

Southwest Plume Site Investigation and Path Forward

August 16, 2007



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Site Investigation Focus

To collect data on potential source units

1. SWMU 1 (Oil Land Farm)
 - Former bioremediation site
 - TCE source
2. C-720 (Maintenance Building)
 - Equipment maintenance
 - TCE source
3. Storm Sewer
 - Runs north of C-720

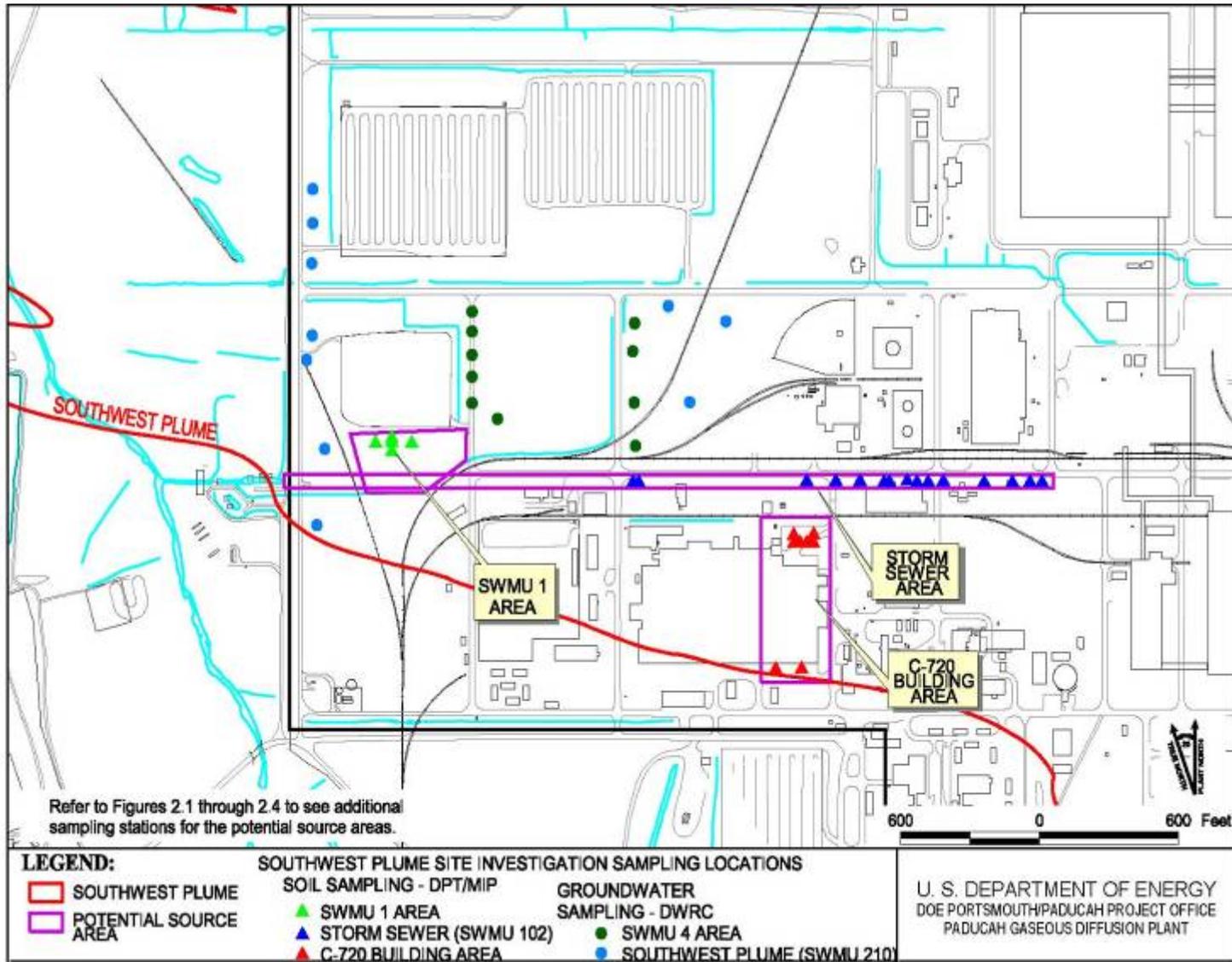
NOTE: SWMU 4 now included in Burial Grounds Operable Unit



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Site Investigation Areas



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SWMU 1 – Results and Conclusions

- Area of TCE contamination ~0.2 acre to a depth of 55 feet
 - Average concentrations in the source range up to 111 ppm (10 to 20 ft below the surface)
- Predicted TCE concentration at property boundary from this source is 1.3 ppb with variable TCE degradation rate (3.2-11.3 years) and 8.6 ppb for fixed TCE degradation rate set at zero (TCE MCL of 5 ppb)
- SWMU 1 is not a source of Tc-99 contamination



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C-720 – Results and Conclusions

- Largest TCE contamination area ~0.3 acre to a depth of 60 feet
 - Average concentrations in the source range up to 12 ppm (20 to 30 ft below surface)
- Predicted TCE concentration at property boundary from this source is 0.1 ppb with variable TCE degradation rate (3.2-11.3 years) and 2.9 ppb for fixed TCE degradation rate set at zero (TCE MCL of 5 ppb)
- C-720 is not a source of Tc-99 contamination



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Storm Sewer – Results and Conclusions

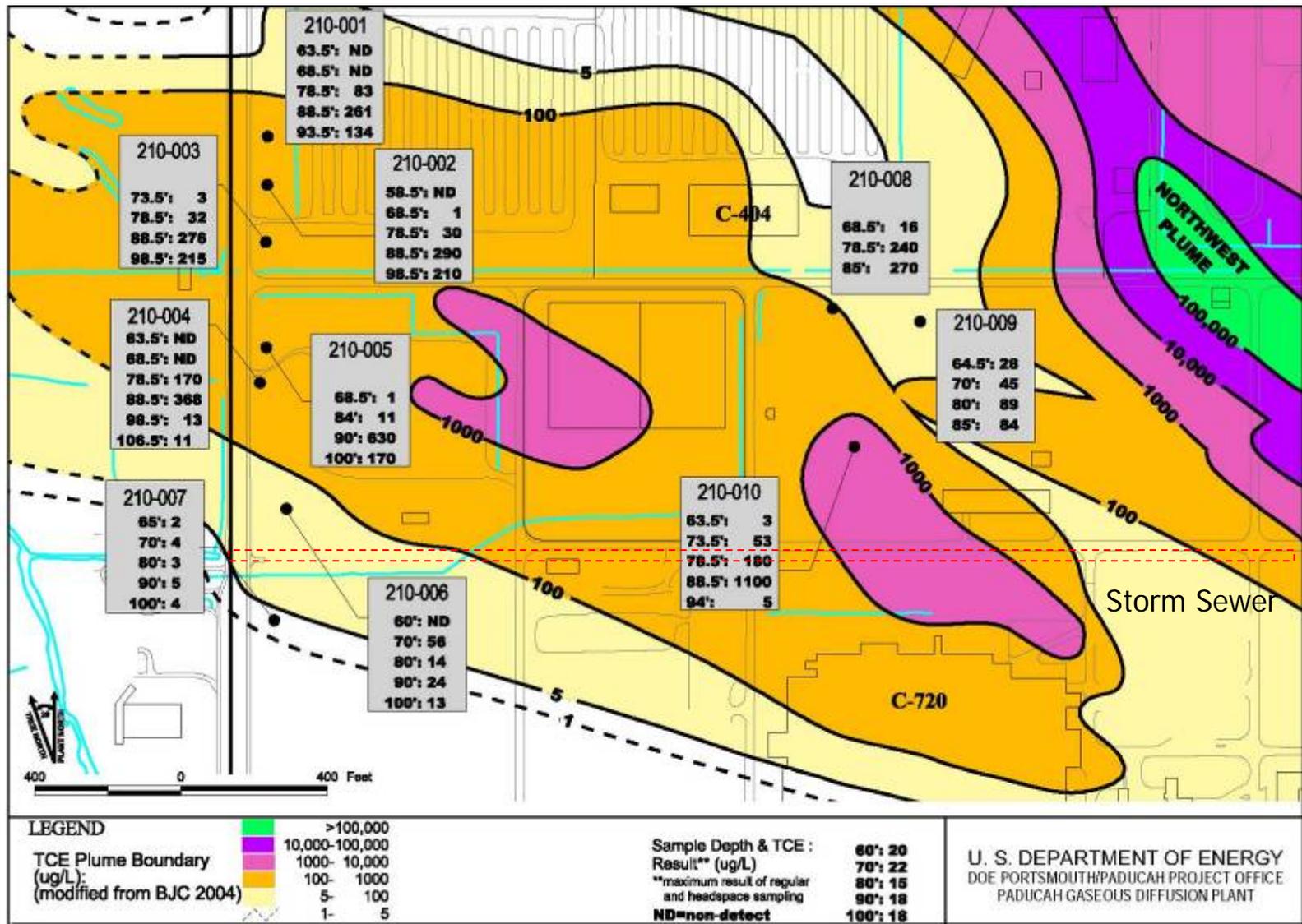
- Storm sewer structural integrity is good
- Not a source of TCE contamination
- Not a source of Tc-99 contamination



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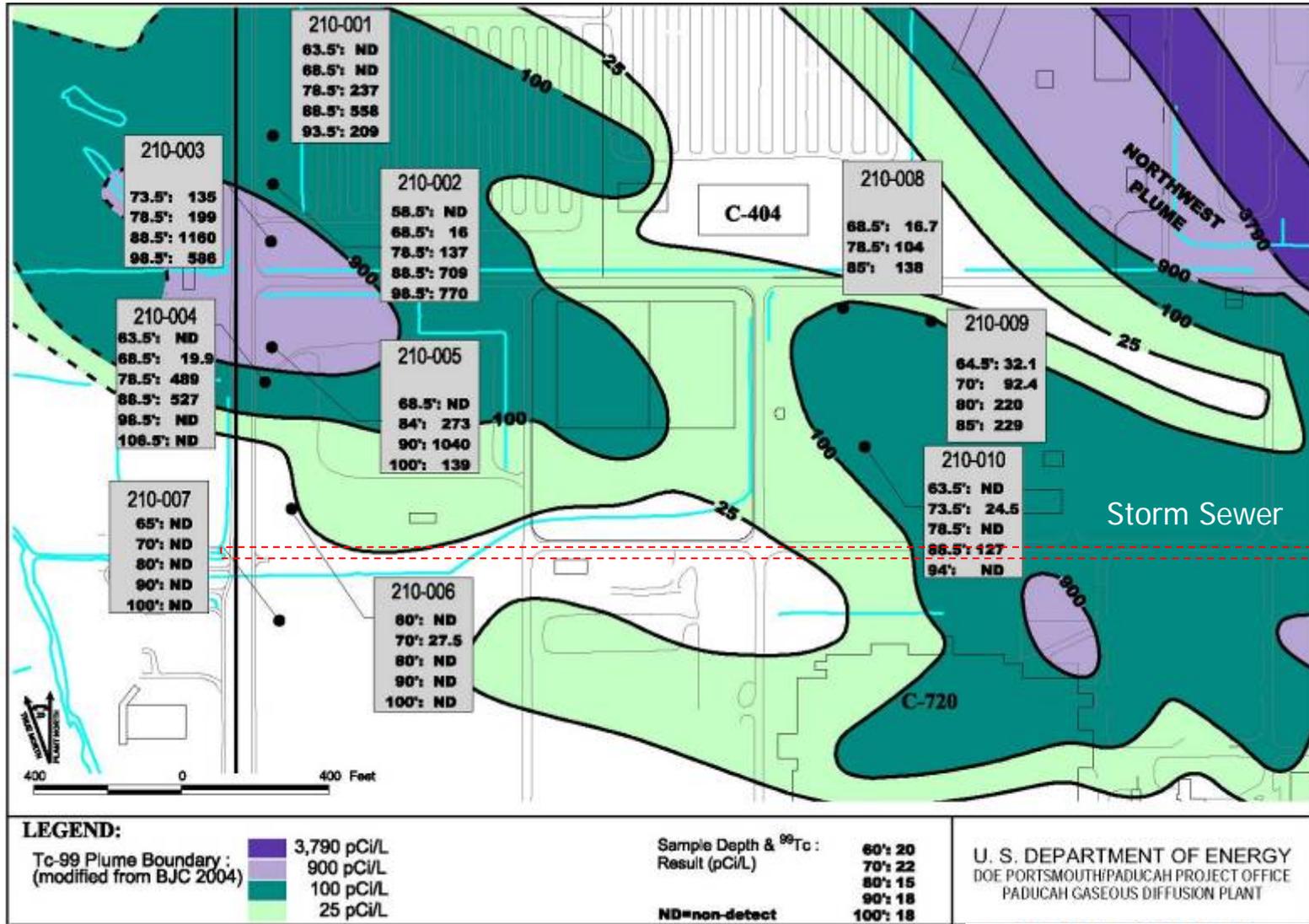
Southwest Plume – TCE



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Southwest Plume – Tc-99

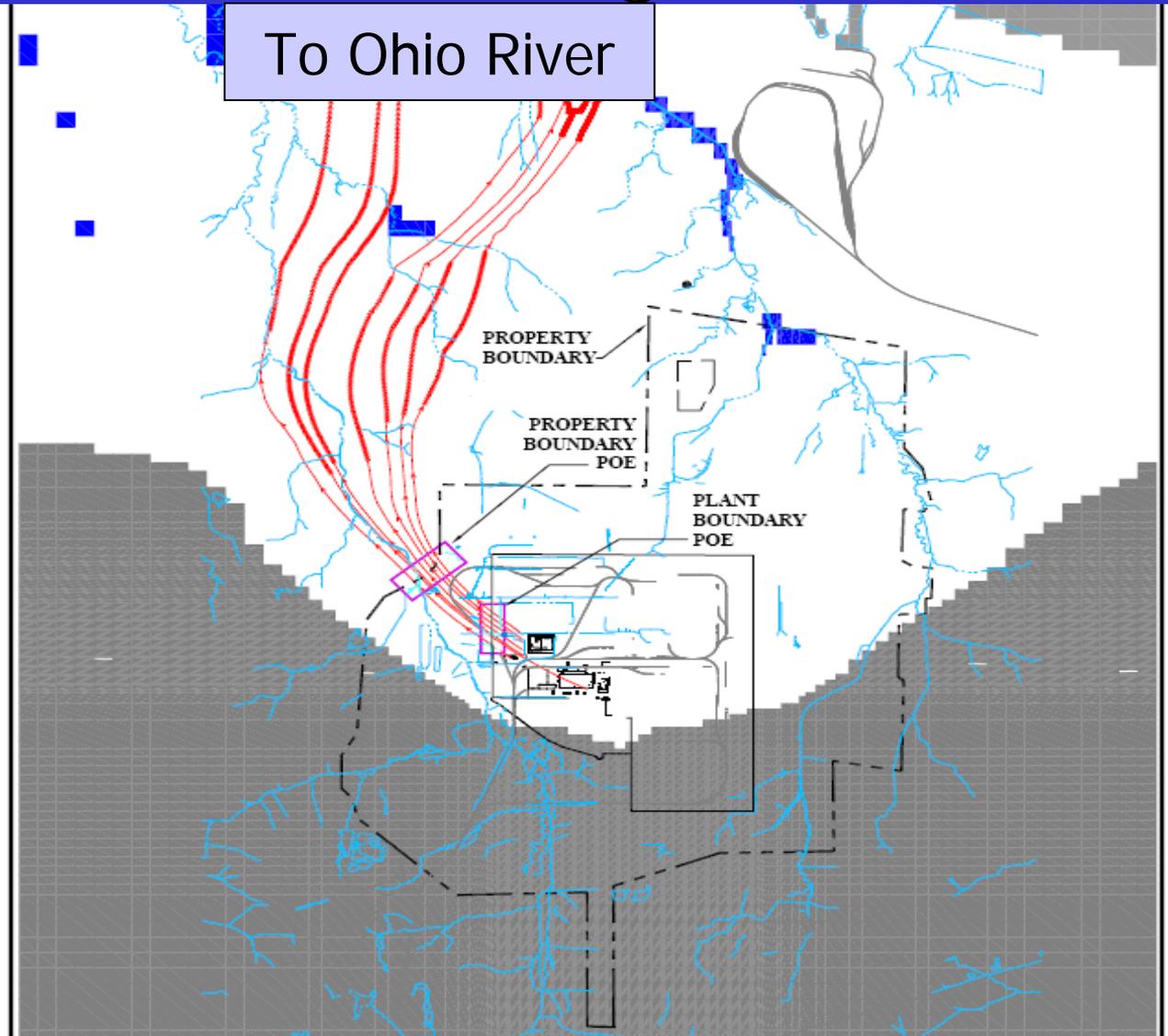


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Groundwater Modeling Results

Expected Migration Pathways for SW Plume



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SW Plume – Results and Conclusions

- Primary contaminants are TCE with lesser amounts of other VOCs and Tc-99
- SWMU 4 is the most important contributor of TCE and Tc-99 to the plume and will be evaluated under BGOU
- C-400, located upgradient of SWMU 4, may be a minor contributor to the Southwest Plume but a separate source reduction will be conducted there



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SW Plume – Results and Conclusions

- TCE concentrations at the plant fence range from non-detect to 630 ppb
 - At the property boundary, when variable TCE degradation rates (greater than 11 years) are considered, modeling indicates no exceedance of MCLs (5 ppb)
 - When degradation is not considered, worst case modeling shows TCE concentrations from 2.9 ppb to 8.6 ppb at property boundary
- Tc-99 levels at the fence range from non-detect to 1,160 pCi/L (Concentrations increase with depth)
 - Drinking water standard is 900 pCi/L
 - Levels at property boundary below drinking water standard



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Status and Schedule

Status

Currently is in Informal Dispute with several steps required to resolve

- Resolve informal dispute
- Complete regulatory review of D2/R1 SW Plume SI Report

Schedule

- D2R1 Site Investigation to be approved by Kentucky and EPA
- D1 Proposed Plan, 30 days after approval of D2R1 SI
- 45-day public comment period, following approval of D2 Proposed Plan
- Public meeting, within public comment period
- Record of Decision, 30 days following close of public comment period



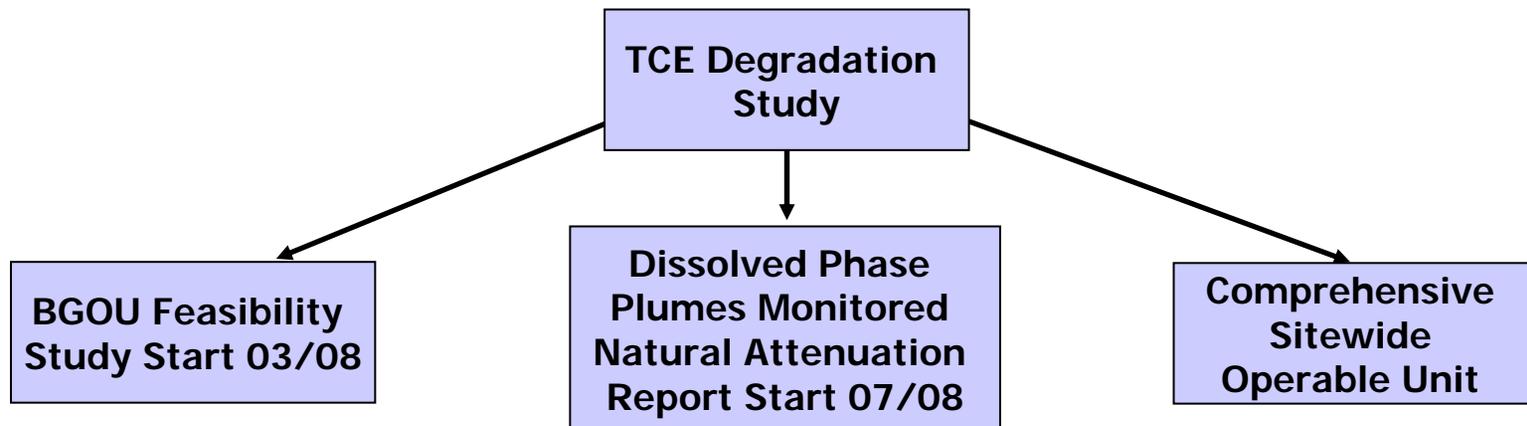
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TCE Degradation Study

Completion, December 2007

- Preparation – KRCEE, operating under a DOE grant, with technical assistance from DOE national labs, DOE headquarters and sites, Kentucky, EPA Region 4, and U.S. EPA's Groundwater Lab
- Scope – Evaluating degradation of TCE to prepare a scientific study, using sampling and modeling, that evaluates whether TCE degrades in the RGA at Paducah and at what rate
- Future impact – Data will be used to support dissolved phase plumes projects, Burial Grounds Operable Unit, and Comprehensive Sitewide Operable Unit



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SW Plume – Proposed Plan

- Southwest Plume Remedial Alternatives considered for source areas (Oil Land Farm and C-720)
 - No Action
 - No Further Action
 - Maintaining access controls
 - CERCLA 5-Year Review
 - Limited Action
 - Access and land use controls, CERCLA 5-Year Review
 - Source zone monitoring
 - Treatment of Source Areas
 - Direct heating of the source area
- Preliminary Southwest Plume Preferred Alternative
 - No Further Action
- 5-Year Review will be supported by additional monitoring



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