Caltrans

Maintenance

STORM WATER POLLUTION PREVENTION BULLETIN

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Management of Concrete Waste

Some highways are paved with concrete–so how can concrete waste be a potential storm water pollutant? The environmental concerns for concrete waste are potential sediment runoff and the potential to raise the pH of water. Portland cement concrete (PCC) contains alkaline compounds that when mixed with water raise its pH or degree of alkalinity. Concrete waste is generated during the following highway maintenance activities:

- Concrete paving, grinding, coring, or drilling
- Mudjacking
- Sawcutting
- Spall repair

Best management practices (BMPs) to protect the environment for these activities are described in the *Caltrans Storm Water Quality Handbooks, Maintenance Staff Guide* as:

- B Family - Rigid Pavement Activities
- K6 – Saw Cutting for Detector Loops

This photograph shows a vacuum that attaches directly to a 55-gallon drum which is used to collect concrete slurry waste.

Prevent Discharge of Concrete Waste

Follow these procedures to prevent discharging concrete waste to the storm water drainage system while conducting highway maintenance activities:

- Avoid conducting concrete work while it is raining.
- Protect down stream drain inlets during concrete paving, coring, drilling, cutting, and mudjacking, and sawcutting operations.
- Shovel or vacuum concrete residue into appropriate containers.
- Remove excess material from the roadway where practical.
- Use an appropriate container to capture excess material when cleaning out equipment.
- Transport excess material back to the maintenance facility or approved storage site.
- Minimize water use when washing out equipment and contain wash water.
- Perform washout in designated areas only. At least 50 feet away from any drainage facility or watercourse is recommended.

Concrete Washout Containment

It is important to contain runoff from concrete washout areas. Some examples to contain concrete include:

- Use a 55-gallon drum or other appropriate container large enough to completely contain the liquid and solid concrete waste. Make sure the drum lid is secure during transportation.
- Construct a temporary pit away from drain inlets that will completely contain the concrete waste. This can be done by digging a hole in the ground, or by constructing a bermed area using sand bags or straw bales. Be sure to check with your supervisor before placing concrete waste on the ground. There may be local requirements or other environmental restrictions regarding concrete waste disposal.
- Plastic bags can be used if nothing else is available. Avoid breaking the bags open by double-bagging and only filling the bags to about 1/5 of their capacity.

You Have Collected Concrete Waste–Now What?

The following practices are recommended for disposing of concrete waste collected during maintenance activities:

- Allow the solids to settle in the containers used to store the concrete waste.
- The water at the top of the settled solids may have an unacceptably high pH and should not be discharged to the storm drain system.
- Decant the clear water from the top of the settled solids to the wash rack or other area that drains to the sanitary sewer.
- If no sanitary sewer is available, allow the water to evaporate. A pit may be constructed as described above for evaporation.
- Allow the settled solids to dry. Recycle concrete waste material, if possible, or dispose as solid waste in the trash dumpster.

Additional Information

Additional information on concrete waste management can be found in the Construction BMP CD16 in the *Caltrans Storm Water Quality Handbooks, Construction Contractors Guide and Specifications*. Caltrans staff can request a copy of the storm water handbooks by calling the Caltrans Publications Distribution Unit (916) 445-3520.

This bulletin is published monthly by the Storm Water Compliance Review Task Force to support the Caltrans maintenance staff in its efforts to achieve and maintain compliance with storm water pollution prevention regulatory requirements.

Additional information is available in the Caltrans Maintenance Manual, Chapter C-6, or from your District Maintenance Storm Water Coordinator. Questions or comments may be directed to Jack Broadbent, Maintenance Storm Water Coordinator, (916) 653-0361