

PC-38 DEEP SUMP CATCH BASIN

Reference: King County Washington, Department of Natural Resources and Parks, Stormwater Pollution Control Manual.

Photograph to come.

BMP Objectives

- Perimeter Control
- Slope Protection
- Borrow and Stockpiles
- Drainage Areas
- Sediment Trapping
- Stream Protection
- Temporary Stabilizing
- Permanent Stabilizing

Definition and Purpose

A deep sump catch basin is designed to capture and treat runoff. This structure is a modified drainage inlet that removes debris, oil, grease, and sediment from storm flows. Runoff enters the top of the structure and flows through screened orifices to a treatment chamber. Stormwater flows out of the chamber through an inverted pipe. Because the pipe is inverted, pollutants are trapped in the basin.

Appropriate Applications

- Can be used to provide pre-treatment for other BMPs.
- Can be retrofitted to provide water quality treatment for small urban lots where larger BMPs cannot be used due to site constraints.
- Located underground so lot size is not a factor.
- Can be used as part of a storm drain system with a circular manhole or rectangular box.
- Can be easily accessed for maintenance.
- Generally used for parking lots, gas stations, convenience stores, or other areas with substantial vehicle traffic. Contributing area is expected to generate high sediment and hydrocarbon loadings.
- Contributing area to a single structure should be limited to one acre or less.

Limitations

Has limited pollutant removal capabilities and is expensive to maintain.

Design Parameters

- Structure discharge point is located at least 4 feet below the inflow point.
- Inflow pipe is designed to pass the design storm volume directly into the sump. Excess flows are routed to another BMP of sufficient capacity to meet water quality requirements.

- The volume of the permanent pool in the chamber should be maximized to achieve a consistent removal of pollutants.
- The chamber volume should equal 400 cubic feet (or more) per acre of contributing impervious area.
- Vertical baffles can be placed at the bottom of the structure to minimize sediment re-suspension.
- Outlet pipe should be covered with a trash rack or screen to keep suspended pollutants out of downstream discharges.

Maintenance and Inspection

- Conduct inspections as required by the NPDES permit or contract specifications during construction.
- Periodic inspection and maintenance will be required based on post-construction site conditions.
- Make any repairs necessary to ensure the measure is operating properly.
- Regular maintenance is required to ensure effectiveness of structure.