Horse Creek/Pine River Sediment Remediation Project

- 2001 Consent Agreement with Total Petroleum called for a SEP to remediate selected areas of Horse Creek and/or the Pine River near Alma, MI
- Goal: to maximize positive environmental impacts within the fixed dollar amount allocated o the project
Horse Creek/Pine River Sediment Remediation Project

- Sediment remediation work plan, sediment characterization study, and characterization report all completed by 2002
- Evaluation of alternatives 11/2002
- Design – early 2003
- Implementation – 2003
- Final Report
Horse Creek/Pine River Sediment Remediation Project

• Selection Criteria Used
• Technical: performance, reliability, feasibility, safety
• Environmental/human health
• Governmental and Local Concerns
• Cost
Horse Creek/Pine River Sediment Remediation Project

• Bid process:
• 8 firms contacted and asked to develop scopes of work and cost estimates based on sediment characterization data
• All asked to sample and bench test their preferred removal/dewatering approach
• Unlimited access to site provided
Horse Creek/Pine River Sediment Remediation Project

- Scope of Project:
- County Drain 52 (channelized ag drain)
- Horse Creek (County Drain 218)
- Combined length of 12,600 lineal feet
- 2.94 acre Marsh Area adjacent to HC
- 6.82 acre confluence with Pine River
Horse Creek/Pine River Sediment Remediation Project

• Sediment Volumes:
• 72,000 cubic yards total
• Drains 52/218: 4,600 yards
• Marsh: 6,600 yards
• Confluence: 32,600 yards
• 12 inch Overdredge: 28,200 yards
Horse Creek/Pine River Sediment Remediation Project

- Screening of Alternatives Process
- Containment in-situ
- Treatment in-situ
- Removal
- Both containment and treatment were screened out
Horse Creek/Pine River Sediment Remediation Project

- Removal Alternatives
- Excavation, including isolation and draining evaluated for Drains 52/218 and Marsh
- Mechanical Dredging of confluence
- Hydraulic Dredging of confluence with dewatering by filter press or geotube
Horse Creek/Pine River Sediment Remediation Project

• Costs:
  • Excavation of Drains 52/218, Marsh and Hydraulic dredging of confluence with filter press dewatering, landfill disposal: $8.95M
  • Same as above but with Geotube dewatering: $9.61M
• Timeframe: 210 days
Horse Creek/Pine River Sediment Remediation Project

• Selected Alternative:

• Excavation of Drains 52/218 and Marsh using isolation cells and landfill disposal

• Hydraulic dredging of confluence with shaker screens, hydrocyclones, polymer addition, filter press and landfill disposal