

## **Ashland/NSP Lakefront MGP Site Upland and Sediment Remedial Action**

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**Background/Objectives.** The Ashland/Northern States Power Lakefront Superfund Site (Site) sits on the shore of Chequamegon Bay, Lake Superior, in the city of Ashland, Wisconsin. The Site is comprised of several properties including those owned by Northern States Power Company (NSPW) (dba Xcel Energy). The Site was historically industrialized and encompasses several upland properties, including a former manufactured gas plant owned by NSPW, former lumber operations, a former wastewater treatment plant and several acres of offshore impacted sediment. The Site has known contamination of upland soils, groundwater and bay sediments and has been divided into two remedial areas: the Phase 1 upland area and the Phase 2 sediment area. The Record of Decision (ROD) for the Site identified the need for upland Phase 1 remedial action (source control) to be completed prior to initiation of the Phase 2 sediment remediation. Primary contaminants of concern for the Site are a select set of volatile organic compounds, semi-volatile organic compounds, non-aqueous phase liquid, and metals.

**Approach/Activities.** Foth was engaged by NSPW, in 2008, to assist with remedial planning and design services. A ROD was finalized in 2010 and Foth commenced final design of the Phase 1 remedy shortly thereafter, and then formed a design/build Joint Venture with Envirocon to remediate the upland Phase 1 portion of the Site, beginning in 2012. A medium temperature thermal desorption technology was selected to treat excavated impacted soils. Groundwater and process generated water were treated through a temporary water treatment system. Additionally, an intricate groundwater collection and containment system, as well as a long-term water treatment system were designed and constructed.

Phase 2 entailed completion of the in-water work. In 2015, a rock-rubble breakwater was constructed to create a sheltered area for dredging. Following breakwater construction, a pilot dredging project was carried out to prove the concept of conventional wet dredging could meet the stringent project Performance Standards.

The pilot proved successful in meeting the Performance Standards, and USEPA issued an Explanation of Significant Difference (ESD) in 2016 allowing wet dredging for the Phase 2 full-scale project. Full-scale mechanical dredging was completed in November 2017; and the remaining Phase 2 work, including hydraulic clean-up pass dredging and placement of a 16-acre restorative layer is planned for completion in 2018.

**Results/Lessons Learned.** Diligence during ROD negotiations resulted in achievable performance standards and opportunities for cost and schedule savings with pilot study concept. Implementing an effective Phase 1 project with care taken to address local community impacts was crucial to implementing Phase 2. The successful Wet Dredge Pilot Study resulted in securing an ESD for implementing a full-scale Phase 2 wet dredge project. Approximately, 53,000 cubic yards of PAH-impacted soil were removed and treated during Phase 1, and approximately 150,000 cubic yards of sediment and heavy debris were removed and disposed during Phase 2.