

Leasing a Stormceptor® Now Possible in Ontario

Hanson Pipe & Products Canada Inc., recently introduced a new leasing option for purchasing a Stormceptor® System. Leasing arrangements are now available for three, five, or seven-year terms without tying up cash resources. Flexible start-up dates, a maintenance service package for the term of the lease, and third party care of assets are standard. Additional options are available if required, and at the end of the lease, the lessee owns the Stormceptor unit.

Savings to the Bottom Line

By leasing a Stormceptor System, infrastructure costs move from capital spending to operating costs which equates to immediate savings in taxes and budgeted expenditures and the impact of budget overruns is significantly reduced.

Worry-free Maintenance

The responsibility and obligation for inspection and sediment servicing of the unit is removed by including in the lease agreement the Stormceptor Service Package managed by



Minotaur Guardian Services Ltd. Customers can enjoy the convenience of receiving Stormceptor inspections and maintenance from one source, confident they are in compliance. Once financial issues are removed with the lease option, projects can move ahead quickly.

DRAINage



Performance Claim Verified
by the ETV Program

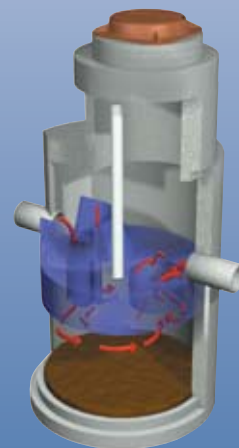


Illustration of a Submerged
Stormceptor System

Stormceptor®
www.stormceptor.com

DRAINage

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Newsletter
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Stormceptor® Excels in a Rare 100-Year Plus Storm

On July 15th, 2004, Peterborough, Ontario and the surrounding areas were inundated with approximately 200 mm (8 inches) of rainfall in just a few hours. According to Gerry Rye, the city engineer for Peterborough, "the July 15 flood was caused by a very large storm, the likes of which occur, only once every 300 or more years." People were forced out of their homes and businesses, and the stormwater and wastewater systems were overwhelmed. With many Stormceptor® units operating in the Peterborough area, this major storm event provided Stormceptor Canada Inc. (SCI) an excellent opportunity to evaluate the performance of its units under extreme conditions, including very high flows and floodwaters.

Souring Avoided

On July 22nd, 2004, Minotaur Guardian Services Ltd.* inspected 46 Stormceptor units in the Peterborough area. Sediment levels in the treatment chambers measured between 25 and 600 mm (1 to 24 inches), with an average of about 175 mm (7 inches). This compares to an average sediment level of less than 150 mm (6 inches) in the three to four months leading up to the storm. "We knew

the sediment levels prior to the storm because most of the Stormceptor units in the Peterborough area were inspected in early spring 2004. We anticipated a moderate increase in the sediment levels during the inter-inspection period and the results matched our expectations," said Tim Patriquin, Division Manager for the Stormceptor Group of Companies.

The Stormceptor System is an oil sediment separator for storm drain systems. The key advantage of this technology is the patented high flow internal bypass that prevents the re-suspension and scouring of captured pollutants during subsequent storm events. Although extensive laboratory and field testing have proven the effectiveness of the Stormceptor System, the Peterborough flood presented a rare opportunity to evaluate the internal bypass under extreme field conditions. This analysis provides additional field support demonstrating the performance of the Stormceptor System to avoid scouring, even during intense rain events.

* Hanson Pipe and Products manufactures all Stormceptors in Ontario. They offer a Quality Assurance Program that is provided by Minotaur Guardian Services Ltd.

Trade Shows - Come see us!

WEFTEC'04
October 3-6, 2004
New Orleans, Louisiana
Booth: 1629

ACWWA
October 17-19, 2004
Charlottetown, P.E.I.

Canadian Public Works Expo
December 1-2, 2004
Toronto, Ontario

Stormceptor is manufactured under license by:

IN CANADA



IN THE USA



IN AUSTRALIA



THE STORMCEPTOR GROUP OF COMPANIES

12 Madison Avenue
Toronto, ON M5R 2S1

† 800 565 4801
‡ 416 960 5637

THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS

Canadian Patent No. 2,009,208
Canadian Patent No. 2,137,942
Canadian Patent No. 2,175,277
Canadian Patent No. 2,180,305
Canadian Patent No. 2,206,338
Australian Patent No. 693,164
Australian Patent No. 707,133

THE STORMCEPTOR SYSTEM IS PROTECTED BY ONE OR MORE OF THE FOLLOWING PATENTS

U.S. Patent No. 4,985,148
U.S. Patent No. 5,498,331
U.S. Patent No. 5,725,760
U.S. Patent No. 5,753,115
U.S. Patent No. 5,849,181
U.S. Patent No. 6,068,765
U.S. Patent No. 6,371,690

Clear Returns: Economical Stormwater Quality Solutions by Stormceptor®

Penh Tov, P.Eng., Stormwater Specialist
Stormceptor Group of Companies



Hydrologists often design for quantity treatment where large infrequent design flows are considered for the purpose of flood protection and drainage. As a result, the Rational Method is adopted for conveyance designs.

The Stormceptor® System is designed for quality treatment. Historical rainfall data is examined to determine the characteristics of storms that represent the majority of the events that occur over the long term. These events tend to be frequently occurring small storms.

This design philosophy is similar to that presented in the general guidance document for *Urban Runoff Quality Management* prepared by WEF and ASCE*. By analyzing historical rainfall records, general trends indicate that frequently occurring storms tend to be small storms that constitute the majority of runoff volume over the long term. To illustrate, runoff from a 2.5 acre (1 ha), 100% impervious site is plotted using historical rainfall data for various areas in the state of Ohio (Figure 1).

Figure 1 demonstrates that a large percentage of runoff volume (almost 90% in this example) is contributed by small storms that yield low runoff rates (< 1.5 cfs or 42 L/s). By designing stormwater quality treatment systems to treat most frequently occurring flows, a high level of treatment and an economically feasible solution is achieved. Treating higher runoff rates does not necessarily yield a significant increase in removal efficiency and, therefore, does not provide an optimum cost-effective solution. The design for stormwater quality treatment can be determined using data found at the “knee of the curve” in Figure 1.

Internal Bypass Achieves Quality Stormwater treatment

For infrequently occurring higher flows, the Stormceptor System treats the “first flush” portion of a large storm when pollution loading tends to be higher. When the remainder of the storm gives way to higher flows, the patented internal bypass enables the Stormceptor System to treat up to its maximum flow rate and to bypass the remainder of the runoff volume.

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By capturing frequently occurring events and bypassing infrequent excess flows, a high level of treatment is achieved without the risk of scouring previously captured materials. Scouring generally occurs when flows or velocities entering a device are high enough to re-suspend settled sediment. The Stormceptor System prevents scouring by controlling flows in the lower chamber and internally bypassing excess flows. The Stormceptor System is the only proprietary stormwater Best Management Practice with an in-line bypass

capability. Unlike other technologies, the Stormceptor System effectively allows excess flows to bypass the lower chamber without the added cost of installing upstream and downstream off-line bypass structures required by other stormwater quality devices.

* Water Environment Federation and American Society of Civil Engineers (1998) *Urban Runoff Quality Management*. WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87, USA.

Humeceptor® Treats Large Stormwater Volumes on Limited Real Estate along Perth’s Leach Highway, Australia*

Leach Highway is a major six-lane highway linking key industrial areas and residential suburbs in Perth. It carries significant traffic including heavy vehicles such as semi-trailers and fuel and oil tankers. To improve water quality and to protect the local environment, Main Roads Western Australian and the City of Melville implemented Perth’s Leach Highway stormwater runoff project in 2003.

Prior to the installation of the Humeceptor®**, stormwater runoff from a 4.3 ha (10.6 acre) catchment of Leach Highway was being discharged directly into a regionally significant wetland at Booragoon Lake. The need to remove pollutants such as hydrocarbons and heavy metals bound with sediments; inherently associated with stormwater runoff from major roadways, such as Leach Highway, was identified by the City of Melville and Main Roads Western Australia, in conjunction with GHD Pty Ltd.

Humeceptor® Designed for Limited Real Estate

GHD Pty Ltd. required a stormwater treatment device capable of removing hydrocarbons, sediments and heavy metals as well as handling the possible rollover of an oil or fuel tanker. Historical and statistical analyses demonstrated that the 2,980 litre (765 US gallons) oil storage capacity of the STC18 Humeceptor, traditionally installed to treat highway runoff, would be insufficient to cater for a potential fuel or oil spillage. A new Humeceptor design was required for Perth’s Leach Highway including an additional 19,000 litres (5019 US gallons) of storage capacity.

In addition to the potential storage capacity issues, the team faced tight spatial constraints. Only a 10m (33’) strip lay between Leach Highway and the nearby Booragoon Lake, thus a small footprint was an essential prerequisite for any treatment device. The solution was building an adjacent concrete stormwater oil storage tank connected to the oil storage zone of the STC18 Humeceptor®.



Humeceptor® installation at Booragoon Lake in Perth, Australia, to treat stormwater runoff from a catchment area near Leach Highway.

Quick Installation

The Humeceptor design made it possible for contractor DM Civil to complete the installation within hours, thereby avoiding excessive dewatering and potential contamination from acid sulphate soils.

* Adapted with permission from “Humeceptor Treats Perth’s Leach Highway Stormwater Runoff” published in Construction News, December 2003.

** Stormceptor® is manufactured in Australia by Humes under the Humeceptor® Trademark.

Cumulative Frequency Plot of Runoff Volume vs. Flow Rate (Figure 1)

