

Biosolids Program Annual Report 2015



Biosolids Management Plan (BMP) Update

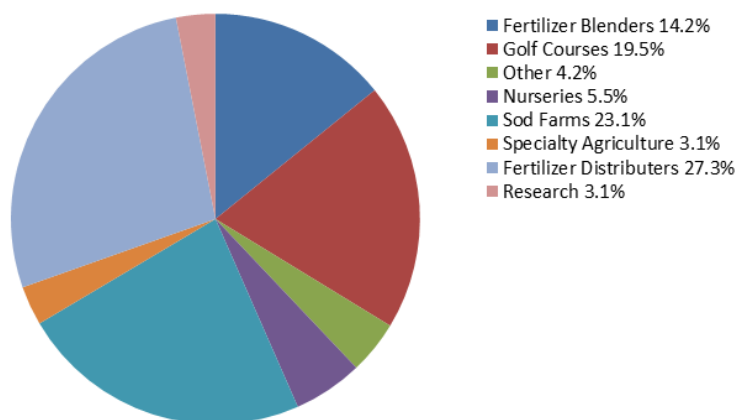
Volume 8 - Sept 2015

The Encina Wastewater Authority (EWA) continues to implement Phase II of its Biosolids Management Plan (BMP), by developing "Tier II" markets for its PureGreen fertilizer (e.g. fertilizer distributors and blenders, golf courses, sod farms, local communities, specialty agriculture and research). Tier I options (land application and landfill) provide EWA with reliable and flexible outlets for its biosolids as needed.

BMP Accomplishments to-date includes:

- Since 2010, PureGreen fertilizer has generated over \$334,000 in operational revenue.
- Identified a productive fertilizer marketing strategy by developing partnerships to assist in Tier II product distribution.
- During FY2015, 2,307 tons (53%) of Pure Green Fertilizer was distributed to Tier II markets.
- During FY2015, the Tier II market generated an additional \$84,139 in revenue through sales of the product.

FY 2015 Tier II Distribution: 2,307 Tons

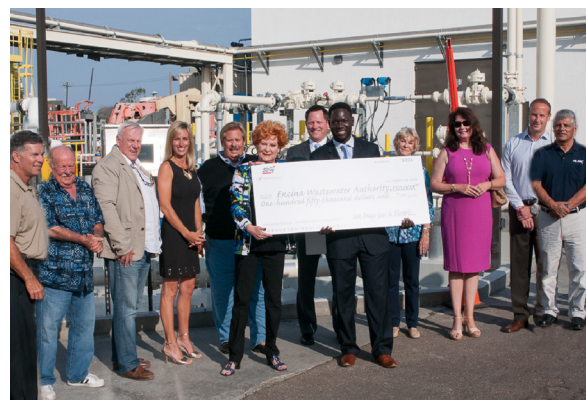


Environmental Performance

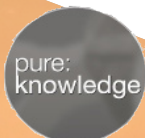
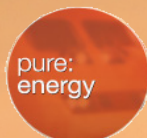
EWA produced 80% of the energy needed to operate the treatment plant through the use of digester gas in its cogeneration facility and continues to be recognized by the EPA as a Top 30 Green Power Partner.

Ninety-five percent of EWA's biosolids were recycled as a fertilizer or soil amendment.

Installation of new saddle media in the RTO (regenerative thermal oxidizer) for the heat dryer reduced natural gas usage by 30% and decreased the frequency of cleaning.



EWA's Alternative Fuel Receiving Facility came online in April. The introduction of FOG (fats, oil and grease) to the digesters has increased gas production by more than 20% and will help the agency achieve its goal of becoming energy independent.



Environmental Management System (EMS) Accomplishments

Regulatory Compliance

EWA received a specialty fertilizer license in California, which could lead to future retail sales of bagged product.

Testing results demonstrated that EWA's biosolids meet EPA Class A Exceptional Quality standards for metals, pathogen reduction standards, and vector attraction reduction.

Relations with Stakeholders



In September 2014, a workshop was held with EWA's Board of Directors to present accomplishments from the previous five years and get input for development of the 2020 Business Plan.

EWA increased its use of social media via Facebook and Twitter to expand outreach to interested parties.



Thirty Encina Water Pollution Control Facility (EWPCF) tours were provided and five community outreach events were held, which provided information about how EWA protects the Pacific Ocean and produces renewable resources.

Quality Biosolids Practices



In February 2015, EWA partnered with Nutrients Plus to produce a blended fertilizer product containing PureGreen. As a result, the production process was modified to achieve Clarus Quality (CQ) standards including a larger, more consistently sized pellet with minimal dust.

The dust control system for the PureGreen load out was modified to apply coating oil more evenly, which increased product quality by reducing fugitive dust.

EWA modified its influent bar screens to reduce the spacing from 3/4 to 3/8 inch. This has increased debris removal up to 50%, resulting in reduced downstream maintenance and an improvement in the quality of PureGreen fertilizer.

Product quality assurance testing has been increased to meet Nutrient Plus contract obligations. This information is now provided to Tier II customers on the Bill of Lading.

Three EWA staff members visited the Pierce County, Washington heat dryer operation to gain operational knowledge from a similar facility.

Safety

An intensive review of the heat drying process took place subsequent to two fires that occurred during 2014. A third party investigation of the events was conducted and a technical representative from the heat dryer manufacturer was brought in to review EWA's dryer operation. In addition, Black & Veatch finalized the design of Heat Dryer Safety Improvements. Based on this input, EWA staff implemented a corrective action plan that included: new and revised SOPs, use of start-up and shutdown checksheets, a formalized heat dryer training program, addition of a thermal imaging camera, and longer-term capital elements for improving heat dryer safety.

An Occupational Exposure Assessment for dust inhalation in the Class A load out building was performed while using coating oil as a dust mitigation measure during load out. The results verified the application of oil negated the need for use of a respirator.

Monitoring & Measurement Results

Environmental Management System Audits

EWA was the ninth organization in the nation to receive certification of its Biosolids Program from the National Biosolids Partnership (NBP) in 2005 and was recertified in 2010. To maintain certification, third-party interim audits are required in years two and four, while internal audits may be substituted in years one and three. During 2012 and 2014, both internal and third party external audits were performed. In 2015 a third party reverification audit is planned, marking the 10th year EWA has been a member of the National Biosolids Partnership.

Internal Audit

EWA conducted an internal audit of its Biosolid EMS during FY 2015. The audits were performed by five EWA staff members and covered three elements of the biosolids value chain including laboratory, pretreatment, information technology, as well as, safety. This audit identified one finding needing correction and four opportunities for improvement. The finding needing correction was to revise SOP 80 to reflect changes to the dust mitigation schedule in the heat dryer building. This item was addressed using EWA's corrective action process, which resulted in an update of the SOP. Opportunities for improvement noted were: Laboratory training should be provided to operations staff responsible for the Carlsbad Water Recycling Facility following a shift change to ensure proper understanding of sampling and testing procedures; discrepancies between the Pretreatment Ordinance, the Revised Basic Agreement with Member Agencies, and member agency Sewer Ordinances should be addressed to prevent issues related to enforcement; and an EMS orientation should be provided for newer staff to increase their awareness of the history and purpose of the program.

Third-Party Audit

On September 1-3, 2014 DEKRA Certification, Inc. (DEKRA) conducted an independent third party audit of EWA's EMS. DEKRA reviewed the dynamics of EWA's biosolids program and audited parts of the program for conformance with expectations and

requirements of the NBP EMS Elements. The audit identified three minor nonconformances which require EWA to: create more measurable goals for the EMS program; expects corrective action plans to include individual(s) responsible, the estimated completion date, and required resources and that progress in completing the corrective actions be tracked; and increase in the frequency of internal audits. These have been addressed through EWA's corrective action process. Upon completion, the auditor noted EWA's biosolids program is functioning efficiently and recommended continuing certification within the NBP Biosolids EMS.

Monitoring of Biosolids Product

EWA conducts required and routine testing of its biosolids to ensure that reuse of this product will not endanger public health or the environment. All tests conducted during FY2015 demonstrated that EWA's PureGreen fertilizer and biosolids met or exceeded federal standards required by 40 CFR 503.

Contractor Compliance

EWA contracts with Denali Water for handling its land applied biosolids. Class A material not used by Tier II clients is hauled to Yuma, Arizona for land application along with any Class B material-produced. During FY2015, Denali Water hauled 2,637 dry tons (dt) to Yuma and 251 dt to the Otay Landfill. EWA entered into an emergency agreement with Ag Tech during a 3 ½ month disruption in PureGreen production. This gave EWA additional land application options for Class B product. During this period Ag Tech hauled 604 dt to Yuma for land application and 132 dt to the South Yuma County Landfill.

Denali Water and Ag Tech's Yuma operations were inspected December 16, 2014. As part of the inspection, EWA staff reviewed standard operating procedures, permits and land application operations. Agronomic rate information is provided to EWA via email. This evaluation demonstrated that Denali Water is meeting its contractual requirements.

PureGreen customers e.g. nurseries, golf courses and third party distributors are visited and or communicated with on a regular basis regarding product use and re-heating.

FY 2016 Goals and Objectives

Minimize adverse environmental impacts:

- 100% beneficial reuse of biosolids.
- Reduce energy use by 5% annually.

Achieve 100% compliance with permit discharge requirements:

- Encina Water Pollution Control Facility.
- Carlsbad Water Recycling Facility.
- Four contract operated pump stations.

Improve biosolids marketability:

- Provide 1000 tons of PureGreen to Nutrients Plus for use in the premium fertilizer market.
- Assess cost efficiency the production of filling totes as a two person operation for reducing nitrogen use.
- Conduct a study with the Center for Applied Horticultural Research on the release of nutrients in biochar and PureGreen by March of 2016.

Maintain a safe and healthy work place:

- Award contract for heat dryer safety improvements by March 2016.
- Track injury rate for heat dryer process compared to the outlying EWPCF operation and report data to staff by July 2016
- Conduct a plant wide arc flash hazard safety assessment by March 2016.

Communicate with Stakeholders:

- Participate in one outreach event annually with each member agency.
- Complete update of the EWA website by November 2015
- Complete the PureGreen website by December 2015
- Monitor EWA trends on social media and report to EWA's Board of Directors annually.

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 website at: www.encinajpa.com.

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