

Alcoa Corrective Action Badin, North Carolina

Corrective Action Activities

Alcoa began operations at the Badin site in 1915 as a primary aluminum smelter. Principal products manufactured at the plant include carbon cathodes and anodes, continuous cast sheets and specialty metals. Alcoa reduced aluminum smelting operations at the Badin facility in 2002 and ceased operation in 2007. The Alcoa plant site is approximately 123 acres in size. The site contains industrial buildings and structures, parking lots, and areas covered with vegetation. Alcoa owns land that extends to Badin Lake, however the industrial plant property extends only to Highway 740 and does not abut the lake.

Alcoa was issued a Hazardous Waste Management Permit to store spent potlining on March 30, 1992 and the permit was renewed on March 24, 2006. The Hazardous Waste Management Permit required Alcoa to identify and investigate solid waste management units for potential adverse impact to the environmental media at the Badin facility. A solid waste management unit is any discernible waste management unit at a RCRA facility which has been used for the treatment, storage, or disposal of solid waste at any time, irrespective of whether the unit is or ever was intended for management of solid waste.

The contamination at the site is predominantly inorganic compounds (cyanide and fluoride) from the production of aluminum. Low concentrations of organic constituents (mainly polycyclic aromatic hydrocarbons, PCB aroclors, and trichloroethene) are found in localized areas of the plant site associated with a limited number of solid waste management units.

Interim measures were conducted from 1996 to 2012 on eight solid waste management units at the site to minimize the threat of further environmental releases from those units. The interim measures included the placement or improvement of landfill covers, installation and repair of surface water diversion pipes and ditches, replacement of open ditches with sealed-joint concrete pipe and excavation of impacted soil.

Comprehensive sampling of the environmental media was conducted in areas identified as potentially contaminated with hazardous constituents during the RCRA Facility Investigation process. The RCRA Facility Investigation Work Plan was approved on February 10, 1999. The results of the extensive sampling were evaluated and summarized in the RCRA Facility Investigation Report.

There were a total of forty-nine solid waste management units and areas of concern identified at the Alcoa site. During the RFI process, no further action was immediately determined for twenty-two solid waste management units, confirmatory sampling was conducted at five units in which no further investigation was warranted, no further

investigation was determined for two units, eighteen units were further investigated, and the two permitted storage units were to be closed.

As a result of the corrective action investigations and remedial actions conducted, no further action has been determined for twenty-four solid waste management units, no further investigation was determined for eighteen units, the two permitted storage units were cleaned closed, and five solid waste management units including the ground-water in the Northern Main Plant Area are included in the Corrective Measures Study (CMS).

The RCRA Facility Investigation Report was approved on December 19, 2007. Based on the results of the Report, the CMS process was initiated to identify and evaluate remedial alternatives to determine effective and efficient technologies to remediate contaminated media. The first phase of the CMS was approved on March 25, 2009. The CMS process is currently in Phase 4 and 5 of a five phase approach.

A public meeting was held at Morrow Mountain State Park on May 13, 2013 to present information on the Yadkin River Basin sediment and fish tissue study and Phase 4 and Phase 5 of the CMS for the former Badin plant site. The Hazardous Waste Section accepted comments from the public on the proposed CMS through August 15, 2013.

Alcoa is currently in Phase 4 and Phase 5 of the CMS for the former Badin plant site. Phase 4 of the CMS identifies and evaluates the alternatives for corrective action and Phase 5 of the CMS provides the justification and recommendation of the selected alternatives for the remedy of the plant site. Upon approval of the final corrective action remedy, financial assurance for the completion of corrective action must be demonstrated within sixty days.

Badin Lake Sediment Remedial Action Plan

Two areas within the southwestern arm of Badin Lake have sediments which have been impacted by polychlorinated biphenyls (PCBs). These areas are located in the vicinity of storm water discharge outfalls in Badin Lake that drains the Alcoa industrial site, one at Outfall 002, near the boat ramp, and the other at Outfalls 011 and 012. Alcoa submitted a remedial action plan to place an engineered cap over the impacted sediment with concentrations of PCBs greater than 1 mg/kg. The purpose of the cap is to isolate the contaminated sediments from coming into contact with swimmers and aquatic life.

An Administrative Agreement for State-Directed Assessment and Remedial Action for the placement of a cap over sediments impacted by polychlorinated biphenyls in the two locations of Badin Lake to isolate the contaminated sediments was public noticed on August 10, 2012. The Badin Lake Sediment remedial Action Plan was approved on September 17, 2012.

Alcoa submitted the Construction Completion Report for the sediment cap in November 2013. The report evaluated the thickness of the sediment caps placed over the contaminated sediments in Badin Lake. Final as-built drawings illustrating the

topography of the sediment caps on lake bottom were constructed from data collected during the installation of the caps. A bathymetric survey was conducted two months after the completion of the sediment caps to establish a baseline for comparisons of future surveys to be conducted. Video from a remotely operated vehicle in September 2013 indicated that the average thickness of the sediment caps met or exceeded design thickness at the five settlement plates viewed.