

Overview of Soil Remediation Programs in the United States

September 29-30, 2005

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Office of Superfund Remediation and Technology
Innovation

USEPA

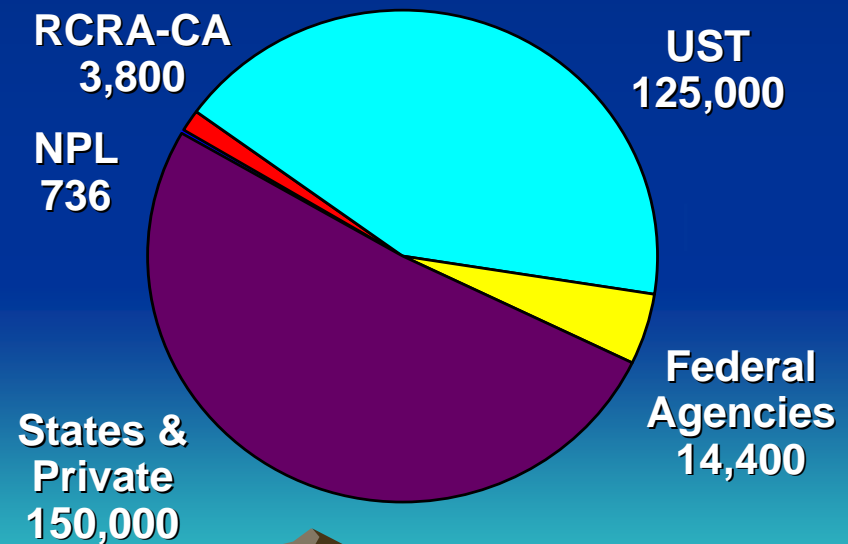
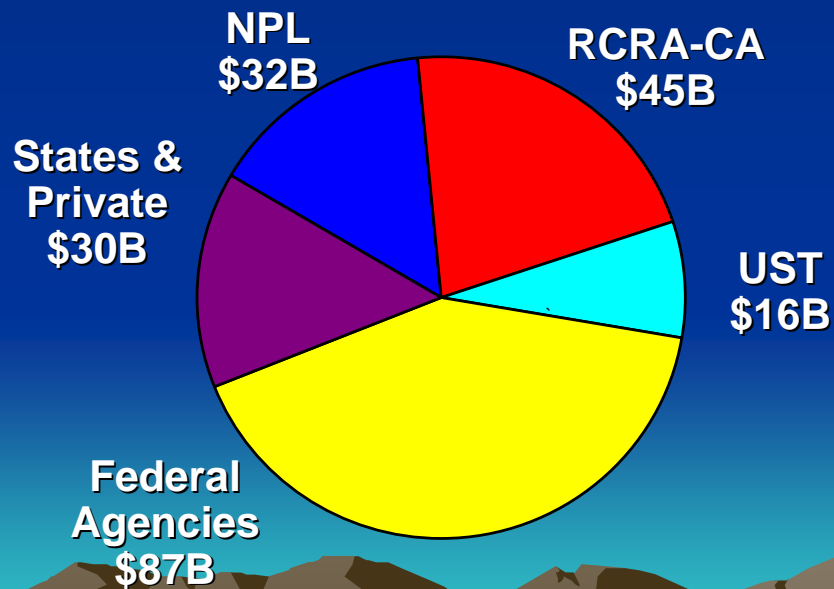
Major Remediation Programs for Land in US

- Abandoned Sites (Superfund)
- Operating facilities (Corrective Action)
- Underground Storage Tanks (UST)
- Federal Agencies (Energy, Defense, Interior...)
- Other State, Brownfields, private programs

Estimated Site Numbers and Cleanup Costs (2004-2033)

Total Cost = \$209 Billion

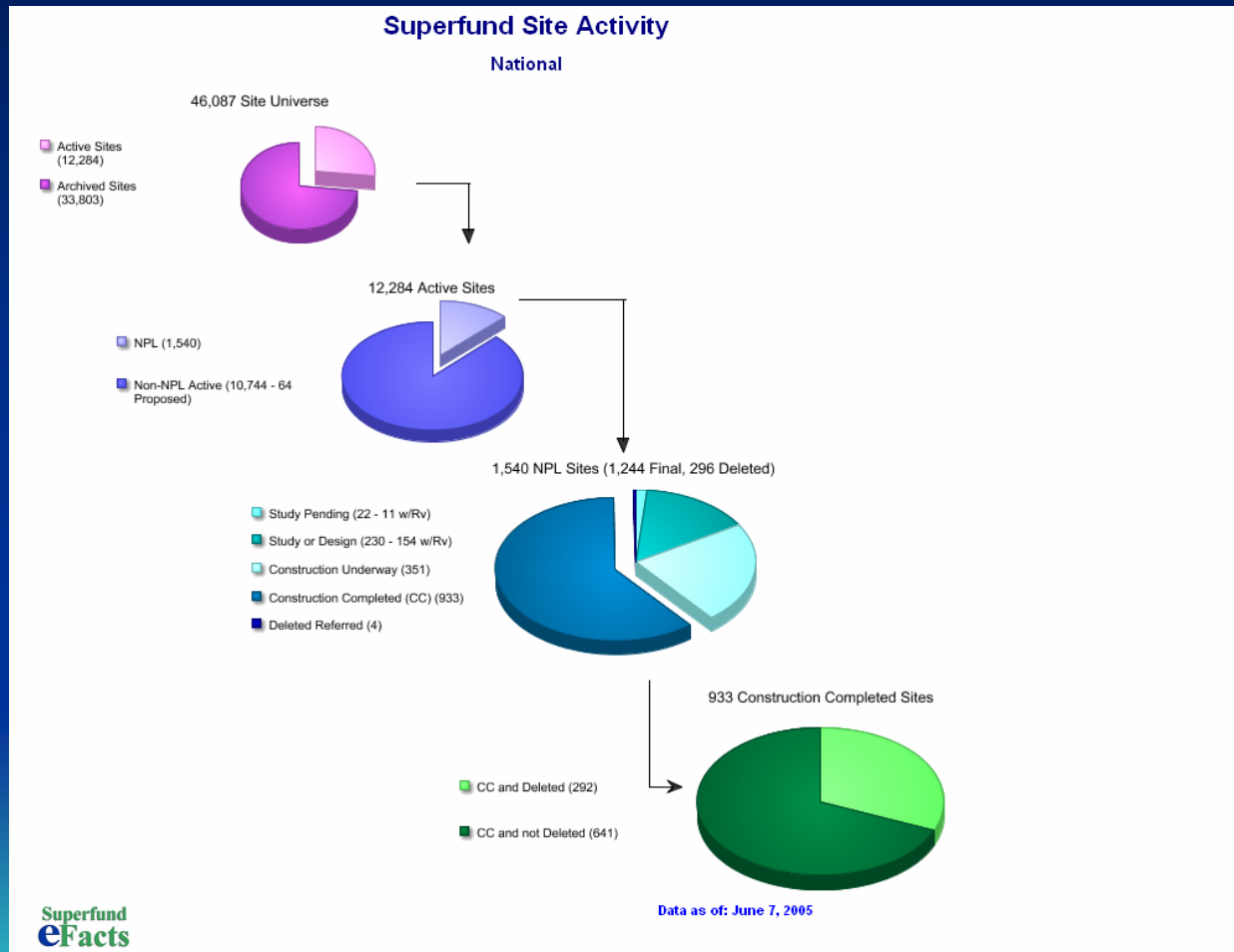
Total Sites = 294,000



Estimated Site Numbers and Cleanup Costs (2004-2033)

US Program	Number of Sites	Cleanup Costs (US dollars)
Superfund NPL	686 – 946	\$24 – 50 B
RCRA facilities (CA)	3,800	\$31 – 58 B
RCRA, tanks (UST)	95,000 – 155,000	\$12 – 19 B
Dept. of Defense	6,400	\$33 B
Dept. of Energy	5,000	\$35 B
Civilian Agencies	3,000	\$15 – 22 B
States & Private	120,000 – 180,000	\$ 24 – 36 B
Total Range	235,000 – 355,000	\$174 – 253 B
Middle Value	294,000	\$209 B

NPL Sites Move Toward Completion



Measuring Progress: Superfund Goals for 2008

- **Construction complete:** 1086/1498 sites (72%).
- **Final site assessment decisions:** 41,700.
- Sites with **human exposure controlled:** 1259/1494 (84%).
- Sites with **groundwater migration controlled:** 832/1275 (65%).
- Sites with **final remedies** decided: 1223/1498 (82%).

Performance Goals for Superfund

Measure	FY02 Cumulative	FY03 Target	FY03 Actual	FY03 Cumulative	FY04 Target	FY04 Actual	FY04 Cumulative	FY05 Target	FY05 Actual	FY06 Target	FY07 Target	FY08 Target in Strategic Plan
Construction Complete	846 / 1,498 NPL sites (56%)	40	40	886 / 1,498 NPL sites (59%)	40	40	926 / 1,498 NPL sites (62%)	40	22	40	40	1,086
Final Site Assessment Decisions	37,669	475	917	38,586	500	548	39,134	500	510	500	500	41,086
Human Exposures Under Control	1,199 / 1,495 HE NPL sites (80%)	10	28	1,227 / 1,493 HE NPL sites (82%) <i>Note baseline adjustment</i>	10	15	1,242 / 1,493 HE NPL sites (83%)	10	31	10	10	1,259
Ground Water Migration Under Control	772 / 1,275 GW NPL sites (61%)	10	54	826 / 1,275 GW NPL sites (65%)	10	18	875 / 1,306 GW NPL sites (67%) <i>Note baseline adjustment</i>	10	26	10	10	832
Final Remedy Selections	1,103 / 1,498 NPL sites (74%)	None	None	973 / 1,498 NPL sites (65%) <i>Note correction to cumulative baseline</i>	20	31	1,004 / 1,498 NPL sites (67%)	20	17	20	20	1,093

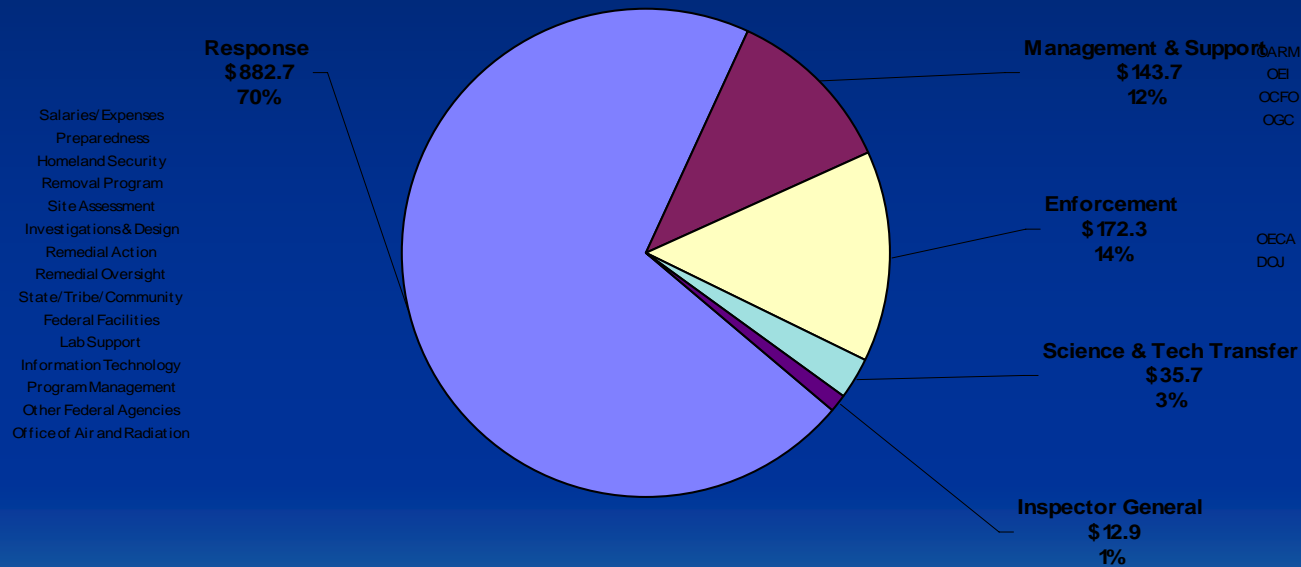
Superfund, Brownfields, ATSDR, and NIEHS Funding

FY 1993 - 2005

Program Funding in Constant 2004 dollars (dollars in Millions)													
	Fiscal years												
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Superfund	\$1,797	\$1,654	\$1,437	\$1,377	\$1,403	\$1,431	\$1,406	\$1,275	\$1,247	\$1,220	\$1,290	\$1,258	\$1,223
Brownfields	---	1	2	9	42	100	100	100	96	99	170	170	161
ATSDR	73	80	81	68	72	83	84	76	79	81	84	73	75
NIEHS	64	64	69	60	61	68	70	68	67	73	78	78	78
Total	\$1,934	\$1,799	\$1,589	\$1,514	\$1,578	\$1,682	\$1,660	\$1,519	\$1,489	\$1,473	\$1,622	\$1,579	\$1,537

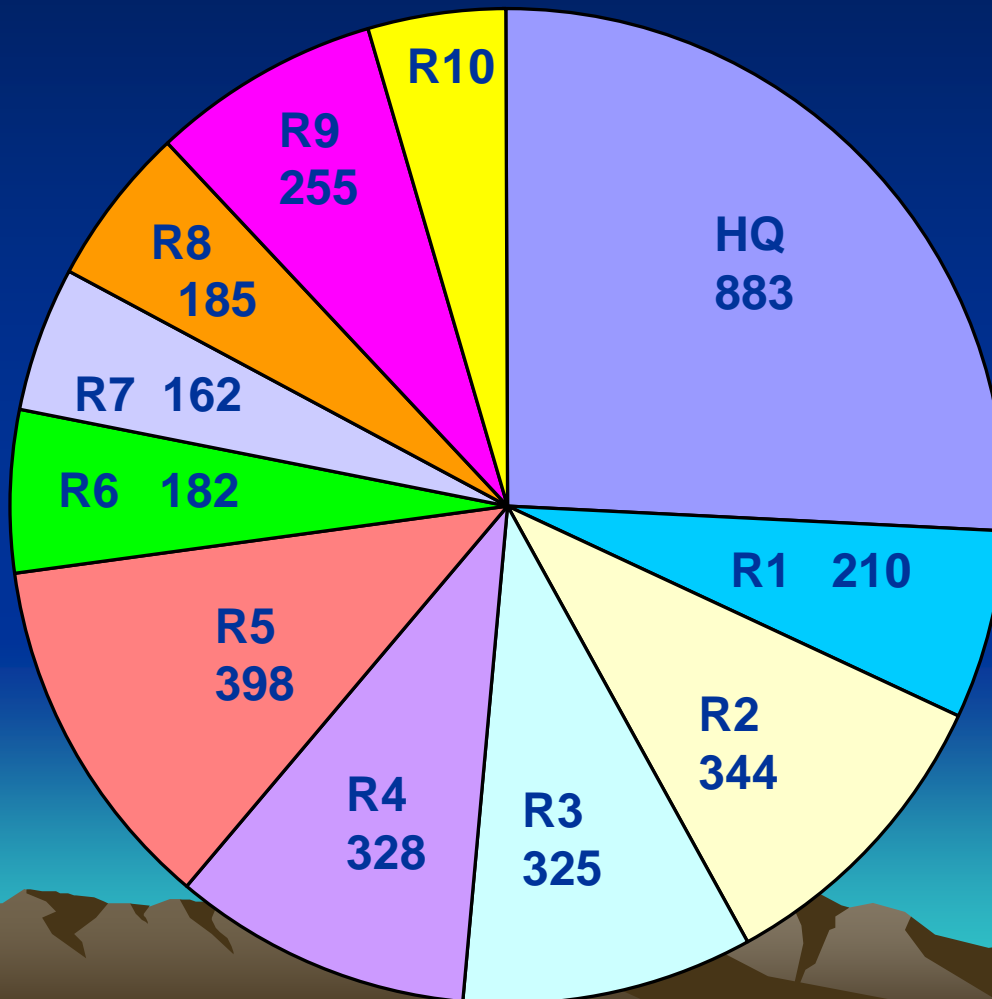
FY 2005 Superfund Budget By Function

Total: \$1247.3 Million



Source: (BAS Operating Plan, \$ in Millions)

Superfund Employees (FY 2003)

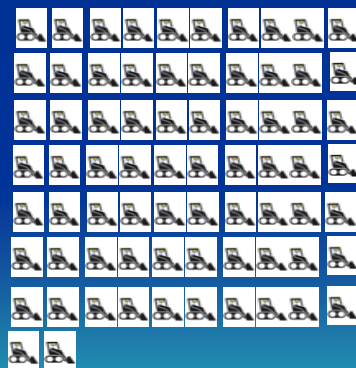


Actual Full-Time Employee
"Equivalents"
(Total: 3,425)

Over 50% of Budget For Ongoing Construction Is Dedicated to Large, Complex Projects

Of \$193M Obligated in FY 2004

\$83M for 72 Projects



\$110M for 9 Projects



Potentially Responsible Parties and Federal Agencies

- PRP commitments greater than \$22.8 billion (FY 2004)
 - Enforcement action at 98% of non-federal possible PRP sites in FY 2004
 - \$8 of response for every \$1 spent on enforcement
 - Response commitments totaled \$18.7 billion
 - Cost Recovery and Special Accounts commitments totaled \$4.1 billion
- DOD / DOE commit \$9 billion / yr in FY 2005
 - DOE \$7.4B
 - DoD \$1.6 B (\$1.3B Defense Environmental Restoration Act and \$0.3B Base Relocation and Closure (BRAC))

Reuse Integrated into Decision Making at Superfund sites

- Reasonably anticipated future use of land is critical consideration. (245,000 acres at 472 sites ready for reuse)
- “Ready for Reuse” determinations relieve market concerns.
- “Return to Use Initiative” attempts to remove barriers to reuse.
- Third parties key:
 - U.S. Soccer Federation, National Academy of Model Aeronautics (NAMA);
 - Help local communities explore opportunities for recreational reuse at sites;
 - Can provide communities with services such as mowing, maintenance of fences, and general surveillance that helps maintain protectiveness.

Bowers Landfill

(before/during)



Source: U.S. EPA

The East Ditch, located at the south end of Bowers Landfill, contained discarded tires and debris.



Source: U.S. EPA

1993: After excavating soil, the west field was graded and seeded to support wetlands.

Bowers Landfill (after)



Source: U.S. EPA

1997: Wetlands that were created during the cleanup flourish with a variety of plants and wildlife.

Luminous Processors (before)



Source: U.S. EPA

Using funds from Superfund, workers from the State of Georgia cleanup the radioactive contamination at the site in 1982.

Luminous Processors (after)



Source: U.S. EPA

A McDonald's fast food restaurant and playground now occupies the former hazardous waste site, providing many positive benefits to the community.

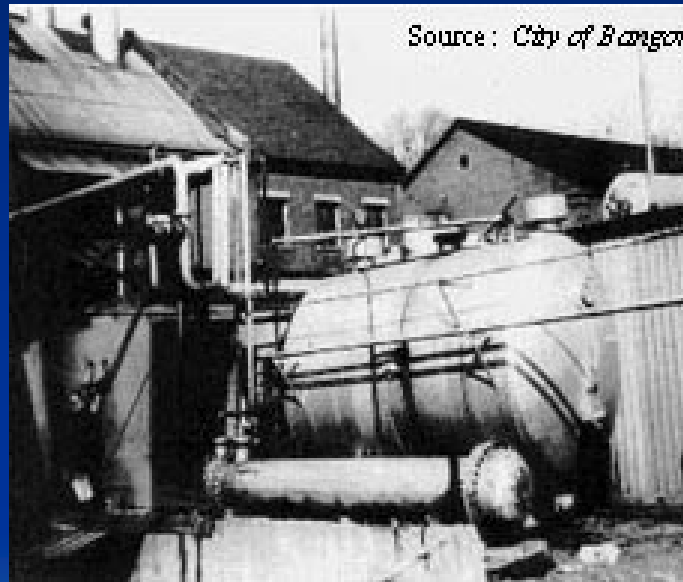
Old Works /East Anaconda Smelter (before)



Old Works /East Anaconda Smelter (after)



Bangor Gas Works (before)



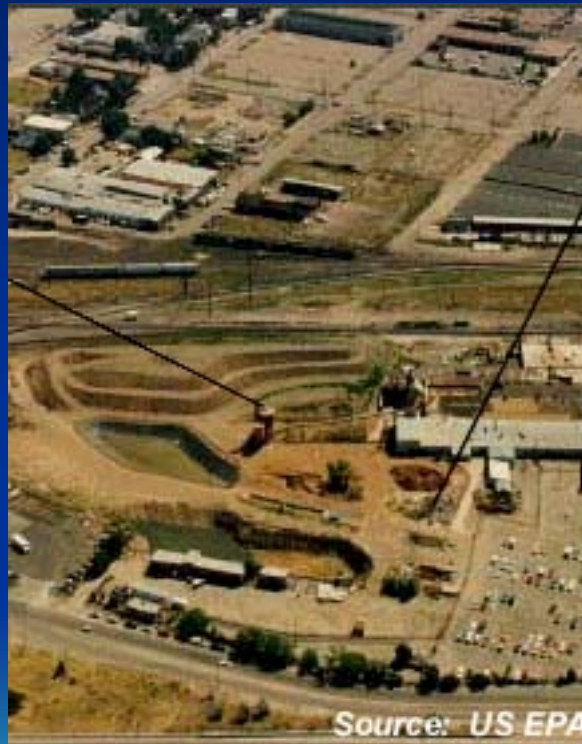
Source: *City of Bangor*

Bangor Gas Works (after)



Denver Radium

(before)



Denver Radium (after)



For Further Information

- Superfund Home Page
 - (<http://www.epa.gov/superfund/>)
- Superfund Risk Assessment
 - (www.epa.gov/superfund/programs/risk/index.htm)
- Superfund Cleanup Decisions
 - (www.epa.gov/superfund/action/guidance/remedy/index.htm)
- Operating Facilities, RCRA Corrective Action
 - (www.epa.gov/epaoswer/hazwaste/ca/index.htm)
- Underground Storage Tanks
 - (www.epa.gov/oust/directiv/od961017.htm)
- Brownfields Program
 - (www.epa.gov/brownfields)

Contact Information

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