ACTION TEAM PROGRESS REPORT

Technologies Promoting the Sustainable Use of Contaminated Sediments and the Beneficial Use of Waste-Related Materials

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Team Membership:
EPA Region 2 Dredged Material Management Team, RCRA Programs Branch, Hazardous Substances Technical Liaison,, **Region 3** Environmental Assessment and Innovative Division, **Region 5** Superfund, **Great Lakes National Program Office**, **OSWER, ORD NRML**, **NJ Department of Transportation** – Office of Maritime Resources, **US Department of Energy** – Brookhaven National Laboratory, **University of New Hampshire** – Center for Contaminated Sediment Research, **Michigan Department of Environmental Quality** – Hazardous Waste Technical Support Unit, **BASF Corporation** – Department of Ecology and Security

Environmental Problem:
Contaminated sediments on the order of many millions of cubic yards pose a national problem both in navigational, Superfund and solid waste programs. Remedial options are often controversial, as disposal and standard treatment options can be costly, require long-term monitoring programs, result in human and ecological exposures, and may not be widely accepted by local communities. Since 1994, Region 2 has been working with their federal and state partners (DOE, USACE) NJDOT) on innovative sediment decontamination technologies with beneficial use applications. What makes these technologies innovative is the production of beneficial use end-products such as cement, soils, and light-weight aggregates. An ETC action team was formed led by Region 2 to take this concept one step further in creating a sustainable recycling program and an efficient method of materials handling for other media such as municipal solid waste, construction debris, sewage sludge, and even medical and electronic waste. These additional treatment uses would allow EPA Programs such as Superfund, RCRA, Dredged Material, and GLNPO to have cross-program applications resulting in an integrated approach to material management.

Technology Challenges:
Utilizing existing cross-program applications, promote more efficient environmental and economic revitalization of contaminated sites by building a sustainable multi-media recycling program based on innovative decontamination technologies that manufacture high-value, beneficial use products. EPA, in conjunction with their partners, has realized that these technologies form the basis of a holistic, cross-program management and recycling approach for contaminated sediment sites in that they address and consider dredged material management, environmental restoration and revitalization, and

environmental sustainability. In addition, when coupled with economic drivers, these sediment decontamination technologies could contribute to the revitalization and redevelopment of communities by using the beneficial use products, derived from previously contaminated site sediment, directly at the sites.

FY'06 Accomplishments:
Complete processing (May 2006) of 20,000 cubic yards of NY/NJ Harbor navigational dredged material and 5,000 cubic yards of Superfund Passaic River, NJ sediment utilizing a sediment washing process with manufactured soil as a beneficial use.

Integrate the EPA innovative sediment decontamination program with the USACE New England Division, CT Department of Environmental Protection and the Bridgeport, CT Port Authority.

Identify innovative cost-effective technologies that can be implemented using a treatment train concept (materials handling, technology, post-treated beneficial use applications) for multi-media processing. Support development of innovative emerging technologies. Identify EPA cross - programs that can utilize different media and technologies.

Identify potential partners with industrial cross-media residuals which could be combined in the sediment feedstock.

Identify marketable beneficial end uses.

Identify and provide links between industrial residual producers, sources of dredged materials/contaminated sediments, treatment technologies, markets for end users, and venture capitalists for developing a long-term self-sustaining environmental manufacturing industry.

Pursue partnership opportunities (as appropriate) with the Great Lakes Dredging Team, National, and Regional Dredging Teams, EPA Region 5 Center of Excellence for Sustainable Residual Management, the Great Lakes Commission, and GLNPO.

Identify regulatory challenges to implement and permit these technologies with beneficial use applications. Work with appropriate offices to develop regulatory / permitting strategies to overcome these challenges.

Conceptualize and develop a working model for a regional multi-use processing facility utilizing different technologies and beneficial end uses.

FY'07 Objectives:
Commence start-up (November 2007) of a thermal-chemical rotary kiln process for Newark Bay, NJ navigation sediment and Superfund Passaic River, NJ sediment. Beneficial use application is construction grade cement. This system has the capability of utilizing additional feedstock for steam recovery and waste to energy generation.

Continue working on all components of FY'07