

FocalPoint⁶EMR

ENHANCED METAL REMOVAL **ZN CU**

ENHANCED METAL REMOVALS WHERE INDUSTRY MEETS THE WATER

Developed by the US Navy, FocalPointEMR is a Green Stormwater Infrastructure system that eliminates harmful metals, nutrients, TSS, oil and grease from industrial site runoff.

Why FocalPointEMR?

Most industrial facilities are under increasing pressure from regulators and local communities to protect harbors, bays, lakes, and streams by reducing the elevated concentrations of environmental pollutants commonly found within their facility's stormwater runoff. Facilities are challenged due to intense operations with heavy equipment, multiple pollutant sources, non-porous paved surfaces and buildings, storage areas, and aging drainage and stormwater management technologies. To help solve this challenge, US Navy engineers spent 10 years and tested dozens of optional media options to develop FocalPointEMR, an LID/BMP hybrid system that decreases the concentration of toxic contaminants to meet NPDES permit requirements. In addition, the small footprint and rapid processing times of FocalPointEMR is beneficial for industrial sites where usable space is at a premium.

FocalPointEMR Is Ideal For:

- Naval and Port Facilities
- Metal Recycling/Fabrication
- Oil & Gas Mining
- Light Industrial
- Landfills/Dumps
- Roof runoff
- Sewer/Wastewater Facilities
- Manufacturing Facilities
- Transfer/Recycling Facilities
- Transportation Facilities
- Petroleum Stations/Terminals
- Other industries



After 10 years of developing and testing systems, the **US Navy** concluded that the FocalPointEMR system is the most effective, durable and long-lasting solution available.



BEFORE**AFTER**

How Does It Work?

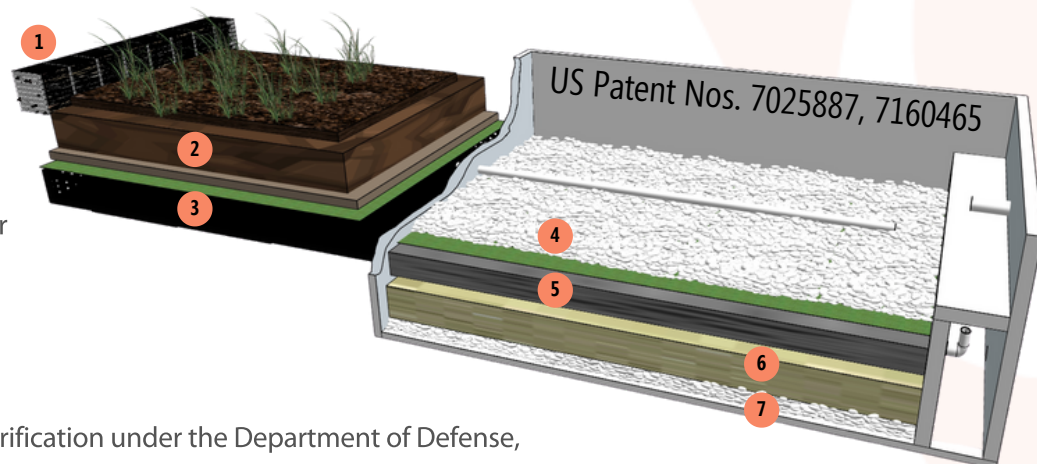
The FocalPointEMR system is made of seven main components, working in succession to filter out TSS, fine particles, nutrients, oil, grease and metals. Runoff initially filters through a Gabion Barrier which prevents larger trash and debris from entering the system. Runoff then enters the Biofiltration System, where the stormwater percolates down through a mulch layer, engineered media and bridging stone before it enters the modular box underdrain. Once the modular box underdrain is full, runoff flows into the secondary treatment system. Here it percolates down through activated carbon char, which absorbs heavy metals, fluorides, iron and organic molecules. Then, through FS-50, an iron enhanced activated alumina on top of the underdrain that reduces dissolved contaminants.

Key Benefits:

- **Shallow profile** as shallow as 4'
- **Small footprint**
- **Gravity-driven** no pumps required
- **No electrical needed**
- **Low maintenance** replace mulch annually, media designed with factors of safety

Key Components:

1. Gabion
2. Hi-Flow Biofiltration System
3. Modular Box Underdrain
4. 2" Gravel w/ Mesh
5. 6" Oxbow Activated Carbon Char
6. 9" Activated Alumina FS-50
7. 4" Underdrain w/ Stone



Performance Proven:

FocalPointEMR has full scale field verification under the Department of Defense, Environmental Security Technology Certification Program (ESTCP). In addition, the NAVFAC Engineering and Expeditional Warfare Center performed all testing and sampling protocols per the Washington State Department of Ecology's Technology Assessment Protocol (TAPE) - Ecology and Naval Base Point Loma NPDES permit.

- High Performance Media - loading rate 1 gpm/SF (100 "/hr)
- Total Zinc - 98%, reduced effluent to below 95 ug/L
- Dissolved Zinc - 98%
- Total Copper - 97%, reduced effluent to below 33.2 ug/L
- Dissolved Copper - 97%
- Total Suspended Solids - 95%
- Total Phosphorus - 81%
- Oil and Grease - reduce effluent below 15 mg/L

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