

Stormceptor® Overview

The Stormceptor System is a water quality device used to remove total suspended solids (TSS) and free oil (TPH) efficiently from stormwater. Stormceptor takes the place of a conventional manhole or inlet structure within a storm drain system.

The Stormceptor will capture the majority of the pollutants which are carried in the initial flows of the stormwater. A key advantage of Stormceptor compared to other water quality controls in a storm sewer is the patented internal by-pass which prevents the re-suspension and scouring of captured material during infrequent high flow conditions.

Stormceptor has two components:

- lower chamber
- upper chamber

Stormwater flows into the Stormceptor via the storm sewer pipe. Average flows are diverted into the lower chamber by a weir and drop pipe arrangement (Figure 1). The drop pipe is configured to discharge water tangentially along the lower chamber wall. Water flows through the lower chamber to the outlet pipe, which is submerged similar to the drop inlet pipe. Water flows up through the outlet pipe based on the head at the inlet weir, and is discharged back into the upper chamber downstream of the weir. The downstream section of the upper chamber is connected to the outlet sewer pipe.

Oil and other liquids with a specific gravity less than water will rise in the lower chamber and become trapped since the outlet pipe is submerged. Sediment will settle to the bottom of the chamber by gravitational forces. The circular design of the lower chamber is critical to prevent turbulent eddy currents and to promote settling.

During high flow conditions, stormwater in the upper chamber will overtop the weir and be conveyed to the outlet sewer directly (Figure 2). Water, which overflows the weir, creates a backwater effect on the outlet pipe (head stabilization between the inlet drop pipe and outlet riser pipe) ensuring that excessive flow will not be forced into the lower chamber which could scour or re-suspend the captured material. The by-pass is an integral part of the Stormceptor since other oil / grit separators have been noted to scour during high flow conditions (Schueler and Shepp, 1993).

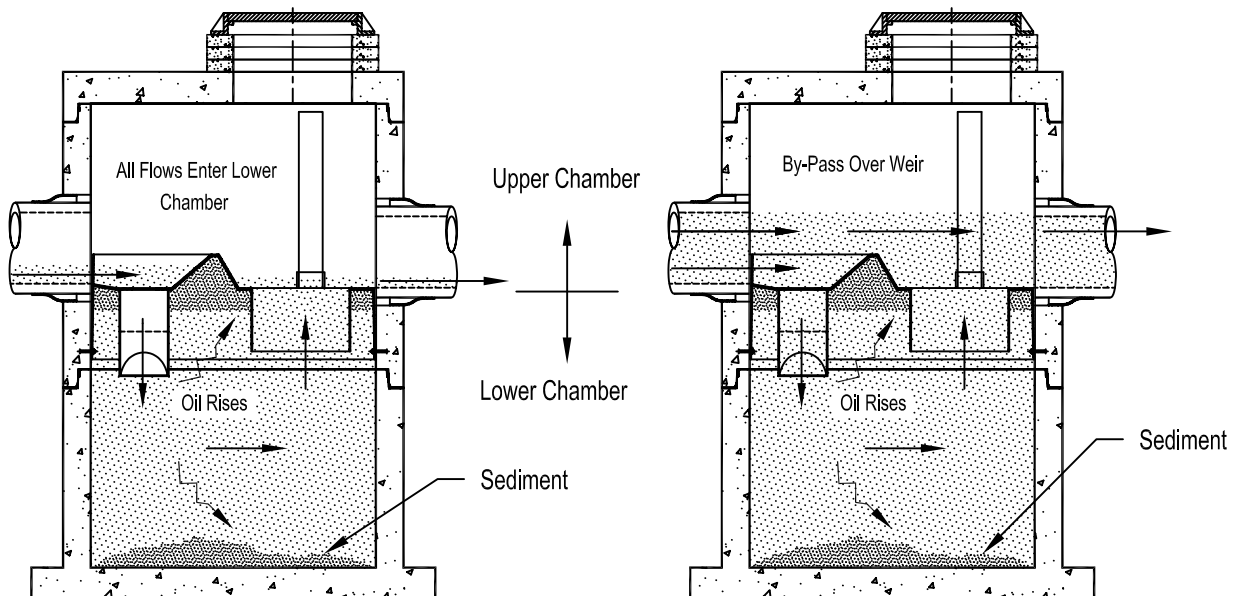


Figure 1

Stormceptor Operation During Average Flow Conditions

Figure 2

Stormceptor Operation During High Flow Conditions

Head Differential Reduced During By-Pass
(No Scour or Re-Suspension of
Pollutants in Lower Chamber)