Kirtland Air Force Base

Albuquerque Bernalillo County Water Utility Authority Board Meeting

August 21, 2013

Project Update

KAFB Bulk Fuels Spill project involves 2 Solid Waste Management Units

SWMU ST-106: Vadose Zone

SWMU SS-111: Ground Water

Interim measures to address these two SWMUs consist of the following remediation approaches:

- **Vadose Zone**: SVE applied to unsaturated zone above water table. SVE treatment expected to remediate contamination in unsaturated zone, and fuel product floating on the water table to include EDB.
- **LNAPL Remediation**: Treatment expected to remediate source area fuel product on and below water table.
- **Dissolved Phase Remediation:** Treatment specifically targeted at remaining dissolved-phase contaminants.

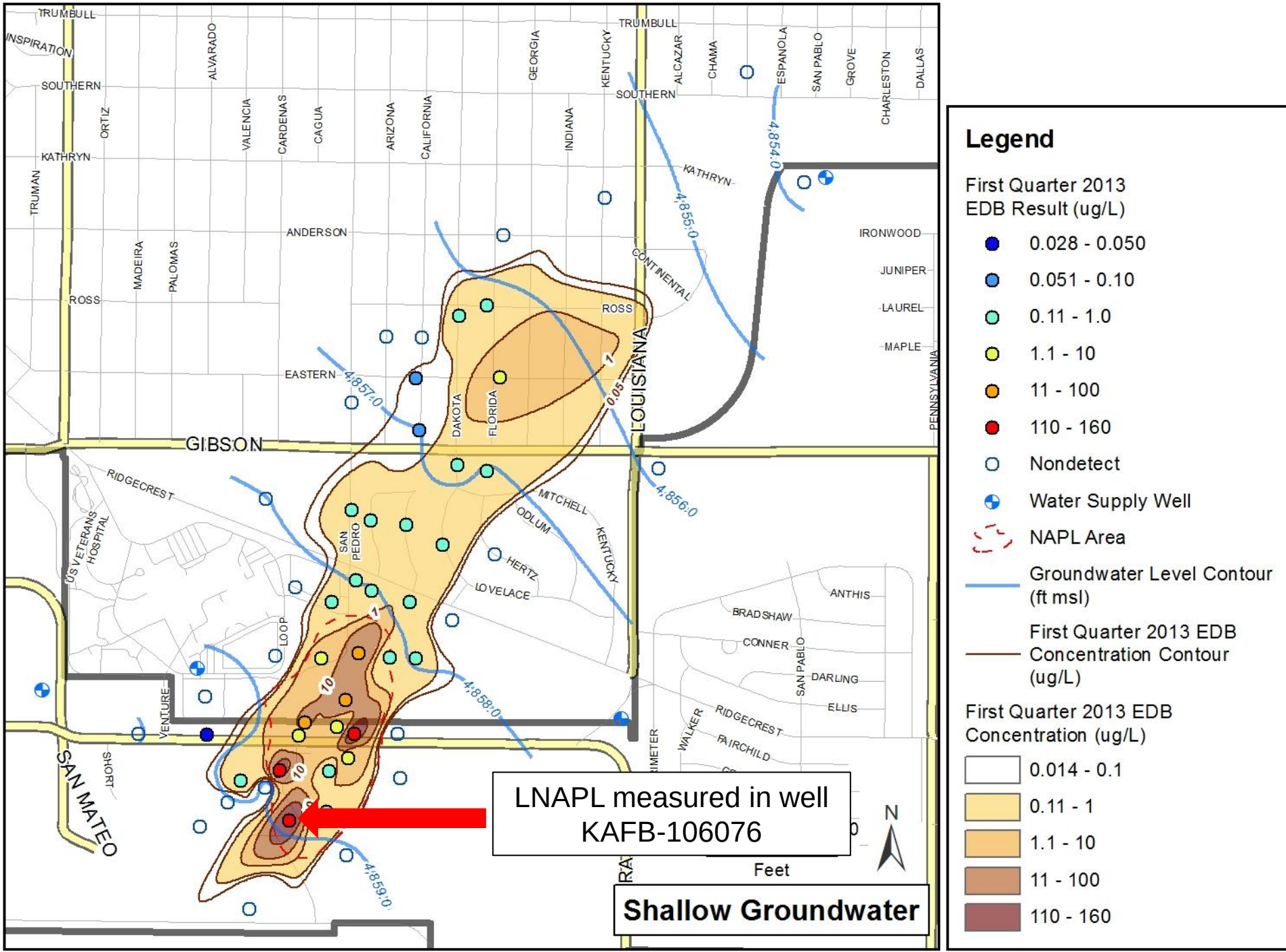
SVE Update

- System startup and ROI testing complete
- Full operation on March 15, 2013
- System is operational and treating hydrocarbons
- Troubleshooting, repairs, and optimization
  - April System not performing at designed destruction rate
  - May 31 SVE system stopped operating due to a faulty LEL meter
  - June 1 LEL meter repair completed
  - August 9 Destruction rate restored

- System optimization will continue during interim operation

EDB and NAPL Plume Update

- In 1st Quarter 2013: LNAPL detected in single monitoring well (KAFB-106076)
- LNAPL and Dissolved-phase plume extent remains characterized
  - Site data indicates LNAPL plume is not migrating
  - Most likely due to biodegredation
- Remaining groundwater RFI data gaps :
  - EDB degradation rates
  - Pump Test Evaluation
  - Groundwater Model
- Groundwater RFI delivered by end of CY 2013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LNAPL measured in well KAFB-106076
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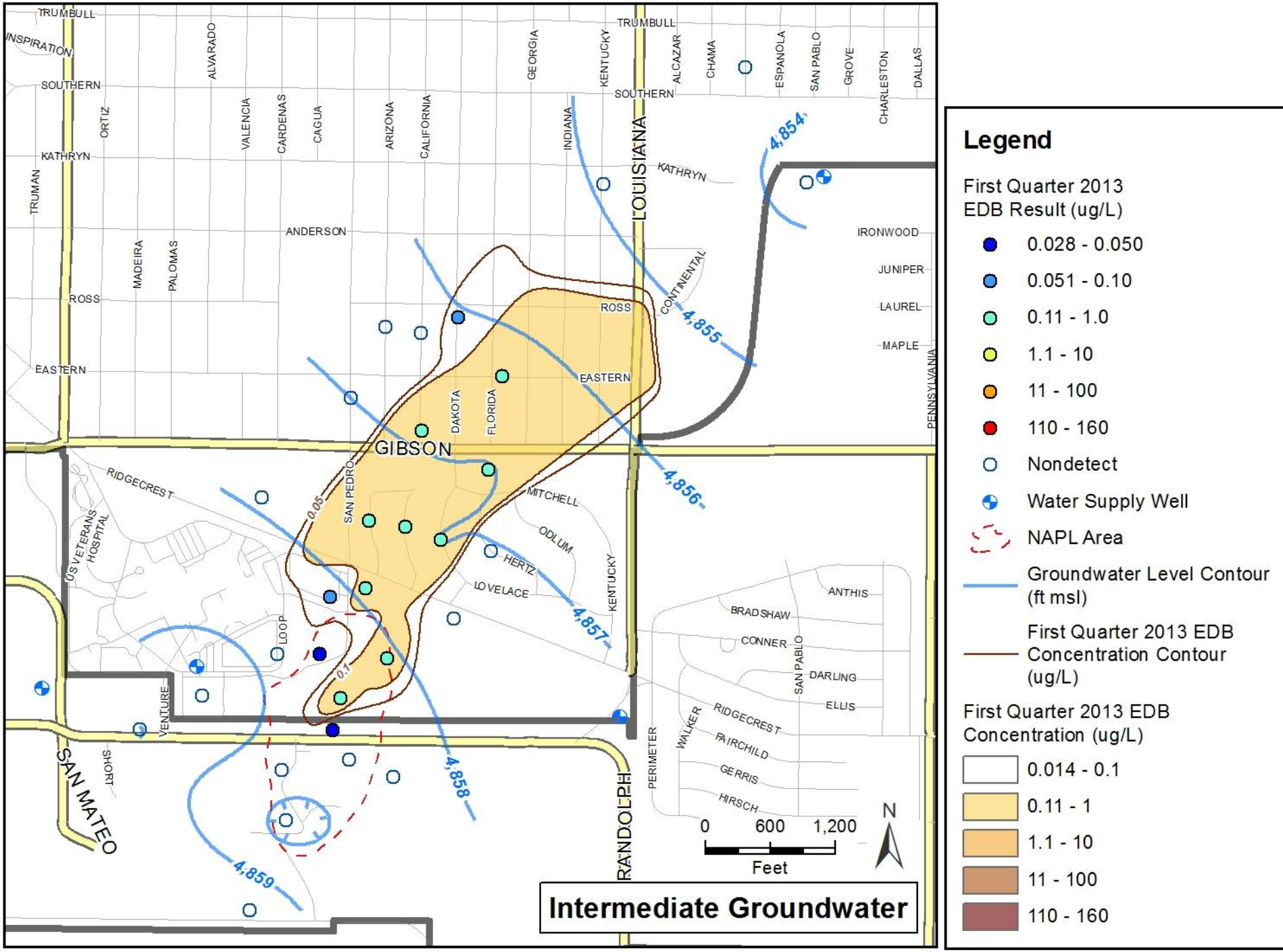
Shallow Groundwater
Legend
First Quarter 2013 EDB Result (ug/L)
0.028 - 0.050
0.051 - 0.10
0.11 - 1.0
1.1 - 10
11 - 100
110 - 160
Nondetect
Water Supply Well
NAPL Area
Groundwater Level Contour (ft msl)
First Quarter 2013 EDB Concentration Contour (ug/L)
First Quarter 2013 EDB Concentration (ug/L)
0.014 - 0.1
0.11 - 1
1.1 - 10
11 - 100
110 - 160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Legend
First Quarter 2013 EDB Result (ug/L)
0.028 - 0.050
0.051 - 0.10
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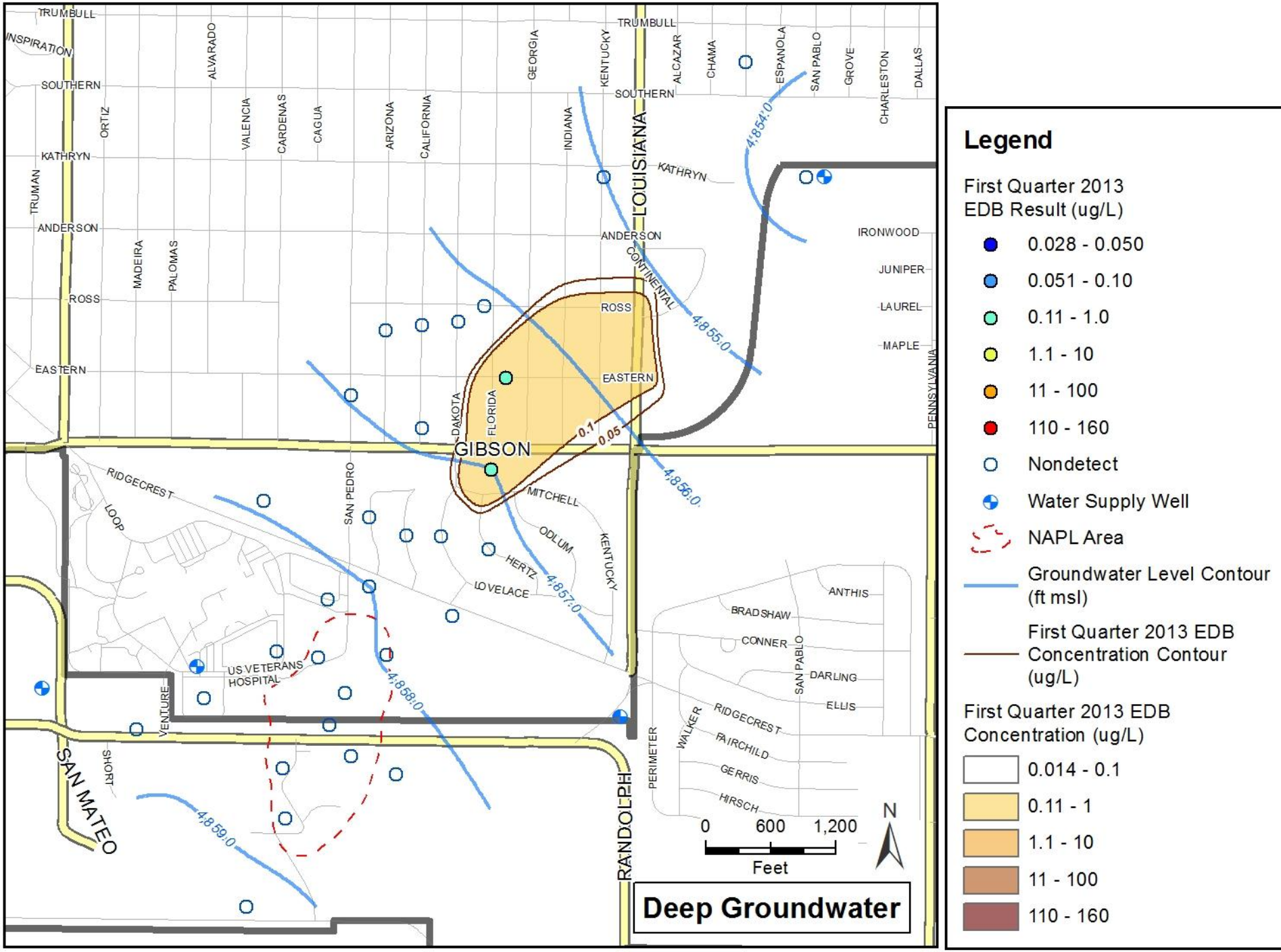
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Specific Concerns

1. LNAPL Containment

2. Rising Water Table

3. LNAPL and Dissolved Phase Plume

4. Plume Stability

Rising Water Table

- Full characterization as part of the groundwater RFI will result in a comprehensive understanding of water table conditions
- The 3-pronged remediation effort (Vadose Zone, LNAPL and Dissolved-phase) will take into account water table conditions
- Groundwater levels will be accounted for when determining the interim and final remedies

LNAPL & Dissolved Phase Plume

- The current SVE interim measure is actively remediating LNAPL at and just above the water table
  - Sufficient data has been collected to move forward with SVE expansion
  - KAFB is working with NMED to identify candidate wells for expansion of the SVE system
- Addressing data gaps as part of the RFI will identify the appropriate interim measure to address dissolved phase EDB in groundwater

Plume Stability

- A formal evaluation of plume stability will be performed as part of the groundwater RFI

- Until this evaluation is complete, a discussion of plume stability is premature

NMED Timeline