Illinois has gained a vital partner to aid in the critical resolution of acid mine runoff problems.

Restoring the Land

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Photos By DNR Mines and Minerals Staff

Through a partnership with Lafarge North America, acidic soils on DNR lands are treated with an alkaline derivative from the manufacture of cement.

An innovative partnership between the Department of Natural Resources (DNR) and an Illinois-based construction material manufacturer is helping neutralize acidic soils and provide long-term protection for streams and wildlife throughout southern Illinois.

As long as coal has been extracted to help fuel homes and businesses there has been acid mine drainage, a chronic pollutant resulting from the weathering of coal mine waste and some spoil materials. Once buried deep within the ground, bedrock covering hundreds of acres of surface mined lands in southern Illinois is now exposed to the effects of rainfall and air, producing acidic seeps and groundwater flows. Standing visible against the horizon, large piles of gob, a black waste associated with underground coal mining, are adding to the acid drainage problem.

Solutions to the pollution problem are often difficult because the acid forms over large areas and seldom flows out of a single point. Ongoing treatment is expensive since the land may produce acid runoff for 20 years or more.

More proactive solutions involve limiting the production of acid mine drainage at its source—the spoil or gob. Since 1992, DNR's Abandoned Mined Lands Reclamation Division has minimized acid drainage by utilizing various alkaline by-products in reclamation, including by-products of coal combustion, fly ash, sludge and bottom ash.

In 1999, a new by-product material became available from Lafarge North America's Joppa Cement Plant—cement kiln dust (CKD). A highly alkaline white dust derived from the manufacture of cement, CKD has a pH in excess of 11 and a calcium carbonate equivalent of 720 tons per 1,000 tons. When added to acidic soil, the calcium carbonate acts much like an antacid tablet.

Lafarge is North America's largest diversified supplier of construction materials such as cement and cement related products, ready-mixed concrete, gypsum wallboard, aggregates, asphalt and concrete products and has a plant in Grand Chain in Pulaski County. The company's materials are used in residential, commercial, institutional and public works construction in the United States and Canada. The parent business, Lafarge Group, is a world leader in building materials and maintains a global partnership with the World Wildlife Fund and the Wildlife Habitat Council.

To date, the Joppa Cement Plant has provided more than 200,000 tons of CKD for reclamation of abandoned mine sites in southern Illinois. On lands where enhanced reclamation would not have been economically feasible otherwise, problems will cease to exist and fish and wildlife can return to healthy stream, grassland and woodland habitats.

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