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15 **SUPERIOR COURT OF THE STATE OF CALIFORNIA**

16 **FOR THE COUNTY OF TULARE**

17 CITY OF LOS ANGELES; COUNTY  
SANITATION DISTRICT NO. 2 OF LOS  
18 ANGELES COUNTY; ORANGE COUNTY  
SANITATION DISTRICT; RESPONSIBLE  
19 BIOSOLIDS MANAGEMENT, INC., R&G  
20 FANUCCHI, INC.; SHAEN MAGAN, BOTH  
INDIVIDUALLY AND D/B/A HONEY BUCKET  
21 FARMS AND TULE RANCH/MAGAN FARMS;  
WESTERN EXPRESS, INC.; CALIFORNIA  
22 ASSOCIATION OF SANITATION AGENCIES,

23 Plaintiffs,

24 v.

25 COUNTY OF KERN; KERN COUNTY  
26 BOARD OF SUPERVISORS,

27 Defendants.

Case No. Civ. 242057

**DECLARATION OF TRACI J.  
MINAMIDE, P.E., SUPPORTING  
PLAINTIFFS' MOTION FOR  
PRELIMINARY INJUNCTION**

Hearing: June 9, 2011

Dep't: 10

Hearing Judge: Hon. Lloyd L. Hicks

Action filed: January 26, 2011

Trial date: Not set

1 I, Traci J. Minamide, declare as follows:

2 **Experience And Qualifications**

3 1. I am Chief Operating Officer of the Bureau of Sanitation, Department of  
4 Public Works, City of Los Angeles ("City"). I have served in this position since 2008. I have  
5 worked for the City Bureau of Sanitation since 1985. Before my appointment to Chief Operating  
6 Officer in 2008, I was Assistant Director of the Bureau of Sanitation. I also have previously  
7 served as manager of the Bureau's Regulatory Affairs Division and manager of its Industrial  
8 Waste Management Division.

9 2. I am a licensed Professional Engineer in the State of California, with a  
10 Certification in Executive Management from Harvard University, a Master of Science degree in  
11 Environmental Engineering from Loyola Marymount University, and a Bachelor of Science  
12 degree in Civil Engineering from California State Polytechnic University, Pomona.

13 3. Among other responsibilities as part of the executive team at the Bureau of  
14 Sanitation, I serve as the Chief Operating Officer supporting the Director on all Bureau activities  
15 and having a primary responsibility over Wastewater Treatment Operations. In this position, I  
16 have authority over all aspects of wastewater treatment and biosolids generation and  
17 management, including the City's efforts to manage biosolids in a lawful, environmentally  
18 responsible, and economical manner. Numerous employees and contractors who work on  
19 biosolids issues are under my supervision and report to me. As part of my job, I am familiar  
20 with the City's compliance with all regulations regarding biosolids and land application. I am  
21 also familiar with issues regarding land application of biosolids in Southern California and Kern  
22 County; the City's Green Acres Farm ("Green Acres" or "Farm") in Kern County; and the  
23 history of the Farm's operations and regulation.

24 4. I have spent much of my career on wastewater and biosolids issues. In  
25 addition to my job responsibilities and experience, I am active in national and statewide  
26 professional organizations that deal with these issues. I understand the costs, markets, logistics  
27 and regulatory requirements for land application and other biosolids management options.



1 used as a fertilizer and a soil conditioner to enhance the growth of feed crops such as corn,  
2 wheat, Sudan grass, milo and alfalfa, which are primarily sold to local dairy farms as animal  
3 feed. The City depends on Green Acres for environmentally beneficial and economical  
4 management of biosolids in compliance with the Clean Water Act. As explained below, the City  
5 invested nearly \$13 million in purchasing Green Acres and constructing improvements on the  
6 property to serve its biosolids program. The City also spent approximately \$15 million to  
7 upgrade its wastewater treatment plants to generate biosolids of higher quality in order to meet  
8 Kern County's prior regulatory mandates. Green Acres has proved to be a sustainable,  
9 environmentally sound operation that plays an important role in Kern County's agricultural  
10 economy.

11           10. The Kern Ban undermines the City's significant investments and the  
12 efforts of the City and its contractors, as well as the interests of the City's hundreds of thousands  
13 of sewage rate paying citizens. It will impose substantial burdens on the City of Los Angeles  
14 and its biosolids management program. The City is working to determine and identify how it  
15 will safely and lawfully manage its biosolids in anticipation of the Ban and is already incurring  
16 significant costs in that process. Regardless of these other speculative options, one result is for  
17 certain: the City will have to pay many millions more annually to manage its biosolids if Kern  
18 County is successful in shutting down land application at Green Acres.

19           11. If allowed to take effect, the Ban will also cause detrimental  
20 environmental impacts in Southern California and Arizona, and the possibility that Kern  
21 authorities may suddenly enforce Measure E threatens public health and safety. The Ban will  
22 force the City to attempt to find new sites, most likely in Arizona, for beneficially using its  
23 biosolids. Quickly changing transportation routes to divert the material to other locations within  
24 and outside of California means longer hauling distances for the trucks carrying the biosolids,  
25 and as a result increased emissions of air pollution, truck traffic, traffic hazards, and greenhouse  
26 gas emissions.

**The City Of Los Angeles' Wastewater Treatment, Biosolids Management,  
And Land Application At Green Acres Farm**

**A. Wastewater Treatment in Los Angeles**

12. The City of Los Angeles treats wastewater at four separate plants: Hyperion (located just south of Los Angeles International Airport on the Pacific Coast), Terminal Island (a much smaller plant located in Los Angeles Harbor), Los Angeles Glendale, and D.C. Tillman. Hyperion and Terminal Island treatment processes include solids handling that produces biosolids. Hyperion is one of the world's largest and most modern wastewater treatment plants, with a design capacity to handle 450 million gallons a day of wastewater from homes, businesses, schools and institutions. Wastewater inflow and biosolids generation are a constant, non-discretionary government function. The City of Los Angeles collects and treats wastewater for approximately four million residents of greater Los Angeles, including 29 agencies and jurisdictions that contract with the City for wastewater treatment.

13. Wastewater treatment is regulated under the Clean Water Act and the City's two plants hold detailed National Pollutant Discharge Elimination System ("NPDES") permits that prescribe how wastewater is treated and discharged. Under the authority of its NPDES permits, the City administers a vigorous pretreatment program, requiring businesses and industries that discharge wastewater to the City's sewers to reduce to harmless trace levels many pollutants before the wastewater enters the City's sewer system. Pretreatment successfully led to a dramatic reduction in the 1980s and 1990s of the amount of pollutants in sewage and biosolids.

**B. The EPA Part 503 Rules Regulating Biosolids and Land Application**

14. The Clean Water Act also regulates the generation and management of biosolids through its "Part 503" rules (which are set forth in the Code of Federal Regulations at 40 C.F.R. Part 503). The U.S. Environmental Protection Agency ("EPA") adopted these rules in 1993 after lengthy research and peer review and an extensive rulemaking process. Part 503 provides detailed requirements for how sewage sludge must be treated before it can be land

1 applied (including sale as a bagged product or compost), or used for other beneficial uses, such  
2 as reclamation of strip mining sites.

3 15. Part 503 provides for Class A and Class B biosolids. Class B biosolids are  
4 treated (typically by heating or by applying simple chemicals such as lime) to reduce certain  
5 microorganisms by 99%. The particular microorganisms measured for in biosolids to verify the  
6 effectiveness of treatment are called indicator organisms, which serve as proxies to verify the  
7 reduction of pathogens (bacteria and viruses that can cause disease). Biosolids do not innately  
8 harbor pathogens but this process ensures that any pathogens are killed or reduced to very small  
9 amounts. As an additional preventative precaution, for Class B biosolids that may have residual  
10 microorganisms, the Part 503 rules require site controls such as restrictions on human access to  
11 the farm fields and setbacks from property lines that guarantee safety.

12 16. Class A biosolids are treated longer or more intensively (and at higher  
13 costs) to essentially eliminate microorganisms. Few restrictions on use and distribution are then  
14 imposed on these Class A biosolids, which are often bagged for retail sale to home gardeners.  
15 As discussed below, Los Angeles currently produces and land applies *only* Class A biosolids at  
16 Green Acres.

17 17. In addition to controlling potential pathogens in biosolids, the Part 503  
18 rules also limit the amounts of eight trace elements (metals) that can be found in biosolids at the  
19 parts per million level. EPA set the limits after a comprehensive risk assessment process that  
20 screened hundreds of chemicals potentially in biosolids and identified the very few that required  
21 regulation. *See EPA, A Guide to the Biosolids Risk Assessments for the EPA Part 503 Rule*  
22 *(1995)*. Biosolids that are sufficiently low in metals qualify as “Exceptional Quality” (“EQ”),  
23 and EPA allows wider uses of such biosolids. Because of the success of the City’s pretreatment  
24 program, as discussed above, Los Angeles’ biosolids have qualified as EQ for many years.

### 25 C. Additional Testing of Los Angeles Biosolids

26 18. Other important testing of the City’s biosolids is done before they are land  
27 applied at Green Acres. The City tests its biosolids for numerous pesticides, metals and organic  
28

1 chemicals not included in Part 503 but regulated under California's Title 22 rules governing  
2 potential hazardous wastes. Kern County (pursuant to its pre-Ban ordinance) also requires  
3 periodic testing of the City's biosolids upon their arrival in the County for PCBs, dioxins, and  
4 certain bacteria. Finally, the City measures the nutrient content of the biosolids (including the  
5 primary plant nutrients nitrogen, phosphorous, and potassium) and provides this data to its land  
6 application contractor, Responsible Biosolids Management ("RBM"). This data allows RBM to  
7 manage crop nutrient needs and comply with Part 503 requirements that biosolids be applied at  
8 the proper rate to satisfy particular crops' respective nitrogen needs (the agronomic rate). The  
9 City has complied with Kern's County's pre-Ban biosolids ordinance, including unannounced  
10 quarterly inspections and will continue to do so.

11           19.     The Hyperion plant currently generates approximately 620 wet tons per  
12 day of Class A EQ biosolids, and the City's Terminal Island plant generates approximately 35  
13 wet tons per day of Class A EQ biosolids. The vast majority (approximately 75%, or 515 tons  
14 per day) of these biosolids are land applied at Green Acres. The remaining tonnage is reused  
15 through composting, and a portion is injected into deep subsurface as part of the demonstration  
16 project at the Terminal Island Treatment Plant. The deep subsurface project, known as the  
17 Terminal Island Renewable Energy ("T.I.R.E.") project, is a five-year demonstration project  
18 permitted by EPA.

19 **D.     History of Land Application at Green Acres Farm**

20           20.     Los Angeles has successfully land applied biosolids on farms for twenty-  
21 three years. In 1987, after ending ocean disposal of biosolids, the City implemented a mix of  
22 management options, including land application of biosolids, composting, and disposal of  
23 biosolids in landfills.

24           21.     In 1989, the California Legislature enacted the California Integrated Waste  
25 Management Act, which directed localities to recycle biosolids rather than dispose of them.  
26 Since that time, the City has committed to beneficially reuse 100% of its biosolids, and it ceased  
27 landfill disposal of biosolids, which is not a beneficial use.

1           22.     In the early 1990s, the City began working with farmers in Kern County to  
2 land apply biosolids to several properties in the County. In November 1994, the City  
3 commenced its land application program at Green Acres. The success of farming with and  
4 recycling biosolids at Green Acres led the City to purchase the Farm in 1999 for \$9,630,000,  
5 demonstrating the City's dedication to beneficial use of biosolids and stewardship of the Farm.  
6 In 1998, the California Water Environment Federation prepared a Manual of Good Practice for  
7 the Agricultural Land Application of Biosolids. The manual, the first of its kind for the state of  
8 California, established standards of excellence for applying biosolids to agricultural land and  
9 encouraged statewide uniformity in the application of biosolids. In May 2000, the Los Angeles  
10 City Council adopted a Biosolids Policy Statement, which reaffirmed that "[t]he City is  
11 committed to maintaining 100% beneficial use of high quality biosolids . . ." and included the  
12 Manual of Good Practice as a standard that the City and its contractors would follow. This  
13 commitment shows that the City and its contractors are responsible and informed about biosolids  
14 management and following best management practice for agricultural land application of  
15 biosolids to ensure its safe and beneficial use.

16           23.     In 1998, Kern County passed its first ordinance regulating Class B land  
17 application and required an annual fee to be paid to the County. In 1999, Kern County adopted  
18 another ordinance (the first of its kind in California) mandating that, by 2003, all biosolids land  
19 applied in the County meet more restrictive Class A EQ standards for metals and pathogen  
20 reduction as well as additional testing criteria (as discussed above). The City and its contractors  
21 continuously have cooperated with Kern County regulators and have complied with, and meet,  
22 all the standards set by the County regulations regarding land application of biosolids.

23           24.     In good faith compliance, the City made significant investments in new  
24 equipment and technology to transition from Class B to Class A biosolids. The City spent  
25 approximately \$15 million to upgrade its wastewater treatment facilities at Hyperion and  
26 Terminal Island to allow additional holding time for heat treatment of biosolids in large  
27 anaerobic digesters that kill microorganisms. See City of Los Angeles Bureau of Sanitation,  
28

1 Bureau of Engineering, *Achieving Exceptional Quality Biosolids* (2003). This includes more  
2 than \$9.2 million spent on capital improvements at Hyperion, more than \$5.5 million spent on  
3 capital improvements at Terminal Island, and approximately \$300,000 spent on certification and  
4 testing, plus \$1.7 million in annual operating costs. The City made these significant investments  
5 solely to support its land application program at Green Acres and to ensure compliance with the  
6 new, more stringent regulations adopted by Kern County.

7           25. As noted above, the City bought Green Acres in 1999 for nearly \$10  
8 million. The City made this significant investment in order to guarantee a controlled  
9 environment for its biosolids land application program and to ensure full City oversight of the  
10 program. At an additional cost of more than \$3 million, the City constructed and installed a  
11 variety of permanent improvements to the Farm property, including adding roads, a conference  
12 center, a water well, and other improvements - all built solely to support its land application  
13 program. The City currently employs approximately 70 full-time staff including farmers,  
14 contractors, engineers, operators, inspectors, and other employees to oversee and implement the  
15 transportation of biosolids from the City to the Farm, the land application of biosolids at the  
16 Farm, and farming with biosolids to grow healthy feed crops and to improve soil quality at Green  
17 Acres.

18           26. The City contracts with RBM to administer its land application program at  
19 Green Acres. RBM has primary responsibility for preparing and filing reports with regulatory  
20 authorities, including EPA Region IX, the Central Valley Regional Water Quality Control Board  
21 ("Regional Board"), and Kern County.

22           27. The City itself also files, among other reports, an annual report to EPA  
23 Region IX that includes analytical data demonstrating that the City generates Class A EQ  
24 biosolids and information on land application activities, such as total tonnage applied. In  
25 addition to its formal reporting requirements, the City publishes monthly a report, entitled  
26 *Biosolids Program Management: Monthly Progress Report*, that compiles very detailed  
27 information about its biosolids activities and the Farm, including much of the analytical data on  
28

1 biosolids quality that is contained in the regulatory reports. An example of a *Monthly Progress*  
2 *Report* is attached to this declaration as Exhibit 1.

3           28. In addition to EPA's Part 503 rules and Kern County's pre-Ban ordinance,  
4 Green Acres Farm operates under the requirements of the California State Water Resources  
5 Control Board's General Order governing land application (Water Quality Order No. 2004-10-  
6 DWQ) and pre-existing land application orders by the Central Valley Regional Water Quality  
7 Control Board. The Farm also operates under a Regional Board permit that governs use of  
8 treated secondary effluent from the City of Bakersfield for farm irrigation. These orders and  
9 permits, along with Part 503 and Kern County's requirements, impose specific management  
10 practices, such as application conditions and mandatory setback distances from drinking water  
11 wells, and monitoring, record-keeping, and reporting requirements. Green Acres Farm complies  
12 with all of these requirements.

13           29. The City contracts with Plaintiff R & G Fanucchi, Inc. ("Fanucchi  
14 Farms") to farm Green Acres. Fanucchi Farms uses biosolids, irrigates the fields, and grows  
15 feed crops at Green Acres year around. Crops include corn, wheat, alfalfa, Sudan grass, and  
16 milo, which are sold to local dairies as animal feed.

17           30. A critical component of recycling and sustainability at Green Acres is use  
18 of treated secondary effluent from a City of Bakersfield wastewater treatment plant for the  
19 Farm's irrigation needs. Like biosolids, Bakersfield treated secondary effluent is generated  
20 every day (approximately 14 million gallons average flow) and must be managed. The City and  
21 its contractors accordingly have developed a sophisticated system so that enough crops are  
22 always in need of irrigation water to make beneficial use of the effluent discharges from  
23 Bakersfield. By recycling Bakersfield treated secondary effluent, Green Acres only draws a  
24 small percentage of the water it has rights to from the Kern Delta Water District canals, which  
25 divert water from the Kern River. The City does not charge Bakersfield for managing its  
26 effluent. Bakersfield manages its Class B biosolids by land application at a farm not far from  
27  
28

1 Green Acres that is within the City of Bakersfield, an incorporated area of the County, and  
2 therefore is not subject to the Kern Ban.

3 **E. Public Outreach and Involvement**

4 31. Education, outreach, and community involvement are also fundamental to  
5 beneficial use of biosolids and sustainable land application in particular. The City has worked to  
6 increase public understanding and acceptance of biosolids recycling and many City employees  
7 and contractors spend time communicating and meeting with the public, both in Los Angeles and  
8 Kern County, regarding Green Acres Farm and biosolids. The City has a dedicated person  
9 assigned to communicate, meet with, and respond to the public about its biosolids management  
10 program. Also, a dedicated hotline is available for receiving biosolids inquiries. The City meets  
11 regularly with interested parties to provide updates on the biosolids management program and to  
12 solicit their input on goals and continual improvements for the program. The City has hosted  
13 hundreds of visitors at Green Acres, attended public and government meetings in Kern County,  
14 and continues to support these outreach activities. The City maintains a robust website to ensure  
15 that the public has accurate and up-to-date information on its biosolids management program,  
16 including information regarding Green Acres. The website is updated at least semi-annually and  
17 receives many hits daily from the public and interested parties.

18 32. Since 1989, the City has received numerous awards and recognitions for  
19 its biosolids management program at the local, state, and national levels. In recognition of the  
20 City's achievements in its biosolids program, in 2003 the Los Angeles Bureau of Sanitation  
21 became only the second sanitation agency in the country to receive the National Biosolids  
22 Partnership's Environmental Management System ("EMS") Certification. EMS certification, a  
23 voluntary program, was earned through a lengthy third-party audit of all management, training,  
24 compliance and public outreach components of the City's biosolids program. The City, since  
25 2003, has maintained its EMS Certification through third party audits. Specifically, the City of  
26 Los Angeles has maintained EMS Platinum Level status, which is the highest level of  
27 achievement for a biosolids management program. The last audit occurred in August 2010.

1 Copies of the City's most recent EMS audits are available on its website, at  
2 [http://san.lacity.org/biosolidsems/program\\_performance/audits\\_results.htm#auditprogram](http://san.lacity.org/biosolidsems/program_performance/audits_results.htm#auditprogram).

3 **The City Of Los Angeles Will Suffer Substantial Harms From the Ban**

4 **A. The Kern Ban Imposes Significant Costs and Major Obstacles to Sound Biosolids**  
5 **Management**

6 33. The new Kern Ban will impose substantial burdens on the City of Los  
7 Angeles. Since 1987, the City has invested tens of millions of dollars, as well as many hours of  
8 staff time and effort, in improving land application of biosolids. Since 1994, it has focused on  
9 building a model, long-term land application program at Green Acres. However, because of the  
10 Kern Ban, the City will now have to abandon its successful land application and farming with  
11 biosolids at Green Acres and abruptly change course, and hope to secure alternative  
12 arrangements for handling the 515 tons of biosolids it generates and land applies each day of the  
13 year. If allowed to take effect, the Kern Ban will dramatically increase the costs of the City's  
14 biosolids program and create significant uncertainties and other burdens as well. Approximately  
15 50 jobs will be immediately lost or jeopardized.

16 34. The City's current costs for hauling and land application at Green Acres  
17 are approximately \$5.76 million per year, based on the current price of \$30.66 per wet ton for  
18 biosolids generated at Hyperion. The City has evaluated potential alternatives to land application  
19 of biosolids at Green Acres, and the least expensive alternative identified, land application at  
20 other sites in California and Arizona, would increase annual costs to the City by approximately  
21 \$2.68 million. These alternatives are described in more detail at paragraphs 35-39. All  
22 alternatives exceed the approximately \$7.23 million budgeted by the City for Fiscal Year 2010-  
23 2011 for managing the minimum contracted amount of 548 wet tons per day of biosolids.

24 35. The City has been investigating potential alternative land application sites  
25 in California and in Arizona. Hauling biosolids to these potential new sites would be  
26 considerably more expensive than the City's current land application program at Green Acres.  
27 For these potential new sites, hauling and land application costs could range anywhere from  
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1 \$44.93 per wet ton to as much as nearly \$63 per wet ton. Even at \$44.93 per wet ton, at a lower  
2 than expected tonnage of 515 wet tons per day, 365 days a year, annual hauling and land  
3 application costs would total more than \$8.44 million each year, an approximate \$2.68 million  
4 increase over the costs of the current program and in excess of the City's allocated budget  
5 resources. Further, there is no guarantee that the City will be able to secure the lower price of  
6 \$44.93 per wet ton for all, or even a substantial portion, of the 515 tons of biosolids it land  
7 applies at Green Acres every day of the year. As a result, the overall annual hauling and land  
8 application costs could be even higher.

9           36. In addition, the availability of potential land application sites in California  
10 is extremely limited. As a result, the City will most likely have to attempt to identify new land  
11 application sites in Arizona, which are as far as 350 miles (one way) from Los Angeles.  
12 Estimated per ton costs for hauling do not account for increases in fuel prices, and the City  
13 compensates haulers for additional costs due to increased fuel prices. Therefore, increases in  
14 fuel prices would raise the City's annual costs even higher, particularly given the long distances  
15 involved.

16           37. Alternatives to land application such as composting would also be  
17 considerably more expensive than the City's current biosolids management program. Based on  
18 current cost proposals, hauling and composting costs would range from nearly \$55 per wet ton to  
19 over \$70 per wet ton. Even at \$55 per wet ton, this would increase the City's current costs for  
20 the vast majority of its biosolids (\$30.66 per wet ton, for the 515 tons per day) by over \$12,500  
21 per day, or \$4.57 million per year. Further, it is not clear that there is readily available  
22 composting capacity of the scale needed to manage the City's biosolids.

23           38. If the City is forced to dispose of its biosolids in a landfill, the City's costs  
24 would likely be higher. Based on current cost proposals and estimates, costs for disposal in a  
25 landfill would range from nearly \$48 per wet ton to over \$68 per wet ton. Moreover, landfill  
26 capacity in California is extremely limited, and existing sites are permitted to accept only a  
27 portion of the City's biosolids, which may restrict the use of this alternative regardless of price.

28

1 Choosing the landfill alternative would be in violation of the existing California legislative  
2 mandate to divert all recyclable materials from landfills and also go against the City's established  
3 goals of diverting 70% of refuse from landfills by 2010.

4           39. Another option the City is investigating is using some of the City's  
5 biosolids as landfill cover (called "alternative daily cover"). Landfills are required to cover their  
6 debris at the end of each day, and in some instances biosolids can be used as the daily cover.  
7 However, capacity in California for this option is not readily available to the City as an  
8 alternative to Green Acres. Moreover, based on current proposals and estimates, costs for using  
9 biosolids as alternative daily cover would range from \$48.86 to nearly \$60 per wet ton - which,  
10 again, represents a dramatic cost increase over the City's current program at Green Acres.

11 **B. The Kern Ban Imposes Significant Administrative and Planning Burdens**

12           40. Apart from the significant economic harm that the Kern Ban will cause by  
13 increasing the costs of the City's biosolids program, the City will also face numerous  
14 uncertainties and administrative and other burdens if it is compelled to abandon its longstanding  
15 program, which has operated successfully at Green Acres for almost two decades. The many  
16 tasks involved in transitioning to a new biosolids program will require significant staff time and  
17 effort and City expense, and it is not even guaranteed the City will in fact be able to find a viable  
18 alternative for handling all of the City's biosolids effectively and in an environmentally sound  
19 way.

20           41. To transition to a new biosolids management program, which could  
21 involve different methods of handling biosolids, the City may have to negotiate one or more new  
22 biosolids contracts. The City's standard contracting process includes many extensive and time-  
23 consuming steps, including: (a) preparing the initial Request for Proposal ("RFP"); (b) Board of  
24 Public Works approval for distribution of the RFP, which involves review by the City Attorney  
25 and the Bureau of Contract Administration, as well as consultations with the City's labor unions  
26 and the City Personnel Department; (c) receipt and review of responses to the RFP, which  
27 involves a team of City staff who undertake a detailed technical review, as well as a further  
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1 review by the Bureau of Contract Administration to determine prospective contractor compliance  
2 with City requirements pertaining to non-discrimination, living wages, child care and support,  
3 etc.; (d) ranking, interviewing and selection of prospective contractors; (e) Board of Public  
4 Works approval to negotiate the contracts; (f) negotiation of the contract terms; (g) Board of  
5 Public Works approval to award the contract; (h) review by the Mayor's office and/or the City  
6 Council; and (i) finalization and execution of the contract. In addition, City contracting could  
7 entail environmental review under the California Environmental Quality Act, another potentially  
8 expensive and time-consuming step.

9           42.     The Kern Ban impedes the City's longstanding commitment to recycle and  
10 beneficially use its biosolids. As noted above, the California Integrated Waste Management Act  
11 of 1989 ("Act") directed localities to recycle biosolids rather than dispose of them. Through its  
12 land application program at Green Acres, the City meets the Act's directive to recycle, by  
13 collecting and treating wastewater in its facilities at the Hyperion and Terminal Island plants to  
14 create biosolids, and then beneficially using the biosolids as an economically and agriculturally  
15 beneficial product that stimulates the growth of crops, which are then sold in the marketplace.

### 16 **C.     Additional Obstacles To Replacing Green Acres**

17           43.     To continue beneficial reuse of all of the approximately 515 tons of  
18 biosolids the City land applies at Green Acres daily, the City is investigating alternative sites for  
19 land application and composting. Based on the City's investigations, the City will have to  
20 attempt to secure one or more distant sites in Arizona for beneficial reuse of biosolids. The City  
21 is continuing to work on and assess these options, none of which have the proven reliability of 16  
22 years of operations at Green Acres.

23           44.     Attempting to relocate the City's large land application program to distant  
24 locations in another state will entail many complex and time-consuming tasks, including:  
25 (a) detailed investigations of prospective land application sites; (b) public and community  
26 outreach before one or more such sites is selected for land application; (c) consultation with state  
27 and local regulators regarding the location, manner, and amount of land application, and the  
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1 establishment of a comprehensive and effective biosolids management plan for the specific  
2 site(s) the City ultimately selects; (d) the evaluation and selection of potential haul routes from  
3 Los Angeles to the specific site(s) the City ultimately selects; (e) the development of contingency  
4 plans to address uncertainties associated with the haul routes (e.g., accidents, road closures,  
5 weather, etc.); and (f) the establishment of a process and a mechanism for City oversight of land  
6 application of biosolids at distant locations in Arizona, to ensure that land application of  
7 biosolids occurs, like it currently occurs at Green Acres, in an effective and environmentally  
8 sound manner that complies with all applicable rules and regulations.

9           45.     The Kern Ban also conflicts with the City's contract with the City of  
10 Bakersfield. The City currently has an agreement with the City of Bakersfield that runs until  
11 2026 to use approximately 14 million gallons (average flow) per day of treated secondary  
12 effluent from the Bakersfield Wastewater Treatment Plant No. 3 for irrigation of Green Acres.  
13 The Central Valley Regional Water Quality Control Board mandates that use of the treated  
14 secondary effluent at Green Acres site is limited to irrigation for growing vegetation. The only  
15 reason the City purchased Green Acres was to land apply responsibly and farm with biosolids,  
16 and there is no indication that the Farm will be economically viable without the use of biosolids.  
17 As a result, alternative arrangements may be needed for use of treated secondary effluent from  
18 the Bakersfield plant, including capital and operations and maintenance costs for treating the  
19 existing secondary effluent to Title 22 reclaimed water standards.

20           46.     Planning and implementing a major biosolids beneficial use program  
21 require years of effort, often a three-to-five year timeframe. Moreover, planning and  
22 implementing new technologies for managing biosolids (e.g., new thermal drying technologies,  
23 using biosolids as fuel, etc.) take even longer and are not at the present time a viable alternative  
24 to land application at Green Acres.

25           47.     The Kern Ban, however, will require the City to terminate its well-  
26 established biosolids program at Green Acres, and attempt to find a viable and environmentally  
27 sound replacement, within a matter of months. The Ban will therefore force the City to turn to  
28

1 expensive, stopgap arrangements (assuming these arrangements can in fact be secured), and will  
2 impede sound and responsible biosolids planning and management.

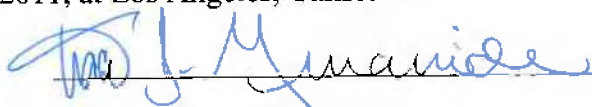
3 **D. The Kern Ban Will Have Adverse Environmental Impacts**

4 48. The Kern Ban will also have adverse impacts on the environment of  
5 Southern California (and of Arizona) due to the increased traffic that would be needed to haul the  
6 City's biosolids longer distances. The air pollution impacts from particulate matter and nitrogen  
7 oxides and increased greenhouse gas emissions from the additional truck mileage are real and  
8 measurable. Under my direction, the Bureau of Sanitation scientists studied the increased air  
9 emissions that would result from various potential alternatives to Green Acres that are presently  
10 under consideration. The report (which is attached) concluded that air emissions would more  
11 than double under most scenarios and could increase three-fold. *See generally Exhibit 2,*  
12 *Assessment of Air Emissions for Transmitting Biosolids For Beneficial Reuse to Alternative*  
13 *Locations in Response to Kern County Land Application Ban (BOS, Sept. 2006).*

14 49. In sum, the Kern Ban, if allowed to take effect, would dramatically  
15 increase the annual costs of the City's biosolids management program and it would also impose  
16 numerous additional economic, administrative and other burdens and uncertainties on the City.  
17 The Ban would also result in significant environmental effects in southern California and in  
18 Arizona.

19  
20 I declare under penalty of perjury under the laws of the State of California that the  
21 foregoing is true and correct.

22  
23 Executed this 21 day of April, 2011, at Los Angeles, California.

24 

25 Traci J. Minamide, P.E.  
26 Chief Operating Officer  
27 City of Los Angeles Bureau of Sanitation  
28

# **EXHIBIT 1**



# BIOSOLIDS PROGRAM MANAGEMENT

Vol. 10, No. 6

Monthly Progress Report

December 2010



**BIOSOLIDS TRUCK DRIVERS ARE BEING CERTIFIED**



CITY OF LOS ANGELES  
DEPARTMENT OF PUBLIC WORKS  
BUREAU OF SANITATION



**THIS REPORT IS PREPARED FOR  
ADMINISTRATIVE AND MANAGERIAL  
PURPOSES ONLY**

**This is not a report that will meet any of the City's Legal Reporting Requirements**

**CITY OF LOS ANGELES  
BUREAU OF SANITATION  
BIOSOLIDS PROGRAM MANAGEMENT**

Transmitted for your use and information is a copy of the Monthly Progress Report for City of Los Angeles Biosolids Management Program. This report provides an overview of all biosolids management activities. We welcome your comments to improve the quality of this report. Please address all comments to Emmanuel Alloh, Biosolids Manager at HTP Stop #535 or Emmanuel.Alloh@lacity.org.

**BOARD OF PUBLIC WORKS (1) – 464**

**BUREAU OF SANITATION – 520**

Executive Office

Traci Minamide – Asst. Director

Adel Hagekhalil – Asst. Director

**HYPERION TREATMENT PLANT – 535**

Steve Fan, Preg 3 – Plant Mgr

Mark Starr, Preg 3 - Eng Mgr

Emmanuel Alloh, Preg 3 – Eng

Chuck Turhollow, HRDD

Randy Womble-Green Acres Farm-Eng

Masahiro Dojiri, EMD-Preg 5

Karen Coca, Recycling-944

Tim Dafeta, IWMD-911

Omar Moghaddam, RAD –535

Diane Gilbert, RAD –535

Michael Sarullo, EED

Lisa Mowery, FMD-581

Lauren Fondahl, USEPA

**OTHERS**

Michael Mullin, Office of the Mayor - 370

File

***Report prepared and compiled by:***

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*Alan Tran*

*Arturo Perez*

*Maria Depaz*

*Miguel Medina*

***Report reviewed by: Emmanuel Alloh***

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## EXECUTIVE SUMMARY

### Introduction

Below is a summary of some significant biosolids issues during the month of December:

- Responsible Biosolids Management (RBM) beneficially used a total of 16,212 wet tons of biosolids from Hyperion Treatment Plant (HTP) at the City's Green Acres Farm (GAF). In addition, 153 wet tons of biosolids from HTP were also processed at the City's Griffith Park Composting Facility (GPCF). Terra Renewal/Solid Solutions (TR/SS) hauled 1,658 wet tons of biosolids from HTP and 91 wet tons of biosolids from TIWRP to South Kern Composting Facility. TR/SS also hauled 2,429 wet tons of biosolids from HTP to TIRE plus an equivalent of 1,143 wet tons of TIWRP digested sludge were processed at the TIRE project. The Biosolids Distribution Master Plan (page 7 of this report) summarizes existing reuse options that are available and utilized during the month.
- The total expenditure at the end of the month was \$6,347,441, which represent 44.9% of the total Hyperion and Terminal Island biosolids beneficial use, TIRE injection project, and Green Acres Farm (GAF) management budget of \$14,138,144. This is approximately 5.1% under the projected budget.
- A total of \$943,340 was received as revenues from sales of crops at GAF.
- Monthly data for pollutant metals in HTP and TIWRP biosolids were reviewed and the metals were below EPA Part 503 limits for Exceptional Quality (EQ) biosolids.
- Nine inspections were conducted of the Green Acres Farm and one at TIRE project this month.

# BIOSOLIDS DISTRIBUTION MASTER PLAN, WET TONS

FISCAL YEAR 2010 - 2011

	CONTRACT MINIMUM WT	COST \$/WT	Jul-10	Aug-10	Sep-10	Oct-10	Nov-10	Dec-10	Jan-11	Feb-11	Mar-11	Apr-11	May-11	Jun-11	TOTAL TONS TO DATE	COMMENTS		
<b>REUSE ALTERNATIVES - EXISTING CONTRACTS</b>																		
RBM	GAF	548	HTP \$28.01	15,057	15,094	12,805	15,501	13,762	16,212	0	0	0	0	0	0	88,431	Availability per Farm Plan	
			TIWRP \$32.29	0	0	0	0	0	0	0	0	0	0	0	0	0		0
			TOTAL	15,057	15,094	12,805	15,501	13,762	16,212	0	0	0	0	0	0	0		88,431
SS	South Kern Composting, CA	51	HTP \$70.57	1,584	1,759	1,585	1,694	1,549	1,658	0	0	0	0	0	0	9,830	South Kern Started June 2009	
			TIWRP \$70.57	46	0	0	0	24	91	0	0	0	0	0	0	0		161
			TOTAL	1,630	1,759	1,585	1,694	1,573	1,749	0	0	0	0	0	0	0		9,990
Average Daily Tonage (all reuse and other alternatives) , wet tons per day				637	647	576	647	611	663	0	0	0	0	0	0			
<b>OTHER ALTERNATIVES</b>																		
Geo Environmental Technologies (pilot study)	NA	HTP biosolids	1907	2998	2645	2716	2818	2429	0	0	0	0	0	0	0	15,512	TIRE at TIWRP	
		TI digested sludge	892	1093	1072	951	1082	1143	0	0	0	0	0	0	0	6,233		
GRIFFITH PARK COMPOSTING FACILITY	NA	NA	271	212	242	151	182	153	0	0	0	0	0	0	0	1,210		

LEGEND: \* total tonage injected (biosolids from HTP & TIWRP digested sludge)

## **CHAPTER 1 - PROGRAM MANAGEMENT ACTIVITIES**

### **1.0 Program Management Issues**

- No update this month.

### **1.1 Environmental Management System (EMS)**

- Nonconformances and Opportunities for Improvement
  - SRPCD was asked to complete their continual improvement from the 2010 interim audit. The continual improvement states that the Griffith Park Compost Facility Emergency Action Plan could include procedures to follow in the event of biosolids spill and in the event of overflow of the retention pond. SRPCD has not completed at this time, and this opportunity is still open.
  - HTP Operations was asked to complete their continual improvement from the 2010 audit. The continual improvement states that the TWAS spill that occurred on February and May 2010 was not properly addressed. HTP operations are working on the opportunity and has not completed at this time, and this opportunity is still open.
- Goals and Objectives
  - 2<sup>nd</sup> Quarter updates to the objectives have been sent to the EMS Coordinator. All divisions are on schedule to completing the EMS objectives. EMD has an objective that's on the borderline of being complete due to a shortage of staff.
- Audit
  - No update this month.
- Public Participation and Communication
  - No update this month.

### **1.2 Financial Management**

#### **1.2.1 Biosolids Hauling and Farm Management Financial Report**

- The biosolids beneficial use expenditure as of this month, six months into the fiscal year is \$5,277,368, which is 44.3% of the total budget of \$11,907,344.

Therefore, we are approximately 5.7% below our projected fiscal years' budget.

- The Grit and Screenings disposal expenditure for HTP, TIWRP and Wastewater Collection Division as of this month, six months into the fiscal year is \$258,534, which is 39.7% of the total budget of \$651,908. Therefore, we are 10.3% below our projected fiscal years' budget.
- The Green Acres Farm expenditure as of this month, six months into the fiscal year is \$1,070,073, which is 48.0% of the total budget of \$2,230,800. Therefore, we are 2.0% below our projected fiscal years' budget.

#### 1.2.2 Biosolids Program Budget Summary

- Total adopted budget for fiscal year 2010/2011 is \$15,369,305 and proposed for fiscal year 2011/2012 is \$15,055,083.

#### 1.2.3 FY 10/11 Griffith Park Composting Facility Revenue

- No sales or revenue for this month.

**Table 1.3.1 Biosolids Management Program Financial Report  
As Of December 31, 2010**

<b>Biosolids Expenditures</b>	<b>FY 2010-11 YTD Expenditures</b>	<b>FY 2010-11 Budget</b>
<i>Description</i>		
HTP Biosolids Hauling	\$3,867,432	\$8,681,144
TIWRP Biosolids Hauling	\$11,605	\$150,000
TIRE injection project	\$1,398,330	\$3,076,200
<b>Totals</b>	<b>\$5,277,368</b>	<b>\$11,907,344</b>

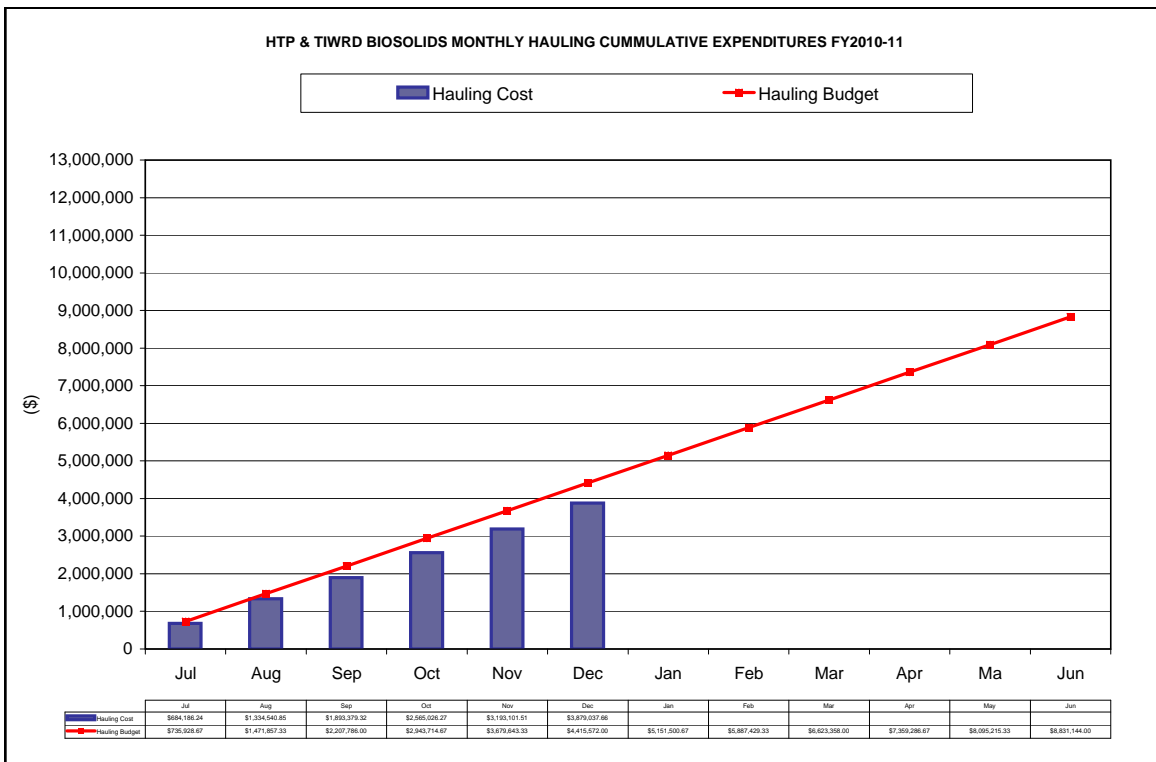
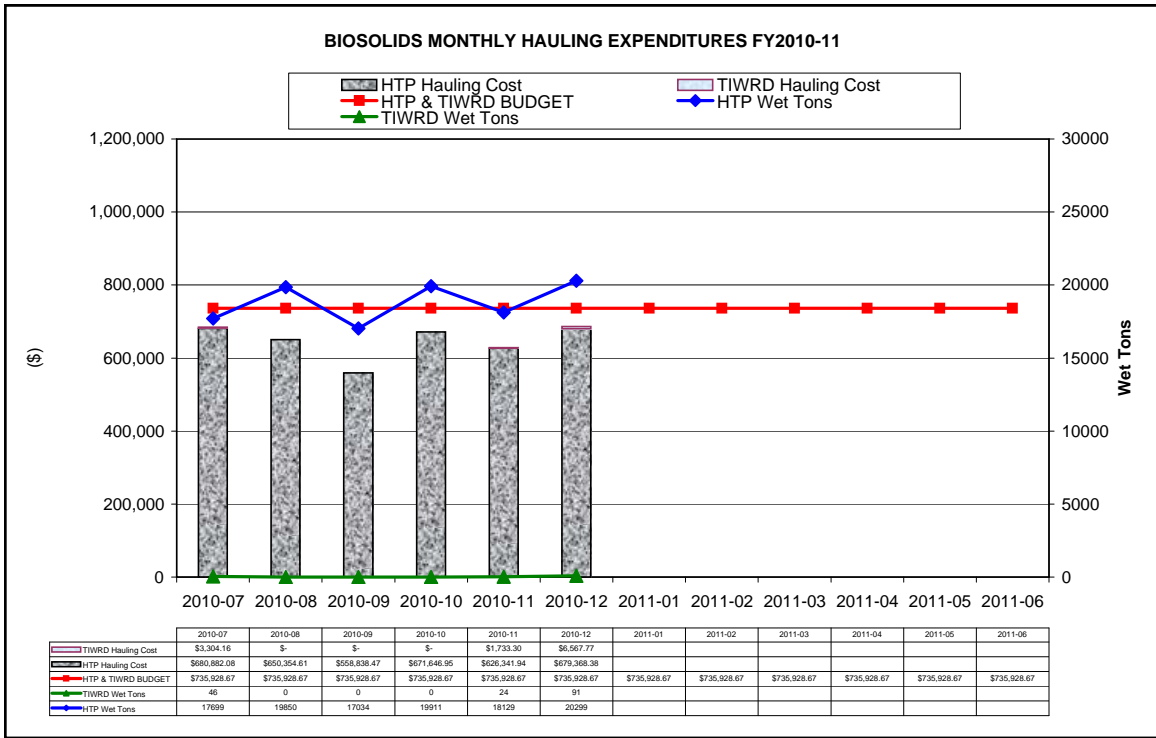
<b>Farming Expenditures</b>			<b>FY 2010-11 YTD Expenditures</b>	<b>FY 2010-11 Budget</b>
<i>Description</i>	<i>Invoice(s) Number</i>	<i>Date</i>		
R & G Fanucchi - Custom Farming	1394-1399	7/7/10 - 8/2/10	\$149,695.40	\$2,230,800.00
R & G Fanucchi - Custom Farming	209-10; 1400-05	8/2/10-9/6/10	\$280,283.17	
R & G Fanucchi - Custom Farming	211; 1406-10	9/6/10-10/14/10	\$91,925.56	
R & G Fanucchi - Custom Farming	212; 1411-15	10/4/10-11/10/10	\$218,255.23	
R & G Fanucchi - Custom Farming	213; 1416-20	11/9/10-12/15/10	\$144,367.53	
R & G Fanucchi - Custom Farming	214	1/24/2011	\$82,901.08	
R & G Fanucchi - Custom Farming	1421	12/6/2010	\$13,249.95	
R & G Fanucchi - Custom Farming	1422	12/6/2010	\$26,161.85	
R & G Fanucchi - Custom Farming	1423	12/13/2010	\$29,666.70	
R & G Fanucchi - Custom Farming	1424	12/23/2010	\$17,353.35	
R & G Fanucchi - Custom Farming	1425	12/27/2010	\$6,649.96	
R & G Fanucchi - Custom Farming	1426	1/5/2011	\$9,563.20	
<b>Totals</b>			<b>\$1,070,072.98</b>	<b>\$2,230,800</b>

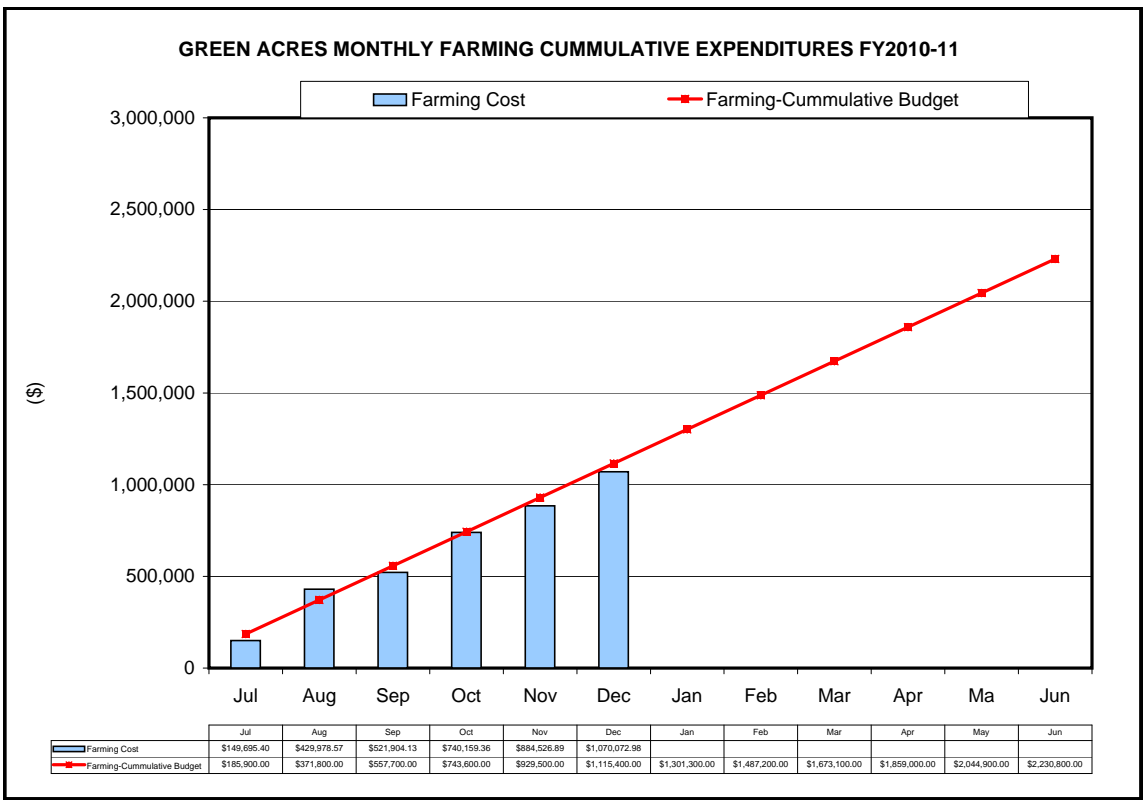
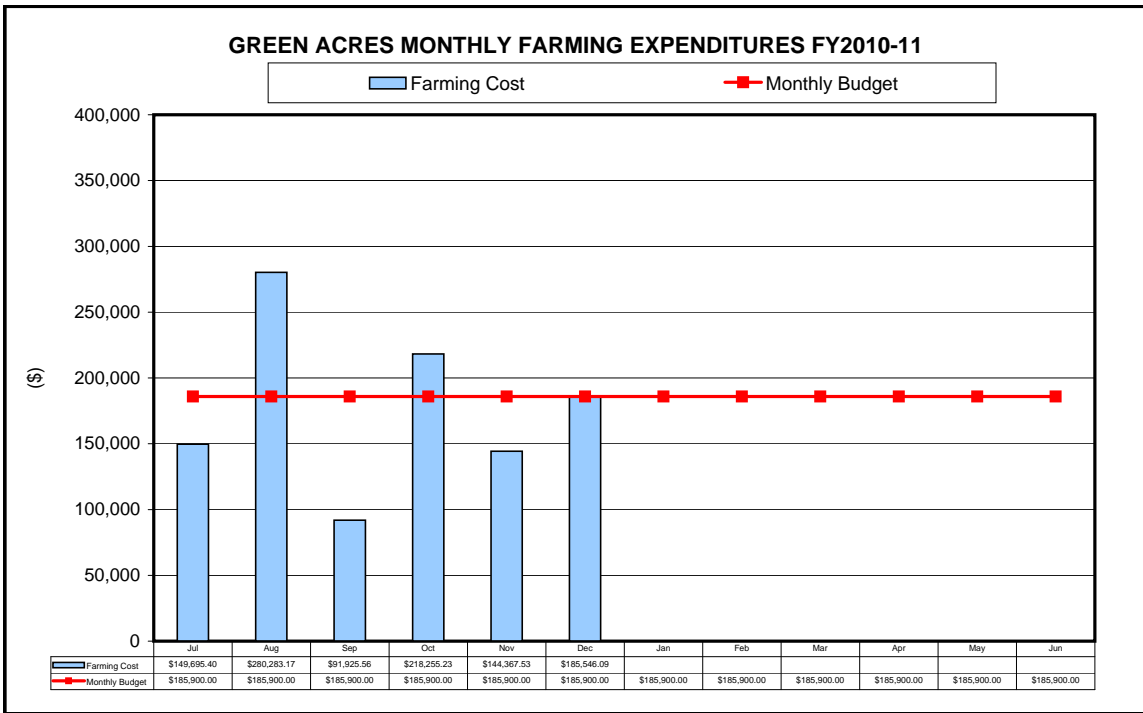
<b>Farming Revenues</b>			<b>FY 2010-11 Revenue</b>
<i>Description</i>	<i>Check/Invoice No.</i>	<i>Date</i>	
R & G Fanucchi - Crop Sale	8870	7/27/2010	\$22,305.00
R & G Fanucchi - Crop Sale	8934	8/11/2010	\$136,178.60
R & G Fanucchi - Crop Sale	9022	9/9/2010	\$35,589.18
R & G Fanucchi - Crop Sale	9023	9/14/2010	\$83,776.25
R & G Fanucchi - Crop Sale	9044	9/22/2010	\$81,750.00
R & G Fanucchi - Crop Sale	9075	10/5/2010	\$145,236.60
R & G Fanucchi - Crop Sale	9278	12/6/2010	\$192,379.60
R & G Fanucchi - Crop Sale	9279	12/6/2010	\$246,125.25
<b>Totals</b>			<b>\$943,340.48</b>

**GREEN ACRES FARM CUSTOM FARMING  
DECEMBER 2010**

Date	Inv No.	Description	Management Fee	Equipment / Repairs	Seeds	Chemicals	Electric	Diesel	Water	Subcontract / Misc	Farm Services	Invoice Subtotal	Plus 5%	AMOUNT (\$)
12/6/10	1422	Management Fee	26,161.85									26,161.85		26,161.85
12/6/10	1421	Farm Services									13,249.95	13,249.95		13,249.95
12/13/10	1423	Farm Services									29,666.70	29,666.70		29,666.70
12/23/10	1424	Farm Services									17,353.35	17,353.35		17,353.35
12/27/10	1425	Farm Services									6,649.96	6,649.96		6,649.96
1/5/11	1426	Farm Services									9,563.20	9,563.20		9,563.20
1/24/11	214	Irrigation Repairs-Agri Valley Irrigation Inc		647.97										
		Chemicals and Fertilizers-Britz Simplot Growers				47,966.86								
		Machine Hire-Dennis Suburu								5,616.00				
		Spraying Service-Inland Crop Dusting								4,155.00				
		Spraying Service-Old River Crop Dusting								4,653.00				
		Pump And Engine Repair-SA Camp Pump & Drilling		3,338.25										
		Irrigation Repairs-San Joaquin Irrig Maint, LLC		10,060.46										
		Engine Repair-South Kern Machinery		823.73										
		Fuel-Wholesale Fuels Inc						995.68						
		Garbage Disposal-Price Disposal								164.95				
		Irrigation Repairs-US Irrigation		665.55										
		PG&E Reimbursement					(140.75)					78,946.70	3,954.38	82,901.08
<b>TOTAL</b>			26,161.85	15,535.96	-	47,966.86	(140.75)	995.68	-	14,588.95	76,483.16	181,591.71	3,954.38	185,546.09
<b>FY2010-2011 - TO - DATE TOTALS</b>			156,971.10	27,690.00		(1,089.94)	0.00			536,297.06		17,995.01		
			67,571.30	135,235.16		50,273.60				79,129.69		1,052,077.97		1,070,072.98

TOTAL EXPENDITURES		PROJECTED BUDGET	
Jul-10	\$ 149,695.40	\$ 185,900.00	
Aug-10	\$ 280,283.17	\$ 185,900.00	
Sep-10	\$ 91,925.56	\$ 185,900.00	
Oct-10	\$ 218,255.23	\$ 185,900.00	
Nov-10	\$ 144,367.53	\$ 185,900.00	
Dec-10	\$ 185,546.09	\$ 185,900.00	
Jan-11	\$ -	\$ 185,900.00	
Feb-11	\$ -	\$ 185,900.00	
Mar-11	\$ -	\$ 185,900.00	
Apr-11	\$ -	\$ 185,900.00	
May-11	\$ -	\$ 185,900.00	
Jun-11	\$ -	\$ 185,900.00	
<b>Total</b>	<b>\$ 1,070,072.98</b>	<b>\$ 2,230,800.00</b>	





## **CHAPTER 2 - REGULATORY ISSUES**

Any federal, state, and local regulation that affects the management of biosolids is tracked and maintained by the Regulatory Affairs Division (RAD). The following updates and changes to regulations and legislations have been provided by RAD:

### **2.0 Local and Other Issues**

#### **Kern County Ordinance (Measure E)**

The City is meeting internally to determine a course of action regarding the Measure E ordinance in Kern County.

#### **Biosolids Management Program CEQA Addendum**

On December 8, the City Council approved the Biosolids Program CEQA addendum. The Notice of Determination was processed by the City Clerk's Office on December 10. On December 13, the City filed the Notice of Determination (NOD) with the County Clerk's Office. The NOD will be posted for public comment for thirty days.

#### **Negative Declaration for Oil Excavation at Green Acres**

No update for this month.

### **2.1 State Issues**

No update for this month.

### **2.2 Federal Issues**

No update for this month.

## CHAPTER 3 – PLANNING AND DEVELOPMENT

### 3.0 Deep Well Injection – Terminal Island Renewable Energy (TIRE)

- The injection operations continue and the well is responding and accepting the material.
- Approximately 150 wet tons are being injected daily.

### 3.1 Biosolids Management

- RBM Contract Amendment No. 3  
No Update.
- Terra Renewal/Solid Solutions Contract Amendment No. 1  
No Update.

### 3.2 Pathogen Equivalency Project

- No update.

## **CHAPTER 4 – OPERATIONS**

### **4.0 Biosolids Production**

#### **4.0.1 Hyperion Treatment Plant**

- Beneficially reused 16,212 wet tons of biosolids at 29.8% TS at the Green Acres Farm, 1,658 wet tons were processed at South Kern Composting Facility, 2,429 wet tons were processed at TIRE, and 153 wet tons were processed at Griffith Park Composting Facility during the month.

#### **4.0.2 Terminal Island Water Reclamation Division**

- An equivalent of 1,143 wet tons of digested sludge was injected at the TIRE project.

### **4.1 Biosolids Assessment**

- See Appendix G.

### **4.2 Miscellaneous Operational Challenges**

- No report.

### **4.3 Daily Biosolids Trucking Quota**

- See Appendix D.

**BIOSOLIDS MANAGEMENT  
HYPERION AND TERMINAL ISLAND  
DATA SUMMARY**

December 2010

DATE DAY		Hyperion Treatment Plant					Terminal Island Water Reclamation Plant					
		BIOSOLIDS				GRIT	BIOSOLIDS*			GRIT		
		Compost		Land Applied	Deep Well Inject	TOTAL	Landfill	Compost		Deep Well (Digested Sludge)	TOTAL	Landfill
		GPCF	SS	RBM	TIRE			WM	GPCF	SS		
wt	wt	wt	wt	wt	wt	wt	wt	wt	wt	wt		
1	WED		51	475	146	672	41			54	54	
2	THU	30	77	497	144	748	41		23	49	72	
3	FRI		25	500		525	21			16	16	
4	SAT		76	526		602	22			0	0	
5	SUN		51	397		448				0	0	
6	MON		51	604	144	799	43		47	52	100	19
7	TUE	31	80	470	122	702	43		20	53	73	
8	WED		26	446	144	615	43			51	51	
9	THU	30	77	393	143	644	38			55	55	
10	FRI		51	447	143	642	20			44	44	
11	SAT		51	445		496	37			0	0	
12	SUN		51	609		660				0	0	
13	MON		25	368	144	538	61			46	46	
14	TUE	31	77	371	145	623	43			56	56	
15	WED			183	144	328	21			50	50	
16	THU		51	264	122	438	44			32	32	
17	FRI		51	737	144	932	20			58	58	
18	SAT		51	685		736	44			0	0	
19	SUN		51	556		607				0	0	
20	MON		50	627	120	797	64			38	38	18
21	TUE		100	708		809	35			74	74	
22	WED		75	497		572	19			69	69	
23	THU		51	656		706	42			42	42	
24	FRI		76	759		835	43			79	79	
25	SAT		26	605		631				0	0	
26	SUN		77	421		498				0	0	
27	MON		25	730	96	851	107			36	36	
28	TUE	31	51	600	144	827	22			48	48	
29	WED		51	464	143	658	42			52	52	
30	THU		77	549	143	769	20			53	53	
31	FRI		25	570	97	692	37			37	37	
TOTALS, wt		153.00	1656.93	16160.73	2429.2	20399.89	1013.64	0.0	90.62	1143	1234	36.47
Daily Average, wt/d		5	53	521	78.36	658	33	0	3	37	40	1

YTD DATA SUMMARY								
TIWRP	WT/YTD	%YTD	HTP		WT/YTD	%YTD	HTP & TI	
Compost	1189	9.6%	Compost	20398	8.9%	Compost	21588	8.9%
LandAppl	0	0.0%	LandAppl	187989	81.8%	LandAppl	187989	77.6%
DeepWell	11214	90.4%	DeepWell	21399	9.3126%	DeepWell	32613	13.5%
TOTAL	12403	100.0%	TOTAL	229787	100.0%	TOTAL	242190	100.0%

GPCF: Griffith Park Composting Facility

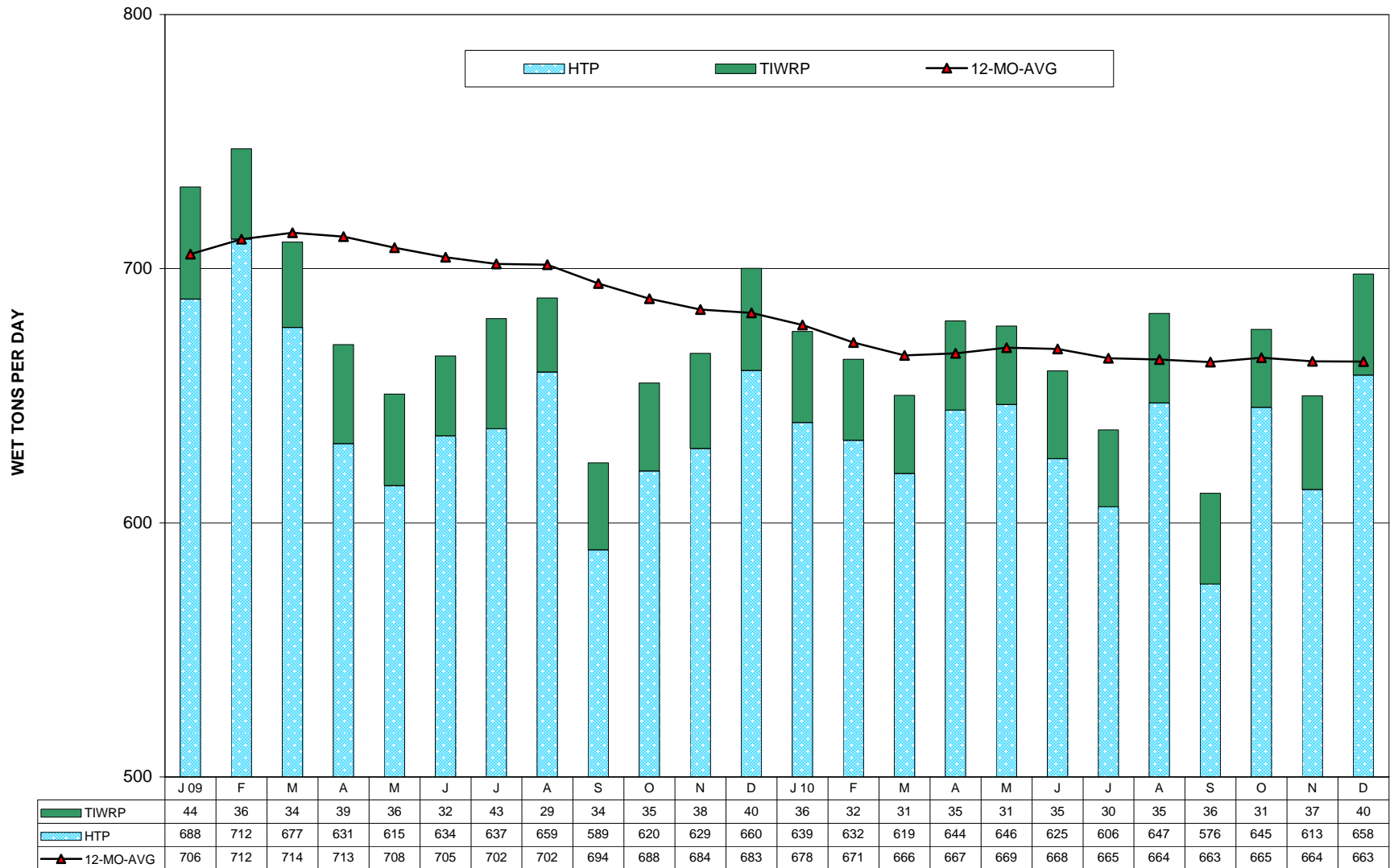
RBM: Responsible Biosolids Management

SS: Solid Solutions - began hauling on October 4, 2007.

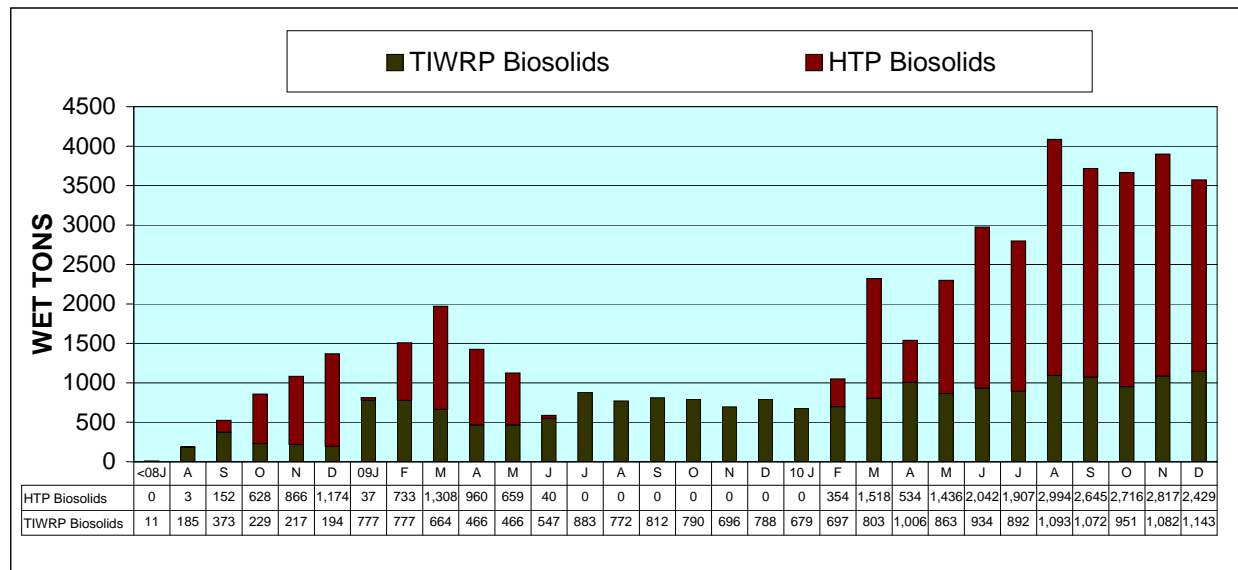
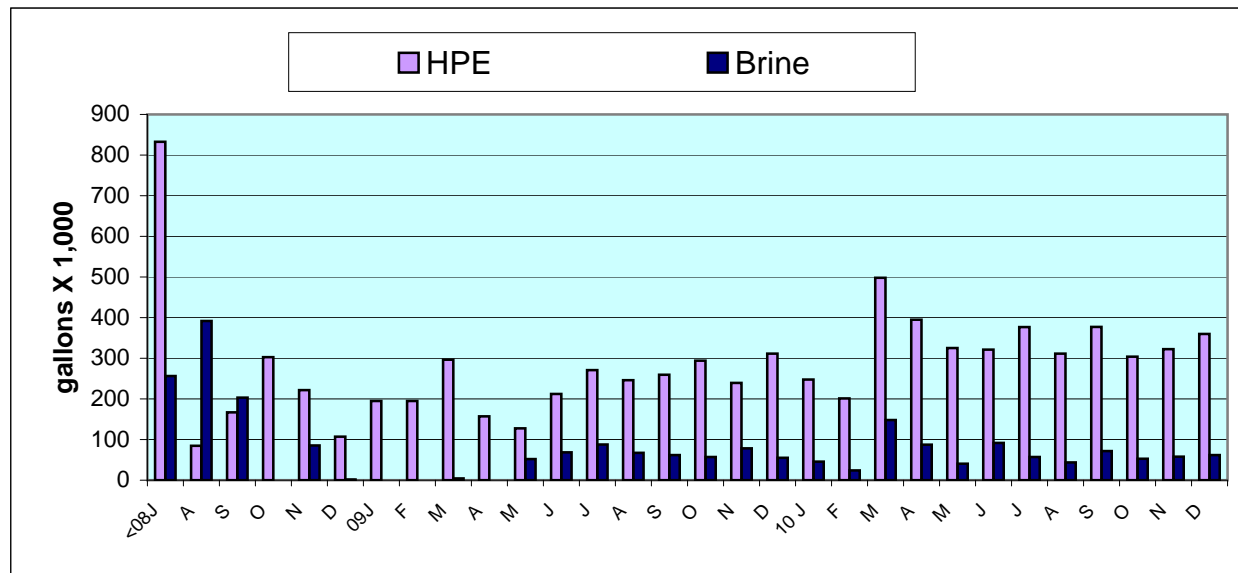
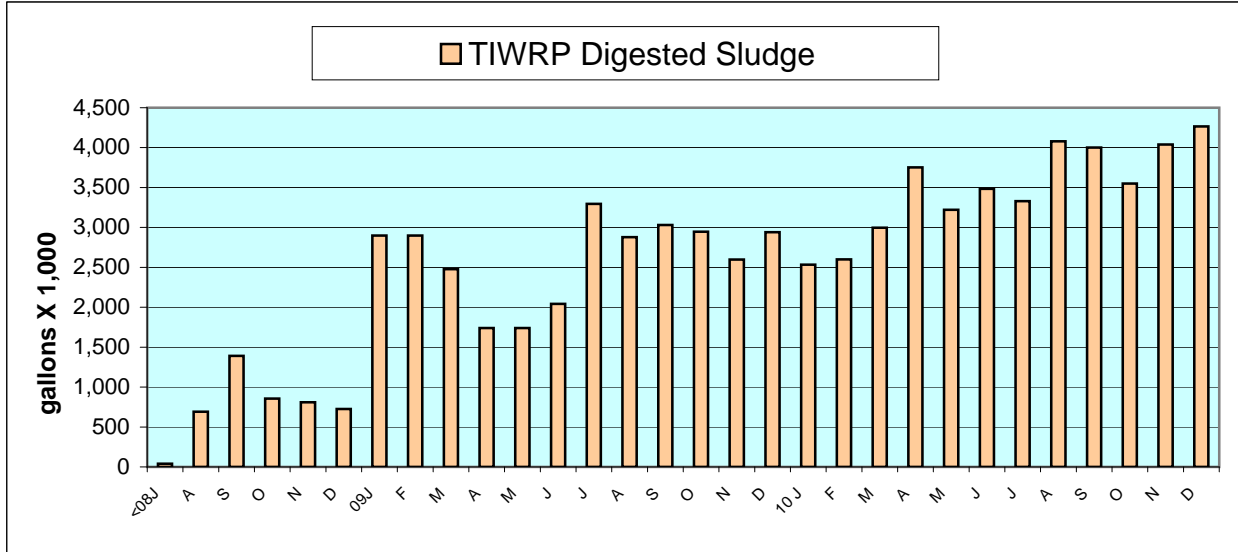
TIRE: Terminal Island Renewable Energy started injection August 2008.

Reduced Terminal Island biosolids production due to deepwell injection of digester sludge.

### BIOSOLIDS REUSE



# T I R E Project



## **CHAPTER 5 – CONTRACT MANAGEMENT**

### **5.0 R & G Fanucchi Farms (Fanucchi)**

- Fanucchi continues to perform custom farming operations of the Green Acres Farm.

### **5.1 Responsible Biosolids Management (RBM)**

- RBM hauled a total of 16,212 wet tons of biosolids from HTP to the Green Acres Farm during the month.

### **5.2 Terra Renewal/Solid Solutions, LLC. (TR/SS)**

- Terra Renewal hauled 1,658 wet tons of biosolids from HTP and 91 wet tons of biosolids from TIWRP to South Kern Industrial Composting Facility.
- Terra Renewal also hauled 2,429 wet tons of biosolids from HTP to TIRE.

### **5.3 Waste Management Inc. (WM)**

- A total of 1,014 wet tons of grit and screenings from HTP and 36 wet tons of grit and screenings from TIWRP were disposed at Simi Valley Landfill this month at a cost of \$42,571.48.

### **5.4 Geo Environment Technologies (GET)**

- The TIRE project injected 4,265,825 gallons (1,143 wet tons eq.) of TIWRP digested sludge and 2,429 wet tons of biosolids from HTP.

## CHAPTER 6 - BIOSOLIDS MANAGEMENT

### 6.0 Land Application - Green Acres Farm (GAF)

- As of December 31, 2010, 1402 acres of land are available for biosolids application at the Green Acres Farm.
- On December 2010, RBM notified the California Regional Water Quality Control Board Central Valley Region that field numbers 17-3, 17-2, 8-2, 8-1S and 8-5 have been scheduled to be land applied with biosolids for the month of January 2011 for a total of 422 acres.

#### 6.0.1 Crop Planting

333 acres of wheat were planted this month. A total of 1810 acres of wheat will be planted this season.

**Table 6.0**

#### **FIELD PLANTING SUMMARY**

<b>FIELD</b>	<b>ACRES</b>	<b>CROP</b>	<b>DATE PLANTED</b>
6-1B	69	Wheat	12/01/10
6-1A	80	Wheat	12/08/10
6-2A	74	Wheat	12/13/10
6-2C	74	Wheat	12/15/10
8-4	36	Wheat	12/16/10

#### 6.0.2 Harvest

- 548 acres of Alfalfa were harvested this month.

**Table 6.1**

#### **FIELD HARVESTING SUMMARY**

<b>FIELD</b>	<b>ACRES</b>	<b>CROP</b>	<b>HARVEST DATE</b>
1-3	68	Alfalfa	12/02/10
1-4	67	Alfalfa	12/02/10
7-4	142	Alfalfa	12/02/10
16-2	103	Alfalfa	12/03/10
16-4	168	Alfalfa	12/03/10

### 6.0.3 Crop Sales

R & G Fanucchi remitted the following check:

\$192,379.60 for wheat

\$ 246,125.25 for corn

### 6.0.4 Irrigation Water

- Green Acres Farm is permitted under the Regional Water Quality Control Board Central Valley Region Order No. 88-172 to receive the secondary effluent from Bakersfield WWTP No. 3.
- Approximately 236.12 million gallons of effluent was used for irrigation at the farm for this month.

### 6.0.5 Effluent Quantity

- Bakersfield's Treatment Plant No. 3 transmits the Effluent Flow and Dissolved Oxygen Monitoring Report to the Biosolids Management Group on a monthly basis.
- An average of 7.62 million gallons per day (MGD) was discharged to the farm for this month. The average Dissolved Oxygen (D.O.) reading taken at the effluent holding pond was 8.0 mg/l. The City of Bakersfield takes the effluent flow meter reading daily and the D.O. reading once per week.

### 6.0.6 Water Management

- The farm utilized all 236.12 million gallons of effluent received from the City of Bakersfield Treatment Plant No. 3.
- No ground water from our wells was used for irrigation in December.

### 6.0.7 Farm Nutrient Study

- No update.

### 6.0.8 Farm Capital Improvement Projects

- No update.

### 6.0.9 Farm Status Meeting

- Farm meeting was held on December 22, 2010. The next meeting will be held on January 26, 2011 at Green Acres Farm.

### 6.0.10 Other Farm Issues

- No report submitted.

## 6.1 Composting

### 6.1.1 Griffith Park Composting Facility (GPCF)

- A total of 153 wet tons of biosolids from HTP were processed at GPCF during the month of December.

### 6.1.2 Synagro's Composting Facility

- A total of 1657.92 wet tons of biosolids from HTP were processed at Synagro's Composting Facility in South Kern during the month of December.

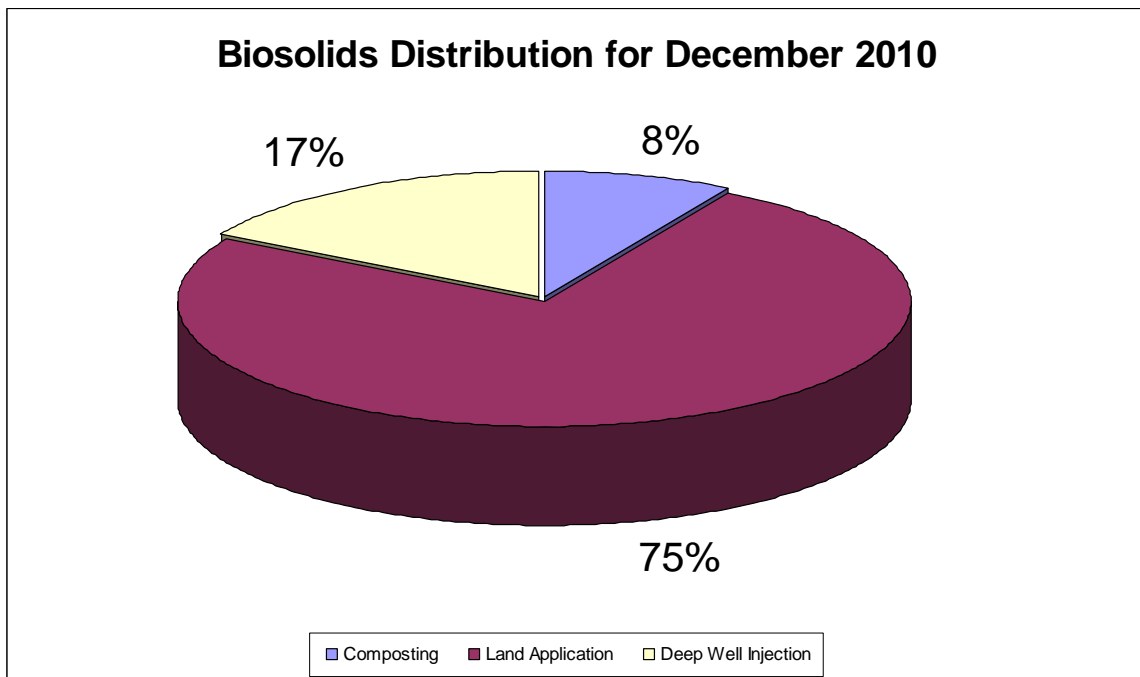
## 6.2 Deep Well Injection (TIRE)

- The TIRE project received 2,429.22 wet tons of biosolids from HTP and 4,266,825 gallons (1,143.51 wet tons eq.) of TIWRP digested sludge.

### Biosolids Distribution

December 2010

	Tonnage	% Distribution
Composting	1,810.92	8 %
Land Application	16,212.29	75 %
Deep Well Injection	3,572.73	17 %



## FIELD TRACKING WORK SHEET

**December 2010**

FIELD #	ACRES	DATE BIOSOLIDS APPLIED	BIOSOLIDS APPLIED (t/a)	DATE CROPS PLANTED	TYPE OF CROP PLANTED / Ag Rate (t/a)	ESTIMATED HARVEST DATE	COMMENTS
<b>1-1</b>	<b>39.05</b>						
1-2	80	09/19/10 09/26/10	42.14	10/13/10	Wheat 53	03/13/11	Wheat planted, 10/13/10
1-3	68.55	08/03/08 08/09/08	66.17	10/22/08	Alfalfa 109.53/1.73	03/22/09	Cutting, 03/26/09, 05/21/09, 06/15/09, 07/22/09, 08/24/09, 09/25/09, 11/30/09, 03/23/10, 05/10/10, 06/12/10, 07/14/10, 08/16/10, 09/20/10, 12/02/10
1-4	67.5	07/25/08 08/02/08	71.83	10/22/08	Alfalfa 110.54/3.14	03/22/08	Cutting, 03/26/09, 05/21/09, 06/15/09, 07/21/09, 08/21/09, 09/24/09, 11/30/09, 03/24/10, 05/13/10, 06/12/10, 07/14/10, 08/18/10, 09/20/10, 12/02/10
1-5	76.5	09/27/10 10/02/10	34.21	10/16/10	Wheat 47.16	03/16/11	Wheat planted, 10/16/10
1-6	81.1	10/03/10 10/06/10	24.67	10/17/10	Wheat 35.34	03/17/11	Wheat planted, 10/17/10
1-7	75.51	10/07/10 10/12/10	33.15	10/18/10	Wheat 40.62	03/18/11	Wheat planted, 10/18/10
1-8	79	10/12/10 10/17/10	33.31	10/25/10	Wheat 46.3	03/25/11	Wheat planted, 10/25/10
5-1	55	08/02/10 08/07/10	41.65	11/13/10	Wheat 62.06	04/13/11	Wheat planted, 11/13/10
6-1A	80	11/21/10 12/01/10	36.25	12/08/10	Wheat 40.92	05/08/11	Wheat planted, 12/08/10
6-1B	69	11/22/10 11/26/10	34.79	12/01/10	Wheat 41.76	05/01/11	Wheat planted, 12/01/10
6-2A	74	12/02/10 12/06/10	34.82	12/13/10	Wheat 40.44	05/13/11	Wheat planted, 12/13/10
6-2B	63	11/17/10 11/20/10	30.34	11/29/10	Wheat 41.16	04/29/11	Wheat planted, 11/29/10
6-2C	74	12/07/10 12/12/10	37.99	12/15/10	Wheat 41.03	05/15/11	Wheat planted, 12/15/10
6-2D	73	11/11/10 11/16/10	02/07/00	11/27/10	Wheat 42.35	04/27/11	Wheat planted, 11/27/10
<b>7-1</b>	<b>165</b>	05/26/10 06/11/10	53.27	06/18/10	Milo 53.67	10/18/10	Milo harvested, 10/17/10
<b>7-2</b>	<b>162</b>	06/12/10 06/25/10	44.08	06/29/10	Milo 47.64	11/30/10	Milo harvested, 10/17/10
7-3	149	08/07/10 08/19/10	43.02		Alfalfa 62.06		Biosolids applied
7-4	142	01/14/08 01/24/08	46.75	02/05/08	Alfalfa 76.12	05/05/08	Cutting, 05/08/08, 06/13/08, 07/19/08, 08/23/08, 09/23/08, 01/12/09, 03/25/09, 05/06/09, 06/03/09, 07/12/09, 08/17/09, 09/22/09, 12/02/09, 03/25/10, 05/10/10, 06/13/10, 07/13/10, 08/18/10, 09/22/10, 12/02/10

## FIELD TRACKING WORK SHEET

December 2010

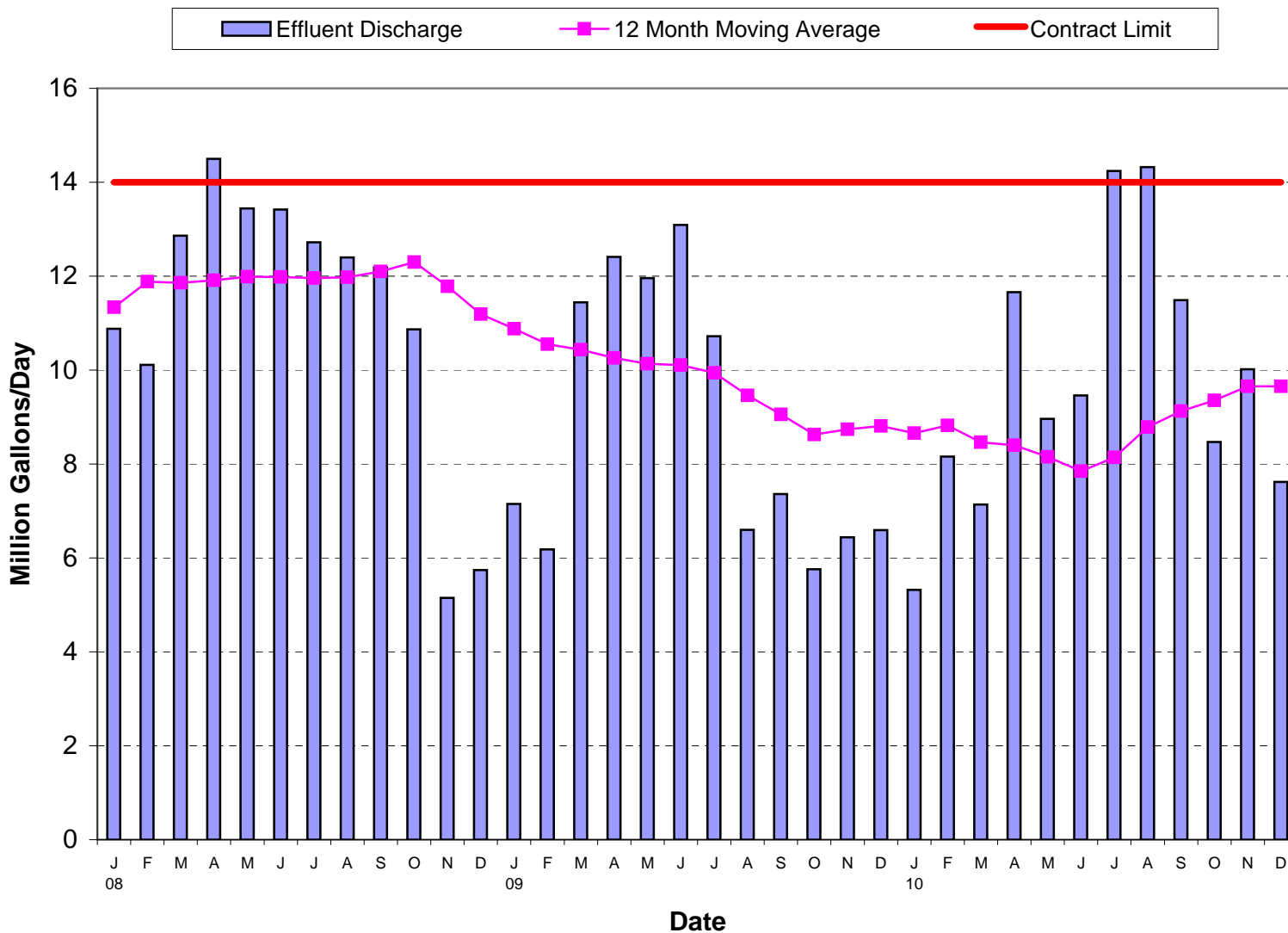
FIELD #	ACRES	DATE BIOSOLIDS APPLIED	BIOSOLIDS APPLIED (t/a)	DATE CROPS PLANTED	TYPE OF CROP PLANTED / Ag Rate (t/a)	ESTIMATED HARVEST DATE	COMMENTS
8-1n	70	No application of biosolids High Nitrogen content		11/09/10	Wheat	04/09/11	Wheat planted, 11/09/10
<b>8-1s</b>	<b>70</b>	07/22/10 07/30/10	54.00	07/31/10	Milo 52.43	11/31/10	Milo harvested, 11/17/10
<b>8-2</b>	<b>70</b>	12/16/10			Corn 45.59		Biosolids applied (partial)
<b>8-3</b>	<b>66</b>	05/11/10 05/17/10	61.40	06/07/10	Corn 58.12	11/07/10	Corn harvested, 09/21/10
8-4	36	12/13/10 12/15/10	24.90	12/16/10	Wheat 32.18	12/16/10	Wheat planted, 12/16/10
<b>8-5</b>	<b>130</b>	03/18/10 03/27/10	40.49	05/01/10	Corn 39.38	10/01/10	Corn harvested, 08/07/10
9-1	25	07/30/10 08/02/10	51.37	11/13/10	Wheat 62.51	04/13/11	Wheat planted, 11/13/10
12-1	71	10/18/10 10/21/10	29.81	10/26/10	Wheat 42.62	03/26/10	Wheat planted, 10/26/10
12-2	79.11	No application of biosolids High Nitrogen content		10/20/10	Wheat	03/18/11	Wheat planted, 10/20/10
12-3	69.78	No application of biosolids High Nitrogen content		10/27/10	Wheat 41.03	03/27/10	Wheat planted, 10/27/10
12-4	77.15	No application of biosolids High Nitrogen content		10/21/10	Wheat	03/21/11	Wheat planted, 10/21/10
12-5	59.71	10/22/10 10/24/10	28.44	10/28/10	Wheat 35.67	03/28/10	Wheat planted, 10/28/10
<b>12-6</b>	<b>65.41</b>	08/31/08 09/04/08	50.75	12/03/08	Wheat 56.33/2.83	05/03/09	Wheat harvested, 06/10/09
<b>12-7</b>	<b>20.01</b>	09/11/08 09/12/08	43.59	10/26/08	Wheat 44.51/2.83	03/26/09	Wheat harvested, 05/02/09
<b>12-8</b>	<b>61</b>	No application of biosolids High Nitrogen content		12/04/08	Wheat	05/04/09	Wheat harvested, 04/30/09
12-9	62.58	10/25/10 10/30/10	02/12/00	11/12/10	Wheat 42.03	04/12/11	Wheat planted, 11/12/10
<b>12-10</b>	<b>21.79</b>	No application of biosolids High Nitrogen content		12/13/08	Wheat	05/13/09	Wheat harvested, 05/06/09
<b>16-1</b>	<b>62</b>	04/01/10 04/06/10	58.87	04/27/10	Corn 68.57	09/27/10	Corn harvested, 08/11/10
16-2	103	01/27/09 02/03/09	48.56	02/20/09	Alfalfa 52.13	06/28/09	Cutting, 05/19/09, 07/05/09, 08/06/09, 09/21/09, 12/02/09, 03/25/10, 05/13/10, 06/16/10, 07/19/10, 08/20/10, 09/24/10, 12/03/10
<b>16-3</b>	<b>126</b>	03/28/10 04/13/10	39.56	05/04/10	Corn 40.79	10/04/10	Corn harvested, 08/11/10
16-4	168	02/08/09 02/23/09	45.34	03/15/09	Alfalfa 62.65	07/15/09	Cutting, 05/19/09, 07/13/09, 08/26/09, 10/19/09, 12/03/09, 03/26/10, 05/13/10, 06/15/10, 07/20/10, 08/20/10, 09/25/10, 12/03/10

## FIELD TRACKING WORK SHEET

**December 2010**

FIELD #	ACRES	DATE BIOSOLIDS APPLIED	BIOSOLIDS APPLIED (t/a)	DATE CROPS PLANTED	TYPE OF CROP PLANTED / Ag Rate (t/a)	ESTIMATED HARVEST DATE	COMMENTS
17-1	68	08/20/10 08/28/10	58.88	11/01/10	Alfalfa 87.65	03/01/11	Alfalfa planted, 11/01/10
<b>17-2</b>	77	01/25/10 02/03/10	59.25	03/22/10	Corn 64.47	08/22/10	Corn harvested, 07/26/10
<b>17-3</b>	75	01/13/10 01/20/10	45.30	03/19/10	Corn 42.09	08/19/10	Corn harvested, 07/27/10
17-4	76	08/28/10 09/03/10	41.22	11/01/10	Alfalfa 61.61	03/01/11	Alfalfa planted, 11/01/10
<b>17-5</b>	<b>70</b>	07/09/10 07/15/10	50.98	07/23/10	Milo 56.99	09/23/10	Milo harvested, 11/15/10
17-6	68	12/19/10 12/26/10	56.84		Corn 57		Biosolids applied
<b>17-7</b>	68	12/26/10			Corn		Biosolids applied (partial)
17-8	66	12/27/10 12/31/10	43.77		Corn 38		Biosolids applied
18-1	116	No application of biosolids High Nitrogen content		11/10/10	Wheat	04/10/11	Wheat planted, 11/10/10
18-2	115	10/31/10 11/10/10	39.09	11/15/10	Wheat 41.30	04/15/11	Wheat planted, 11/15/10
<b>18-3</b>	<b>147.5</b>	02/19/10 03/18/10	53.19	04/25/10	Corn 53.92	09/25/10	Corn harvested, 08/09/10
18-4	152	09/04/10 09/18/10	45.46	10/11/10	Wheat 52.53	03/11/11	Wheat planted, 10/11/10
<b>18-5</b>	<b>90</b>						No Activity - Site Needs To Be Developed
<b>Fields available for land application in BOLD</b>							
*Alfalfa fields stay in production for 3 years. When crop matures it is then harvested every 30 days.							
**Field planted without biosolids pre-application.							
Corn & Wheat fields are in production for approximately 4 to 5 months.							
Sudan Grass is in production 6 to 7 months. Once the crop has matured it is harvested every 45 days (it will take 60-80 days for the first cutting).							
Winter Wheat will be planted starting in November.							
Ag Rate means Agronomic Rate							
t/a means tons/acre							

# Effluent Discharge to Green Acres Farm

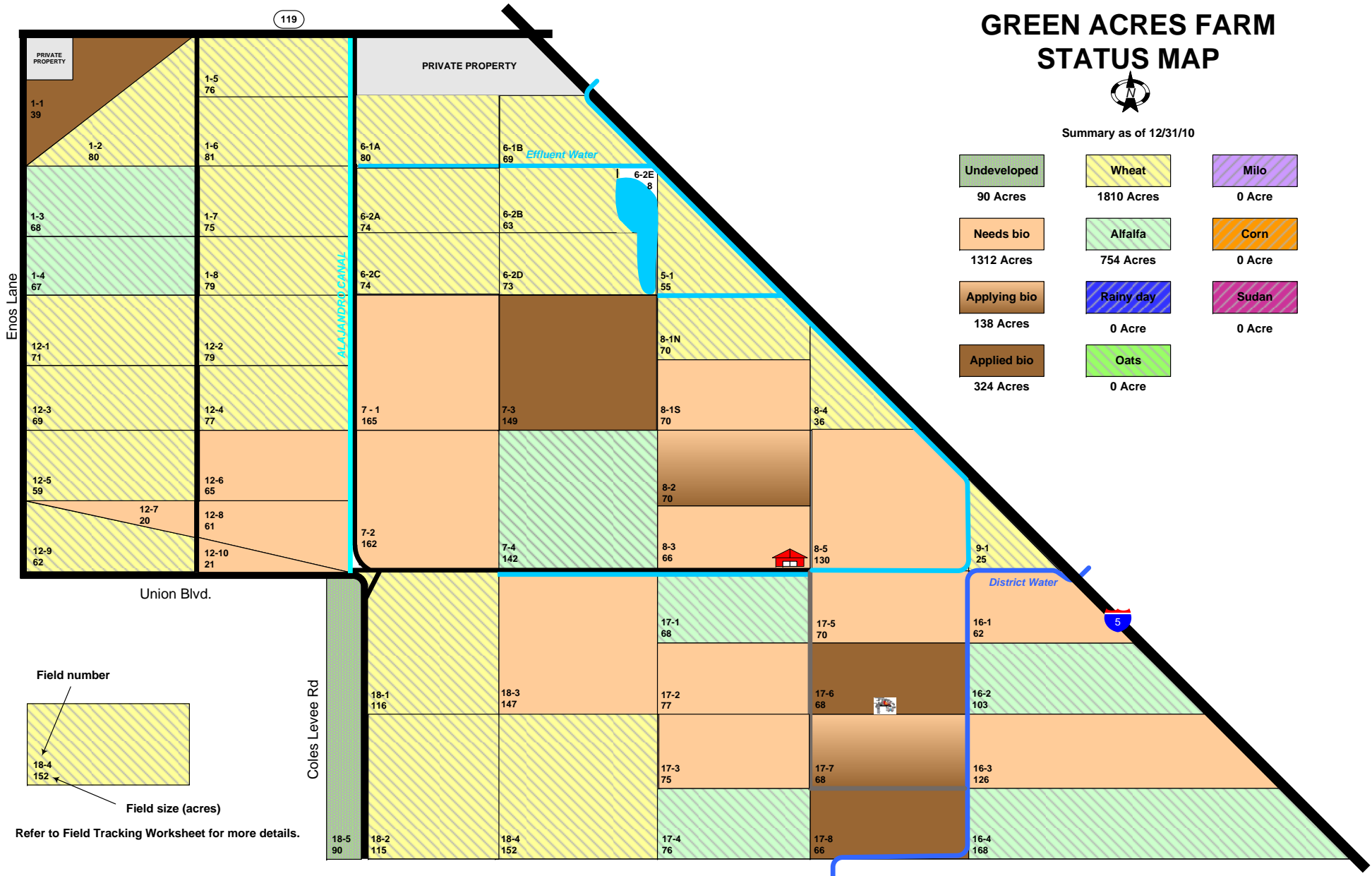


# GREEN ACRES FARM STATUS MAP



Summary as of 12/31/10

<b>Undeveloped</b> 90 Acres	<b>Wheat</b> 1810 Acres	<b>Milo</b> 0 Acre
<b>Needs bio</b> 1312 Acres	<b>Alfalfa</b> 754 Acres	<b>Corn</b> 0 Acre
<b>Applying bio</b> 138 Acres	<b>Rainy day</b> 0 Acre	<b>Sudan</b> 0 Acre
<b>Applied bio</b> 324 Acres	<b>Oats</b> 0 Acre	



Field number



Field size (acres)

Refer to Field Tracking Worksheet for more details.

## CHAPTER 7 – INSPECTION

### 7.0 Field Report

Responsible Biosolids Management’s land application and Fanucchi’s farming operations were inspected on December 1, 2, 6, 8, 13, 15, 20, 22, and 28, 2010; Griffith Park Composting Facility was inspected on December 14, 2010, and Terminal Island Renewable Energy was inspected on December 21, 2010. (See Appendix F for field inspection reports).

### 7.1 Inspection Issues

- A total of 389 acres were applied with biosolids. The table below shows field, acreage, application date, and crop to be planted.

**GREEN ACRES FARM BIOSOLIDS APPLICATION, December 2010**

<b>FIELD</b>	<b>ACREAGE</b>	<b>APPLICATION DATE</b>	<b>CROP TO BE PLANTED</b>
6-1A	14	12/01/10 to 12/01/10	Wheat
6-2A	74	12/02/10 to 12/06/10	Wheat
6-2C	74	12/07/10 to 12/12/10	Wheat
8-4	36	12/13/10 to 12/15/10	Wheat
*8-2	21	12/16/10 to 12/18/10	Corn
17-6	72	12/19/10 to 12/26/10	Corn
*17-7	32	12/26/10 to 12/26/10	Corn
17-8	66	12/27/10 to 12/31/10	Corn
<b>Total</b>	<b>389</b>		

\*Partial field applied with biosolids. See chapter 6, Field Tracking Worksheet table for total field acreage

- The HTP loading facility was inspected on December 2, 6, 7, 13, 14, 20, and 27, 2010. A total of six RBM trucks to Green Acres Farm, seven Fleet trucks to TIRE project, two CLA trucks to Griffith Park composting, one CLA truck to landfill and one Fleet truck to South Kern Composting were observed loading.

- Griffith Park Composting Facility was inspected on December 14, 2010. Two loads of biosolids were delivered at the site for composting during inspection.
- Terminal Island Renewable Energy site was visited on December 21, 2010. No biosolids was delivered to the site. GeoEnvironmental Technologies was pumping only the digested sludge from TIWRP to lower the level of sludge. Both machines were pumping at a rate of 108 strokes per minute with a total pressure of 2600 psi.

## **7.2 Trucks and Driver Certification**

Five drivers from Lutrel Trucking, and one Terra Renewal truck were certified this month.

## **7.3 Permit Compliance**

No issue to report.

## **7.4 Contract Compliance**

No infraction of hauler/driver was issued this month.

## **CHAPTER 8 - PUBLIC RELATIONS**

### **8.0 EMS Public Inquiries and Comments**

There was one public inquiry this month.

### **8.1 PR Activities**

#### **8.1.1 Farm and Other Tours**

Tour totals for the month of December include 9 tours with 143 guests and 1 cancellation.

#### **8.1.2 Public Meetings/Conferences**

No update this month.

#### **8.1.3 Media Outreach, Public Outreach, and Communication Program**

The City attended the National League of Cities Conference in Denver, Colorado, to accept an award for outstanding biosolids management for the TIRE project. RAD staff provided a presentation of TIRE project to USC Engineering Department.

## **APPENDIX A**

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### **Weekly Reports From RBM**



12/15/10

**WEEKLY REPORT  
RBM/VCI  
Kern County**

12/06/10 through 12/12/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

RBM's BTRC # is 397764-28. Acquired on 10/12/96 and the start date is 10/01/96.

**1.3 RWQCB**

*No new issues to report at this time.*

**1.4 Kern County**

*No new issues to report at this time.*

**1.5 San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)**

No new issues to report at this time.

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*Randy Womble, employed by the City of Los Angeles, conducts daily inspections of farming and biosolids activities at the site.*

## **2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

## **2.3 Kern County**

10/11/10: Amy Rutledge, Kern County Environmental Health Services, visited Green Acres and no compliance issues with Bio-Solids operations with Kern County regulations were reported.

## **2.4 Others**

01/05/10: Quarterly Biosolids samples were pulled by Zalco Labs for analysis of heavy metals, PCBs, Dioxins, E Coli, Salmonella and enteric viruses per Kern County requirements.

## **3. OPERATIONAL ISSUES AND CHANGES: SIGNIFICANT OCCURRENCES:**

### **3.1 Equipment Status**

No new issues to report at this time.

### **3.2 Transportation**

*There are no new issues to report at this time.*

### **3.3 Driver Status**

*There are no changes to report at this time.*

### **3.4 Training**

Land application: Field safety and land application of biosolids procedures are discussed with field employees weekly.

### 3.5 Monthly Farm Meeting

*11/17/10: Regularly scheduled meeting at Green Acres Farm was attended by representatives of the Bureau of Sanitation, Fannuchi Farms, and Responsible Biosolids Management.*

### 3.6 Plant Loading Issues

*There are no new issues to report at this time.*

### 3.6 Field

*We are currently applying biosolids in fields 06-02A and 06-02C.*

We are in compliance with all the requirements of all agencies with jurisdiction over this project.

Field training on communications and field procedures are continuous.

### 3.7 Estimated Capacity

Field	Acres	Available	Crop	Loading Rate	Days @815	Estimated Completion
17-02	77.00	10/04/10	Corn	64.72	10	Rainy Day
17-03	73.00	10/04/10	Corn	55.44	8	Rainy Day
17-06	72.00	10/04/10	Corn	56.69	8	Rainy Day
17-07	68.00	10/04/10	Corn	41.39	6	Rainy Day
17-08	66.00	10/04/10	Corn	37.88	5	Rainy Day
18-01	116.00	10/25/10	Corn	36.84	9	Rainy Day
18-02	115.00	10/25/10	Corn	41.30	10	Rainy Day
18-03	147.00	10/25/10	Corn	40.46	12	Rainy Day
06-02A	74.00	11/19/10	Wheat	40.44	6	Open Rainy Day
06-02C	74.00	11/19/10	Wheat	41.03	6	Open Rainy Day
08-03	70.00	12/03/10	Wheat	37.50	5	12/12/10
08-04	36.00	12/03/10	Wheat	32.18	2	12/08/10
08-05	130.00	12/03/10	Corn	45.70	12	Open Rainy Day
08-02	70.00	12/09/10	Wheat	45.59	7	12/19/10

Submitted by:

A handwritten signature in black ink, appearing to read "J. R. Stockton". The signature is written in a cursive style with a large, sweeping initial "J" and "R".

J. R. Stockton



12/22/10

**WEEKLY REPORT  
RBM/VCI  
Kern County**

12/13/10 through 12/19/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

RBM's BTRC # is 397764-28. Acquired on 10/12/96 and the start date is 10/01/96.

**1.3 RWQCB**

*No new issues to report at this time.*

**1.4 Kern County**

*No new issues to report at this time.*

**1.5 San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)**

No new issues to report at this time.

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*Randy Womble, employed by the City of Los Angeles, conducts daily inspections of farming and biosolids activities at the site.*

## **2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

## **2.3 Kern County**

10/11/10: Amy Rutledge, Kern County Environmental Health Services, visited Green Acres and no compliance issues with Bio-Solids operations with Kern County regulations were reported.

## **2.4 Others**

01/05/10: Quarterly Biosolids samples were pulled by Zalco Labs for analysis of heavy metals, PCBs, Dioxins, E Coli, Salmonella and enteric viruses per Kern County requirements.

## **3. OPERATIONAL ISSUES AND CHANGES: SIGNIFICANT OCCURRENCES:**

### **3.1 Equipment Status**

No new issues to report at this time.

### **3.2 Transportation**

*There are no new issues to report at this time.*

### **3.3 Driver Status**

*There are no changes to report at this time.*

### **3.4 Training**

Land application: Field safety and land application of biosolids procedures are discussed with field employees weekly.

### 3.5 Monthly Farm Meeting

*11/17/10: Regularly scheduled meeting at Green Acres Farm was attended by representatives of the Bureau of Sanitation, Fannuchi Farms, and Responsible Biosolids Management.*

### 3.6 Plant Loading Issues

*There are no new issues to report at this time.*

### 3.6 Field

*We are currently applying biosolids in fields 08-04, 08-02, 17-02, and 17-06.*

We are in compliance with all the requirements of all agencies with jurisdiction over this project.

Field training on communications and field procedures are continuous.

### 3.7 Estimated Capacity

Field	Acres	Available	Crop	Loading Rate	Days @815	Estimated Completion
17-02	77.00	10/04/10	Corn	64.72	10	Rainy Day
17-03	73.00	10/04/10	Corn	55.44	8	Rainy Day
17-06	72.00	10/04/10	Corn	56.69	8	Rainy Day
17-07	68.00	10/04/10	Corn	41.39	6	Rainy Day
17-08	66.00	10/04/10	Corn	37.88	5	Rainy Day
18-01	116.00	10/25/10	Corn	36.84	9	Rainy Day
18-02	115.00	10/25/10	Corn	41.30	10	Rainy Day
18-03	147.00	10/25/10	Corn	40.46	12	Rainy Day
08-03	70.00	12/03/10	Wheat	37.50	5	12/12/10
08-04	36.00	12/03/10	Wheat	32.18	2	12/08/10
08-05	130.00	12/03/10	Corn	45.70	12	Open Rainy Day
08-02	70.00	12/09/10	Wheat	45.59	7	12/19/10

Submitted by:

A handwritten signature in black ink, appearing to read "J. R. Stockton". The signature is written in a cursive style with a large, sweeping initial "J".

J. R. Stockton



12/29/10

**WEEKLY REPORT  
RBM/VCI  
Kern County**

12/20/10 through 12/26/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

RBM's BTRC # is 397764-28. Acquired on 10/12/96 and the start date is 10/01/96.

**1.3 RWQCB**

*No new issues to report at this time.*

**1.4 Kern County**

*An incident occurred on 12/20/10 and 12/21/10 as a result of a significant storm that caused flooding from that rain water to escape the Green Acres property. Kern County has requested an incident and action plan response.*

**1.5 San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)**

No new issues to report at this time.

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*Randy Womble, employed by the City of Los Angeles, conducts daily inspections of farming and biosolids activities at the site.*

**2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

**2.3 Kern County**

10/11/10: Amy Rutledge, Kern County Environmental Health Services, visited Green Acres and no compliance issues with Bio-Solids operations with Kern County regulations were reported.

**2.4 Others**

01/05/10: Quarterly Biosolids samples were pulled by Zalco Labs for analysis of heavy metals, PCBs, Dioxins, E Coli, Salmonella and enteric viruses per Kern County requirements.

**3. OPERATIONAL ISSUES AND CHANGES:  
SIGNIFICANT OCCURRENCES:**

**3.1 Equipment Status**

No new issues to report at this time.

**3.2 Transportation**

*There are no new issues to report at this time.*

**3.3 Driver Status**

*There are no changes to report at this time.*

**3.4 Training**

Land application: Field safety and land application of biosolids procedures are discussed with field employees weekly.

### 3.5 Monthly Farm Meeting

*12/22/10: Regularly scheduled meeting at Green Acres Farm was attended by representatives of the Bureau of Sanitation, Fannuchi Farms, and Responsible Biosolids Management.*

### 3.6 Plant Loading Issues

*There are no new issues to report at this time.*

### 3.6 Field

*We are currently applying biosolids in fields 17-02, and 17-06.*

We are in compliance with all the requirements of all agencies with jurisdiction over this project.

Field training on communications and field procedures are continuous.

### 3.7 Estimated Capacity

<u>Field</u>	<u>Acres</u>	<u>Available</u>	<u>Crop</u>	<u>Loading Rate</u>	<u>Days @815</u>	<u>Estimated Completion</u>
17-02	77.00	10/04/10	Corn	64.72	10	Rainy Day
17-03	73.00	10/04/10	Corn	55.44	8	Rainy Day
17-06	72.00	10/04/10	Corn	56.69	8	Rainy Day
17-07	68.00	10/04/10	Corn	41.39	6	Rainy Day
17-08	66.00	10/04/10	Corn	37.88	5	Rainy Day
18-01	116.00	10/25/10	Corn	36.84	9	Rainy Day
18-02	115.00	10/25/10	Corn	41.30	10	Rainy Day
18-03	147.00	10/25/10	Corn	40.46	12	Rainy Day
08-03	70.00	12/03/10	Wheat	37.50	5	12/12/10
08-05	130.00	12/03/10	Corn	45.70	12	Open Rainy Day
08-02	70.00	12/09/10	Wheat	45.59	7	12/19/10

Submitted by:

A handwritten signature in black ink, appearing to read "J. R. Stockton". The signature is written in a cursive style with a large, sweeping initial "J" and "R".

J. R. Stockton



01/05/11

**WEEKLY REPORT  
RBM/VCI  
Kern County**

12/27/10 through 01/02/11

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

RBM's BTRC # is 397764-28. Acquired on 10/12/96 and the start date is 10/01/96.

**1.3 RWQCB**

*No new issues to report at this time.*

**1.4 Kern County**

*An incident occurred on 12/20/10 and 12/21/10 as a result of a significant storm that caused flooding from that rain water to escape the Green Acres property. Kern County has requested an incident and action plan response.*

**1.5 San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD)**

No new issues to report at this time.

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*Randy Womble, employed by the City of Los Angeles, conducts daily inspections of farming and biosolids activities at the site.*

**2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

**2.3 Kern County**

10/11/10: Amy Rutledge, Kern County Environmental Health Services, visited Green Acres and no compliance issues with Bio-Solids operations with Kern County regulations were reported.

**2.4 Others**

01/05/10: Quarterly Biosolids samples were pulled by Zalco Labs for analysis of heavy metals, PCBs, Dioxins, E Coli, Salmonella and enteric viruses per Kern County requirements.

**3. OPERATIONAL ISSUES AND CHANGES:  
SIGNIFICANT OCCURRENCES:**

**3.1 Equipment Status**

No new issues to report at this time.

**3.2 Transportation**

*There are no new issues to report at this time.*

**3.3 Driver Status**

*There are no changes to report at this time.*

**3.4 Training**

Land application: Field safety and land application of biosolids procedures are discussed with field employees weekly.

### 3.5 Monthly Farm Meeting

*12/22/10: Regularly scheduled meeting at Green Acres Farm was attended by representatives of the Bureau of Sanitation, Fannuchi Farms, and Responsible Biosolids Management.*

### 3.6 Plant Loading Issues

*There are no new issues to report at this time.*

### 3.6 Field

*We are currently applying biosolids in fields 17-07, 17-08 and 17-02.*

We are in compliance with all the requirements of all agencies with jurisdiction over this project.

Field training on communications and field procedures are continuous.

### 3.7 Estimated Capacity

<u>Field</u>	<u>Acres</u>	<u>Available</u>	<u>Crop</u>	<u>Loading Rate</u>	<u>Days @815</u>	<u>Estimated Completion</u>
17-02	77.00	10/04/10	Corn	64.72	10	Rainy Day
17-03	73.00	10/04/10	Corn	55.44	8	Rainy Day
17-06	72.00	10/04/10	Corn	56.69	8	Rainy Day
17-07	68.00	10/04/10	Corn	41.39	6	Rainy Day
17-08	66.00	10/04/10	Corn	37.88	5	Rainy Day
18-01	116.00	10/25/10	Corn	36.84	9	Rainy Day
18-02	115.00	10/25/10	Corn	41.30	10	Rainy Day
18-03	147.00	10/25/10	Corn	40.46	12	Rainy Day
08-03	70.00	12/03/10	Wheat	37.50	5	12/12/10
08-05	130.00	12/03/10	Corn	45.70	12	Open Rainy Day
08-02	70.00	12/09/10	Wheat	45.59	7	12/19/10
08-01S	70.00	12/19/10	Wheat	45.62	7	12/29/10

Submitted by:

A handwritten signature in black ink, appearing to read "J. R. Stockton". The signature is written in a cursive style with a large, sweeping initial "J".

J. R. Stockton

## **APPENDIX B**

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# **Weekly Reports From Terra Renewal**



**WEEKLY REPORT – 12/01/10**

**Terra Renewal Services  
South Kern Composting Facility – Kern Co, CA**

11/22/10 through 11/28/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

There are no outstanding invoices to report at this time.

**1.3 RWQCB**

*No issues to report at this time.*

**1.4 Kern County**

*No issues to report at this time.*

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*We are not aware of any visits or inspections during this period.*

**2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

**2.3 Kern County**

*We are not aware of any visits or inspections during this period.*

**2.4 Others**

*We are not aware of any other visits or inspections during this period.*

**3. OPERATIONAL ISSUES AND CHANGES:  
SIGNIFICANT OCCURRENCES:**

**3.1 Equipment Status**

*There are no new issues to report at this time.*

**3.2 Transportation**

*There are no new issues to report at this time.*

**3.3 Driver Status**

*There are no changes to report at this time.*

**3.4 Training**

*There are no new issues to report at this time.*

**3.5 Plant Loading Issues**

*There are no new issues to report at this time.*

**4. TONNAGE AND DESTINATIONS**

**4.1 Tonnage and destination hauled by plant**

Terminal Island	0.00	tons hauled to South Kern Composting Facility
Hyperion	380.80	tons hauled to South Kern Composting Facility
	432.10	tons hauled to Terminal Island Plant

Submitted by:



Cesar Garcia Environmental Specialist



**WEEKLY REPORT – 12/08/10**

**Terra Renewal Services  
South Kern Composting Facility – Kern Co, CA**

11/29/10 through 12/05/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

There are no outstanding invoices to report at this time.

**1.3 RWQCB**

*No issues to report at this time.*

**1.4 Kern County**

*No issues to report at this time.*

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*We are not aware of any visits or inspections during this period.*

**2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

**2.3 Kern County**

*We are not aware of any visits or inspections during this period.*

**2.4 Others**

*We are not aware of any other visits or inspections during this period.*

**3. OPERATIONAL ISSUES AND CHANGES:  
SIGNIFICANT OCCURRENCES:**

**3.1 Equipment Status**

*There are no new issues to report at this time.*

**3.2 Transportation**

*There are no new issues to report at this time.*

**3.3 Driver Status**

*There are no changes to report at this time.*

**3.4 Training**

*There are no new issues to report at this time.*

**3.5 Plant Loading Issues**

*There are no new issues to report at this time.*

**4. TONNAGE AND DESTINATIONS**

**4.1 Tonnage and destination hauled by plant**

Terminal Island	23.18	tons hauled to South Kern Composting Facility
Hyperion	381.70	tons hauled to South Kern Composting Facility
	576.58	tons hauled to Terminal Island Plant

Submitted by:



Cesar Garcia Environmental Specialist



**WEEKLY REPORT – 12/15/10**

**Terra Renewal Services  
South Kern Composting Facility – Kern Co, CA**

12/06/10 through 12/12/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

There are no outstanding invoices to report at this time.

**1.3 RWQCB**

*No issues to report at this time.*

**1.4 Kern County**

*No issues to report at this time.*

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*We are not aware of any visits or inspections during this period.*

**2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

**2.3 Kern County**

*We are not aware of any visits or inspections during this period.*

**2.4 Others**

*We are not aware of any other visits or inspections during this period.*

**3. OPERATIONAL ISSUES AND CHANGES:  
SIGNIFICANT OCCURRENCES:**

**3.1 Equipment Status**

*There are no new issues to report at this time.*

**3.2 Transportation**

*There are no new issues to report at this time.*

**3.3 Driver Status**

*There are no changes to report at this time.*

**3.4 Training**

*There are no new issues to report at this time.*

**3.5 Plant Loading Issues**

*There are no new issues to report at this time.*

**4. TONNAGE AND DESTINATIONS**

**4.1 Tonnage and destination hauled by plant**

Terminal Island	67.44	tons hauled to South Kern Composting Facility
Hyperion	331.56	tons hauled to South Kern Composting Facility
	721.14	tons hauled to Terminal Island Plant

Submitted by:



Cesar Garcia      Environmental Specialist



**WEEKLY REPORT – 12/22/10**

**Terra Renewal Services  
South Kern Composting Facility – Kern Co, CA**

12/13/10 through 12/19/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

There are no outstanding invoices to report at this time.

**1.3 RWQCB**

*No issues to report at this time.*

**1.4 Kern County**

*No issues to report at this time.*

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*We are not aware of any visits or inspections during this period.*

**2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

**2.3 Kern County**

*We are not aware of any visits or inspections during this period.*

**2.4 Others**

*We are not aware of any other visits or inspections during this period.*

**3. OPERATIONAL ISSUES AND CHANGES:  
SIGNIFICANT OCCURRENCES:**

**3.1 Equipment Status**

*There are no new issues to report at this time.*

**3.2 Transportation**

*There are no new issues to report at this time.*

**3.3 Driver Status**

*There are no changes to report at this time.*

**3.4 Training**

*There are no new issues to report at this time.*

**3.5 Plant Loading Issues**

*There are no new issues to report at this time.*

**4. TONNAGE AND DESTINATIONS**

**4.1 Tonnage and destination hauled by plant**

Terminal Island	0.00	tons hauled to South Kern Composting Facility
Hyperion	332.20	tons hauled to South Kern Composting Facility
	699.73	tons hauled to Terminal Island Plant

Submitted by:



Cesar Garcia Environmental Specialist



**WEEKLY REPORT – 12/29/10**

**Terra Renewal Services  
South Kern Composting Facility – Kern Co, CA**

12/20/10 through 12/26/10

**1. SIGNIFICANT ISSUES**

**1.1 CITY**

There are no new issues to report at this time.

**1.2 Outstanding Invoices**

There are no outstanding invoices to report at this time.

**1.3 RWQCB**

*No issues to report at this time.*

**1.4 Kern County**

*No issues to report at this time.*

**2. SITE VISITS AND INSPECTIONS**

**2.1 CITY**

*We are not aware of any visits or inspections during this period.*

**2.2 RWQCB**

*We are not aware of any visits or inspections during this period.*

**2.3 Kern County**

*We are not aware of any visits or inspections during this period.*

**2.4 Others**

*We are not aware of any other visits or inspections during this period.*

**3. OPERATIONAL ISSUES AND CHANGES:  
SIGNIFICANT OCCURRENCES:**

**3.1 Equipment Status**

*There are no new issues to report at this time.*

**3.2 Transportation**

*There are no new issues to report at this time.*

**3.3 Driver Status**

*There are no changes to report at this time.*

**3.4 Training**

*There are no new issues to report at this time.*

**3.5 Plant Loading Issues**

*There are no new issues to report at this time.*

**4. TONNAGE AND DESTINATIONS**

**4.1 Tonnage and destination hauled by plant**

Terminal Island	0.00	tons hauled to South Kern Composting Facility
Hyperion	454.82	tons hauled to South Kern Composting Facility
	119.80	tons hauled to Terminal Island Plant

Submitted by:



Cesar Garcia      Environmental Specialist

## **APPENDIX C**

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### **R & G Fanucchi Monthly Report**

# R & G Fanucchi Monthly Report

**Date:** 1/5/11

**To:** Ernesto

**From:** Robert Fanucchi

**RE:** Monthly Report December 2010

**Summary of all current farming activity**

## Irrigation

<u>Date</u>	<u>Field</u>	<u>Crop</u>	<u>Irrigation #</u>
12/1/10	6-2d	wheat	1 <sup>st</sup>
12/6/10	17-1	alfalfa	2 <sup>nd</sup>
12/6/10	17-4	alfalfa	2 <sup>nd</sup>
12/6/10	7-4	alfalfa	1 <sup>st</sup>
12/6/10	12-5	wheat	2 <sup>nd</sup>
12/7/10	1-3	alfalfa	2 <sup>nd</sup>
12/7/10	1-4	alfalfa	2 <sup>nd</sup>
12/7/10	8-1n	wheat	2 <sup>nd</sup>
12/7/10	1-8	wheat	2 <sup>nd</sup>
12/8/10	16-4	alfalfa	1 <sup>st</sup>
12/9/10	6-1b	wheat	1 <sup>st</sup>
12/9/10	6-2b	wheat	1 <sup>st</sup>
12/11/10	16-2	alfalfa	1 <sup>st</sup>
12/13/10	5-1	wheat	2 <sup>nd</sup>
12/13/10	12-3	wheat	2 <sup>nd</sup>
12/13/10	12-4	wheat	2 <sup>nd</sup>
12/13/10	12-9	wheat	2 <sup>nd</sup>
12/15/10	6-2a	wheat	1 <sup>st</sup>
12/17/10	6-1a	wheat	1 <sup>st</sup>
12/21/10	16-2	alfalfa	2 <sup>nd</sup>
12/21/10	1-8	wheat	4 <sup>th</sup>
12/27/10	6-1b	wheat	2 <sup>nd</sup>
12/27/10	8-1n	wheat	3 <sup>rd</sup>
12/28/10	6-2b	wheat	2 <sup>nd</sup>
12/28/10	6-2d	wheat	2 <sup>nd</sup>
12/29/10	5-1	wheat	3 <sup>rd</sup>

Notes

None

### **Planting**

<u>Date</u>	<u>Field</u>	<u>Crop Variety</u>	<u>Sold to</u>
12/1/10	6-1b	wheat	
12/8/10	6-1a	wheat	
12/13/10	6-2a	wheat	
12/15/10	6-2c	wheat	
12/16/10	8-4	wheat	

### Notes

Done planting wheat

### **Ground Work**

<u>Date</u>	<u>Field</u>	<u>Operation</u>
12/1/10	6-1a	disk and collipack
12/1/10	6-2b	borders
12/2/10	6-1b	borders
12/3/10	6-1a	landplane 1 <sup>st</sup>
12/9/10	6-2a	disk and collipack
12/8/10	6-2a	rip
12/7/10	6-1a	landplane 2 <sup>nd</sup>
12/9/10	6-2a	landplane 1 <sup>st</sup> and 2 <sup>nd</sup>
12/10/10	7-3	landplane 1 <sup>st</sup> and 2 <sup>nd</sup>
12/11/10	7-3	landplane 3 <sup>rd</sup>
12/10/10	6-1a	borders
12/13/10	6-2c	disk and collipack
12/15/10	8-4	disk and collipack
12/14/10	8-4	rip
12/14/10	6-2c	landplane 1 <sup>st</sup>
12/15/10	6-2c	landplane 2 <sup>nd</sup>
12/16/10	8-4	landplane 1 <sup>st</sup>
12/16/10	8-4	landplane 2 <sup>nd</sup>
12/13/10	6-2a	borders
12/17/10	8-4	borders
12/17/10	6-2c	borders

### Notes

None

### **Harvest**

Date          Field          Crop          Yield          Sold to

Notes

None

**Pesticides and fertilizers**

Date          Field          Chemical          Reason

Notes

None

**Miscellaneous**

<u>Date</u>	<u>Field</u>	<u>Operation</u>	<u>Notes</u>
December	all	grader	58 hrs
	All	backhoe	104 hrs
	All	scraper	52 hrs
	All	spray weeds	42 hrs
	all	Misc Man	188 hrs

Notes

None

**Schedule of current and projected activity**

None

**Documentation of all farming expenses**

None

**Invoices**

Invoice #          Date Mailed          Correction sent          Proof of payment          Received

None

**Permit, Subsidies and/or regulatory issues**

None

**Repairs**

None

## **APPENDIX D**

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# **Daily Biosolids Trucking Quota**

## DAILY BIOSOLIDS TRUCKING QUOTA

FROM: 12/01/10  
TO: 12/07/10

DATE ISSUED: 11/30/2010  
NEW: X REVISED:

HTP														TIWRP	
TRUCK LOADING WINDOWS (HOURS)	0500 - 0700	2230 - 0230 0600 - 0800	6:30-1:30	2:00-12:00	2200 - 0530 0600 - 1330									0300, 1000	

CONTRACTOR		GPCF		SS (Fleet) South Kern Composting		TIRE - City of LA		TIRE - SS/FLEET		RBM - Lutrel (STI / LTI)		TOTAL		SS (Fleet) South Kern Composting	
DAY	DATE	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS
WED	12/01/10	0	0	2	48	0	0	6	144	16	422	24	614	0	0
THU	12/02/10	2	30	2	48	0	0	6	144	15	396	25	618	0	0
FRI	12/03/10	0	0	2	48	0	0	0	0	22	581	24	629	0	0
SAT	12/04/10	0	0	2	48	0	0	0	0	22	581	24	629	0	0
SUN	12/05/10	0	0	2	48	0	0	0	0	18	475	20	523	0	0
MON	12/06/10	0	0	2	48	0	0	6	144	20	528	28	720	0	0
TUE	12/07/10	2	30	2	48	0	0	6	144	15	396	25	618	0	0

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Any problems with regards to hauling, please call Biosolids Management Group: Arturo Perez @ 213-272-8416 or Maria Depaz @ 310-709-2503; RBM: Jon Coffin @ 805-962-5927; Lutrel/Sierra: Keith/Rick Lutrel @ 661-979-9095; Solid Solutions/Terra Renewal: Chris Marks @ 760-801-3175 or John Chavez @ 626-434-6396

C: Enrique Zaldivar (MS 520) Traci Minamide Steve Fan Michael Ruiz Shifty  
Dewatering pr\_cent BMG (213) 272-8416 Fleet (SS) Fax (714) 799-0140,  
Lutrel Trucking Fax (661) 399-3251 RBM Fax(805) 962-5976 SS Fax (415) 532-1682

PREPARED BY:  

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Maria Depaz



## DAILY BIOSOLIDS TRUCKING QUOTA

FROM: 12/15/10  
TO: 12/21/10

DATE ISSUED: 12/22/2010  
NEW: X REVISED:

<b>HTP</b>												<b>TIWRP</b>	
TRUCK LOADING WINDOWS (HOURS)	0500 - 0700	2230 - 0230 0600 - 0800	6:30-1:30	2:00-12:00	2200 - 0530 0600 - 1330							0300, 1000	

CONTRACTOR		GPCF		Terra Renewal South Kern Composting		TIRE - City of LA		TIRE - Terra Renewal		RBM - Lutrel (STI / LTI)		TOTAL		Terra Renewal South Kern Composting	
DAY	DATE	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS
WED	12/15/10	0	0	0	0	0	0	6	144	6	158	12	302	0	0
THU	12/16/10	2	30	2	48	0	0	6	144	15	396	25	618	0	0
FRI	12/17/10	0	0	2	48	0	0	6	144	16	422	24	614	0	0
SAT	12/18/10	0	0	2	48	0	0	0	0	22	581	24	629	0	0
SUN	12/19/10	0	0	2	48	0	0	0	0	18	475	20	523	0	0
MON	12/20/10	0	0	2	48	0	0	6	144	20	528	28	720	0	0
TUE	12/21/10	2	30	2	48	0	0	6	144	15	396	25	618	0	0

NOTE: Scheduled shutdown on Wednesday, December 15, 2010 will result in reduced trucking quota.

Any problems with regards to hauling, please call Biosolids Management Group: Arturo Perez @ 213-272-8416 or Maria Depaz @ 310-709-2503; RBM: Jon Coffin @ 805-962-5927; Lutrel/Sierra: Keith/Rick Lutrel @ 661-979-9095; Solid Solutions/Terra Renewal: Chris Marks @ 760-801-3175 or John Chavez @ 626-434-6396

C: Enrique Zaldivar (MS 520) Traci Minamide Steve Fan Michael Ruiz Shifty  
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PREPARED BY:

\_\_\_\_\_  
Maria Depaz

## DAILY BIOSOLIDS TRUCKING QUOTA

FROM: 12/22/10  
TO: 12/28/10

DATE ISSUED: 12/22/2010  
NEW: REVISED: X

<b>HTP</b>												<b>TIWRP</b>	
TRUCK LOADING WINDOWS (HOURS)	0500 - 0700	2230 - 0230 0600 - 0800	6:30-1:30	2:00-12:00	2200 - 0530 0600 - 1330							0300, 1000	

CONTRACTOR		GPCF		Terra Renewal South Kern Composting		TIRE - City of LA		TIRE - Terra Renewal		RBM - Lutrel (STI / LTI)		TOTAL		Terra Renewal South Kern Composting	
DAY	DATE	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS	LOADS	TONS
WED	12/22/10	0	0	2	48	0	0	0	0	22	581	24	629	0	0
THU	12/23/10	2	30	2	48	0	0	0	0	21	554	25	632	0	0
FRI	12/24/10	0	0	2	48	0	0	0	0	22	581	24	629	0	0
SAT	12/25/10	0	0	2	48	0	0	0	0	22	581	24	629	0	0
SUN	12/26/10	0	0	2	48	0	0	0	0	18	475	20	523	0	0
MON	12/27/10	0	0	2	48	0	0	6	144	20	528	28	720	0	0
TUE	12/28/10	2	30	2	48	0	0	6	144	15	396	25	618	0	0

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NOTE: Scheduled shutdown on Wednesday, December 15, 2010 will result in reduced trucking quota.

Any problems with regards to hauling, please call Biosolids Management Group: Arturo Perez @ 213-272-8416 or Maria Depaz @ 310-709-2503; RBM: Jon Coffin @ 805-962-5927; Lutrel/Sierra: Keith/Rick Lutrel @ 661-979-9095; Solid Solutions/Terra Renewal: Chris Marks @ 760-801-3175 or John Chavez @ 626-434-6396

C: Enrique Zaldivar (MS 520) Traci Minamide Steve Fan Michael Ruiz Shifty  
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Lutrel Trucking Fax (661) 399-3251 RBM Fax(805) 962-5976 SS Fax (415) 532-1682

PREPARED BY:



## **APPENDIX E**

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# **Monthly Farm Meeting Notes**

**CITY OF LOS ANGELES  
FARM STATUS MEETING MINUTES**

**Meeting Date:** 12-22-10

**Location:** City of Los Angeles Green Acres Farm, Bakersfield, CA.

**Notes by:** Randy Womble

**Attendance:**

Randy Womble	(213) 216-4114
Arturo Perez, CLA	(310) 648-5362
Louie Torres, RBM	(661) 303-3907
Rob Fanucchi, (R&G)	(661) 619-4103
Maria Depaz (CLA)	(310) 648-5764
Jay Stockton (RBM)	(661)303-3845
Steve Stockton (RBM)	(805)733-1053

**1. Purpose of meeting**

To discuss issues that affect land application, farming and City of Los Angeles (CLA) interests at the farm.

**2. Comments to last month's meeting minutes**

November 17, 2010

**3. Land application**

- Louie Torres is currently in 17-6, then will finish up 17-7, 17-8, 17-3, 17-2, then 8-2 or 8-5. Louie needs asphalt grindings (recycled) for 16-3 to make the road more accessible.
- Rob Fanucchi has used asphalt grindings on another ranch at the cost of \$500 per load of approximately 24 tons.
- Louie Torres said that TIRE is not taking any loads this week so he is picking up the slack of 8 loads extra. This makes between 25-28 loads per day, this week.

**4. Farming**

- Rob Fanucchi has calculated around 1,785 acres of wheat for this season. His men will be finishing up the wheat plantings by the end of December as long as the ground is not too wet.
- Rob Fanucchi said that the canal dredging will probably take place next year because of the delay in water from the City of Bakersfield. Our farm has been wet because of the rains.

- Steve Stockton said that inspectors will be coming out to the farm in January to look at the overall status. The conditions and application techniques are very important to review and get opinions on for the current stay for the City of Los Angeles.
- Rob Fanucchi said that we need amendments (gypsum, sulfur, potassium) for 5 straight years before we will see a nitrogen uptake major improvement in our corn and milo crops.

**5. Public Relations:**

**6. House Keeping**

- The Conference Center is being cleaned up and maintained on a monthly basis for visitors and tours.

**7. Bills (Invoices)- Status of R&G Fanucchi payments**

**8. Construction**

- Maria has no new information on Tri Cor

**8a. Legal**

- Steve Stockton had no comments for this meeting.

**9. Visitors**

- Amy Rutledge of Environmental Health came by for a quarterly inspection on Wednesday, November 10<sup>th</sup>.

**10. Next meeting**

- Next meeting will be on Wednesday, January 19, 2010 at 10:30.

Distribution: Steve Fan  
 Biosolids Management Group  
 Mark Starr  
 Attendees

**APPENDIX F**

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**Site Inspection Report**

## SITE INSPECTION SHEET

Date: <u>December 1, 2010</u>	Weather: <u>Sunny</u>
Time of Inspection Start: <u>9:00 AM</u> End: <u>1:20 pm</u>	Was there any rain in the past 48 hrs? <u>No</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: <u>Estimated planting date: December-10</u> <u>Crop: Wheat</u>	
<u>Field being land applied: 6-2A</u>	
<u>Approved Agronomic Rate (tons/acre): 40.44 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	Disking	Plowing		
Which method of biosolids incorporation is being used?		X		

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks	
Are there proper hand washing facilities?	X				
Is the truck wash area clean?	X				
Are there eye wash/shower facilities?	X				
	Dust Mask	Gloves	Rubber boots	Eye protection	Remarks
Is personal protective equipment (PPE) being used?	X	X			

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 15 loads of biosolids which had previously arrived were landplanned and incorporated at noon, in compliance with SJVAPCD Rule 4565.

\* Irrigation of fields 12-1, 12-2, and 1-2; planting wheat in field 6-1B, ripping field 6-1A and making borders in field 6-2D were observed.

\* Observed one Lutrel truck unloading biosolids, the proper unloading procedures were followed. The driver cleaned his truck at the wash pad before leaving the farm.

Inspection completed by: Arturo Perez

## SITE INSPECTION SHEET

Date: <u>December 2, 2010</u>	Weather: <u>sunny</u>
Time of Inspection Start: <u>9:45 am</u> End: <u>12:45 pm</u>	Was there any rain in the past 48 hrs? <u>no</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>December-10</u> Crop: <u>Wheat</u>	
Field being land applied: <u>6-2A</u>	
Approved Agronomic Rate (tons/acre): <u>40.44 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	Disking	Plowing		
Which method of biosolids incorporation is being used?	X			

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks	
Are there proper hand washing facilities?	X				
Is the truck wash area clean?	X				
Are there eye wash/shower facilities?	X				
	Dust Mask	Gloves	Rubber boots	Eye protection	Remarks
Is personal protective equipment (PPE) being used?		X	X		

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 13 loads of biosolids which had previously arrived had been spread, landplanned, and incorporated at 10:30 AM, in compliance with SJVAPCD Rule 4565.

\* Observed irrigation of fields 1-5, 1-7, 12-1, 12-2, 12-5, harvesting of field 1-3, 7-4, and landplanning 6-1A.

Inspection completed by: Maria Depaz

## SITE INSPECTION SHEET

Date: <u>December 6, 2010</u>	Weather: <u>cloudy</u>
Time of Inspection Start: <u>9:30 am</u> End: <u>12:45 pm</u>	Was there any rain in the past 48 hrs? <u>yes</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>December-10</u> Crop: <u>Wheat</u>	
Field being land applied: <u>6-2C</u>	
Approved Agronomic Rate (tons/acre): <u>41.03 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	<b>Disking</b>	<b>Plowing</b>		
Which method of biosolids incorporation is being used?	X			

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks
Are there proper hand washing facilities?	X			
Is the truck wash area clean?	X			
Are there eye wash/shower facilities?	X			
	<b>Dust Mask</b>	<b>Gloves</b>	<b>Rubber boots</b>	<b>Eye protection</b>
Is personal protective equipment (PPE) being used?	X	X		

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 13 loads of biosolids which had previously arrived had been spread, landplanned, and incorporated at 10:20 AM, in compliance with SJVAPCD Rule 4565.

\* Observed irrigation of fields 17-1, 17-4.

\* Observed 1 truck unloading on field 6-2C. All proper procedures were followed, the truck was washed on the field and at the wash pad area.

\* Canal along east perimeter of the farm broke during the weekend. R&G Fanucchi were currently repairing the canal.

**Inspection completed by:** Maria Depaz

## SITE INSPECTION SHEET

Date: <u>December 8, 2010</u>	Weather: <u>Sunny</u>
Time of Inspection Start: <u>9:00 AM</u> End: <u>1:20 pm</u>	Was there any rain in the past 48 hrs? <u>No</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>December-10</u> Crop: <u>Wheat</u>	
Field being land applied: <u>6-2C</u>	
Approved Agronomic Rate (tons/acre): <u>41.03 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	Disking	Plowing		
Which method of biosolids incorporation is being used?		X		

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks	
Are there proper hand washing facilities?	X				
Is the truck wash area clean?	X				
Are there eye wash/shower facilities?	X				
	Dust Mask	Gloves	Rubber boots	Eye protection	Remarks
Is personal protective equipment (PPE) being used?	X	X			

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 11 loads of biosolids which had previously arrived plus one load that unloaded at 9:00 AM were landplanned and incorporated at 11:30 AM, in compliance with SJVAPCD Rule 4565.

\* Irrigation of fields 1-6, 1-8, 1-3, 12-1, 12-2, 12-5, 7-4, 6-2D, 8-1N, 17-1, and 17-4; plantingwheat in field 6-1A and ripping in field 6-2A were observed.

\* Observed one Lutrel truck unloading biosolids, the proper unloading procedures were followed. The driver cleaned his truck at the wash pad before leaving the farm.

Inspection completed by: Arturo Perez

## SITE INSPECTION SHEET

Date: <u>December 13, 2010</u>	Weather: <u>overcast</u>
Time of Inspection Start: <u>9:30 AM</u> End: <u>1:00 pm</u>	Was there any rain in the past 48 hrs? <u>Yes</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>December-10</u> Crop: <u>Wheat</u>	
Field being land applied: <u>8-4</u>	
Approved Agronomic Rate (tons/acre): <u>32.18 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	<b>Disking</b>	<b>Plowing</b>		
Which method of biosolids incorporation is being used?	X			

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks
Are there proper hand washing facilities?	X			
Is the truck wash area clean?	X			
Are there eye wash/shower facilities?	X			
	<b>Dust Mask</b>	<b>Gloves</b>	<b>Rubber boots</b>	<b>Eye protection</b>
Is personal protective equipment (PPE) being used?	X	X		

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 11 loads of biosolids which had previously arrived were landplanned and incorporated at 9:30 AM, in compliance with SJVAPCD Rule 4565.

\* R&G Fanucchi was working on canal problems again (east part of the farm, along I-5)

\* Observed irrigation of fields 1-3, 1-4, 1-8, 12-1 and 12-2.

\* Observed disc and collipack on field 6-2C.

**Inspection completed by:** Maria Depaz

## SITE INSPECTION SHEET

Date: <u>December 15, 2010</u>	Weather: <u>Sunny</u>
Time of Inspection Start: <u>8:50 AM</u> End: <u>1:30 pm</u>	Was there any rain in the past 48 hrs? <u>Yes</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>March-11</u> Crop: <u>Corn</u>	
Field being land applied: <u>8-2</u>	
Approved Agronomic Rate (tons/acre): <u>45.59 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	Disking	Plowing		
Which method of biosolids incorporation is being used?		X		

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks	
Are there proper hand washing facilities?	X				
Is the truck wash area clean?	X				
Are there eye wash/shower facilities?	X				
	Dust Mask	Gloves	Rubber boots	Eye protection	Remarks
Is personal protective equipment (PPE) being used?	X	X			

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 7 loads of biosolids which had previously arrived were landplanned and incorporated at 11:30 AM, in compliance with SJVAPCD Rule 4565.

\* Irrigation of fields 16-2, 5-1, 1-3, 1-4, 12-3, 12-4, 12-9, 6-1B, and 6-2B; disc and collipack in field 8-4 and landplanning field 6-2C were observed.

\* Only 7 loads of biosolids were scheduled for today due to plant shut down.

Inspection completed by: Arturo Perez

## SITE INSPECTION SHEET

Date: <u>December 20, 2010</u>	Weather: <u>raining</u>
Time of Inspection Start: <u>9:30 AM</u> End: <u>12:45 pm</u>	Was there any rain in the past 48 hrs? <u>Yes</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>March-11</u> Crop: <u>Corn</u>	
Field being land applied: <u>17-6</u>	
Approved Agronomic Rate (tons/acre): <u>56.69 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	Disking	Plowing		
Which method of biosolids incorporation is being used?	X			

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks	
Are there proper hand washing facilities?	X				
Is the truck wash area clean?	X				
Are there eye wash/shower facilities?	X				
	Dust Mask	Gloves	Rubber boots	Eye protection	Remarks
Is personal protective equipment (PPE) being used?	X	X			

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 15 loads of biosolids which had previously arrived were landplanned and incorporated at 10:00 AM, in compliance with SJVAPCD Rule 4565.

\* Road west of section 12 (Enos Lane) was flooded with stormwater due to the heavy rains during the weekend. Randy notified me and Fanucchi about the flooding. Fanucchi was in the process on getting pumps to relieve the reservoir on section 12-9.

Inspection completed by: Maria Depaz

## SITE INSPECTION SHEET

Date: <u>December 21, 2010</u>	Weather: <u>Clear skies, no rain</u>
Time of Inspection Start: <u>8:30 AM</u> End: <u>10:00 AM</u>	Was there any rain in the past 48 hrs? <u>No</u>
Biosolids received from: <u>HTP</u> <input checked="" type="checkbox"/> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>TIRE-Deep Well Injection</u>	
Applies only to land application site: <input type="checkbox"/>	Estimated planting date: <u>N/A</u> Crop: <u>N/A</u>
	Field being land applied: <u>N/A</u>
	Approved Agronomic Rate (tons/acre): <u>N/A</u>

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>			X	
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>			X	
Is the staging/application site designated? <sup>3</sup>			X	
Are set back areas clearly marked? <sup>3</sup>			X	
Are set back areas being observed? <sup>3</sup>			X	
Is the distance from school site 2 miles? <sup>1</sup>			X	
Is the distance from US body of water 33 ft? <sup>3,4</sup>			X	
Is the distance from any public road 50 ft? <sup>1,3</sup>			X	
Is the distance from property line 50 ft? <sup>1,3</sup>			X	
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>			X	
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>			X	
Is the distance from any private residence 500 ft? <sup>1</sup>			X	
Is the distance from agricultural buildings 10 ft? <sup>1</sup>			X	
Is the distance from surface water 100 ft? <sup>1</sup>			X	

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?			X	
Were the biosolids incorporated within the required time frame? <sup>2</sup>			X	
Were the biosolids incorporated as specified in contract?			X	
	Disking	Plowing		
Which method of biosolids incorporation is being used?			X	

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?	X			
Is the sludge screen area hosed down regularly?	X			
Has the truck driveway been cleared of biosolids?	X			
Has the grit pad area been cleared of biosolids?	X			
Are the proper barriers in place along the sump perimeter?	X			
Is the Mix Tank clear of slip and trip hazards?	X			

General Requirements	YES	NO	NA	Remarks	
Are there proper hand washing facilities?	X				
Is the truck wash area clean?	X				
Are there eye wash/shower facilities?	X				
	Dust Mask	Gloves	Rubber boots	Eye protection	Remarks
Is personal protective equipment (PPE) being used?		X	X		

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* There is no loads delivered to the site. GeoEnvironmenta Technologies were only pumping the digested sludge from TIWRP to lower their sludge level, and no problem of operation encountered at the time of inspection. Both Injection pump were operating at 108 strokes/minute with a total pressure of 2600 psi.

Inspection completed by: Arturo Perez

## SITE INSPECTION SHEET

Date: <u>December 22, 2010</u>	Weather: <u>Light scattered rain</u>
Time of Inspection Start: <u>9:00 AM</u> End: <u>1:00 pm</u>	Was there any rain in the past 48 hrs? <u>Yes</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>March-11</u> Crop: <u>Corn</u>	
Field being land applied: <u>17-6</u>	
Approved Agronomic Rate (tons/acre): <u>57.00 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	Disking	Plowing		
Which method of biosolids incorporation is being used?		X		

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks	
Are there proper hand washing facilities?	X				
Is the truck wash area clean?	X				
Are there eye wash/shower facilities?	X				
	Dust Mask	Gloves	Rubber boots	Eye protection	Remarks
Is personal protective equipment (PPE) being used?	X	X			

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 15 loads of biosolids which had previously arrived were landplanned and incorporated at noon, in compliance with SJVAPCD Rule 4565.

\* Field 12-9 was flooded due to continues rain. Fanucchi's personnel were pumping the pond from field 12-9 to the pond of field 12-10. Effluent water from Bakersfield Treatment Plant # 3 was already off on December 18, 2010 according to Rob Fanucchi.

Inspection completed by: Arturo Perez

## SITE INSPECTION SHEET

Date: <u>December 28, 2010</u>	Weather: <u>raining</u>
Time of Inspection Start: <u>9:30 AM</u> End: <u>12:30 pm</u>	Was there any rain in the past 48 hrs? <u>Yes</u>
Biosolids received from: <u>X HTP</u> <u>TIWRP</u>	
Site being inspected (ie. Land Application, Composting, Deep Well Injection): <u>Green Acres Farm-Land Application</u>	
Applies only to land application site: Estimated planting date: <u>March-11</u> Crop: <u>Corn</u>	
Field being land applied: <u>17-8</u>	
Approved Agronomic Rate (tons/acre): <u>37.88 tons/acre</u>	

Trucking	Mark an <b>X</b> in the appropriate column.			Remarks
	YES	NO	NA	
Are the trailer(s) displaying required identity markings (name, address, phone number)?	X			
Are truck(s) being observed off loading?	X			
Are the trailer(s) tarps in place?	X			
Are there any unusual odors?		X		
Are truck(s) being cleaned before leaving site? <sup>3</sup>	X			
Are truck(s) leaking biosolids/liquids?		X		
Are any truck(s) driving over biosolids? <sup>3</sup>		X		
Are any truck(s) causing dust problems? <sup>3</sup>		X		
Are biosolids being tracked off site? <sup>3</sup>		X		
Was a biosolids sample collected at the site?		X		

Land Application Site Requirements	YES	NO	NA	Remarks
Are there no trespassing signs posted? <sup>3</sup>	X			
Is the staging/application site designated? <sup>3</sup>	X			
Are set back areas clearly marked? <sup>3</sup>	X			
Are set back areas being observed? <sup>3</sup>	X			
Is the distance from school site 2 miles? <sup>1</sup>	X			
Is the distance from US body of water 33 ft? <sup>3,4</sup>	X			
Is the distance from any public road 50 ft? <sup>1,3</sup>	X			
Is the distance from property line 50 ft? <sup>1,3</sup>	X			
Is the distance from any domestic or public water well 500 ft? <sup>1,3</sup>	X			
Is the distance from any non-domestic water well 50 ft? <sup>1,3</sup>	X			
Is the distance from any private residence 500 ft? <sup>1</sup>	X			
Is the distance from agricultural buildings 10 ft? <sup>1</sup>	X			
Is the distance from surface water 100 ft? <sup>1</sup>	X			

Land Application Operations	YES	NO	NA	Remarks
Are the biosolids being uniformly distributed?	X			
Were the biosolids incorporated within the required time frame? <sup>2</sup>	X			
Were the biosolids incorporated as specified in contract?	X			
	<b>Disking</b>	<b>Plowing</b>		
Which method of biosolids incorporation is being used?	X			

Deep Well Injection	YES	NO	NA	Remarks
Is the area around the injection pumps clear of debris and oil?			X	
Is the sludge screen area hosed down regularly?			X	
Has the truck driveway been cleared of biosolids?			X	
Has the grit pad area been cleared of biosolids?			X	
Are the proper barriers in place along the sump perimeter?			X	
Is the Mix Tank clear of slip and trip hazards?			X	

General Requirements	YES	NO	NA	Remarks
Are there proper hand washing facilities?	X			
Is the truck wash area clean?	X			
Are there eye wash/shower facilities?	X			
	<b>Dust Mask</b>	<b>Gloves</b>	<b>Rubber boots</b>	<b>Eye protection</b>
Is personal protective equipment (PPE) being used?	X	X		

NA = Not Applicable

1. Kern County Ordinance NO. G-6931
2. San Joaquin Valley Air Pollution Control District Rule 4565
3. CWEA Manual of Good Practice- Agricultural Land Application of Biosolids
4. EPA Part 503

### GENERAL COMMENTS

\* Upon arrival at the farm, all 16 loads of biosolids which had previously arrived were landplanned and incorporated at 10:00 AM, in compliance with SJVAPCD Rule 4565.

\* All unpaved roads throughout the farm are a mess due to last weeks storms, was not able to observe any farming operations.

**Inspection completed by:** Maria Depaz

## **APPENDIX G**

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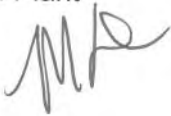
### **Assessment of Biosolids Report**

**CITY OF LOS ANGELES**  
INTER-DEPARTMENTAL CORRESPONDENCE

Date: January 21, 2011

To: Steve Fan, Plant Manager  
Hyperion Treatment Plant

Roshanak Aflaki, Acting Plant Manager  
Terminal Island Water Reclamation Plant

From: Masahiro Dojiri, Division Manager   
Environmental Monitoring Division

Subject: **ASSESSMENT OF BIOSOLIDS FOR DECEMBER 2010**

This report contains data from the analysis of composite biosolids and digested sludge samples collected in December 2010 at the Hyperion Treatment Plant and Terminal Island Water Reclamation Plant, respectively. The samples were tested in accordance with EPA's Part 503 Sewage Sludge Regulations, Tables 1 and 3, to furnish a beneficial use assessment. Analyses were also performed to determine if pathogen and vector control requirements of Part 503 were met.

**Hyperion Treatment Plant**

The metals and nutrient analysis data are presented in Tables 1 and 2 of this report. All metals detected in the composite sample were below their respective ceiling and pollutant concentration limits listed in EPA 40 CFR 503.13, Tables 1 and 3. For December, fecal coliform and *Salmonella* results were below the EPA 40 CFR Part 503 limit for Class A biosolids (Table 6). The helminth ova and enteric virus results were below the limit for Class A biosolids. The November enteric virus result is reported herein and was below the limit for Class A biosolids. Polychlorinated biphenyls were not detected. Dioxin data was not available at time of reporting (Table 5).

**Terminal Island Water Reclamation Plant**

No TIWRP biosolids analyses were required in December per the sampling schedule.

Please note that some previously reported results have been corrected. The digested sludge pH values reported in September, October, and November have been changed to AE, indicating analyst error. The wrong type of sample was analyzed in each case. The percent solids reported in September has also been corrected leading to a recalculation of all results related to this particular sample. Results from two different types of samples were being averaged contrary to the regular practice. Also, the percent solids reported for July was deleted, because a sample from an incorrect sample location was reported; hence all July results have been changed to AE.

All of the aforementioned problems arose from changes in personnel and further complicated by switching to injecting digested sludge into TIRE. Some important sampling information was not communicated to the new personnel and this led to the wrong type of sample being collected or no sample being collected at all. The new personnel have been trained further so as to avoid these mistakes in the future.

Graphs of the concentrations of selected metals in HTP and TIWRP biosolids over the past 24 months are shown in Figures 1 through 10.

If you have any questions about this report, please contact Jeffrey Beller of my staff at (310) 648-5262.

MAD: KMY

Attachment: Appendix 1- Arizona ELAP-Certified Monthly Biosolids Monitoring Report with Class A and B Microbiological Requirements

c: Ron Palacios (HTP)  
File

ec: Varouj Abkian (EXEC)  
Traci Minamide (EXEC)  
Diane Gilbert (RAD)  
Ernesto Libunao (HTP)  
Emmanuel Alloh (HTP)  
Miguel Medina (HTP)  
Mark Starr (HTP)

Rosalia Rojo (SRPCD)  
Timeyin Dafeta (IWMD)  
Derrick Lee (HTP)  
Arturo Perez (HTP)  
Loudmilla Vertanessian (IWMD)  
Lance Thibodeaux (TIWRP)  
Adonis Ogbeni (TIWRP)

Doug Walters  
Dave Gumaer (TIWRP)  
EMD Lab Managers

**Table 1. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS AT HYPERION TREATMENT PLANT**

Sampling Date	pH	%TS	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
	mg/kg dry weight											
Dec-10	7.9	29.6	3.95	13.2	90.2	882	22.0	34.5	1.24	34.5	ND	1,330
Nov-10	8.3	28.6	4.16	12.9	114	1,080	26.4	36.0	1.39	53.1	37.4	1,490
Oct-10	8.2	28.9	11.7	10.0	111	1,060	28.7	36.7	1.67	41.5	8.93	1,460
Sep-10	7.8	29.0	6.93	9.93	122	1,060	32.4	37.2	1.41	35.2	ND	1,360
Aug-10	8.0	29.0	7.38	12.3	114	1,050	30.3	39.3	1.46	44.1	18.3	1,280
Jul-10	8.2	29.6	3.24	14.5	94.9	1,000	25.4	31.9	1.25	39.5	2.43	1,250
Jun-10	8.0	29.5	2.85	12.2	78.6	922	21.4	30.2	1.56	35.6	2.95	1,190
May-10	8.3	27.6	3.95	10.9	76.1	902	19.9	31.5	1.59	37.7	11.2	1,140
Apr-10	7.9	29.9	4.55	13.6	81.9	870	19.5	33.8	1.18	39.8	3.04	1,180
Mar-10	8.0	30.0	5.77	11.1	73.0	833	18.5	32.3	1.25	35.3	8.83	1,260
Feb-10	8.4	30.0	4.07	10.6	90.7	857	16.4	42.0	1.73	11.9	6.00	1,160
Jan-10	8.4	26.3	3.61	15.2	80.2	1,000	17.9	38.8	1.48	38.0	7.11	1,290
<b>Average</b>	8.1	29.0	5.18	12.2	94.0	960	23.2	35.4	1.43	37.2	8.85	1,280
<b>Maximum</b>	8.4	30.0	11.7	15.2	122	1,080	32.4	42.0	1.73	53.1	37.4	1,490
<b>Minimum</b>	7.8	26.3	2.85	9.93	73.0	833	16.4	30.2	1.18	11.9	ND	1,140
<b>Ceiling Conc.*</b>			75	85	***	4300	75	840	57	420	100	7500
<b>Pollutant Conc.**</b>			41	39	***	1500	***	300	17	420	100	2800

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WISARD - Biosolids Management - HTP TIWRP Biosolids

\* Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation.

\*\* Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation

\*\*\* Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995

**Table 2. HTP BIOSOLIDS - NUTRIENTS AND MISC. METALS - EVALUATION FOR LOADING PURPOSES**

Sampling Date	%TS	Aluminum (Al)	Calcium (Ca)	Iron (Fe)	Potassium (K)	Magnesium (Mg)	Nitrate-N (NO3-N)	Phosphorus (Tot-P)	Sodium (Na)	Ammonia-N (NH3-N)	Organic-N (Org-N)
	mg/kg dry weight										
Dec-10	29.6	7,700	34,800	45,300	1,290	6,450	13.5	30,200	1,380	5,070	43,200
Nov-10	28.6	8,500	39,200	40,600	1,270	6,990	21.0	30,600	1,380	9,860	39,900
Oct-10	28.9	8,000	40,100	49,500	1,470	6,960	10.4	29,700	1,830	8,270	32,800
Sep-10	29.0	8,100	40,300	43,800	1,500	7,000	6.90	30,000	1,360	6,930	32,700
Aug-10	29.0	7,400	40,300	42,100	1,460	7,170	6.90	28,700	1,390	8,280	27,300
Jul-10	29.6	8,400	39,500	33,400	1,320	7,330	10.1	29,600	1,340	7,500	34,800
Jun-10	29.5	7,800	39,000	31,900	1,190	7,120	6.78	30,400	1,440	8,340	33,100
May-10	27.6	7,800	39,500	30,400	1,550	7,360	7.25	30,200	1,470	9,530	45,700
Apr-10	29.9	8,200	46,200	32,500	1,240	7,260	6.69	30,900	1,210	9,700	39,500
Mar-10	30.0	8,000	42,300	31,700	1,700	6,830	13.3	33,000	1,320	8,770	36,000
Feb-10	30.0	8,900	44,300	32,600	1,580	7,400	10.0	31,100	1,560	7,900	25,100
Jan-10	26.3	9,400	52,100	37,600	1,610	8,330	3.80	39,500	1,770	8,900	40,300
<b>Average</b>	29.0	8,180	41,500	37,600	1,430	7,180	9.72	31,200	1,450	8,250	35,900
<b>Maximum</b>	30.0	9,400	52,100	49,500	1,700	8,330	21.0	39,500	1,830	9,860	45,700
<b>Minimum</b>	26.3	7,400	34,800	30,400	1,190	6,450	3.80	28,700	1,210	5,070	25,100

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WISARD - Biosolids Management - HTP TIWRP Biosolids

**Table 3. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS AT TERMINAL ISLAND WATER RECLAMATION PLANT**

Sampling Date	pH	%TS	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Mercury (Hg)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)
	mg/kg dry weight											
Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-10	AE	1.7	18.2	4.85	30.3	254	29.7	17.0	0.867	36.4	35.2	679
Oct-10	AE	1.5	13.3	5.33	20.0	177	26.7	16.7	0.840	20.0	44.0	594
Sep-10	AE	0.98	20.4	2.04	20.4	388	30.6	18.4	0.861	30.6	49.0	623
Aug-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-10	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE
Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-10	7.8	27.2	5.66	6.47	31.5	291	22.8	35.3	1.75	40.4	47.4	857
Apr-10	7.8	26.2	6.68	6.49	39.7	297	26.6	38.5	1.22	47.3	37.1	954
Mar-10	7.9	25.4	9.17	6.50	44.5	290	28.5	38.6	1.28	38.1	60.6	1,660
Feb-10	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jan-10	7.8	23.8	5.42	11.5	38.3	381	42.9	26.1	1.24	38.9	72.3	1,000
<b>Average</b>	7.8	15.2	11.3	6.16	32.1	297	29.7	27.2	1.15	36.0	49.4	909
<b>Maximum</b>	7.9	27.2	20.4	11.5	44.5	388	42.9	38.6	1.75	47.3	72.3	1,660
<b>Minimum</b>	7.8	1.0	5.42	2.04	20.0	177	22.8	16.7	0.840	20.0	35.2	594
<b>Ceiling Conc.*</b>			75	85	***	4300	75	840	57	420	100	7500
<b>Pollutant Conc.**</b>			41	39	***	1500	****	300	17	420	100	2800

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**WISARD - Biosolids Management - HTP TIWRP Biosolids**

\* Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation.  
 \*\* Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation  
 \*\*\* Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995

AE - Analyst Error  
 NS - No Sampling Required

**Table 4. TIWRP BIOSOLIDS - NUTRIENTS AND MISC. METALS - EVALUATION FOR LOADING PURPOSES**

Sampling Date	%TS	Aluminum (Al)	Calcium (Ca)	Iron (Fe)	Potassium (K)	Magnesium (Mg)	Nitrate-N (NO3-N)	Phosphorus (Tot-P)	Sodium (Na)	Ammonia-N (NH3-N)	Organic-N (Org-N)
	mg/kg dry weight										
<b>Dec-10</b>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<b>Nov-10</b>	1.7	5,900	24,200	44,400	12,000	12,600	49.7	28,800	41,200	58,400	31,900
<b>Oct-10</b>	1.5	5,300	24,900	50,200	11,400	10,700	54.7	28,700	15,300	49,800	32,000
<b>Sep-10</b>	0.98	4,900	24,900	35,300	14,500	12,000	78.6	21,000	66,300	67,000	33,500
<b>Aug-10</b>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<b>Jul-10</b>	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE	AE
<b>Jun-10</b>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<b>May-10</b>	27.2	7,800	33,200	61,800	2,070	9,080	7.35	35,100	3,860	6,030	36,800
<b>Apr-10</b>	26.2	8,800	35,000	55,700	1,820	9,310	11.5	34,600	3,640	6,410	36,300
<b>Mar-10</b>	25.4	8,900	30,500	55,100	2,310	11,100	11.8	39,800	4,290	6,460	40,900
<b>Feb-10</b>	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<b>Jan-10</b>	23.8	8,900	38,600	60,100	2,390	12,500	4.20	40,600	5,380	7,610	43,700
<b>Average</b>	15.2	7,200	30,200	51,800	6,640	11,100	31.1	32,700	20,000	28,800	36,400
<b>Maximum</b>	27.2	8,900	38,600	61,800	14,500	12,600	78.6	40,600	66,300	67,000	43,700
<b>Minimum</b>	1.0	4,900	24,200	35,300	1,820	9,080	4.20	21,000	3,640	6,030	31,900

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WISARD - Biosolids Management - HTP TIWRP Biosolids

AE - Analyst Error

NS - No Sampling Required

Table 5. CONCENTRATIONS OF DIOXIN AND PCBs IN HTP AND TIWRP BIOSOLIDS

Sampling Date	Dioxin 2,3,7,8-TCDD (ppb ng/g wet wt.)	PCBs**							Total PCBs*** ppm (mg/kg wet wt.)
		AR 1016	AR 1221	AR 1232	AR 1242	AR 1248	AR 1254	AR 1260	

HTP BIOSOLIDS									
Dec-10	NA	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Nov-10	<0.8400 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Oct-10	<0.0010 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Sep-10	<0.3100 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Aug-10	<2.5000 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Jul-10	<0.0010 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Jun-10	<2.5000 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
May-10	<2.4000 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Apr-10	<0.0009 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Mar-10	<0.1200 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Feb-10	<0.0520 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Jan-10	0.01000 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND

TIWRP BIOSOLIDS / DIGESTED SLUDGE @, \$									
Dec-10	NS	NS	NS	NS	NS	NS	NS	NS	NS
Nov-10	<0.0890	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Oct-10	<0.0005 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Sep-10	<0.0240	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Aug-10	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jul-10	0.000001 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Jun-10	NS	NS	NS	NS	NS	NS	NS	NS	NS
May-10	<2.4000 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Apr-10	0.000531 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Mar-10	<0.0890 *	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND
Feb-10	NS	NS	NS	NS	NS	NS	NS	NS	NS
Jan-10	0.000498 ^^	<0.007	<0.040	<0.012	<0.003	<0.026	<0.026	<0.011	ND

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WISARD - Biosolids Management - HTP TIWRP Biosolids

- \* Low Resolution analysis.
- ^^ High resolution 2,3,7,8-TCDD TEQ analysis.
- \*\* Polychlorinated biphenyls
- \*\*\* Sum of AR 1016, AR 1221, AR 1232, AR 1242, AR 1248, AR 1254, AR 1260
- NA - Data not yet available.
- ND Not Detected
- NS No Sampling Required
- @ Sampling frequency for TIWRP is 6 months/year. The sampling months are: Jan, Mar, May, Jul, Sep and Nov.
- # TIWRP changed from analyzing Biosolids to analyzing Digested Sludge in July 2010

Note: California Title 22 lists 10 ppb for Dioxin and 50 ppm for PCBs as the Total Threshold Limit Concentration (TTL) for hazardous waste

Table 6. HTP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA

Sampling Date	%TS	FECAL COLIFORM		SALMONELLA, sp.		HELMINTH OVA <sup>^</sup>			ENTERIC VIRUS <sup>*</sup>		
		MPN/gram TS (dry wt)		MPN/4 grams TS (dry wt)		Viable Helminth Ova/4 grams TS (dry wt)			PFU/4 grams TS (dry wt)		
		Silo#/Farm		Silo#/Farm		Raw Sludge	Silo#/Farm		Raw Sludge	Silo#/Farm	
Dec-10	26.8	Silo #2	85.8	Silo #2	<1.6	9.0	Silo #2	<0.4	<1	Silo #2	<1
Nov-10	27.9	Silo #2	<7.2	Silo #2	<1.5	8.2	Silo #2	<0.4	12	Silo #2	<1
Oct-10	26.6	Farm	<7.5	Farm	<1.6	3.6	Farm	<0.5	10	Farm	<1
Sep-10	28.8	Silo #2	59	Silo #2	<1.5	3.5	Silo #2	<0.5	18	Silo #2	<1
Aug-10	26.8	Silo #2	<7.5	Silo #2	<1.6	8.6	Silo #2	<0.4	34	Silo #2	<1
Jul-10	28.0	Farm	39.3	Farm	<1.6	1.0	Farm	<0.5	25	Farm	<1
Jun-10	27.2	Silo #5	<7.4	Silo #5	<1.6	6.9	Silo #5	<0.4	7	Silo #5	<1
May-10	26.4	Silo #2	<7.6	Silo #2	<1.6	4.4	Silo #2	<0.5	14	Silo #2	<1
Apr-10	28.1	Farm (Silo #1)	<7.1	Farm (Silo #1)	<1.6	1.1	Farm (Silo #1)	<0.5	19	Farm (Silo #1)	<1
Mar-10	27.4	Silo #2	292	Silo #2	<1.6	1.7	Silo #2	<0.5	5	Silo #2	<1
Feb-10	28.2	Silo #1	<7.1	Silo #1	<1.5	3.5	Silo #1	<0.4	5	Silo #1	<1
Jan-10	27.2	Farm	<7.4	Farm	<1.6	3.0	Farm	<0.5	4	Farm	<1
Requirement**			<1000		<3			<1			<1

<sup>^</sup> - Analysis Performed by EMD beginning November 2009

<sup>\*</sup> - Analysis Performed by BioVir Laboratories, 685 Stone Road Unit 6, Benicia, CA 94510

<sup>\*\*</sup> - EPA 40 CFR Part 503 Class A requirements

**Table 7. TIWRP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA**

Sampling Date	TOTAL SOLIDS		FECAL COLIFORM		SALMONELLA, sp.	
	%		MPN/gram TS (dry wt)		MPN/4 grams TS (dry wt)	
	Silo#/Farm		Silo#/Farm		Silo#/Farm	
	6 Times/Year@		6 Times/Year@		Quarterly	
Dec-10	NS	NS	NS	NS	NS	NS
Nov-10	TIWRP Digester Sludge	1.8	TIWRP Digester Sludge	22.2	TIWRP Digester Sludge	<1.4
Oct-10	NS	NS	NS	NS	NS	NS
Sep-10	TIWRP Digester Sludge	1.72	TIWRP Digester Sludge	<11.6	TIWRP Digester Sludge	<1.3
Aug-10	NS	NS	NS	NS	NS	NS
Jul-10	TIWRP Digester Withdraw	1.72	TIWRP Digester Withdraw	<11.6	TIWRP Digester Withdraw	<1.3
Jun-10	NS	NS	NS	NS	NS	NS
May-10	Wetcake	21.7	Wetcake	783	Wetcake	<2.0
Apr-10	NS	NS	NS	NS	NS	NS
Mar-10	Wetcake	23.4	Wetcake	128	Wetcake	<1.9
Feb-10	NS	NS	NS	NS	NS	NS
Jan-10	Wetcake	21.1	Wetcake	10427	Wetcake	<2.0
Requirement*				<1000		<3

\* - EPA 40 CFR Part 503 Class A requirements  
 NS - No Sampling Required  
 @ - Sampling frequency for TIWRP is 6 months/year. The sampling months are: Jan, Mar, May, Jul, Sep and Nov.

### Hyperion Treatment Plant Arsenic (As) and Mercury (Hg) in Biosolids

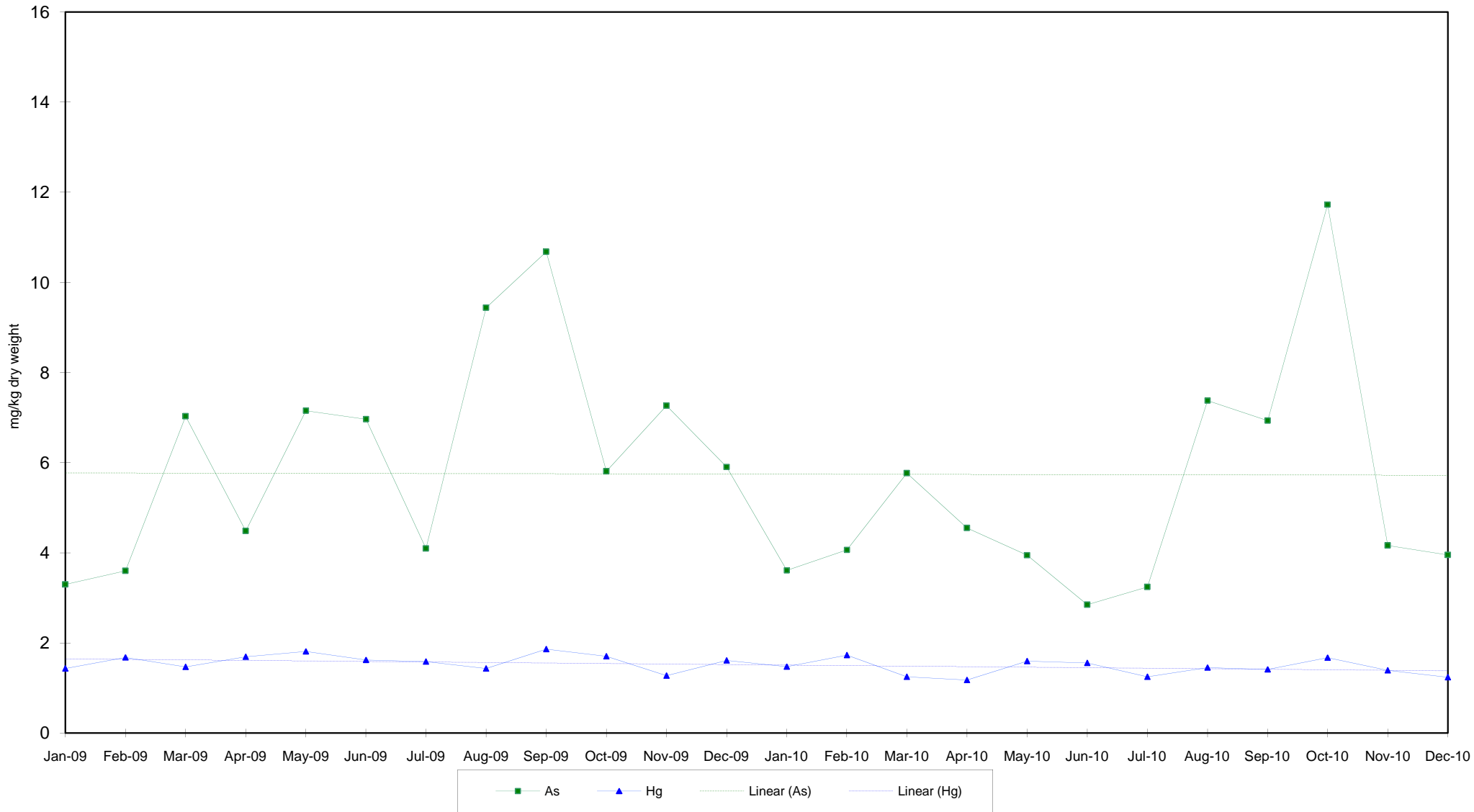


Figure 1. Concentrations of arsenic and mercury in HTP biosolids from January 2009 to December 2010

### Hyperion Treatment Plant Cadmium (Cd), Lead (Pb), and Nickel (Ni) in Biosolids

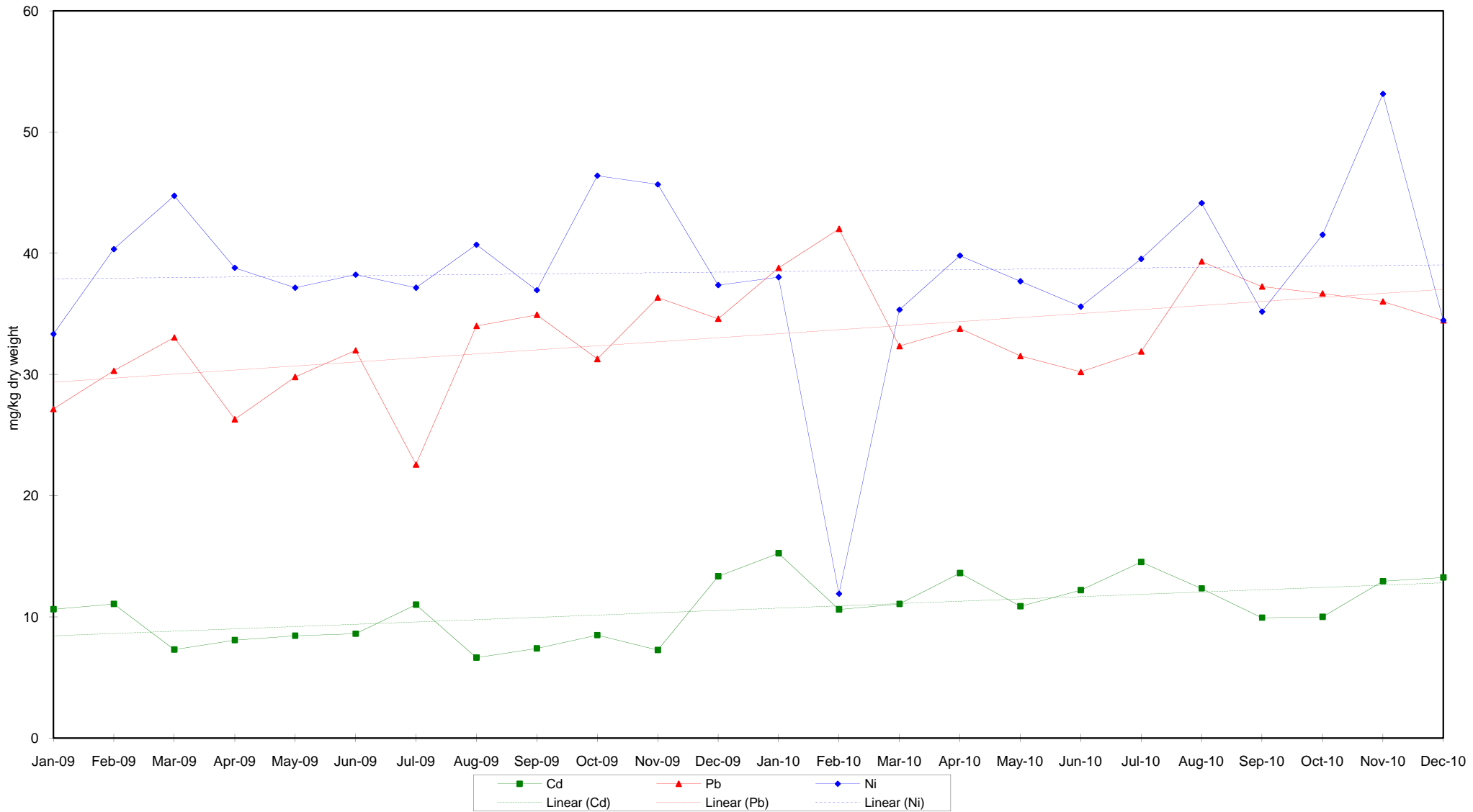


Figure 2. Concentrations of cadmium, lead, and nickel in HTP biosolids from January 2009 to December 2010

### Hyperion Treatment Plant Zinc (Zn) and Copper (Cu) in Biosolids

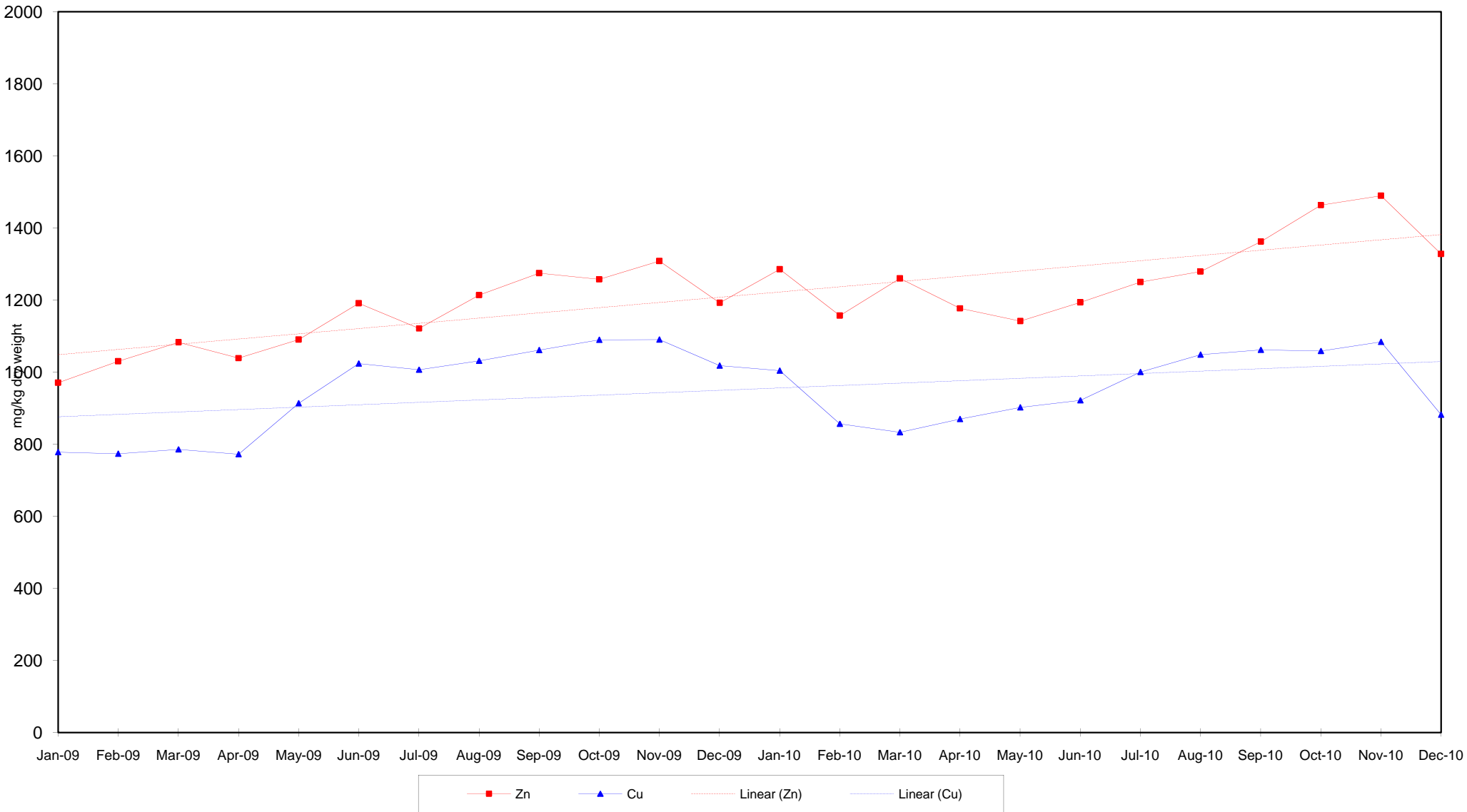


Figure 3. Concentrations of zinc and copper in HTP biosolids from January 2009 to December 2010

### Hyperion Treatment Plant Molybdenum (Mo) in Biosolids

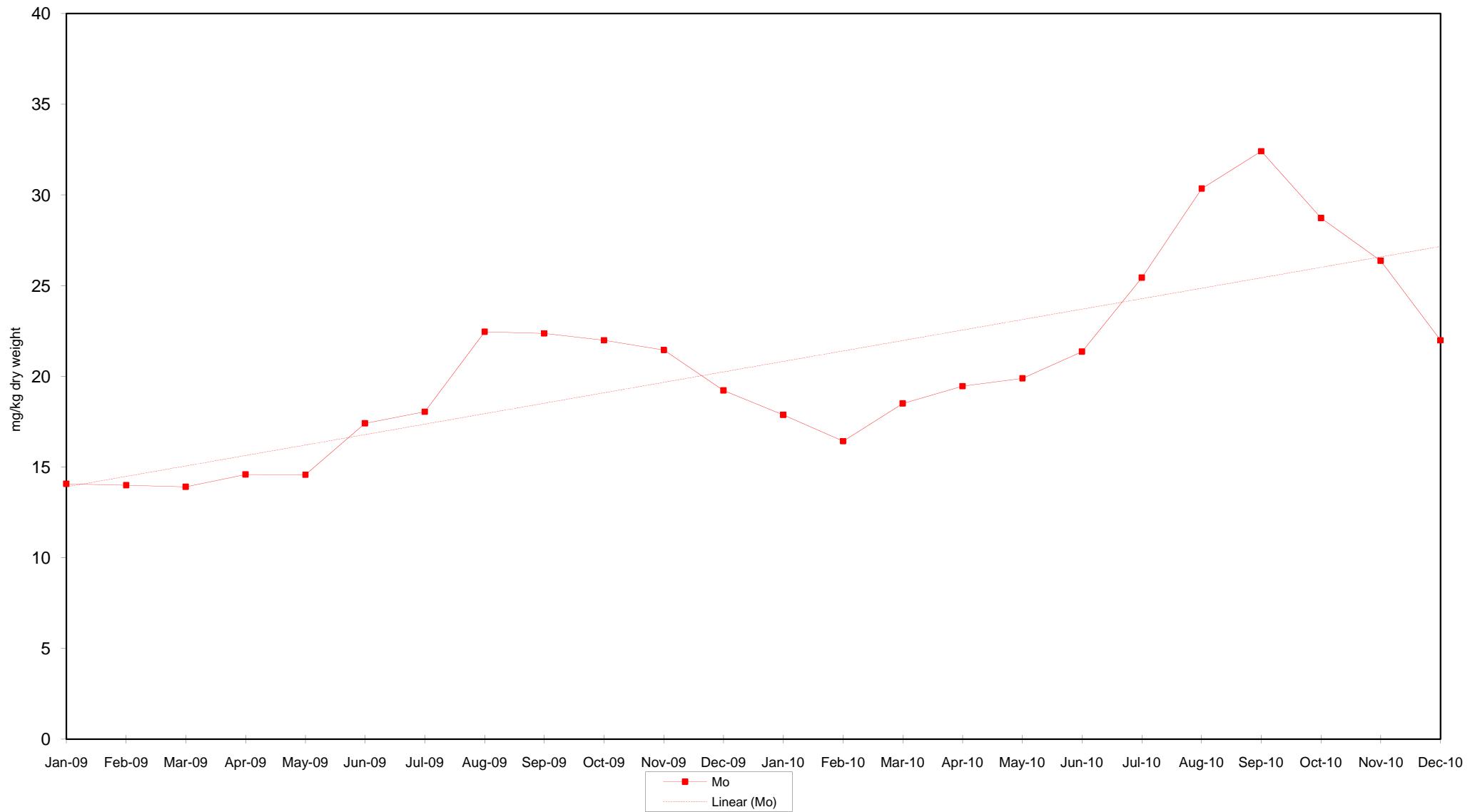


Figure 4. Concentrations of molybdenum in HTP biosolids from January 2009 to December 2010

### Hyperion Treatment Plant Chromium (Cr) and Selenium (Se) in Biosolids

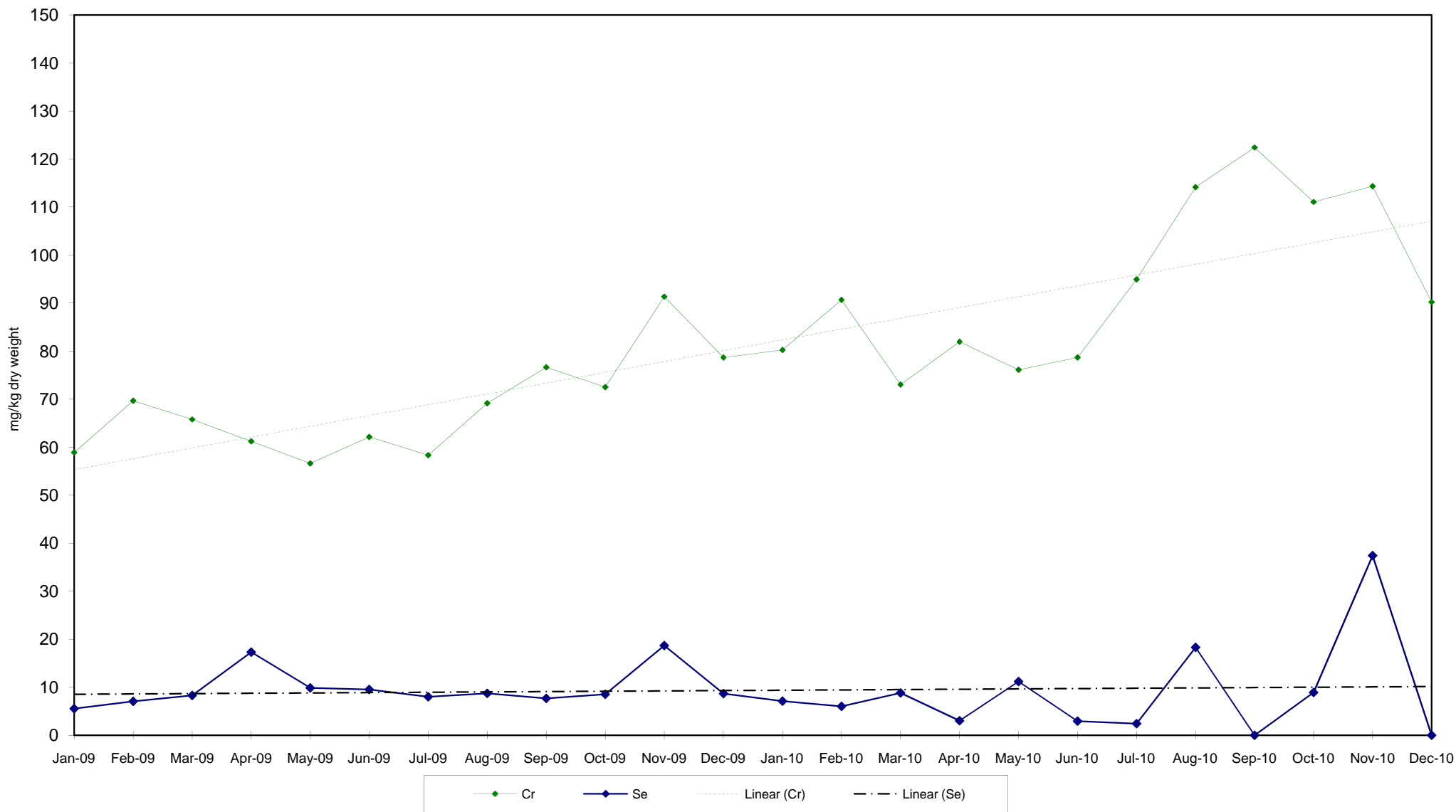


Figure 5. Concentrations of chromium and selenium in HTP biosolids from January 2009 to December 2010

### Terminal Island Water Reclamation Plant Zinc (Zn) and Copper (Cu) in Biosolids

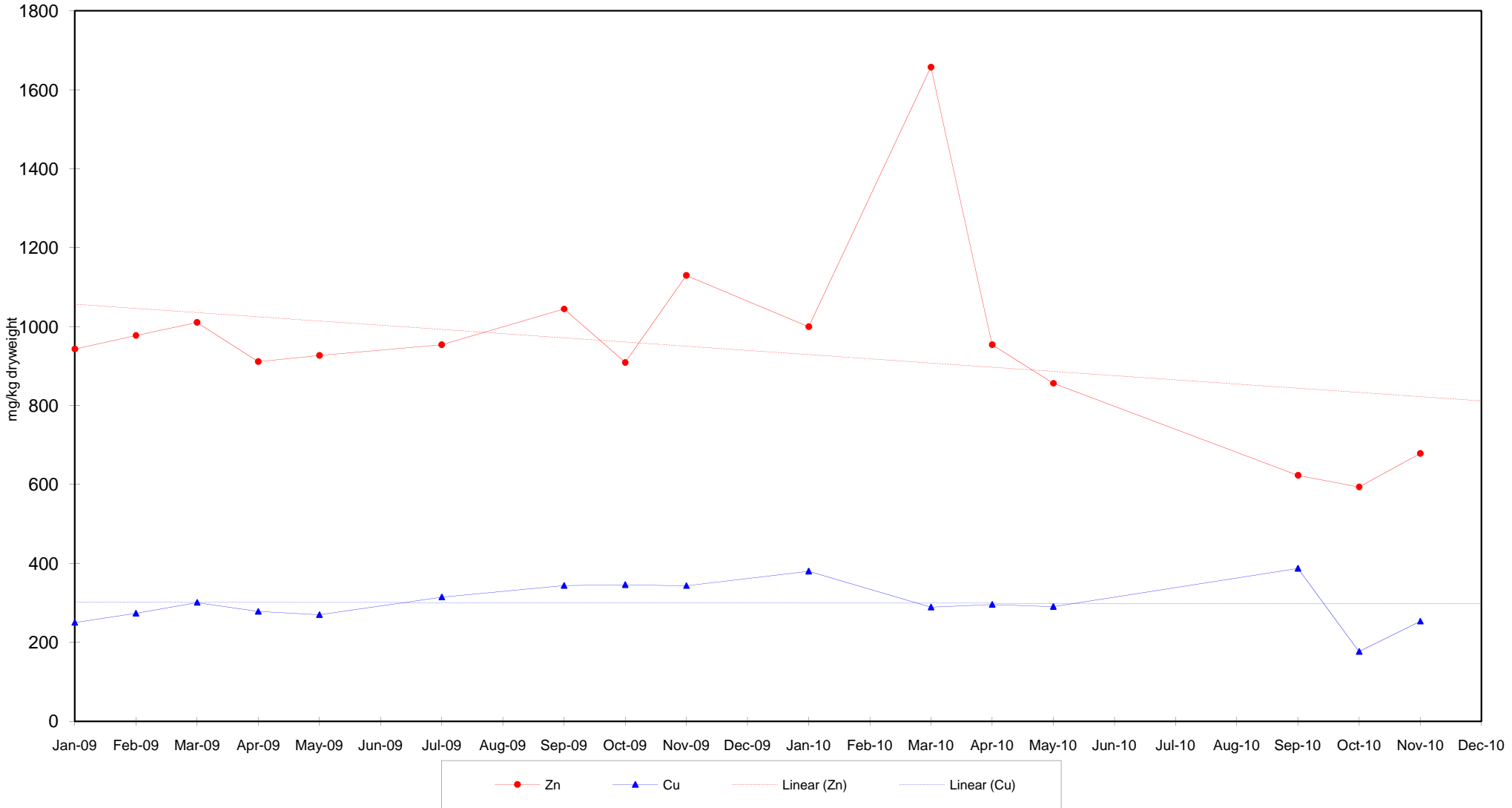


Figure 6. Concentrations of zinc and copper in TIWRP biosolids from January 2009 to December 2010

### Terminal Island Water Reclamation Plant Cadmium (Cd), Lead (Pb), and Nickel (Ni) in Biosolids

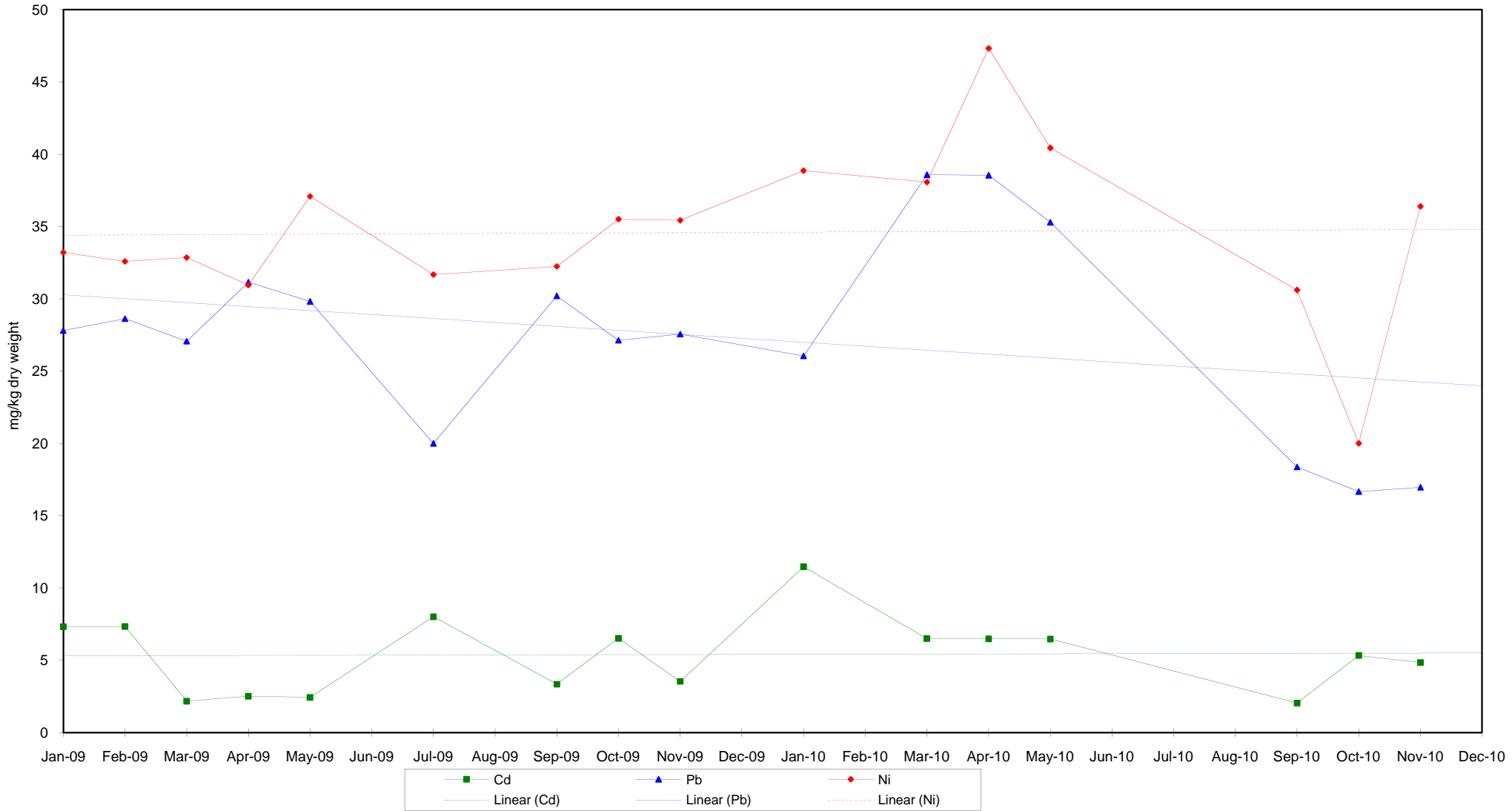


Figure 7. Concentrations of cadmium, lead, and nickel in TIWRP biosolids from January 2009 to December 2010

### Terminal Island Water Reclamation Plant Arsenic (As) and Mercury (Hg) in Biosolids

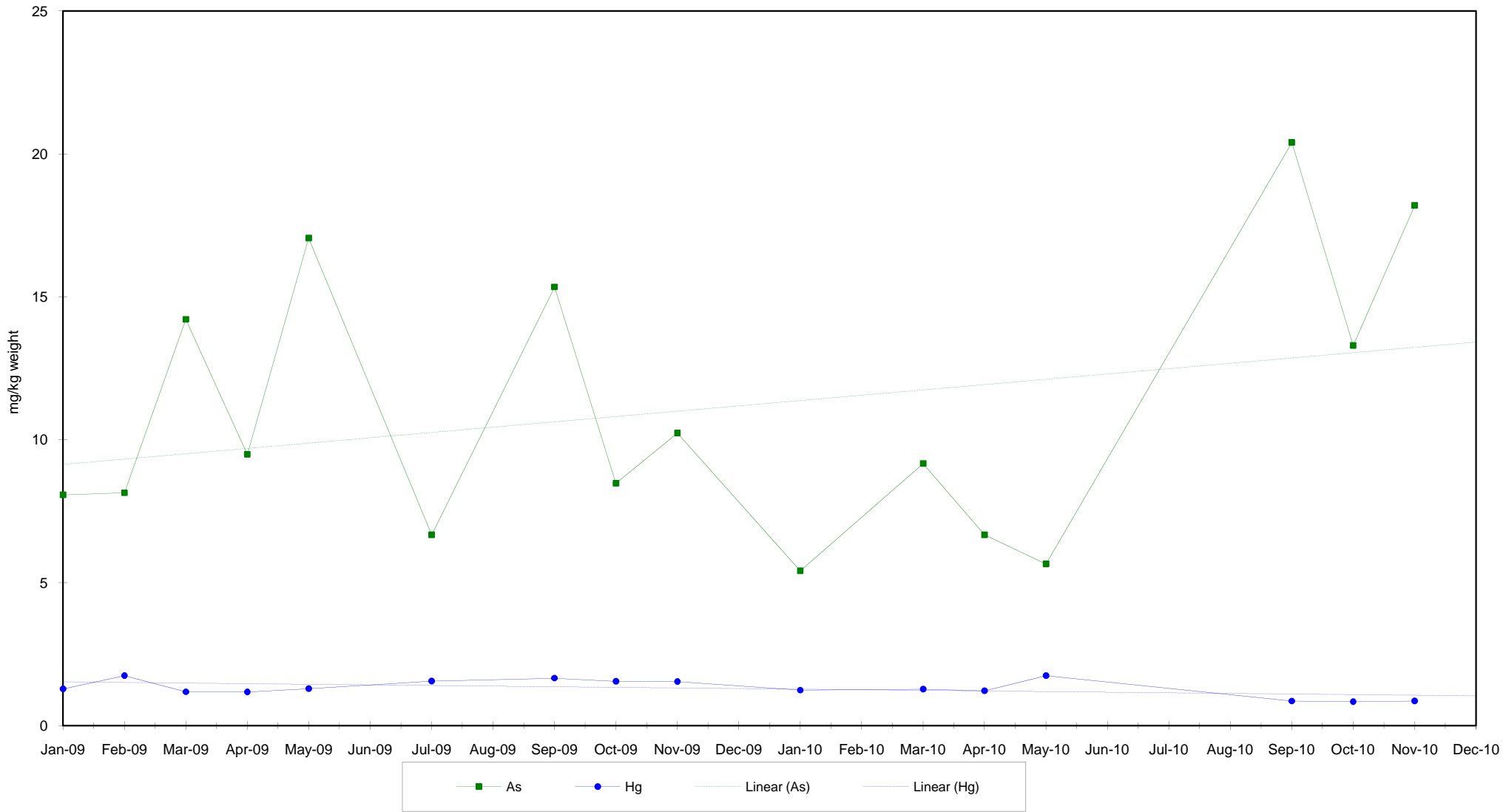


Figure 8. Concentrations of arsenic and mercury in TIWRP biosolids from January 2009 to December 2010

### Terminal Island Water Reclamation Plant Molybdenum (Mo) in Biosolids

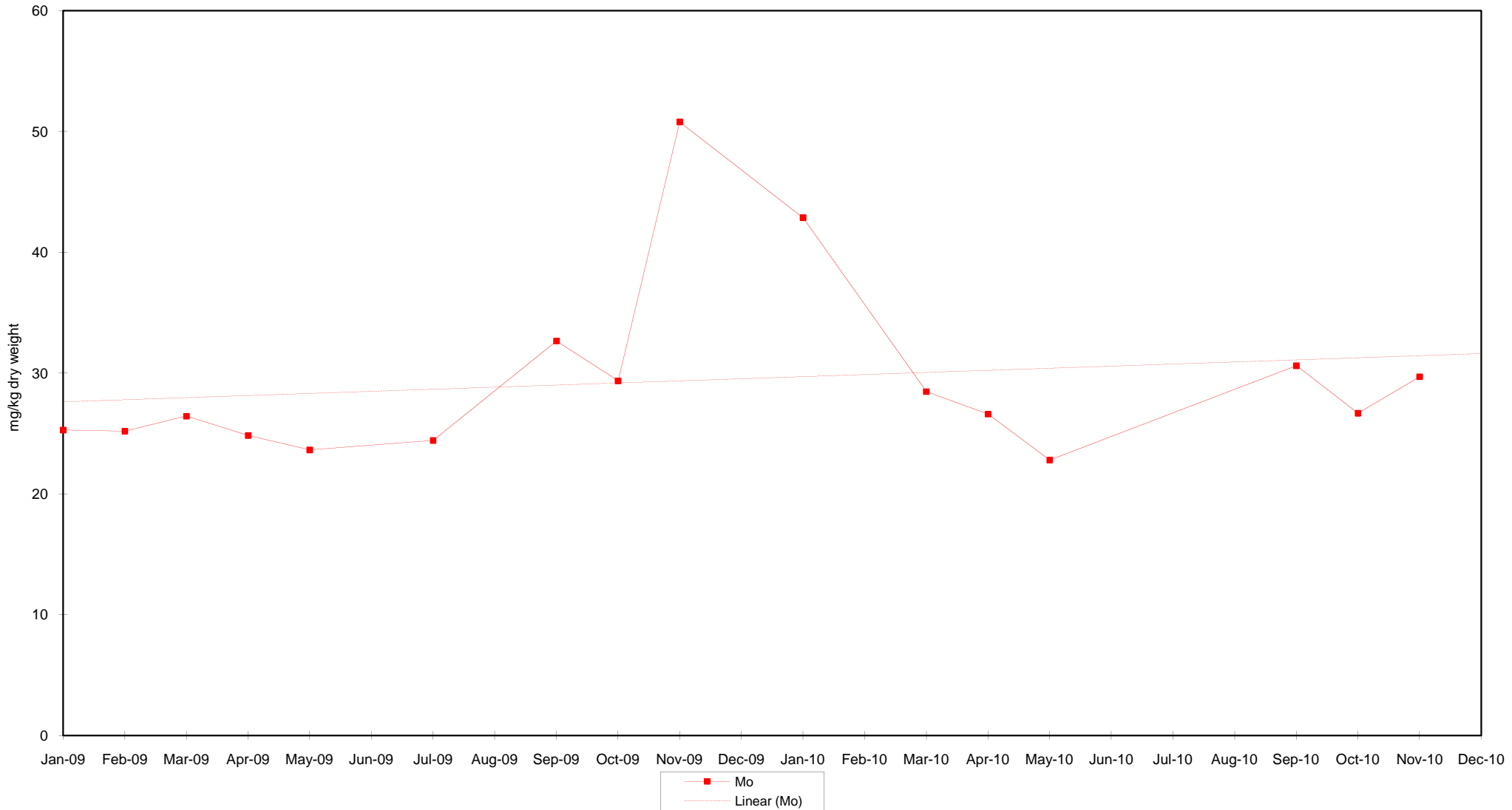


Figure 9. Concentrations of molybdenum in TIWRP Biosolids from January 2009 to December 2010

**Terminal Island Water Reclamation Plant  
Chromium (Cr) and Selenium (Se) in Biosolids**

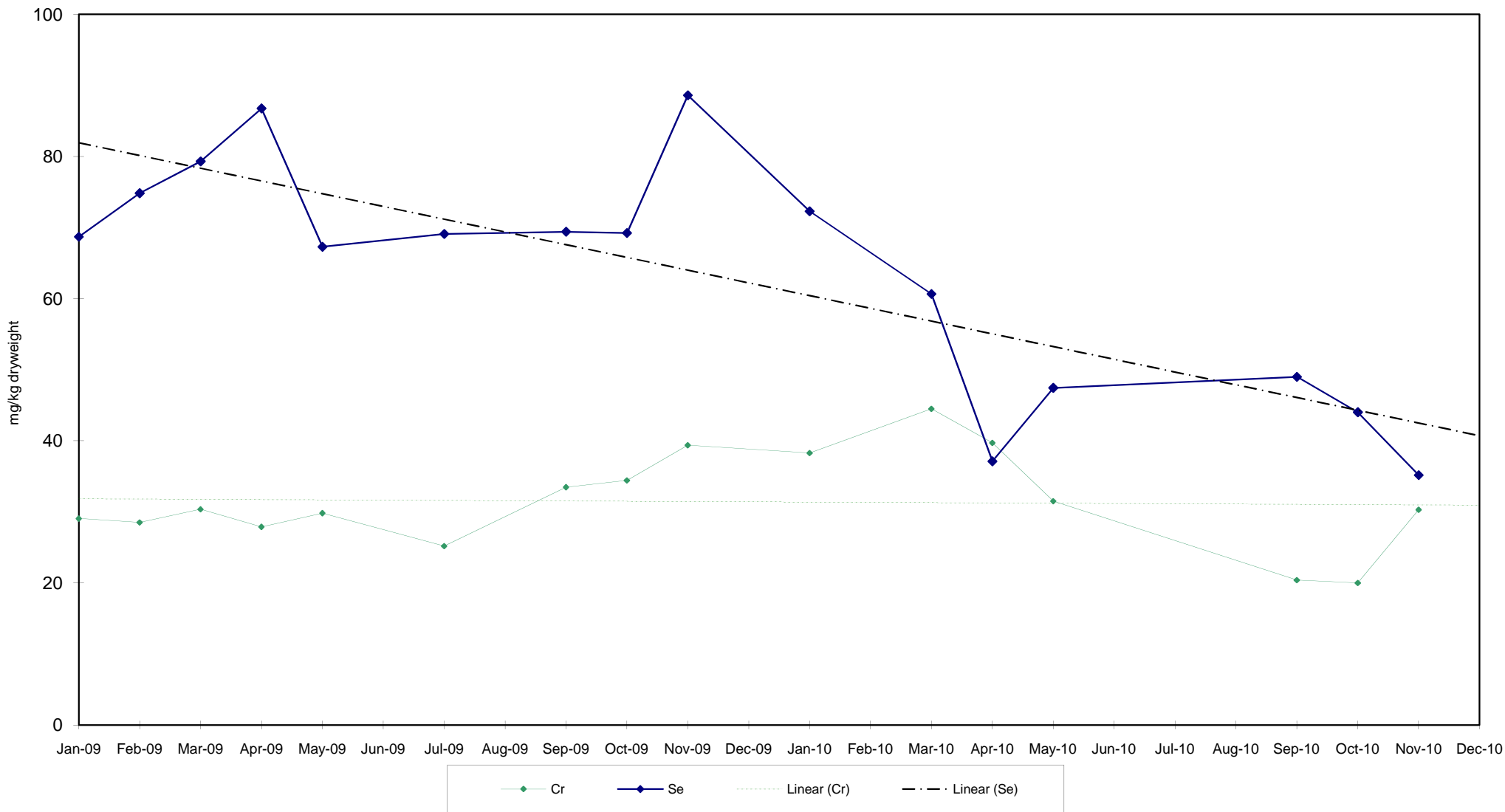


Figure 10. Concentrations of chromium and selenium in TIWRP biosolids from January 2009 to December 2010

**Appendix 1**

**Monthly Biosolids Monitoring Report**

**December 2010**

**HYPERION TREATMENT PLANT**  
**MONTHLY BIOSOLIDS MONITORING REPORT FOR ARIZONA STATE**  
**December 2010**

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690  
 Dept. of Public Works/ Bureau of Sanitation  
 City of Los Angeles, CA

**Table 1. TOTAL SOLIDS AND TOTAL VOLATILE SOLIDS**

Sample date: 12/01/2010

Method No. SM 2540 G

Sample*	Total Solids %	Total Volatile Solids %
Raw Sludge	2.28	80.9
TWAS	8.03	84.5
Digested Sludge	1.62	70.6

**Table 2. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS\* : METALS DATA**

Sample date: 12/01/2010

Parameters	Total Solids	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)	Mercury (Hg)
Method No.	SM 2540 G	EPA 3050/ EPA 6010B									EPA 7471A
Unit	%	mg/kg dry weight									
Results	29.6	3.95	13.2	90.2	882	22.0	34.5	34.5	ND	1,330	1.24
Ceiling Conc.**	----	75	85	****	4300	75	840	420	100	7500	57
Pollutant Conc.***	----	41	39	****	1500	****	300	420	100	2800	17

**TABLE 3. BIOSOLIDS^ - CLASS B COMPLIANCE MICROBIOLOGICAL MONITORING DATA**

Sample Date				7-Dec-10	8-Dec-10	9-Dec-10	10-Dec-10	13-Dec-10	14-Dec-10	16-Dec-10
PARAMETERS	Method #	Unit	Req #							
Total Solids	SM 2540G	%	-----	1.26	1.53	2.04	1.54	1.72	1.61	1.68
Fecal Coliform	SM 9221E	MPN/gram TS(dry wt.)	<2,000,000	8.7E+03	<1.3E+02	<9.8E+01	7.1E+04	2.9E+05	<1.2E+02	8.3E+03

**Table 4. HTP BIOSOLIDS - CLASS A COMPLIANCE MONITORING DATA**

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690

Helminth Ova and Enteric Virus analyzed by Aerotech, an Arizona ELAP Lic No. AZ0611

Sample date	Parameters	FECAL COLIFORM		SALMONELLA, sp.		HELMINTH OVA*		ENTERIC VIRUS*			
		MPN/gram TS (dry wt)		MPN/4 grams TS (dry wt)		Viable Helminth Ova/4 grams TS (dry wt)		MPN IU/4 grams TS (dry wt)**			
		Silo#	Farm	Silo#	Farm	Sludge	Silo#	Farm	Sludge	Silo#	Farm
12/7/2010	26.8	Silo#2	85.8	Silo#2	<1.6	*****	Silo#2	*****	*****	Silo#2	*****

\* - 24- Hour composite sample  
 \*\* - Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation  
 \*\*\* - Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation  
 \*\*\*\* - Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995  
 ^ - Grab sample of digested sludge  
 ^^ - Detection limit based on the % solid in the sample  
 # - EPA 40 CFR Part 503 Class B requirement  
 SM - Standard Methods, 20th Ed. 1998

**TERMINAL ISLAND WATER RECLAMATION PLANT  
MONTHLY BIOSOLIDS MONITORING REPORT FOR ARIZONA STATE**

**December 2010**

Analyzed by Environmental Monitoring Division : Arizona ELAP Lic. No. AZ0690  
Dept. of Public Works/ Bureau of Sanitation  
City of Los Angeles, CA

PAGE 2 OF 2

**Table 1. TOTAL SOLIDS AND VOLATILE SOLIDS**

Sample date:

Method No. SM 2540 G

Sample*	Total Solids %	Total Volatile Solids %
Raw Sludge	NS	NS
TWAS	NS	NS
Digested Sludge	NS	NS

**Table 2. BENEFICIAL USE ASSESSMENT OF BIOSOLIDS\*: METALS DATA**

Sample date:

Parameters	Total Solids	Arsenic (As)	Cadmium (Cd)	Chromium (Cr)	Copper (Cu)	Molybdenum (Mo)	Lead (Pb)	Nickel (Ni)	Selenium (Se)	Zinc (Zn)	Mercury (Hg)
Method No.	SM 2540 G	EPA 3050/ EPA 6010B									EPA 7471A
Unit	%	mg/kg dry weight									
Results	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Ceiling Conc.**	----	75	85	****	4300	75	840	420	100	7500	57
Pollutant Conc.***	----	41	39	****	1500	****	300	420	100	2800	17

**TABLE 3. BIOSOLIDS^ - CLASS A COMPLIANCE MICROBIOLOGICAL MONITORING DATA**

Sample Date:

Parameters	TOTAL SOLIDS	FECAL COLIFORM	SALMONELLA, sp.
Method No.	SM2540G	SM 9221E	SM 9260D
Unit	%	MPN/gram TS (dry wt)	MPN/4 grams TS (dry wt)
Frequency	6 Times/Year@	6 Times/Year@	Quarterly
Results	NS	NS	NS
Requirement#		<1000	<3

\* - 24-Hour composite sample  
 \*\* - Ceiling concentration in Table 1 of EPA Part 503 Sludge Regulation  
 \*\*\* - Pollutant concentration in Table 3 of EPA Part 503 Sludge Regulation  
 \*\*\*\* - Limit was deleted according to Federal Register Vol. 60, No. 206 of Oct. 25, 1995  
 @ - Sampling frequency for TIWRP is 6 months/year. The months are: Jan, Mar, May, Jul, Sep and Nov.  
 # - EPA 40 CFR Part 503 Class A requirements  
 NS - No Sampling Required  
 SM - Standard Methods, 20th Ed. 1998

# **EXHIBIT 2**

**ASSESSMENT OF AIR EMISSIONS OF TRANSPORTING BIOSOLIDS FOR  
BENEFICIAL REUSE TO ALTERNATIVE LOCATIONS IN RESPONSE TO  
KERN COUNTY LAND APPLICATION BAN**



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**City of Los Angeles, Bureau of Sanitation**

**September 2006**

## **Executive Summary**

The City of Los Angeles currently generates an average of approximately 700 wet tons per day (tpd) of Class A Exceptional Quality biosolids, including 650 tpd at Hyperion Treatment Plant (HTP) and 50 tpd at Terminal Island Treatment Plant (TITP). The biosolids are hauled to the City of Los Angeles' Green Acres Farm, which is located in an unincorporated area of Kern County, California, where they are beneficially used as a fertilizer and soil conditioner to grow a variety of animal feedstock.

On June 6, 2006, Kern County voters adopted an initiative ordinance as Measure E, which prohibits land application of biosolids in unincorporated areas of the county. Under the new Kern biosolids ban, permitted facilities such as the City's Green Acres Farm now have six months from the ban's effective date (July 22, 2006) to cease land application of biosolids.

In response to the new Kern biosolids ban, the City of Los Angeles, Bureau of Sanitation is evaluating potential alternatives to its longstanding biosolids program at Green Acres, where the City has been land applying biosolids since 1994. This report assesses five potential alternatives for beneficially reusing biosolids at other locations in Arizona and California, and compares the air emissions resulting from hauling the City's biosolids to those alternative locations, to the air emissions resulting from hauling biosolids to Green Acres in Kern County. In particular, this report assesses the emissions of air pollutants from diesel-powered transfer trucks, specifically, particulate matter (PM10), which may contribute to increased cancer risk, and oxides of nitrogen (NOx), which are known to cause lung damage. Both pollutants have been identified as toxic air contaminants and are regulated by the California Air Resources Board (CARB).

### **A. Existing Operations and Other Potential Beneficial Use Options for City of Los Angeles' Class A Exceptional Quality Biosolids:**

Sierra Transport, the company that currently hauls the City's biosolids to Green Acres Farm, operates 23 long-haul transfer trucks that all are fueled with CARB Low Sulfur No. 2 Diesel Fuel (CARB Diesel). Each truck has a maximum capacity of 26.4 wet tons/load. Based on 2006 data, on average, there are 24 loads/day and 2 loads/day of biosolids from HTP and TITP, respectively. The biosolids are taken to the Green Acres Farm in Kern County, California for land application.

Five other potential beneficial use options for the City of Los Angeles' Class A biosolids were involved in this study, including trucking the material to the San Joaquin Composting facility (also in Kern County) for composting and to out-of-state locations in Arizona for land application and/or composting.

### **B. Emissions Analysis:**

Included in the report is the overall emissions attributed to on-road driving (Travel Emissions), stop-and-go idling (On-Road Idling Emissions) during heavy traffic conditions, and idling during intermittent driving breaks (Off-Road Idling Emissions). The sum of all three provides the Total Emissions.

C. Data Calculation Source:

CARB emission factors for PM10 and NOx were obtained for the various model years of diesel heavy-duty vehicles in the Sierra Transport fleet, along with the idling emission factors for each vehicle.

Table A depicts the potential annual mass emissions of PM10 and NOx corresponding to existing practice, i.e., trucking biosolids to Green Acres Farm, as well as for the other five potential beneficial use scenarios evaluated in this study. The percentage of change as shown in Table A indicates that transporting the biosolids to the Green Acres Farm results in the lowest annual mass emissions of PM10 and NOx while the other options would produce higher emissions, up to a three-fold increase.

Table A: Summary of Potential Annual Mass Emissions of PM10 and NOx Corresponding to Hauling of the City of Los Angeles' Class A Exceptional Quality Biosolids to Various Locations for Beneficial Use.

Scenario	Description	Annual Mass Emission			
		PM10		NOx	
		tons/yr	Percentage of Existing Emission (%)	tons/yr	Percentage of Existing Emission (%)
1	Green Acres (HTP/TITP)	0.69	N/A	32.4	N/A
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	0.91	132%	43.8	135%
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	2.04	296%	97.9	302%
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.80	262%	86.5	267%
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.74	252%	83.4	257%
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.72	249%	82.3	254%

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## I. BACKGROUND

The City of Los Angeles generates an average of approximately 700 wet tons per day (tpd) of Class A Exceptional Quality (EQ) biosolids, including 650 tpd at Hyperion Treatment Plant (HTP) and 50 tpd at Terminal Island Treatment Plant (TITP). The City contracts with Responsible Biosolids Management (RBM) for handling and beneficial use of biosolids. RBM retains the service of Sierra Transport for hauling biosolids from the City's wastewater treatment facilities to the Green Acres Farm in Kern County, California. Since 1994, this 4,688-acre farm has served as the land application site for the City's biosolids. At Green Acres Farm, the biosolids are tilled into the soil and beneficially used as a fertilizer and soil conditioner to grow a variety of cattle's feedstock including wheat, alfalfa, and corn.

On June 6<sup>th</sup> 2006, a majority of Kern County voters adopted an initiative ordinance known as Measure E, which prohibits land application of biosolids to property within the unincorporated area of Kern County. Under the terms of the new Kern biosolids ban, permitted facilities such as the City's Green Acres Farm now have six months from the ban's effective date (July 22, 2006) to cease land application of biosolids.

The Kern biosolids ban is forcing the City to investigate potential alternatives to Green Acres for management of biosolids, including trucking biosolids to other locations for land application and/or composting. The alternative arrangements are not guaranteed to assure a viable alternative for handling all of the City's biosolids. The potential California scenarios evaluated in this study include one site which is not yet operational (ABT Haskell), and other sites may have capacity and contractual restrictions that could preclude the City from selecting these potential alternatives.

The out-of-state alternatives are located at much further distances from the City of Los Angeles as compared to the Green Acres Farm in Kern County. Table 1 lists the existing (i.e., Green Acres Farm) and potential alternative locations for beneficial reuse of the City's biosolids, as well as the companies managing those locations and the round-trip driving distances from the City of Los Angeles to these locations.

Among possible environmental impacts related to trucking of biosolids to distant destinations is the potential increase of emissions of air contaminants released from diesel-powered transfer trucks. In 1998, the California Air Resources Board (CARB) identified exhaust from diesel-powered engines as a toxic air contaminant. The objective of this study is to assess the potential increase of emissions of two CARB regulated vehicular air pollutants, namely, particulate matter (PM10: particles with aerodynamic diameter less than 10 microns in diameter) and oxides of nitrogen (NOx), from diesel-

powered biosolids transfer vehicles. Diesel PM has been listed by CARB to be among the top three contributors of potential cancer risk from mobile sources. NOx, in addition to forming ground-level photochemical ozone, has been known to cause damages to cell membranes in respiratory tissues and constriction of airway passages.

Table 1: Existing and Potential Alternative Locations for Beneficial Reuse of the City of Los Angeles’ Class A Exceptional Quality Biosolids.

<b>Company</b>	<b>Site</b>	<b>Round-Trip Driving Distance from HTP or TITP (miles)</b>	<b>Biosolids Use</b>
RBM*	Green Acres, Kern County, CA	240	Land Application
RBM	Cullison Farms, Welton, AZ	700	Land Application
Solid Solutions	San Joaquin Composting, Kern County, CA	310	Composting
Solid Solutions	Copper Mountain Landfill, Yuma, AZ	650	Alternative Daily Cover
ABT Haskell	ABT/Haskell, Redlands, San Bernardino County, CA	160	Composting
Synagro	Arizona Soils, AZ	580	Composting

\*: Responsible Biosolids Management

## II. TECHNICAL APPROACH

### 1. Existing Biosolids Transport Operation

Sierra Transport currently operates a fleet of 23 long-haul trucks to transfer the City of Los Angeles’ biosolids. Pertinent information regarding the transfer vehicles is included in Appendix A. All transfer vehicles are fueled in California using the CARB Low Sulfur No. 2 Diesel Fuel (CARB Diesel).

Each transfer vehicle has a maximum capacity of 26.4 wet tons/load. The actual numbers of daily loads of biosolids leaving either HTP or TITP (also known as pick-up loads); however, fluctuate depending on the quantities of biosolids generated daily. Based on 2006 data, the average pick-up loads of biosolids for HTP is 24 loads/day, i.e., transfer vehicles perform an average of 24 round-trips/day to transport biosolids from HTP to Green Acres Farm. For TITP, there are typically 2 loads/day, based on its 50 tpd throughput and 26.4 wet tons/load. For HTP, the daily pick-up loads from January to June 2006 are presented in Appendix B.

## 2. Existing and Potential Alternative Beneficial Use Options for City of Los Angeles' Class A Biosolids

The City of Los Angeles, Bureau of Sanitation is investigating possible alternative options for beneficial use of Class A Exceptional Quality biosolids generated at HTP and TITP. Five potential alternative beneficial use scenarios, in addition to the existing practice of trucking of biosolids to the Green Acres Farm in Kern County, California, are presented in Table 2. The potential alternative scenarios evaluated in this study are representative samples of the types of management alternatives the City is currently considering in response to the Kern County biosolids ban, but do not constitute a comprehensive list. The City continues to work to identify potential alternative options to its biosolids land application program at Green Acres, and to determine how it will safely and lawfully manage its biosolids as soon as January 2007 (when the Kern County biosolids ban would become effective), but no final decision has yet been made.

Table 2: Existing and Potential Alternative Beneficial Use Scenarios for City of Los Angeles' Class A Exceptional Quality Biosolids.

SCENARIOS	HTP						TITP		
	RBM (GREEN ACRES)	SOLID SOLUTIONS (SJC*)	RBM (ARIZONA)	SOLID SOLUTIONS (ARIZONA)	ABT HASKELL	SYNAGRO AZ SOILS	RBM (GREEN ACRES)	SOLID SOLUTIONS (SJC)	SOLID SOLUTIONS (ARIZONA)
	(Wet Tons)	(Wet Tons)	(Wet Tons)	(Wet Tons)	(Wet Tons)	(Wet Tons)	(Wet Tons)	(Wet Tons)	(Wet Tons)
1 (Existing Operation)	650						50		
2		650						50	
3			650						50
4			500	50	50	50		50	
5			150	400	50	50		50	
6			50	500	50	50		50	

\*: San Joaquin Composting

Based on the daily average of actual truck loads of biosolids taken to the Green Acres Farm from January 2006 to June 2006, the projected number of daily truck loads of biosolids to the potential alternative beneficial use sites are listed in Table 3.

## 3. Emissions Assessment Methodology

The exhaust emissions from long-haul trucks are contributed mainly by those emitted during on-road driving operation (Travel Emissions). However, other modes of operation may also contribute to the overall emissions. In this study, in addition to the Travel Emissions, emissions attributed to stop-and-go idling during heavy traffic conditions (On-Road Idling Emissions) and idling during

intermittent driving breaks (Off-Road Idling Emissions) were also considered.

Table 3: Pick-Up Loads of City of Los Angeles’ Class A Exceptional Quality Biosolids Corresponding to Existing and Potential Alternative Beneficial Use Scenarios.

SCENARIOS	HTP						TITP		
	RBM (GREEN ACRES)	SOLID SOLUTIONS (SJC)	RBM (ARIZONA)	SOLID SOLUTIONS (ARIZONA)	ABT HASKELL	SYNAGRO AZ SOILS	RBM (GREEN ACRES)	SOLID SOLUTIONS (SJC)	SOLID SOLUTIONS (ARIZONA)
	(Pick Up Loads)	(Pick Up Loads)	(Pick Up Loads)	(Pick Up Loads)	(Pick Up Loads)	(Pick Up Loads)	(Pick Up Loads)	(Pick Up Loads)	(Pick Up Loads)
1 (Existing Operation)	24						2		
2		24						2	
3			24						2
4			18	2	2	2		2	
5			6	14	2	2		2	
6			2	18	2	2		2	

**a. Travel Emissions**

The exhaust emissions associated with traveling per long-haul truck is based on the round-trip driving distance (in miles) from the City of Los Angeles (HTP or TITP) where the biosolids are loaded to the final destinations. The round-trip driving distance corresponding to each beneficial use location is listed in Table 1.

**b. On-Road Idling Emissions**

Depending on traffic conditions, the long-haul vehicles may experience “stop-and-go” operation while proceeding through traffic congestions on freeways and surface roads. During this “stop-and-go” mode, the engines remain idling and likewise emit pollutants while the vehicles are queuing on the roads. The posted speed limit for trucks is 55 mph on freeways. However, according to Mr. Mark Lutrel of Sierra Transport, the transfer trucks can travel at an average speed of 48 mph due to congestion and other traffic conditions. The emissions attributed to on-road idling will be assessed based on the estimated additional time required to transfer the loads to the destinations at the average speed of 48 mph instead of 55 mph. The round-trip on-road idling time corresponding to different scenarios are presented in Table 4.

Table 4. On-Road Idling Time due to Traffic Conditions per Round-trip for Long-Haul Trucks Transporting Biosolids from HTP or TITP to Various Destinations.

Origin	Destination	Round-Trip Driving Distance (miles)	Round-Trip Travel Time Based on 55 mph*	Round-Trip Travel Time Based on 48 mph**	Round-Trip On-Road Idling (hours)
HTP	Green Acres/Kern County, CA	240	4.36	5.00	0.64
TITP	Green Acres/Kern County, CA	240	4.36	5.00	0.64
HTP	San Joaquin Composting /Kern County, CA	310	5.64	6.46	0.82
TITP	San Joaquin Composting /Kern County, CA	310	5.64	6.46	0.82
HTP	Cullison Farms/Welton, AZ	700	12.73	14.58	1.86
TITP	Copper Mountain Landfill/Yuma, AZ	650	11.82	13.54	1.72
HTP	Copper Mountain Landfill/Yuma, AZ	650	11.82	13.54	1.72
HTP	Redlands, CA	160	2.91	3.33	0.42
HTP	Arizona Soils, AZ	580	10.55	12.08	1.54

\*: Posted speed limit for trucks.

\*\* : Actual average speed (provided by Mr. Mark Lutrel, President of Sierra Transport)

### c. Off-Road Idling Emissions

During traveling, the drivers need to make off-road stops for resting as well as for vehicle inspections. According to Mr. Mark Lutrel of Sierra Transport, if the one-way travel time is 3 hours or less, the drivers do not make any stops before reaching their destinations. However, if the one-way travel time is more than 3 hours, the drivers are required to make off-road stops every three hours for a period of 30 minutes per stop. Because the engines are equipped with turbochargers, they produce an increased amount of waste heat, and this condition necessitates the engines to remain idling during the off-road stops, thus contributing to the overall emissions. The estimated total time for off-road stops based on the corresponding one-way travel time is shown in Table 5. It should be noted that the drivers are required to make off-road stops every three hours during the transport of biosolids to the destinations and on the return trip to the wastewater treatment plants in Los Angeles.

Table 5. Estimated “Off-Road” Idling Time due to Stops per Round Trip for Long-Haul Trucks Transporting Biosolids from HTP or TITP to Various Destinations.

Origin	Destination	One-Way Distance (miles)	One-Way Travel Time* (Hours)	Number of Off-Road Stop Per One-Way Trip	Off-Road Idling Time Per Round Trip** (Hours)
HTP	Green Acres/Kern County, CA	120	2.50	0	0
TITP	Green Acres/Kern County, CA	120	2.50	0	0
HTP	San Joaquin Composting /Kern County, CA	155	3.23	1	1.0
TITP	San Joaquin Composting /Kern County, CA	155	3.23	1	1.0
HTP	Cullison Farms/Welton, AZ	350	7.29	2	2.0
TITP	Copper Mountain Landfill/Yuma, AZ	325	6.77	2	2.0
HTP	Copper Mountain Landfill/Yuma, AZ	325	6.77	2	2.0
HTP	Redlands, CA	80	1.67	0	0
HTP	Arizona Soils, AZ	290	6.04	2	2.0

\*: Based on the average speed of 48 mph and includes on-road idling during "stop-and-go" driving conditions.

\*\* : See text for additional information.

#### d. Total Emissions

For comparison purposes, the reported total emission from long-haul trucks transporting biosolids from the City of Los Angeles to a specific beneficial use location will be determined as the sum of emissions from three different contributing factors, namely, travel, on-road idling, and off-road idling:

$$\text{Total Emission} = \text{Travel Emission} + \text{On-Road Idling Emission} + \text{Off-Road Idling Emission.}$$

#### 4. The California Air Resources Board’s Emission Factors

In this study, the following emission factors developed by the California Air Resources Board staff for heavy heavy-duty diesel vehicles with gross vehicle weight rating (GVWR) over 33,000 lbs were employed:

##### a. Travel Emission Factors

The emission factors (grams/mile or g/mile) corresponding to diesel heavy heavy-duty vehicles are shown in Table 6.

Table 6. Emission Factors for Diesel Heavy Heavy-Duty Vehicles 33,000+ lbs GVWR.

<b>Diesel Transfer Truck Model Year</b>	<b>PM10 (g/mile)</b>	<b>NOx (g/mile)</b>
1998-2002	0.403	17.58
2003-2006	0.252	11.63

Sources: CARB's The Carl Moyer Program Guidelines, Part IV, Appendices, Approved Nov. 17, 2005, Pg. B-5, Table B-5. Criteria: Diesel Heavy Heavy Duty Vehicles 33,000+lbs GVWR, model year 1987-2006.

Based on the CARB's emission factors as shown above and the model years of the trucks (Appendix A), the weighed average of PM10 and NOx emission factors for the entire long-haul truck fleet operated by Sierra Transport were determined as shown in Table 7.

Table 7: Weighed Average of PM10 and NOx Emissions Factors for Diesel Heavy Heavy-Duty Vehicles 33,000+ lbs GVWR and Model Years of 2002-2006.

<b>Diesel Transfer Vehicles Model Years 2002-2006</b>	<b>PM10 (g/mile)</b>	<b>NOx (g/mile)</b>
Weighed Average	0.272	12.41

**b. Idling Emission Factors**

The idling emission factors, in grams per hour (g/hr), corresponding to diesel heavy heavy-duty vehicles are listed in Table 8.

Table 8. Idling Emission Factors for Diesel Heavy Heavy-Duty Vehicles 33,000+ lbs GVWR.

<b>Diesel Transfer Truck Model Year</b>	<b>PM10 (g/hr)</b>	<b>NOx (g/hr)</b>
1999-2002	2.28	171.00
2003	1.65	187.00
2004-2006	1.50	191.50

Sources: CARB's The Carl Moyer Program Guidelines, Part IV, Appendices, Approved Nov. 17, 2005, Pg. B-8, Table B-9. "Heavy Heavy-Duty Vehicles Idling Emission Factors (g/hr)"

The corresponding weighed average PM10 and NOx idling emission factors for the entire long-haul truck fleet operated by Sierra Transport are listed in Table 9.

Table 9. Weighed Average PM10 and NOx Idling Emissions Factors for Diesel Heavy Heavy-Duty Vehicles 33,000+ lbs GVWR and Model Years of 2002-2006.

<b>Diesel Transfer Vehicles Model Years 1989-2006</b>	<b>PM10 (g/hr)</b>	<b>NOx (g/hr)</b>
Weighed Average	1.62	188.43

### III. SAMPLE CALCULATIONS

For the purpose of illustration, detailed calculations are shown for the PM10 and NOx emissions corresponding to Scenarios 2 and 3, i.e., the transport of all biosolids generated at both HTP and TITP to the San Joaquin Composting facility in Kern County, CA, and the transport of biosolids from HTP to Cullison Farms in Welton, AZ and biosolids from TITP to Copper Mountain Landfill in Yuma, AZ. The same approach was also used to determine the emissions corresponding to other beneficial use scenarios.

#### 1. Scenario 2 (Transport of All Biosolids from HTP and TITP to San Joaquin Composting Facility in Kern County, CA):

##### 1.1. Travel Emissions

For the following calculations, the data presented in Tables 1, 3, and 7 were used.

##### **PM10:**

- a. Daily emission due to transport of one load of biosolids (round trip) from HTP or TITP to SJC:  
 = Weighed Ave PM10 Emission Factor \* Round-Trip Distance  
 = (0.272 g/mile)\*(310 miles/load)  
 = 84.3 g/load
- b. Daily emission due to transport of 24 loads of biosolids from HTP to SJC:  
 = (84.3 g/load)\*(24 loads/day)  
 = 2024 g/day
- c. Daily emission due to transport of 2 loads of biosolids from TITP to SJC:  
 = (84.3 g/load)\*(2 loads/day)  
 = 169 g/day
- d. Total daily emission due to transport of biosolids from HTP and TITP to SJC:  
 = (2024 g/day) + (169 g/day)  
 = 2193 g/day

- e. Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (2193 \text{ g/day}) * (365 \text{ days/yr}) * (1 \text{ ton}/908000\text{g})$   
 $= \mathbf{0.88 \text{ tons/yr}}$

**NO<sub>x</sub>:**

- f. Daily emission due to transport of one load of biosolids (round trip) from HTP or TITP to SJC:  
 $= \text{Weighed Ave NO}_x \text{ Emission Factor} * \text{Round-Trip Distance}$   
 $= (12.41 \text{ g/mile}) * (310 \text{ miles/load})$   
 $= 3847 \text{ g/load}$
- g. Daily emission due to transport of 24 loads of biosolids from HTP to SJC:  
 $= (3847 \text{ g/load}) * (24 \text{ loads/day})$   
 $= 92330 \text{ g/day}$
- h. Daily emission due to transport of 2 loads of biosolids from TITP to SJC:  
 $= (3847 \text{ g/load}) * (2 \text{ loads/day})$   
 $= 7694 \text{ g/day}$
- i. Total daily emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (92330 \text{ g/day}) + (7694 \text{ g/day})$   
 $= 100024 \text{ g/day}$
- j. Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (100024 \text{ g/day}) * (365 \text{ days/yr}) * (1 \text{ ton}/908000\text{g})$   
 $= \mathbf{40.2 \text{ tons/yr}}$

**1.2. On-Road Idling Emissions**

For the following calculations, the data presented in Tables 3, 4, and 9 were used.

**PM<sub>10</sub>:**

- a. Daily emission due to transport of one load of biosolids (round trip) from HTP or TITP to SJC:  
 $= \text{Weighed Ave PM}_{10} \text{ Idling Emission Factor} * \text{On-Road Idling Time}$   
 $= (1.62 \text{ g/hr}) * (0.82 \text{ hr/load})$   
 $= 1.33 \text{ g/load}$
- b. Daily emission due to transport of 24 loads of biosolids from HTP to SJC:  
 $= (1.33 \text{ g/load}) * (24 \text{ loads/day})$   
 $= 31.88 \text{ g/day}$
- c. Daily emission due to transport of 2 loads of biosolids from TITP to SJC:  
 $= (1.33 \text{ g/load}) * (2 \text{ loads/day})$   
 $= 2.66 \text{ g/day}$

- d. Total daily emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (31.88 \text{ g/day}) + (2.66 \text{ g/day})$   
 $= 34.54 \text{ g/day}$
- e. Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (34.54 \text{ g/day}) * (365 \text{ days/yr}) * (1 \text{ ton}/908000\text{g})$   
 $= \mathbf{0.014 \text{ tons/yr}}$

**NOx:**

- f. Daily emission due to transport of one load of biosolids (round trip) from HTP or TITP to SJC:  
 $= \text{Weighed Ave NOx Idling Emission Factor} * \text{On-Road Idling Time}$   
 $= (188.43 \text{ g/hr}) * (0.82 \text{ hr/load})$   
 $= 154.51 \text{ g/load}$
- g. Daily emission due to transport of 24 loads of biosolids from HTP to SJC:  
 $= (154.51 \text{ g/load}) * (24 \text{ loads/day})$   
 $= 3708 \text{ g/day}$
- h. Daily emission due to transport of 2 loads of biosolids from TITP to SJC:  
 $= (154.51 \text{ g/load}) * (2 \text{ loads/day})$   
 $= 309 \text{ g/day}$
- i. Total daily emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (3708 \text{ g/day}) + (309 \text{ g/day})$   
 $= 4017 \text{ g/day}$
- j. Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (4017 \text{ g/day}) * (365 \text{ days/yr}) * (1 \text{ ton}/908000\text{g})$   
 $= \mathbf{1.62 \text{ tons/yr}}$

**1.3. Off-Road Idling Emissions**

For the following calculations, the data presented in Tables 3, 5, and 9 were used.

**PM10:**

- a. Daily emission due to transport of one load of biosolids (round trip) from HTP or TITP to SJC:  
 $= \text{Weighed Ave PM10 Idling Emission Factor} * \text{Off-Road Idling Time}$   
 $= (1.62 \text{ g/hr}) * (1.0 \text{ hr/load})$   
 $= 1.62 \text{ g/load}$
- b. Daily emission due to transport of 24 loads of biosolids from HTP to SJC:  
 $= (1.62 \text{ g/load}) * (24 \text{ loads/day})$   
 $= 38.88 \text{ g/day}$

- c. Daily emission due to transport of 2 loads of biosolids from TITP to SJC:  
 $= (1.62 \text{ g/load}) * (2 \text{ loads/day})$   
 $= 3.24 \text{ g/day}$
- d. Total daily emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (38.88 \text{ g/day}) + (3.24 \text{ g/day})$   
 $= 42.12 \text{ g/day}$
- e. Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (42.12 \text{ g/day}) * (365 \text{ days/yr}) * (1 \text{ ton}/908000\text{g})$   
 $= \mathbf{0.017 \text{ tons/yr}}$

**NOx:**

- f. Daily emission due to transport of one load of biosolids (round trip) from HTP or TITP to SJC:  
 $= \text{Weighed Ave NOx Idling Emission Factor} * \text{Off-Road Idling Time}$   
 $= (188.43 \text{ g/hr}) * (1.0 \text{ hr/load})$   
 $= 188.43 \text{ g/load}$
- g. Daily emission due to transport of 24 loads of biosolids from HTP to SJC:  
 $= (188.43 \text{ g/load}) * (24 \text{ loads/day})$   
 $= 4522 \text{ g/day}$
- h. Daily emission due to transport of 2 loads of biosolids from TITP to SJC:  
 $= (188.43 \text{ g/load}) * (2 \text{ loads/day})$   
 $= 376.86 \text{ g/day}$
- i. Total daily emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (4522 \text{ g/day}) + (377 \text{ g/day})$   
 $= 4899 \text{ g/day}$
- j. Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (4899 \text{ g/day}) * (365 \text{ days/yr}) * (1 \text{ ton}/908000\text{g})$   
 $= \mathbf{1.97 \text{ tons/yr}}$

**1.4. Total Emissions**

Total Emission = Travel Emission + On-Road Idling Emission + Off-Road Idling Emission.

**PM10:**

- Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
 $= (0.88 \text{ tons/yr}) + (0.014 \text{ tons/yr}) + (0.017 \text{ tons/yr})$   
 $= \mathbf{0.91 \text{ tons/yr}}$

**NOx:**

Total annual emission due to transport of biosolids from HTP and TITP to SJC:  
= (40.2 tons/yr) + (1.62 tons/yr) + (1.97 tons/yr)  
= **43.8 tons/yr**

**2. Scenario 3 (Transport of Biosolids from HTP and TITP to Cullison Farms in Welton, AZ and Copper Mountain Landfill in Yuma, AZ, respectively):**

**2.1. Travel Emissions**

For the following calculations, the data presented in Tables 1, 3, and 7 were used.

**PM10:**

- a. Daily emission due to transport of one load of biosolids (round trip) from HTP to Cullison Farm (CF):  
= Weighed Ave PM10 Emission Factor \* Round-Trip Distance  
= (0.272 g/mile)\*(700 miles/load)  
= 190.4 g/load
- b. Daily emission due to transport of 24 loads of biosolids from HTP to CF:  
= (190.4 g/load)\*(24 loads/day)  
= 4569.6 g/day
- c. Daily emission due to transport of one load of biosolids (round trip) from TITP to Copper Mountain Landfill (CML):  
= Weighed Ave PM10 Emission Factor \* Round-Trip Distance  
= (0.272 g/mile)\*(650 miles/load)  
= 176.8 g/load
- d. Daily emission due to transport of 2 loads of biosolids from TITP to CML:  
= (176.8 g/load)\*(2 loads/day)  
= 353.6 g/day
- e. Total daily emission due to transport of biosolids from HTP to CF and from TITP to CML:  
= (4569.6 g/day) + (353.6 g/day)  
= 4923 g/day
- f. Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
= (4923 g/day)\*(365 days/yr)\*(1 ton/908000g)  
= **1.98 tons/yr**

**NO<sub>x</sub>:**

- g. Daily emission due to transport of one load of biosolids (round trip) from HTP to CF:  
= Weighed Ave NO<sub>x</sub> Emission Factor \* Round-Trip Distance  
= (12.41 g/mile)\*(700 miles/load)  
= 8687 g/load
- h. Daily emission due to transport of 24 loads of biosolids from HTP to CF:  
= (8687 g/load)\*(24 loads/day)  
= 208488 g/day
- i. Daily emission due to transport of one load of biosolids (round trip) from TITP to CML:  
= Weighed Ave NO<sub>x</sub> Emission Factor \* Round-Trip Distance  
= (12.41 g/mile)\*(650 miles/load)  
= 8066.5 g/load
- j. Daily emission due to transport of 2 loads of biosolids from TITP to CML:  
= (8066.5 g/load)\*(2 loads/day)  
= 16133 g/day
- k. Total daily emission due to transport of biosolids from HTP to CF and from TITP to CML:  
= (208488 g/day) + (16133 g/day)  
= 224621 g/day
- l. Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
= (224621 g/day)\*(365 days/yr)\*(1 ton/908000g)  
= **90.3 tons/yr**

**2.2. On-Road Idling Emissions**

For the following calculations, the data presented in Tables 3, 4, and 9 were used.

**PM<sub>10</sub>:**

- a. Daily emission due to transport of one load of biosolids (round trip) from HTP to CF:  
= Weighed Ave PM<sub>10</sub> Idling Emission Factor \* On-Road Idling Time  
= (1.62 g/hr)\*(1.86 hr/load)  
= 3.01 g/load
- b. Daily emission due to transport of 24 loads of biosolids from HTP to CF:  
= (3.01 g/load)\*(24 loads/day)  
= 72.24 g/day

- c. Daily emission due to transport of one load of biosolids (round trip) from TITP to CML:  
 = Weighed Ave PM10 Idling Emission Factor \* On-Road Idling Time  
 = (1.62 g/hr)\*(1.72 hr/load)  
 = 2.79 g/load
- d. Daily emission due to transport of 2 loads of biosolids from TITP to CML:  
 = (2.79 g/load)\*(2 loads/day)  
 = 5.58 g/day
- e. Total daily emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (72.24 g/day) + (5.58 g/day)  
 = 77.82 g/day
- f. Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (77.82 g/day)\*(365 days/yr)\*(1 ton/908000g)  
 = **0.031 tons/yr**

**NOx:**

- g. Daily emission due to transport of one load of biosolids (round trip) from HTP to CF:  
 = Weighed Ave NOx Idling Emission Factor \* On-Road Idling Time  
 = (188.43 g/hr)\*(1.86 hr/load)  
 = 350.48 g/load
- h. Daily emission due to transport of 24 loads of biosolids from HTP to CF:  
 = (350.48 g/load)\*(24 loads/day)  
 = 8412 g/day
- i. Daily emission due to transport of one load of biosolids (round trip) from TITP to CML:  
 = Weighed Ave NOx Idling Emission Factor \* On-Road Idling Time  
 = (188.43 g/hr)\*(1.72 hr/load)  
 = 324.10 g/load
- j. Daily emission due to transport of 2 loads of biosolids from TITP to SJC:  
 = (324.10 g/load)\*(2 loads/day)  
 = 648.20 g/day
- k. Total daily emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (8412 g/day) + (648 g/day)  
 = 9060 g/day
- l. Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (9060 g/day)\*(365 days/yr)\*(1 ton/908000g)  
 = **3.64 tons/yr**

### 2.3. Off-Road Idling Emissions

For the following calculations, the data presented in Tables 3, 5, and 9 were used.

#### PM10:

- a. Daily emission due to transport of one load of biosolids (round trip) from HTP to CF:  
= Weighed Ave PM10 Idling Emission Factor \* Off-Road Idling Time  
= (1.62 g/hr)\*(2 hr/load)  
= 3.24 g/load
- b. Daily emission due to transport of 24 loads of biosolids from HTP to CF:  
= (3.24 g/load)\*(24 loads/day)  
= 77.76 g/day
- c. Daily emission due to transport of one load of biosolids (round trip) from TITP to CML:  
= Weighed Ave PM10 Idling Emission Factor \* Off-Road Idling Time  
= (1.62 g/hr)\*(2 hr/load)  
= 3.24 g/load
- d. Daily emission due to transport of 2 loads of biosolids from TITP to CML:  
= (3.24 g/load)\*(2 loads/day)  
= 6.48 g/day
- e. Total daily emission due to transport of biosolids from HTP to CF and from TITP to CML:  
= (77.76 g/day) + (6.48 g/day)  
= 84.24 g/day
- f. Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
= (84.24 g/day)\*(365 days/yr)\*(1 ton/908000g)  
= **0.034 tons/yr**

#### NOx:

- g. Daily emission due to transport of one load of biosolids (round trip) from HTP to CF:  
= Weighed Ave NOx Idling Emission Factor \* Off-Road Idling Time  
= (188.43 g/hr)\*(2 hr/load)  
= 376.86 g/load
- h. Daily emission due to transport of 24 loads of biosolids from HTP to CF:  
= (376.86 g/load)\*(24 loads/day)  
= 9044.6 g/day

- i. Daily emission due to transport of one load of biosolids (round trip) from TITP to CML:  
 = Weighed Ave NOx Idling Emission Factor \* Off-Road Idling Time  
 = (188.43 g/hr)\*(2 hr/load)  
 = 376.86 g/load
- j. Daily emission due to transport of 2 loads of biosolids from TITP to CML:  
 = (376.86 g/load)\*(2 loads/day)  
 = 753.72 g/day
- k. Total daily emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (9044.6 g/day) + (753.7 g/day)  
 = 9798 g/day
- l. Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (9798 g/day)\*(365 days/yr)\*(1 ton/908000g)  
 = **3.94 tons/yr**

## 2.4. Total Emissions

Total Emission = Travel Emission + On-Road Idling Emission + Off-Road Idling Emission.

### PM10:

Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (1.98 tons/yr) + (0.031 tons/yr) + (0.034 tons/yr)  
 = **2.04 tons/yr**

### NOx:

Total annual emission due to transport of biosolids from HTP to CF and from TITP to CML:  
 = (90.3 tons/yr) + (3.64 tons/yr) + (3.94 tons/yr)  
 = **97.9 tons/yr**

## IV. RESULTS AND DISCUSSION

### 1. Travel Emissions

#### PM10:

The total annual PM10 masses emitted from diesel-powered transfer vehicles operating in travel mode during the transport of biosolids from HTP or TITP to various destinations according to five beneficial use scenarios are presented in Table 10 and Figure 1.

Table 10: Annual PM10 Emissions from Transfer Vehicles Operating On Travel Mode.

<b>Scenario</b>	<b>Description</b>	<b>Annual PM10 Emission (tons/yr)</b>
1	Green Acres (HTP/TITP)	0.68
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	0.88
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	1.98
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.75
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.68
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.66

As shown in Table 10 and Figure 1, there is approximately a 30% increase of PM10 emission corresponding to the transport of biosolids to the San Joaquin Composting Facility (Scenario 2) compared to the current transport of biosolids to the Green Acres Farm (Scenario 1). This increase in emissions is due to the further travel distance to SJC as compared to Green Acres Farm. Trucking the City of Los Angeles’ biosolids to SJC would require the vehicles to travel an additional round-trip distance of approximately 70 miles (Table 1). Because this additional 70 miles of travel would occur within Kern County (where SJC is located), the increased emissions would also likely occur within Kern County.

It should also be noted that the PM10 emission from transfer vehicles increases significantly if the biosolids are hauled to out-of-state locations. It is probable that hauling biosolids from the two major City of Los Angeles’ Wastewater Treatment Plants (HTP and TITP) to sites in Arizona would result in increases of PM10 emissions as much as three times the emissions associated with the transport of the City’s biosolids to the Green Acres Farm. For instance, the annual PM10 emission corresponding to Scenario 3, i.e., trucking biosolids from HTP and TITP to the Cullison Farms in Welton, AZ and to the Copper Mountain Landfill in Yuma, AZ, respectively, is 1.98 tons/year as compared to the annual PM10 emission of 0.68 tons/year if the biosolids are taken to the Green Acres Farm for beneficial reuse.

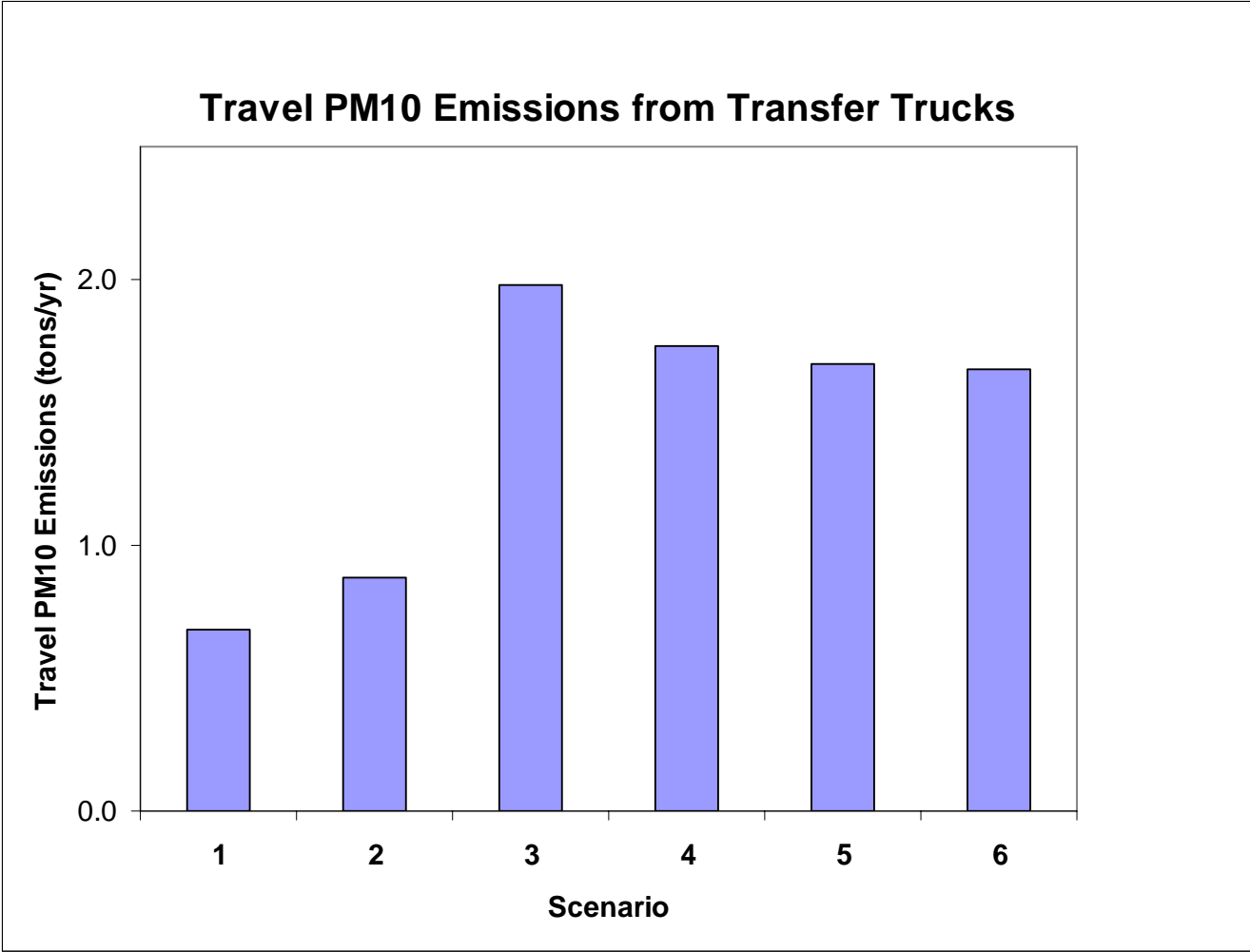


Figure 1. Annual PM10 Emissions from Diesel-Powered Transfer Vehicles Operating in Travel Mode from City of Los Angeles (HTP or TITP) to Various Beneficial use Locations. Please see Table 10 for more details on the six beneficial use scenarios.

**NOx:**

The total annual NOx emissions from diesel transfer vehicles operating in travel mode and transporting biosolids from HTP or TITP to various destinations according to five beneficial use scenarios are presented in Table 11 and Figure 2.

Table 11: Annual NOx Emissions from Transfer Vehicles Operating On Travel Mode.

<b>Scenario</b>	<b>Description</b>	<b>Annual NOx Emission (tons/yr)</b>
1	Green Acres (HTP/TITP)	31.1
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	40.2
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	90.3
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	79.8
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	76.8
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	75.8

Similar to the PM10 travel emissions, the NOx emissions also increase nearly 30% for the trucking of biosolids to the San Joaquin Composting Facility compared to the Green Acres Farm. Also, transport of the biosolids to the out-of-state beneficial use locations may result in increased NOx emissions as much as three-fold as compared to the emissions corresponding to the existing operation. The annual NOx emission of 90.3 tons/year corresponding to Scenario 3, i.e., trucking biosolids from HTP and TITP to the Cullison Farms in Welton, AZ and to the Copper Mountain Landfill in Yuma, AZ, respectively, is significantly higher than the annual NOx emission of 31.1 tons/years if the biosolids are taken to the Green Acres Farm.

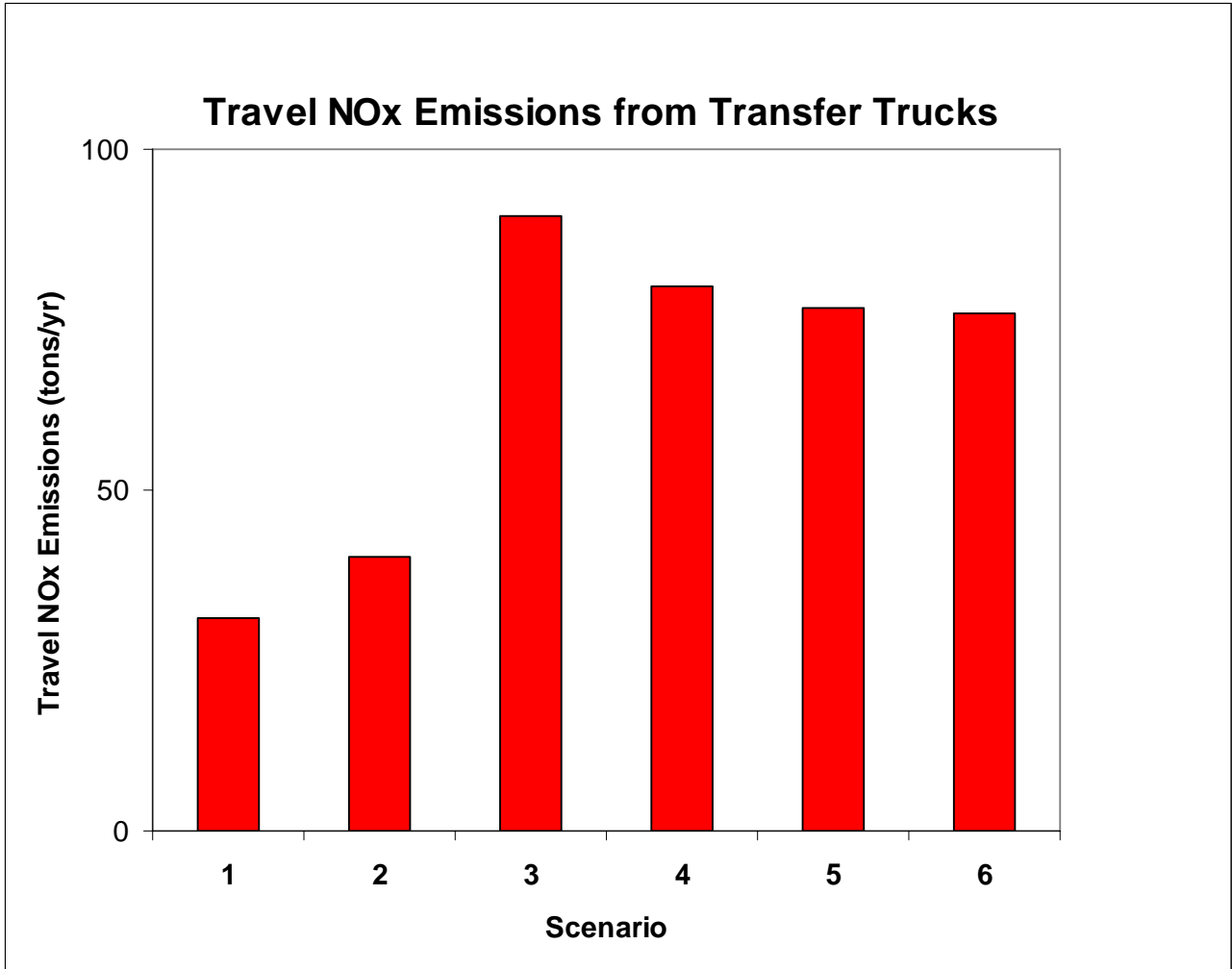


Figure 2. Annual NOx Emissions from Diesel-Powered Transfer Vehicles Operating in Travel Mode from City of Los Angeles (HTP or TITP) to Various Beneficial Use Locations.

**2. On-Road Idling Emissions**

**PM10:**

The PM10 emissions due to on-road idling of transfer vehicles are presented in Table 12 and Figure 3. As shown, the PM10 emissions due to on-road idling corresponding to out-of-state transport of City of Los Angeles’ biosolids are significantly higher than the PM10 emissions from vehicles transporting the biosolids to Green Acres Farm in Kern County.

Table 12: Annual PM10 Emissions due to On-Road Idling of Transfer Vehicles.

Scenario	Description	Annual PM10 Emission (tons/yr)
1	Green Acres (HTP/TITP)	0.011
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	0.014
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	0.031
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	0.028
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	0.027
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	0.026

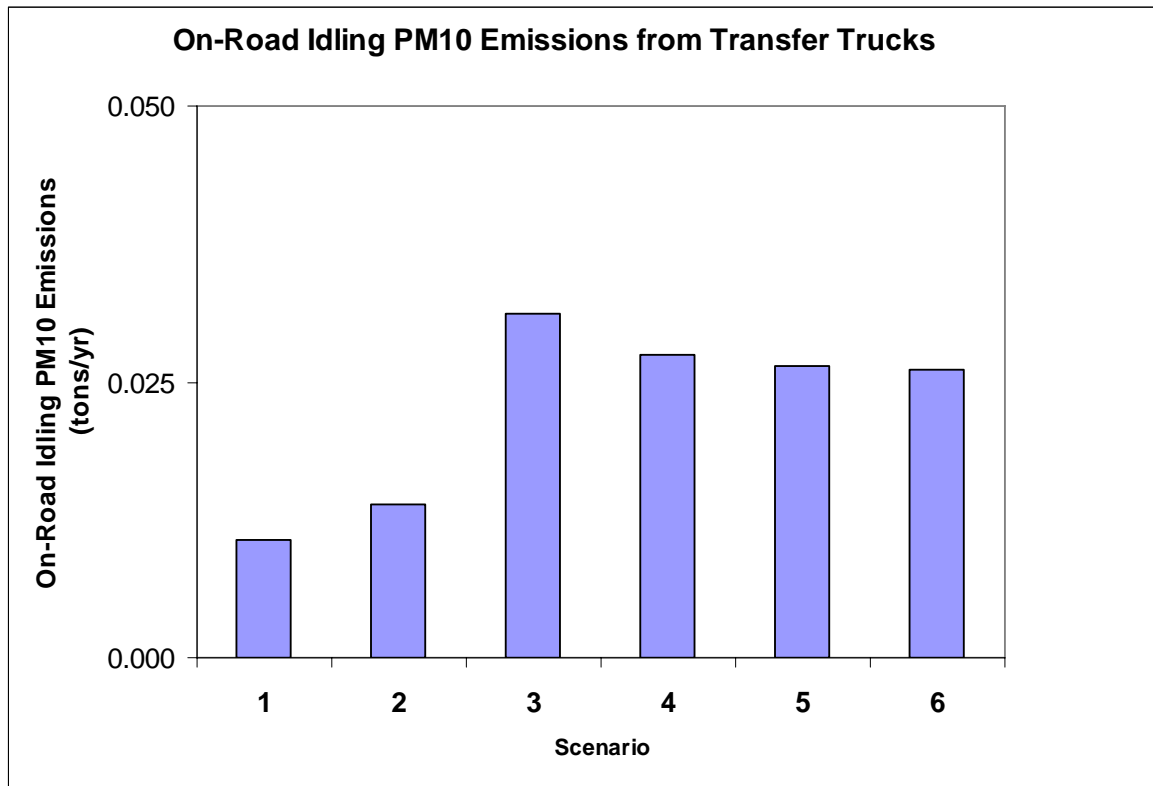


Figure 3. Annual PM10 Emissions Attributed to On-Road Idling of Diesel-Powered Transfer Vehicles.

**NOx:**

The NOx emissions due to on-road idling of transfer vehicles are shown in Table 13 and Figure 4. As with PM10 emissions, the on-road idling emissions of NOx are significantly higher for out-of-state transport as compared with the City’s current practice of transporting biosolids to Green Acres Farm.

Table 13: Annual NOx Emissions due to On-Road Idling of Transfer Vehicles.

<b>Scenario</b>	<b>Description</b>	<b>Annual NOx Emission (tons/yr)</b>
1	Green Acres (HTP/TITP)	1.25
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	1.62
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	3.64
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	3.21
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	3.09
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	3.05

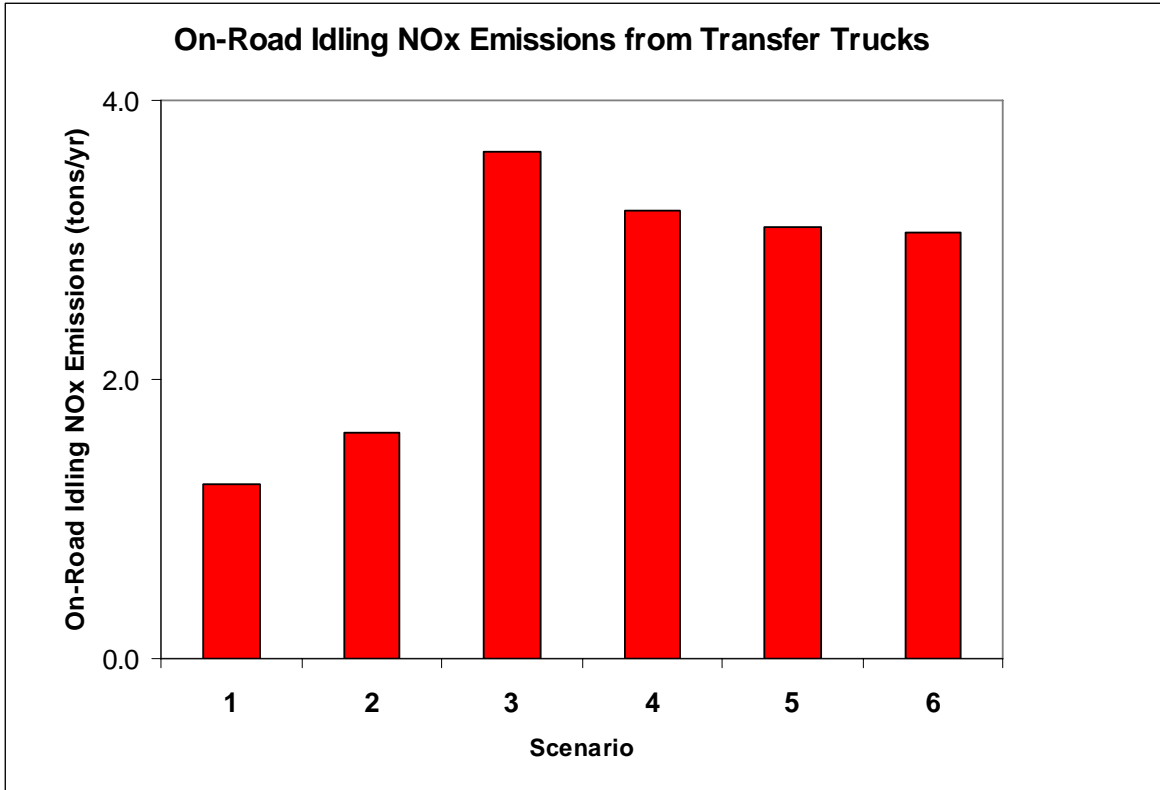


Figure 4. Annual NOx Emissions due to On-Road Idling of Diesel-Powered Transfer Vehicles.

**3. Off-Road Idling Emissions**

**PM10:**

The PM10 emissions due to off-road idling of the transfer vehicles are included in Table 14 and depicted in Figure 5.

Figures 1 and 5 illustrate that the increase in emissions associated with off-road idling of transfer vehicles for transporting biosolids to out-of-state destinations has a strong correlation with the increase of emissions due to traveling time, since both of these factors depend on driving distance.

Table 14: Annual PM10 Emissions due to Off-Road Idling of Transfer Vehicles.

Scenario	Description	Annual PM10 Emission (tons/yr)
1	Green Acres (HTP/TITP)	0
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	0.017
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	0.034
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	0.030
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	0.030
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	0.030

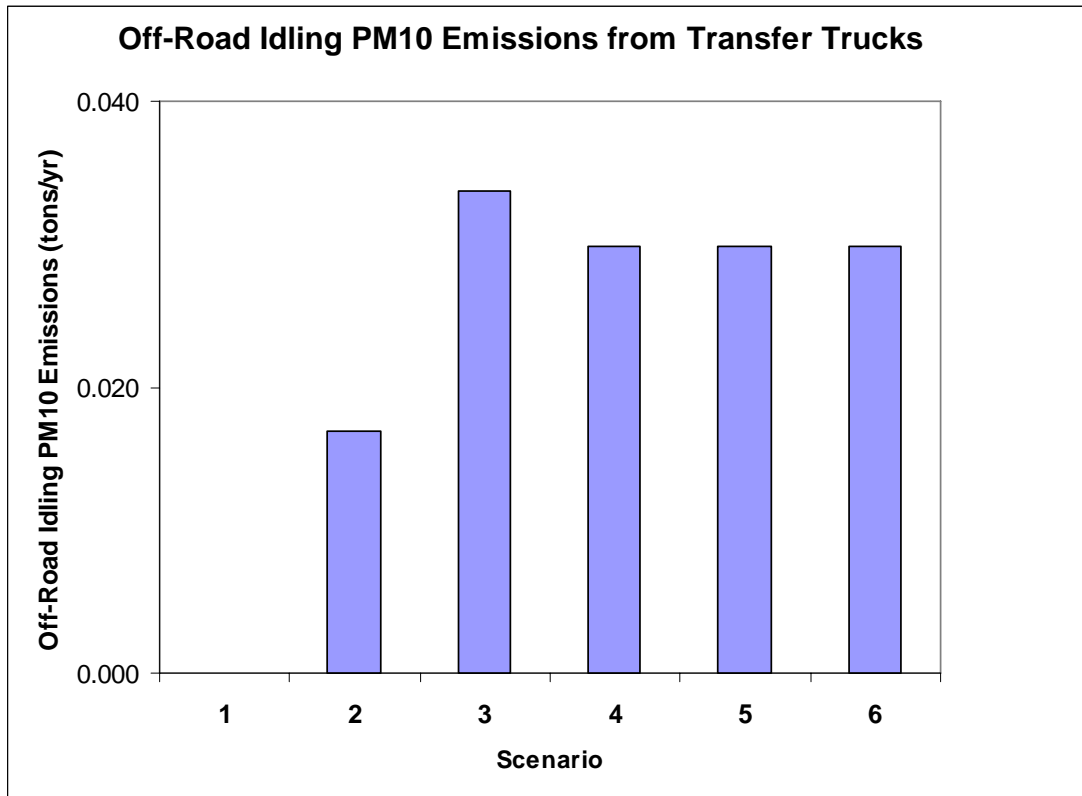


Figure 5. Annual PM10 Emissions Attributed to Off-Road Idling of Diesel-Powered Transfer Vehicles.

**NOx:**

The NOx emissions due to off-road idling of the transfer vehicles are included in Table 15 and depicted in Figure 6.

Table 15: Annual NOx Emissions due to Off-Road Idling of Transfer Vehicles.

<b>Scenario</b>	<b>Description</b>	<b>Annual NOx Emission (tons/yr)</b>
1	Green Acres (HTP/TITP)	0
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	1.97
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	3.94
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	3.48
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	3.48
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	3.48

As shown in Table 15, there is an increase in NOx emissions from transfer vehicles due to off-road idling in all of the alternative scenarios when compared to the current transport to Green Acres.

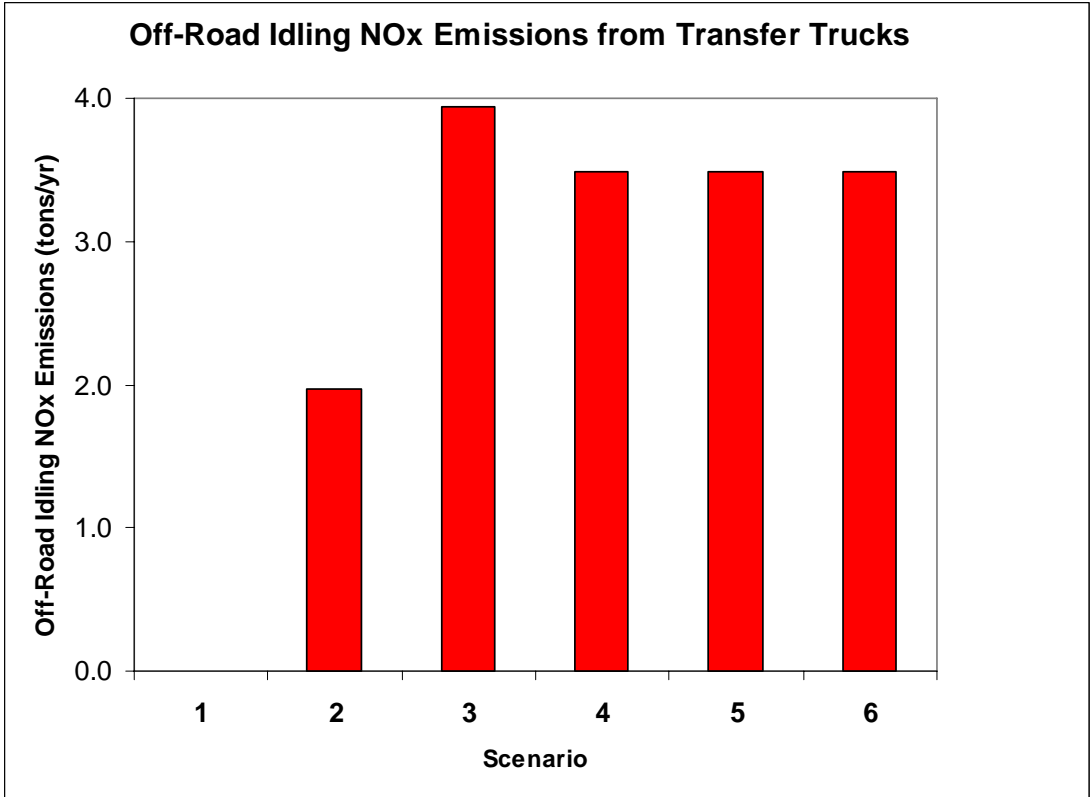


Figure 6. Annual NOx Emissions due to Off-Road Idling of Diesel-Powered Transfer Vehicles.

**4. Total Emissions**

**PM:**

The total annual PM10 emissions including those contributed by travel, on-road idling, and off-road idling are presented in Table 16 and Figure 7. Based on the baseline emission corresponding to Scenario 1, i.e., trucking biosolids to the Green Acres Farm, the percentage of existing emissions for other scenarios are presented in Table 16 using the following formula:

$$\text{Percentage of Existing Emission (\%)} = [(\text{Total Annual Emission}) * 100\%] / (\text{Total Baseline Emission})$$

Table 16: Total Annual PM10 Emissions from Transfer Vehicles Transporting Biosolids to Various Beneficial Use Locations.

<b>Scenario</b>	<b>Description</b>	<b>Annual PM10 Emission (tons/yr)</b>	<b>Percentage of Existing Emission (%)</b>
1	Green Acres (HTP/TITP)	0.69	N/A
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	0.91	132%
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	2.04	296%
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.80	262%
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.74	252%
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	1.72	249%

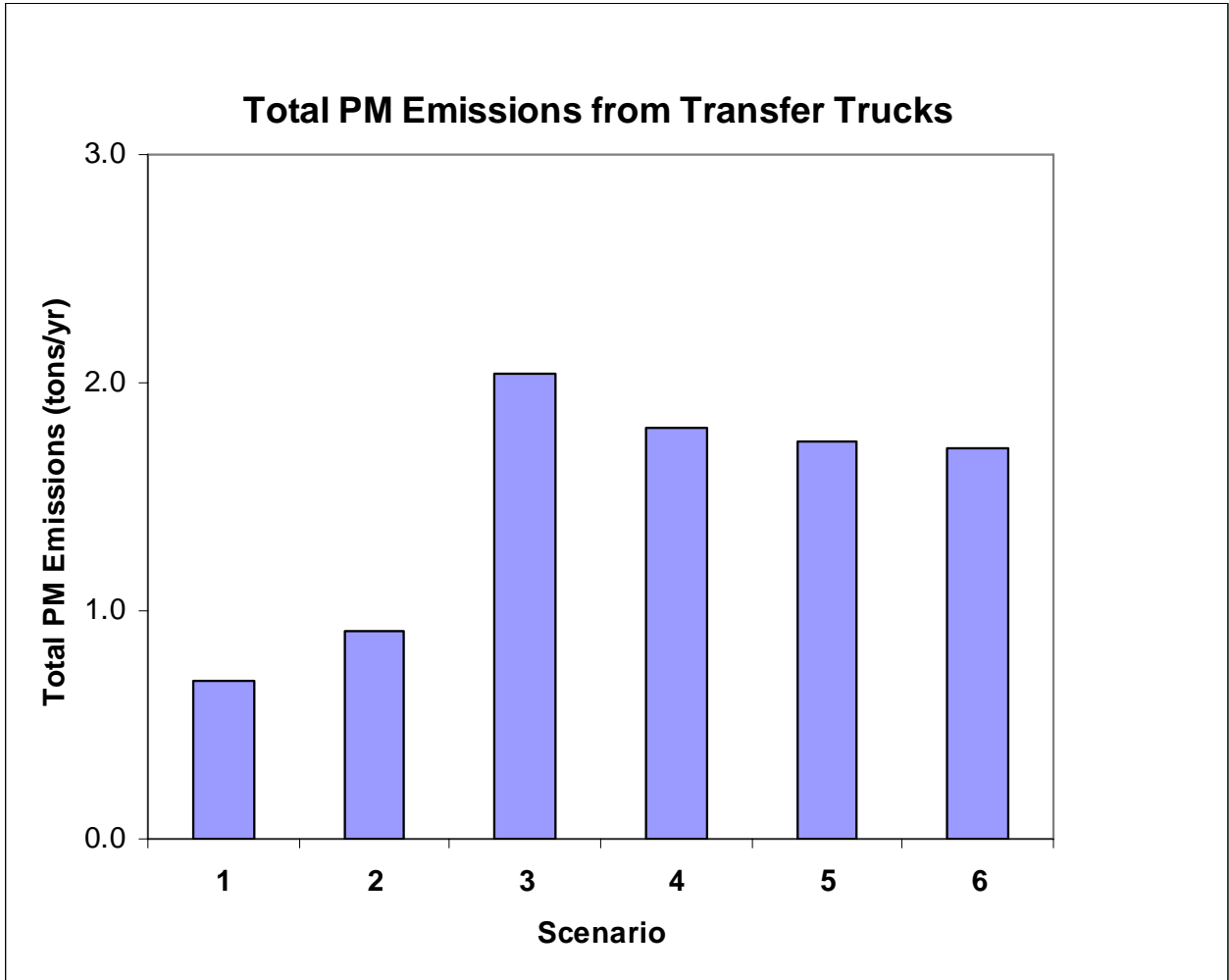


Figure 7. Total Annual PM10 Emissions from Transfer Vehicles Transporting City of Los Angeles' Biosolids to Various Destinations.

**NOx:**

The total annual NOx emissions from transfer vehicles are presented in Table 17 and Figure 8.

Table 17: Total Annual NOx Emissions from Transfer Vehicles Transporting Biosolids to Various Beneficial Use Locations.

<b>Scenario</b>	<b>Description</b>	<b>Annual NOx Emission (tons/yr)</b>	<b>Percentage of Existing Emission (%)</b>
1	Green Acres (HTP/TITP)	32.4	N/A
2	Solid Solutions/SJC (HTP) Solid Solutions/SJC (TITP)	43.8	135%
3	RBM/Arizona (HTP) Solid Solutions/Arizona (TITP)	97.9	302%
4	RBM Arizona (HTP, 500 tpd) Solid Solutions/Arizona (HTP, 50 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	86.5	267%
5	RBM Arizona (HTP, 150 tpd) Solid Solutions/Arizona (HTP, 400 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	83.4	257%
6	RBM Arizona (HTP, 50 tpd) Solid Solutions/Arizona (HTP, 500 tpd) ABT Haskell (HTP, 50 tpd) Synagro (HTP, 50 tpd) Solid Solutions/SJC (TITP, 50 tpd)	82.3	254%

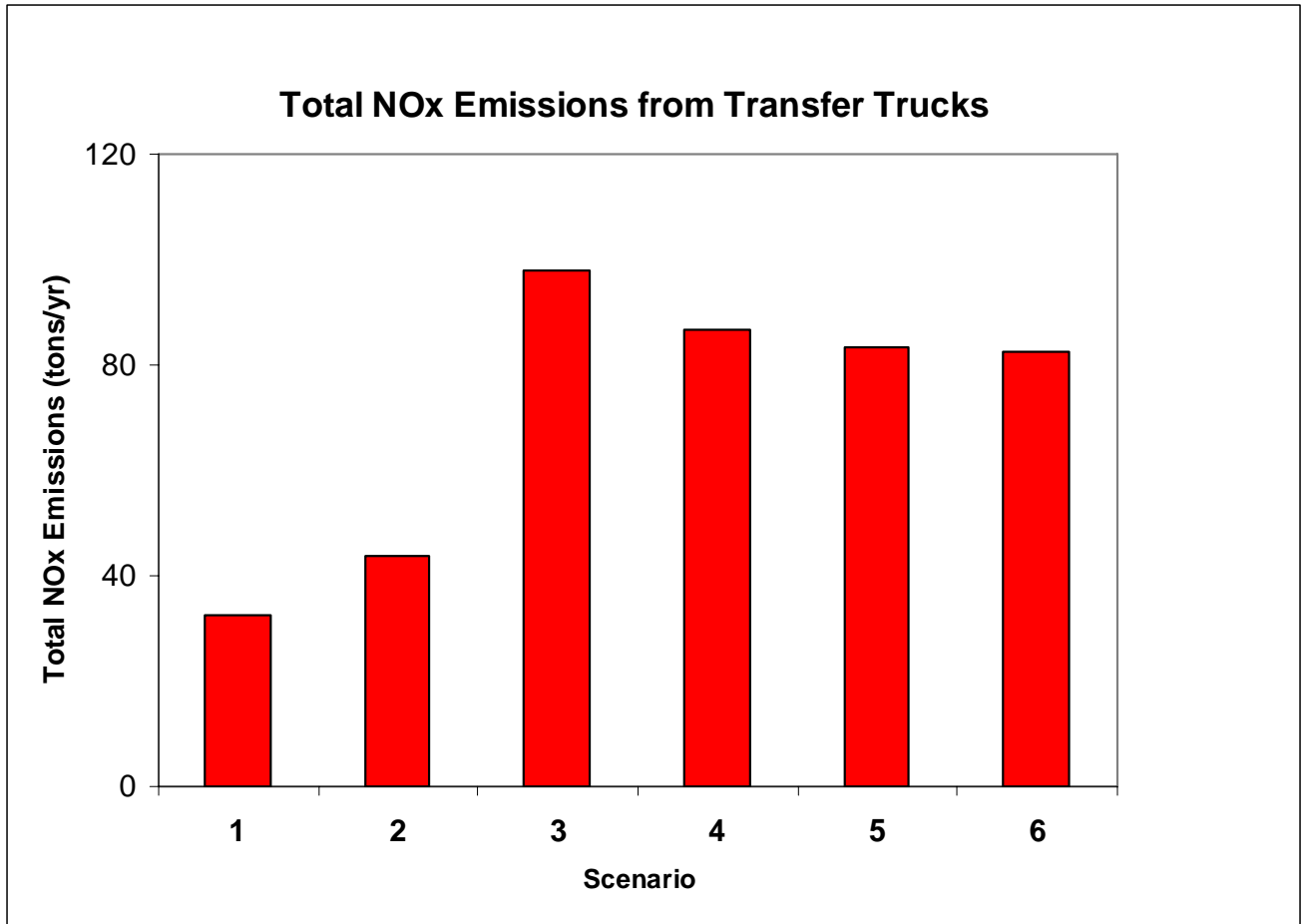


Figure 8. Total Annual NOx Emissions from Transfer Vehicles Transporting City of Los Angeles' Biosolids to Various Destinations.

## V. CONCLUSION

This study was conducted to estimate emissions of PM10 and NOx from transfer vehicles associated with various potential scenarios for transporting biosolids from the City of Los Angeles for beneficial reuse. The study demonstrates that transporting biosolids to potential locations in Arizona would result in significant increases in emissions when compared to the City's current and longstanding program of transporting the City's biosolids to Green Acres Farm. In particular, the study shows that the newly adopted Kern biosolids ban, by prohibiting land application at Green Acres and by forcing the City of Los Angeles to try to identify alternative, more distant locations for beneficial reuse of biosolids, could result in a three-fold increase in overall emissions of PM10 and NOx as compared with current conditions.

**APPENDIX A**

**Inventory of Heavy-Duty Long-Haul Vehicles Transporting the City of Los Angeles' Class A  
Exceptional Quality Biosolids to the Green Acres Farm in Kern County, California.**

<b>No.</b>	<b>Vehicle No.</b>	<b>Type</b>	<b>Model Year</b>	<b>Manufacturer</b>	<b>Licence Plate</b>	<b>VIN</b>
1	224	Truck	2002	Peterbilt	9B93462	1XPGDU9X92D574617
2	227	Truck	2002	Peterbilt	9B93495	1XP5DU9X82D583123
3	228	Truck	2002	Peterbilt	9B93496	1XP5DU9X62D583122
4	239	Truck	2003	International	7C12692	2HSCEAXR43C073238
5	240	Truck	2003	International	9D42406	2HSCEAXR33C074302
6	241	Truck	2004	Freightliner	9D42397	1FUJA6CV04PN12875
7	242	Truck	2005	Freightliner	9D42897	1FUJA6CVX5DN5S123
8	243	Truck	2005	Freightliner	9D42896	1FUJA6CV65DN55121
9	244	Truck	2005	Freightliner	9D56755	1FUJA6CV75DN74146
10	245	Truck	2005	Freightliner	9D56756	1FUJA6CV25DN74149
11	246	Truck	2005	Freightliner	9D54930	1FUJA6CV45DN74167
12	247	Truck	2005	Freightliner	9D54929	1FUJA6CV65DN74171
13	248	Truck	2006	Freightliner	9D83004	1FUJA6CV26DU30439
14	249	Truck	2006	Freightliner	9D83005	1FUJA6CV36DU30448
15	250	Truck	2006	Freightliner	9D86674	1FUJA6CV56DU30466
16	251	Truck	2006	Freightliner	9D86670	1FUJA6CVX6DU30480
17	252	Truck	2006	Freightliner	9D86673	1FUJA6CV26DU30456
18	253	Truck	2006	Freightliner	9D86668	1FUJA6CV96DU30485
19	254	Truck	2006	Freightliner	9D86671	1FUJA6CV76DU30484
20	255	Truck	2006	Freightliner	9D86678	1FUJA6CV56DU30483
21	256	Truck	2006	Freightliner	9D86695	1FUJA6CV36DU30479
22	257	Truck	2006	Freightliner	9D86672	1FUJA6CV16DU30481
23	258	Truck	2006	Freightliner	9D86669	1FUJA6CV66PV93707

## APPENDIX B

### Daily Pick-up Loads of Class A Exceptional Quality Biosolids from the City of Los Angeles’ Hyperion Treatment Plant to the Green Acres Farm in Kern County, California.

<b>Date</b>	<b>Jan. 2006</b>	<b>Feb. 2006</b>	<b>Mar. 2006</b>	<b>Apr. 2006</b>	<b>May 2006</b>	<b>Jun. 2006</b>
1	20	26	28	24	23	24
2	23	25	22	21	25	25
3	22	29	26	24	16	21
4	22	22	25	31	15	15
5	27	24	20	29	23	26
6	25	22	27	25	26	26
7	16	27	27	26	21	25
8	24	22	26	21	23	25
9	29	22	25	23	25	26
10	24	28	26	28	21	22
11	18	26	24	25	23	16
12	24	20	3	26	28	27
13	22	28	25	23	27	22
14	20	32	30	28	22	25
15	17	34	28	21	26	30
16	28	25	30	22	28	26
17	27	28	26	21	24	21
18	31	26	20	25	25	20
19	27	24	23	26	27	28
20	24	26	28	23	22	22
21	18	30	33	23	19	33
22	14	22	30	20	24	17
23	20	25	25	17	27	21
24	19	26	26	28	24	23
25	19	22	27	29	22	24
26	22	19	24	22	17	27
27	27	22	26	23	21	28
28	23	28	26	28	16	26
29	22		17	19	17	26
30	30		28	23	13	17
31	22		31		21	
<b>Daily Ave.</b>	23	25	25	24	22	24