
Environmental Restoration Public Meeting

May 3, 2010

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Projects Division Manager

Interim Remedial Action Report

- **Provides detailed documentation of how the Selected Remedies were constructed/ implemented.**
- **This detail provides a basis for future modifications, as necessary.**
- **Also describes the initial performance of the components of the remedies.**
 - Pump & Treat Systems
 - In-Situ Bioremediation Systems
 - Long-Term Monitoring Network, etc.

Status of Interim Remedial Action Report

- **Draft Final Interim Remedial Action Report (IRAR) submitted October 2009.**
 - TCEQ comments received March 18, 2010
 - EPA comments received April 22, 2010
- **Final IRAR and response to comments due May 14, 2010.**
- **Review and approval is anticipated in July/August 2010.**

Application to Modify Compliance Plan

- **Current Compliance Plan contains requirements for interim corrective measures.**
- **The Compliance Plan modification will provide requirements for operation and maintenance of the installed remedies (Corrective Action Systems).**
- **The Modified Compliance Plan mirrors the Remedial Design approved by EPA.**

Compliance Plan Path Forward

- Application submitted July 2009.
- 60-day Public Comment Period ended October 26, 2009; no comments were received.
- Additional Information requested by TCEQ was submitted December 2009.
 - The Risk Reduction Rule Guidance Document
 - The Ogallala Aquifer and Perched Groundwater Contingency Plan.
 - Added Point-of-Compliance and Point-of-Exposure wells.
 - Revised tables and figures.
- TCEQ is working to finish the proposed modification.

Quarterly Progress Reports

- **Approved as part of the Remedial Design in July 2009 (a comprehensive report is still submitted annually).**
- **Purpose is to provide a snapshot of the progress of the Corrective Action Systems and summarize any unexpected conditions identified through monitoring results.**

Quarterly Progress Reports (Cont'd)

- **Two Quarterly Progress Reports submitted to TCEQ and EPA since the last meeting in November 2009.**
 - December 2009 report - covers 3rd Qtr 2009 data.
 - March 2010 report - covers 4th Qtr 2009 data.
- **Quarterly Progress Reports are available at www.pantex.com**
 - Select “About PX”, then “Environment,” then “Environmental Restoration Documents.”

Groundwater Remedies

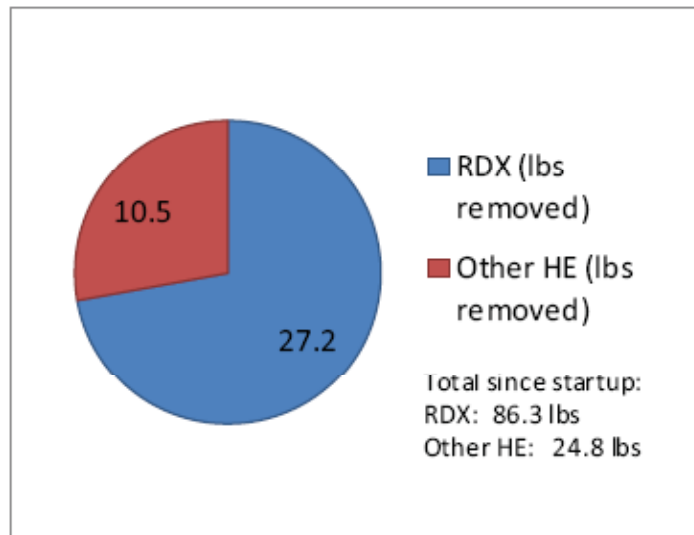
- **Playa 1 Pump and Treat**
- **Southeast Pump and Treat**
- **Southeast In-Situ Bioremediation**
- **Zone 11 In-Situ Bioremediation**

Playa 1 Pump & Treat

- **10 Extractions Wells; no Injection Wells.**
- **Operation began in September 2008.**
- **106 million gallons of perched groundwater treated through end of 2009.**
- **Water is reused beneficially via the subsurface irrigation system.**

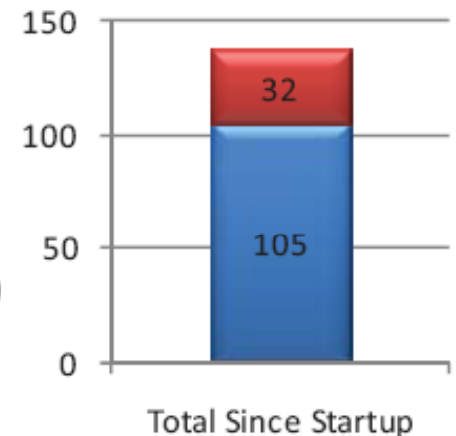
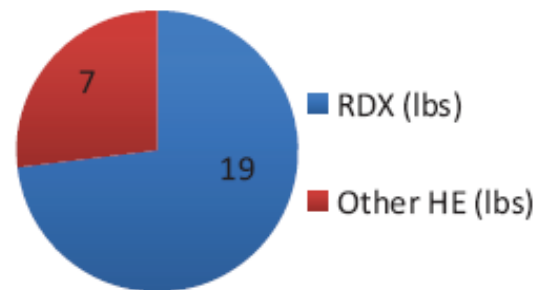


Playa 1 Pump & Treat Progress



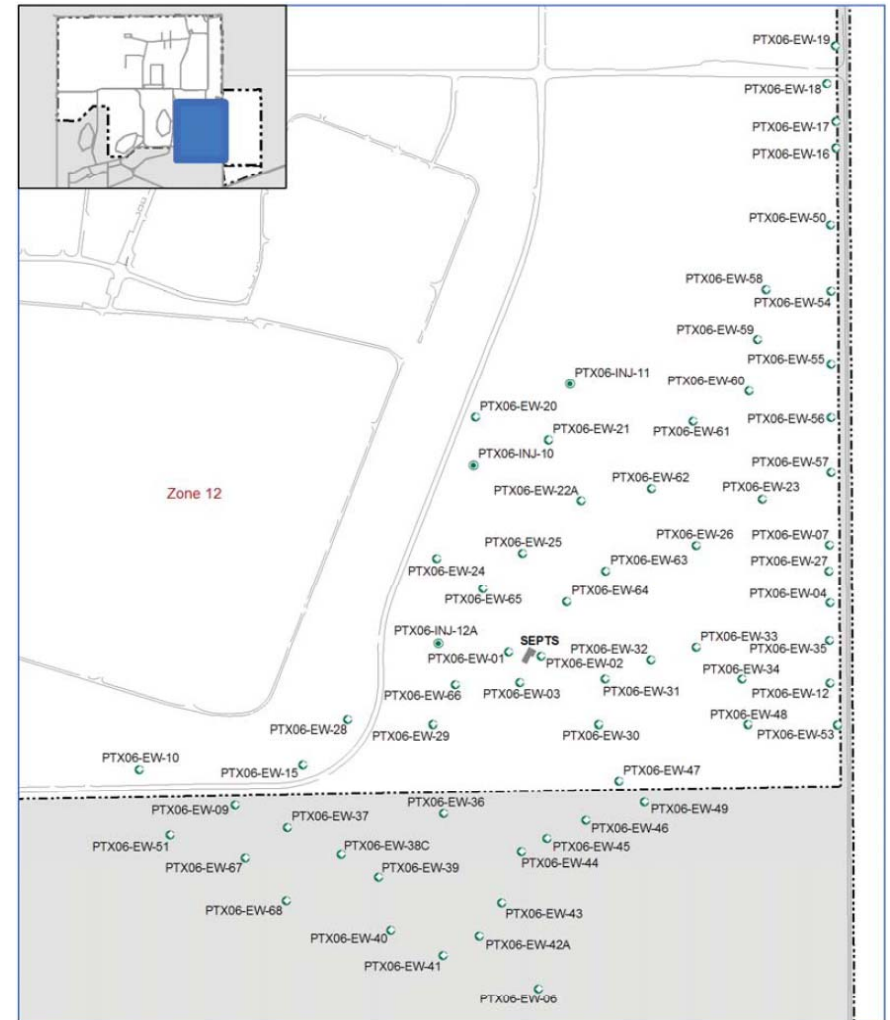
Playa 1 Pump and Treat,
4th Quarter 2009
•Treated 26 million gallons

Playa 1 Pump and Treat,
3rd Quarter 2009
•Treated 22 million gallons

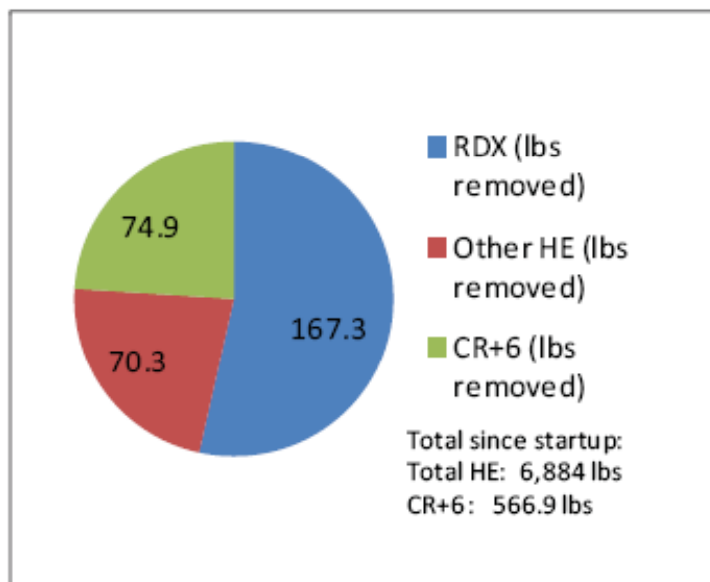


Southeast Pump & Treat

- **62 Active Extraction Wells.**
- **3 Active Injection Wells.**
- **Operated since 1995.**
- **819 million gallons of perched groundwater treated through end of 2009.**



Southeast Pump & Treat Progress

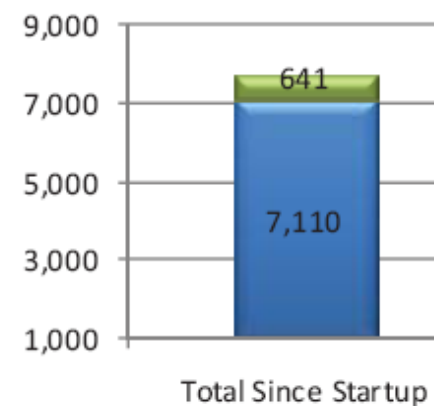
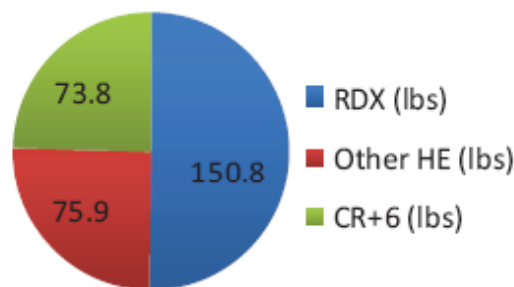


Southeast Pump and Treat,
3rd Quarter 2009

- Treated 35.9 million gallons

Southeast Pump and Treat,
4th Quarter 2009

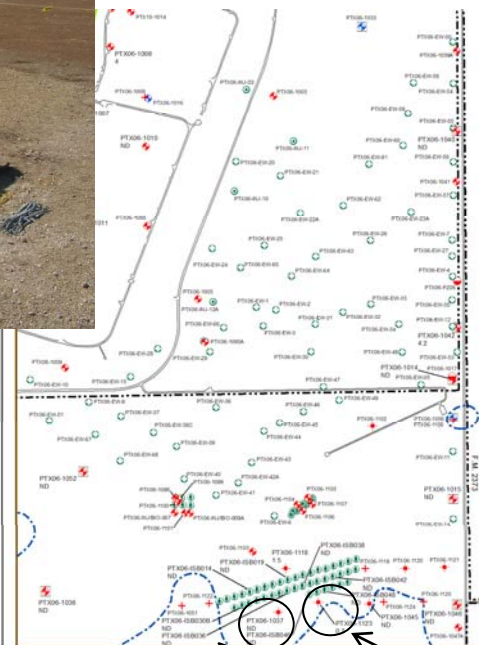
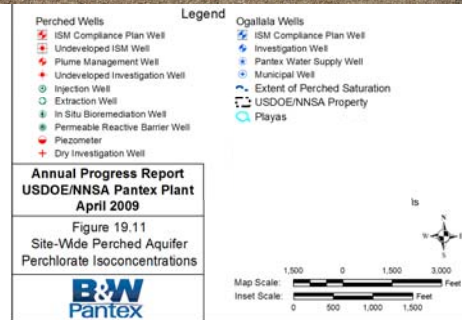
- Treated 38.4 million gallons



SE In-Situ Bioremediation Project



ISB Trailer



PTX06-1037

PTX06-1123

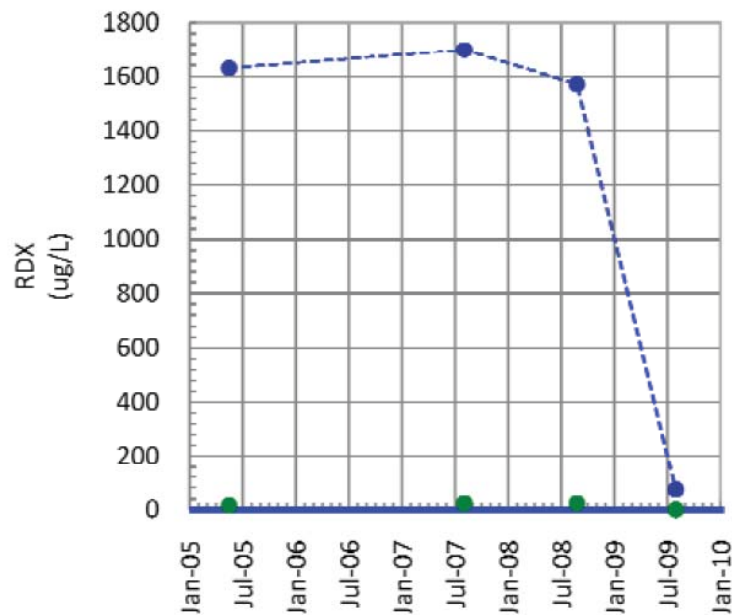
Southeast *ISB*

SE ISB Project (cont'd)

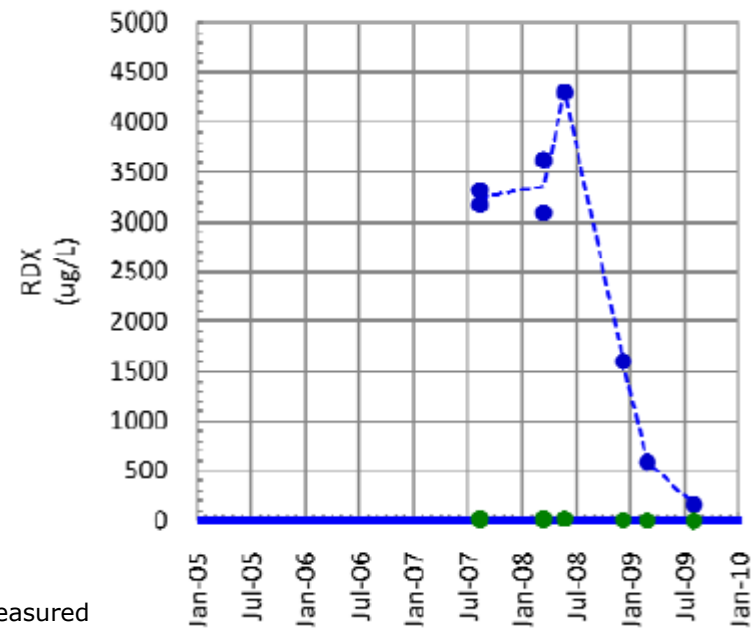
- **42 injection wells were installed in 2007.**
- **1st injection was completed in March 2008.**
- **2nd injection completed April 2010.**

SE ISB System Progress

- Effectively reducing contamination in closest downgradient wells.



PTX06-1037



PTX06-1123

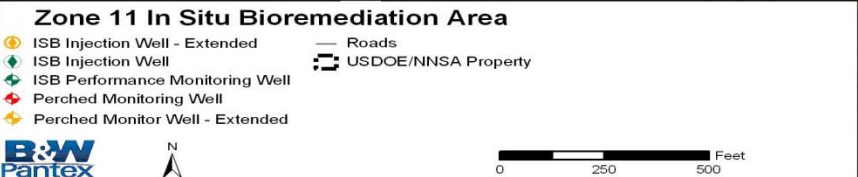
● measured value
● reporting limit

Zone 11 In-Situ Bioremediation Project

- A Corrective Action System for treating perchlorate and TCE in perched groundwater in Zone 11.
- In early 2009, 23 injection wells and 3 monitoring wells were installed.
- An additional 9 injection wells were installed in November 2009 to enhance the original system.



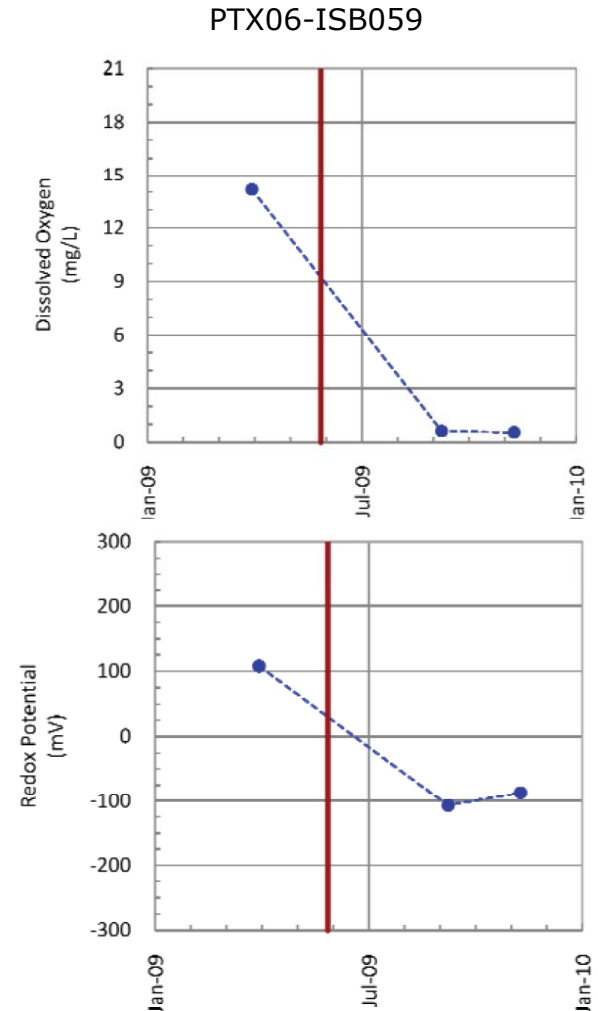
Installation of a conveyance line that transports treated water from the southeast pump & treat system to the Zone 11 ISB.



Zone 11 ISB System Progress

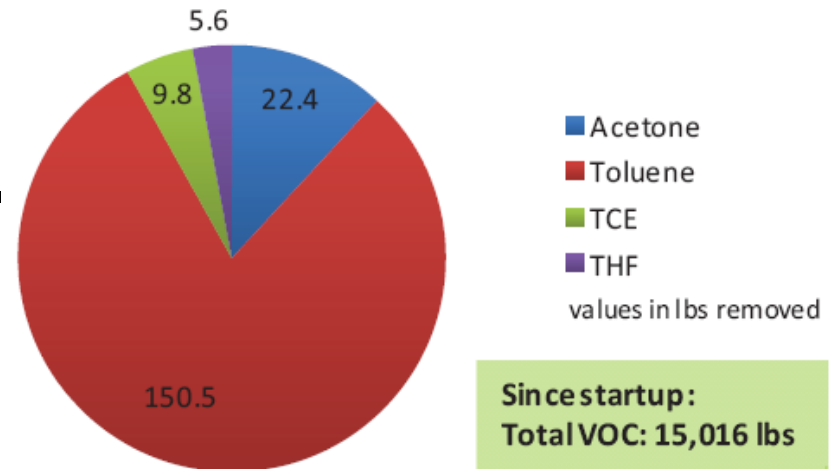
- **Zone 11 ISB**
 - First injection complete in June/November 2009.
 - Treatment zone is becoming established.
 - Dissolved oxygen and redox potential indicate reducing conditions have been achieved.
 - Monitoring will continue to assess the health of the treatment zone.

● measured value
■ date of injection



Burning Grounds SVE *(Soil Vapor Extraction)*

- Granular Activated Carbon (GAC) is used to treat contaminants.
- Continued extraction focuses on one well, SVE-S-20.



4th Quarter SVE Mass Removal



| Month/Year | # Hours Operated | # GAC Changes |
|---------------|------------------|---------------|
| October 2009 | 620.2 | 4 |
| November 2009 | 412.5 | 4 |
| December 2009 | 522.8 | 5 |

Institutional Controls

- **Deed Restrictions completed April 2010.**
 - Restrictions for contaminant extent areas recorded in Carson County Records.
 - ◆ Soils & Perched Groundwater
- **Recognizes Need to Protect Components of the Selected Remedies**
 - Landfill Covers/Ditch Liners
 - Burning Ground SVE System
 - Pump & Treat and ISB Systems
 - Long-Term Monitoring Network

Next Quarterly Progress Report

- **Covers 1st Quarter 2010 sampling results and remedy performance; due in June 2010.**
- **Data was acquired using the revised Sampling and Analysis Plan approved through the Remedial Design.**
- **Sampling results are screened for unexpected conditions as preliminary data is received.**

Contingency Plan

- **If an unexpected condition is noted, follow up actions and notifications are implemented as defined in the Contingency Plan (a part of the approved Remedial Design).**
- **Actions depend on how the concentrations compare to the groundwater protection standard (GWPS).**

3rd Quarter Unexpected Condition

- One unexpected condition was noted in a sample collected in August 2009.
- A sampling result from PTX06-1032 (an Ogallala monitoring well southeast of Pantex) showed trace amounts of two high explosives.
 - DNT4A and RDX
- TCEQ and EPA were notified and confirmation sampling was completed on September 30th.

Results and Path Forward

- **Results confirmed the presence of DNT4A and RDX at ~ 1 ppb and 0.37 ppb, respectively.**
- **Both concentrations are below the GWPS.**

Results and Path Forward (cont.)

- **Factors evaluated to assist in determining the probable cause of these HE detections:**
 - Purge Test - HE concentrations were monitored as PTX06-1032 was steadily pumped at about 5 gpm for about 8 hours.
 - Records Review – difficulties encountered during installation of PTX06-1032 (stuck drive casing removed through water jetting); & condition of current and former wells within 0.5 miles of PTX06-1032 examined.

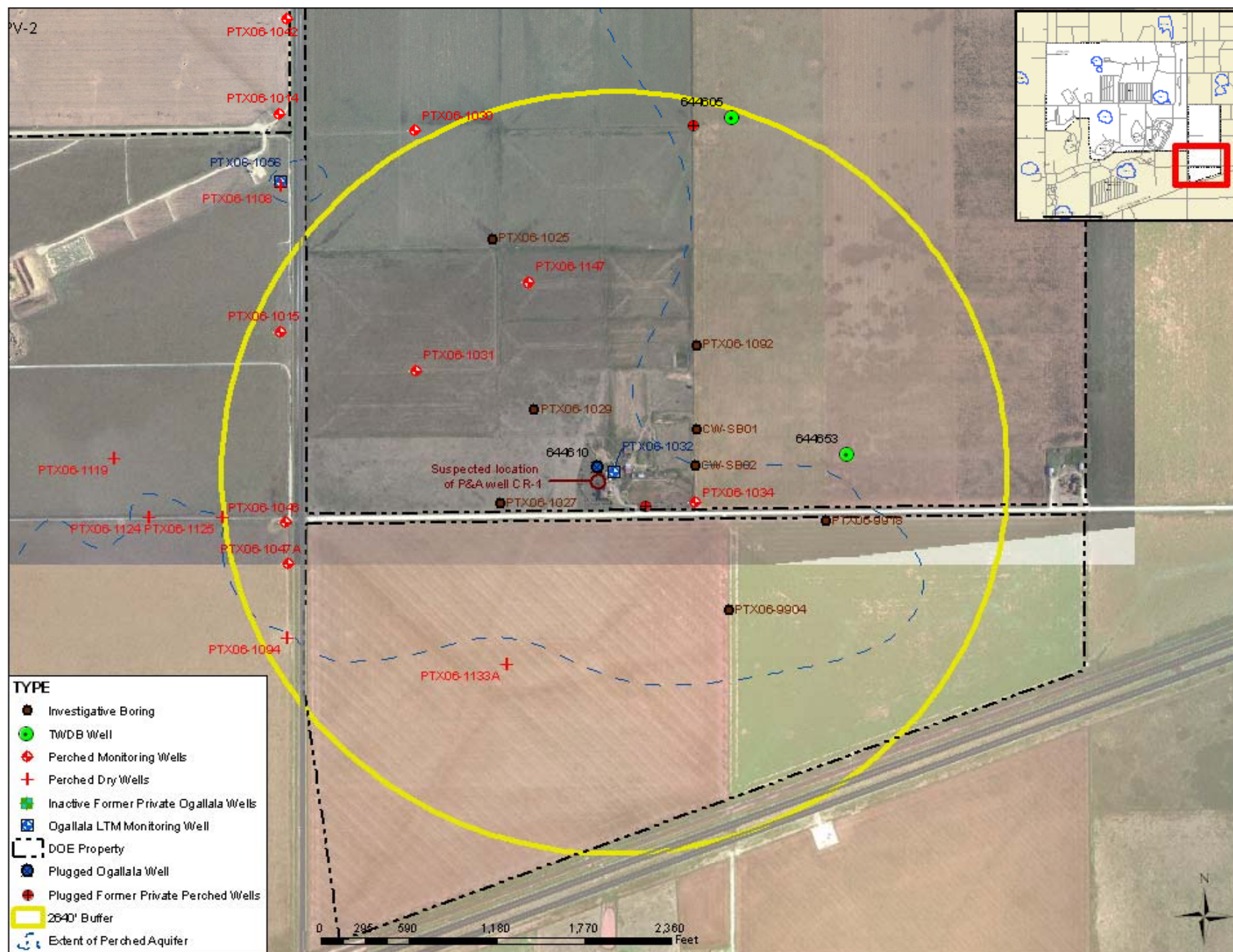
Results and Path Forward (cont.)

- During the evaluation period, the sampling frequency for PTX06-1032 was increased to monthly.
- The monthly sampling results continued to show traces of RDX and DNT4A.

Purge Test Analytical Results

| Volume purged (gal) | B&W Sampling | | TCEQ Co-sampling | |
|---------------------------|--------------|----------------|------------------|----------------|
| | RDX (ppb) | DNT4A (ppb) | RDX (ppb) | DNT4A (ppb) |
| 0 | 0.333 | 0.504 | 0.36 | 0.99 |
| 800 | 0.13(J) | 0.172(J) | 0.13 | 0.29 |
| 1600 | ND | ND | 0.066(J) | 0.16 |
| 2400 | ND | ND | 0.045(J) | 0.1 |

ND means < 0.104 ppb (sample detection limit)







PTX06-1032 Conclusions

- **Concentrations of RDX and DNT4A declined to non-detectable levels during steady pumping.**
 - Confirmed theory that annular seal was ineffective.
- **Evaluation of Wells within 0.5 miles indicated no problems other than PTX06-1032.**
- **Records on installation of PTX06-1032 decreased confidence in the annular seal.**

Actions Implemented

- **Plugged and abandoned PTX06-1032 (i.e., perforated casing at the FGZ and squeezed grout into the formation to seal) after approval by TCEQ and EPA in February 2010.**
- **Replaced PTX06-1032 with a new well (PTX06-1157) in March 2010.**
- **PTX06-1157 will be sampled in conjunction with TCEQ Region 1.**



-  Ogallala LTM Monitoring Well
-  DOE Property
-  Extent of Perched Aquifer
-  Plugged and Abandoned Monitoring Well

0 170 340 680 1,020 1,360 Feet

B&W
Pantex