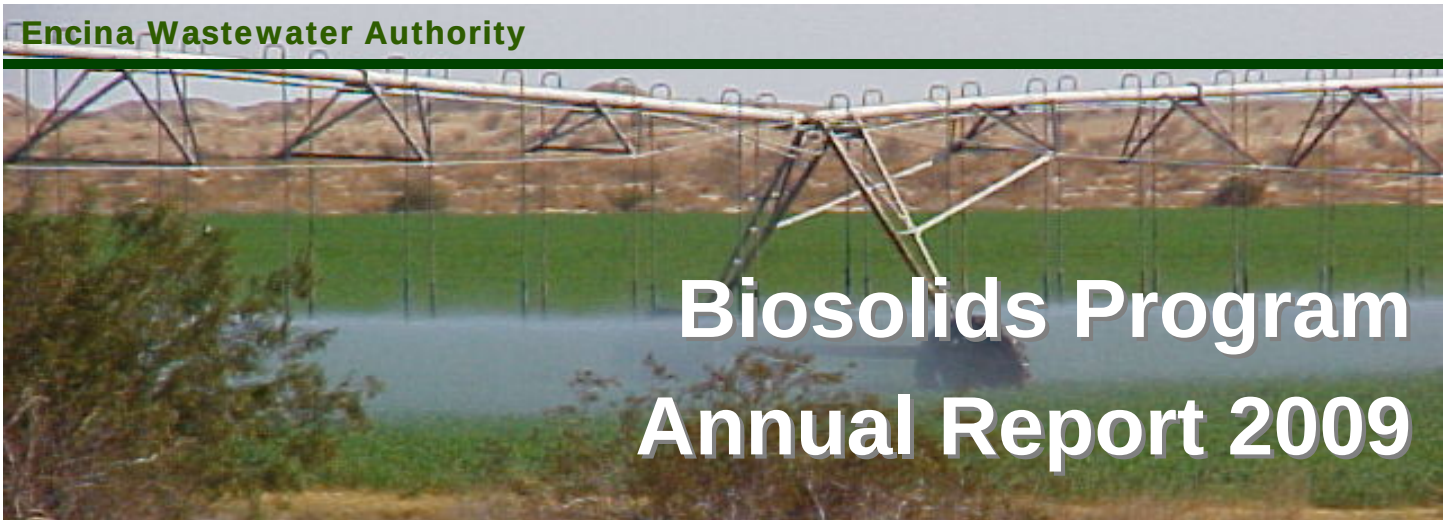
Encina Wastewater Authority



Biosolids Program Annual Report 2009

Volume 6, March 2010

EWA's Biosolids Now Used as a Biofuel

After spending months optimizing the new heat drying facilities, EWA sent its first shipment of Class A biosolids pellets to CEMEX in August. CEMEX operates a cement kiln in Victorville, California where they use the pellets as a biofuel. This achievement is the culmination of a long-term planning process to provide EWA with more options for use of its biosolids, while reducing associated costs.

The relationship with CEMEX benefits EWA in a number of ways. First of all, CEMEX provides a single source that can take all of EWA's biosolids without concern for seasonal demand or the need to construct bagging facilities. Secondly, transportation costs and vehicular emissions have been reduced since EWA's biosolids are no longer hauled to Yuma, Arizona for land application and because the volume of biosolids is reduced by 80% from the heat drying process. Finally, CEMEX pays EWA for its biosolids pellets based on its fuel value (approximately 60% that of coal), thus providing a source of revenue to help offset the transportation costs.

CEMEX also benefits from its relationship with EWA. CEMEX has a corporate goal that 15% of their total fuel usage comes from alternative fuels. The use of biosolids, which is a renewable fuel source, reduces greenhouse gas emissions from the CEMEX facility. In addition, CEMEX is able to purchase EWA's biosolids pellets at a lower cost than coal. Thus it is a win-win for both parties.

The agreement with CEMEX achieves a key goal of EWA's Biosolids Management Plan: securing a beneficial reuse outlet for 100% of the Class A biosolids produced by the Encina Water Pollution Control Facility. The agreement also reflects the first step toward achievement of the "Diversified Portfolio" identified in the Biosolids Management Plan. Looking to the future, EWA will pursue higher value for the pellets by exploring competing biofuel, fertilizer, soil blender, turf management, and specialty agriculture markets. EWA is committed to leading our industry in the marketing and beneficial reuse of wastewater treatment by-products.

CEMEX plant in Victorville, California

Biosolids Management Policy Update

With achievement of the goal to produce Class A biosolids and use of the product for options other than land application, it became necessary to update EWA's Biosolids Management Policy. As a result, the following policy was adopted by EWA's Board of Directors, which provides staff with the flexibility to pursue alternative options for biosolids use in accordance with EWA's Biosolids Management Plan.

It is the policy of the Encina Wastewater Authority to:

- Pursue sustainable biosolids reuse options that protect human health and environmental quality, are fiscally responsible and provide flexibility with respect to end use.
- Follow the Code of Good Practices for biosolids developed by the National Biosolids Partnership.
- Implement the Encina Wastewater Authority's Biosolids Management Plan.

EWA Receives Platinum Award

In July 2009, EWA received the National Association of Clean Water Agencies (NACWA) Platinum Peak Performance Award. The Peak Performance Awards Program recognizes publicly owned treatment works (POTWs) for excellence in wastewater treatment as measured by compliance with their National Pollutant Discharge Elimination System (NPDES) permit. The Platinum Award, which is the highest award given by NACWA, honors the Encina Water Pollution Control facility for having achieved 100% compliance with its NPDES permit for five consecutive years. This achievement is a result of the hard work and dedication of all EWA staff.

EWA General Manager Kevin Hardy presents award to 2009 Board Chair Trish Hannan

"The sale of biosolids pellets for use as an alternative fuel reflects EWA's mission to remain a fiscally responsible environmental leader."

Allan Juliussen
EWA Board Chair

Accomplishments of 2009

Regulatory Compliance

- Testing results demonstrated that EWA's biosolids meet Class A requirements.
- Metal concentrations in EWA's biosolids were found to be well below the EPA's limits for exceptional quality.

Environmental Performance

- 99% of EWA's biosolids were beneficially used for land application or as a biofuel.
- Transport vehicle emissions were reduced by 80%, as a result of hauling a smaller volume of biosolids to Victorville, CA rather than Yuma, AZ.
- Greenhouse gas emissions from the CEMEX facility were reduced by the use of EWA's biosolids in lieu of coal.

Interested Party Relations

- EWA received positive press coverage regarding the new heat drying facilities and as a result, received the CalPERS Spotlight On Excellence Award for implementation of this innovative project.
- Staff made presentations to industry associations regarding: EWA's Biosolids Management Plan; implementation of the heat drying facilities; and the EMS internal audit program.
- Tours of the heat drying facilities were provided to fifteen professional and school groups.
- Source Control Program staff discussed the new heat drying facilities during public outreach events and distributed samples of biosolids pellets.

Quality Practices

- Centrifuge operations were optimized, which increased the percentage of cake solids and reduced the use of processing chemicals.
- Standard Operating Procedures (SOPs) for the heat drying facilities were revised to address safety concerns related to pellet reheating and combustibility.
- An SOP was developed for loading pod trailers from the pellet storage silos.
- EWA's Respirator, Hearing Conservation, and Eye Protection Policies were revised to include activities related to operation and maintenance of the heat drying facilities.
- SOPs were developed for biosolids sampling and testing procedures utilized to demonstrate compliance with Class A requirements.
- Staff worked proactively with the new biosolids contractors to ensure compliance with EWA's EMS.
- The Computerized Maintenance Management System (CMMS) was updated to include maintenance tasks associated with the new dewatering and drying equipment.

Audit Results

EWA obtained certification of its Biosolids Environmental Management System (EMS) from the National Biosolids Partnership (NBP) in 2005. To maintain certification, third-party interim audits are required in years one and three following certification, while internal audits may be substituted in years two and four. EWA elected to substitute its internal audit for the third-party audit in 2009.

The internal audit of EWA's Biosolids Program was conducted in April and May by EWA staff who audited areas outside their technical expertise. The audit covered wastewater treatment, solids generation & stabilization, storage & transportation, beneficial reuse, the Pretreatment Program, laboratory operations, information technology and management. In addition, inspections of EWA's new contractors (CEMEX and Solid Solutions) were performed during the year. Due to significant changes in EWA's biosolids operations, KEMA-Registered Quality, Inc. (KEMA - EWA's third-party auditor) conducted an off-site audit of the new processes and contractors as well.

The audits identified strengths in EWA's Biosolids Program, fourteen findings needing correction, and eighteen opportunities for improvement. The findings needing correction were associated primarily with documentation related to the new biosolids processes/contractors and were addressed using EWA's corrective action procedure. Many of the opportunities for improvement have been implemented or will be in the near future.

Based on the results of the audits, EWA's Biosolids EMS complies with the NBP's requirements and EWA's Biosolids Management Policy, and KEMA recommended continued NBP certification. In addition, the audits showed EWA's Biosolids EMS to be an effective program as evidenced by progress in accomplishing goals and objectives, and the achievement of positive outcomes in the areas of regulatory compliance, environmental performance, relations with interested parties, and quality biosolids practices. As a result of the audit process, EWA's operations continue to improve, and staff has a greater understanding of biosolids processes and their role in supporting the EMS.

Public Outreach

Staff conducts public outreach regarding EWA's Biosolids Program to increase awareness of the management practices utilized to ensure biosolids quality. Methods utilized include:

- Conducting plant tours
- Hosting booths at local street fairs
- Posting audit reports and other information on the website: www.encinajpa.com/ems
- Making presentations to industry association groups
- Publishing articles in local newspapers
- Sending emails to people that request to be included on the interested party list
- Publishing an e-bulletin entitled "RenEWAble News"

Source Control staff discuss EWA's biosolids program with local residents

2010 Goals

Each year EWA establishes goals to continually improve our biosolids program. Listed below are the current goals for 2010.

- Implement pellet recycling system between silos and recycle bin to improve operational flexibility.
- Design centrifuge sludge feed screening process, which may reduce wear on process equipment.
- Implement the use of biofuel for heat dryer operations.
- Improve dust control in the heat dryer building by implementation of a centralized vacuum system.
- Conduct detailed evaluation of biosolids pellet bagging operations and identify equipment/location for implementation in FY 2012.
- Evaluate cost-effectiveness of in-house biosolids hauling.
- Conduct dental community survey to assess the need for a program to control the discharge of amalgam.
- Establish demonstration garden utilizing biosolids pellets and recycled water.
- Establish communication with staff at other heat drying facilities to facilitate the sharing of information.

Encina Wastewater Authority

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Monitoring and Measurement Results

EWA conducts routine testing of its biosolids to ensure that reuse of this product will not endanger public health or the environment. All testing conducted in 2009 demonstrated that EWA's biosolids met or exceeded federal standards set forth at 40 CFR Part 503, including the EPA's stringent exceptional quality (EQ) metal limits for arsenic, cadmium, copper, lead, mercury, molybdenum, nickel, selenium and zinc.

Additional testing conducted in support of EWA's contract with CEMEX shows the biosolids pellets have an average fuel value of 6,800 British Thermal Units (BTU), which is approximately 60% that of coal.

	EPA Class A Requirements	Average for 2009
Fecal Coliform	<1000 MPN/gram	<1 MPN/gram
Percent Solids	> 90%	92.9 %
Heat Dryer Exit Temperature	≥176 °F	203 - 205 °F

Contractor Compliance

In 2009 EWA signed a contract with Solid Solutions for handling both Class A and B biosolids. During the year they hauled 3,696 dry metric tons of biosolids to Yuma, Arizona for land application and transported an additional 1,896 dry metric tons of biosolids to CEMEX's cement kiln in Victorville, California for use as a biofuel.

On February 19, 2009, EWA staff conducted a site inspection of Desert Ridge Farms in Yuma, where Solid Solutions land applies EWA's biosolids. Staff also reviewed Solid Solutions' Biosolids Management Plan, monitoring data, agronomic rate calculations, and employee training records.

On June 25, 2009, EWA staff visited the CEMEX facility. CEMEX staff provided EWA with: copies of their air permits authorizing the use of biosolids in their kilns; and standard operating procedures for biosolids delivery, unloading, and use in the kiln, as well as dust control, and fire and spill prevention.

Based on the site inspections and document review, Solid Solutions and CEMEX are meeting all regulatory requirements and complying with their contractual obligations to support EWA's EMS Program.

Biosolids help turn desert wasteland into productive farm fields

Contact Information

If you have comments on this report or any other biosolids related items, please call our EMS Coordinator at:

(760) 438-3941 or e-mail us at:

biosolidsEMS@encinajpa.com.

If you would like to be involved in the Biosolids EMS process, you may request to be placed on the interested party list by calling us or submitting your request via email.

For more information about EWA's biosolids program, you can access the Biosolids EMS website at: www.encinajpa.com/ems.