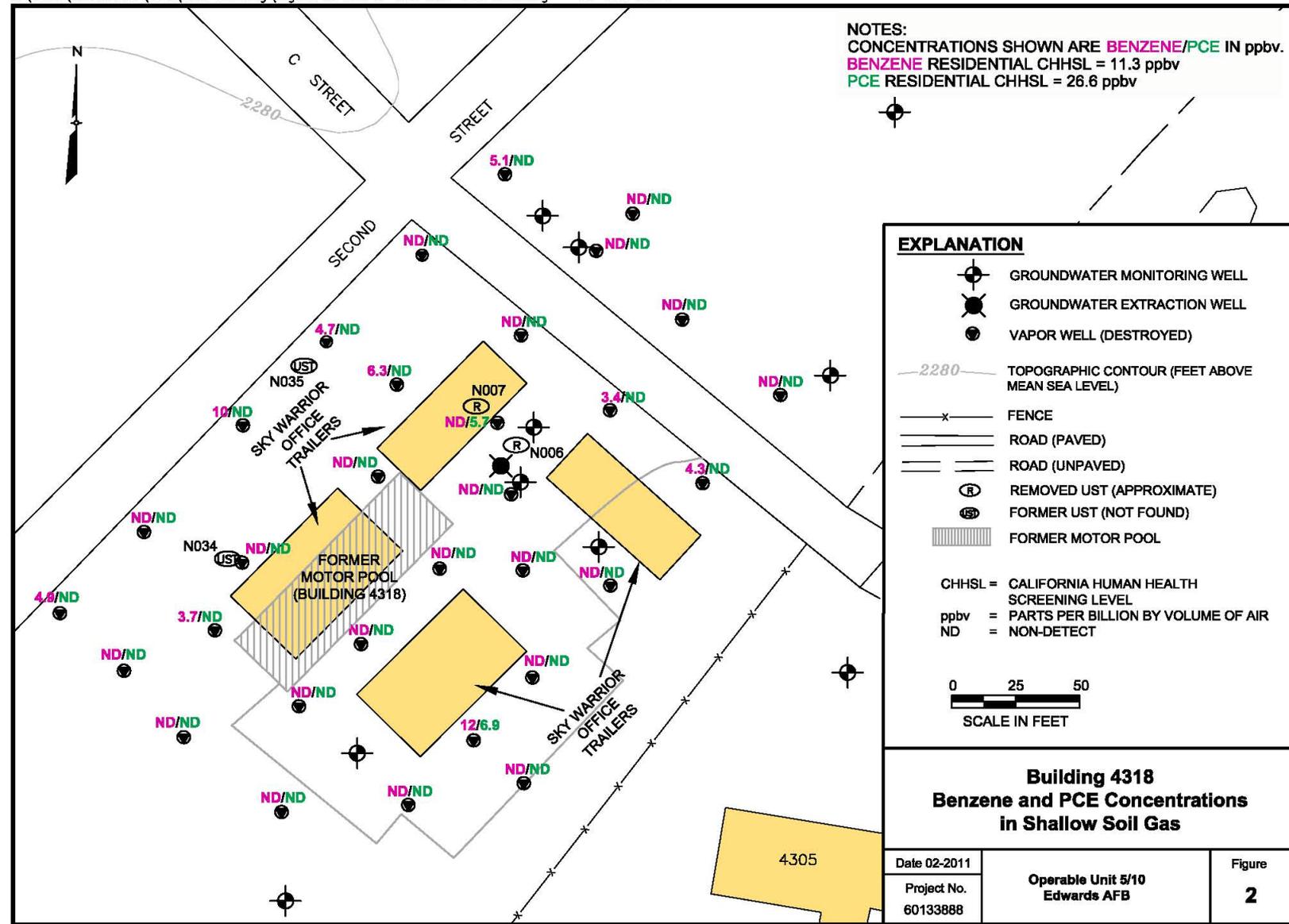
- **Tetrachloroethene (PCE), benzene and 1,2-dichloroethene (1,2-DCA)**
 - Former Motor Pool, Bldg 4318
 - All PCE and benzene vapor readings below residential levels; no 1,2-DCA detects
 - Hangar 4401
 - Two PCE readings above residential levels, four benzene above residential levels; no 1,2-DCA detects



Site 231 Bldg 4318 Soil Gas Results



95 ABW

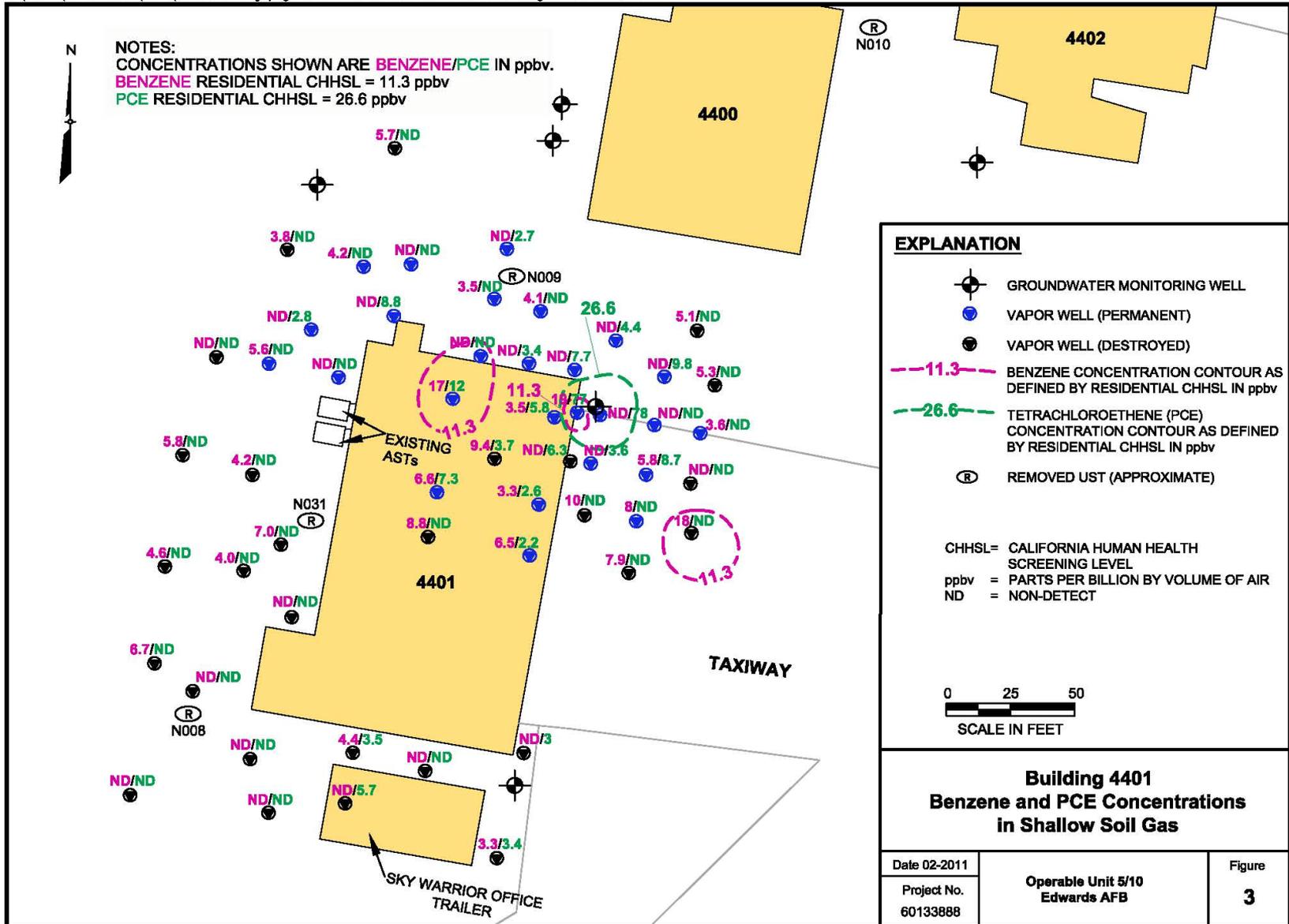




Site 231 Bldg 4401 Soil Gas Results



95 ABW





Site 231 Soil Gas Sampling/Analysis



95 ABW



Soil Gas Sample Collection



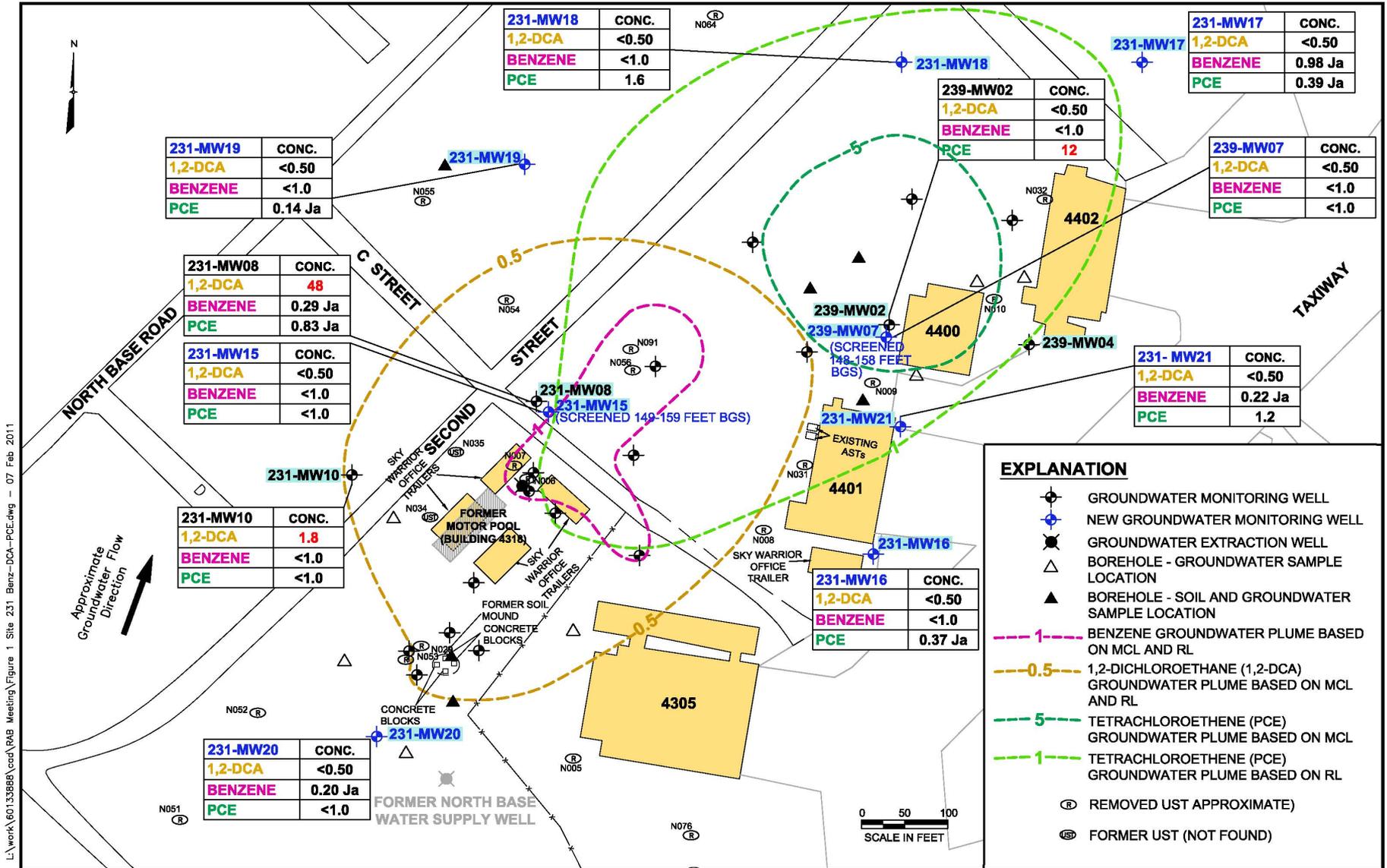
Mobile Laboratory



Site 231 Groundwater Plumes



95 ABW



L:\work\60133888\cad\RAB Meeting\Figure 1 Site 231 Benz-DCA-PCE.dwg - 07 Feb 2011



Site 231- MW21 Borehole Advancement and Soil Core



95 ABW



Borehole Advancement at Hangar 4401



Soil Sample with Staining



Soil Evaluation for Borehole Logs



95 ABW



**Soil Sample
Examination/Evaluation**



Soil Sample



Questions?



95 ABW



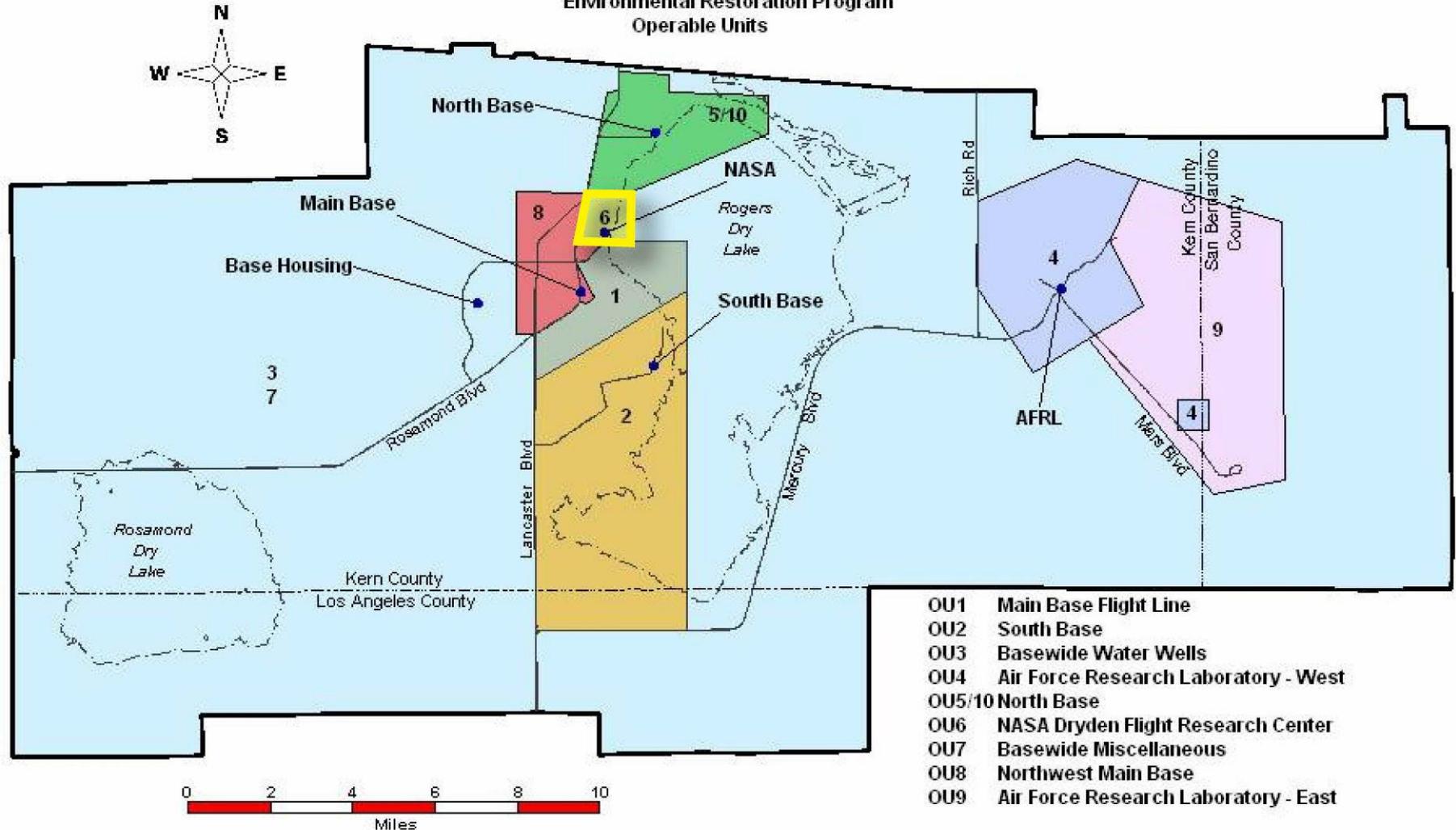


OU6 NASA Dryden



95 ABW

Environmental Restoration Program Operable Units



- OU1 Main Base Flight Line
- OU2 South Base
- OU3 Basewide Water Wells
- OU4 Air Force Research Laboratory - West
- OU5/10 North Base
- OU6 NASA Dryden Flight Research Center
- OU7 Basewide Miscellaneous
- OU8 Northwest Main Base
- OU9 Air Force Research Laboratory - East



OU6 NASA Dryden



95 ABW

- **Post-ROD**
 - Commenced Five-Year Review
 - Began preparing report
 - Developed schedule
 - Field activities consisted of managing investigative-derived waste associated with previous well installations and groundwater sampling event



OU6 NASA Dryden



95 ABW

- **Post-ROD**
 - Future Plans
 - February 2011 – Draft Five-Year Review Report outline
 - March/April 2011 – Groundwater sampling of 60 wells
 - March/April 2011 – Conduct on-site worker interviews and site inspection for Five-Year Review
 - June 2011 – Draft Final Five-Year Review Report to RPMs
 - September 2011 – Complete Five-Year Review



OU6 NASA Dryden



95 ABW

Questions or Comments?

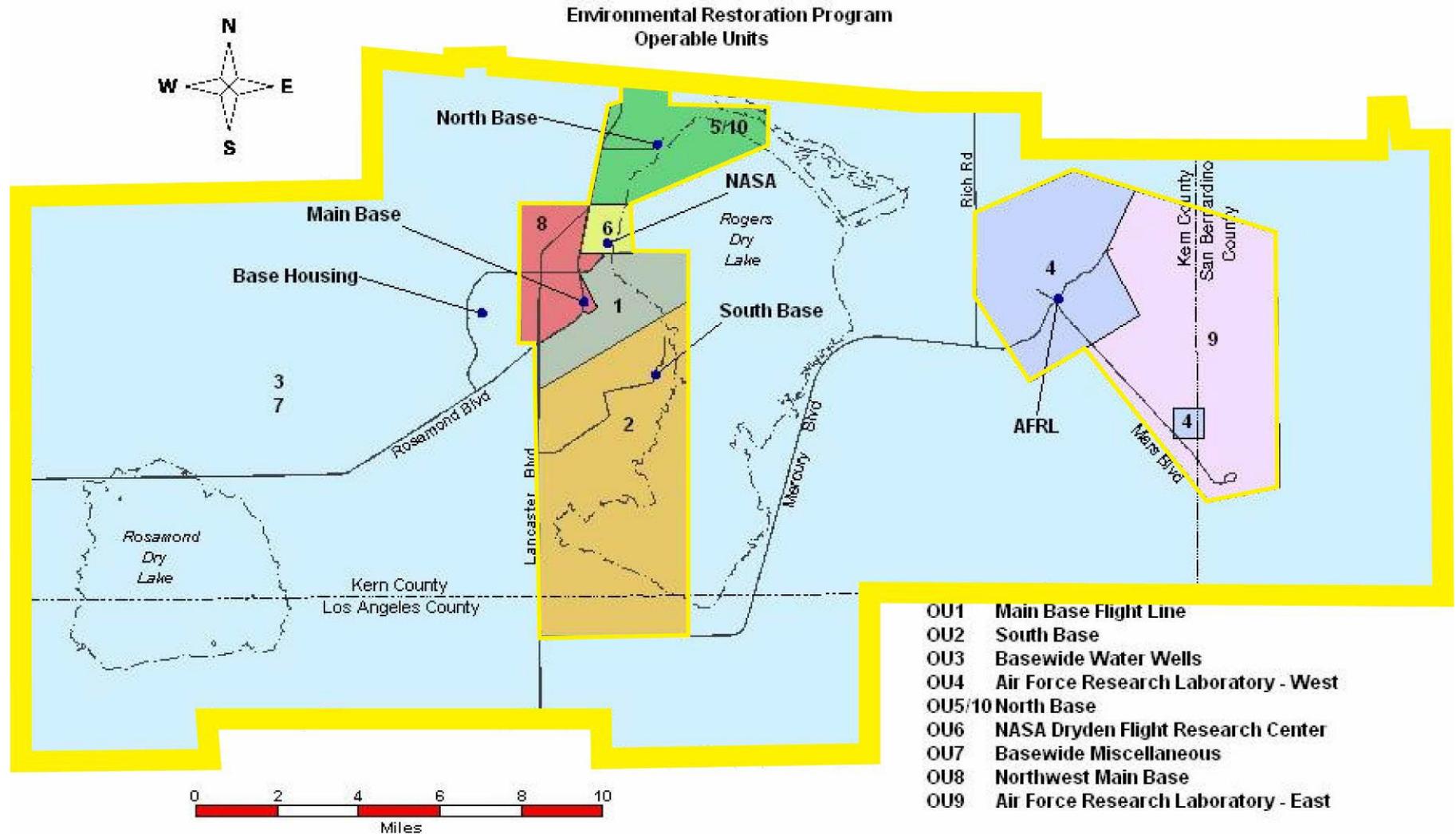


OU7

Basewide Miscellaneous



95 ABW



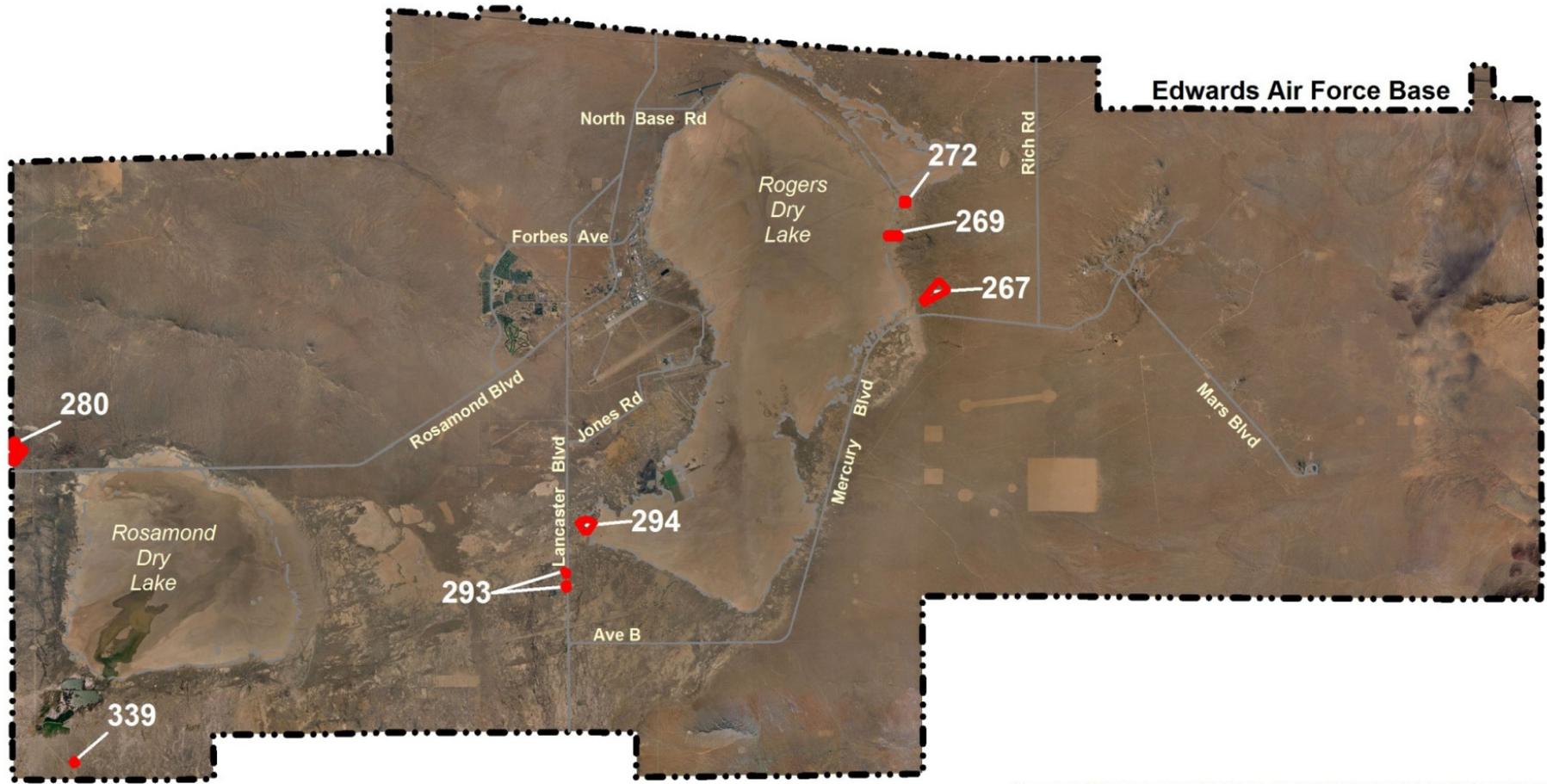


OU7

Basewide Miscellaneous



95 ABW



\\moas\gis\GIS_Projects\EMERP\GIS_Admin\2009\ERP-O\OU7\OU7_ERP-O.gws



OU7

Basewide Miscellaneous



95 ABW

- **Proposed Plan**
 - Draft Final for RPM review June 2012
- **Engineering Evaluation/Cost Analysis (EE/CA) for Non-Time Critical Removal Actions at Sites 280, 294 and 339 (Soil Only)**
 - Canceled to accommodate new extended Federal Facility Agreement schedules



95 ABW

Questions or Comments?



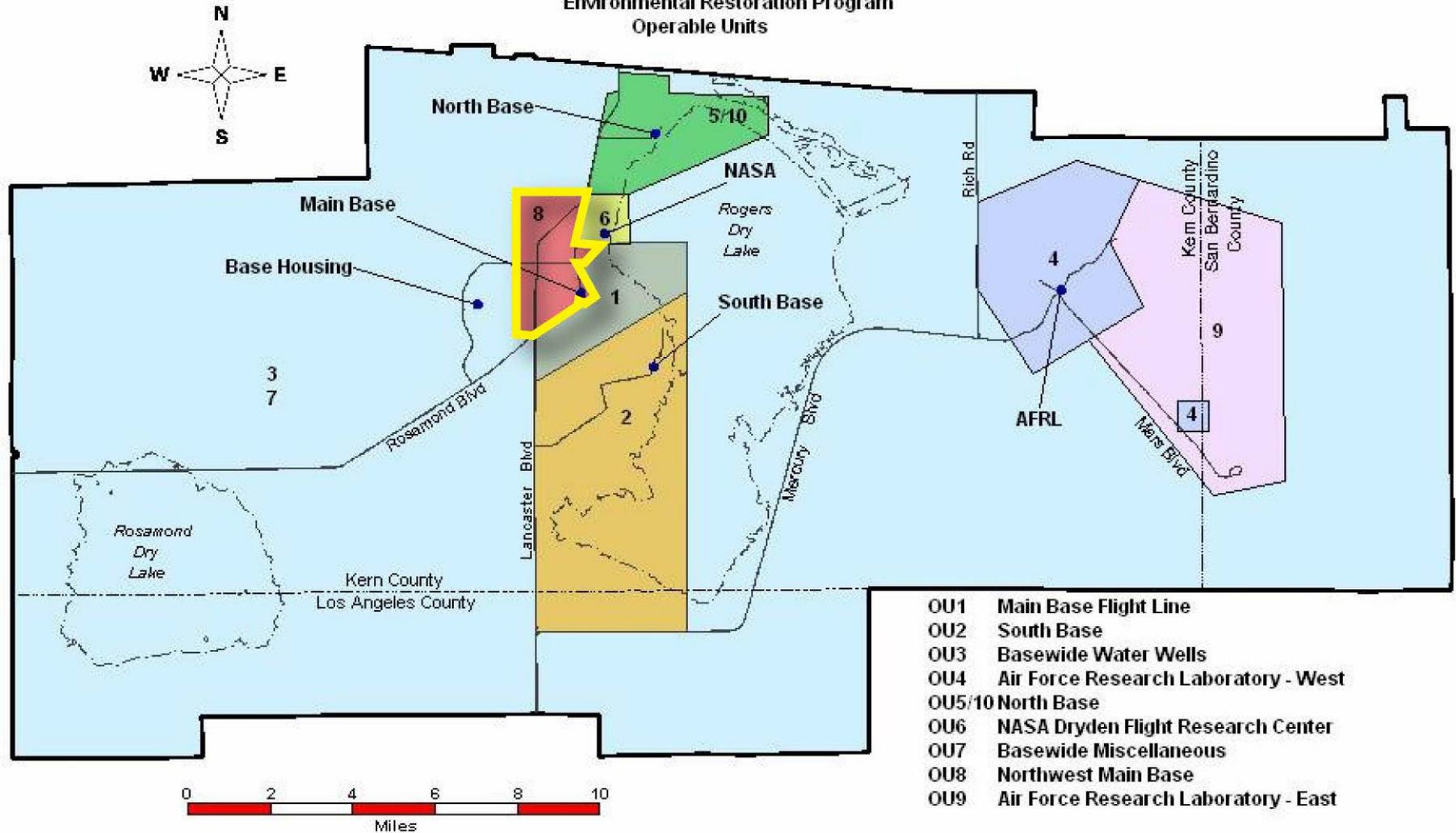
OU8

Northwest Main Base



95 ABW

Environmental Restoration Program Operable Units



- OU1 Main Base Flight Line
- OU2 South Base
- OU3 Basewide Water Wells
- OU4 Air Force Research Laboratory - West
- OU5/10 North Base
- OU6 NASA Dryden Flight Research Center
- OU7 Basewide Miscellaneous
- OU8 Northwest Main Base
- OU9 Air Force Research Laboratory - East



OU8

Northwest Main Base



95 ABW

- **Draft OU8 Proposed Plan**
 - In RPM comment resolution
 - Draft Final for RPM review 30 January 2012
- **Data Gap Project to be awarded February 2011**
 - For Sites 61, 301, and 299



OU8

Northwest Main Base



95 ABW

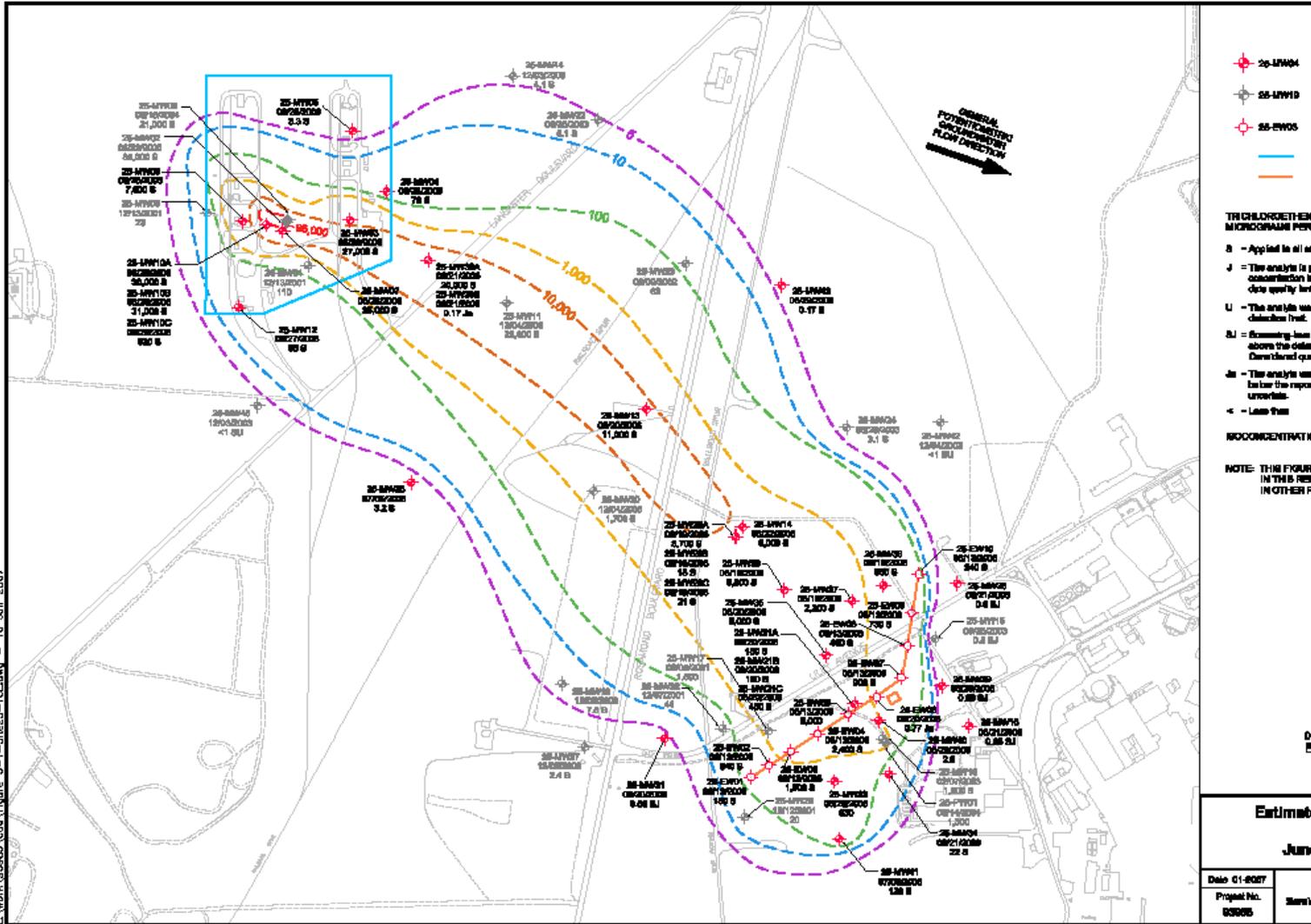
- **Sites 257, 299, and 300**
 - Excavation of shallow contaminated soil will not be performed until remedy is documented in ROD and Remedial Design is complete (post-ROD action)
- **Pre-Design Investigation Work is underway**
 - Site 226: Twelve new borings to define arsenic
 - Site 299: Five new wells to define solvents
 - Site 257: Three new wells to define nitrite



OU8 Site 25 GW Plume



95 ABW



L:\work\95065\cond\Figure 3-1-Site25-TCE.dwg - 10 Jan 2007



OU8 Site 25



95 ABW

- **Draft OU8 Site 25 Feasibility Study**
 - Technical Impracticability (TI) waiver
 - In RPM comment resolution
 - Extension for Draft Final submittal to March 2011
 - New plume delineation project
 - Forty to fifty wells plus bedrock-fracture analysis
- ***In Situ* Chemical Oxidation Treatability Study**
 - Trench delivery for treatment of shallow groundwater in fractured bedrock is being finalized



95 ABW

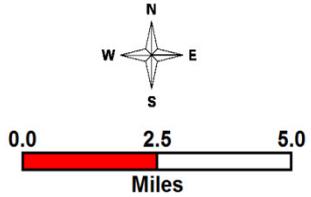
Questions or Comments?



Petroleum Sites Location Map



95 ABW



Petroleum Sites



Site Status



95 ABW





Site Status



95 ABW





Petroleum Sites



95 ABW

- **Site 20**
 - Draft Sampling Plan submitted to Kern County Environmental Health Services Department
 - Expect to perform groundwater monitoring March 2011
- **Site 21**
 - Continue free product removal
 - Total removed this year is 224 gallons
 - Vapor Intrusion Pathway project planned for May 2011
- **Site 24**
 - Continue free-product removal
 - Total removed this year is 9 gallons



Petroleum Sites



95 ABW

- **Site 63**
 - 2010 Remedial Action Report submitted to Kern County Environmental Health Services Department (KCEHSD)
- **Site 297**
 - *In Situ* Chemical Oxidation Pilot Study Report submitted to KCEHSD



Compliance Restoration Program (CRP)



95 ABW

- **Phase 1 CRP Evaluation was conducted in 2009**
 - Identified seven eligible sites for the CRP
- **Phase 2 CRP Evaluation is currently underway**
 - Evaluating oil water separators (OWS) for eligibility
 - Other petroleum sites not previously captured
 - Total of 117 OWS were listed in the Edwards database
 - 39 OWS are currently active
 - 78 OWS have been removed



Compliance Restoration Program



95 ABW

- Fifty OWS sites identified as potentially eligible for the CRP
 - Additional review of records and site inspections are being performed to verify site eligibility
- One new petroleum site has been identified for CRP eligibility
 - Site 461 located at the AFRL



95 ABW

Questions or Comments?