Rhodia Sediment Cap
Portland, Oregon

Client:
Rhodia for CH2M Hill
Portland, Oregon

Contract Value:
$484,500

Project Timeline:
Started: November 2004
Completed: January 2005

Project Highlights:

- Placement of geotextile filter fabric and 3,430 cy of gravel and rip rap over 46,000 sq. ft. area
- Used GPS WINOPS system for bucket location
- Placement elevation criteria of +/- 6”

The Rhodia Sediment Cap project was located at the Rhodia, Inc. aluminum facility in the North Portland Harbor area (Oregon Slough) of Portland, Oregon. The purpose if the project was to isolate contaminated sediments from the surrounding ecosystem. Contaminated sediments were discovered near an outfall used historically by the Rhodia facility for discharge of alum mud to the Columbia River. Pesticides were unintentionally mixed into the alum mud through co-use of the grinding equipment in the alum production process from 1954 to 1968. DDT and DDE concentrations detected in the alum deposits and surface sediments along the shoreline were found at levels exceeding the cleanup criteria established by DEQ. If not isolated, the pesticides would tend to bio-accumulate through the food chain, posing not only a threat to fish within the Columbia River, but an increased risk to wildlife and humans through fish ingestion.

Advanced American Construction was chosen to selectively place a rock sediment cap over a 46,325 square foot area in the river to cover the contaminated area. The sediment cap consisted of a geotextile fabric layer covered by a gravel leveling layer and a Class 25 rip rap layer to control future erosion of the cap material from wind or water induced wave action or flood events. The cap was surrounded by a rock apron constructed of Class 50 rip rap to protect the cap from wave erosion. Overall, the project staff placed 1,000 tons of 3/4” gravel; 1,020 tons of Class 100 rip rap; and 2,500 tons of Class 50 rip rap. This material was placed using a barge mounted Manitowoc 4100 Series 2 Vicon, material barges, and tugboats. A barge mounted GPS system was utilized during the placement of all capping materials. This GPS WINOPS system facilitated the precise placement of the aggregate, within the cap boundary.

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