What Defines a Megasite?

- The combined extramural, actual and planned, removal and remedial action costs are greater than $50 million.
Are Federal Facilities Counted as Megasites?

• Generally, EPA has not tracked Federal Facility sites as Megasites.

• If the Megasite definition was more rigorously applied to Federal facilities, many sites would likely be classified as Megasites.
Trends in NPL Listing

Data as of: 12/16/05
Megasites by Region

189 NPL Megasites and Potential Megasites

Data as of: 12/16/05
Comparison of NPL Megasites by Site Type

NPL Megasites

- Manufacturing/Processing/Maintenance: 64 sites (41.8%)
- Waste Management: 37 sites (24.2%)
- Mining: 22 sites (14.4%)
- Recycling: 12 sites (7.8%)
- Multiple*: 10 sites (6.5%)
- Other**: 8 sites (5.2%)

*Multiple: Sites that fall in more than one site type
**Other: Includes categories such as ground water plume; military; research, development, and testing facilities; transportation, etc.

CERCLIS Data as of: 12/20/05
Megasites in the Pipeline

NPL Megasites by Pipeline Stages

Data as of: 12/16/05
Remaining NPL Sites are More Complex than Construction Complete Sites

966 Construction Complete Sites
- Federal Facilities: 48 (5%)
- Megasites: 49 (5%)
- Other NPL Sites: 869 (90%)

581 Non-Construction Complete Sites
- Federal Facilities: 125 (22%)
- Megasites: 102 (18%)
- Other NPL Sites: 354 (60%)

End of FY 2005 CERCLIS data for Final and Deleted NPL sites
Remaining Fund-lead Sites are More Costly than Construction Complete Sites

Average Actual Plus Projected Construction Costs Per Site (Dollars in Millions)

Non-Megasites
- Construction Complete: $8
- Not Construction Complete: $14

Megasites
- Construction Complete: $67
- Not Construction Complete: $114

End of FY 2005 CERCLIS data for Final and Deleted NPL Sites
New Bedford Harbor

Given:
- Volume 880,000 cubic yards
- 2004 unit cost of dredging is $300/cubic yard

Assumption:
- Inflation at 3% per year to 2004 unit cost

<table>
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<th>Annual Funding</th>
<th>Years to Complete</th>
<th>Cost to Complete</th>
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</table>
1. States have identified ~ 63,000 known and suspected sites.

2. States have identified ~ 23,000 sites as needing attention.
What EPA is Doing Now to Address Megasites

- Address human health risks first.

- Review remedies and annual progress; provide advice to site managers on the largest or most complex contaminated sediment sites where a remedy has not yet been selected (EPA Contaminated Sediments Technical Advisory Group).

- Implement Hard Rock mining site strategy.

- Conduct demonstration pilot projects for urban river cleanup and restoration.
How Does Research Fit Into Megasite Work?

EPA Superfund Research Needs for Mining, Sediment, Groundwater Sites

Mining Sites

- Site characterization tools for acid mine drainage.

- Understanding of bioavailability and bioaccessibility of arsenic in soil.

- Innovative and cost-effective remediation technologies for mining wastes, including uranium and asbestos-containing mine tailings.
How Does Research Fit Into Megasite Work? (cont’d)

**Groundwater**

- Economical detection methods for emerging contaminants in groundwater, such as perchlorate and 1,4-dioxane.

- Real-time and cost-effective field characterization and monitoring methods for ground water contaminants.

- Characterization tools for evaluating vapor intrusion pathways from groundwater.

- Remediation technologies for DNAPL chlorinated solvents.
Sediment Sites

- Validation of surface water/sediment fate and transport and food chain models.

- Methods to accurately evaluate releases from upland sources and recontamination of sediments.

- In-situ treatment and innovative containment technologies for contaminated sediment.

- Method for evaluating impacts on ecological and human health risk from contaminant releases and sediment residuals from dredging.
Chemical Specific Needs

- Toxicity information for toxaphene congeners and their degradation products and associated information for human health.

- Analytical methods to determine speciation of arsenic, chromium, and mercury in soils, sediments, water and biota.

- Asbestos toxicity, sampling and analytical methods.
• Megasites have become the main focus for EPA’s Superfund Program.

• Prolonging construction completion results in greater total cleanup costs.

• EPA encourages the SBRP to translate research findings quickly into methods and technologies that improve the efficiency of site characterization, remediation and achievement of cleanup goals.