UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Signed September 3, 2002

MEMORANDUM

SUBJECT: CSTAG Recommendations on the Ashland/Northern States Power Lakefront Superfund Site

FROM: Stephen J. Ells **/s/ Stephen J. Ells**
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Contaminated Sediments Technical Advisory Group (CSTAG)

TO: Jon Peterson, RPM
Region 5

Background

OSWER Directive 9285.6-08, *Principles for Managing Contaminated Sediment Risks at Hazardous Waste Sites* (Feb. 12, 2002), established the CSTAG as a technical advisory group "that will monitor the progress of and provide advice regarding a small number of large, complex, or controversial contaminated sediment Superfund sites." The main purpose of the CSTAG is to help Regional site managers (*i.e.*, RPMs and OSCs) of selected large, complex, or controversial sediment sites appropriately manage their sites throughout the Superfund process in accordance with the 11 risk management principles set forth in the OSWER Directive. CSTAG membership consists of one representative per Region, two from the Office of Research and Development, one from the Office of Water, and two from the Office of Emergency and Remedial Response.

Brief Description of the Site

The Ashland/Northern States Power Lakefront site is located in Ashland, Ashland County, Wisconsin in northwestern Wisconsin on the shore of Chequamegon Bay, a large bay in Lake Superior. Ashland County has a population of 16,866. Nearby communities include the Bad River Indian Reservation (1,400), Sanborn (1,092), and White River (796). The contaminated properties include a former manufactured gas plant (MGP) owned by Northern States Power Company (now referred to as Excel Energy), Wisconsin Central Limited Railroad corridor, the City of Ashland's old waste water treatment plant/Kreher Park, and approximately 10 acres of contaminated sediments in Chequamegon Bay. During the operation of the MGP, residual coal tars and oils were produced as a by-product from the manufacture of gas from coal. Records indicate that the residual MGP wastes such as coal tar and oils were discharged with the waste water. The CSTAG focused its review on the sediment contamination in Chequamegon Bay and upgradient sources from activities conducted by the former manufactured gas plant.

Chequamegon Bay is a very popular area for recreational fishing and boating, and there is a marina adjacent to the contaminated site. The Common Tern, a state endangered species, nests

in Chequamegon Bay. The shoreline immediately in front of Kreher Park consists mostly of large rocks, installed as riprap, to protect the integrity of the shoreline. Yellow signs are placed every 100 feet to warn the public about contaminated sediments. Although the Ashland Water Utility draws water from the bay, it is approximately 2000 feet offshore and to the east of the Kreher Park area, *i.e.*, not expected to be impacted by the contamination.

The subsurface soil, groundwater, lake sediments and surface waters at the Ashland Lakefront/NSP site are contaminated by varying concentrations of complex mixtures of organic chemicals that are typical of a former MGP site. In 1998, the Wisconsin Department of Natural Resources assessed the contamination and discovered that Chequamegon Bay sediments immediately off of Kreher Park contain volatile organic compounds (VOCs), polyaromatic hydrocarbons (PAHs), and oils and tars existing as dense non-aqueous phase liquids (DNAPLs). Disturbance of these sediments releases oils and tars to the water column and surface, causing a slick to form on the water surface. In 1995 and 1999, Excel Energy conducted investigations to further define the area of contamination. The presence of VOCs associated with coal tar wastes was confirmed.

The CSTAG visited the site and met with the State of Wisconsin and EPA RPMs from July 15 to 17, 2002. Six stakeholder groups associated with the Superfund site were invited to participate in the meeting and made short presentations to the CSTAG. They were: 1) Excel Energy and their consultants, URS; 2) the League of Women Voters; 3) the Red Cliff Band of Lake Superior Chippewa Indians; 4) the City of Ashland; 5) the Sigurd Olson Institute of Environmental Studies; and 6) the Bad River Indian tribe.

CSTAG Recommendations

Based upon our site visit, our review of the site information provided to us, and the oral presentations made by several stakeholders, the CSTAG is making the following recommendations to the EPA site RPM on how to more fully address the 11 principles. The CSTAG expects that the EPA RPM will work with the State RPM in determining how best to consider these recommendations as the investigations continue, as the conceptual site model is refined, and as remedial alternatives are developed and evaluated. The EPA RPM should send a short written response to these recommendations to the CSTAG co-chairs within 60 days.

Principle #1, Control Sources Early

- Many potential sources appear to have been well characterized and adequately identified. However, the CSTAG recommends further characterization of the free product and the dissolved phase of the contaminants in the deeper aquifer.
- Evaluate the potential benefits of addressing upland sources before sediment remediation.
- Consider consulting with technical experts at EPA's National Risk Management Research Laboratory in Ada, OK regarding DNAPL control/removal technologies and methods for characterizing the deeper aquifer.

Principle #2, Involve the Community Early and Often

- Overall, the project team has encouraged early and meaningful community involvement and such practices should continue, especially with regard to decision criteria and remedial technologies, including environmental dredging and capping.
- Update the Human Health Risk Assessment using EPA Superfund guidance and current site-specific data (*e.g.*, consumption rates and frequency of dermal contact).

- Discuss fish consumption concerns with affected tribes and incorporate changes where appropriate. Consider ways to limit any adverse impacts from the remedial action on tourism and public use of the waterfront.
- Explore whether additional stakeholders should be involved (*e.g.*, public service commission).

Principle #3, Coordinate with States, Local Governments, Tribes, and Natural Resource Trustees

- Increase involvement of natural resource trustees throughout the process.

Principle #4, Develop and Refine a Conceptual Site Model that Considers Sediment Stability

- Evaluate sediment stability using core data and depositional pattern data. Use all available data (*i.e.*, 1998 and 2001 data).
- Investigate the effect of ice scour/movement on sediment stability and mixing. Literature reviews and possible tracer tests should be evaluated.
- Evaluate the effects of proposed future waterbody uses (*e.g.*, propeller wash, anchoring) on sediment stability.

Principle #5, Use an Iterative Approach in a Risk-Based Framework

- Document how a phased approach to the sediment remedy is being considered.
- Evaluate addressing the sediment portion of the site in one season to minimize impacts on the community.
- Consider an iterative approach to cleanup, including hot spot removal.

Principle #6, Carefully Evaluate the Assumptions and Uncertainties Associated with Site Characterization Data and Site Models

- Validate bioaccumulation data and use existing fish tissue data where possible. Access resources of EPA's National Health and Environmental Effects Research Laboratories at Narragansett, RI and Duluth MN with regard to toxicological effects and fingerprinting of PAHs and to bioaccumulation modeling expertise.

Principle #7, Select Site-specific, Project-specific, and Sediment-specific Risk Management Approaches that will Achieve Risk-based Goals

- Evaluate Monitored Natural Recovery (MNR) in the Feasibility Study.
- Evaluate combinations of various technologies in the Feasibility Study (*e.g.*, dredge and cap, dredge and MNR).
- Consider installing a temporary breakwall (*e.g.*, sheet piling, water dike, silt curtain) and completing remediation in one season.
- Consider performing a sensitivity analysis to compare a range of cleanup numbers, dredging technologies, and the implications on the sediment cleanup.

Principle #8, Ensure that Sediment Cleanup Levels are Clearly Tied to Risk Management Goals

- Develop more site-specific Remedial Action Objectives (RAOs) and clearly articulate RAOs for protecting benthos, fish, and for recreational users.
- Discuss the uncertainties associated with the derivation of cleanup goals and how they were addressed.
- Solicit additional technical support from researchers at the Duluth Laboratory in using the toxicity data to select final cleanup goals.
- Reevaluate ecological significance of toxicological tests used to develop cleanup goals.
- Update the ecological risk information based on current research on toxicity to organisms in the Great Lakes.

Principle #9, Maximize the Effectiveness of Institutional Controls and Recognize their Limitations

- Collect site-specific information to document the effectiveness of any institutional controls required as part of the selected remedy (*i.e.*, boating bans).

Principle #10, Design Remedies to Minimize Short-term Risks while Achieving Long-term Protection

The CSTAG recognizes that many site investigations are on-going, that data are under evaluation, and that the Region may not be ready to propose a remedy for the site. Nevertheless, the CSTAG thought it appropriate to recommend the following design considerations:

- Evaluate whether the remedy can be completed in one season to minimize impacts on the local community and aquatic biota.
- Evaluate multiple dredging/excavation technologies to minimize resuspension, volatilization and other short-term impacts to the community.
- Evaluate short-term risks from transportation and disposal technologies.

Principle #11, Monitor During and After Sediment Remediation to Assess and Document Remedy Effectiveness

The CSTAG recognizes a long-term monitoring program may not be developed for this site for some time, but offers the following recommendations for future monitoring considerations:

- Ensure that monitoring plans are linked to RAOs.
- Ensure the pre-Remedial Action baseline data are sufficient for comparison.
- Evaluate whether air monitoring during dredging/stockpiling is necessary.

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