

Influence of Depositional Environment on Dissolved-Phase Plume Migration at the Kirtland Air Force Base Bulk Fuels Facility Leak Site

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Presented by:

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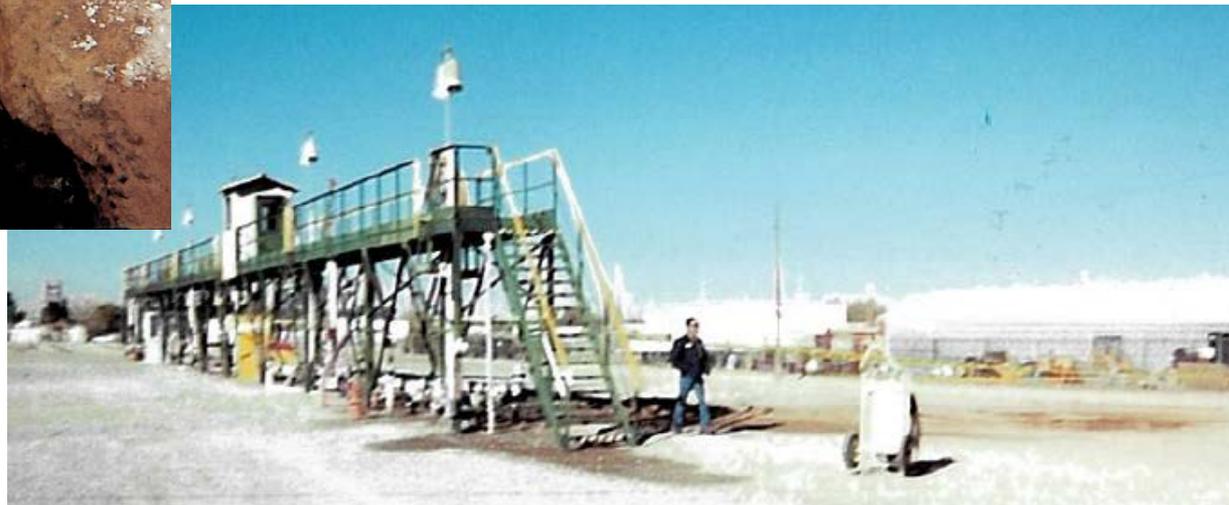
April 8, 2016

Site History

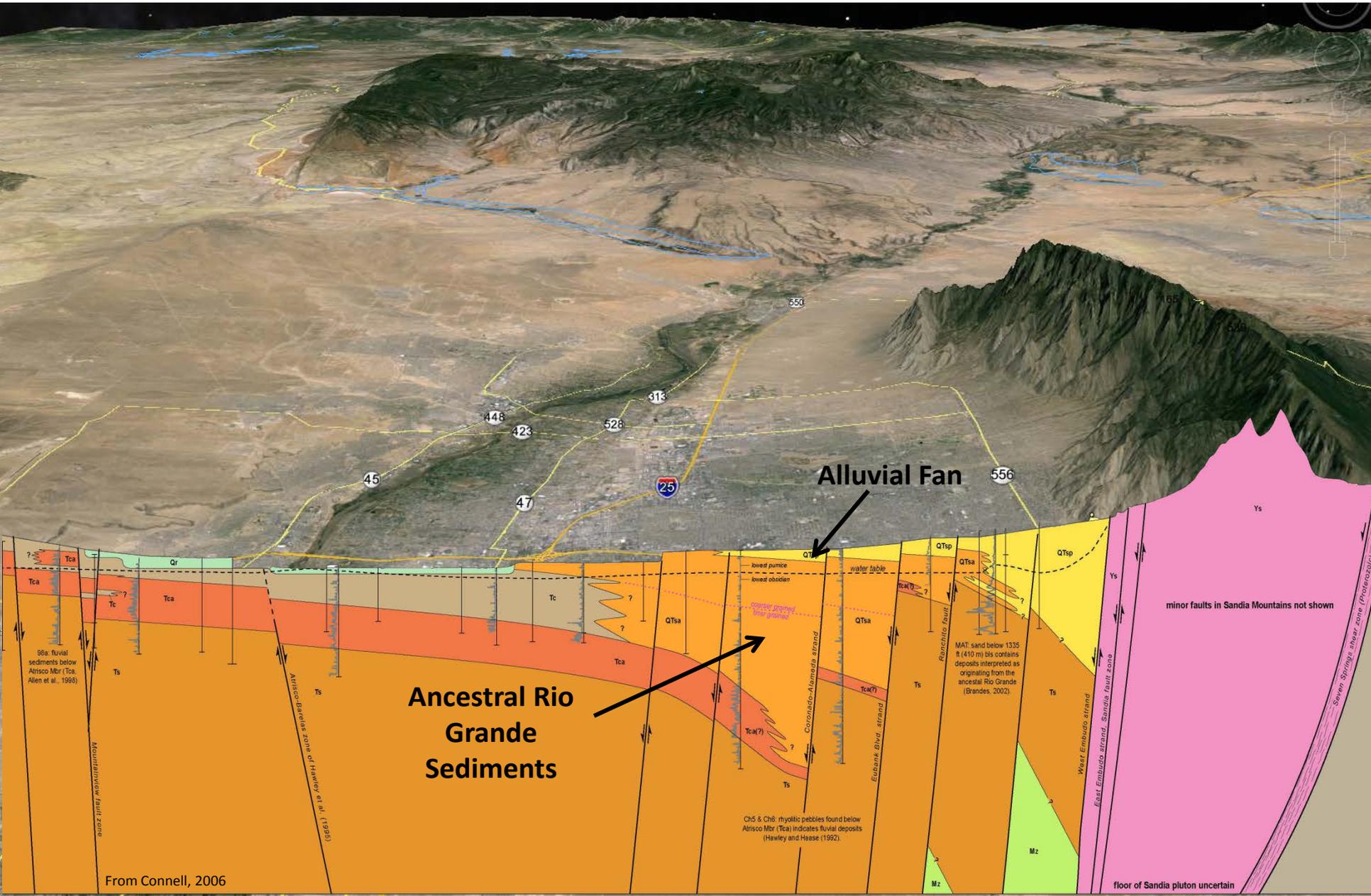
- The Kirtland Air Force Base (KAFB) Bulk Fuels Facility (BFF) is located in the northwestern portion of the base and began operation in 1953.
- BFF was the fueling area for the installation and received bulk shipments of fuel from railcars and trucks.
- An underground pipeline extending from the fuel off-loading area to the fuel pump house leaked jet fuel into the ground.
- The leak was discovered in 1999 and KAFB sealed off the underground pipe and removed it from service.
- The KAFB fuels facility was replaced in 2011 with all above-ground piping and tanks, along with state-of-the-art leak detection technology.

1999 Leak Photos at BFF

Metal Stair Step



Middle Rio Grande Basin

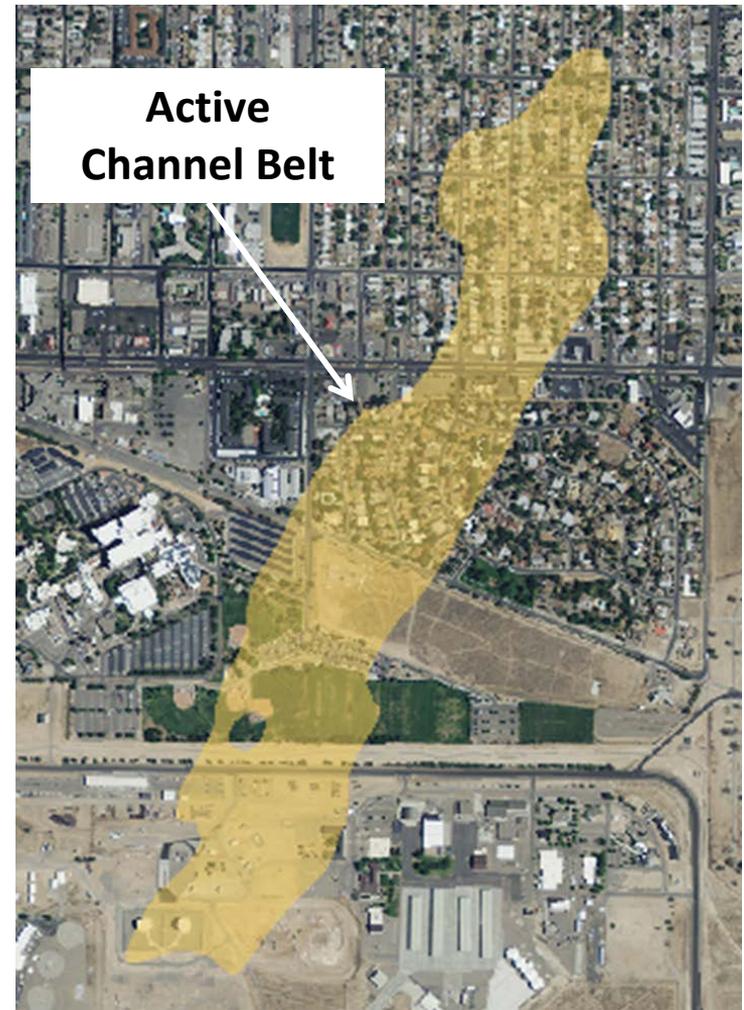


Rio Grande Braided Stream Channel Belt

Rio Grande River
Albuquerque South Valley

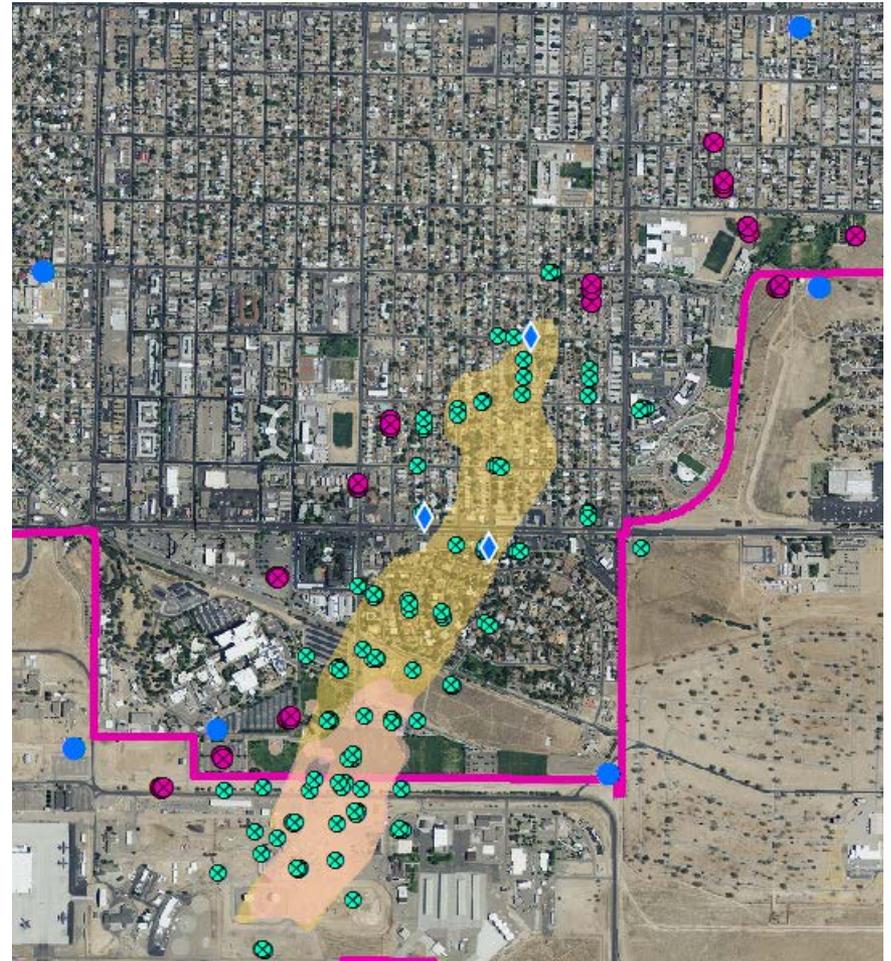


Shallow Ethylene Dibromide
Plume



Inputs into the Stratigraphic Model: *Regional and Plume-Scale*

- 124 groundwater monitoring

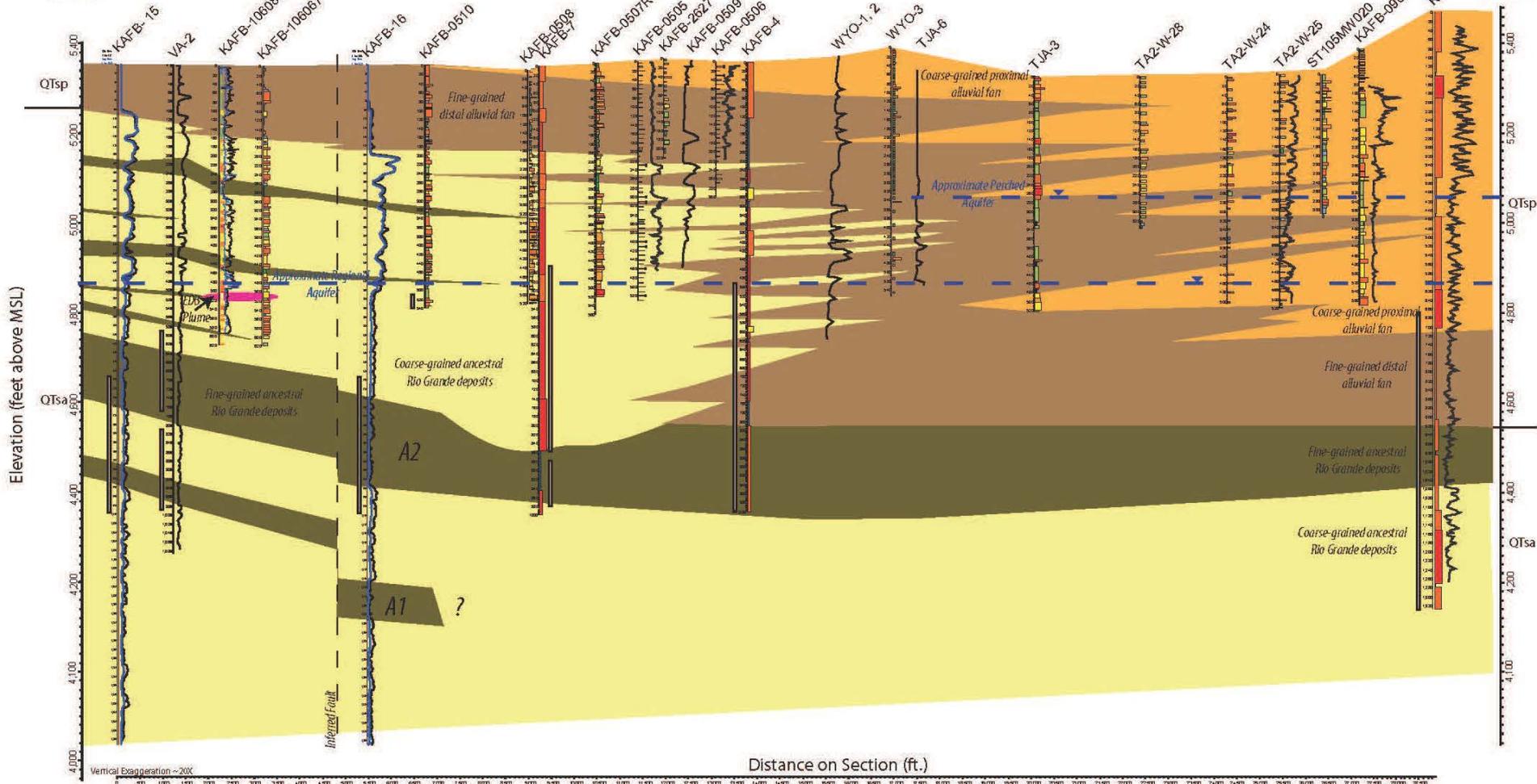


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SOUTH WEST NORTH EAST



0 1,000 2,000 3,000 4,000 5,000 6,000 7,000 8,000 9,000

Litho Facies Key

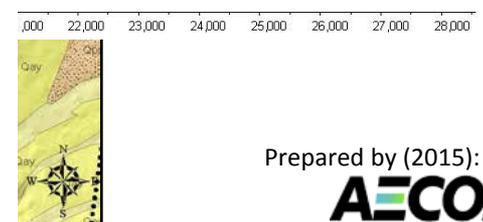
● Cross Section Wells
— Cross Sections
— Line 1, Figure 4
— Line 2, Figure 5

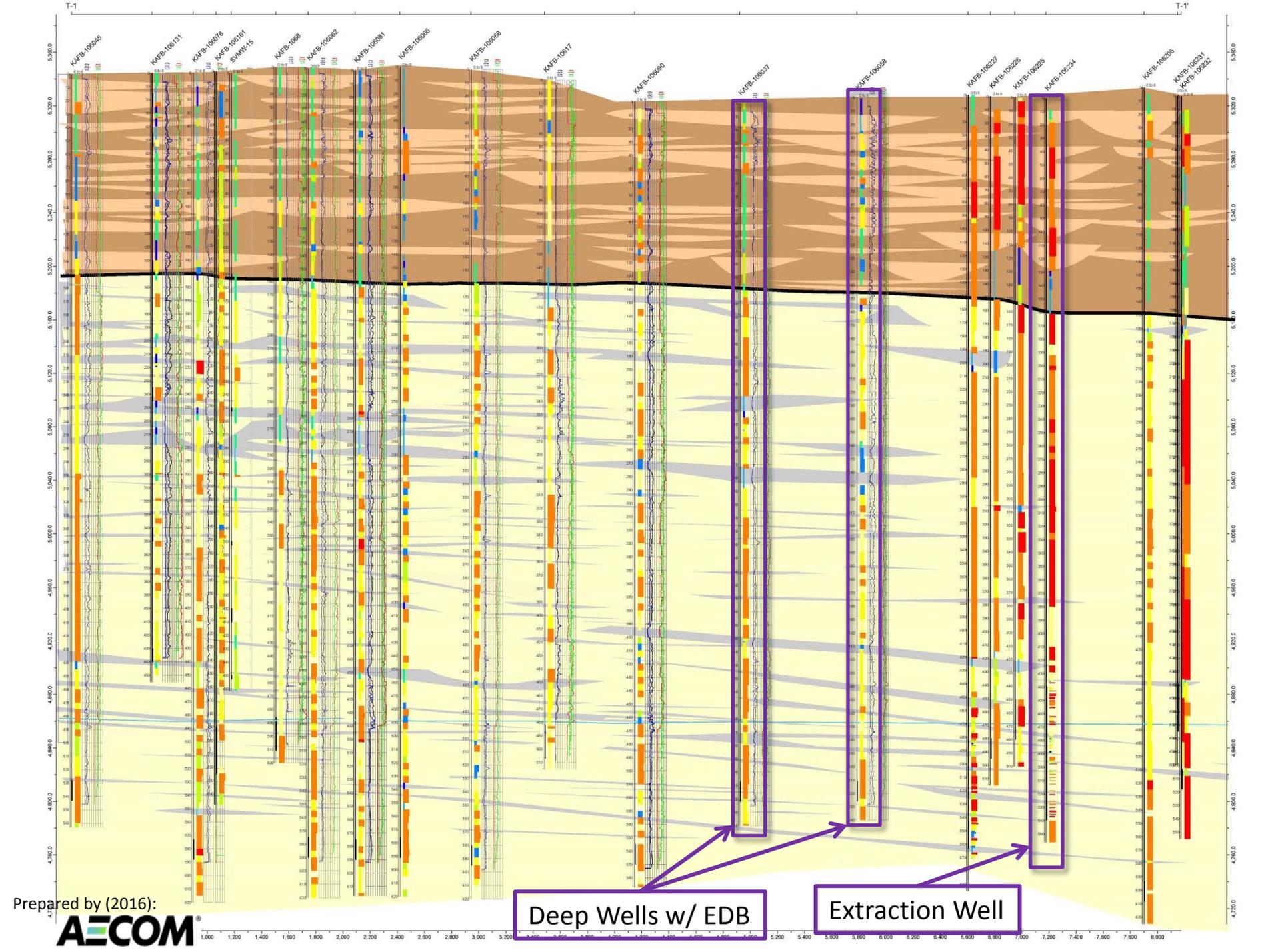
Braided river deposits (high % sand and gravel)
 Fine grained deposits potential change in river morphology indicated

Proximal fan (coarse relative grainsize)
 Distal fan (finer relative grainsize)

— QTsa: Ancestral Rio Grande
— QTsp: Alluvial Fan

2,000 1,000 0
 1 inch = 2,500 feet





Prepared by (2016):



Deep Wells w/ EDB

Extraction Well

Take-Away

- Identification of regional and plume-scale stratigraphy was key in development of site conceptual model.
- Plume-scale geology is consistent with Connell, 2006.
- Stratigraphic cross-sections can be updated with plume concentration data to inform location and screen interval of future monitoring and extract wells.
- Continuing to evaluate data to determine complete characterization of vertical EDB extent.

Questions?

