



**INSITE GROUP, INC.**

# CASE STUDY

## POND SEDIMENT REMOVAL

Commercial / Industrial Facility  
Western Pennsylvania

### STATEMENT OF THE PROBLEM

A pond contained several feet of sediment consisting of fine metallic particles coated with cutting oil. The source of the material was a historical metal cutting operation that used oil to cool the blade. Process oil and metal fines then entered the pond and accumulated on the bottom. The pond serves as a source of water to the fire system and could not be dewatered due to the conditions of the insurance policy. No local public water supply having sufficient volume and pressure was available to feed the fire system on an interim basis. The pond has a clay liner and single outfall to a high quality stream. The pond was classified as a Residual Waste Impoundment due to its historical permit status.



### TREATABILITY STUDY

Insite Group, Inc. (IGI) evaluated options for removing the sediment. Several bench top pilot studies were performed. The successful pilot test identified application of a flocculant to bind the fine particles and oil residue into larger particles where they could be captured by filtration. The next pilot test included a small-scale field pilot test, which was also successfully completed. Despite permit challenges, IGI successfully established attainable discharge limits for the effluent with the Pennsylvania Department of Environmental Protection (PADEP).

### FULL SCALE SYSTEM

IGI used a remote-controlled floating dredge to evacuate and pump sediments from the pond bottom to two bag filters measuring 200 by 40 feet in area. An in-line pump was used to inject flocculant into the main feed line where mixing occurred. The sediments accumulated in the bags while the effluent discharged through the bag walls and into a drainage swale leading back into the pond. During this process the outfall was protected using booms to ensure the highest quality for the pond discharge.



### SEDIMENT DRYING AND DISPOSAL

Sediments were dried in the bags. Later, the bags were cut open and the sediments loaded for transport and disposal at a landfill in accordance with a Form U permit. Post-removal attainment sampling of pond sediments showed that 97% of the sediment had been removed. A Closure Report for the site was approved by the PADEP.

#### LOCATION:

611 South Irvine Avenue  
Sharon, PA 16146  
724.347.2101 phone  
724.347.2139 fax

sgiordano@insitegroup.org  
progers@insitegroup.org