



Defense Shield

The increasingly dynamic role of protective coatings in water/wastewater

In an interview with WWD Associate Editor Caitlin Cunningham, Sherwin-Williams' Kevin Morris shared information and insight regarding the expanding role coatings play in defending water/wastewater infrastructure.

Caitlin Cunningham: What are the most significant industry challenges for which protective coatings may prove to be an effective solution?

Kevin Morris: In the water treatment industry, there are no overriding factors that are contributing to the rate of corrosion other than age. These facilities need protective coatings to lower overall cost of operation through corrosion prevention, thus providing longer life cycles for equipment and structures. Concrete corrodes through many different mechanisms—erosion of the surface from abrasive flows or cavitation, chloride-induced corrosion of the reinforcing steel and freeze-thaw cycling, just to name a few. All of these are more prevalent now due to the age of these structures and can be stopped with the proper selection of protective coatings.

In the wastewater treatment industry, the most critical corrosion issue is hydrogen sulfide gas or sulfuric acid formation from microbial-induced corrosion (MIC). Population growth has taken these structures out of rural settings and into the urban sprawl. This has caused the municipal owner to have to address odor control issues, accelerating the effects of MIC. This phenomenon affects both steel and concrete and can eventually cause structural failure. The sewer collection system and primary treatment portion of the plant are the areas most susceptible.

Cunningham: What types of coatings are available on the market today? How can one determine which solution is the best fit for a specific project?

Morris: The workhorse coatings for water and wastewater applications are primarily epoxies. The greatest changes to coatings have come in the form of high-build, rapid-cure products, which reduce the number of coats and overall cost of a project by reducing labor costs.

The best method for determining which solution is the best fit for a given project or situation is through your local manufacturer's field representatives.

Cunningham: What kind of coating maintenance requirements can an end-user or owner anticipate? Do you have any preservation advice to offer?

Morris: Protective coatings extend an asset's life when they are properly

maintained. Areas of a structure's coating system that have been breached by things like weed eaters and rocks will begin to corrode and undercut the edge of the sound coating. Timely inspection of a coating system and touch-up to the damaged areas will provide an increased life cycle.

Consider the following example: You have several pieces of equipment that are currently heavily corroded and one fairly large asset that is showing minimal rusting. The substrate that has the worst appearance tends to receive the attention. How much worse can this piece of severely corroded equipment get? Will it last a couple of years until you can budget it back in? Or can you save the mildly corroded substrate by performing minimal surface preparation and over-coating? This should save money on surface preparation while extending the life of an asset that, if left to corrode, would require more surface preparation and money.

Cunningham: How do you anticipate the role of water/wastewater coatings will evolve in the coming decade?

Morris: The greatest change over the next decade will be restrictions over volatile organic compounds. These will dictate new product formulations and coatings specifications for projects for the foreseeable future, resulting in coatings that are higher in volume solids. This shift will force coatings applicators to become more sophisticated.

The secondary issue will be owners' and consulting engineers' quest to reduce the cost of capital improvements. They will be looking for coatings that provide the same performance with fewer applied coats. This factor will be critical during our current economic status but may lessen as the economy begins to recover. **WWD**

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U.S. EPA Releases State Water Reports



As part of U.S. EPA Administrator Lisa P. Jackson's directive to enhance public transparency regarding clean water enforcement, EPA has released comprehensive reports and data on water enforcement in all 50 states.

The reports include information on clean water compliance and enforcement in each state as well as copies of clean water enforcement and compliance performance reports.

More information is available at www.epa.gov/compliance/data/results/performance/cwa/index.html.

Plans Announced for Water Trust Fund



Congressman Earl Blumenauer (D-Ore.) recently announced his plan to introduce legislation to create a Water Trust Fund (the Water Protection and Reinvestment Act).

Several groups issued statements of support, including Food & Water Watch, the American Society of Civil Engineers and the Associated General Contractors of America.

North Carolina Student to Compete for Stockholm Junior Water Prize



Eileen Jang of Cary, N.C., was named the U.S. winner of the 2009 Stockholm Junior Water Prize.

Jang's work, "Natural Organics Control Aggregation

of Mercury Sulfide Nanoparticles in Freshwater Systems," introduced a novel aqueous synthesis process for studying how HgS nanoparticles, the precursors to methylmercury, persist in freshwater systems.

Milwaukee River Basin Groups Receive \$1.9-Million Grant



A group of organizations committed to improving water quality in the Milwaukee River basin has received a \$1.9-million, three-year grant from The Joyce Foundation of Chicago, *The Business*

Journal of Milwaukee reported. Seven environmental groups and the Southeastern Wisconsin Watersheds Trust will receive funding to develop projects to improve water quality, habitat and the health and economy of communities in Milwaukee-area watersheds.

Water Scarcity Expected to Boost the Desalination Market

Increasing demand for freshwater, especially in regions with growing populations

and long drought seasons, is driving strong growth in the desalination market, according to Frost & Sullivan.



The focus is particularly high in the Mediterranean region. Spain was one of the first countries in the region to consider desalination to solve water-shortage issues in large urban areas.

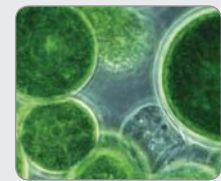
Arcadis Finalizes Merger With Malcolm Pirnie



Arcadis has finalized a merger with Malcolm Pirnie, a White Plains, N.Y.-based company active in water and environmental consulting and engineering. All internal shareholders voted in favor of the merger.

"I am very pleased with the acceptance of our merger offer by all of the Malcolm Pirnie shareholders," Arcadis CEO Harrie Noy said.

Algae-to-Biofuels Pilot Program Begins in Arizona



PetroSun BioFuels and Gilbert, Ariz., have executed an agreement to commence an algae-to-biofuels waste-

water pilot program at the Neely Wastewater Reclamation Facility, operated by Severn Trent Services.

The program will evaluate the feasibility of the utilization of wastewater as a source of nutrients and water for the cultivation of algae and its subsequent processing into feedstock for the production of biodiesel and other products.

House Bill Sets Deadline for Perchlorate Regulation



Representative Jackie Speier (D-Calif.) recently introduced a House bill that would require the EPA to set a drinking water standard for perchlorate, a common ingredient of rocket fuel and fireworks, *E&E Daily* reported.

H.R. 3206 gives EPA one year to propose a national drinking water regulation for the substance.

Massachusetts established a 2-ppb standard in 2006, and California has a legal limit of 6 ppb for public drinking water.

San Juan River Pipeline Project Unveiled



Bureau of Reclamation officials recently unveiled a plan for the Navajo-Gallup pipeline, an \$870-million project that will deliver water from the San Juan River in New Mexico to two Western tribes and the city of Gallup, N.M., *Land Letter* reported.

The project will provide a long-term sustainable water supply for the Navajo Nation, the Jicarilla Apache Tribe and the city, all of which are suffering from water shortages. **WWD**

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