



Kirtland Air Force Base (KAFB) Bulk Fuels Facility Leak Cleanup

***Public Meeting
February 25, 2026***

Ryan Wortman, Air Force Civil Engineer Center



BFF Discussion Topics

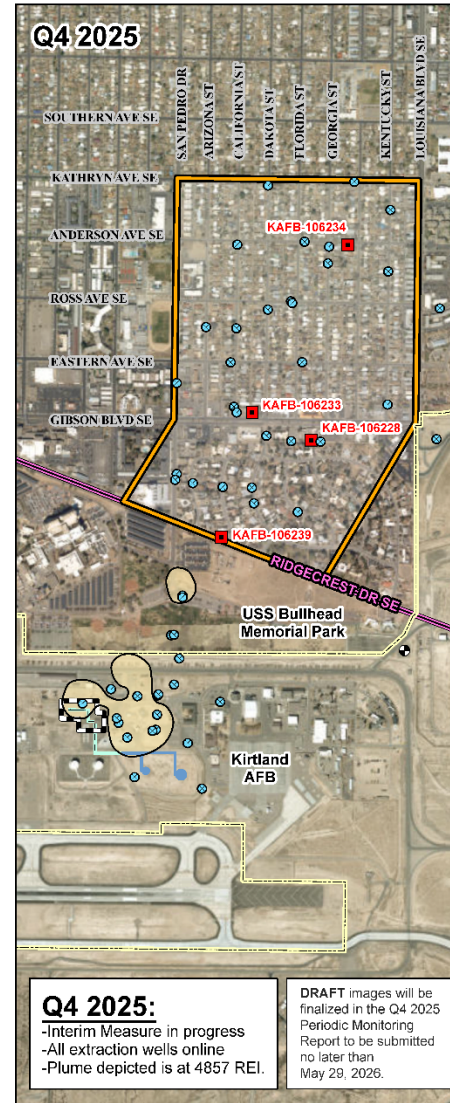
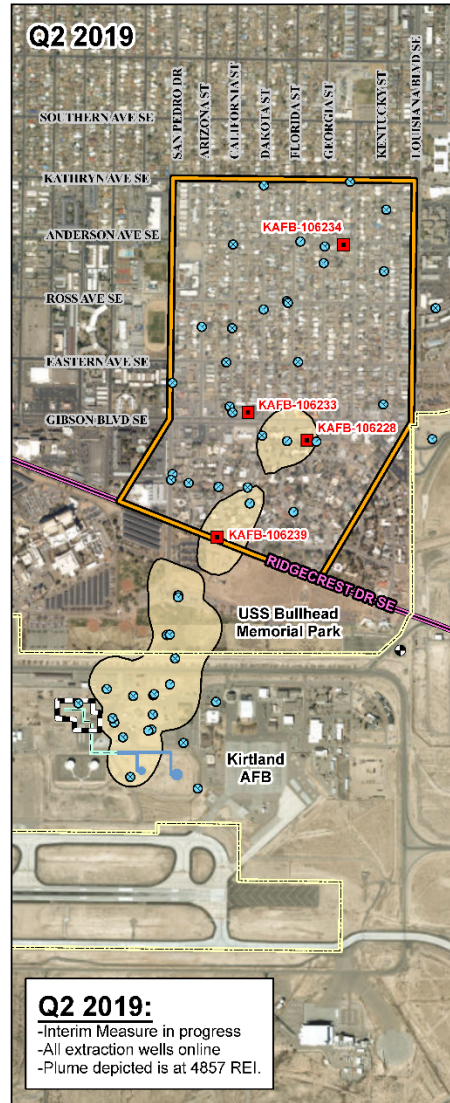
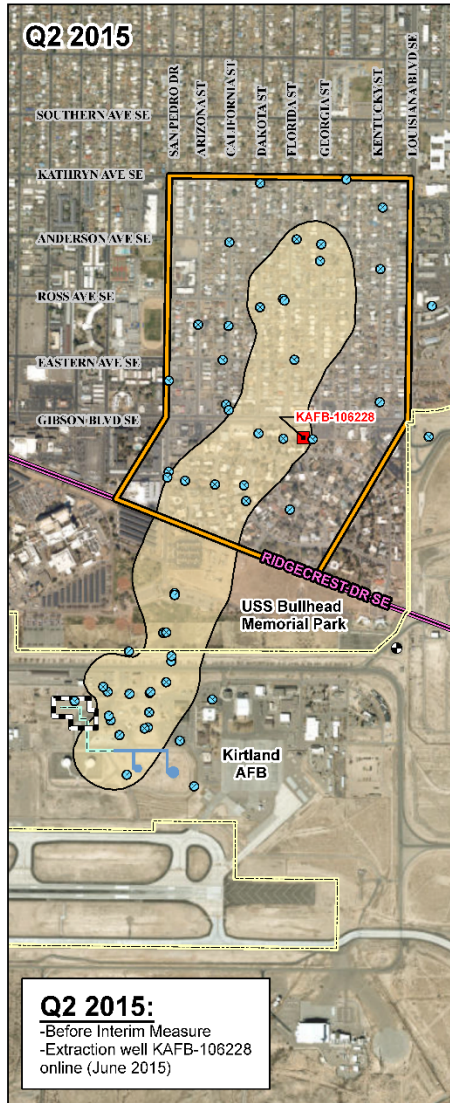


- Ethylene Dibromide (EDB) Plume
 - 2015 vs 2025
 - Interim Measure (IM) Status
 - No EDB exceedance in the interim measure operational area in Q4 2025
- Benzene Plume Footprint Stabilized
- Groundwater Sampling Method Comparison Study Supplemental Investigation
- Phase II Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) Report Update

EDB Plume Footprint (over time)



Comparison of Dissolved-Phase EDB in the Interim Measure Operational Area Between Q2 2015 and Q4 2025



Legend

- Groundwater Monitoring Well
- Extraction Well
- Drinking Water Supply Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Ridgecrest Drive SE
- Interim Measure Operational Area
- Installation Fence Boundary
- Source Area
- Dissolved-Phase EDB ≥ 0.05 $\mu\text{g/L}$ (EPA MCL)

Scale:
0 600 1,200 2,400 Feet
1 inch equals 1,200 feet
Projection: NAD83 State Plane New Mexico Central FIPS 3002 Feet

General Notes:
Aerial imagery provided by ESRI Online service.
EDB plume contour generated with ESRI Spatial Analyst and adjusted with professional judgement.

Acronym(s):
AFB = Air Force Base
EDB = 1,2-dibromoethane (ethylene dibromide)
EPA MCL = Environmental Protection Agency maximum contaminant level
REI = reference elevation interval
 $\mu\text{g/L}$ = microgram(s) per liter
Q2 = quarter 2
Q4 = quarter 4

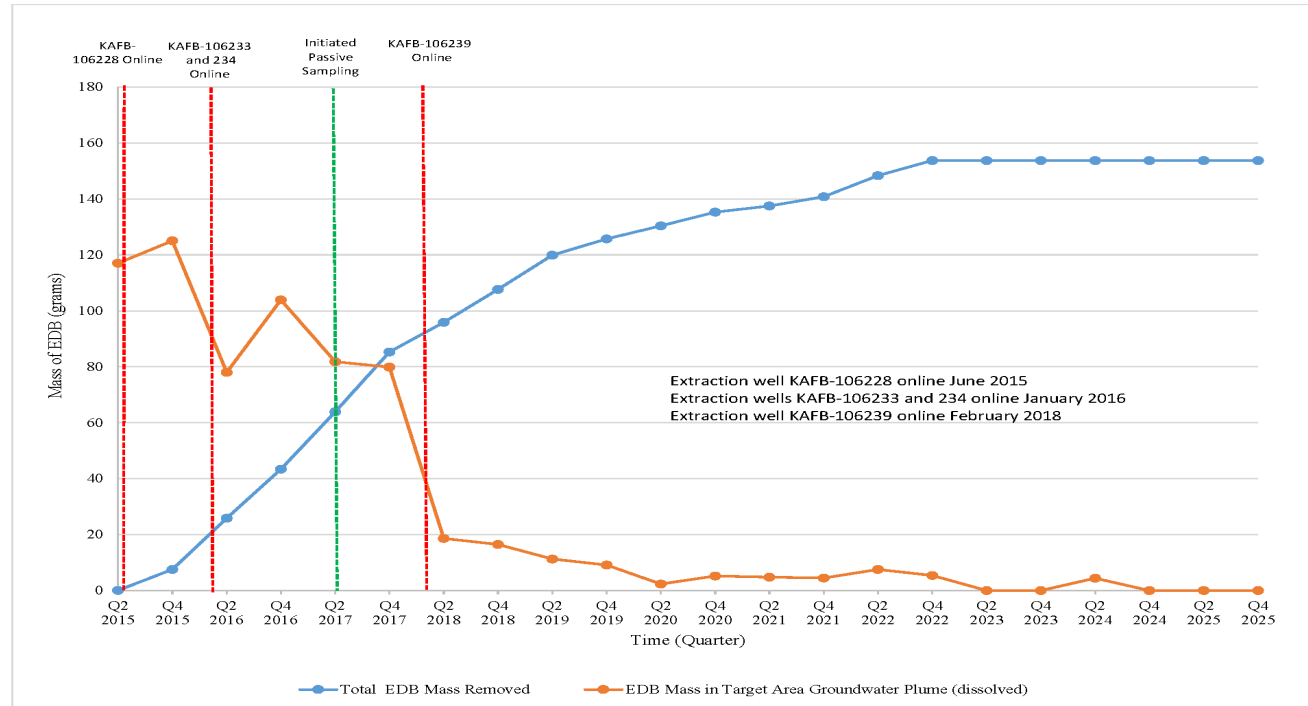
SITE LOCATION:
Map showing the location of Kirtland AFB relative to I-25 and I-40.



Status Update: EDB Interim Measure



EDB Mass in Groundwater vs. Time



Pump and treat interim measure has achieved an estimated 95.8% reduction in the interim measure operational area of the dissolved EDB mass since 2016. EDB was not detected between Q4 2024 and Q4 2025, indicating no mass was removed during these quarters.



Groundwater Sampling Method Comparison Study



- NMED required a study to compare passive and low-flow groundwater sampling method
- For preliminary data, Air Force implemented comparison technique in Q2 2024
- NMED approved the sampling method comparison study work plan with modifications and was formally implemented in the Q3 2025 monitoring event
- Includes 4 wells (KFAB-106089, KAFB-106S2, KAFB-106S5, and KAFB-106S7) to be sampled for 8 consecutive quarters under the approved work plan
- Objective of the study is to compare trends between passive and low-flow sampling techniques



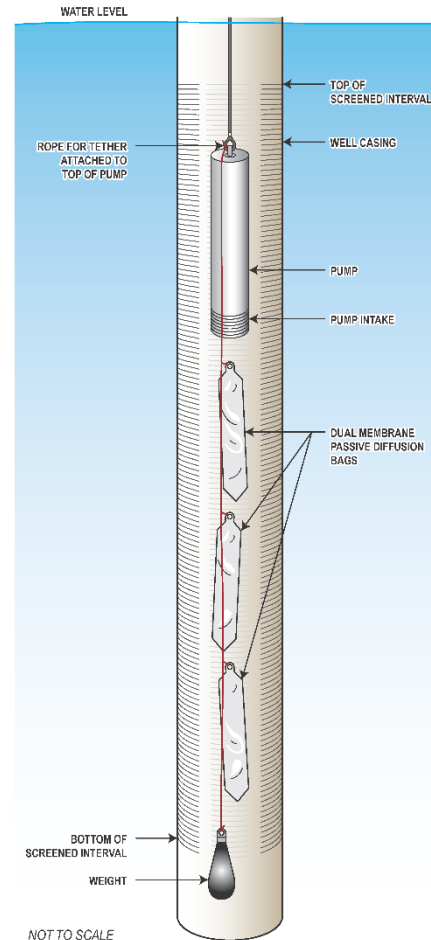
Comparison Study Sampling Assembly



Due to the well casing diameter, the pump and passive samplers cannot be placed at the same depth at the same time. Passive samplers will be hung 0.2 feet below the pump, minimizing the difference in depth.

Due to the depth to groundwater at this site (approximately 450 ft bgs), it is difficult to install or remove equipment without significantly disturbing the water column. To eliminate the risk of disturbing the water column, the entire sampling assembly will be installed prior to the passive sampling equilibration time and will not be removed until after low-flow sampling is complete.

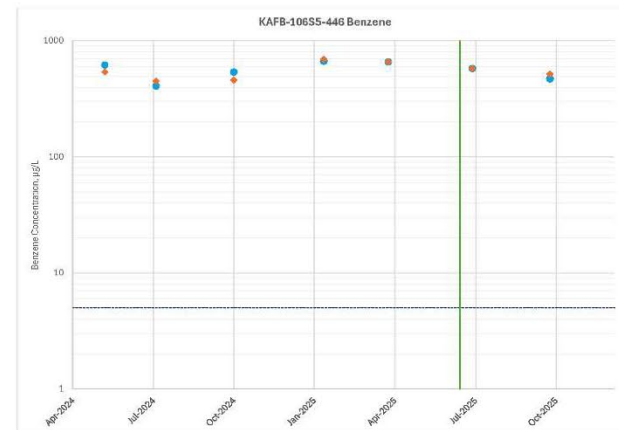
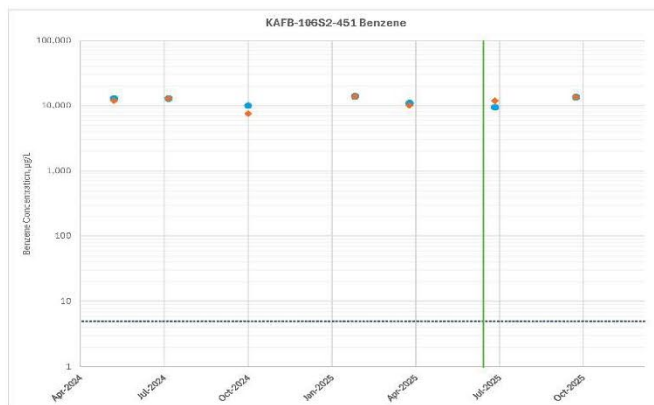
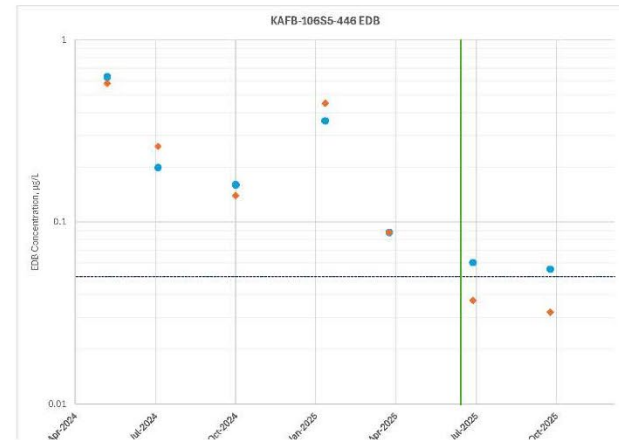
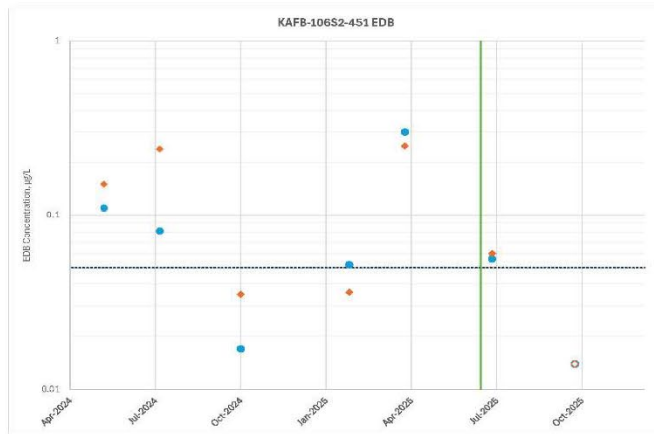
Because the passive samplers will be hung below the pump, they cannot be retrieved without also removing the pump. To minimize disturbance to the water column, low-flow samples will be collected first and then the entire sampling assembly will be retrieved to collect passive samples.



Sampling Assembly



Comparison of Data Collected to Date for Wells KAFB-106S2 and KAFB-106S5



- Passive sampling data
- ◆ Low-flow sampling data
- EPA MCL
- NMED approval with modifications, official start of study

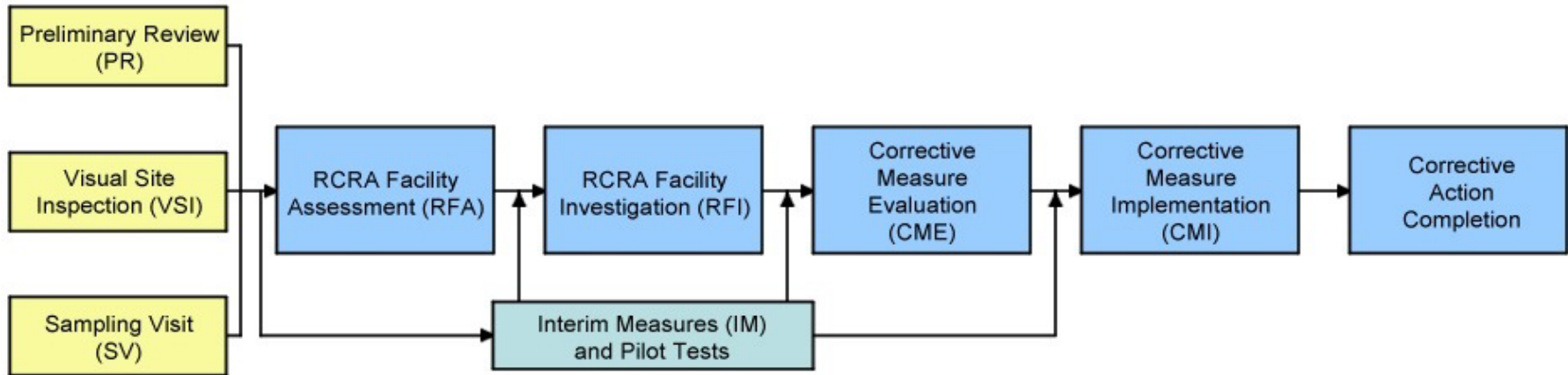
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RCRA Corrective Action Process



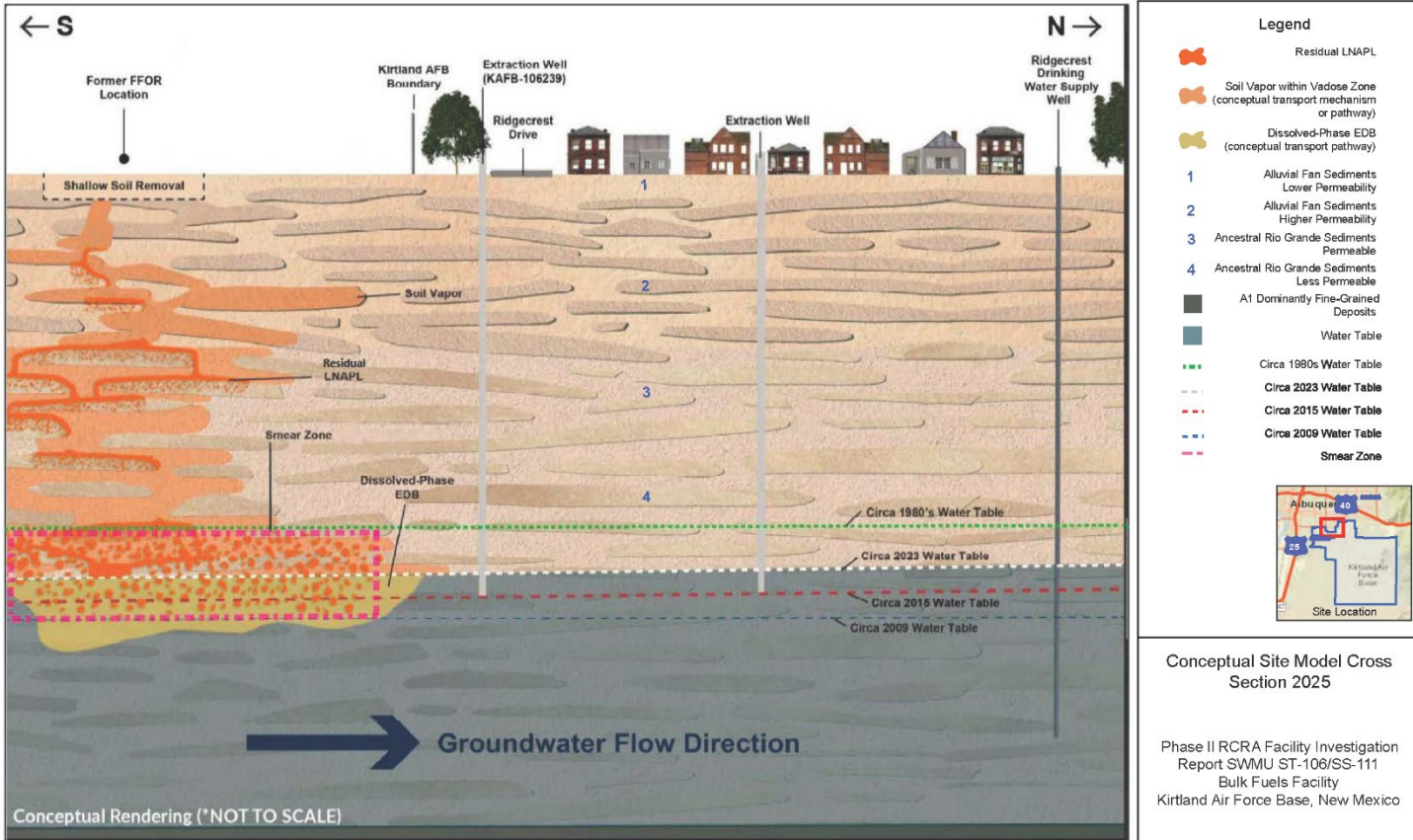
*Image adapted from California Department of Toxic Substances Control (<https://dtsc-topock.com/resource-conservation-and-recovery-act>)



- Pace of cleanup is driven by the iterative corrective action (CA) process in KAFB's RCRA permit
- IMs are allowed under the permit when actions necessary to minimize or prevent the further migration of contaminants and limit actual or potential human and environmental exposure to contaminants before the CME and corrective measures implementation plan.
- All activities in the RCRA CA process inform the CME: IMs, pilot studies, RCRA Facility Investigation (RFI) I and II, and ongoing monitoring results



Conceptual Site Model 2025





Phase II RFI Report Update



- The Phase II RFI Report was delivered to NMED and other recipients on April 28, 2025.
- Meetings between the Air Force and NMED to discuss Phase II RFI Report:
 - On October 21, 2025, NMED requested additional clarification to facilitate a thorough review of the Phase II RFI Report.
 - Revised figures, appendices, and a response to clarification comments were provided to NMED on January 30, 2026.
- Official NMED response to the Phase II RFI Report pending



Phase II RFI Report Clarification



- LNAPL Extent Clarified
 - Data utilization
 - Smear Zone Extent
 - Migration Pathway Extent
 - Major Geologic Feature



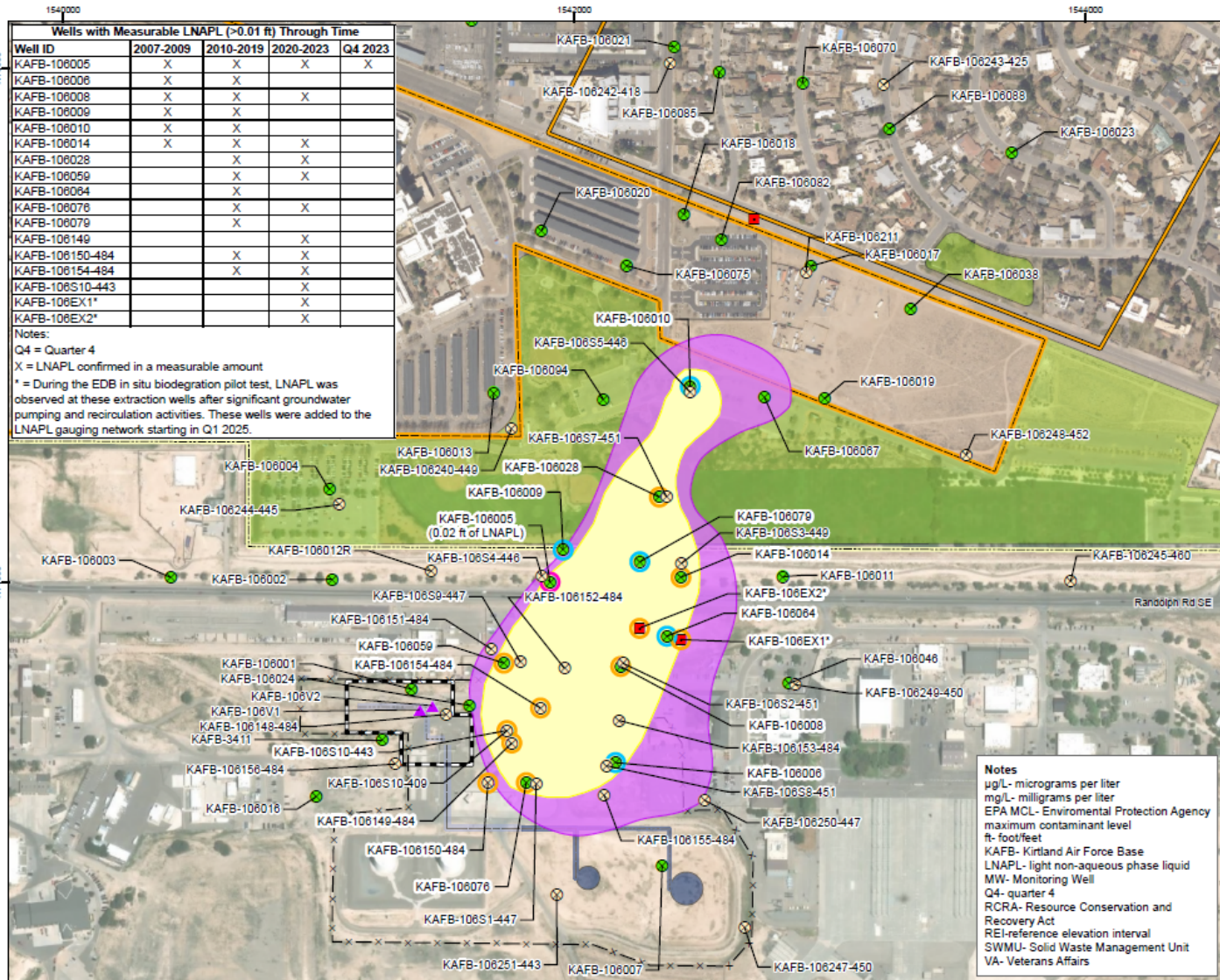
LNAPL EXTENT



- Report clarification demonstrates all data utilized to support the Phase II RFI LNAPL Extent:
 - Data collected from 11 source area borings were used for cross sections
 - Soil vapor collected from 323 monitoring points semiannually
 - 76 LNAPL gauging events since 2007
 - 926 photoionization readings from source area well installation activities
 - Benzene effective solubility concentrations from 173 groundwater monitoring wells



LNAPL Lateral Extent Updated Figure 6-64



Legend

- Monitoring Well with Confirmed LNAPL in Q4 2023
- Wells with LNAPL last measured between 2020 and 2023
- Wells with LNAPL last measured between 2010 and 2019
- REI 4857 MW (Screen not submerged)
- REI 4857 and 4857/4838 MW (Screen Submerged)
- Extraction Wells
- Soil Vapor Monitoring Location
- Kirtland Air Force Base Installation Area
- VA Boundary
- Interim Measure Operational Area
- City of Albuquerque Park
- Source Area
- Bulk Fuels Facility Area
- Approximate LNAPL Footprint (Benzene concentration greater than effective solubility of benzene, 1.43 mg/L)
- Benzene Plume, Q4 2023 > 5 µg/L (EPA MCL)
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Former Aboveground Storage Tank

Revision Date: 12/18/2025

Scale: 0 200 400 800 Feet
1:5,000

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

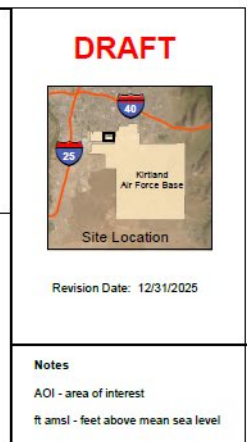
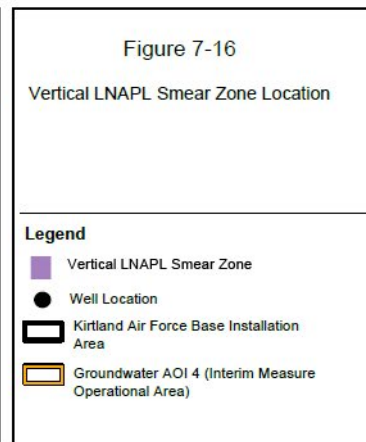
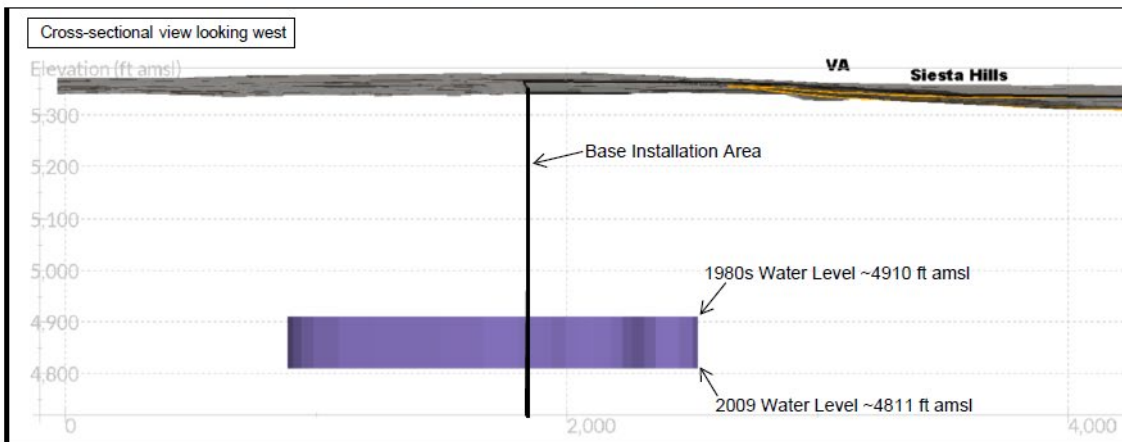
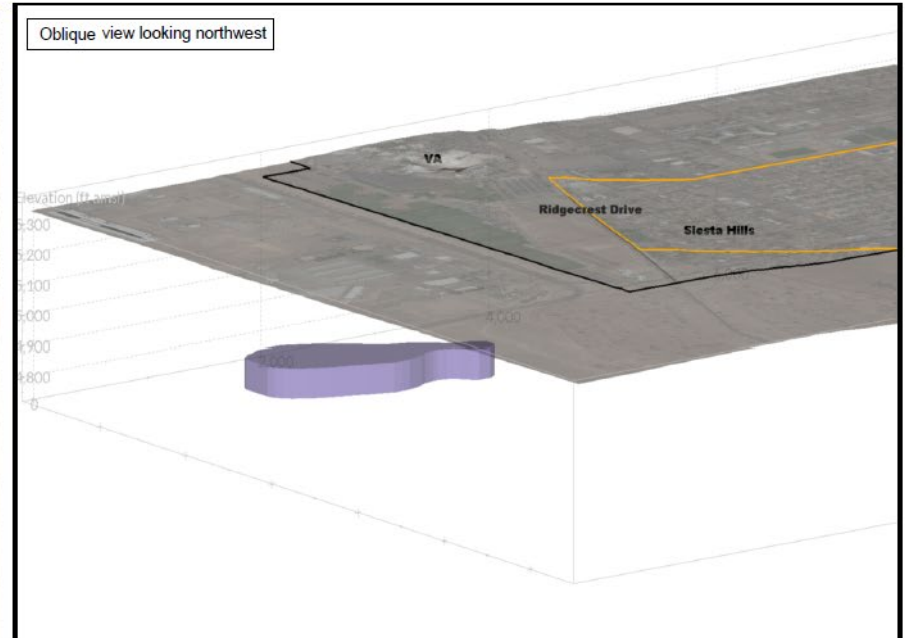
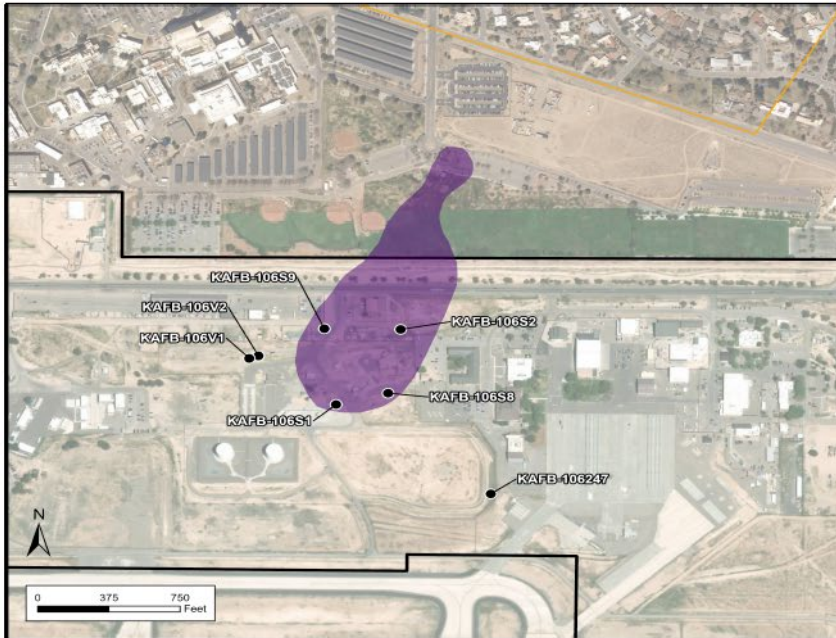
RCRA FACILITY INVESTIGATION
PHASE II REPORT
SWMU ST-106/SS-111
BULK FUELS FACILITY
KIRTLAND AIR FORCE BASE, NEW MEXICO

FIGURE 6-64

GROUNDWATER MONITORING WELLS
WITH MEASURABLE LIGHT NON-AQUEOUS
PHASE LIQUID, Q4 2023



Smear Zone Vertical Extent New Figure 7-16

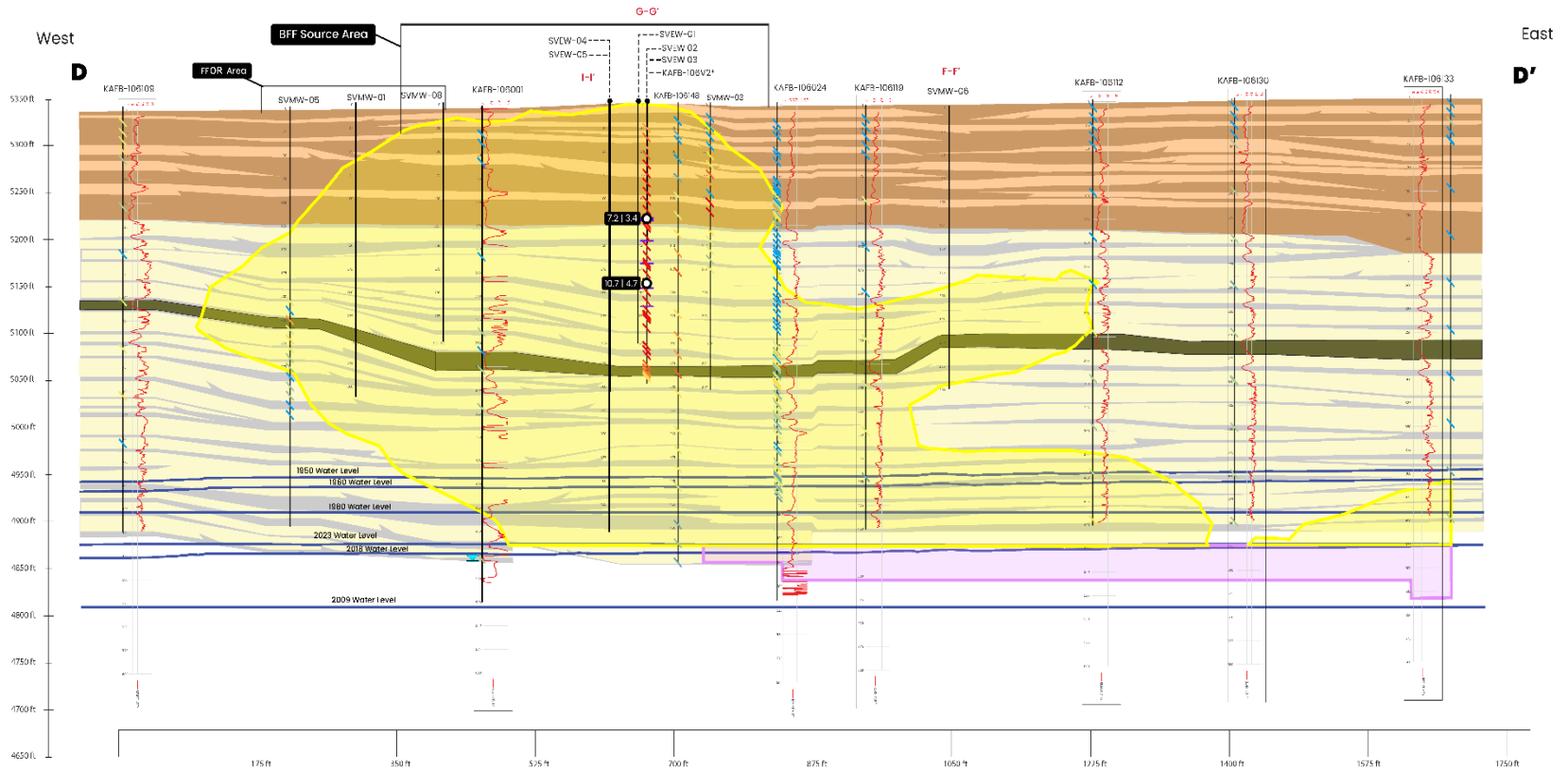




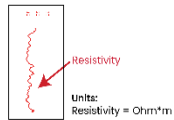
LNAPL Historical Migration Pathway



- Phase II RFI indicates that the 250-foot clay layer is the only lithologic feature observed to have historically influenced LNAPL laterally
- Resistivity and lithology logs show one persistent clay layer at approximately 250-feet below ground surface
- All 10 geologic cross section transects clearly demonstrated the presence of this clay layer across the site
- The clay layer ranges from 15 to 85-feet thick
- Consists of dark, plastic clay to silty-clay and silt with variable organic content



Borehole Geophysics



Legend

- Groundwater Elevation at Drilling
- Facies**
- Coarse-Grained Ancestral Rio Grande Deposits:** Fine to coarse-grained sand, gravel, and sandy gravels deposited in a braided river setting as channel-fills and complex bar deposits.
- Fine-Grained Ancestral Rio Grande Deposits:** Sandy clay, clayey and/or silty fine-grained sand with some coarse-grained sand deposited in a braided river setting as overbank and still water deposits.
- 250 FT. Clay:** Locally continuous clay layer of varying thickness around the measured depth of ~250 ft bgs.
- Coarse-Grained Alluvial Fan Deposits:** Sand and sandy gravel with some silts deposited in distributary channels and sheet floods.
- Fine-Grained Alluvial Fan Deposits:** Clayey silts and fine-grained sand associated with interdistributary fan areas. Some calcium carbonate rich zones indicating paleosol horizons.

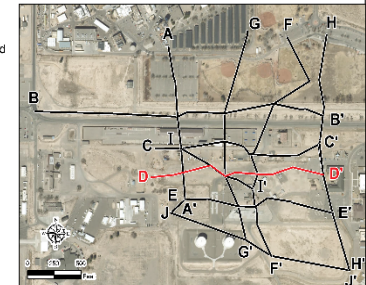
- Benzene Q4 2023 Soil Vapor Plume >120 µg/m³
- Benzene Q4 2023 Groundwater Plume >5 µg/L
- UV Fluorescence**
- (±PV) (±TV) LNAPL Saturation
- PID in ppm**
- ≤ 0.1
- ≤ 61.6
- ≤ 0.4
- ≤ 319.2
- ≤ 2.3
- ≤ 1654.2
- ≤ 12
- < 8563

Acronyms:

- KAFB - Kirtland Air Force Base
- LNAPL - Light non-aqueous phase liquid
- PID - photoionization detector
- ppm - parts per million by volume
- PV - Pore volume
- TV - Total volume
- UV - ultraviolet
- ug/m³ - micrograms per cubic meter
- ug/L - micrograms per liter
- ug/kg - micrograms per kilogram

* LNAPL, UV, and PID are associated with KAFB-106V2.
 ** Purple represents a positive UV fluorescence.

Cross Section D-D' with Photoionization Detector Data			
RCRA FACILITY INVESTIGATION PHASE II REPORT SVMW ST-106/SS-111			
BULK FUELS FACILITY			
KIRTLAND AIR FORCE BASE, NEW MEXICO			
Kirtland Air Force Base - Albuquerque, New Mexico			
PROJECT NO:	PREPARED BY:	DATE:	FIGURE:
60607437.04	JS	July 2024	Figure 7-7-D





Questions?



Point of Contact:

Ryan Wortman, Physical Scientist, - ryan.wortman.3@us.af.mil
Kirtland AFB Public Affairs, (505) 846-5991 - 377ABW.PA@us.af.mil

Additional information:

Online at <https://www.kirtland.af.mil/Home/Environment/Bulk-Fuels-Facility/> and <https://ar.cce.af.mil/> or visit our New Information Station at the New Mexico Veterans Memorial at 1100 Louisiana Blvd SE, Albuquerque, NM

Upcoming 2026 Public Events:

- July Groundwater Treatment System Open House
- November Public Meeting