

CleanConnections

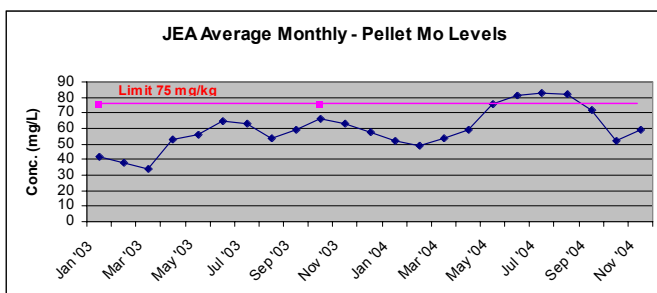
Pollutant of the Year: Good Golly Miss Moly!

In 2003, JEA commissioned a state of the art Biosolids Reuse Facility. For more than 18 months pelletized Class AA residuals were produced for marketing and land application (see Picture 1). Instead of hauling the biosolids to the landfill, this material was now a beneficial reuse product.



Picture 1 - Biosolids Pellets Drying Drum

That changed this past summer. Beginning in April 2004 the concentration of molybdenum (Moly) in the residuals began to increase dramatically. The ceiling limit established for Moly in land application is 75mg/kg (40CFR 503.13). By June, JEA residuals were exceeding this limit. (see graph)



These exceedances meant that pellets could not be land applied. The only recourse was to haul the pellets to the landfill. This cost an average of \$2000 per day and the loss of a new facility built to reuse residuals.

A major source of molybdenum in the sewer is from cooling tower blow down. In the form of sodium molybdate, Moly is used in cooling tower chemicals throughout Jacksonville.

With data from vendors that supply chemicals to cooling towers in Jacksonville, it was estimated that 5.8 lbs./day of Mo in the pellets could be from cooling towers alone. It only takes 5.5 lbs/day of Moly in the pellets to reach the ceiling limit!

It seemed cooling tower blow down could be the culprit (see Picture 2). Trending data helped confirm this conclusion. Data from the past 2 years (see Graph), suggest that Moly levels increase during warmer months and decrease in the cooler ones. This seemed to correlate with cooling tower activity.



Picture 2 - Cooling Tower - Moly free is the way to be!

While some strictly industrial sources of Moly were identified, the data suggested that if we could get Moly out of cooling tower blow down, we would remove enough from the sludge to get back within the limit.

Moly is not an active ingredient, but is used as a tracer to determine the concentration of treatment chemical in the tower. There is a Moly-free alternative

that is used in other municipalities that have experienced similar problems. IP requested that chemical vendors and our industrial users make the switch to the Moly-free alternative.

Most Industrial Users and chemical vendors responded admirably, agreeing to remove the molybdenum expeditiously. Some industries that use Moly in industrial processes even volunteered to remove it.

In little over a month after taking these actions, molybdenum levels in the pellets were dropping. By mid September pellets were within specification and once again available for reuse.

JEA is developing a Best Management Practices for Cooling Tower blow down as a source control of molybdenum and hopefully to prevent another pollutant in this waste stream from surprising us.

If it were not for the tremendous cooperation we received from our industries and the chemical vendors, we would not have been able to turn this around so quickly. Thank you for your assistance.

IP Compliance Inspectors and Assigned IU's

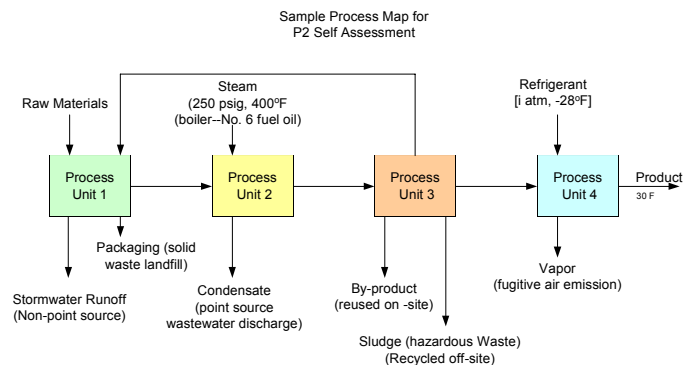
Gary Christiansen 665-4440	Karen Foreman 665-4795	Randy Hilton 665-4522	Christina Jacobs 665-6283
AlSCO	AET	Adcom Wire	American Cool Air
Anchor Glass	ATC	Aramark	Amrep
Anheuser - Busch	Bacardi	Clear View	Baptist Medical Center
JEA-BBGS	IFF	Coca Cola	COJ-Landfills
Chevron Products	C&C Bulk Liquid	CSX Intermodel	Crown Plating
Colomer	Cintas	Dura Automotive	CSX -Westyard
Crane Resistoflex	CSX-Moncreif	Duval Plating	Enkei
FMC	Hydrochem	FL East Coast RR	Kitchens Seafood
Florida Times Union	IWS	FL Rock & Tank	Interstate Brands
GA Southern and FL RR	JEA-NGS	Flowers	Mayo Clinic
GE	K&G Box	Kaman	Jax Powder Coating
H.J. Heinz	Kraft Foods	Mailwell	Memorial Hospital
Henry's Hickory	Lorenz Surgical	Metal Container	Millenium
Jefferson Smurfit	Morning Star	Phillip Services	Navy, FISC
Malnove	Packaging Corp.	Rex Packaging	Pan-Glo
Owens Corning	SE Atlantic Beverage	Swisher	Pepsi
Petroleum Packers	Southern Tank	Trend Offset Printing	Phillips Petroleum
ST Services	Unison	Unisource	Publix
Stone Container	USG	Vanguard Plastics	Reichhold
U.S. Filter		WRI	Shands
Vistakon		WinCup	Shaw's Southern Belle
			St Vincent's
			St. Luke's
			Sunbeam Landfill
			Technical Painting
			Westyard

P2: Assess Yourself!

In the last article, I mentioned all the benefits of Pollution Prevention (P2) projects. Not only is it good for the environment, P2 just makes good business sense. So why haven't you started a project or scheduled a free assessment? If you just want to do it yourself and don't know where to start, help is on the way. In conjunction with the Florida Pollution Prevention Roundtable (FLPPR), a team of state, municipal, and industry environmental professionals have developed a self assessment guide you can use to develop P2 projects at your facility.

The main goals of P2 are to reduce source pollution and minimize wastes through recycling or reuse. The first step is to assemble a team with a leader or coordinator. This team should include members from purchasing, maintenance, management, engineering, and operations. People familiar with your process that actually perform the work can provide valuable input.

The next step is to map each process labeling inputs and outputs (see illustration). Determine everything that goes into your product or service. For example, identify all the materials, labor, and energy inputs for the process. Document how each part of the process is performed and what products or wastes are generated during the process. It's important to determine all the materials or chemicals used as well as the wastes that are produced as a result of each process in your facility. Be sure to consider recycling systems (such as closed loop systems) and material storage and handling. Review wastewater treatment systems, air emissions and the final disposal point of wastes. These are all outputs of your process.



The third step is to assess your waste streams. Where is waste generated? Are wastes hauled off site, reclaimed or recycled? Determine if there is a way for your company or another company to reuse any of the waste. One company's trash could be another's treasure! Can the waste be reduced by using different equipment, altering the process slightly or by using a different chemical in your process?

There are many ways to reduce waste, conserve resources and streamline your process. P2 projects don't have to be complicated or costly. Chances are you will recover the initial investment and many savings occur just from small process changes or simple chemical or material substitution. Many companies save enough money with their first project; they take the savings and start another P2 project!

If you are interested in learning more about Pollution Prevention, contact Karen Foreman at 665-4795. Or you can visit the FLPPR website at www.flppr.org or FLDEP at www.dep.state.fl.us/waste/categories/p2/default.htm.

Time Permitting

Federal, state, and local pretreatment regulations require JEA's Industrial Pretreatment (IP) department to issue Industrial User Discharge Permits (IUDP). An industrial discharge permit provides public utilities with a control mechanism to protect the treatment works, sewer system and its workers from potentially harmful industrial discharges.

A variety of permitting needs arise for JEA customers regulated under the IP Regulation. For example, new customers may require a permit to be able to discharge industrial wastewater. Existing customer's permits may transfer to a new owner, require modification because of process or regulatory changes, or be re-issued upon permit expiration.

Timelines to submit a permit application depend on the permitting need.

- Re-issuance applications for existing permits are sent to the customer by JEA at least 180 days prior to existing permit expiration dates.
- Applications for re-issuance are due in to IP 120 days prior to permit expiration.
- For new facilities, permit applications are due 180-days before the first planned sewer discharge.

Permit modification requests are due at least 90 days prior to such changes taking effect; refer to Section 3.2 of your existing permit for specific details on modification requirements.

Before a new permit can be written, the permit application must be complete. Incomplete applications are the most frequent cause of a delayed permit issuance. Incomplete applications are returned to the customer with a letter "requesting additional information (RAI)." If needed, an RAI is sent out within 30-days of application receipt.

Some of the most common reasons an application is returned for additional information include: 1) Failure to identify all facility wastestreams; 2) Failure to describe pretreatment; 3) Insufficient facility and pretreatment plans and/or diagrams.

JEA Industrial Pretreatment is required to obtain this information on all permitted industrial users. To avoid a delay in the issuance of your discharge permit please make sure the application is complete.

Once issued IUDPs have a three to five year duration.

Pretreatment application materials for new permits are available online at jea.com/business/services/industrialpre/permits.asp, or can be mailed upon your request.

If you have any permitting questions concerning your facility, please feel free to contact your compliance inspector or Randy Hilton (665-4522).

Treatment Plant Update

This past quarter has been tough on three of JEA's Water Reclamation Facilities (WRF). In December, the Mandarin WRF experienced problems that lead to discharges of high ammonia levels. This resulted in several days of violations of the WRF's discharge permit. Investigation of the incident indicates that the plant may have received a toxic discharge that inhibited the facility's nitrifying bacteria (nitrifiers). The role of nitrifiers in the treatment plant is to convert ammonia to nitrates. If the nitrifiers are inhibited, the ammonia can pass through the plant unchanged. Analysis of the influent has found unusually high levels of volatile organic substances that are found in solvents for grease (degreasers). The plant has recovered and is able to once again properly treat ammonia. Industrial Pretreatment continues to investigate the sources of the organic compounds.

The Buckman WRF has experienced fluctuating levels of oxygen demand since this past November. While no discharge violations have resulted, these incidents impact operations ability to meet the ever changing oxygen needs.

JEA's District 2 WRF, servicing north of the Trout River, has been receiving occasional loads with a slight chemical odor. These loads cause the sludge in the plant's primary clarifiers to float and interfere with the clarifier's ability to remove solids. No discharge violations have resulted from these incidents.

If you have a problematic wastestream to discharge, please contact your Industrial Pretreatment compliance inspector. JEA would like to work with industries to ensure wastewater is discharged to our treatment plants in an acceptable manner.

Clean Connections is published semi-annually by the JEA Industrial Pretreatment Program. 21 West Church Street Jacksonville, FL 32202. (904) 665-4796.

Contributing writers Randy Hilton and Karen Foreman.

For More information about our program, forms, and past issues, please visit the JEA Industrial Pretreatment Website <http://www.jea.com/business/services/industrialpre/index.asp>