Environmental Projects: Public Meeting

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Presentation Highlights

Pantex Overview

Remedial Action Status at Pantex

• Cleanup Actions
• Accomplishments for 2020
  • Pump and Treat Systems
  • In Situ Bioremediation Systems
  • Soil Vapor Extraction System
• Five-Year Review (FYR) Milestones Accomplishments
Current Pantex Remedial Action Systems
Groundwater Flow at Pantex

Perched Aquifer
- Depth: 200-300 ft bgs
- Saturated thickness: <1 to 75 ft (avg 15'-20')

Ogallala Aquifer
- Regional drinking water resource
- Depth: 400-500 ft bgs
- Saturated thickness ranges from 100-400 ft occurs 100-200 ft beneath perched aquifer

Fine Grained Zone (FGZ)
- Causes perched water to form

Playas/Ditches
- Past discharges of legacy wastes expanded our perched aquifer and contributed high explosive, solvents, perchlorate and chromium to perched groundwater
Groundwater Plumes at Pantex

- Perched Groundwater Extent as of Dec 2020
- Main contaminants:
  - High explosives (RDX)
  - Metals (Cr⁶⁺)
  - Solvents (TCE)
  - Perchlorate
- Mainly contained within DOE controlled boundaries; one area of migration offsite requiring action.
Pump and Treat Systems
Pump and Treat Systems

2020 Accomplishments:
- 103.6 Mgal treated
- 398 lbs of contaminants removed

Challenges:
- Current drip irrigation system is under repair.
- Need options for use of treated water

Current Path Forward:
- Repair on current irrigation system complete by late 2021
- New Pivot Irrigation east of FM 2373 – (construction phase initiated)
- Inject in perched groundwater near Playa 2 (late 2021)

(Since startup)
- 2.9 billion gallons treated
- 1.7 billion gallons beneficially used
- Declining water levels in areas under the influence of the systems
Pivot Sprinkler East of FM 2373

Milestones:
- Design began in Oct 2020
- Begin construction in Fall 2021
- Complete construction in 2022

System Components:
- 5 pivot sprinklers, subsurface conveyance line and lagoon pond
- SCADA system to communicate with SEPTS and P1PTS
In Situ Bioremediation Systems
In Situ Bioremediation (ISB) Systems

(1) Zone 11 ISB:
- Perchlorate and TCE reduced near or below groundwater protection standards (GWPS) at most wells

(2) Southeast ISB:
- High explosives reduced below groundwater protection standards (GWPS)
- Hexavalent chromium reduced in all wells.

(3) Southeast Extension ISB:
- Expected reduction of HE in next 2 years

2020 Accomplishments:
- Zone 11 ISB
  - 6 new ISB wells added on the northwest to further cutoff TCE plume
  - Completed one injection event including new wells
- Southeast ISB Extension
  - 4 new ISB wells added
  - Completed one injection event
Southeast Plume Remediation Systems
Offsite ISB System
Soil Vapor Extraction System
Soil Vapor Extraction System

Installed in February 2002

- Remedial goal to reduce the mass of Volatile Organic Compounds (VOCs) – highest historical concentration ~ 1845 ppmv; highest current concentration ~ 100 ppmv

Future Operations:

- Continue to evaluate declining source
- Plan to pulse system in 2020 - 2022 to evaluate potential for future closure

Total VOCs removed since startup: 21,227 lbs

2020 Accomplishments

- Toluene, 215
- Acetone, 25
- TCE, 20
- THF, 9

Acetone, 25
Toluene, 215

Modified Wells
SVE System Wells
**Ogallala Detection Monitoring**

**Monitoring Information:**
- 24 wells monitored
  - Including one well located on neighbor property (PTX06-1064, located north of Pantex property)
- All detected analytes below the Groundwater Protection Standard (GWPS)

**Challenges with Recent Detections:**
- DNT4A, a high explosive, and 1,2-DCA, a volatile organic compound, continue to be detected below GWPS at PTX06-1056
- DNT4A detect at PTX06-1076
- Continue to monitor to determine if action is needed

* DNT4A – 4-amino-2,6-dinitrotoluene  
1,2-DCA – 1,2-dichloroethane
Five Year Review Follow-Up Actions – 2020-2021

• Address the perchlorate plume that is moving into the SEPTS well field
  ▪ Continue monitoring the plume expansion and the influent to the SEPTS
  ▪ Evaluation of perchlorate treatment at the SEPTS has been performed and new perchlorate treatment vessel will be installed to address plume

• Address minor deficiencies in landfill protective soil covers
  ▪ Completed repairs and maintenance of covers on Landfill 3
  ▪ A long-term contract has been used to address minor deficiencies in the soil covers. Annual tasks are set up to address findings

• Address the TCE plume that extends west, outside of the Zone 11 ISB system
  ▪ Expanded ISB treatment to northwest (6 new ISB wells added)
Questions

Reports and slides can be found at:


Remediation Summary Booklet – available here and on our website

Fact Sheets – available here and on our website
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