

TESTING SUMMARY

Field Monitoring Results Westwood, Massachusetts

Summary: From July 1997 to November 1997 a Massachusetts firm, Environmental Sampling and Technology (EST), collected stormwater samples from a Stormceptor® Model STC 1200. Data collected from six storm events during this period indicate a very high removal rate for Total Suspended Solids (TSS). The data also indicates a high removal rate for Total Petroleum Hydrocarbons (TPH).

Average TSS Removal
93%

Average TPH Removal
82%

The average TSS removal rate is based on three storm events that produced significant inflow TSS levels. Significant is defined as levels that typically require treatment by regulatory permitting criteria. Only one storm event produced significant TPH levels. The TPH removal rate for this event was 82%. The TSS removal rate is higher than that predicted by the current sizing criteria

Methodology: EST, which specializes in stormwater sampling, installed two automatic stormwater samplers (ISCO Model 3700) inside the Stormceptor to collect composite samples at the inlet and outlet. The purpose of the sampling program was to determine Total Suspended Solids (TSS), Total Petroleum Hydrocarbons (TPH) and metals during a variety of storm events.

Flow was measured using a flow meter (ISCO 3230) used in conjunction with a temporary weir inserted into the 12" diameter influent pipe. The sampling program includes a composite sample consisting of twenty-eight 200ml aliquot samples collected at five-minute intervals over a four-hour period. A rain gauge mounted nearby is used to measure and record rainfall in 0.01-foot increments. Following each rain event during this five-month period, samples were collected and preserved in accordance with 40 CFR Part 136 and delivered to a certified laboratory.

Project Details: This Stormceptor was installed in October 1996 at a loading/unloading trucking area at a local manufacturing facility located in Westwood, Massachusetts. The paved area (impervious area of 0.65 acres) contributes runoff to a catch basin that is located upstream of the Stormceptor. The size of the unit was based on the sizing criteria listed in Table 5 of the Stormceptor Technical Manual.

(More information on the next page)

Event #1 (August 5, 1997)

Storm Intensity: 0.06 in/hr (1.5 mm/h)
 Total Precipitation during event: 0.18 inches (4.6 mm)
 Maximum Flow: 1.8 gallons per minute (0.11 L/s)
 Total Flow Volume (3 hours): 122 gallons (462 L)
 Composite Sample Period: 3 hours

Pollutant	Influent Composite	Effluent Composite	Pollutant Removal Rate
TSS	400 mg/l	5.3 mg/l	98%

Event #2 (August 21, 1997)

Storm Intensity: 0.08 in/hr (2.0 mm/h)
 Total Precipitation during event: 0.25 inches (6.4 mm)
 Maximum Flow: 2.3 gallons per minute (0.15 L/s)
 Total Flow Volume (3 hours): 304 gallons (1152 L)
 Composite Sample Period: 3 hours

Pollutant	Influent Composite	Effluent Composite	Pollutant Removal Rate
TSS	86 mg/l	6.8 mg/l	92%
TPH	7.8 mg/l	1.4 mg/l	82%

Event #3 (September 29, 1997)

Storm Intensity: 0.03 in/hr (0.8 mm/h)
 Total Precipitation during event: 0.22 inches (5.6 mm)
 Maximum Flow: 3.2 gallons per minute (0.2 L/s)
 Total Flow Volume (7 hours): 672 gallons (2545 L)
 Composite Sample Period: 7 hours

Pollutant	Influent Composite	Effluent Composite	Pollutant Removal Rate
TSS	47 mg/l	<5.0 mg/l	90%