



# ***Kirtland Air Force Base Bulk Fuels Facility Leak Cleanup***

***Water Protection Advisory Board Meeting  
August 12, 2022***

**Ryan Wortman, Air Force Civil Engineer Center**





# Discussion Topics

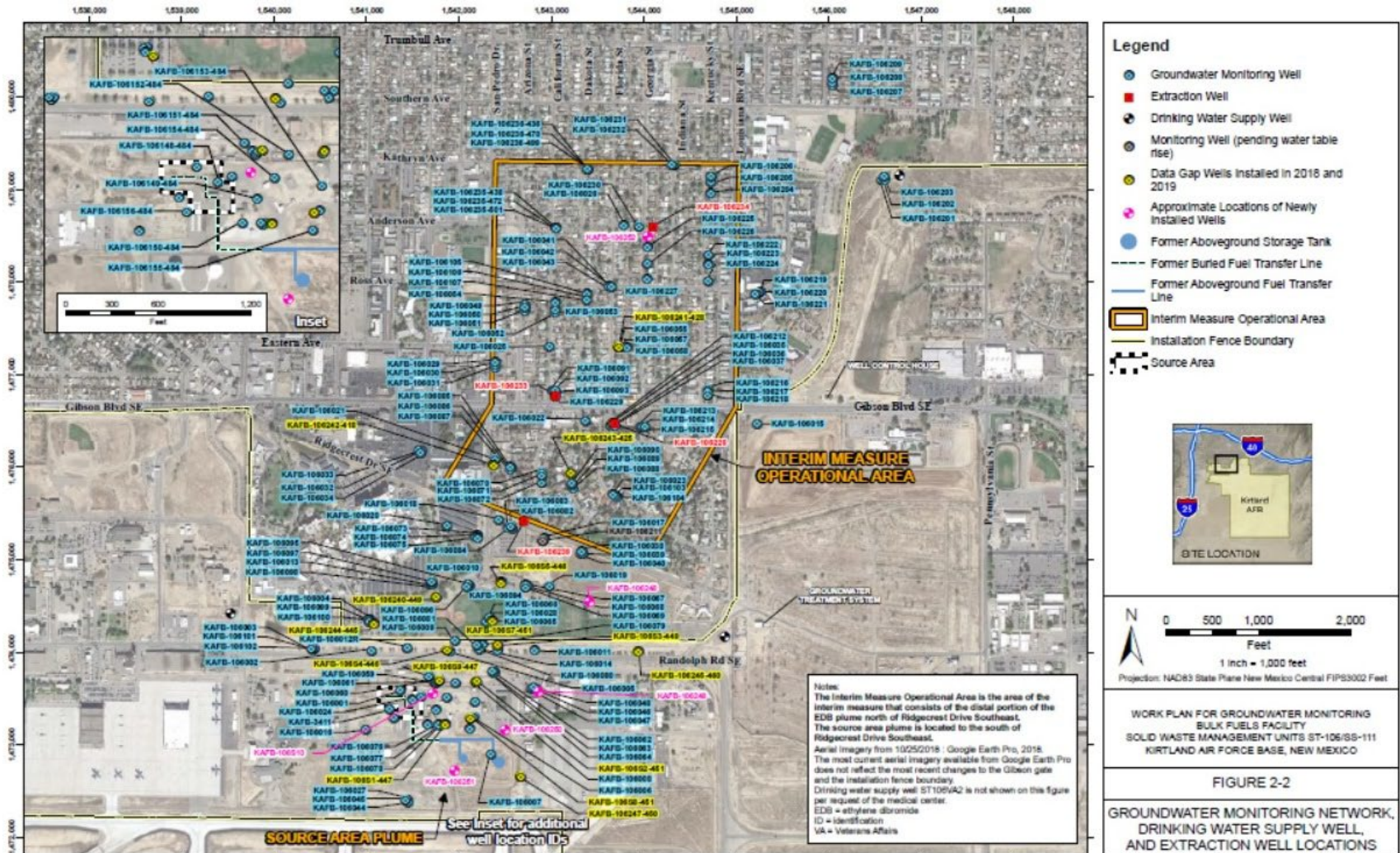


- Project Status
  - Groundwater Contaminant Plume
  - Pump and Treat System Status
- Shallow Soil Vapor
- Technical Working Groups
- Resource Conservation and Recovery Act (RCRA) Process
- Questions





# Groundwater Well Locations



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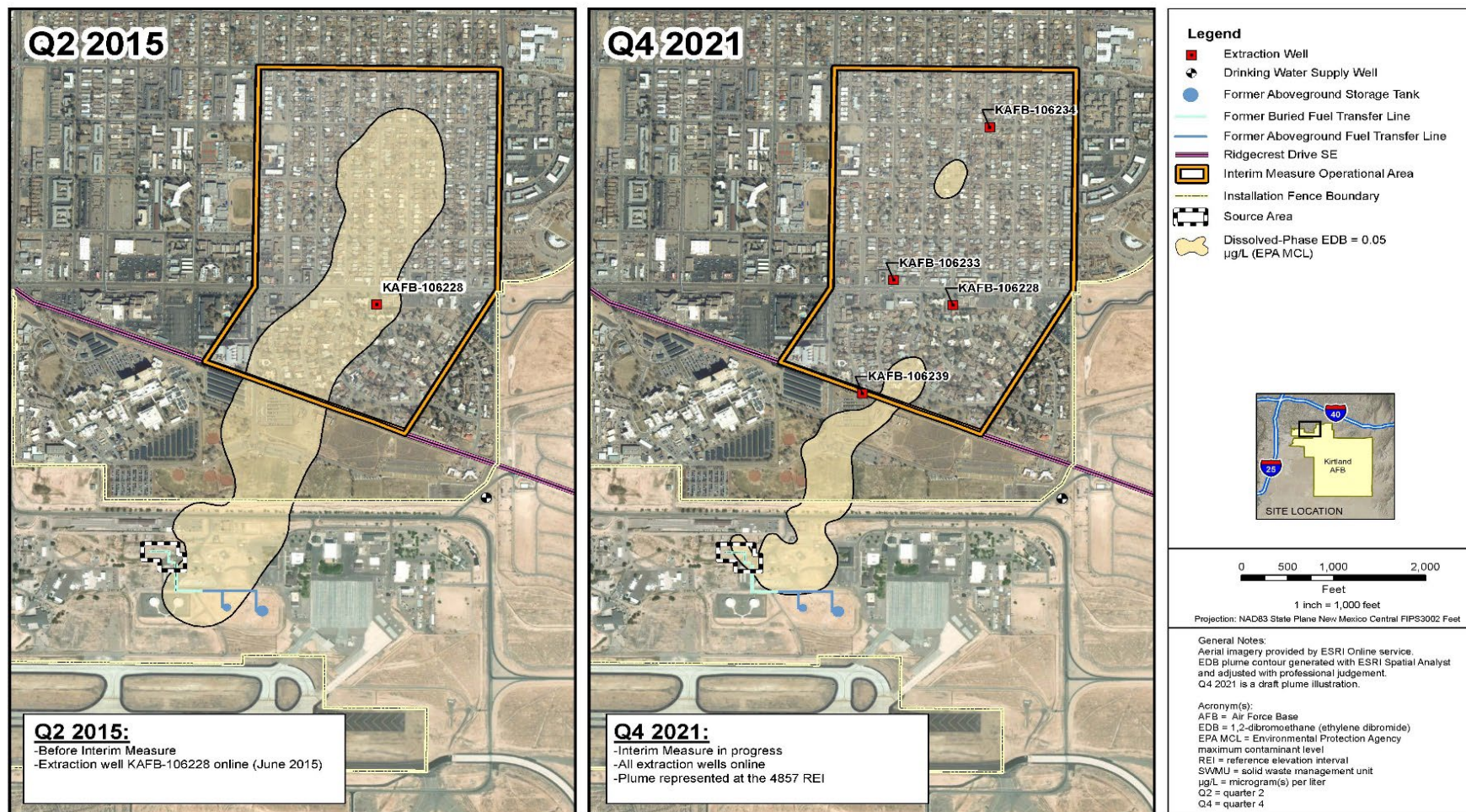
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# EDB Plume Footprint (over time)



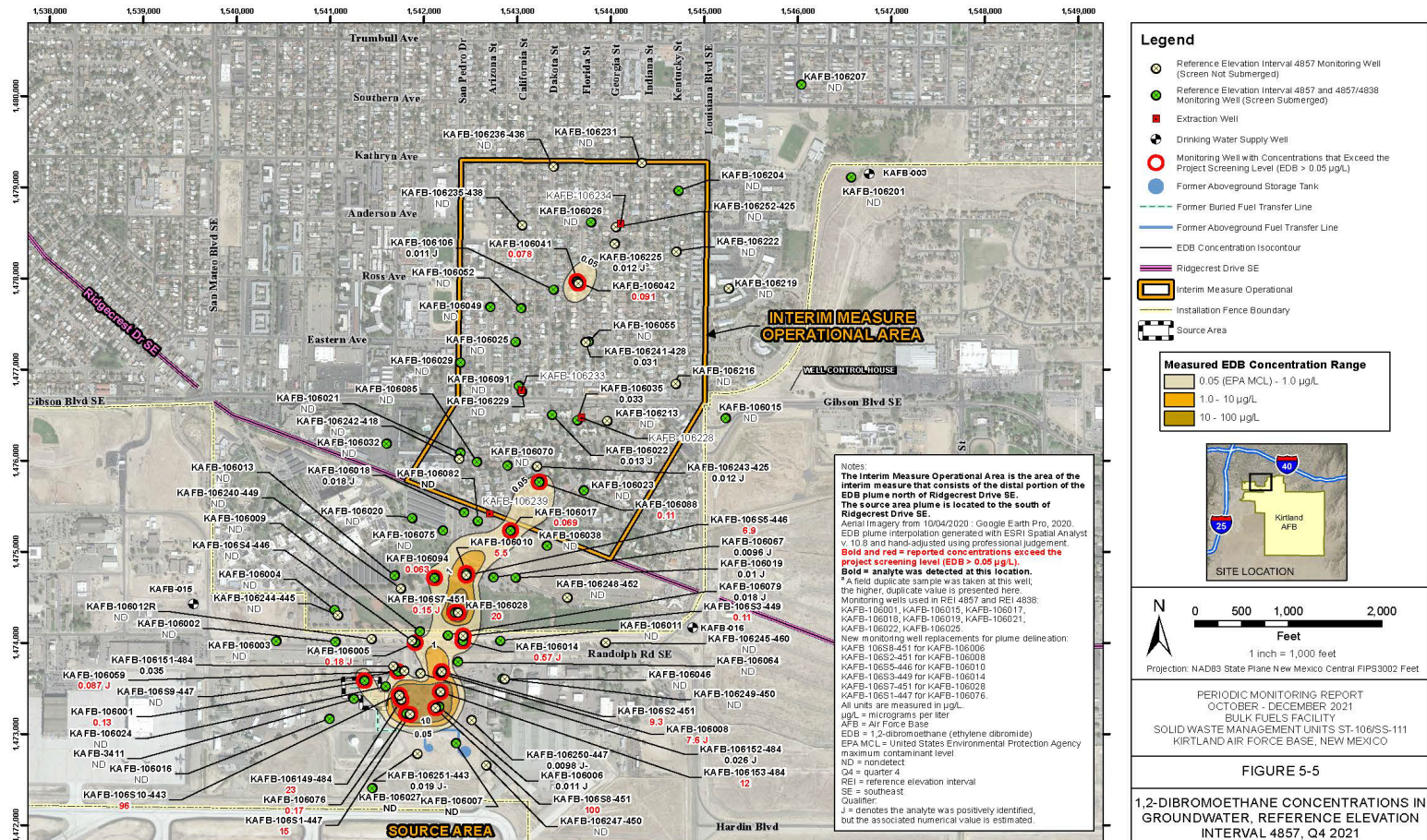
## Comparison of Dissolved-Phase EDB Collapse in the Interim Measure Operational Area Between Q2 2015 and Q4 2021







# GWM Network

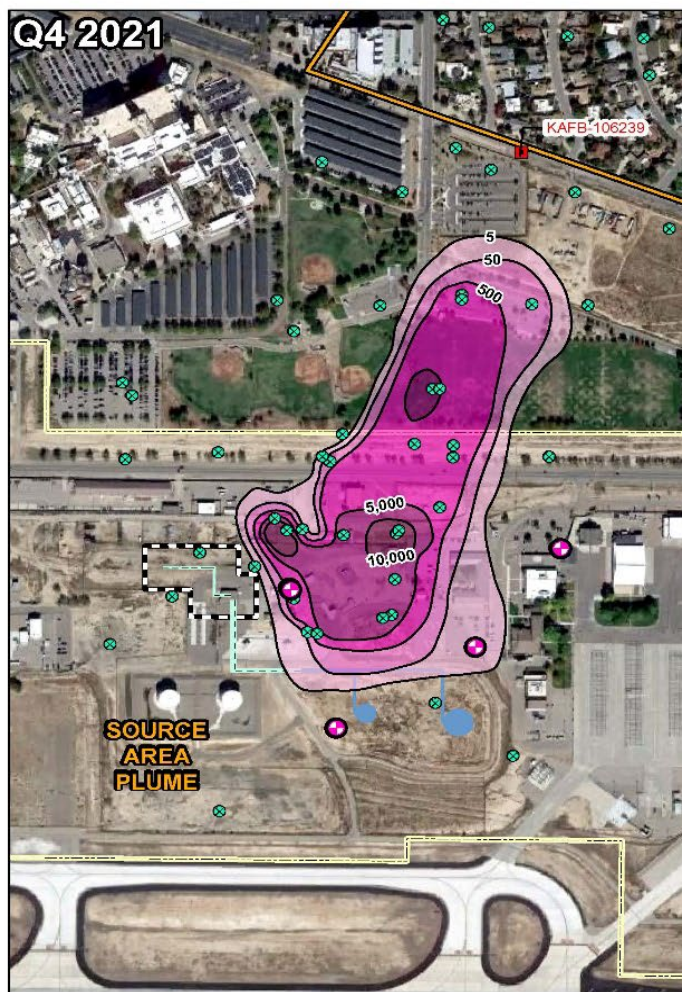
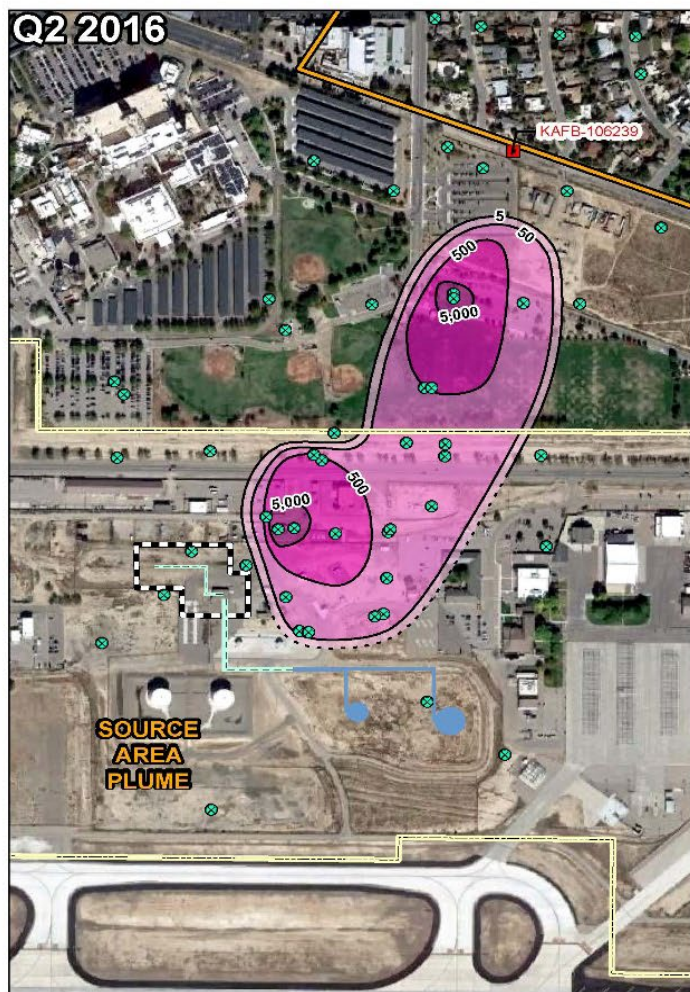


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# Benzene Plume Footprint (over time)



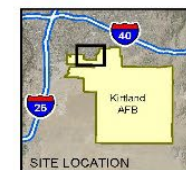
## Legend

- Groundwater Monitoring Well
- Extraction Well
- Newly Installed Well
- Former Aboveground Storage Tank
- Former Buried Fuel Transfer Line
- Former Aboveground Fuel Transfer Line
- Benzene Concentration Isocontour (µg/L) (dashed where inferred)
- Interim Measure Operational Area
- Installation Fence Boundary
- Source Area

## Benzene Concentration Range

- 5.0 (EPA MCL) - 50 µg/L
- 50 - 500 µg/L
- 500 - 5,000 µg/L
- >5,000 µg/L

Note:  
Q4 2021 is a draft plume illustration.  
Acronyms:  
µg/L = micrograms per liter  
AMSL = above mean sea level  
EDB = ethylene dibromide  
EPA MCL = United States Environmental Protection Agency maximum contaminant level  
ft = foot/feet  
NMED = New Mexico Environment Department  
Q2 = quarter 2  
Q4 = quarter 4  
REI = reference elevation interval



0 250 500 1,000  
Feet  
1 inch = 500 feet

Projection: NAD83 State Plane New Mexico Central FIPS3002 Feet

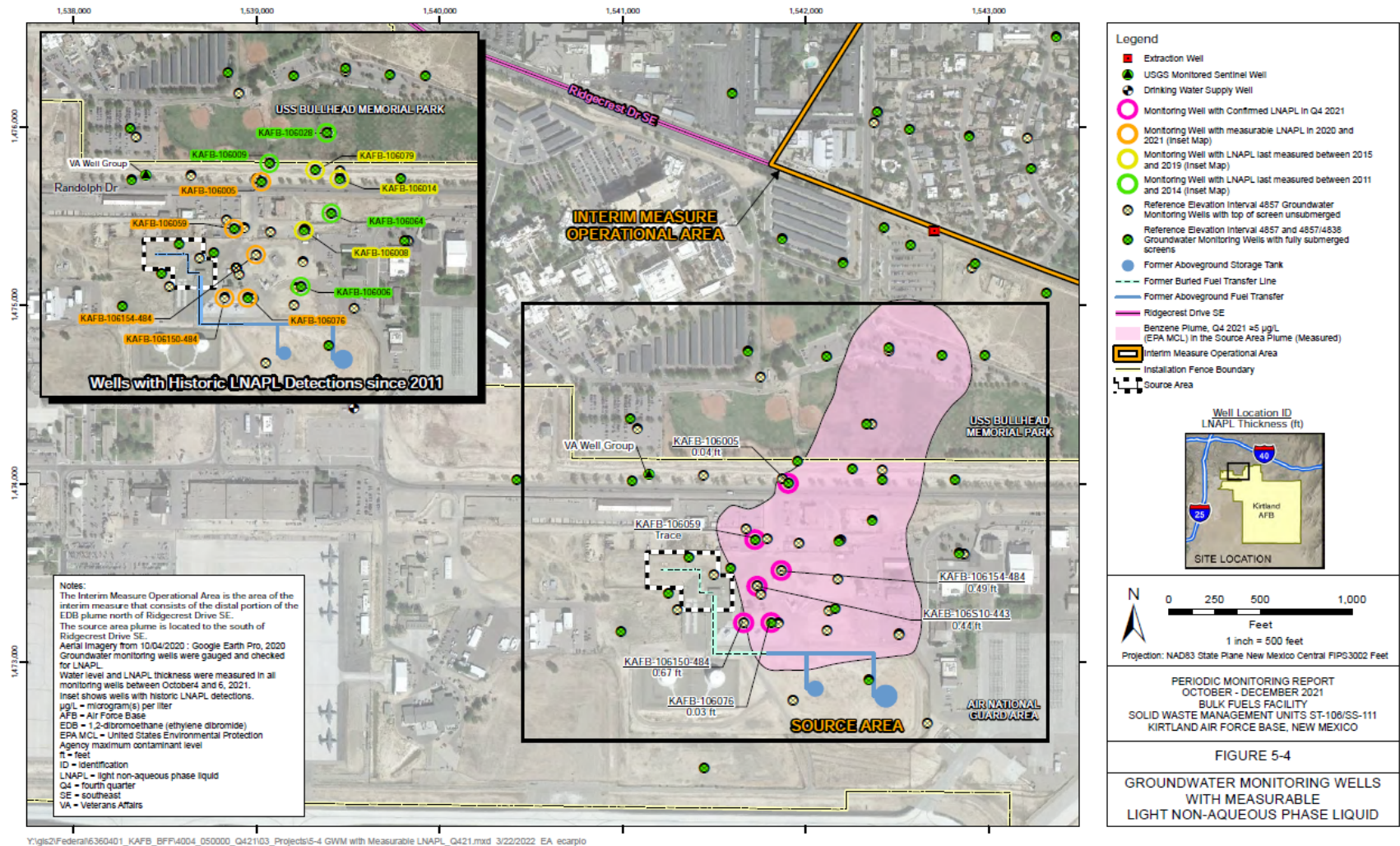
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# Groundwater Monitoring Wells with measurable LNAPL

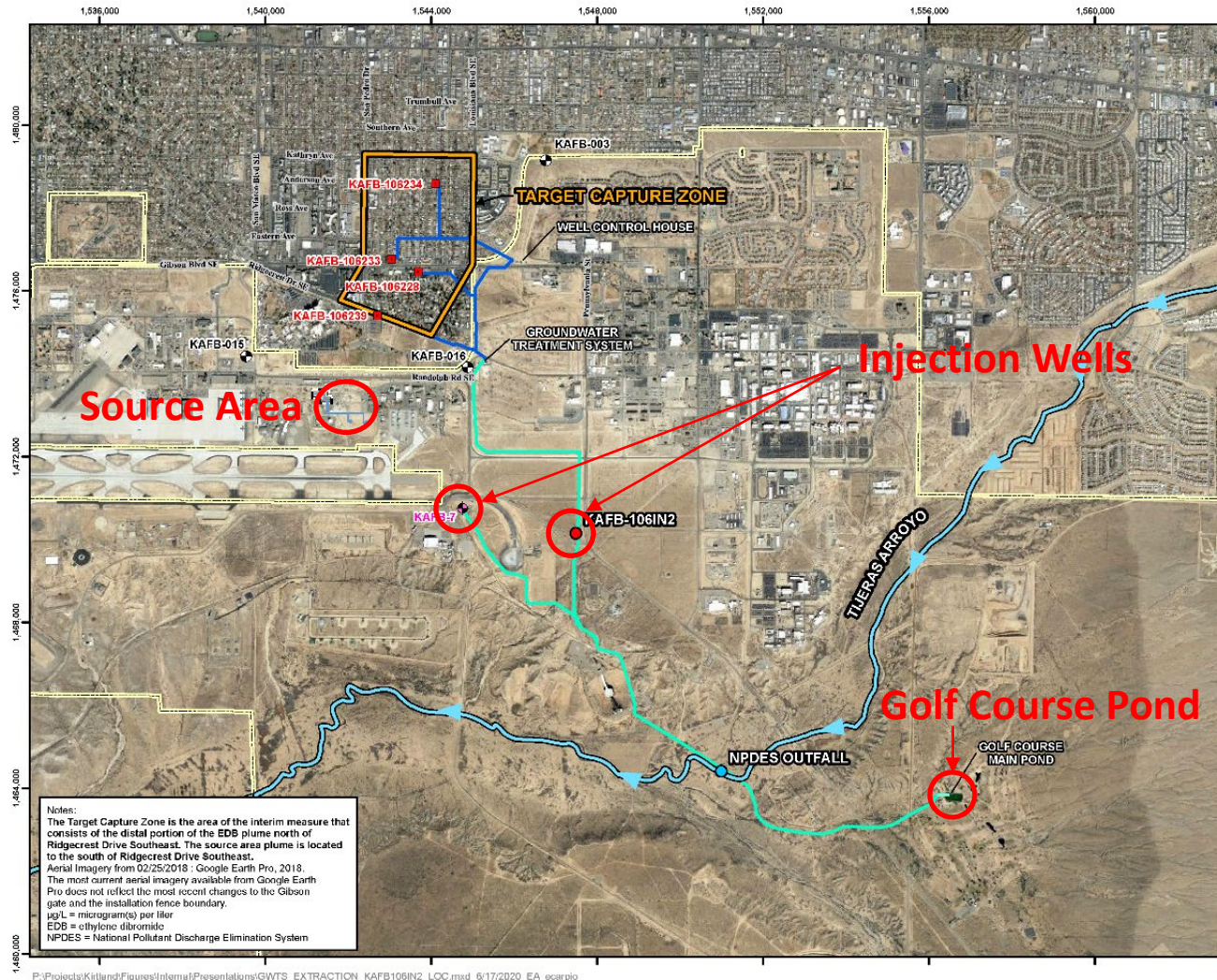


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# Groundwater Pump and Treat System Status



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## ***Groundwater Pump and Treat System Status (cont.)***



- The pump and treat IM is operating, properly and successfully
- The goal of the IM is to eliminate the possibility of EDB impacting drinking water supply wells
- No drinking water wells have been impacted and a robust groundwater monitoring (GWM) program is in place
- EPA Maximum Concentration level (MCL) for EDB is 0.05 microgram per liter





# ***Injection Well Activities Completed KAFB-106IN2***

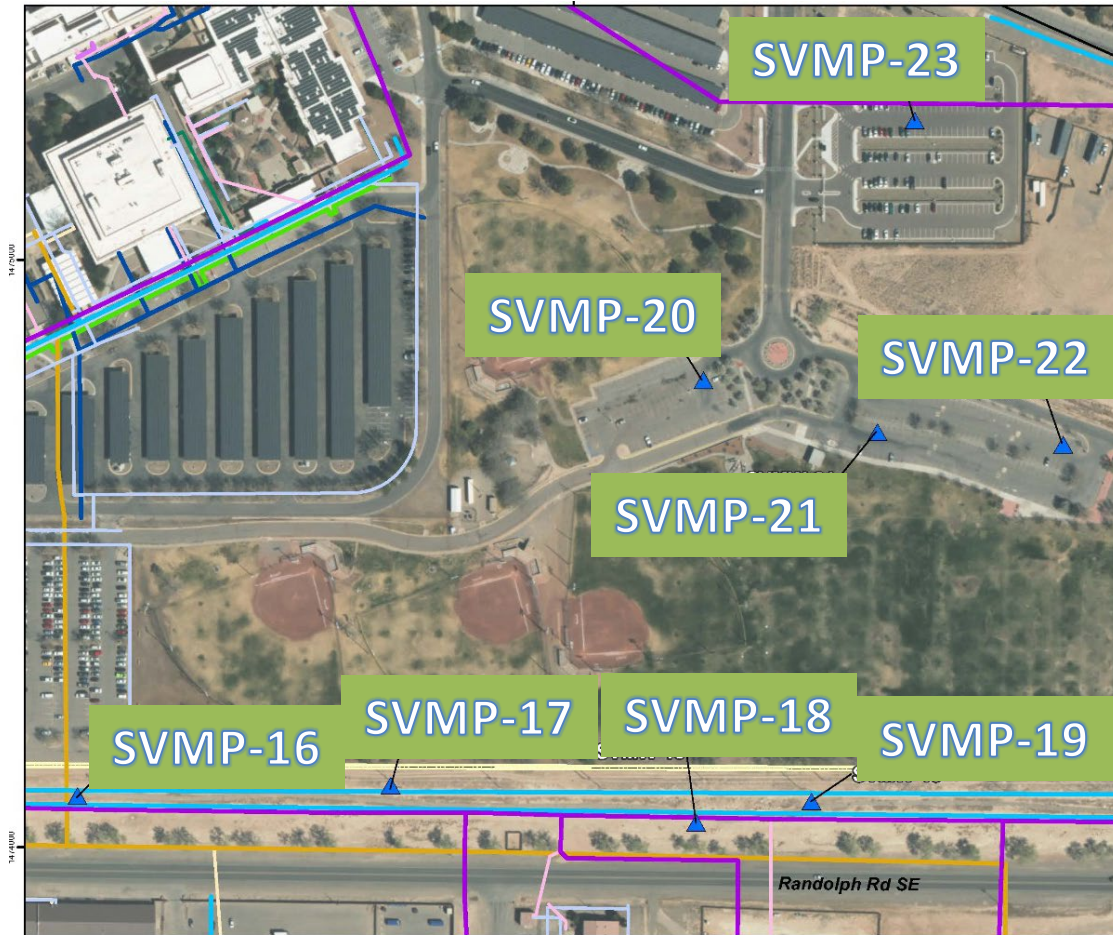


- As of 7/25/2022, 56,528,200 gallons of treated water have been injected into KAFB-106IN2
- Site restoration completed:
  - Site was graded and tilled
  - Site was reseeded
  - Gravel mulch placed to minimize wind and water erosion
  - Silt fence will remain until site achieves 70% growth





# Shallow Soil Vapor Monitoring Well Installation and Sampling



Document Path: N:\Kirtland\GIS\GIS - Projects\02\_2021\Proposed\Locations - Base\Perimeter\Figure 2-1\_Proposed Wells & 02\_FDR Results2.mxd

- Eight soil vapor monitoring wells (SVMWs) were installed in February 2022
- Each SVMW has nested screens at 5, 10, and 15-foot depths
- Winter sampling was completed in early March 2022
- Data will be evaluated after a winter and summer sampling events are completed
- Wells will be incorporated into routine monitoring with 59 other nested vapor wells





# Shallow Soil Vapor Monitoring Well (SVMP) Installation and Sampling



- Eight SVMWs were placed at areas that are most likely to allow migration of soil vapor (utility corridors) or accumulate soil vapor (beneath pavement)
- Borehole information collected during drilling did not identify utility fill material that could potentially serve as a preferred migration pathway



- Drilling was completed safely given the proximity to underground utilities
- Data will be compared to residential soil vapor intrusion screening levels (VISLs)
- First round of shallow soil vapor sampling all concentrations were below the VISLs
- Second round of shallow soil vapor sampling (summer event) scheduled for the week of August 8<sup>th</sup>, 2022





# Technical Working Groups



- Technical Working Group (TWG) held on October 21, 2021 to discuss the groundwater monitoring (GWM) program
- Stakeholder participation included:
  - Air Force
  - USGS
  - USACE
  - NMED
  - City of ABQ
  - Bernalillo county
  - ABCWUA
  - EPA
- Outcomes to evaluate recommendations during the development of an update to GWM Work Plan
- Future TWG dependent on approval/review of the following documents:
  - *Work Plan for GWM*, April 19, 2021
  - *Source Zone Characterization Report Rev. 1*, April 26, 2021
  - *Investigation Report for Data Gap Monitoring Well Installation KAFB-106248 to KAFB-106252*, October 6, 2021
- Utility in TWG is dependent on if recommendations can be tied directly into regulatory documents
- Possible future TWG topics include:
  - Follow on to the GWM Program TWG
  - Phase II Resource Conservation and Recover Act (RCRA) Facility Investigation (RFI) Report

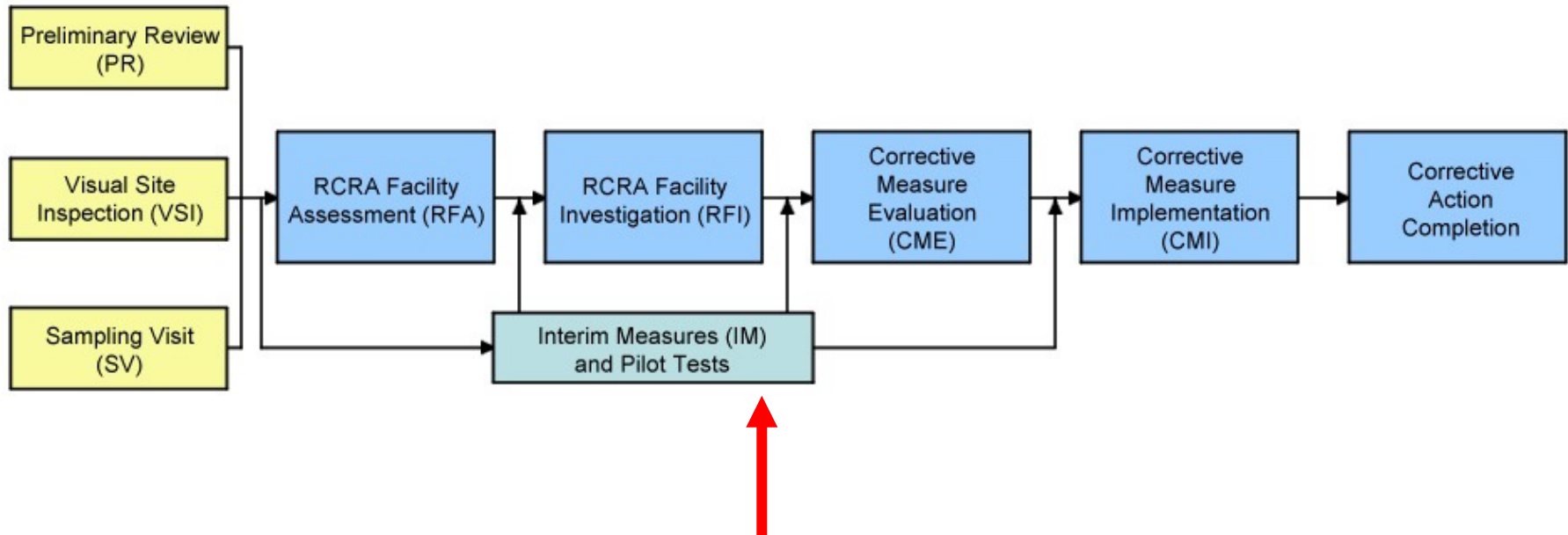




# RCRA Corrective Action Process



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



We Are Here





## *Pathway to RFI Phase II*



- Air Force has defined nature and extent in all impacted media to the degree necessary to support the CME
- NMED currently reviewing *Source Zone Characterization Report Rev. 1*, April 26, 2021 and the *Investigation Report for Data Gap Monitoring Well Installation KAFB-106248 to KAFB-106252*, October 6, 2021
  - NMED's approval of these reports indicates that the Phase II RFI Report can be drafted
- Air Force has a requirement to submit a Phase II RFI Work Plan no later than March 3, 2023





# Questions?



## Point of Contact:

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## Additional information:

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