OAK RIDGE NATIONAL LABORATORY
MANAGED BY UT-BATTELLE FOR THE DEPARTMENT OF ENERGY
FACT SHEET

Use of Best Management Practices, Non-Putrescible Landfill

Fort Stewart, Georgia

The Best Management Practices for Stormwater Management

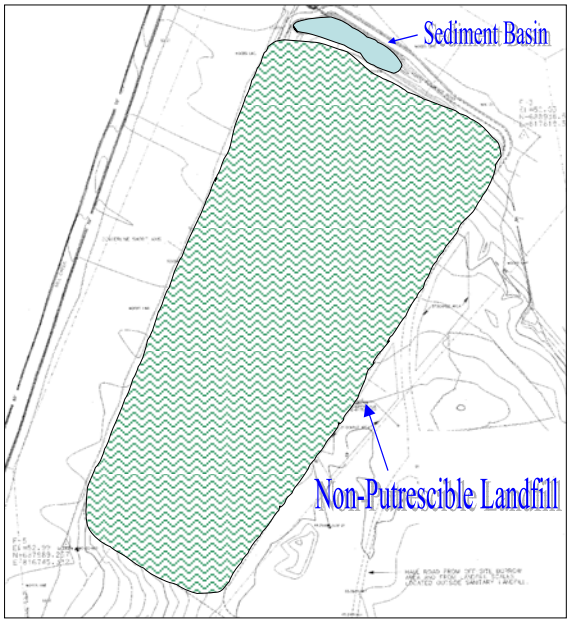
Best management practices (BMPs) are structural, nonstructural and managerial techniques that are recognized to be the most effective and practical means to control non-point source pollutants, yet are compatible with the productive use of the resource to which they are applied. These techniques are used to minimize the impact of stormwater runoff rates and volumes, prevent erosion, and capture pollutants. Overall improvement and protection of surface water quality is a major goal in the implementation of BMPs.

BMPs can be engineered or constructed systems ("structural BMPs") that improve the water quality and/or control the quantity of runoff, such as retention ponds and constructed wetlands. They can also be pollution prevention practices designed to limit the generation of stormwater runoff or reduce the amounts of pollutants contained in the runoff, along with institutional controls and education ("non-structural BMPs").

BMP Applications at the Non-Putrescible Landfill, Fort Stewart

The Oak Ridge National Laboratory's (ORNL's) Environmental Sciences Division (ESD) is conducting environmental pilot studies at the Non-Putrescible Landfill at Fort Stewart, Georgia. The BMPs implemented through these pilot studies include both structural and non-structural stormwater management techniques to divert stormwater flow away from exposed areas, convey runoff, prevent sediment loss and reduce erosion from stormwater runoff. The implementation of these measures protects adjacent natural resources, including, streams, wetlands, and wildlife habitat. The benefits of implementing BMPs at this site are two-fold: 1) protection of natural resources; and 2) reduction in costs for erosion and sedimentation control.

Non-Putrescible Landfill and Sediment Basin, Fort Stewart



The construction of a sediment basin is the main component of a set of drainage controls to be used during the filling of the non-putrescible landfill. As the landfill develops, stormwater will be controlled by grading the site to promote sheet flow to the northwest where it will collect in the sediment basin. Further development of the landfill calls for sheet flow to be additionally controlled with ditches, check dams and other BMPs that direct the drainage to the sediment basin.

Sediment Basin at Non-Putrescible Landfill

Sediment basin captures sheet flow and sediment, preventing runoff into surrounding wetlands, creeks and other natural areas.

Mill Creek adjacent to Landfill

Runoff intercepted by the sediment basin helps protect adjacent Mill Creek.

Specific Techniques Used at Fort Stewart to Implement BMPs

- Regrading to decrease erosion and redirect flow away from sensitive natural areas into a sediment basin.
- Installation of rock filter dams for sediment filtering.
- Creation of bioretention areas (e.g., sediment basins) in strategic locations to capture runoff and associated sediment.
- Promote growth of vegetative buffers that absorb pollutants from runoff, slow runoff and capture sediment, thereby protecting aquatic and terrestrial ecosystems.

ORNL's Involvement in BMP Applications at Fort Stewart

ORNL, through the Environmental Sciences Division (ESD), is assisting Fort Stewart in implementing BMPs at the post. Using its expertise in environmental and natural resource monitoring and management, ESD is identifying new ways and suitable locations for the application of BMPs to aid Fort Stewart in minimizing the impacts of stormwater runoff to natural resources. ESD provides value-added in this area with corporate knowledge in such areas as native vegetation plantings (including riparian applications), wetlands restoration, aquatic resource assessment, monitoring, and modeling (i.e., hydrology, water quality, macroinvertebrates and fish), toxicity studies, and wildlife management.

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