

**INDIAN CREEK-AML: COAL SLURRY RECLAMATION  
(KANSAS CASE HISTORY)**

by

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Abstract. Black & Veatch, assisted by Jack Nawrot, developed conceptual and final designs and provided construction assistance to create grasslands and wetlands in order to reclaim an abandoned coal mine for the state of Kansas. The mine included spoils, a coal refuse dump, and slurry pond in the Indian Creek drainage basin in east central Kansas. The Indian Creek flowed from an off-site abandoned mine and through the coal slurry pond where its waters became more polluted. The intent of the reclamation project was to improve water quality and create a wildlife refuge. The coal refuse was covered and seeded with a diversity of vegetation including several grasses and legume. The slurry pond was developed into a series of large wetland cells to improve water quality. Prior to reclamation, the water leaving the site had a typical pH of 3.3, ranging from 2.4 to 5.6, an iron content which typically over 22 mg/L and ranging over 100 mg/L, and contained large amounts of coal slurry. The acid sediment in the slurry killed fish and caused visible damage to a new large concrete box culvert several miles downstream of the site. Post-reclamation water quality leaving the Indian Creek site showed immediate improvement even before vegetation was reestablished. The existing wetland treatment systems have been successfully treating water for over seven years with the pH of the water leaving the wetlands above 7 and soluble iron content less than 1 mg/L. Fish in the constructed wetlands support waterfowl which now nest onsite.

**Additional Key Words:** acid-mine drainage, coal refuse, reclamation, slurry pond, water treatment, wetlands

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