

In this issue:

New Stormwater
Neutralization Solution

Stormceptor®
Engineered to Protect

Stormceptor®
Protects Threatened
Brook

Now Available
in New Zealand

News from the Field

Ask an Expert

Trade Shows



© Balreet Dandiwal

Next Generation Environmental Protection: Stormwater Neutralization

Paul Chapple, MSc., Green Turtle

Safe treatment of high pH stormwater is now available, using a new stormwater neutralizing treatment process.

A large ready-mixed concrete supplier operating batch plants in Ontario, Canada, wanted to improve the treatment quality of stormwater at its plants. The stormwater runoff discharged at its batch plants contains oil, sediment and alkali due to the aggregates stored on the sites.

Conventional practices to neutralize alkali stormwater include holding ponds or tanks and injecting hazardous hydrochloric acid (HCl) or sulfuric acid (H₂SO₄) into the stormwater prior to discharge. Employing such dangerous treatment methods raised serious concerns for the company, including inconsistent treatment and employee safety. A consistent, effective and safe solution was required.

An engineering firm was hired to design an unique stormwater management solution to treat high pH stormwater runoff at an unstable site (the chosen plant area was predominantly covered in gravel). The consultant identified the Stormceptor® System as the optimal stormwater treatment system. Engineers from the Stormceptor Group and Hanson Pipe and Products Canada Inc. sized the Stormceptor

System to comply with the Ontario Ministry of the Environment's Normal Water Quality Objective (70 percent annual TSS Removal and 85 percent annual runoff capture), based on the unstable site conditions.

To develop a safe and simultaneous neutralization system for the high pH stormwater, the Stormceptor Group worked with Green Turtle, a sister company specializing in wastewater treatment. A solution was identified by integrating the PHIX™ Basic Series System (by Green Turtle) and the Stormceptor System. At the ready-mixed site, the PHIX Basic Series System is located in a maintenance building 70 ft (22 m) from the Stormceptor System. Using a pH probe, the PHIX Basic Series System continuously monitors the pH of the stormwater, located in the lower chamber of the Stormceptor unit.

When the monitor reaches a pH level of 8.5 or more, the neutralization system automatically activates and begins drawing stormwater from the Stormceptor riser pipe. A self-priming pump sends the stormwater into the PHIX Basic Series System where CO₂ is injected to lower the pH. The stormwater is then forced through a static mixer ensuring effective and efficient neutralization. The neutralized stormwater returns to the Stormceptor System through a secondary drop-tee for treatment.

The ready-mixed concrete supplier is pleased with its new, safe and effective stormwater treatment system that efficiently removes oil and sediment and neutralizes pH without risking the health of their employees.



© Kyle "Scooter" Chisholm

Stormceptor® Engineered to Protect

TARP Tier I Approval Verifies Stormceptor® System's Superior Performance

Penh Tov, P.Eng., Stormwater Specialist

Brian Lee, P.Eng., Stormwater Specialist

Fabio Tonto, P.Eng., Stormwater Specialist

In February 2005, Stormceptor® received TARP Tier I interim certification from New Jersey Department of Environmental Protection (NJDEP). The certification verified the performance of the Stormceptor System during normal and high flow conditions. The Stormceptor System, with accurate sizing methodology and its specially engineered internal by-pass, met all laboratory testing requirements without scouring. The certification program was developed to provide scientifically creditable and reliable data on stormwater technologies and their performance claims enabling states, regulators and engineers to make sound and defensible stormwater treatment decisions.

The Technology Acceptance and Reciprocity Partnership (TARP) program was established as a standardized method of collecting and evaluating technology performance claims. The uniform protocols are shared with the eight participating states: New Jersey, California, Illinois, Maryland, Massachusetts, New York, Pennsylvania and Virginia. The TARP program is

a three-tiered process including full-scale laboratory testing, field tests and regulatory permits. One of the objectives of the program is to evaluate and verify stormwater treatment technologies during various flow scenarios including high flows, beyond the technologies' documented capabilities. By verifying and certifying performance claims, engineers can accurately compare and confidently size the technologies to ensure optimal performance and protection.

The Stormceptor Group conducted a full-scale Tier I laboratory test. The rigorous testing protocol required the technology be tested beyond its normal operating capacity with a finer particle size gradation (50 percent smaller than typically sized for the Stormceptor) and be pre-loaded with 50 percent sediment capacity.

The purpose of the laboratory test was to evaluate the unit's performance under various flow scenarios, and the ability of the device to retain previously captured pollutants even during high flows. The test also confirmed the precision of the Stormceptor theoretical model and the accuracy of Stormceptor sizing, even for extreme flow conditions.

TARP Tier I approval further substantiated Stormceptor's claim that effective stormwater treatment can be founded on a scientific sizing methodology using known theoretical models and computer simulation. The certification also confirmed the crucial protection the internal by-pass provides against pollutant re-entrainment without affecting long-term TSS removal goals even during high flows. To date, Stormceptor is the only single-structured stormwater treatment device to perform a scour test for Tier I approval.

"We are extremely pleased with our Tier I approval," said Tim Patriquin, P.Eng., MBA, Stormceptor Group Manager. "The TARP program allows us to test and verify the Stormceptor System against independently developed testing protocols. The results truly illustrate Stormceptor's ability to effectively treat stormwater runoff during severe conditions without scouring."

Stormceptor is committed to providing clear and accurate performance data and carried out the TARP Tier I testing with prudence. Stormceptor engineering prevailed under extreme conditions validating the continuous effort to build treatment solutions that protect the environment for future generations.

"With 15 years experience, we are pleased that TARP Tier I confirms Stormceptor's superior performance and technology. As a pioneer and leader in the stormwater treatment industry, Stormceptor is looking forward to participating in TARP Tier II," said Patriquin. To learn more, please contact info@stormceptor.com.

Stormceptor® Protects Threatened Brook

Stewart Totten, Sales Associate, Strescon

Mapleton Village is nestled on the outskirts of picturesque Moncton, New Brunswick, Canada. Close to the city and surrounded by forests, it is an ideal location for young families with children. Running through this new development is Rabbit Brook. Protecting this waterway from contaminated stormwater runoff is essential to ensure the sustainability of the local environment and public health. Faced with limited space and strict environmental requirements, AV Construction* needed a simple, efficient and cost-effective solution to protect Rabbit Brook and the community.

AV Construction contracted Basic Design and Associates (BDA) to design the stormwater treatment facility. Initially, a detention pond was proposed. The pond, however, presented numerous concerns including public safety, high maintenance costs and large land area needs. Requiring an alternative to ponds, AV Construction charged BDA to identify a new stormwater treatment solution.

Superior Stormwater Treatment in Limited Space

With its simple, non-scouring design and small footprint, Strescon presented the Stormceptor® System to BDA as a superior solution to effectively remove suspended solids and hydrocarbons from the stormwater runoff in the limited geographic area of the new housing development. In addition, the Stormceptor System offered further protection to the Rabbit Brook ecosystem by removing fine sediment and containing captured contaminants, even during large storm events.



Strescon easily installed the Stormceptor System underground and inline with stormwater sewer infrastructure thereby minimizing public safety liability and creating more free land for additional development. The residents benefited too; protected from harmful stormwater pollutants, Rabbit Brook can be enjoyed safely and the natural environment continues to thrive.

Faster Approvals Using Stormceptor®

AV Construction is confident and pleased with the Stormceptor System solution for Mapleton Village. By including the Stormceptor System in the expansion, AV Construction attained faster approvals from the city for the housing development.

Stormceptor is available in Atlantic Canada from Strescon, www.strescon.com

* AV Construction Ltd., located in Dieppe, NB, is owned and operated by Sira Enterprises Ltd.

Humeceptor®* Now Available in New Zealand

Keron McCallum-Gaul, Principal Environmental Engineer
Humes™ Australia

Humes™ Australia is pleased to announce that Humes Pipeline Systems of New Zealand have signed a sub-license agreement to market and manufacture the Humeceptor® throughout New Zealand and the South Pacific Island Region.

Stormwater treatment is in its infancy in New Zealand. The Auckland Regional Council has identified the importance of removing 75 percent total suspended solids from stormwater. It only allows stormwater Best Management Practices that meet this performance criterion, to be installed

to treat contaminated stormwater runoff, including the Humeceptor System.

It is anticipated that strong regulatory controls combined with a good understanding of water quality issues will build a solid foundation for growth and acceptance of Humeceptor System in New Zealand. In August 2005, Humes will install two Humeceptor units in a large tire manufacturing facility in Christchurch.

Welcome Humes Pipeline Systems to the Stormceptor® family!

Humes™ Pipeline Systems is the oldest and largest provider of pipeline systems and precast concrete products in New Zealand. The company operates ten manufacturing facilities and 20 pipeline sales centers covering throughout New Zealand and is active in most of the South Pacific Islands including the Cook Islands, Fiji, Vanuatu, Samoa, Tahiti, New Caledonia and Norfolk Island.

* Stormceptor® is manufactured by Humes Australia under the Humeceptor® trademark.0

News from the Field

Stormceptor® Now Approved in Indianapolis

We are pleased to announce the Stormceptor® System is now approved in Indianapolis, Indiana. The Stormceptor System is the first stormwater treatment product ever to be approved under the City of Indianapolis'

newly established criteria for Stormwater Quality Treatment Systems (SWQTS). The Stormceptor System is available and manufactured locally in Indianapolis by Rinker Materials™.

For more information, please visit www.rinkermaterials.com

Ask an Expert

What is the importance of the Stormceptor internal bypass?

*Kelsy B., P.Eng.
Ottawa, Ontario, Canada*

The internal bypass is integral to the high efficiency operation of the Stormceptor® System. The internal bypass prevents scouring by ensuring that all previously captured sediment, oil and hydrocarbons do not re-suspend during infrequent high flow conditions.

Under normal flow conditions, all stormwater runoff enters the lower chamber of the unit where sediment settles to the bottom and oil

and other hydrocarbons are trapped beneath the fiberglass insert. During infrequent, high flow conditions, effective stormwater treatment continues, with a portion of the stormwater entering the lower chamber for treatment. To prevent scouring, excess stormwater flows through the internal bypass and exits via the outlet pipe. Receiving waters are effectively protected from captured pollutants.

Tim Patriquin, P.Eng., MBA
Stormceptor Group Manager

*Have a question for a Stormwater Specialist?
Ask an Expert by emailing your question to info@stormceptor.com*

DRAINage



Performance Claim Verified by the ETV Program

Trade Shows - Come see us

StormCom' 05 Orlando, Florida Jul. 18 to 21, 2005 Booth: 319	APWAC* Minneapolis, MN Sept. 11 to 13, 2005 Booth: 1216	WCWWAA** Saskatoon, Saskatchewan Oct. 16 to 19, 2005	WEFTEC' 05 Washington, DC Oct. 29 to Nov. 2, 2005 Booth: 8063
---	--	--	--

* American Public Works Association Congress

** Western Canada Water and Wastewater Association Annual Conference and Tradeshow

Stormceptor is manufactured under license by:

IN CANADA



IN THE USA



IN AUSTRALIA



IN NEW ZEALAND



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

Australia Patent No. 693,164; 693,164; 707,133; 729,096 -693,164 / Canadian Patent No. 2,009,208; 2,137,942; 2,175,277; 2,180,305; 2,180,383; 2,206,338 / China Patent No. ZL 97 1 13074.4
European Patent Treat Patent No. 95 307 996.9 / Japan Patent No. 9-11476 (Pending) / Korea Patent No. 10-2000-002601 (Pending) / Malaysia Patent No. P19701737 (Pending) / New Zealand Patent No. 314646 / United States Patent No. 4,985,148; 5,498,331; 5,725,760; 5,753,115; 5,849,181; 6,068,765

STORMCEPTOR GROUP

12 Madison Avenue
Toronto, ON M5R 2S1
T 800 565 4801
F 416 960 5637


Stormceptor®
www.stormceptor.com