THE DRAINage

CONFUSED ABOUT BMP PERFORMANCE?

For years hydrologists have been tackling the challenge of using flow measurements from one catchment to estimate flows in another.

Similar challenges exist for stormwater quality treatment designers when using historical monitoring data to estimate future pollutant loads and performance of stormwater best management practices (BMPs). Unfortunately, measured performance (the efficiency of pollutant removal) cannot be easily compared between different monitoring sites or used to size future systems.

Generalizations about the effectiveness of BMPs are often made from a limited review of monitoring data. To obtain approval in many jurisdictions, structural BMPs must achieve sediment removal efficiency targets of 80% or more for sensitive sites (Calgary, 2000; MDE, 1998; MA DEP, 1997; ON MOEE, 1994). When monitoring data are reviewed and results show removal efficiencies were less than 80%, designers and reviewers often incorrectly conclude that the BMP is not capable of achieving the efficiency target.

Consideration must be given to other factors that contribute to the measured efficiency. These factors can increase or decrease perceived performance. One factor that is most often ignored is the designed removal efficiency. If the BMP was designed to

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The Stormceptor® System is a vertically-oriented stormwater separator that removes oil, sediment and other pollutants from urban runoff. Its built-in bypass feature prevents trapped contents from flushing out during intense rain storms.

STORMCEPTOR SYSTEMS IN USE TO DATE

9016

DESIGN ONLINE!

Visit our website www.stormceptor.com to design online with our interactive Expert System Tool

STORMCEPTOR® UNITS INSTALLED AT THE PORT OF LOS ANGELES

Comprising 7500 acres and 35 miles of waterfront, the Port of Los Angeles is one of the largest and most diversified seaports in the world. Located in San Pedro Bay, approximately 20 miles from downtown Los Angeles, the Port is America's leading cruise terminal on the west coast and its busiest container port, moving a record breaking five million marine cargo containers (TEUs) in November 2001 alone.

To enhance the existing terminal's efficiency, the Board of Harbor Commissioners moved ahead with the construction of Berth 100 Wharf and

Container Terminal located in the West Basin area of the Port, former home to a Chevron Marine Terminal and Todd Shipyard which closed in the early 1990s. The Wharf portion of the project is currently under construction and will provide the Port with an estimated additional 327,000 TEUS in container capacity.

As the first port authority in the U.S. to establish an Environmental Management Division in 1973, the Port of Los Angeles has become pro-active in the environmental arena over the last several decades. In light of this past history, it was only appropriate that Port engineers, working with their consultant DMJM Harris of Orange, California, made a special effort to pre-treat the storm water runoff from the completed project site prior to it being discharged into the Pacific Ocean. A stringent water quality specification was formulated to ensure that the

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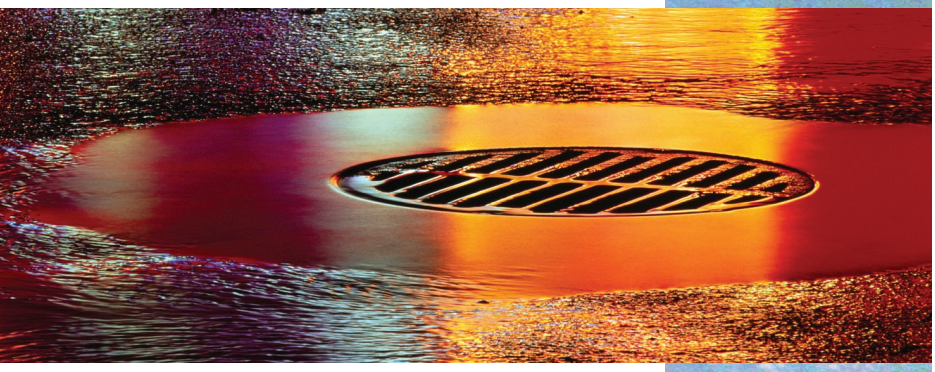
CONFUSED ABOUT BMP PERFORMANCE?

achieve an efficiency of 70%, a measured efficiency of less than 80% can still support the conclusion that the BMP is very effective. Conversely, in some instances where minimal effort has been expended to obtain data of only poor quality, positive conclusions are erroneously drawn. For example, grab samples taken upstream and downstream of a BMP at one instant in time do not support the conclusion that the unit is effective over the long-term.



Inappropriate conclusions have led to confusion regarding the effectiveness of both traditional and proprietary BMPs. To use field data as a tool for assessing the effectiveness of future BMPs, an appropriate frame of reference must be developed, a frame of reference that effectively normalizes the data. A number of factors that need to be normalized and considered when using test data to estimate future performance include:

Design – Compare the expected performance to the measured performance. How well was the measured performance predicted?

Site and Land Use – Consider the land use at the test site compared to the design site. The performance of a unit tested in a public works yard or construction site will differ from a shopping mall parking lot, just as the hydrology and runoff coefficients/characteristics will differ.

Configuration – Consider variations caused by hydraulic structures, flow controls, upstream storage or pre-treatment, use of bypasses (internal or external), and the use of oil absorbents in the test unit. The design unit must have the same configuration as the test unit to have similar performance.

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ATLANTIC CITY EXPRESSWAY ADDS 24 NEW UNITS

Camtek is pleased to announce a record order for Stormceptor® units in its territory placed on April 12 for:

24 units - 14-STC 900 and 10-STC 450i

Project Location- Pleasantville, NJ

Camtek provides exclusive representation of the Stormceptor System for Rinker Materials in five states and is proud to have received the first U.S. orders for an STC450 (New Rochelle, NY, in 2000) and the Series Stormceptor. (Long Island, NY, 2001).

Andy Virostec
President,
Camtek Construction Products Corp.

WEFTEC 2002

Stormceptor will once again be featured at WEFTEC, the largest wastewater and water quality exposition in North America.

The 75th Annual Conference and Exposition is being held at the McCormick Place in Chicago, IL, from Friday September 27th to Wednesday October 2nd.

Please visit www.weftec.org for further information about the event and visit us at BOOTH #1727!

UPCOMING INDUSTRY TRADE SHOWS

Carder Concrete Products will be participating in the following Trade Shows

ASCE 9th International Conference on Urban Drainage, September 8-11 in Portland, OR.
Visit us at booth 18!
For details **www.asce.org/conferences/9icud2002**

CASFM 13th Annual Conference,
September 11-13 in Steamboat Springs, CO.
For details **www.casfm.org**

Lafarge Canada Inc. will be showcasing in the following Trade Shows

AUMA - Alberta Urban Municipalities Association, 96th Annual Convention and Trade Show,
September 18-21 in Calgary, AB.
Visit us at booth 140!
For details **www.munilink.net**

SWIFT - Summer Winter Integrated Field Technology Conference for Airport Equipment,
September 8-12 in Calgary, AB.
Visit us at booth 52!
For details **www.swiftconference.org**

CPWA - Canadian Public Works Association Annual Conference and Trade Show,
October 28-30 in Red Deer, AB.
Visit us at booth 34!
For details **www.publicworks.ca**

Camtek will be participating in the following Trade Shows

The Pennsylvania DEP and Pennsylvania Soil Conservation District's Erosion Control Conference,
September 17-18 in Ramada State College, PA.

PCNY (Precast Concrete Association of NY) Stormwater Quality Workshop, January 2003 (date still tentative) in Albany, NY.

PROMOTIONS

Congratulations to Mike Schmidtler and Ryan Finley of Lafarge Canada Inc., the licensed Stormceptor manufacturer in Western Canada. Mike was recently promoted to General Manager of the Calgary Pipe Plant and Ryan was promoted to the position of Design and Marketing Engineer for Stormceptor and Pipe in Southern Alberta.

The Metra project which was built in conjunction with IDOT recently won a Merit Award from the consulting Engineers Council of Illinois, 2002 Engineers Excellence Awards Competition.

STORMCEPTOR® SYSTEMS

- INLET
- INLINE
- SUBMERGED
- SERIES

STORMWATER IMPLEMENTATION AT SCHAUMBERG

Schaumberg is a progressive community and is implementing stormwater quality measures in anticipation of the upcoming NPDES rules and regulations.

The Village of Schaumberg, IL, is located west of Chicago's O'Hare Airport and has a population of approximately 80,000. Waukesha Concrete Products, a Stormceptor licensee for Illinois and Wisconsin, has been working with Corey Schuster of the Schaumberg Engineering Department over the past three years. Waukesha has supplied the Stormceptor System for six projects including: Apria Healthcare, Daily Herald, EM Jorgenson, IKEA Store, Sears Great Indoors and the Schaumberg Commuter Station Parking Lot Reconstruction. The Metra project which was built in conjunction with IDOT recently won a Merit award from the consulting Engineers Council of Illinois, 2002 Engineers Excellence Awards Competition. The site has two Stormceptor structures that treat the parking lot run-off before the stormwater runs into an adjacent environmentally sensitive wetland area. Corey Schuster said the reasons they specified the Stormceptor system was because it is a simple but effective stormwater quality system, and they received good support from both Waukesha Concrete and Stormceptor. Waukesha has been helpful to the contractors as well by being on site during each installation. Stormceptor offers a wide selection of sizes to meet all the needs of their various sites. Corey also stated that due to the high cost of land in Schaumberg, water quality detention basins are often cost prohibitive and Stormceptor has been an effective method of addressing stormwater quality.

Chicago's O'Hare Airport

Jim Luedeke
Sales Representative
Waukesha Concrete Products, Inc.

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STORMCEPTOR® ASSISTS THE PORT OF LOS ANGELES

implemented Structural Best Management Practices (BMPs) would be well tested and proven in their ability to remove a large percentage of the fine sediments and hydrocarbons typically found in storm water runoff. These finer sediments tend to transport nutrients and heavy metals.

Being in a coastal environment, the storm drain outfall pipes operate in a partially submerged condition most of the day so it is critical that the BMP will still perform in this tidal situation.

Stormceptor was subsequently chosen as the preferred BMP to satisfy both the specified treatment and submerged criteria. Each unit is fitted with a special insert to operate under submerged pipe conditions.

A total of 10 Stormceptor units were manufactured to the highest quality standards at the Los Angeles Plant of Rinker Materials' Hydro Conduit Division in Corona, California, and shipped by truck to the project site in San Pedro from May through July 2002.

The installation contractors were Sully Miller of Anaheim, California, and Traylor Pacific of Irvine, California.

Jim Johnston P.E.
Region Engineer, Los Angeles Region
Rinker Materials, Hydro Conduit Division

IDEAL APPLICATIONS INCLUDE

- Industrial Properties
- Commercial Parking Lots
- Gas Stations
- Transportation Terminals
- Highways / Streets
- Pond / Wetland / Infiltration Pre-Treatment

Performance Claim Verified by the ETV Program

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CONFUSED ABOUT BMP PERFORMANCE?

Monitoring Protocol and Test Procedures – Understand the definition of the pollutant measured during the test because a similar name might exist for a different pollutant or test procedure. For example, sediment removal efficiency is highly dependent on sediment size. High removal efficiencies can occur at a test site dominated by coarse sediment. If these results are used to size a unit on a site with very fine sediment, the design will fail because the same level of performance will not be achieved.

Other considerations exist such as the method of calculating performance and the meteorological conditions under which the performance data were collected.

Before using performance data or sizing methods based on these performance data to design future BMPs, the conditions under which the measurements were made must be examined to determine if they are relevant and similar to the design site. Designers should be aware of dissimilarities between test sites and design sites and use some method for normalizing the variations, such as a calibrated and validated computer model.

Todd Neff, P.Eng.
Engineering Director and Division Manager
Stormceptor Canada Inc.

References

Calgary, City of, Stormwater Management & Design Manual, Draft 2000, p 4-14, 2000.

MDE, Maryland Department of Environment, Maryland Stormwater Design Manual Volumes I & II, September 1998 Review Draft, p1.13, 1998.

MA DEP, Massachusetts Department of Environmental Protection, and Massachusetts Office of Coastal Zone Management, Stormwater Management, Volume One: Stormwater Policy Handbook, p1-4, 1997.

ON MOEE, Ontario Ministry of Environment and Energy, Stormwater Management Practices Planning and Design Manual, pp 171-176, 1994.

Stormceptor is manufactured under license by:

IN CANADA LAFARGE CANADA INC. · Hanson · LECUYER · STRESCON LIMITED

IN THE USA Rinker MATERIALS · CRETEX COMPANIES, INC. · CARDER CONCRETE PRODUCTS · WYOMING CONCRETE PRODUCTS

IN AUSTRALIA CSR Humes

THE STORMCEPTOR GROUP OF COMPANIES
12 Madison Avenue
Toronto, ON M5R 2S1
Tel: 800-565-4801
Fax: 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

RINKER MATERIALS HYDRO CONDUIT DIVISION
712 Broadway, Suite 600
Kansas City, MO 64105
Tel: 800-909-7763
Fax: 816-802-3871

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