

CRYSTALCLEAN SEPARATOR RESUME

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STORMWATER TREATMENT BMP

- ♦ **Over 12 years of Experience as a Certified Water Quality Product** having been designed and installed on a variety of stormwater applications, providing the optimal performance with removal rates in excess of 80% TSS and 40% Phosphorus helping to protect the environment and client. Project backgrounds range from industrial to residential, to commercial applications.
- ♦ **Extensive background in the capture** of a variety of pollutants without discharging captured pollutants at flows greater than the water quality flow. Can be designed for flows in excess of 100 cfs (cubic feet per second).
- ♦ **Demonstrated success in real life employment and maintenance friendliness** with over 1400 installations and 5000 documented cleanings and in excess of 13.5 million pounds of sediment removed from stormwater.

SKILLS

<i>Maintenance Friendly</i>	<i>100% Full Flow Treatment</i>	<i>Sediment Removal- 80% plus</i>
<i>Site Specifically Designed</i>	<i>Assembled prior to delivery</i>	<i>Phosphorus Removal – 40% plus</i>
<i>Contractor Friendly</i>	<i>Cost Competitive</i>	<i>Nitrogen Removal-45% plus</i>
<i>Optional Internal Bypass</i>	<i>5 year Warranty on Internals</i>	<i>Heavy Metals- 41% plus</i>
<i>Shallow Installations</i>	<i>Locally manufactured to project</i>	<i>Hydrocarbon Reduction-80%</i>

EMPLOYMENT EXPERIENCE

I-15 INTERSTATE CORRIDOR — Salt Lake City, Utah

CST Model 1266, 2011 Spring Installation

The CrystalClean Separator was selected as the Stormwater Treatment Device of choice for over 8 locations on this project, but one specific location of concern by the Utah Fish and Wildlife was to provide maximum protection from the runoff into the Utah Lake where the endangered species called the June Sucker Fish exist. This is the only place in the world where you can find this species of fish.

Key Results:

- ♦ Reduction of Heavy Metals
- ♦ Reduction of Sediment Loading
- ♦ Hydrocarbon Reduction
- ♦ Phosphorus Reduction

WEGMANS DISTRIBUTION CENTER — Rochester, New York

CST Model 1056, 2010 Summer Installation

A parking lot expansion was needed in order to accommodate the additional volume of trucks coming in and out of the facility on a daily basis. However space was very limited and could not utilize a standard holding pond or other standard practices to treat the stormwater before it was released into the storm system. Looking at various product test results the CrystalClean Separator was selected as the product of choice to operate as a stand-alone line of defense against pollutants being washed off.

Key Results:

- ♦ Reduction of Phosphorus
- ♦ Reduction of Sediment Loading
- ♦ Hydrocarbon Reduction

PROFESSIONAL EXPERIENCE (CONTINUED)

MYRTLE BEACH. — Myrtle Beach, South Carolina

Various CST Models, 2005 Installation

The City of Myrtle Beach was faced with the problem of thousands of visitors daily who stayed and played in close proximity to the beach. Storm drains from the hotel district emptied directly onto the beach, bringing trash, oil, debris and bacteria along with the runoff. A pipe collection system was to be installed just beyond the seawall, but the pipes would have to be laid flat. Any sediment or trash that washed into the pipes would impact the system, and seriously affect performance. To protect the pipes, the City decided on the CrystalClean Separator as the best product for the job. Today the beach is clean, free of pipe outfalls, odors, and bacteria. Tons of trash and debris have been removed from the CST devices that continue to protect the “Grand Strand” at Myrtle Beach.

Key Results:

- ◆ Trash & Debris Capture
- ◆ Sediment
- ◆ Hydrocarbons

HIGHLANDS DOWNTOWN. — Highlands, North Carolina

CST Model 2056, 2010 Installation

The Town of Highlands wanted to clean up a stream that passed through the heart of this upscale mountain community. The downtown area is a mix of small shops, bed and breakfast inns, galleries and fine restaurants. It is a prized, high altitude destination in the Great Smokey Mountains, with a unique climate that feature over 90 inches of annual rainfall. A CrystalStream device was placed at the front of drainage improvements to water quality treatment, and a large underground detention/retention area was placed downstream to reduce flooding. The CST device alone has removed over 95% of the solids from the stormwater. The average concentration of solids in the effluent from the CrystalStream unit is so low that it rivals the discharge from a modern wastewater treatment plant.

Key Results:

- ◆ Trash & Debris Capture
- ◆ Sediment
- ◆ Hydrocarbons
- ◆ Phosphorus
- ◆ Heavy Metals

A full list of work experience installations is available upon request.

EDUCATION & CERTIFICATIONS

ALDEN LABORATORIES STORMWATER TESTING FACILITY — Holden, MA

2nd Party Study of CST Model 956

Overview: Was intended to test the product lab conditions using a silica sand with a D50 of 90um. The test was intended to establish a performance and re-suspension curve of the material tested.

Results:

- ◆ Curves supported the field study performance results and the validity of the design process
- ◆ 81% Removal Efficiency of OK-110 according to NJCAT guidelines.

EPA-ENVIRONMENTAL TECHNOLOGY VERIFICATION — Griffin, GA

Third Party Study of CST Model 1056

Overview: Independent third party testing was performed on a CrystalStream Model 1056 Water Quality Vault treating approximately 4 acres including a highway, other roadways and parking areas in Griffin, Georgia known as the TEA-21 Project Area. Testing consisted of 15 qualifying events recording flow data and collecting samples using automated composite sampling. Analysis of the samples was completed using SSC.

Results:

- ◆ 89% TSS Capture
- ◆ 40% Phosphorus Capture
- ◆ 25% Nitrates Capture
- ◆ 50% Nitrites Capture
- ◆ 13% TKN Capture

USGS-SCDOT FIELD STUDY — Beaufort and Colleton Counties

CST Model 1266

Overview: Independent third party testing was performed on a CrystalStream Model 1266 Water Quality Vault and 3 other Water Quality products treating highway applications. Testing consisted of 15 qualifying events recording flow data and collecting samples using automated composite sampling.

Results:

- ◆ CST Outperformed any of the other products tested
- ◆ 39% Phosphorus Capture –with no additives
- ◆ 70% Oil/ Grease/Hydrocarbon Capture- with no additives-Best Rated
- ◆ 36-50% Removal of Trace Metals-Best Rated

NORTH CAROLINA FIELD STUDY — Highlands, NC

Third Party Field Study of CST Model 2056

Activities: Independent third party testing was performed on a CrystalStream Model 2466 Water Quality Vault. Testing consisted of at least 15 qualifying events recording flow data and collecting samples using manual sampling and evaluating the samples using TSS analysis. In addition analysis was completed on the sediment captured and the coconut fiber filter at the back of the unit.

Results:

- ◆ 95.6% TSS removal (7% Clay; 35% Silt(2-60um); 58% Sand (>62um))
- ◆ 74% Total Nitrogen Removal
- ◆ 74% Total Phosphorus Removal
- ◆ 22% Total Fecal Coliform Removal
- ◆ 50% Amonia

Copies of the Credentials and Reports are Available Upon request.

RECOMMENDATIONS

Partial List of Agency Acceptances:

- ◆ City of Los Angeles
- ◆ City of San Francisco
- ◆ New York State Department of Environmental Conservation
- ◆ South Carolina Department of Transportation
- ◆ North Carolina Department of Transportation
- ◆ Nashville, Tennessee
- ◆ Utah Department of Transportation
- ◆ City of Greenville, South Carolina
- ◆ Myrtle Beach, South Carolina
- ◆ St. Louis, Missouri Provisional Use Approval
- ◆ MASTEP Reviewed

A more extensive list is available upon request.



Letters of Recommendation and Certifications Available upon Request