



Clear Solutions

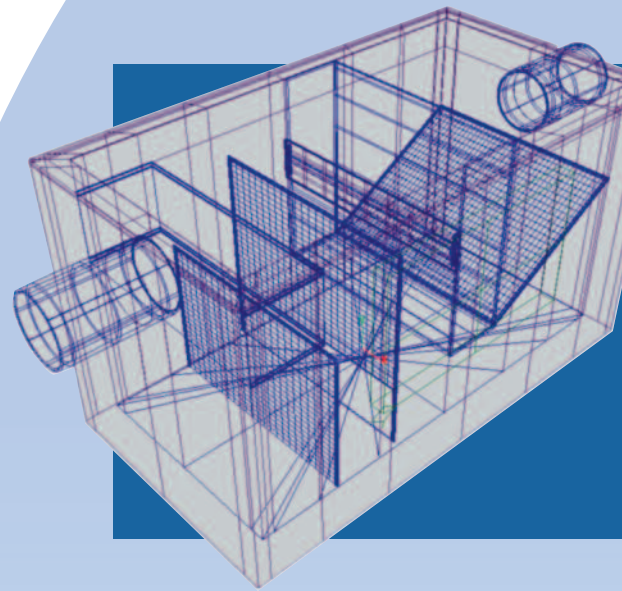
CrystalStream Technologies has built a reputation for engineering excellence, integrity of design and dedication to the spirit of stormwater pollutant mitigation. Our drive is to achieve the water quality goals of the watershed and to become a long term partner with the stakeholders of every project. This drive has produced a company philosophy that is designed to succeed in a changing environment.

The national acclaim of our innovative products and services does not define our success, but it does reflect our commitment to the hard work of pollutant removal in the real world. We are dedicated to the full life cycle of stormwater “best management practices.” We build sustainable solutions through site specific design, integrated installation, periodic cleaning, and preventative maintenance services. This is the clearest path to success measured by the health of our waterways.

Site specific Design

CrystalStream advocates the collaborative design of water quality solutions by working in conjunction with the design engineer. Every site is unique and demands the experience, innovation and dedication to proper design provided by our fully staffed engineering department.

- 💧 Submit on-line for a quick response @ www.crystalstream.com
- 💧 3 view CAD Drawing
- 💧 All Local WQ Calculations
- 💧 Value Engineering on Large Projects



Integrated Installation

Time is money on a job site and CrystalStream's operations group works with the contractor to coordinate delivery, provide crane services if requested and assure a successful installation. We take the time to attend the installation and protect the installer from unknowns.

- 💧 Save time with a "Just in Time" delivery
- 💧 Shallow sump requires less excavation (4 feet below invert)
- 💧 Unit comes fully assembled
- 💧 Freight and crane included in our quote



Cleaning & Maintenance Services

All BMP's will fail if they are not cleaned and maintained on a consistent basis. CrystalStream and its subsidiary, Storm System Services, has been cleaning ALL proprietary BMP's for 8 years. We have the understanding and know how to keep the system in compliance and operating effectively.

- 💧 Only in-house cleaning business in the Industry
- 💧 Reliable, affordable and professional service
- 💧 Trained crews able to perform confined space entry, if necessary



The CrystalClear Polisher

The CrystalClear Polisher is an innovative fine pollutant filtration system with the ability to target the smaller particles and dissolved fraction of pollutants transported in a low flow environment. The Polisher employs a new treatment design of sequential filtering to allow targeting of multiple pollutants with different filter and reactionary media. Traditional filtration systems only use one media based on simultaneous flow entry to the filter media. Sequential filtration leads us into the future of pollutant specific targeting by site.

1

Eighteen individual panels allow for multiple media introduction based on specific targets on the site.

2

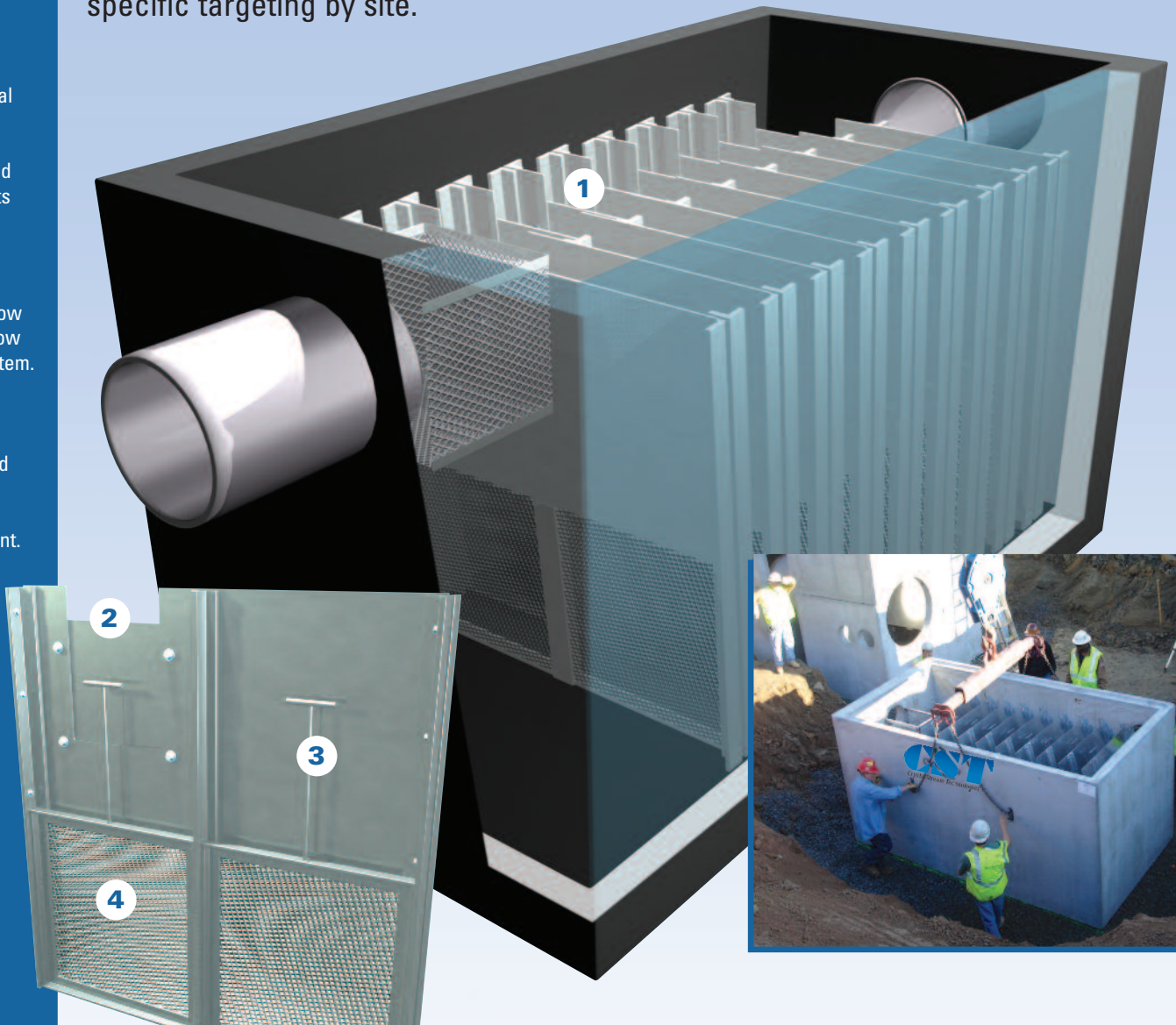
Adjustable overflow weirs allow for flow control in the system.

3

Panels pull up and out for easy and cost effective media replacement.

4

Tensioning rods (not shown) seal panels in place, but can yield as panels reach capacity and resist flow.

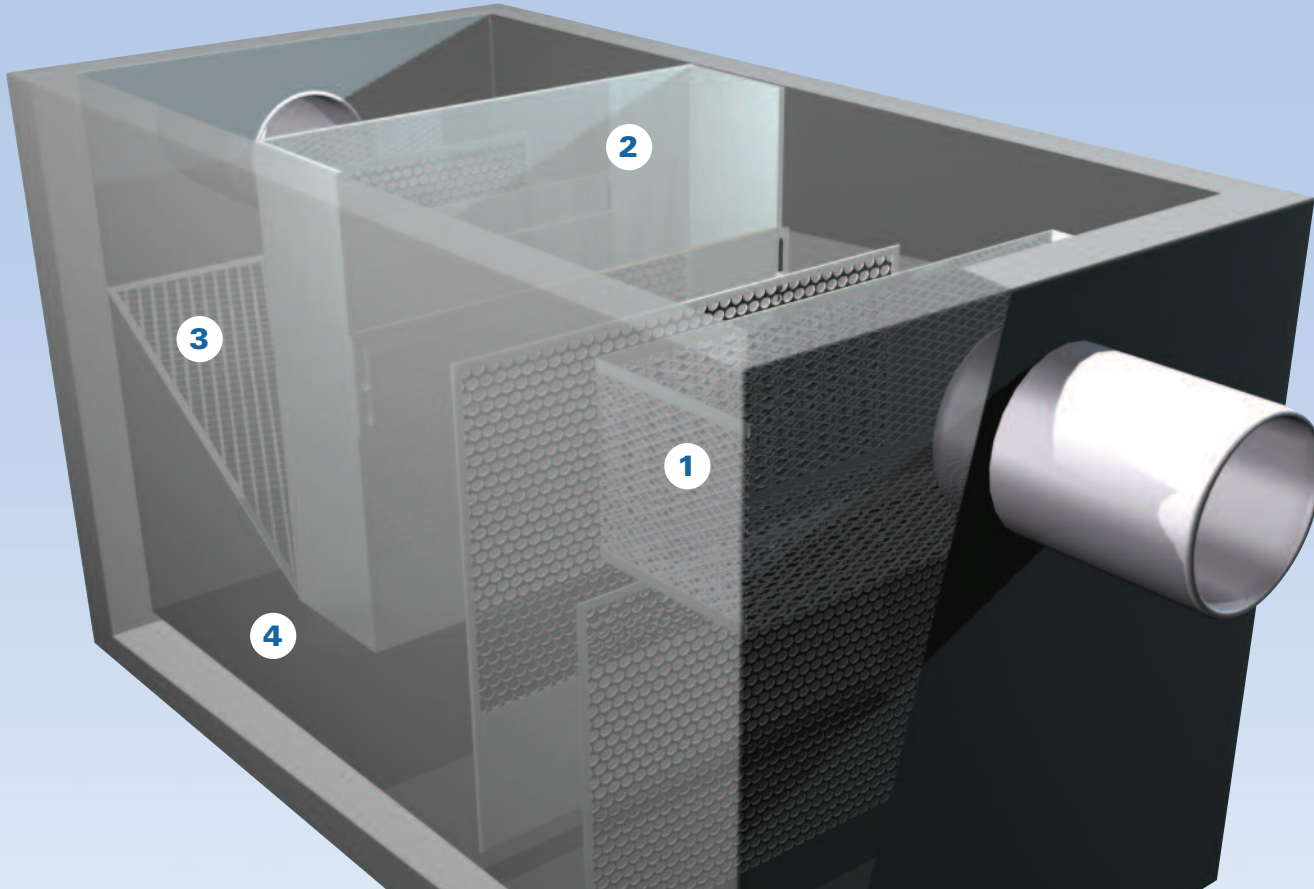


Media Type	Target Pollutants	Removal Rates	Applications
X-Tex (tm)	Oil & hydrocarbons	Greater than 90%	Parking lots, Hot spots
Coconut fiber	Nutrients	Tested at 40%	Landscaped sites
Activated charcoal	Dissolved chemicals	Varies by chemical up to 98%	Industrial or Site specific
Place your media here	Future potential unlimited	To meet future goals	Every site

The power of the CrystalClear Polisher design is that it is not restricted to a single filter media, or even to the media available today. It is a system designed to carry the best available media technology to address the specific needs of your site. It is adjustable "on the fly" in that site conditions not anticipated can be addressed after installation. It can change with the seasons, to reflect the dramatic differences between summer and winter in many areas. It is versatile, in that not every filter panel needs to be changed at every service interval. The polisher is designed to be placed in a treatment train downstream of a pre-treatment device, such as the CrystalClean separator.

The CrystalClean Separator

The CrystalClean Separator is an enhanced gross pollutant separation device that targets the most common pollutants in urban stormwater including sediment, oil & other hydrocarbons, trash and debris, and BOD causing nutrients. The baffle system and unit configuration control velocities and organize flow patterns to achieve industry leading sediment removal as well as treating other pollutants with specific media panels.



1

Trash, vegetative debris and other large pollutants are screened from the flow using the trash basket. The captured material is held above the water line to prevent the decomposition that will occur in other systems that promote a “floating strategy. The CrystalClear separator effectively captures these pollutants where others do not.

2

Spill protection is provided using the hydrocarbon reservoir to segregate floating hydrocarbons from the flow pattern. From commercial refueling operations to DOT rest areas and bridges, the ability to prevent a downstream incident resulting from an accidental spill is a clear advantage of the CrystalClean Separator.

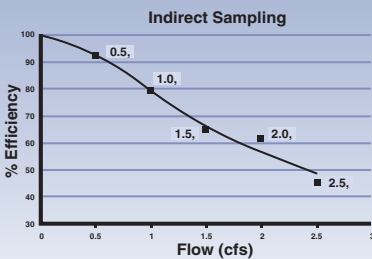
3

Natural fiber filter material is used to remove neutrally buoyant organic particles that contain nitrogen and phosphorus. Where excess nutrients are the pollutant of concern, this treatment phase sets the CrystalClean—Separator apart from other water quality devices.

4

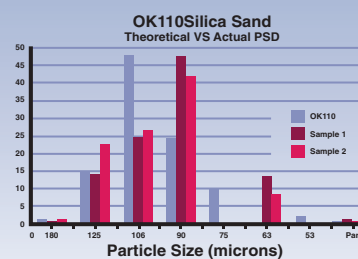
Sediment and associated pollutants are retained by establishing the “Optimal Treatment Flow” based on pollutant type, transportation, cleaning frequency, and device size. CrystalStream is dedicated to using site specific data to maximize the removal rates for targeted pollutants.

Laboratory testing at ALDEN



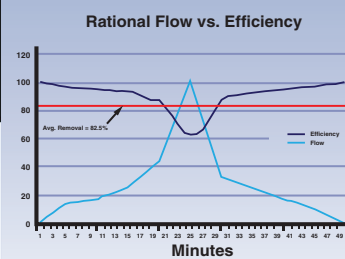
Lab Performance Curves

Verified Laboratory Performance Curves as tested at Alden Laboratories.



Particle Size Definitions

Verified Particle Size Definitions as tested for local comparison.



Local Storm Characteristics

Performance for local storm characteristics calculated for every site.



The CrystalClean-Separator has been the subject of on going monitoring for 8 years due to the recording of sediment captured in over 5,000 cleaning operations stored in our database. These cleaning operations have given unique insight into the nature of captured pollutants and the relative mass of sediment and debris in stormwater runoff.

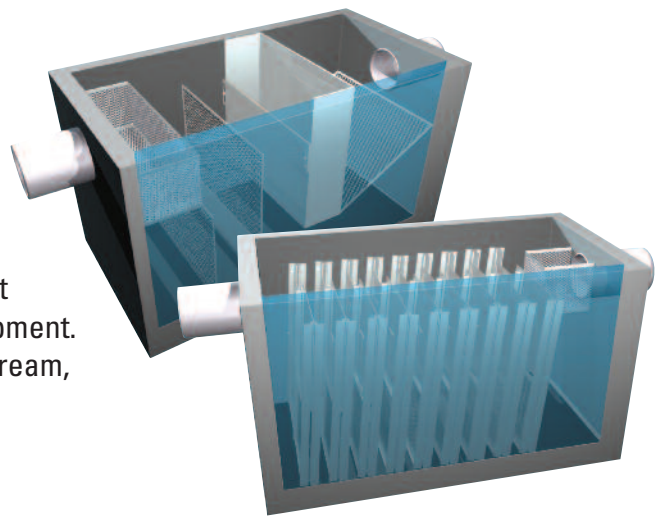
Third Party Field Testing ETV

The CrystalClean-Separator unit from CrystalStream Technologies has been designed and tested to meet the stringent removal standards set forth by the federal, state and local jurisdictions. The unit was tested in a 3 year field test in Georgia and determined to remove 89% of the sediment load measured by the preferred SSC testing method. All of the results of the ETV test can be found at the EPA's website.

CrystalClean Separator

Stand Alone Treatment

The CrystalClean Separator has been used in many applications as a stand alone removal BMP. These sites include small and footprint constrained new development, retro-fit applications and re-development. If you need a sole BMP to stand between the parking lot and the stream, the CrystalClean Separator is the right choice.



CrystalClean Separator

Treatment Train

With CrystalClear Polisher

The use of a CrystalClean Separator for pre-treatment at the front end of a treatment train with the Polisher will provide the best results for pollutant removal on many sites.

With Detention/Retention

The use of a CrystalClean Separator for pre-treatment upstream of a detention system will enhance pollutant removal and save cost on cleaning and maintaining the detention structure.

With Low Impact Development

The use of a CrystalClean Separator for pre-treatment upstream will enhance the performance of land based systems and greatly reduce maintenance costs.



Other Applications



Hotspots

DOT • Bridges • Rest Areas
Maintenance Yards



Retro Fit Applications



Spill Protection

GENERAL DESIGN CRITERIA⁽¹⁾

Model Number	Maximum Design CFS	Water Quality CFS	Spill Protection Gallons	Unit Dimensions
646	6.0	1.2	280	6 x 4 x 6
956	12.5	2.5	550	9 x 5 x 6
1056	17.5	3.0	600	10 x 5 x 6
1266	24.0	4.0	1000	12 x 6 x 6
1246 ⁽²⁾	12.0	2.4	700	12 x 4 x 6
1856 ⁽²⁾	23.0	4.6	1300	18 x 5 x 6
2056 ⁽²⁾	25.0	5.0	1400	20 x 5 x 6
2466 ⁽²⁾	36.0	7.2	2000	24 x 6 x 6

INTERNAL BYPASS UNITS

646-IB	7.8	1.2	280	6 x 4 x 6
956-IB	16.3	2.5	550	9 x 5 x 6
1056-IB	22.8	3.0	600	10 x 5 x 6
1246-IB ⁽³⁾	18.0	2.4	280	12 x 4 x 6
1266-IB	31.2	4.0	1000	12 x 6 x 6
2056-IB ⁽³⁾	35.0	5.0	400	20 x 5 x 6
2466-IB ⁽³⁾	50.0	7.2	600	24 x 6 x 6

1) All units are sized and internal components placed on a site by site basis depending on multiple factors associated within the specific basin. Maximum flow will seldom vary. Water Quality flow is highly dependent on site conditions and target pollutants. The above criteria is for macro level evaluation and comparable analysis. The unit is standard with a 2/10 foot fall across the device but can be reduced in certain applications.

2) Twin vault units. May be inline or side by side

3) Twin vault units. Must be side by side

All units are constructed using 4000 psi pre-cast concrete and all aluminum internal components. Lids and access are available in multiple configurations including traffic loading and non-traffic.



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