

NPL Site Narrative for Macalloy Corporation

MACALLOY CORPORATION North Charleston, South Carolina

Conditions of Proposal (October 22, 1999): The Macalloy Corporation (Macalloy) is located in North Charleston, Charleston County, South Carolina. The facility comprises about 125-acres, and is bound on the west by the CSX Railroad, on the east by Shipyard Creek, a tributary of the Cooper River, on the south by Pittsburgh Avenue, and on the north by a waste-to-energy plant operated by Foster Wheeler, Inc. Since 1979, Macalloy has owned and, until July 1998, operated the facility for the production of ferrochromium alloy. From 1966 to 1979, the facility was owned and operated by AIRCO Corporation. From 1941 to 1966, the facility was owned and operated by the Pittsburgh Metallurgical Corporation. Prior to 1941, the facility property was used as a lumbermill and a rice plantation. At various times from 1942 to July 1998, the United States owned, operated, or otherwise used portions of the facility for the production of ferrochromium alloy. The facility ceased operations in July 1998 due to market pressures from cheaper ferrochromium produced abroad.

Macalloy produced ferrochromium alloy by smelting iron and chromium ore in submerged electric arc furnaces. Ferrochromium alloy is used in the production of high quality stainless steel. Historically, as many as 12 furnaces were used to produce the alloy. At the time of closing, Macalloy operated only one furnace. Alloy manufacturing activities have resulted in the generation of slag, fine particulate matter, ashes and dust (PMAD), gas conditioning tower (GCT) sludge and associated wastewater, electrostatic precipitator (ESP) dust, and baghouse dust.

Slag containing chromium and cadmium has been deposited as fill material throughout the facility and has been used to construct a portion of an on-site unlined surface impoundment. From 1941 to 1970, PMAD was discharged directly into the atmosphere. PMAD containing chromium, lead, zinc, and manganese was deposited throughout the facility through fallout from the atmosphere. Air pollution control (APC) equipment, including gas conditioning towers and electrostatic precipitators, was installed in approximately 1970 to remove contaminants from plant air emissions prior to their discharge to the atmosphere.

ESP dust containing cadmium, chromium, lead, zinc, mercury, and manganese has been generated as part of the operation of the APC at a rate of approximately seven tons per day. From 1970 to approximately 1988, untreated ESP dust was stockpiled in numerous areas on the facility property and was used to fill low areas on site. From 1988 to 1997, Macalloy placed treated ESP dust on site, primarily in the unlined surface impoundment. In January 1997, pursuant to the terms of a consent order with the South Carolina Department of Health and Environmental Control (SCDHEC), Macalloy discontinued disposal of ESP dust in the unlined surface impoundment and initiated off-site disposal of the material. On June 10, 1998, pursuant to the terms of an administrative order on consent with the U.S. Environmental Protection Agency (EPA), Macalloy agreed to conduct work to abate an imminent and substantial threat to human health and the environment.

GCT sludge and associated wastewater containing cadmium, chromium, lead, mercury, nickel, and zinc have also been generated as part of the operation of the APC equipment. GCT sludge has been disposed

as fill material at numerous locations at the facility. Approximately 40,000 tons of GCT sludge were used in the construction of the unlined surface impoundment. Macalloy generated approximately six tons of GCT sludge per day and returned this material from the settling basins to the furnace as a substitute for low-grade chromite ore. From 1970 to July 1998, the GCT wastewater was discharged to a settling basin.

Macalloy operated four surface water discharge points under a National Pollutant Discharge Elimination System permit that SCDHEC issued. These outfalls discharge into Shipyard Creek. Macalloy has repeatedly exceeded its permit limits for total chromium and hexavalent chromium. In 1997, EPA and SCDHEC collected soil, sediment, and surface water samples from various locations at the facility.

Shipyard Creek is used for recreational fishing. On April 30, 1998, SCDHEC issued an emergency order closing Shipyard Creek to the harvesting of all shellfish due to high levels of chromium detected in edible fish tissue. The Cooper River, located approximately 0.75 mile downstream from the facility, is used for fishing, boating, and water skiing.

Status (February 2000): EPA is considering various alternatives for this site.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at [ATSDR - ToxFAQs](http://www.atsdr.cdc.gov/toxfaqs/index.asp) (<http://www.atsdr.cdc.gov/toxfaqs/index.asp>) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.