NPL Site Narrative for Circle Smelting Corp

CIRCLE SMELTING CORP
Beckemeyer, Illinois

The Circle Smelting Corporation facility was originally constructed in 1904 as a primary zinc smelter. In 1920, it was converted to a secondary zinc smelter and began recovering zinc from scrap metals. A Belgium retort system was used to boil zinc scrap and reclaim a reasonably pure "Prime Western" grade zinc. The Belgium retort system was discontinued at this facility in the late 1960s.

Three separate sources have been identified at the Circle Smelting site: a metal-rich slag waste pile; an area of contaminated soil within the stream bed of an intermittent drainage way that receives surface water run off from the slag pile; and an area of contaminated soil that surrounds the smelter property. The slag pile encompasses 17 acres and is up to 15 feet deep. This pile was found to have high concentrations of zinc, nickel, lead, and cadmium.

Residual metals and coal cinders from the smelting process have been discarded in piles on the smelter property and have contaminated the soil. Smelting operations on site have also generated air emissions that include metal oxides. Various soil, sediment, and waste samples from the site and surrounding lands collected by Illinois Environmental Protection Agency personnel during a CERCLA expanded site inspection (ESI) in February and March of 1992 found elevated concentrations of lead, zinc, cadmium, nickel, and copper.

Sampling revealed an estimated minimum of 22,862 square feet of contaminated soils within the intermittent drainage way that flows past the Circle Smelting site. High concentrations of zinc, lead, nickel, and cadmium were found in samples from this drainage way. Samples from residential and agricultural lands surrounding the facility revealed high concentrations of zinc, cadmium, copper, nickel, and lead. This area of contaminated soil was determined to be approximately 21 million square feet.

Soil and surface water have been contaminated by the site. Analytical results from samples taken during the ESI document that hazardous substances have migrated from the site to Beaver Creek. There are approximately 5,800 feet of forested wetland frontage within 15 miles downstream of the site.

An estimated 460 people reside in these areas; 21 people work at the Circle Smelting facility. Approximately 230 children attend school at the Beckmeyer Elementary Public School, which is also located in the contaminated area.

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) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.