

**ALUMINUM COMPANY OF AMERICA (ALCOA)**  
**(Riverdale, Iowa)**

**GENERAL DESCRIPTION**

The ALCOA site is located in Sections 23, 24, 25, and 26 of Township 78N, Range 4E, Scott County, Iowa. The site occupies 445 acres adjacent to the Mississippi River Pool #15 (MRP15). ALCOA is the owner of record. The site was entered on the Registry in November 1990.

**SITE CLASSIFICATION**

**The site is classified “d” closed requires further management.**

**TYPE AND QUANTITY OF HAZARDOUS WASTE**

- **The primary type of hazardous waste: polychlorinated biphenyls (PCB’s) and tetrachloroethylene (PCE)**

The ALCOA facility produces rolled aluminum plate, sheet, and foil and historically used an unlined waste oil surface impoundment located approximately 150 feet from the Mississippi River for disposal of oil and grease, pickling fluids, solvents, and paint wastes. In 1979, ALCOA determined the waste oil in the impoundment was contaminated with PCBs. In 1981, ALCOA removed 2.8 million gallons of waste oil and sludge from the impoundment. Some waste was disposed off-site and the remaining sludge was solidified in place with cement kiln dust to control PCB releases. ALCOA installed groundwater monitoring wells around the perimeter of the impoundment. The monitoring indicated improvement; however, additional action was determined to be necessary. In August 1989, ALCOA informed the EPA of additional PCB problems in the soil and groundwater. In December 1989, ALCOA informed the Iowa Department of Natural Resources (IDNR) of a PCE contamination of undetermined volume in the area around two PCE storage tanks

**SUMMARY OF PUBLIC HEALTH AND ENVIRONMENTAL CONCERNS**

- **The primary environmental concerns at this site are water quality of surface water (the Mississippi River), groundwater, and detrimental effect on flora and fauna of the Mississippi. The primary public health concerns are possible exposure to contaminated soil, groundwater, and consumption of fish containing contaminants.**

Under the terms of a 1984 Administrative Order of Consent (AOC), a cut-off trench was installed to collect groundwater containing oil from the impoundment from reaching the Mississippi River. In addition, the impoundment (with remaining stabilized sludge) was capped with a low permeability compacted clay.

From 1983 to 1987 fish tissue and river sediment studies were conducted in Mississippi River Pool 15 (MRP15). The IDNR evaluated this data and issued a Fish Consumption Advisory in June 1989. This advisory notified the public that Common Carp in MRP15 could contain levels of PCBs above the U.S. Food and Drug Administration (FDA) tolerance level of 2 parts per million (ppm or mg/kg). In April 1990, the IDNR issued a second fish consumption advisory for carpsuckers (*Carpoides* spp., also referred to as “white carp”). The Fish Consumption Advisories recommended not eating Common Carp or carp suckers taken along the Iowa side of the MRP15.

In July 1990, the EPA and ALCOA signed another AOC requiring additional fish and sediment studies in MRP15 and in the outfalls from the ALCOA facility to the river. Fish sampling events were conducted by ALCOA contractors in 1990, 1992, 1994, 1996, and 1998. The analytical results for the sampling events documented declining levels of PCBs in fish from MRP15. In August of 2000, the IDNR lifted the Fish Consumption Advisories for carp and carpsuckers because PCBs in Common Carp were below the tolerance limit of 2 ppm of total PCBs in both the 1996 and 1998 samplings.

In 2006, Iowa DNR, with assistance from the Iowa Department of Public Health, developed a new consumption advisory protocol. This protocol contained three levels of advisory: (1) no restriction on consumption, (2) no more than

one meal per week, and (3) do not eat. While the “do not eat” threshold for total PCBs remained the FDA Action Level of 2.0 mg/kg, the threshold for a one meal per week advisory was set at 0.2 mg/kg. Sampling by Iowa DNR in 2006 showed that levels of total PCBs in MRP15 Common Carp were below the one meal per week advisory threshold of 0.2 mg/kg.

EPA sampling in MRP15 in 2012, however, showed that, while levels of total PCBs remain low in MRP15 fish, levels of total PCBs in large Common Carp tended to exceed both the EPA performance standard of 0.231 mg/kg and the Iowa DNR/Iowa Department of Public Health’s threshold of 0.2 mg/kg for a one meal per week consumption advisory. Based on EPA recommendations, Iowa DNR’s ambient fish tissue monitoring program has long specified that samples of Common Carp collected for tissue analysis should be between 12 and 21 inches (305 to 533 mm). The Common Carp from EPA’s 2012 sampling with levels greater than 0.2 mg/kg ranged in size from about 23 inches up to 29.5 inches (580 to 750 mm ), thus far exceeding Iowa DNR’s upper length limit of 21 inches (533 mm). Based on the new (2012) information from EPA, Iowa DNR conducted confirmation sampling of large Common Carp in MRP15 in 2013 and 2014. Results of monitoring in 2014 showed a level of total PCBs of 0.42 mg/kg in a composite sample of fillets from three Common Carp that averaged 678 mm (26.7 inches) in total length. This information was used by Iowa DNR to issue a one meal per week consumption advisory for Common Carp from MRP15.

No PCB contamination has been found in the bedrock aquifer. However, chlorinated solvents (PCE, trichloroethylene, 1,2-dichloroethylene, and vinyl chloride) have been found in monitoring and process water wells at concentrations well above drinking-water standards.

### **SUMMARY OF ASSESSMENT, MONITORING OR REMEDIAL ACTIONS**

The EPA is the lead agency for this site under the Comprehensive Environmental Response, Compensation, and Liability Act program.

The EPA and ALCOA signed an Administrative Order on Consent in August 1995. This AOC established a process (Overview of Cleanup Strategy) by which ALCOA will evaluate and assess 81 additional areas of potential contamination and, if necessary, conduct removal actions.

In 2002, ALCOA completed a site-wide groundwater remedial investigation that concluded that the production well PW-6 is containing groundwater contamination and substantially preventing off-site migration of contaminants. PW-6 has been in continuous operation since 1989 as a recovery well for containment of groundwater contamination. Water from PW-6 is treated prior to discharge to the Mississippi River.

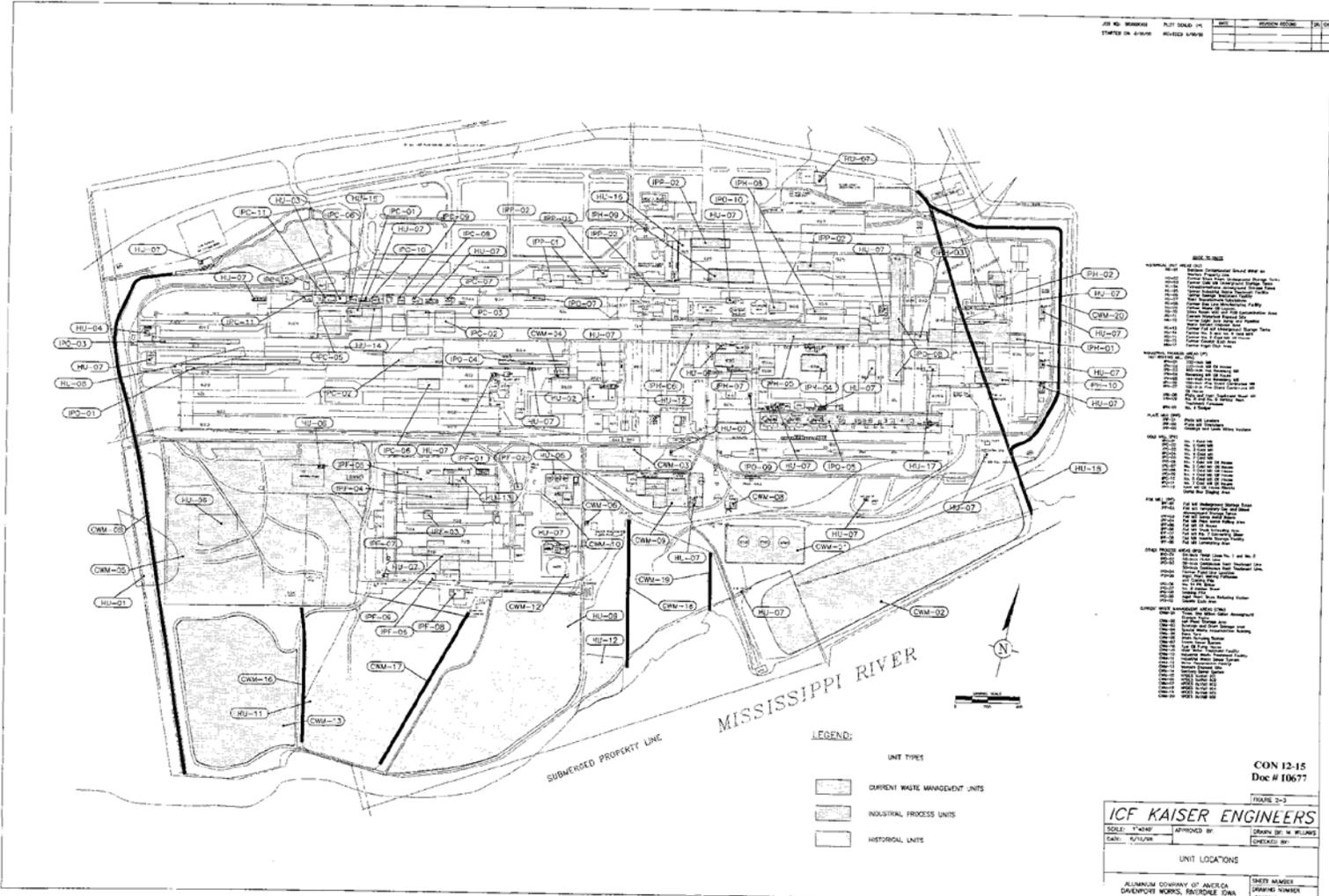
In 2004, the EPA issued a Record of Decision (ROD) for groundwater contamination at the ALCOA property as well as for sediment and aquatic contamination of MRP15. The ROD called for: continued operation of the groundwater treatment system, institutional controls to prevent installation of on-site drinking water wells, and continued use of the property for industrial purposes only and monitoring of groundwater, river sediment and fish (tissue).

In 2009, the EPA entered into a Consent Decree with ALCOA to prepare and implement remedial design/remedial action (RD/RA) in accordance with the 2004 ROD. Since 2013, Alcoa has continued with implementation and operation of the remedial action in accordance with the RD/RA work plan.

2014: Implementation of a Long-Term Monitoring Plan (LTMP) and the Groundwater Containment, Extraction and Treatment System (GCETS)

2015: Quarterly groundwater monitoring has been performed as outlined in the LTMP. The GCETS has removed and treated approximately 119,849,000 gallons of water between October 2014 and September 2015.

**2016: EPA and The Army Corp of Engineers initiated the Five Year Review.**



Map of ALCOA facility

CON 12-15  
 Doc # 10677

FRAME 2-3

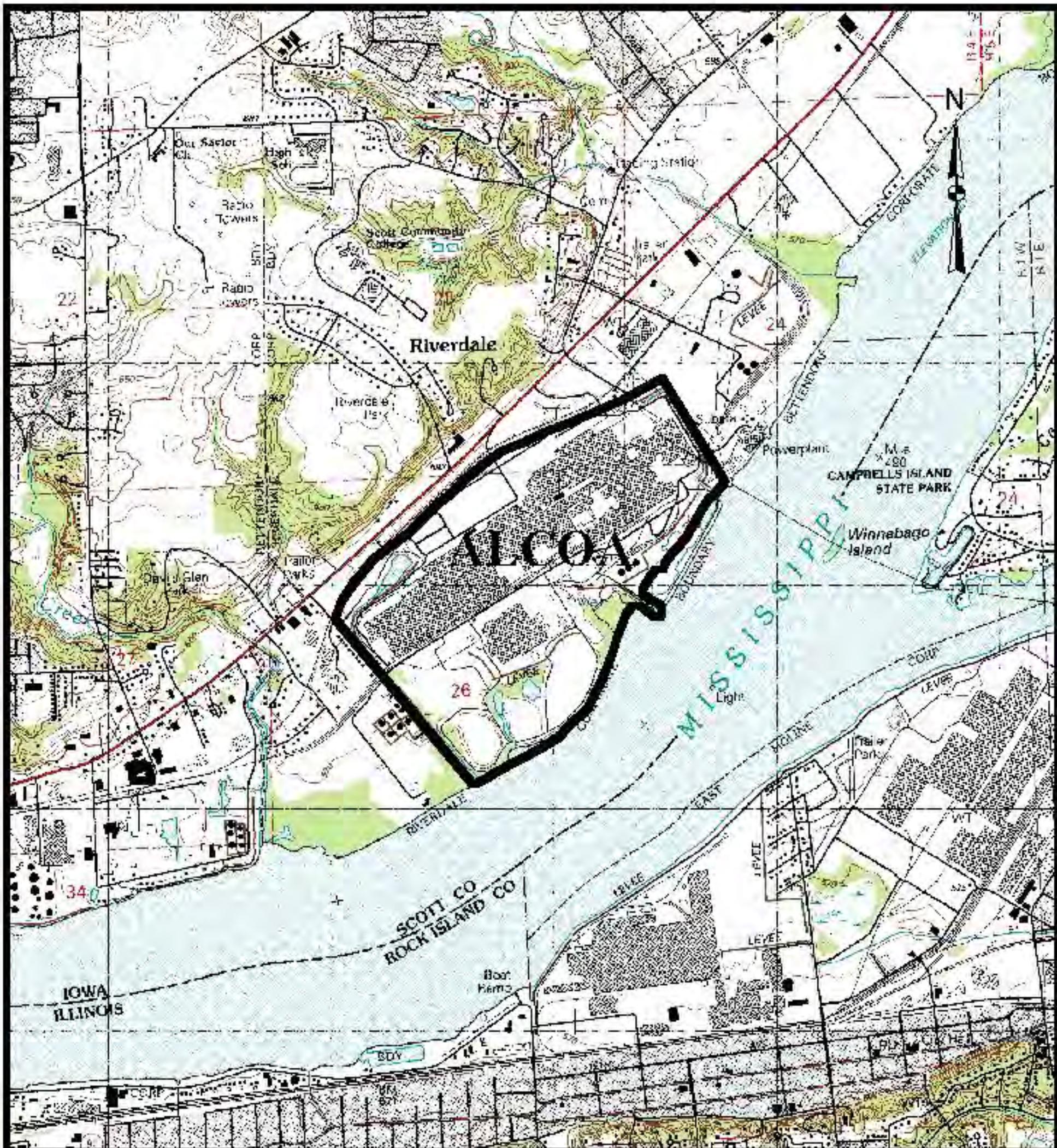
**ICF KAISER ENGINEERS**

SCALE: 1"=50' APPROVED BY: [Signature]  
 DATE: 8/10/06 CREATED BY: [Signature]

UNIT LOCATIONS

ALUMINUM COMPANY OF AMERICA  
 GREENSBORO WORKS, RAYBROOK DAM

SHEET NUMBER: 21191046



Contour Interval 10 Feet

