
Meeting Date: November 9, 2022

Staff Contact: Diane Agnew, Water Rights Program Manager

TITLE: OB-22-21 – Status Update for the Kirtland Air Force Base Bulk Fuels Facility Fuel Leak Cleanup

Action: Presentation Only

SUMMARY:

The Albuquerque Bernalillo County Water Utility Authority (Water Authority) continues to monitor the progress of corrective action activities being conducted by the U.S. Air Force and the Air Force Civil Engineering Center (AFCEC) to address the Bulk Fuels Facility (BFF) jet fuel leak that has contaminated the aquifer near the Ridgecrest Well Field. The jet fuel leak was discovered in 1999 and the site is currently regulated under the Air Force's Resource Conservation and Recovery Act (RCRA) permit. Site characterization of extent of contamination is ongoing. On August 12, 2022, the Air Force gave an update on investigation and cleanup efforts for this site to the Water Protection Advisory Board (WPAB). The Air Force presentation indicated that there is a slowing of progress at the site and that the Air Force is moving towards monitored natural attenuation (MNA), a passive remedial technique, as a final remedy for this site.

The Water Authority conducted an analysis of timeframe to cleanup the BFF jet fuel leak if MNA were to be selected as the final remedy. The results of this analysis put the time to achieve non-detect concentrations at the site on the order of 100's of years if MNA is the selected approach for cleanup. Active remediation is required in order to minimize how long groundwater will be impacted by the jet fuel leak. Additionally, immediate implementation of active remediation will begin to remove existing fuel in the ground and will reduce the amount of contaminated groundwater while also shortening the timeframe to achieve cleanup.

The Water Authority identified the need for an additional groundwater monitoring well based on the sample data from the Water Authority's data gap well installed in 2022 as well as the results of the MNA analysis. The Water Authority is seeking funding for the installation of an additional data gap well in order to make progress towards completing the definition of the of contaminant distribution in groundwater.

The Water Authority continues to sample nearby supply wells on a monthly basis; no fuel-related contaminants have been detected to-date.

FISCAL IMPACT:

None

Water Authority Update: Kirtland Air Force Base Bulk Fuels Facility

Diane Agnew

Water Rights Program Manager

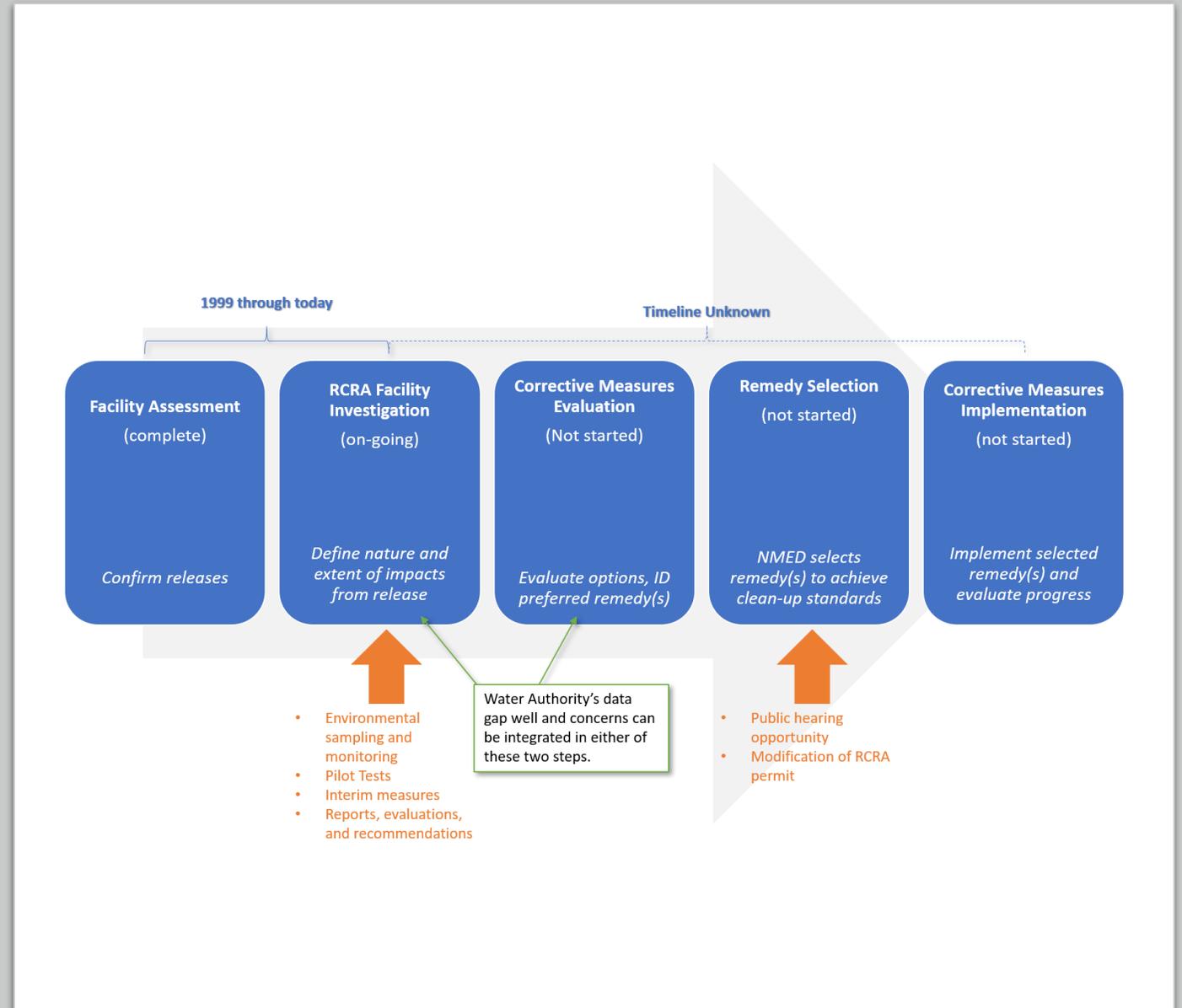
November 9, 2022



Albuquerque Bernalillo County
Water Utility Authority

Site History

- Fuel discovered on the ground at Kirtland Air Force Base (KAFB) Bulk Fueling Facility (BFF) in 1999
- Contamination at the site includes many contaminants, particularly EDB (*ethylene dibromide*)
- EPA has set a Maximum Contaminant Level Goal (MCLG) of 0 micrograms per liter for EDB
- Air Force reports concentrations of contaminants relative to EPA's Maximum Contaminant Level (MCL)
- Site currently following Resource Conservation and Recovery Act (RCRA) Corrective Action process



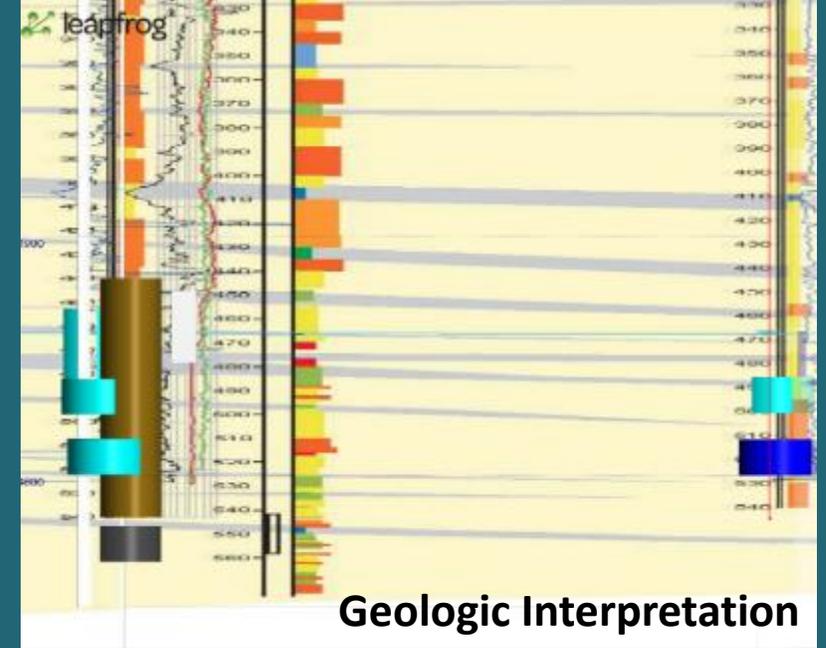
Status of BFF Project

- Data gaps persist for groundwater and source area
- Ongoing remediation
 - Pump & Treat
 - Other interim remediation efforts have been discontinued
- Site monitoring
 - Groundwater monitoring
 - Soil vapor monitoring





Voluntary Monthly Monitoring of Nearby Supply Wells



Geologic Interpretation

Stakeholder and Technical Meeting Attendance

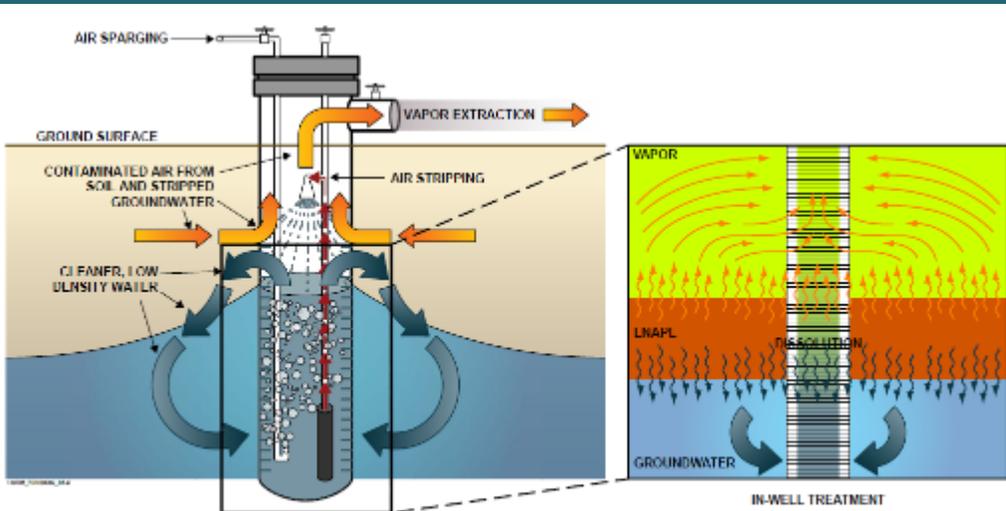
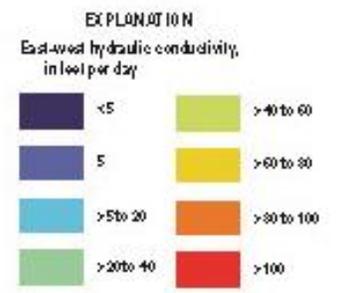
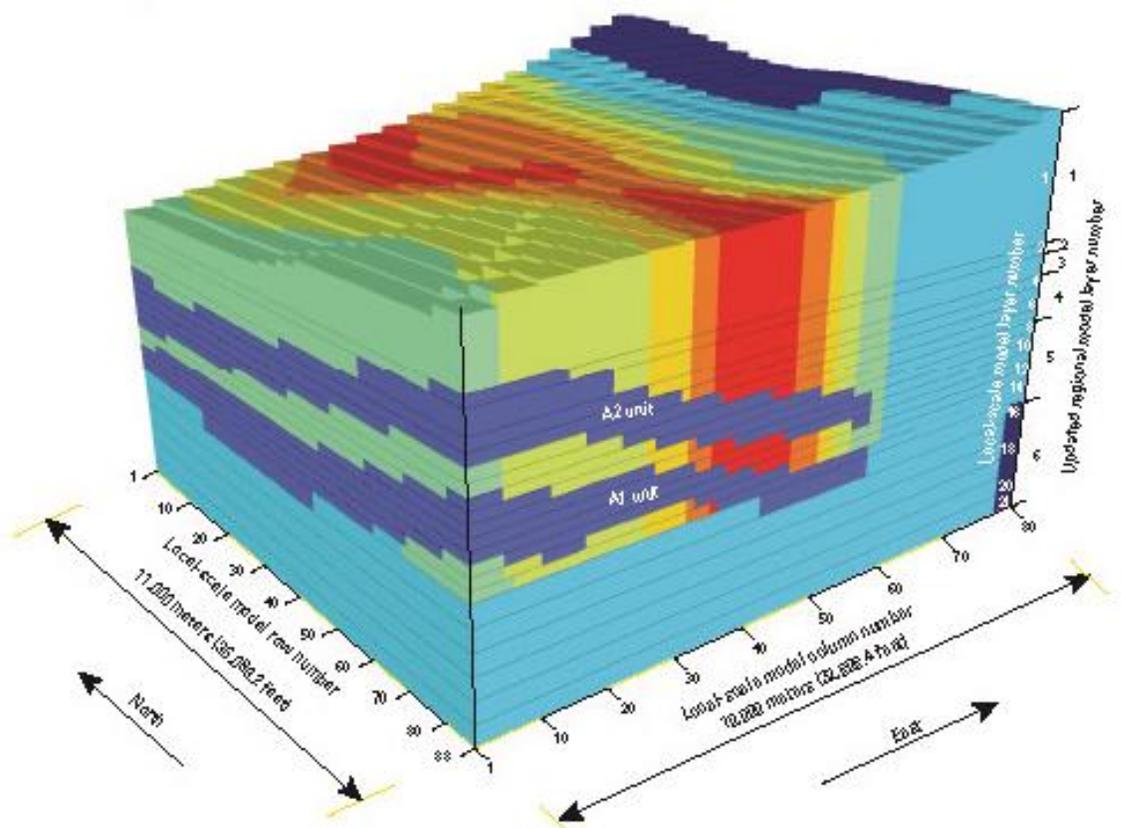


FIGURE 7-1

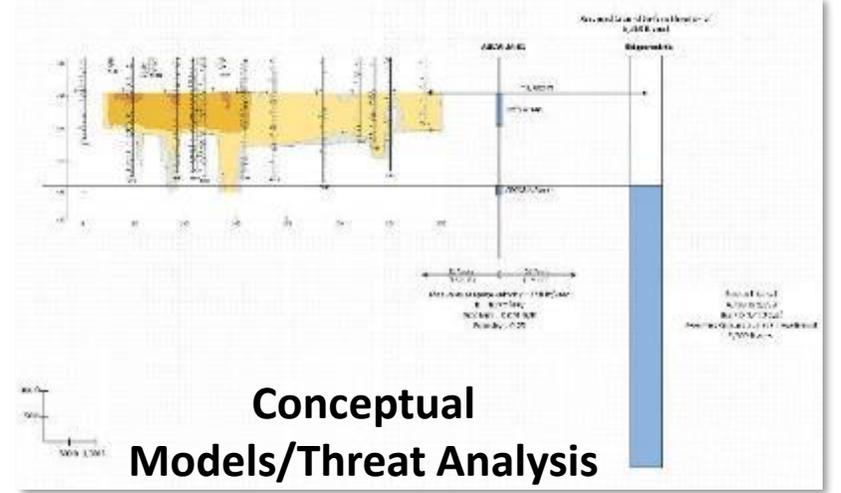
SUMMARY OF IN-WELL TREATMENT SYSTEM

Work Plan and Technology Review





USGS Groundwater Flow Model



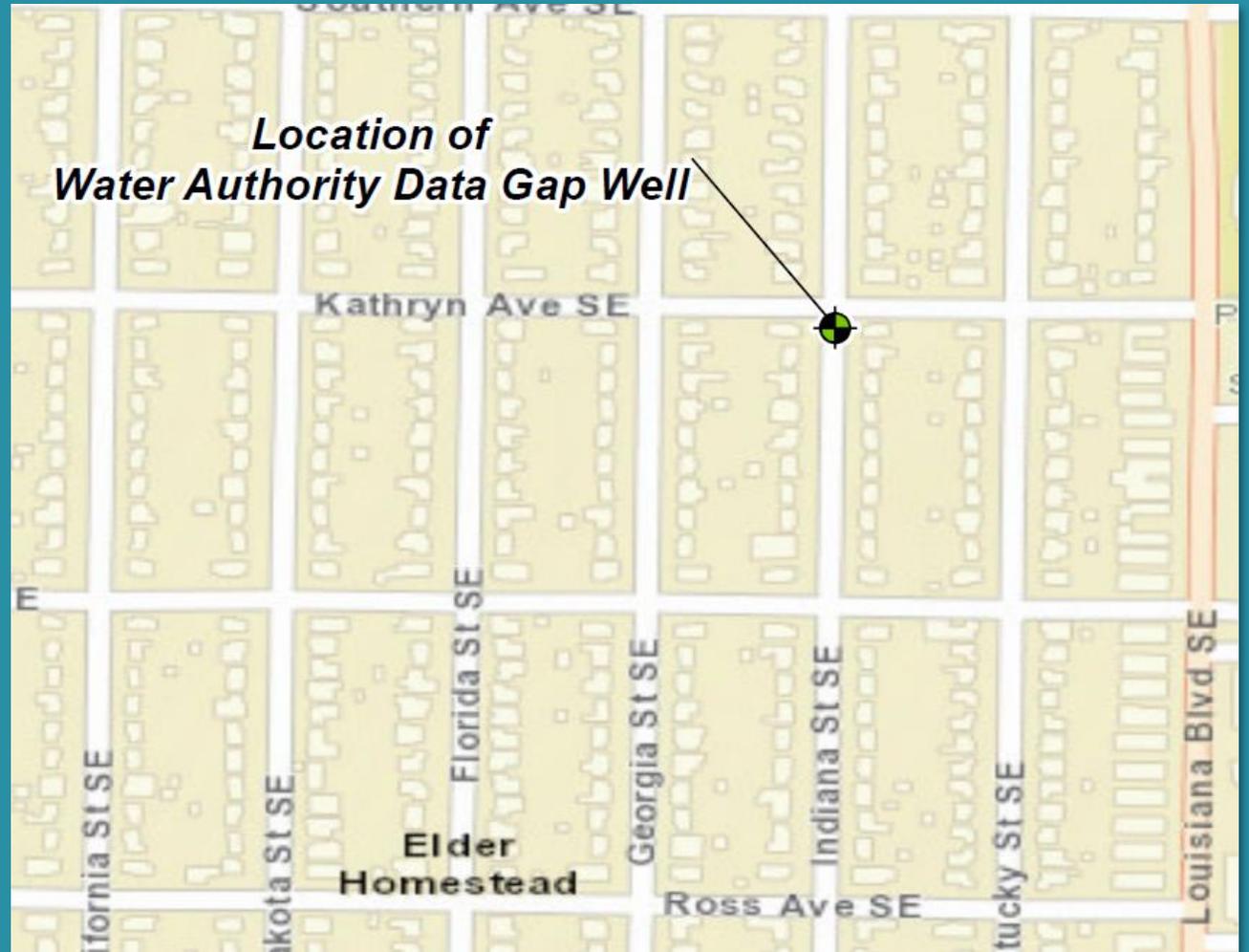
Conceptual Models/Threat Analysis



Fate and Transport/Remediation Modeling

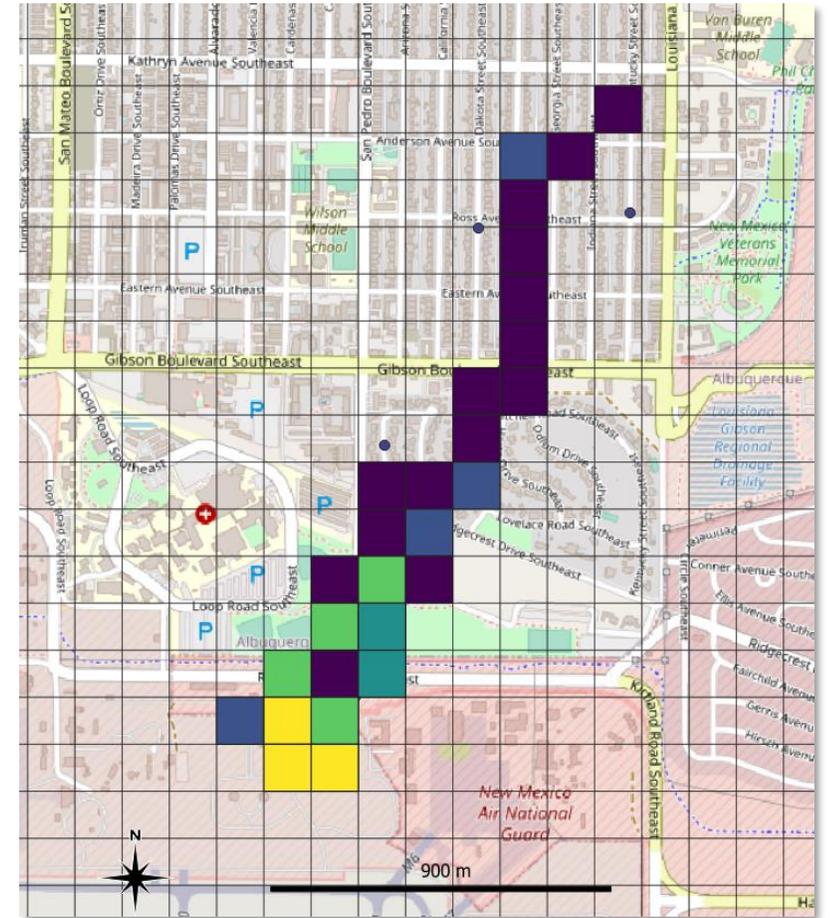
Water Authority Data Gap Monitoring Well Update

- Water Authority data gap well installation complete in April 2022
- Quarterly monitoring of the well began in May 2022
 - No EDB has been detected in this well
 - KAFB has collected split samples
- Water Authority supply wells continue to be sampled monthly; no contaminants have been detected in any samples to date.



Monitored Natural Attenuation

- Air Force is signaling that they want to move towards monitored natural attenuation (MNA) as a final remedy
 - Groundwater contamination persists while natural processes reduce concentrations
 - There is no data to indicate that natural degradation is reducing contamination at this site
 - EDB does not naturally break down under the same conditions as other fuel compounds
 - Impacted groundwater is unavailable for water supply



Timeline to Cleanup

Modeling¹ Assessment of Monitored Natural Attenuation

	Years to EDB ² Below Detection
High EDB depletion (10%); pump & treat on indefinitely	110
High EDB depletion (10%); no pump & treat	618
Medium EDB depletion (5%); no pump & treat	708
Low EDB depletion (2.5%); no pump & treat	887

¹Reference: Model used for this analysis based on USGS site groundwater-flow model, USGS Scientific Investigations Report 2019-5052 (<https://pubs.er.usgs.gov/publication/sir20195052>)

²EDB – ethylene dibromide

Outstanding Concerns

- Incomplete characterization of remaining source
- Timeline to final remedy is slowing
- Opportunities to address gaps and select remedy
 - Interim remedial actions
 - Technical working group meetings
- Water Authority requesting capital outlay funding for an additional data gap well





Questions?