Proposed Cleanup Plan

US Smelter and Lead Superfund Site
East Chicago, Indiana
July 25, 2012
Agenda

• Introductions
• EPA’s Proposed Plan
• Question and Answer
• Opportunity for Comments
Who’s who...

- Michael Berkoff – EPA Project Manager
- Janet Pope – EPA Community Involvement Coordinator
- Steven Kaiser – EPA Site Attorney
- Rik Lantz – EPA Contractor (SulTRAC) Site Manager
- Rich Baldino – EPA Contractor Chemist and Assistant Site Manager (SulTRAC)
- Cheryl Vaccarello – EPA Contractor Community Relations (SulTRAC)
- Doug Petroff – Indiana Department of Environmental Management Project Manager
EPA’s Proposed Plan for Site Cleanup

- Site History and Background
- Description of Cleanup Alternatives
- EPA’s Selection Criteria
- EPA’s Recommended Cleanup Alternative
- Next Steps
- Public Comment Period and Resource Information
- Contact Information
US Smelter and Lead Site

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US Smelter and Lead Superfund Site
US Smelter and Lead Operable Units

• Operable Unit 1
  – Residential Area
  – Includes former Anaconda Lead/International Refining

• Operable Unit 2
  – US Smelter and Lead Facility
  – Site-wide Groundwater

• DuPont Facility – EPA Oversight Cleanup
Sources of Contamination

Historical Polluters in the Area

– USS Lead
  • Smelted lead 1920 to 1985
  • Secondary smelter ~1972

– Anaconda Lead/International Refining
  • Lead processing

– DuPont
  • Lead arsenate filter cake
  • RCRA action ongoing
EPA Work at Site

• RCRA Corrective Action 2004
  – Addressed contamination at facility
  – Limited soil cleanup outside of facility
• Removal Actions 2008, 2011
• On NPL September 2008
  – Eligible for federal money – investigation and cleanup
• Remedial Investigation/Feasibility Study (RI/FS)
  – Nature and extent of contamination
  – Evaluation of cleanup alternatives
Residential Area Investigation (OU1)
Lead-Contaminated Residential Sites Handbook

- Sampling
- Evaluation of risk
- Development of cleanup alternatives
Sampling Activities

• Nature and Extent of Contamination
  – Geographic range - “coarse grid pattern” with 3 properties sampled per block
  – Depth – collected samples down to 2 ft (previous work focused on surface)

• Samples collected late 2009, Summer 2010
Sampling Design

- Composite samples - front and back yards
- Individual samples - play areas and gardens
- Composite samples - drip lines (or gutter outfalls)
- Subset of properties - sampled for other contaminants besides metals
Investigation Conclusions

• Aerial deposition of lead
  – Generally, higher concentrations near surface

• Other contaminants of concern
  – Arsenic
    • largely collocated with lead
  – PAHs – not site related

• Contamination isolated to upper layer
  – Clean native sands ~2 feet bgs
## Remedial Action Levels for Lead and Arsenic

<table>
<thead>
<tr>
<th>Contaminant</th>
<th>OU1 Soil RAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic</td>
<td>26 mg/kg</td>
</tr>
</tbody>
</table>
| Lead        | 400 mg/kg (Residential)  
                   | 800 mg/kg (Industrial) |
Feasibility Study

Pre-remediation

- Contaminated soil
- Uncontaminated soil
- Sand
- Basement
- Sidewalk

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Alternative 1

- No Action
- EPA always includes a “no action” alternative for comparison
- Cost: $0
Pre-remediation

- Contaminated soil
- Uncontaminated soil
- Sand
- Basement
- Sidewalk
Alternative 3

- Cleanup Components
  - 1 Foot cover over contaminated soil
  - Raised flower boxes and gardens
  - 30 years of maintenance
  - Deed restrictions

- Estimated Construction Time and Costs
  - $18,200,000
  - 15 Months
Alternative 3

Flower-box has 1 foot of clean topsoil

Feet below ground surface

Sidewalk

Topsoil
Clean fill

Contaminated soil

Uncontaminated soil

Sand

Basement

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US Smelter and Lead Superfund Site
Alternative 4A

• Cleanup Components
  – Excavate soil: 400 mg/kg (lead), 26 mg/kg (arsenic)
  – Maximum depth 2 feet
  – Off-site disposal

• Estimated Construction Time and Costs
  – $28,900,000
  – 21 Months
Pre-remediation

- Contaminated soil
- Uncontaminated soil
- Sand
- Basement
- Sidewalk

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US Smelter and Lead Superfund Site
Alternative 4B

• Cleanup Components
  – Excavation to sand layer
  – Off-site disposal

• Estimated Construction Time and Costs
  – $43,800,000
  – 33 Months
Alternative 4b

Feet below ground surface

Sidewalk

Topsoil

Clean fill

Sand

Basement

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US Smelter and Lead Superfund Site
# Overview of Alternatives

<table>
<thead>
<tr>
<th>Alternatives</th>
<th>Alternative 1</th>
<th>Alternative 3</th>
<th>Alternative 4A</th>
<th>Alternative 4B</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Remedy</strong></td>
<td>No Action</td>
<td>1 Foot Cover Over Contaminated Yards</td>
<td>Excavation of Contaminated Soil to 2 ft. max</td>
<td>Excavation of Soil at Contaminated Properties to Sand Layer</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>$0</td>
<td>$18,200,000</td>
<td>$28,900,000</td>
<td>$43,800,000</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>0 months</td>
<td>15 months</td>
<td>21 months</td>
<td>33 months</td>
</tr>
</tbody>
</table>
Nine Superfund Remedy Selection Criteria

• Threshold Criteria
  1. Overall protection of human health and the environment
  2. Compliance with applicable or relevant and appropriate requirements (ARARs)

• Balancing Criteria
  3. Long-term effectiveness and permanence
  4. Reduction of toxicity, mobility or volume through treatment
  5. Short-term effectiveness
  6. Implementability
  7. Cost

• Modifying Criteria
  8. State Acceptance
  9. Community Acceptance
## Evaluation Criteria Comparison

<table>
<thead>
<tr>
<th>Evaluation Criterion</th>
<th>Alternative 1</th>
<th>Alternative 3</th>
<th>Alternative 4A</th>
<th>Alternative 4B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Protection of Human Health and the Environment</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Compliance with ARARs</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Long-term Effectiveness and Permanence</td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Reduction of Toxicity, Mobility, or Volume through Treatment</td>
<td>○</td>
<td>○</td>
<td>●</td>
<td>○</td>
</tr>
<tr>
<td>Short-term Effectiveness</td>
<td>N/A</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Implementability</td>
<td>N/A</td>
<td>○</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Alternative Cost ($ millions)</td>
<td>$0</td>
<td>$18.2</td>
<td>$28.9</td>
<td>$43.8</td>
</tr>
<tr>
<td>State Acceptance</td>
<td></td>
<td></td>
<td>The State supports the recommended alternative (Alternative 4A).</td>
<td></td>
</tr>
<tr>
<td>Community Acceptance</td>
<td></td>
<td></td>
<td>Will be evaluated after the public comment period</td>
<td></td>
</tr>
</tbody>
</table>

- ○ Fully meets criterion
- ● Partially meets criterion
- ● Does not meet criterion

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US Smelter and Lead Superfund Site
EPA’s Recommended Alternative: 4A

- Is protective of human health and the environment
- Meets state and federal regulations - ARARs
- Is implementable
- Reduces contaminant mobility
- Is effective in the short- and long-term
- Is cost-effective
- Maintains current/future residential use
- Represents best balance of evaluation criteria
Next Steps

Removal Actions
2008, 2011

Remedial Investigation Report
Presents the nature and extent
2012

Feasibility Study
Presents cleanup alternatives
2012

Proposed Plan
Presents the preferred cleanup alternative and is issued for a 30-day comment period

Record of Decision
Contains the selected remedy for a site and the Responsiveness Summary
2012

Remedial Design
Est. 2014

Remedial Action, Long-Term O&M
Est. 2014

Five-Year Review
Est. 2019

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Public Comment Period

• 30-day period: Started - July 12, 2012
  Ends - August 11, 2012

• Review Documents:
  o Online at:  http://www.epa.gov/region5/sites/
  o East Chicago Public Library
    o 2401 E. Columbus Ave
    o 1008 W. Chicago Ave
  o Region 5 EPA office
Send Public Comments to:

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