

BIOSOLIDS

2008
Performance Report

Environmental Management System

The City of Los Angeles processes, recycles and renews 159 billion gallons of wastewater produced annually by more than four million residents. Twenty one billion gallons of this wastewater is used as recycled water for beneficial water-conservation purposes. Two hundred and fifty six thousand tons of biosolids are fully recycled and are treated as a valuable commodity. The City managed 92% of its biosolids as fertilizer, and 8% as compost.

Terminal Island Renewable Energy (T.I.R.E.) Project Start Up



In April 2007, the City of Los Angeles and Terralog Technologies Inc. began construction for the Terminal Island Renewable Energy (TIRE) project. Two wells were drilled and injection equipment was initially installed. The start-up phase commenced in June 2008, and the equipment was tested with brine and effluent from the Terminal Island Water Reclamation Plant. In August 2008, the City injected the first biosolids from Hyperion Treatment Plant and Terminal Island Water Reclamation Plant. The biosolids were injected successfully and the well accepted the material. In October 2008, the TIRE project reached its first permit milestone: the successful demonstration of biosolids injectivity and the review of well formation response. This milestone was accomplished 35 days ahead of schedule. Currently, approximately 150 wet tons of biosolids are injected 5 days a week.

Daily monitoring and measurement are conducted on the project. A Technical Advisory Committee (TAC) monitors the project operations and analyzes the well response data. The committee includes the U.S. Environmental Protection Agency; Office of Groundwater Protection; Underground Injection Control and Biosolids Management; Department of Energy; California Institute of Technology (CalTech); US Geological Survey; Lawrence Berkeley National Lab and California Division of Oil; and Gas and Geothermal. Based on review of the data and monitoring by the TAC, the results show that the well has responded soundly to the injection and the material is contained vertically.

Extensive outreach efforts were provided for the TIRE project. To date, over 60 presentations, including tours, have been given. As a result of the City's efforts, the TIRE outreach program was recognized by the National Association of Clean Water Agencies for its environmental leadership in providing an effective public outreach and education program for TIRE.

The City has seen several environmental benefits during the start-up phase of the TIRE project:

1. Reduction in air emissions and green-house gases due to a decrease in truck traffic.
2. Reduction in the number of trucks transporting the material to management options outside of the Los Angeles basin from 14 per week to an average of 4 per week.
3. Met permit and regulatory requirements thus far, resulting in protection of groundwater, improved air quality, and odor free operations.

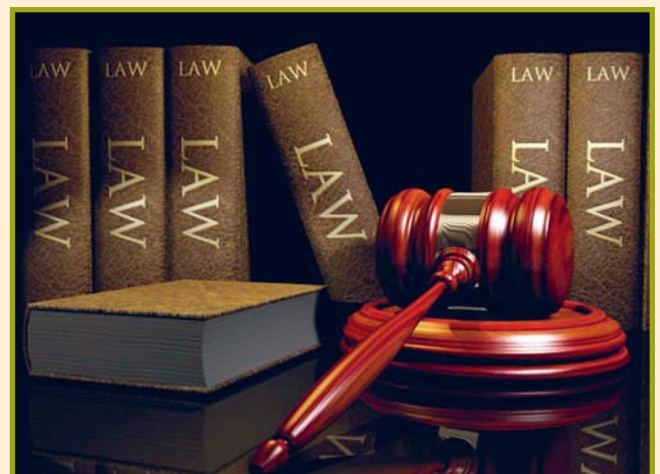
Our Accomplishments

The City continually improves its program each year by accomplishing goals and objectives set. The table below lists some accomplishments the City achieved in FY 07-08.

Accomplishments	Outcomes
Maintained compliance with Kern County Class A ordinance after passage of Measure E and successful ruling on lawsuit against ban on the importation of Biosolids. (Goal)	Regulatory Compliance, Environmental Performance
Included routine site visits to Griffith Park Composting Facility, Terminal Island Water Reclamation Plant, and the Green Acres Farm as part of the Hyperion Solids Operator station post training to enhance the current training program. (Objective)	Quality Management Practices
Upgraded and updated the Biosolids EMS website. Included Survey feedback (Goal)	Relations with Interested parties
Provided information to interested parties, public, and news media through interviews, tours, presentations, and website regarding the Terminal Island Renewable Energy project (deep well injection of biosolids) The public outreach/education element of the project received an environmental award from National Association of Clean Water Agencies (NACWA). (Objective)	Relations with Interested parties
Maintained record of no-odor complaints at Green Acres and Griffith Park Compost facility by following best management practices for off-loading, applying, and beneficially using the biosolids. (Goal)	Regulatory Compliance, Environmental Performance, Quality Management Practices, Relations with Interested parties
Received California & Arizona ELAP re-certification of laboratory.	Quality Management Practices, Relations with Interested parties Regulatory Compliance

Measure E Lawsuit Update

In 2006, the City of Los Angeles along with other affected Southern California agencies and individuals filed a lawsuit challenging Kern County's ban on the land application of biosolids in the unincorporated areas of the County. In 2007, the Federal District Court invalidated Measure E and Kern's ban on land application. Kern County filed an appeal in the 9th Circuit Court of Appeal in September 2007. In the interim, the City, on behalf of the citizen plaintiffs, petitioned the District Court for an award of attorney's fees as the prevailing party and in August 2008, the Judge awarded \$1.09 million to plaintiffs. The parties have argued the matter in the 9th Circuit Court of Appeal and now awaiting a decision.



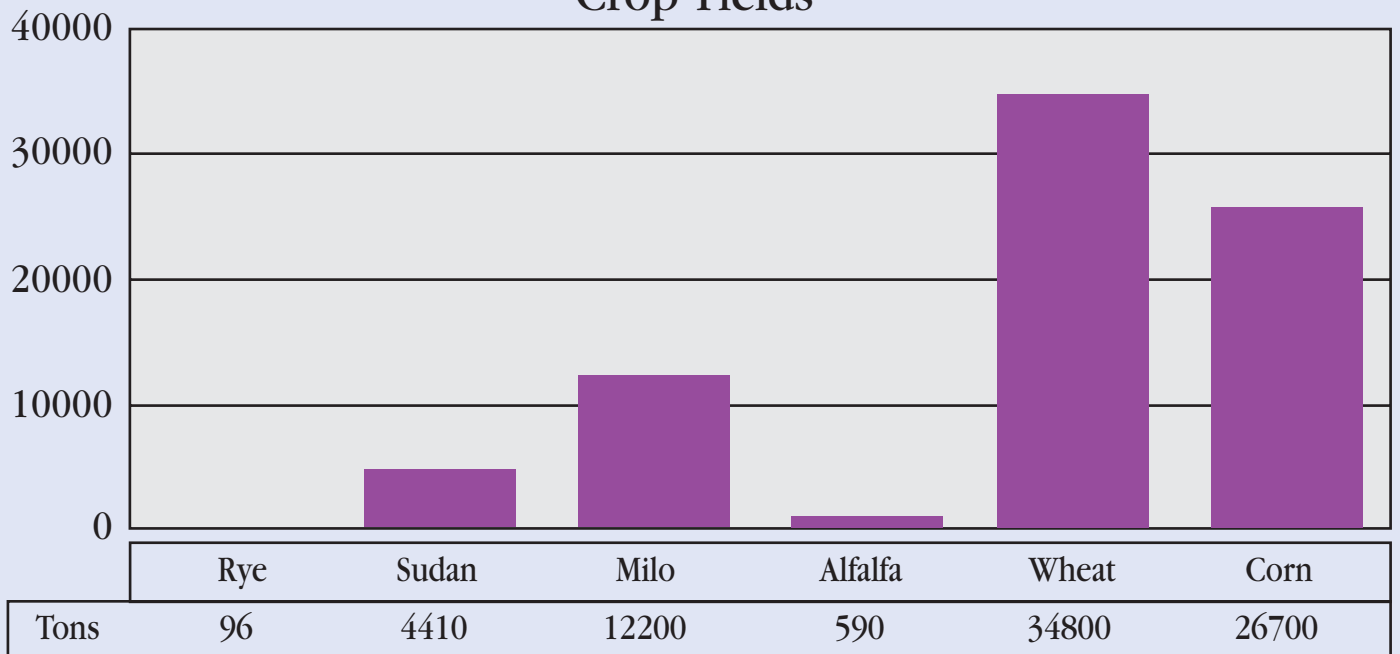
Contractor Compliance

The City's contractors, Responsible Biosolids Management (RBM) and Solid Solutions (SS) L.L.C., manage approximately 670 wet tons of biosolids daily. Both contractors met all regulatory requirements and followed best management practices for reusing the City's biosolids. SS managed the City's biosolids through composting in California and in Arizona. RBM land applied the City's biosolids at Green Acres where it was used beneficially as a fertilizer to grow various non-food crops.

The City's Green Acres Farm offset its operating cost and generated approximately \$400,000 in revenue for FY 07-08. The following graph shows the amount of crops harvested (in tons). These numbers are comparable to crop yields in Kern County.



Crop Yields



Monitoring and Measurements

The City ensures that the biosolids we land apply are safe for the environment. We continually monitor the data we collect to demonstrate that the biosolids are well within the EPA Exceptional Quality standards and the Kern County Ordinance requirements, e.g.: we:

- Maintained a program that meet or exceed the US Environmental Protection Agency and Kern County Class A pathogen requirements of less than 1,000 mpn/gram at our Green Acres Farm. The City's average pathogen level for 2008 was less than 83 mpn/gram.
- Monitored and ensured that biosolids are well below the EPA's stringent Exceptional Quality metal limits.
- Maintained a record of zero non-compliances or notice of violations in 2008.

The following table provides a brief sample of some of the items the City monitors and measures for certain regulatory agencies. For more detailed information, please contact us at the information provided on the back of the report.

	Salmonella (MPN/4 gram)	Fecal Coliform (MPN/gram)	Nickel* (mg/kg)	Dioxins (ppb) (mg/kg)	PCBs (ppm)
2008	<1.5	83.6	42.1	None Detected	None Detected
EPA Class A Requirements	Less than 3	Less than 1000	420 Ceiling Concentration*	Dioxins** (ppb) (mg/kg)	PCBs 50** (ppm)

* Ceiling concentration in Table 1 of EPA 503 Sludge Regulation

** California Title 22 lists 10 ppb for dioxin and 50 ppm for PCBs as the Total Threshold Limit Concentration for hazardous waste.

Public Outreach

The City is constantly extending its public outreach program. In 2008, the City:

- Responded to 23 public inquiries from our website and telephone hotline program.
- Established a new website and released a survey to determine the effectiveness of its new website. Results of the survey show:
 - 86.5% found the information they were seeking on the website
 - 92.0% thought that the information on the website was useful
 - 54.5% visited the site for the first time
 - 13.6% visit the site daily
 - 4.5% visit the site monthly
- Conducted 258 tours at Hyperion Treatment Plant for 3,732 guests and 12 tours at Terminal Island Water Reclamation Plant for approximately 120 guests. The tours included our biosolids processing section and truck-loading facility.
- Coordinated 12 outreach events and provided more than 1,000 people updates on the biosolids management program and the TIRE project. Attendees included City staff; City Council Offices; Neighborhood Councils; Integrated Resources Plan stakeholders; citizen and environmental groups; interested parties; and the public.

To be included in our interested party list, participate in future audits, provide questions and comments about this report, or to obtain more information about the program, please contact us via:

Phone at **310/648-5877** or email at: san.biosolidsems@lacity.org

Our website is at: <http://www.lacity.org/san/biosolidsems/>

Audit Results

2008 Re-Verification Audit Findings

In August 2008, KEMA Inc., a certified NBP audit company, conducted the 2008 re-verification audit of the City's Biosolids Environmental Management System (EMS) program. The third party audit company reviewed, evaluated, and inspected all 17 elements of the biosolids program. The audit found improvements in the system, strengths in the program, opportunities for continual improvement, and five minor nonconformances. KEMA, Inc. recommended continued certification in the National Biosolids Partnership's EMS program at the Platinum Level status. To view the complete audit report, go to BIOSOLIDS: Environmental Management System website at: <http://www.lacity.org/san/biosolidsems/>

An overview of the findings from the 2008 re-verification audit is highlighted below.



EMS Strengths

KEMA, during the audit, noted the following strengths in the City's Biosolids EMS:

- An active public outreach program is in place that has several benefits (e.g. Measure E, TIRE project)
- Improved control methods at Green Acres have been introduced, including inspections and continuous surveillance.
- Use of biosolids at the Green Acres farm is well monitored.
- Positive feedback was received from all interested parties interviewed about Los Angeles being forthright about its biosolids practices.

EMS Outcomes

The auditor, furthermore, found that the City's Biosolids EMS is improving through the use of a management system and identified the following improvement outcomes in the program since the last third party audit was conducted in 2006.

Quality Practices

- Operations at both Hyperion and Terminal Island are consistently producing Class A biosolids. In addition to producing improved product quality, this has provided significant cost benefit and suitability for additional uses.
- Development of standard operating procedures has improved operating practices and captured operator knowledge.

Environmental Performance

- The City pretreatment program and SIU inspections have contributed to a 20% reduction in mercury content in biosolids.

Regulatory Compliance

- Continued 100% regulatory compliance with more stringent and demanding legal requirements, including local ordinances.

Relations with Interested Parties

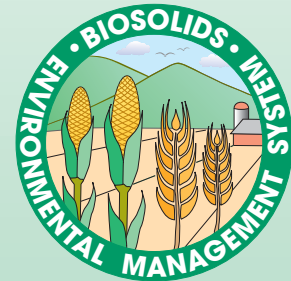
- The effectiveness of the City's communication channels have improved, as demonstrated by positive feedback received from Measure E and an increase in interested parties requesting information about the biosolids program.

Goals and Objectives

City staff set objectives each fiscal year to continually improve its Biosolids EMS program. The City invited the public to participate in the goals and objectives process by attending public meetings, sending letters, e-mails and postings on the biosolids website to our interested parties and the public. To find out more about getting involved contact us at the information listed on the back of the report.

Current 2008-2009 Objectives

- Implement by June 2009 Phase 1 of the Terminal Island Renewable Energy project to demonstrate a new management option that would assist with diversification of biosolids management program.
- Track the issues related to passage of Measure E and respond accordingly to ensure regulatory compliance and maintain the City's biosolids management option at Green Acres during the lawsuit.
- Assist the Hyperion Biosolids Management Group by providing new staff with some of the training for the EMS Auditor Team by June 30, 2009. To be undertaken by the Human Resources Development Division. Use Attendance Rosters to track a minimum of 5 students trained and record that information in the Training Information Management System (TIMS).
- Investigate and review sustainable technologies/options by July 2010 for biosolids management, and update the strategic plan quarterly with alternatives that are being considered by the City to ensure that regulatory compliance requirements are achievable.
- Develop and validate methods for enteric virus and helminth ova monitoring of Hyperion Treatment Plant biosolids by June 30, 2009. Developing these methods within the Environmental Monitoring Division will save the City money that is currently being outsourced to a contract laboratory and will provide more flexibility by allowing a quicker response if a repeat analysis is needed.
- Inspect 249 significant industrial users and 200 dental offices by June 30, 2009 to ensure compliance with biosolids management requirements.



Contacts

For more information about the program, to get on the interested party list or provide questions and comments about this report, you can reach us by: Phone at 310/648-5877 • Email at: san.biosolidsems@lacity.org
Website at <http://www.lacity.org/san/biosolidsems/>

