NPL Partial Site Deletion Narrative

Torch Lake
Houghton County, Michigan

On December 24, 2012, the EPA deleted Isle Royale Tailings and Michigan Smelter Tailings parcels of Operable Unit 3 (OU3), and the Mason Sands Tailings parcel of OU1 of the Torch Lake Superfund site from the National Priorities List (NPL). The Torch Lake site is located on the Keweenaw Peninsula in Houghton County, Michigan. The Isle Royale Tailings area comprises approximately 64 acres northwest of U.S. 41 next to Portage Lake. The Michigan Smelter Tailings parcel is in a 15-acre low-lying area of stamp sands east of Houghton Canal Road on the shore of Portage Lake. The Mason Sands Tailings area is about 225 acres adjacent to the Village of Mason.

Torch Lake was the site of copper milling and smelting facilities and operations for over 100 years. The lake was a repository of milling wastes, and served as the waterway for the mining industry. Copper extraction was accomplished by crushing or "stamping" the rock into smaller pieces and driving them through successively smaller meshes. The crushed rock particles, called "tailings" were discarded along with mill processing water, typically by pumping into the lakes. In the early 1900s, advances in technology allowed recovery of copper from tailings previously deposited in Torch Lake. Dredges were used to collect submerged tailings and an ammonia leaching process involving cupric ammonium carbonate was used to recover copper and other metals from conglomerate tailings. During the 1920s, chemical reagents including lime, pyridine oil, coal tar creosote, wood creosote, pine oil and xanthates were used to further increase the efficiency of reclamation. After reclamation activities were complete, chemically treated tailings were returned to the lakes. During the 1930s and 1940s, the Torch Lake mills operated mainly to recover tailings in Torch Lake. Copper milling had ceased by the late 1960s.

Environmental concerns developed in the 1970s because of the century-long deposition of tailings into Torch Lake. High concentrations of copper and other heavy metals in Torch Lake sediments, toxic discharges into the lakes, and fish abnormalities prompted many investigations into impacts attributed to mine waste disposal. In 1983, the International Joint Commission's Water Quality Board designated the Torch Lake basin as a Great Lakes Area of Concern (AOC) and the Michigan Department of Public Health announced an advisory against the consumption of certain fish due to tumors of unknown origin. The site was placed on the NPL in June 1986.

The EPA began investigation activities in 1988 at Torch Lake, which included a ground penetrating radar and a subbottom profile (seismic) survey to locate drums at the bottom of Torch Lake. In 1989 and 1990, EPA collected 17 samples from drums located on the surface including some drums near Tamarack City. The results indicated that some of these drums may have contained hazardous substances.

The Record of Decision (ROD) for OU1 and OU3 was signed on September 30, 1992. The selected remedial action for the OU1 and OU3 tailings areas was a soil and vegetative cover and deed restrictions to control the migration of tailings piles. The cover prevents direct contact exposures and prevents erosion from surface water runoff and wind. Actual on-site construction began in June 1999 and was completed in September 2005. During this time period, a soil and vegetative cover was placed over stamp sands, tailings, and slag. The EPA conducted Five Year Reviews (FYRs) of the site in 2003 and 2008 and

concluded that all remedial actions are complete. The 2008 FYR called for continued documentation from landowners to verify that proper deed restrictions are in place.

The EPA, with concurrence from the State of Michigan, has determined that all appropriate responses under CERCLA have been completed. Therefore, the EPA is deleting the Isle Royale Tailings and Michigan Smelter Tailings parcels of OU3 and the Mason Sands Tailings parcel of OU1 from the NPL. Because hazardous substances will remain at the site above levels that allow for unrestricted use and unlimited exposure, the EPA will conduct periodic reviews at this site. The next FYR is scheduled for 2013.