

**NATIONAL BIOSOLIDS PARTNERSHIP
FIRST INTERIM AUDIT REPORT**

**City of Waco Water Utilities Services
Waco Metropolitan Area Regional Sewer System (WMARSS)
Waco, Texas**

Audit conducted by

NSF-International Strategic Registrations

William R. Hancuff, Lead Auditor

References:

National Biosolids Partnership (NBP) EMS Elements
NBP Third Party Verification Auditor Guidance – November 2001
(Latest Revision August 2011)
NBP Code of Good Practice
WMARSS Biosolids Management System Manual
July 2015

Final Report – May 2, 2016

INTRODUCTION

The purpose of the Biosolids Management Program (BMP) interim audits are to verify through regular reviews the system's health and effectiveness between verification audits. The third party on-site interim audits provide independent reviews and support credibility between re-verification audits. The goal of the audit is to collect and evaluate objective evidence related to a portion of the BMP such that over the course of the four interim audits conducted between verification audits all 17 elements are addressed.

The goal of the audit is to determine whether the the Waco Metropolitan Area Regional Sewer System (WMARSS) Biosolids Management Program (BMP) is functioning as intended, that practices and procedures are conducted as documented, and that the BMP as implemented conforms to the NBP's Code of Good Practice and the BMP requirements of the National Biosolids Partnership (NBP) program objectives.

RECOMMENDATION

The results of the WMARSS interim audit and review of corrective action plans are positive, and it is the recommendation of the audit team that the City of Waco Metropolitan Area Regional Sewer System BMP receive the "Platinum Recognition" status. This recognition is not the end, but rather the beginning of a continuously improving biosolids management program.

AUDIT SCOPE

The (NSF-ISR) conducted a third party interim audit of the WMARSS BMP from April 14 through April 15, 2016. The on-site audit team consisted of Dr. William R. Hancuff, Lead Auditor.

The primary objective of the annual interim audit is to ensure the biosolids management program's health by reviewing:

- Progress toward goals and objectives,
- Corrective and preventive action requests and responses.
- Actions taken to correct minor non-conformances,
- Management review process, and
- BMP outcomes (environmental performance, regulatory compliance, interested party relations, and quality practices)

The first four items identified above involved reviewing procedures, activities, processes and products that have general requirements found in the NBP standard elements 5, 14, 15, 16 and 17. The fifth item, BMP outcomes, had the potential of involving other NBP standard elements, namely: 1, 2, 4, 6, 9, 10 and 13. In addition the scope specifically include review and verification of individual EMS Elements 3, 10, 12, 13. Work involved document review, interviews, and field visits.

In general terms, the scope of the third party interim audit encompassed the entire biosolids value chain (pretreatment, collection and treatment, solids processing through final end use or disposal) with special attention on those practices and management activities that directly support solids and biosolids-related operations, processes, and activities within the wastewater treatment plant's functions.

The physical biosolids facilities included in the audit and visited during the interim audit were located at the Waco Central Wastewater Treatment Plant. The facilities included the main lift station, peak flow storage ponds (formerly lagoons), headworks, mechanical bar screens, vortex grit separator, primary clarifiers, trickling filters (abandoned), activated sludge units, secondary clarifiers, solids drum thickener, industrial waste collection tank with biosolids storage, septage collection facilities, two-stage anaerobic digesters, digester solids dewatering units, solids storage lagoons, solids dryer operations, disinfection units (ultraviolet light and chlorine for reuse water), spill kit station in storage building, and two potential land application farm sites (belonging to Ben Hirsh and Mark Jackson) for stabilized lagoon solids adjacent to the Central Plant.

The following individuals were interviewed as part of the audit process:

- Lisa Tyer – Utilities Director/WMARSS Manager
- David Kerr – Program Manager
- Jonathan Dulus – Operations Administrator & Lead EMS Auditor
- Scott Espen – Technical Coordinator
- Dale Dennis – Operations Supervisor
- Mistie Gonzales – Pretreatment Coordinator
- Christy Saunders – Staff Assistant
- Matthew Vaughn – Texas Commission on Environmental Quality, Waco Regional Office, Water Section Work Leader
- Brian Sierant TCEQ, Biosolids Manager at headquarters office (Austin, TX) - not available.
- Matthas Mevis – Utilities Operator
- Driver – Russell Brother's industrial waste haulers

INTERIM AUDIT FINDINGS

The interim audit included review of the latest version of the WMARSS Biosolids Environmental Management System Manual revised July 2015, containing the current element procedures; and utilized the most recent version of the NBP Third Party Verification Auditor Guidance dated August 2011. The interim audit found no major non-conformance, 9 minor non-conformances and 9 opportunities for improvement, as well as 2 commendations or positive observations.

The following is a review of the positive observation made during the audit. Minor non-conformances and opportunities for improvement follow and are presented in the sequence of the NBP standard elements listed by requirement number. These numbers, where appropriate, correspond to the Element minimum conformance requirements.

Positive Observations

- The Biosolids Management Program has very strong top management support.
- The dedication and hard work of all those who supported and continue to support the Program Manager and Operations Supervisor in the development and implementation of BMP must be recognized. Without this key support the management system and the facilities operations could not function.

Minor Nonconformances

Requirement 5.1 – Not all of the Goals and/or Objectives were measurable, i.e. they did not provide specific numerical quantities that could be tracked to ensure improvements were being monitored.

Requirement 5.1 and 13.1 – The implementation of Element 5: Goals and Objectives for Continual Improvement Procedure did not meet the intent of periodically reviewing the progress of the biosolids program goals and objectives. Element 13: Monitoring and Measurement procedure 3 indicates that progress towards meeting Goals and Objectives will be tracked monthly using the Master Calendar. There was inadequate evidence available to demonstrate that this progress was being tracked as defined.

Requirement 5.7 – Detailed action plans describing those activities used to achieve program goals and objectives including a breakdown of action items, schedules and milestones have not been prepared for all the goals and objectives.

Requirement 10.2 – The specific regulatory limits for MPN, PCBs, TCLP and pollutant concentrations (metals) are not identified as legal requirements in SOP WMO D1 – Dryer Operations.

Requirement 11.2 – There was no evidence available to demonstrate that the organization evaluated the effectiveness of emergency preparedness and response procedures (spill drill), including communication systems and revises them as necessary. The last reported drill was in 2013 associated with pellet spill cleanup.

Requirement 14.4 – For most of 2015 WMARSS did not implement their corrective action program to identify operational incidents (or nonconformances identified during routine monitoring and measurement) so that root causes and corrective actions could be developed and implemented.

Requirement 15.2 – None of the biosolids management program performance reports were found to be available to the public on the WMARSS website as required in the Element 15: Biosolids Management Program Performance Report procedures.

Element 16 – In Element 16: Internal BMP Audit, Procedure 1 incorrectly indicates that independent third party audits can be conducted in place of internal audits.

Requirement 16.1 – The audit program (or report) did not define the methodology of the audit or assignment of responsibilities for conducting the audit.

Opportunities for Improvement

Requirement 5.1 – Consider modifying Element 5: Goals and Objectives for Continual Improvement procedures to allow for the establishment of new goals and objectives at any time, as opposed to annually no later than December 31st.

Requirement 5.1 – Consider updating the existing table of goals and objectives to reflect accomplishments and changes since its last review and include specific numerically measurable goals.

Requirement 5.1 – Consider developing goals and objectives for the following on-going or planned programs: 1) Adding a new rotary drum used for thickening, and reducing corrosion in the belt press structure.

Requirement 7.2 – Using the Master Calendar as a base consider employing “Argent” task compliance software to ensure that all of the activities required in the biosolids management program are implemented and maintained in a timely manner.

Element 14 – When implementing the asset management tool “Tyler Technologies - Munis” work order software, consider verifying that all the NBP requirements identified in Element 9 - Nonconformances: Preventive and Corrective Actions are addressed. Also, consider providing training on the implementation of this software tool for corrective actions.

Requirement 14.4 – Consider preparing a corrective action plan for replacing pump cans for non-potable water pumps in the dryer building.

Requirement 14.4 – Consider preparing a corrective action plan for increasing the digester gas utilization for solids drying operations from 16,000 scfm to 21,000 scfm. (include cost savings that result from this corrective action to be included in the annual BMP performance report.)

Requirement 15.1 – Consider including in the annual Biosolids Management Program Report an estimate of the total operation and maintenance cost of the critical control points through the biosolids value chain to illustrate the value of the management systems’ potential impact on controlling costs.

Requirement 15.1 – Consider removing what appear to be “reminder notes” from the end of the 2015 annual performance report.

WACO METROPOLITAN AREA REGIONAL SEWER SYSTEM COMMENTS

From 2016 interim audit “WMARSS recognizes the importance and benefits from third party audits as a tool to continually improve our Bio-solids Management Program (BMP). Having an outside party objectively review our accomplishments, recommend areas for opportunities of improvement and non-compliances maintains the checks and balances of the program.”

OUTCOMES MATTER

The WMARSS Biosolids Management Program established a set of new or evolved goals and objectives in 2015. Many of the initial goals and objectives were associated with development of the BMP, while the next evolution containing a few actions related to development of the program but most were more focused on the outcome areas. For 2015 the BMP Team developed the goals and objectives considering each of the four outcome areas of the NBP program as identified below:

1. Environmental Performance,
2. Regulatory Compliance,
3. Relations with Interested Parties, and
4. Quality Biosolids Management Practices.

While it is not a requirement to attain all the objectives established, it is a critical component of the system to make progress towards accomplishing the overall goals. The most recent goals were established to a limited degree using Specific, Measurable, Achievable, Relevant, and Time Bound (SMART) criteria, and could have been better defined in terms of specific measurability.

The facility’s performance relative to each of the above outcome groups is addressed below.

In the Environmental Performance outcome area a long-term goal was initially established in 2011 to remove material from the inactive biosolids lagoons. The goal has continued from year to year through and including 2015. Having only one option for beneficial use of their biosolids product, i.e. the production of Class A pellets from the dryer operation has hamstrung the facility. During times when the dryer system is out of operation, the biosolids must be transported to a landfill at considerable expense, which results in no beneficial use. From November 2015 through March 2016 the dryer was not operational and cost the City over \$500,000 to dispose of biosolids. Removing the 30,000,000 gallons of stabilized biosolids (Class AB) from the previously used biosolids lagoons provides an option of once again using these facilities in place of landfilling. As part of this goal several alternative options were evaluated for economic feasibility and it

was determined that distributing the material to adjacent farming land would provide the most cost effective beneficial use of the stabilized biosolids. Cleaning these lagoons will ultimately provide another option for solids storage and potential reuse. A contract for removal of all solids from lagoon # 3 is scheduled for final approval by the Board in April 2016. Removal of the solids from lagoon # 2 will follow and consideration is being given to reprocessing them through the plant to produce cake or pellets.

One of the most important environmental performance related goals of the program, carried over each year from the outset of the program, is the improvement in the operating capacity of the dryer, which is measurable in total annual pellet production (tons per year) and monitored on a monthly basis. This goal has two objectives: increase the physical capacity of the equipment and reduce the downtime associated with maintenance. The action plan involves upgrading the dryer system to include the furnace, burners, discharge piping, pre-separator, outside silos, new ID fans, and rebuilding the crusher. These should increase the physical production capacity by 10 percent and reduce maintenance down time by over 90 percent. All of the upgrades have been completed and work is being performed to optimize the operations.

The next environmental performance related goal for 2015 evolved from one established in 2013 that initially had a target of reducing the number of spills during product loading from 1 per week to fewer than 2 per year. This morphed into reducing the number of truckloads filled by the truck loader from approximately 15 per month to zero. The action plan to accomplish this is the design and installation of an auger system in the pellet storage building. The employment of this operation is faster and reduces labor requirements. It also increases the accuracy of the weight loaded into each truck measured at the scales. This project is being budgeted and is planned for inclusion in the next fiscal year activities commencing in October 2016.

Another environmental performance goal is to reduce the number of times per day the septage station auger clogs with rags. This goal evolved from an earlier goal to purchase and install a rock trap and waste grinder for the industrial receiving station. The rock trap resulted in elimination of damages to pumps caused by rocks, gravel and sand being inadvertently added to the industrial waste storage tanks from hauler trucks. And the addition of the grinder substantially reduced the number of preventable equipment failure incidents associated with the receiving station. The installation of this equipment was completed in January 2014 and tests on the effectiveness and optimization of operation demonstrated its effectiveness. Currently the septage station auger clogs roughly three times per day resulting in an hour and a half per day maintenance time. A new grinder was purchased in early 2016 and will be installed by mid-year, resulting in elimination of clogging and maintenance.

In the Regulatory Compliance outcome area, some of the 2015 goals and objectives that could have an impact include: 1) cleaning of lagoons to provide an additional option for production of Class AB biosolids as discussed above, 2) improving the septage station and industrial waste receiving station to minimize the possible inadvertent release of

solids to the ground and environment; and 3) installation of a replacement gen set to improve reliability and minimize potential for system failure and violations.

In the Relations with Interested Parties outcome area, one goal was established to develop a market with the local farmers for the lagoon biosolids product. The initial goal was to communicate with local farmers to use 100 truckloads of product. This goal was accomplished and the local farmers will be using all of the solids being removed from lagoon #3.

In the Quality Biosolids Management Practices outcomes area, The goal of reducing the number of truckloads of pellets loaded by the truck loader also has a quality biosolids management practice impact since it provides a cleaner and safer process. It eliminates ground spillage and dust generation and reduces street sweeper cleanup. It is safer through reducing damage to equipment and facilities in the loading area, including trucks.

A second quality management related goal originally established in 2013 is to reduce the number of hand entered trip tickets. Trip tickets are used to track four areas and are issued for truckloads of septage, high strength industrial waste, fats oils and grease (FOG), and biosolids pellets. The goal is the purchase, installation and operation of septic, industrial and FOG receiving station scanners to increase the accuracy of hauler discharge measurements from the current method of estimating to an instrument measurement that includes a monitored record. The improvement will result in increasing the accuracy from the current value of 80% to the 95% level. This will result in a more reliable collection of hauler fees and documentation records. Applications for this technology includes pH measurement and in the future possibly electronic payment. The scanner has been purchased and installed and is being optimized, however there has not been a record of the reduction in the number of trip tickets recorded (septage tickets average 300 plus or minus 50 per month; industrial waste average 325 plus or minus 50 per month and FOG average 175 plus or minus 25 per month).

The final quality management goal for 2015 is the improvement in the operating capacity of the dryer through upgrading the system. It will result in an improvement in maintain a product quality.

CONCLUSIONS AND RECOMMENDATIONS

The results of the first interim audit show the WMARSS has effectively implemented a its Biosolids Management Program. The NSF lead auditor reviewed and approved the corrective action plans for each of the minor non-conformances identified during the audit. Therefore the “Platinum Recognition” recommendation for the WMARSS Biosolids Management Program (BMP), Waco, Texas is made to the NBP. The full implementation of the corrective actions for the minor nonconformances will be accomplished according to the schedule proposed in the corrective action worksheets. It

is expected that the opportunities for improvement will each be addressed although they do not require formal closure.

As was mentioned previously, a BMP is a continuous improvement process, and recognition is not the end -- it is the beginning. The results of this and future audits will provide value added to the system and should be viewed as an overall opportunity to improve. Every audit is a snapshot in time, and does not, or cannot, identify each and every area for improvement. And yet, while no single audit identifies all of the areas for improvement the results of each audit provide an additional incremental step in the overall system's improvement.

Each internal or interim audit will include a review of: the organization's progress toward goals and objectives; BMP outcomes (environmental performance; regulatory compliance; interested party relations; quality practices); actions taken to correct minor nonconformances; the management review process; corrective action requests and responses; and preventive actions. In addition to the above, all of the elements will be audited individually over the four-year interim period between verification audits, such that all elements are addressed.

To attain and maintain platinum status the following audit schedule includes an approach for ensuring all elements are audited as required by NBP:

Year 1 (completed) – Elements 5, 6, 9, 14, 16

Year 2 (third party) – Elements 1, 10, 12, 13

Year 3 (third party) – Elements 3, 8, 15, 17

Year 4 (third party) – Elements 2, 4, 7, 11

Year 5 (third party) – Re-verification – All elements

Attachment 1

Documents and Other Objective Evidence Reviewed During the Interim Audit

Element 1. BMP Manual

- Element 1: WMARSS BMP Manual original issue 10/28/2011.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Reviewed Biosolids Management Program (BMP) Manual.
- WMARSS Biosolids Annual Calendar.
- Element 2: Biosolids Management Policy established by the WMARSS Board.

Element 2. Biosolids Management Policy

- Element 2: Biosolids Management Policy version 2 dated 9/15/12.
- Interviews with Lisa Tyer – Utilities Director/WMARSS Manager, David Kerr – Program Manager, and Jonathan Dulus – Operations Administrator & Lead EMS Auditor.
- Memorandum of Minutes of Waco Metropolitan Area Regional Sewer System Work Session on May 29, 2013 containing a motion to approve commitment to the “Code of Good Practice” in the Biosolids Management Program.

Element 3. Critical Control Points

- Element 3: Critical Control Points, Version 5 dated 9/29/14.
- Table 3.1: Critical Control Points, Operational Controls, SOPs, Monitoring/Measurement and Environmental Impacts dated 9/29/14.
- Interviews with Lisa Tyer – Utilities Director/WMARSS Manager, David Kerr – Program Manager, and Jonathan Dulus – Operations Administrator & Lead EMS Auditor.
- Interviews Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator, Matthas Mevis – Utilities Operator.
- WMARSS Central Plant Wastewater Treatment Facilities, Process Flow Diagram.
- Field observation of various Central Plant critical control points.
- Field observation of two potential land application farm sites (belonging to Ben Hirsh and Mark Jackson) for stabilized lagoon solids adjacent to the Central Plant.

Element 4. Legal and Other Requirements

- Element 4: Legal and Other Requirements Version 2 dated 9/29/14.

- Table 4.1a: Legal Requirements and Guidance Specific to WMARRS Biosolids Program dated February 3, 2014.
- Table 4.1b: Specific Regulatory and Legal Requirements from NPDES and TCEQ permits.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Interview with Matthew Vaughn – Texas Commission on Environmental Quality, Waco Regional Office, Water Section Work Leader.
- Interview with Justin Young – farmer/rancher – product user

Element 5. Goals and Objectives

- Element 5: Goals and Objectives for Continual Improvement, Version 2 dated 9/29/14.
- Review of Goals and Objectives for 2013, 2014 and 2015.
- Action Plan and Tracking Template (for goals and objectives).
- BMP Goals and Objectives Action Plan Tracking Report for 2015.
- Interviews with Lisa Tyer – Utilities Director/WMARSS Manager, David Kerr – Program Manager, and Jonathan Dulus – Operations Administrator & Lead EMS Auditor.
- Interviews with Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.

Element 6. Public Participation in Planning

- Element 6: Public Participation in Planning, Revision 2 dated 9/29/14.
- Table 6.1 WMARSS Public Participation Mechanisms.
- Interested Parties Summary Table.
- WMARSS Plant Tour Summary Table.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Interviews with Christy Saunders – Staff Assistant and Russell Brother’s industrial waste haulers.
- Interview with Matthew Vaughn – Texas Commission on Environmental Quality, Waco Regional Office, Water Section Work Leader.
- Review minor biosolids spill incident associated with truck hauling.
- Review of odor complaints associated with hauling biosolids to the landfill.
- WMARSS website: <http://www.wmarss.com/>

Element 7. Roles and Responsibilities

- Element 7: Roles and Responsibilities Version 2 dated 9/29/14.
- Roles and Responsibilities narratives.

- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Reviewed Roles and responsibilities of BMP Team.

Element 8. Training

- Element 8: Training, Version 2 dated 9/29/14.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Reminder cards with NBP Biosolids EMS required four outcome areas.

Element 9. Communications

- Element 9: Communication, Version 2 dated 9/29/14.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Interview with Matthew Vaughn – Texas Commission on Environmental Quality, Waco Regional Office, Water Section Work Leader.
- WMARSS website: <http://www.wmarss.com/>
- Review minor biosolids spill incident associated with truck hauling.
- Review of odor complaints associated with hauling biosolids to the landfill.
- 2014 Biosolids Management Program Performance/Management Review Report – Annual Report to the Board.
- Draft 2015 Biosolids Management Program Performance/Management Review Report (12/22/15) – Annual Report to the be presented to Board.

Element 10. Operational Control of Critical Control Points

- Element 10: Operational Controls, Version 2 dated 9/24/14.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Interviews with Matthas Mevis – Utilities Operator and Christy Saunders – Staff Assistant.
- Field observation of main lift station, peak flow storage ponds (formerly lagoons), headworks, mechanical bar screens, vortex grit separator, primary clarifiers, trickling filters (abandoned), activated sludge units, secondary clarifiers, solids drum thickener, industrial waste collection tank with biosolids storage, septage collection facilities, two-stage anaerobic digesters, solids storage lagoons, digester solids dewatering units, solids dryer operations, disinfection units (ultraviolet light and chlorine for reuse water), spill kit station in storage building, and two potential land application farm sites (belonging to Ben Hirsh and Mark Jackson) for stabilized lagoon solids adjacent to the Central Plant.

- WMO D1 – SOP for Dryer Operations, version 2012-02.
- WMO SP1 – SOP for Sludge Treatment Process, version 2012-02.
- WMO SP2 – SOP for Responding to Sludge Spills, version 2012-01

Element 11. Emergency Preparedness and Response

- Element 11: Emergency Preparedness & Response, Version 2 dated 9/29/14.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- WMO SP2 – SOP for Responding to a Sludge Spill, version 2012-01.
- Field observation of spill clean up kit in storage building.

Element 12. BMP Documentation and Document Control

- Element 12: Documentation, Document Control & Recordkeeping, Version 3 dated 4/1/16.
- Standard Operating Procedures Document Controls Information title sheet format.
- BMP Procedures Document Control Information title sheet format.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.

Element 13. Monitoring and Measurement

- Element 13: Monitoring and Measurement, Version 3 dated 9/29/14.
- Action Plan and Tracking Template (for goals and objectives).
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Interviews with Matthas Mevis – Utilities Operator, Christy Saunders – Staff Assistant, and driver for Russell Brother’s industrial waste haulers.
- Interview with Matthew Vaughn – Texas Commission on Environmental Quality, Waco Regional Office, Water Section Work Leader.
- Field observation of main lift station, peak flow storage ponds (formerly lagoons), headworks, mechanical bar screens, vortex grit separator, primary clarifiers, trickling filters (abandoned), activated sludge units, secondary clarifiers, solids drum thickener, industrial waste collection tank with biosolids storage, septage collection facilities, two-stage anaerobic digesters, digester solids dewatering units, solids storage lagoons, solids dryer operations, disinfection units (ultraviolet light and chlorine for reuse water), spill kit station in storage building, and two potential land application farm sites (belonging to Ben Hirsh and Mark Jackson) for stabilized lagoon solids adjacent to the Central Plant.
- Toxicity Characteristic Leaching Procedure (TCLP) regulatory levels.
- WMO D1 – SOP for Dryer Operations, version 2012-02.
- WMO SP1 – SOP for Sludge Treatment Process, version 2012-02.

- WMO SP2 – SOP for Responding to Sludge Spills, version 2012-01

Element 14. Nonconformances: Preventive and Corrective Action

- Element 14: Nonconformance – Preventive & Corrective Action, Version 2 dated 7/9/15.
- WMARSS Audit Corrective Action Worksheet template.
- WMARSS Audit Corrective Action Tracking/Summary Report template.
- Review of WMARSS proposed corrective action worksheets for 2014 verification audit findings.
- WMARSS Corrective Action Tracking Report for verification audit 2015.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Internal Audit Report for audit conducted on September 9 & 10 and November 11 & 12, 2015.

Element 15. Biosolids Management Program Report

- Element 15: Biosolids Management Program Performance Report, Version 2 dated 7/9/15.
- Biosolids Management Program Performance/Management Review Report – Annual Report to the Board 2014.
- Biosolids Management Program Performance/Management Review Report – Annual Report to the Board 2015 – draft.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, and Mistie Gonzales – Pretreatment Coordinator.

Element 16. Internal BMP Audit

- Element 16: Internal BMP Audit, Version 2 dated 7/9/15.
- Table 14.1 – WMARSS Audit Corrective Action Worksheet.
- Table 14.2 – WMARSS Corrective Action Tracking Summary Sheet.
- WMARSS BMP Internal Audit Report format template.
- Interviews with David Kerr – Program Manager, Jonathan Dulus – Operations Administrator & Lead EMS Auditor, Scott Espen – Technical Coordinator, Dale Dennis – Operations Supervisor, Mistie Gonzales – Pretreatment Coordinator.
- Internal Audit Report for audit conducted on September 9 & 10 and November 11 & 12, 2015.

Element 17. Management Review

- Element 17: Management Review, Version 2 dated 7/9/15.

- Interviews with Lisa Tyer – Utilities Director/WMARSS Manager, David Kerr – Program Manager, and Jonathan Dulus – Operations Administrator & Lead EMS Auditor.
- 2014 Biosolids Management Program Performance/Management Review Report – Annual Report to the Board.
- Draft 2015 Biosolids Management Program Performance/Management Review Report (12/22/15) – Annual Report to the be presented to Board.