

Improved Production of Pigment as a Byproduct of the Treatment of Coal Mine Drainage in Western Pennsylvania

Impact: The expansion of pigment production from minewater treatment systems will make sustainable treatment of polluted coal mine drainage feasible. Increased production of EnvironOxide™ will provide wood, cement, paint, and plastic manufacturers in western Pennsylvania with a local pigment choice that will assist them in making their products more environmentally friendly.

Project Overview: In 1999, Iron Oxide Recovery (IOR) was formed to develop production processes and markets for iron sludge produced at coal mine drainage treatment facilities. Under its trademark EnvironOxide™, IOR produces an iron oxide pigment from wastes associated with coal mining and sells it to the paint, concrete, and coatings industries. To date, IOR has successfully recovered 3,000 tons of processed iron oxide sludge, but there is much room for growth since only a fraction of the available wastes have had pigmentary characteristics suitable for recovery and sale. In 2003, EnvironOxide™ was named one of the Top 10 New Green Construction Products by BuildingGreen.com.



IOR will work with the University of Pittsburgh to determine the chemical and physical attributes of minewater sludge that produce valuable pigmentary characteristics and use this information to significantly expand production of IOR's EnvironOxide™ product in western PA.

GBA Product Innovation Grant Amount: \$81,564

Leadership Team: The project team is lead by Dr. Robert Hedin, the principal of Iron Oxide Recovery and Hedin Environmental who also serves as adjunct faculty at the University of Pittsburgh. The team also includes Dr. Rosemary Capo, a professor in the University of Pittsburgh Programs in Geological and Planetary Sciences. Dr. Capo and her students have developed expertise in coal mine drainage and chemistry and have worked with Dr. Hedin on several projects over the years.

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