



**Biosolids Management Program
Performance/Management Review Report
*Annual Report to the Board 2014***

***Waco Metropolitan Area Regional
Sewerage System (WMARSS)***



BACKGROUND

The Waco Metropolitan Area Regional Sewerage System (WMARSS) treatment plant in Waco, Texas has been in operation for over 42 years. WMARSS provides wastewater treatment to seven owner cities: Bellmead, Hewitt, Lacy Lakeview, Lorena, Robinson, Waco and Woodway. The facility uses conventional, single stage, nitrifying, activated sludge treatment to meet state treatment requirements for its effluent. Two valuable end products result from these treatment processes: highly treated effluent for reuse and beneficial bio-solids.

Biosolids Manufacturing

Biosolids are either pelletized, using a heat drying process, or lagoon-stabilized, and then land applied. Either method results in beneficial reuse and landfill for emergency disposal (not a beneficial reuse).

The sludge Dryer/Pelletizer has been in operation since 1996, and has continually produced Class A biosolids. In this process, anaerobically digested sludge is dewatered and then heat dried to 92% dry. The result is a bio-solid "pellet" that physically resembles commercial fertilizer. These pellets are land applied using the same equipment utilized in the commercial fertilizer industry. The lagoons receive Class B, anaerobically digested sludge. After further stabilization in the lagoons, the biosolids meet Class AB requirements and can be land applied.

The distribution/transportation of biosolids products is accomplished through the combined efforts of WMARSS personnel, contractors, and/or customers. WMARSS personnel are responsible for producing and loading the Class A, pelletized product. The customer is responsible for hauling the dried material from the treatment plant to their site for land application or further processing (commercial fertilizer companies will purchase the pellets to create their own branded fertilizer products). WMARSS personnel are also responsible for producing the Class AB sludge from the stabilization lagoons. The contractor is then responsible for hauling and land applying the wet sludge at the customer's site.

Regulatory Compliance and Production

Sludge Table Dry Weight basis	8/7/2013	10/3/2013	12/3/2013	1/16/2014	2/6/2014	4/10/2014	6/19/2014	Average sample mg/kg	Max value	Table-1 MAX Limit mg/kg
Arsenic	11.5	7.9	13.1	8.8	8.7	6.1	7.7	9.11	13.10	75
Cadmium	1.56	1.4	1.2	1.3	1.1	1.1	1.5	1.31	1.56	85
Chromium	52.2	33.2	54.3	45.6	41.3	43.3	57.1	46.71	57.10	3000
Copper	362	312	282	264	264	280	335	299.86	362.00	4300
Lead	26.7	22.8	26.8	21.7	20.9	21.3	33.7	24.84	33.70	840
Mercury	0.139	0.37	0.17	0.19	0.18	0.3	0.25	0.23	0.37	57
Molybdenum	15.6	14.4	12	10.7	10.3	12.5	15	12.93	15.60	75
Nickel	19.5	13.9	17.5	12.8	12.3	11.9	16.1	14.86	19.50	420
Selenium	5.26	4.5	3.7	4.9	5.1	4.6	4.6	4.67	5.26	100
Zinc	610	462	469	433	438	547	556	502.14	610.00	7500
MPN	118	89	110		300	74	8.0	116.50	300.00	<1000

WMARSS modifies its biosolids program as needed in response to factors such as new state regulations, new or improved best management practices, and changing customer demands.

The Biosolids Management Program Manual establishes the goals and objectives for the NBP annually. The Manual is available online to City of Waco employees and by request to all other parties. The WMARSS website (www.wmarss.com) provides information about the facility and the NBP.

Annual Reports

The NBP and the Biosolids Management Program Manual outline the required portions of the annual report, which includes: (element15) ***Bio-solids Management Program Performance Report***.

- a. Summaries monitoring data and other measurements that demonstrate the performance of WMARSS BMP relative to established goals, objectives and legal requirements.**

The pellets product tests results all passed the Class A requirements. Attached (WMARSS incident corrective action tracking report). Incorporating new TCEQ class AB sludge requirements for Lagoon sludge.

- b. Summary of relevant contractor activities.**

The bio-solids contractor delivered 4505 wet tons of class B cake to the landfill for the year of 2014.

- c. Summary of performance relative to other voluntary adopted requirements, if any.**

The waste to energy program processed an average of 1-million gallons a month of high strength organics and FOG from local industries. Generator #1 installation is in progress. Using 16,000 cubic feet per hour (9.6mmbtu/hr) of methane gas produced from the anaerobic digesters in the Dryer unit. @ \$3.00 per mmbtu this is a \$219,000.00 saving in natural gas cost.

- d. Progress towards achieving biosolids goals and objectives.**

The 2014 Goals and Objectives are listed in the table below, with the status as of this report.

- e. Summary of internal audit results.**

The summary of the 2014 internal audit is attached (NSF Readiness Review Tracking) The third part audit is substituted for internal audit.

- f. Summary of the third party audit results.**

The independent third party audit was performed on February 14, 2014.

The NBP and the Biosolids Management Program Manual outline the required portions of the annual report, which includes: (element17) ***Management Review Report***.

g. Review monitoring data and other measurements that demonstrate the performance of WMARSS BMP relative to established goals, objectives and legal requirements.

Recommendations:

h. Review Progress towards achieving biosolids goals and objectives.

Recommendations:

i. Review of internal audit results.

Recommendations:

j. Review of the third party audit results.

Recommendations:

k. Review of performance relative to each of the 17 elements of the BMP.

Recommendations:

l. Review documentation of findings, evaluations, and follow up actions.

Recommendations:

m. Review the need for changes in existing policy or the adoption of new policy to support the BMP and biosolids related activities.

Recommendations:

The NBP requires annual reviews of Goals, Standard Operating Procedures, and system/process audits, both internal audits annually and third-party audits. This report documents the annual Program Performance Report and will contain the needed policy changes Utilizing the WMARSS audit corrective action sheet and summary sheet as an attachment, from the meeting between the Biosolids team and Program Manager (Management Review)

Goals and Objectives tracking 2014

As part of the National Bio-solids Process, annual review of goals and objectives are performed. The following table lists the 2014 Goals and Objectives.

Goal/Objective	Target Date	Person Responsible	Resources Available	Interim Status	Benefit	Date Completed
Goal #1 Train staff about NBP and responsibilities at least quarterly	Feb. 2014 May 2014 Aug.2014 Nov.2014	Operation Supervisor	Twice-monthly staff meetings	Ongoing – Initiated (date)	effective bio-solids management	
Goal #2 WMARSS Website up date, and bio-solids benefits, pellet pamphlet and NBP pamphlet	Jan, 2014	Public Information Officer (PIC)	Staff time, web host	Email the document to PIC 2/4/14	Inform the public	2/4/14
Goal #3 Maintain spreadsheet to track survey responses	Feb. 2014 May 2014 Aug.2014 Nov.2014	Staff Assistant	Staff time			
Goal #4 Develop and implement avenues to clean out the next bio-solids lagoon	11/30/2012	Program Administrator Utility Management	Purchasing Legal Dept. Program Manager WMARSS Staff	Met with Mr, Hirsch, his son and grandson 08/2012, 1/16/13 meeting with Mr. Jackson on 6/19/13, 11/21/13 Purchased irrigation reel 2013 put a grinder on pump 2013	to meet market demands Sustainability	Will bid out in 2015
Goal #5 Purchase and Replace auger system in pellet storage building	2014	Operation Supervisor	Staff time		to effectively control the product while loading a truck	Ann Colina finished design
Goal #6 Purchase and replace pellet silo	2014	Maintenance T.C.	Staff time		To maintain product quality	Will Budget 2016
Goal #7	2014	Operations	Staff time	evaluating		Will bid out

Purchase and install septic and industrial receiving station scanner		T.C.		<i>bids</i>	<i>To reduce man-hours associated with tracking incoming loads</i>	in 2015
Goal #8 Purchase rock trap/grinder for industrial receiving station	4/1/2014	Program Administrator	Staff time	ordered jan,2014	to protect downstream equipment	4/1/14
Goal #9 Industrial hauler and Fog hauler	4/1/2014	Operations T.C.	Staff time SOP, WMRS-2		Improve Operations	
Objective # 9.1 Update; Disposal Permit for Waste Transporters	3/15/2013	Program Administrator Operation Supervisor	Staff time, SOP, WMRS-2		Improve Operations	complete
Objective # 9.1 New employee training, Seagroves, Allen Estrada, Shane Garza, Filemon	Aug, 2014	Operation Supervisor	Staff time	Training Conducted	effective bio-solids management	
Goal #10 Corrective actions summary	4/1/2014	Operations T.C.	Staff time		Improve Operations	5/15/2014
Objective #10.1		MBP team			Improve Operations	5/15/2014
Goal #11 Noncompliance from audits	3/15/2014	Program Administrator	Staff time		to improve the BMP	5/15/2014
Objective # 11.1 develop tracking sheet with summary	3/15/2014	Program Administrator Operation Supervisor	Staff time		effective bio-solids management	5/15/2014
Objective # 11.2 BMP team develop audit corrective actions	5/15/2014	Program Administrator Operation Supervisor	Staff time		effective bio-solids management	

Goals and Objectives tracking 2015

Goal	Objective	Target Date	Person Responsible	Resources Required	Current Status	Benefit / NBP Outcome	Date Complete
Goal 1 - Clean out next Biosolids lagoon.		11/30/2015	Program Administrator		Open	Meet Market Demands - Regulatory Compliance	Will bid out 2015
	<i>Obj 1.1 - Interact with out side interest</i>	9/1/2015	Program Administrator	contracts	Met w/ Mr. Hirsch 08/2012 & 1/16/13; Met w/ Mr. Jackson 6/19/13 & 11/21/13, 3/17/14 Joe's working on contract	Quality Biosolids Management Practices	Will bid out 2015
	<i>Obj 1.2 - Purchase Irrigation Reel</i>	12/31/2013	Program Manager	Budget	complete		Will bid out 2015
	<i>Obj 1.3 - Install grinder on Pump</i>	12/31/2013	Operations T.C.	Staff, equipment, tools	complete	Environmental Performance	Will bid out 2015
Goal 2 - Minimize Pellet spillage while loading from ground storage		11/30/2015	Operation Supervisor		Not started	Environmental Performance	Design complete
	<i>Obj 2.1 - Purchase auger in pellet storage building</i>	10/31/2015	Operation Supervisor	Budget, Bid	Not started		Design complete
Goal 3 - Reduce labor on load tracking.		11/30/2015	Operation Supervisor		Open	Quality Biosolids Management Practices	Will bid out in 2015
	<i>Obj 3.1 - Purchase septic and industrial receiving station scanners</i>	10/31/2015	Operation Supervisor	Budget, Bid	developing bid package		Will bid out in 2015

	<i>Obj 3.2 - Install septic and industrial receiving station scanner</i>	11/30/2015	Operations T.C.	Staff, equipment, tools	Not started	Quality Biosolids Management Practices	
Goal 4 - Improve septic station dabris removal		11/30/2015			Not started	Quality Biosolids Management Practices	
	<i>Obj 4.1 - Purchase grinder for septic receiving station</i>	10/31/2015	Operation Supervisor	Budget, Bid	Not started		
	<i>Obj 4.2 - Install grinder for septic receiving station</i>	11/30/2015	Operations T.C.	Staff, equipment, tools	Not started	Quality Biosolids Management Practices	
Goal 5 - Improve Dryer efficiency, reduce Dryer downtime		11/30/2015	Operation Supervisor		Not started	Environmental Performance, Relations with Interested Parties	
	<i>Obj 5.1 - Purchase dryer pre- seperator and poly- cyclones</i>	10/31/2015	Operation Supervisor	Budget, Bid	Not started		
	<i>Obj 5.2 - Replace Dryer effluent air duct 90</i>	11/30/2015	Operations T.C.	Staff, equipment, tools	Not started	Environmental Performance, Relations with Interested Parties	
Goal 6 - Develop a proactive approach to providing meaningful opportunities for public input.		11/30/2015	Program Administrator		Not started	Relations with Interested Parties	

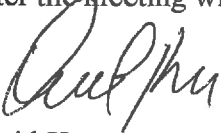
	Obj 6.1 - interest in Class A cake product, Tal Ellet	1/30/2015	Program Administrator	system change	explore avenue to get lagoon sludge to belt press	Relations with Interested Parties	
	Obj 1.4- work with intersted party on lagoon cake	3/1/2015	Program Administrator	agreement	Tal owns 1000 acres and purchase a cake spreader	Meet Market Demands - Regulatory Compliance	
	Obj 1.5- price and make system changes	4/1/2015	Program Administrator	budget and approval	prices pump, piping and auger reconfigure.	Meet Market Demands - Regulatory Compliance	
Goal 7 - install replacement gen set #1.		11/30/2015	Program Administrator		awarded install contract	Environmental Performance	

Respectfully Submitted, Biosolids Management Program Performance Report.



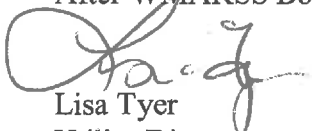
Michael Jupe
WMARSS Program Administrator

After the meeting with the Biosolids Team, (The Management Review) with Recommendations.



David Kerr
Program Manager
City of Waco

After WMARSS Board Meeting



Lisa Tyer
Utility Director
City of Waco