

Stone Outlet Sediment Trap

Applications
 Perimeter Control
 Slope Protection
 Sediment Trapping
 Channel Protection
 Temporary Stabilization
 Permanent Stabilization
 Waste Management
 Housekeeping Practices

Targeted Constituents

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Construction Wastes

Implementation Requirements

- Capital Costs
- Maintenance
- Training
- Suitability for Slopes >5%

Legend

- Significant Impact
- Medium Impact
- Low Impact
- ? Unknown or Questionable Impact

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City of Baton Rouge
Parish of East Baton Rouge

Department of Public Works

DESCRIPTION
 A stone outlet sediment trap is a small ponding area formed by placing a stone embankment or gabion core with an integral stone filter outlet across a drainage swale for the purpose of detaining sediment-laden runoff generated by construction activities. The sediment trap detains runoff long enough to allow most of the suspended sediment to settle while still allowing for diffused flow of runoff.

PRIMARY USE
 A sediment trap is used in situations where flows are concentrated in a drainage swale or channel. The sediment trap reduces velocities and allows for settling of sediment while allowing the area behind the trap to de-water. This is normally used for long term (18 months or less) applications in which a sediment basin is not feasible due to site or construction method restrictions. The use of a gabion core as opposed to a dewatering the area as necessary.

APPLICATIONS
 Temporary stone outlet sediment traps are installed at locations where concentrated flows require a protected outlet to contain sediment or spread flow prior to discharge.

DESIGN CRITERIA

- Maximum drainage area contributing to the trap shall be 3 acres. For larger drainage areas, a sediment basin should be used. The minimum length of the crest, in feet, of the stone outlet shall be equal to 6 times the size (acres) of the contributing drainage area.
- Deposited sediment shall be removed when the depth of sediment is equal to one-third of the height of the outlet structure as measured from the original toe of slope to the crest of the outlet, or has reached a depth of one foot, whichever is less.
- Minimum width of the embankment at the top shall be 3 feet.
- Minimum embankment slope shall be 3:1.

Vehicle And Equipment Cleaning

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DESCRIPTION
 Prevent or reduce the discharge of pollutants to storm water from vehicle and equipment cleaning by using off-site facilities, washing in designated areas only, discharges to the storm drain by infiltrating or recycling the wash water and training employees and subcontractors.

APPLICATIONS
 Washing vehicles and equipment outdoors or in areas where wash water

DESIGN CRITERIA

- Use off-site commercial washing businesses as much as possible. For operations involving a large number of vehicles or pieces of equipment, consider conducting this work at an off-site commercial business equipped to handle and dispose of the wash waters properly. Performing this work off-site can also be economical by eliminating the need for a separate washing operation at your site. If washing must occur on-site, use designated, bermed wash areas to prevent wash water contact with storm water, creeks, rivers, and other water bodies.
- Use as little water as possible to avoid having to install erosion and sediment controls for the wash area.
- Use phosphate-free, biodegradable soaps.
- Educate employees and subcontractors on pollution prevention measures.
- Do not permit steam cleaning on-site. Steam cleaning can generate significant pollutant concentrations leading to potential storm water and groundwater contamination.
- In construction areas where truck tires collect mud, provide a cleaning area for removing soil before truck leaves site. Truck tires cleaning area should not be directly adjacent to drainage conveyances. A vegetated buffer area should be located downstream of the tire wash. For heavy use of tire wash area, silt fencing, or sediment trapping may be necessary.

Vehicle And Equipment Fueling

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DESCRIPTION
 Prevent fuel spills and leaks, and reduce their impacts to storm water by using off-site facilities, fueling in designated areas only, enclosing or covering stored fuel, implementing spill controls, and training employees and subcontractors.

APPLICATIONS
 Fueling vehicles and equipment outdoors or in areas where wash water flows onto the ground can pollute storm water.

DESIGN CRITERIA

- Use of off-site fueling stations as much as possible. If you fuel a large number of vehicles or pieces of equipment, consider using an off-site fueling station equipped to handle fuel and spills properly. Performing this work off-site can also be economical by eliminating the need for a separate fueling area at your site.
- If fueling must occur on-site, use designated areas, located away from drainage course to prevent the runoff of storm water and the runoff of spills.
- Discourage "topping-off" of fuel tanks.
- Always use secondary containment, such as a drain pan, when fueling to catch spills/leaks.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Use adsorbent materials on small spills rather than hosing down or burying the spill. Remove the adsorbent materials promptly and dispose of properly.
- Carry out all Federal and State requirements regarding stationary above ground storage tanks.
- Do not use mobile fueling of mobile construction equipment around the site; rather, transport the equipment to designated fueling areas. With the exception of tracked equipment such as bulldozers and perhaps small forklifts, most vehicles should be able to travel to a designated area with little lost time.

Stone Outlet Sediment Trap

- Maximum embankment height shall be 2 feet as measured from the toe of slope to the crest of the stone outlet. The height of the compacted earth embankment shall be one foot higher than the crest of the outlet.
- The maximum allowable flow-through rate shall be 0.1 CFS per square foot of the frontal area of the outlet structure.
- The effective life of the stone outlet sediment trap is approximately 18 months.

LIMITATIONS
 Limited applications due to cost of construction, availability of materials, and the amount of land required.

Can cause minor flooding upstream of dam, impacting construction operations.

This technique serves as a temporary measure during construction. It should not be used for more than 18 months due to reduced efficiency.

MAINTENANCE REQUIREMENTS
 Sediment shall be removed and the area directly behind the berm shall be regraded to its original dimensions at such point when the capacity of the impoundment has been reduced to one-half of its original storage capacity. The removed sediment shall be stockpiled or redistributed in areas which are protected from erosion.

The stone outlet structure should be inspected frequently and after each major rain event to check for clogging of the void spaces between stones. If the aggregate appears to be silted in such that efficiency is diminished, the stone should be replaced.

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Vehicle And Equipment Cleaning

LIMITATIONS
 Even phosphate-free, biodegradable soaps have been shown degrades. Sending vehicles/equipment off-site should be done in conjunction with Entrance).

MAINTENANCE REQUIREMENTS
 Minimal.

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Vehicle And Equipment Fueling

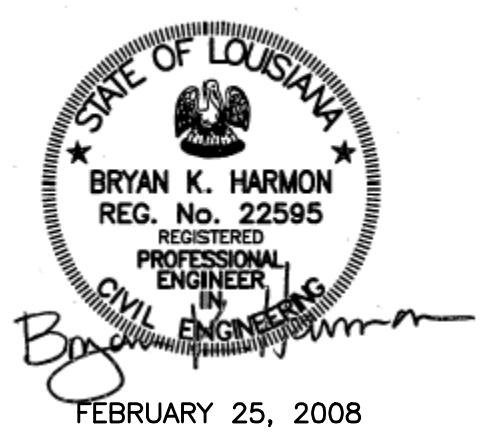
- Train employees and subcontractors in proper fueling and cleanup procedures.

LIMITATIONS
 Sending vehicles/equipment off-site should be done in conjunction with Stabilized Construction Entrance BMP.

MAINTENANCE REQUIREMENTS
 Keep ample supplies of spill cleanup materials on-site. Inspect fueling areas and storage tanks on a regular schedule.

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STANDARD PLAN NO. 903-01	DATED FEBRUARY 25, 2008	SHEET NO. 7 OF 11
STORM WATER POLLUTION PREVENTION PLAN BEST MANAGEMENT PRACTICES		
ENGINEERING DIVISION DEPARTMENT OF PUBLIC WORKS CITY OF BATON ROUGE & PARISH OF EAST BATON ROUGE		
DESIGNED G. CHENG	DRAWN G. VANNICE	CHECKED G. CHENG
		APPROVED B. HARMON

DATE	DESCRIPTION REVISIONS	BY