MatCon® Project Summary

TY Tank Farm Interim Barrier

Location:	Hanford Nuclear Reservation, Richland, WA
Owner:	U.S. Department of Energy
Prime:	Washington River Protective Solutions
Contact:	Dan Parker, Project Manger
Year:	2010
Area:	2.0 AC
History:	Underground Storage of Nuclear Waste
New Use:	Infiltration Barrier - Tank & Instrumentation Access

Site Description

The U.S. Department of Energy (DOE), Office of River Protection (ORP) constructed an interim surface barrier to cover the TY Tank Farm located on the Hanford Site in 241-TY Tank Farm, Richland, Washington. The TY Farm Interim Surface barrier is a RCRA interim measure for the TY tank farm in the 200 West Area. Construction of the barrier involved placing and compacting fill material in the tank farm to establish a 0.8% slope to facilitate drainage from the east side toward the west side of the farm. MatCon modified asphalt was placed on the prepared sub-grade. The MatCon cap was 4-in thick and was constructed using standard asphalt paving equipment and construction practices.

The area covered by the MatCon barrier in the TY tank farm was approximately 80,000 sq. ft. The collected surface water was routed into two standard storm water collection boxes. A buried drain line will route the storm water to an evaporation basin located just west of the TY farm. A cleanout (solids separator) will be installed along the drain line route to separate suspended solids (i.e., blow sand) and prevent buildup in the drain lines buried in the evaporation basin. Figure 1 shows the layout of the interim barrier and evaporation basin.

Specific functional requirements for the barrier included the following:

- Minimize the infiltration of precipitation
- Function under environmental conditions present at the Hanford Site (i.e., semiarid climate)
- Function with minimal maintenance
- Minimize the likelihood of plants or animals accessing and mobilizing contamination
- Control surface water runoff and prevent the run-on of surface water
- Minimize surface erosion by wind and water
- Accommodate potential settling and subsidence to maintain barrier integrity
- Be approved by the Washington State Department of Ecology

Regulatory requirements associated with construction and operation of an interim infiltration surface barrier:

- The Resource Conservation and Recovery Act,
- Hazardous Waste Management Act,
- The Hanford Federal Facility Agreement and Consent Order, and
- The National Environmental Policy Act.

MatCon modified asphalt was selected for the remedy following a thorough analysis of all available alternatives based on a combination of performance, longevity, and cost. The MatCon was placed in only 4 days further minimizing the high cost of working in the tank farm areas due to the high level of health and safety monitoring and construction oversight required for these sites. The tank farm sites are often referred to as some of the most highly contaminated in the United States.