

**NATIONAL BIOSOLIDS PARTNERSHIP  
EIGHTH INTERIM AUDIT REPORT**

**Village Creek Waste Water Treatment Plant  
Fort Worth, 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 – August 2011*  
NBP – *Code of Good Practice*  
Village Creek Wastewater Treatment Plant  
*Environmental Management System for Biosolids Manual*  
*(Latest Revisions – August 2013)***

Final Report – November 4, 2013

## **INTRODUCTION**

The purpose of the Biosolids Environmental Management System (EMS) interim audits is 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 supports credibility between re-verification audits. The goal of the third party interim audit is to collect and evaluate objective evidence related to a portion of the EMS such that over the course of the four interim audits conducted between verification audits all 17 elements are covered. The audits determine whether the Village Creek Waste Water Treatment Plant (VCWWTP) Biosolids EMS is functioning as intended, that practices and procedures are conducted as documented, and that the EMS as implemented conforms to the NBP's Code of Good Practice and EMS program objectives.

## **RECOMMENDATION**

The results of the VCWWTP's eighth interim audit and review of their biosolids management program are positive, and it is the recommendation of the audit team that the Wastewater Treatment Facility BMP maintain its "Certification" status.

## **AUDIT SCOPE**

The NSF-ISR conducted a third party interim audit of the VCWWTP's EMS for Biosolids from October 16 through October 19, 2013. The on-site interim audit team consisted of Dr. William R. Hancuff, Lead Auditor.

The scope of the eighth interim audit included a review of areas generally related to the organization's progress toward goals and objectives; EMS outcome requirements for environmental performance, regulatory compliance, relations with interested parties, and quality biosolids management practices; actions taken to correct minor non-conformances; the management review process; and corrective and preventive action notices and responses. The review of these areas is generally covered in Elements 5, 14, 16 and 17. In addition, other EMS components that were generally be audited included Elements 1, 2, 6, 9, 14, 15, and 16, while specific elements that were audited in their entirety were Elements 3, 8, 15, and 17.

In general terms, the audit encompassed the entire biosolids value chain (pretreatment, collection and treatment, through final end use) with special attention on those practices and management activities that directly support biosolids-related operations, processes, and activities within the biosolids value chain.

The physical biosolids facilities visited during the interim audit included the VCWWTP administrative offices, primary settling tanks, aeration tanks, secondary clarifiers, dual media filter with traveling bridge backwash, anaerobic digesters, digester gas compressors for generators, heat recovery steam generator, high strength waste unloading station, solids dewatering belt presses, lime stabilization process, biosolids

holding tanks, chlorination/dechlorination facilities, on-site biosolids storage area, biosolids truck loading, truck transportation route, staging at land application site, and biosolids land application site in Johnson County at William Mitchell farm (JCWM – 1).

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

Sebastian “Buster” Fichera – Assistant Water Director of Wastewater Treatment  
Steven Nutter – Biosolids Manager/EMS Manager, VCWWTP  
Magan Lersch – Senior Environmental Specialist, VCWWTP  
Jerry Pressley – Water System Superintendent, VCWWTP  
Ben Davis – Renda Environmental, Inc. (REI) – Biosolids Manager  
Mort Barnes – Renda Environmental, Inc. (REI) – Turbine Operator  
Anna Pena – Plant Engineer, VCWWTP  
Ginger Laird – Training Specialist, VCWWTP  
Gonzo Godinez – Graduate Engineer, VCWWTP  
Shane Isbell – Environmental Investigator Water Programs – TCEQ Region IV  
Elizabeth Smith – Air Section Manager – TCEQ Region IV  
Jason Neumann – Air Section Work Leader – TCEQ Waco/Austin Region  
Katie Wooten – Air Sect. Environmental Investigator – TCEQ Waco/Austin Region  
Elizabeth Moman – Air Sect. Environ. Investigator – TCEQ Waco/Austin Region  
Eric Valdez – Dewatering Supervisor, REI (contractor)  
Noel Castillo – Vehicle Operator, REI (contractor)  
Jose Valdez – Land Application Supervisor, REI  
Eugenio Rosas – Spreading Operator, REI  
William Mitchell – Landowner and farmer, user of biosolids for land application.

## **INTERIM AUDIT FINDINGS**

The eighth interim audit found no major non-conformity, 6 minor non-conformities, 4 opportunities for improvement and 1 positive commendation.

The following is a review of the positive observation made during the interim audit. The minor non-conformities and opportunities for improvement follow and are listed by requirement number in the sequence of the Third Party Verification Auditor Guidance.

### **Positive Observation**

Fort Worth has made good use of the corrective/preventive action program through identifying formal corrective and preventive action plans to address nonconformances identified during routine operations and monitoring and measurement. It is expected that this trend will continue into the future.

### **Minor Nonconformances**

Requirement 5.3 – Input from interested parties developed through proactive public participation must be considered in developing program goals and objectives. The

development of program goals and objectives did not specifically consider the input received from the public gathered during plant tours, namely concern in applying biosolids to food crops (18 Jan 2013) and purchase of biosolids from the city (23 May 2013). (Note: in the Proactive Public Participation Section of EMS Element 5.0 it indicates that a new goal/objective will include a footnote describing how public participation assisted in the development of the specific goal/objective. This was not captured.)

Requirement 5.5 – Some of the program goals did not adequately use the SMART (specific, measurable, achievable, relevant and time bound) criteria in their development, more specifically the measurability was not clearly defined in all cases, for example measurable odor constituents reduction (subjective or scientific).

Requirement 9.1 – Fort Worth has not developed a proactive communication program for addressing odor concerns to interested parties and the public consistent with the local circumstances, method of biosolids management, public communication history and the degree of current interest in its biosolids management activities.

Requirement 9.3 – In the Fort Worth EMS Element 16.0 it indicates the independent third party audit results are handled in the same manner as the internal audit results, and the method of providing the internal audit results to the public are as discussed in Element 6.0 and 9.0. In the Element 9.0 in the External Communications Section it indicates the City of Fort Worth EMS manual, annual progress, reports, and audit results are posted on the Biosolids page within <http://www.fortworthgov.org/water>. On that site it incorrectly lists the Fort Worth internal audits for 2009, 2011, and 2012 as interim audits; and does Fort Worth did not post the external interim audits conducted in 2011 and 2012 by the independent third party auditor.

Requirement 10.1 – The treatment plant has not completely developed and implemented standard operating procedures (SOPs), work management practices or other appropriate methods at all critical control points throughout the biosolids value chain to effectively manage potential environmental impacts. The lack of SOPs was identified as a major nonconformance in the last interim audit, but considerable progress has been made in completing these documents and a schedule is in place to complete the remaining SOPs.

Requirement 16.1 – Fort Worth did not perform the required internal audit in 2013. (Note: The Fort Worth Internal EMS Audit – EMS Element 16.0 procedure incorrectly indicates that internal audits are not required to be performed if a NBP approved third party audit is conducted.)

### **Opportunities for Improvement**

Requirement 5.1 and 5.3 – Consider using input received from regulators during the 2013 interim audit in developing future goals and objectives related to relations with interested parties; namely, 1) provide information to the public that ensures runoff from land application sites is controlled, 2) provide brochures, pamphlets or other information to

anyone who may be impacted by biosolids land application, i.e. all immediate land owners and or leasers of adjacent properties to land application sites; 3) provide notification to all county commissioners on the land application benefits and proposed schedules of biosolids distribution in their county, 4) provide land application schedule and other general information to the TCEQ regulators in the regions where land application will take place, 5) provide to the regulators the names of those who own or lease land adjacent to the land application sites.

Requirement 10.1 – Since Instrumentation/Electrical are listed as a separate category requiring SOPs, consider developing a separate list of instrumentation/electrical components identified as being required in each of the critical control points SOPs.

Requirement 15.1 – Consider including in the annual Biosolids Management Program Performance Report a summary of the dollars saved or generated by accomplishment of the goals and objectives and the summation of all money saved by attaining the goals and objectives. Consider placing this summary in an Executive Summary in the opening section of the Performance report.

Requirement 16.3 – Consider providing a clearer and more detailed description of the internal audit frequency, methodology, protocol, scope and schedule.

The corrective actions for the minor non-conformities must be prepared, submitted and reviewed by the auditor within 30 days. The corrective action approaches and schedules for closure need to be approved. Verification of closure of the minor findings will be submitted to the auditor as they are accomplished and the field verification of their implementation will be completed during the next third party interim audit.

## **VILLAGE CREEK WASTEWATER TREATMENT PLANT COMMENTS**

The Fort Worth Water Department is fully committed to its NBP certified Environmental Management System (EMS). We recognize the opportunity to improve our program as a result of the issues identified during the third party audit. Fort Worth will fully implement the needed changes and will strive to continually improve its EMS program.

### **OUTCOMES MATTER**

The City of Fort Worth revitalized its Environmental Management System for Biosolids program through establishing five entirely new longer-term goals in 2011. They were to: (1) Increase methane gas production from anaerobic digesters, (2) Increase capacity of anaerobic digesters through cleaning and mixing improvement, (3) Evaluate and implement grit control to improve biosolids quality, (4) Increase biosolids outreach activities in response to public concerns and (5) provide a new turbine waste heat recovery for combustion of digester gas. During 2011 it was determined that the evaluation and implementation of grit control was not within the budget for that year and it was dropped. However, in August 2012 a grit control study was added back into the goals and objectives, along with another new project, that of creating a biosolids master plan. Because of significant odor issues experienced in early 2013 two new goals were established this year to address these concerns. One was to establish a pilot project to aerate biosolids holding tank number 1 to reduce the odors associated with biosolids land application and the second was to investigate biosolids odors associated with high strength waste. Because of the need to maintain good relations with interested parties and ensure a continued high level of confidence in the quality of Ft. Worth biosolids and additional goal was added in mid-year; namely evaluating an oxidation process to further stabilize the biosolids product and eliminate the cause of odors.

The new goals and objectives were developed recognizing the concerns of the general public for costs and to proactively reduce the financial burden on taxpayers. The goals were established to ensure progress in each of the four outcome focal points 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 objectives established, a critical part of the system is to make progress towards the overall goals. Because of the long-term nature of some of the new goals initial progress was made on some objectives, while delays were experienced in others. Overall the new goals and objectives will result in substantial gains in biosolids management, considerable reduction in cost of operation and generation of energy to offset operational demands. Considerable effort was made to employ SMART

criteria in establishing the new objectives. The City of Fort Worth's performance relative to each of the above groups is addressed below.

In the Environmental Performance area, the City of Fort Worth's Biosolids program established six goals to improve environmental performance. These were 1a) to increase the methane gas production from anaerobic digesters, 1b) enhance the performance of anaerobic digesters through cleaning and mixing improvements, 2) implement a new turbine waste heat recovery system, 3) conduct a grit control study, 4) create a biosolids master plan, 5) provide aerated mixing to the biosolids storage tank and 6) investigate an oxidation process to eliminate odor causing constituents in the final product. Note the first two goals of increasing digester gas production and enhancing digester performance through cleaning and mixing improvements were combined into one since they were implemented at the same time and measured improvements could not be separated.

The first combined goal had two objectives or interim steps, one was to clean the digesters, install new high efficiency mixers, and construct a high strength waste unloading station. The second objective was to evaluate the effectiveness of the improvements and addition of high strength waste. Both objectives were accomplished in 2012 through 2013. The construction objective was completed in September 2012. High strength waste in the form of grease trap cleanings was added to cleaned and refurbished digesters (9 through 14). From October 2012 through June 2013 the increased addition of high strength waste was operated with the usual start up challenges but reached stability in July 2013. Nevertheless, the increase in digester gas generation from January 2013 through September 2013 demonstrated a 52% increase in digester gas production. Extrapolating this increase in methane production results in a potential energy savings of \$1.76 million per year, if all of the gas were converted to usable energy.

The second goal was the implementation of a new turbine waste heat recovery system to generate power to meet the requirement of the wastewater treatment plant and possibly feed excess energy back into the power grid. The system consists of a heat recovery steam generator (HRSG), which drives steam turbines that generate electricity used to power the aeration basin blowers and supply air to the odor control biofilters and scrubbers. These turbines are to be used to capture waste heat from the methane gas produced by the digesters and land fill gas that has in the past been flared as a waste. The design and construction of this facility is complete and testing has been underway since January 2013. Although the energy capture is somewhat variable on a month-to-month basis it is estimated that this will reduce the power requirements of the plant by approximately \$1 million per month. Note that additional waste heat energy is captured and used to heat the digesters and other operations on the hydronic loop.

The third goal was to conduct a grit control study, which ultimately may be used to evaluate the benefits associated with improved grit removal. This program is intended to remove grit before it enters the downstream biosolids value chain critical control points, to reduce the maintenance, repair and replacement of pumps, and to prevent grit from entering the digesters, which decreases the effective volume of these units. Enhanced grit removal also has the benefit of improving the final biosolids product by removing

undesirable material before it becomes part of the land application process. The first objective of this goal is to prepare a report on the influent grit characterization. This initial effort while originally scheduled for completion in October 2012 has been delayed because of conflicting priorities until June 2014. Additional objectives will be based on the results of this study.

The fourth goal is to prepare a biosolids master plan. The objectives of this goal are to prepare a market study for all biosolids beneficial use options and evaluate a maximum number of alternative drying methods and biosolids processing along with end uses. A contract has been awarded to include: establishing a set of weighted non-monetary evaluation criteria to guide the development and screening of long-term alternatives; to develop biosolids projections and evaluate short term capacity requirements; to develop and screen alternatives; to conduct a market analysis of biosolids end use products; to provide detailed alternative evaluations to refine long-term biosolids plan and operational strategies, and to prepare long-term biosolids management recommendations. The project commenced in April 2012 and is now scheduled for completion in mid-2014.

The fifth goal is to provide aerated mixing to the biosolids storage tank to improve performance with respect to odor control. Aeration equipment was added to the biosolids mixing line of holding tank number 1 in June 2013. The objective is twofold: first to keep the contents of the storage tank aerobic so that no odors are generated associated with this critical control point. The second is to reduce the potential for odor occurrences at the land application sites. The first objective has been observed to be effective although no dissolved oxygen measurements have been made to demonstrate aerobic conditions dominate in the tank. The second objective of reducing the potential for odor causing conditions in the field has not been fully demonstrated to date. However, subjective odor measurements are being used as field indicators of the degree of success. Personnel are recording noticeable odors such as slight, moderate and strong, at select locations during field visits.

The sixth goal, which was established in 2013, is to investigate an oxidation process to eliminate odor-causing constituents in the final biosolids product. A proprietary process known as Bioglox (a stabilized hydrogen peroxide and glycolic acid solution) was tested at the laboratory scale and found to be successful in substantially reducing odor causing constituents. The process is currently (October 2013) being evaluated at the pilot plant scale and if determined successful will be scaled up and implemented at the Village Creek facilities. In addition to the environmental performance outcome area the above objectives have secondary impacts on the outcome areas associated with regulatory compliance, relations with interested parties and quality biosolids management practices.

In the Relations with Interested Parties area, the City of Fort Worth's Biosolids program established a goal to increase biosolids outreach activities in response to public concerns. The objectives within this goal were to identify four public/third party concerns related to the biosolids and for each of these concerns contact three external agencies to determine how to provide the agencies with the information to address the concerns. Although the specifics of these objectives were not accomplished, it was determined that most individuals are concerned with odors. While this goal and objective was declared

completed in October 2012 the facility experience serious odor problems in 2013. Therefore new goals and objectives were established as described above in the environmental performance outcome area namely aeration of the biosolids holding tank and investigation of Bioglox for eliminating odor causing constituents in the final product. Another goal, which directly relates to the latter concern with odors and which will improve the relations with interested parties, is the production of a more stabilized final product through improvements in digester cleaning and mixing. The more stabilized product will have a lower probability of odor production. This goal combined with the installation of new turbines for waste heat recovery will result in a substantial increase in energy recovery and lower the annual cost of operations, reducing the taxpayer burden. Additionally, the new goal of preparing a biosolids master plan includes within the scope of services establishing a set of weighted non-monetary evaluation criteria to guide the development and screening of long-term alternatives. These will be based for the most part on the need to maintain positive relations with interested parties.

In the Regulatory Compliance area, the City of Fort Worth's Biosolids program established a goal to clean the digesters and install innovative mixing equipment. This will result in maintaining a high reliability of volatile solids reduction, which can be used as an alternative to meet regulatory requirements for Class A biosolids. One of the fundamental considerations in the new goal for the development of a biosolids master plan will be compliance with current and anticipate future regulatory requirements. Additionally, as a potential side benefit of employing the Bioglox process for odor control is its possible use to attain pathogen reduction requirements to meet Class A or Class B regulations.

In the Quality Biosolids Management Practices area, the City of Fort Worth's Biosolids program established three goals containing several objectives, which have been discussed in previous sections. These were the cleaning of the digesters, including installation of new mixers, the evaluation of the removal of grit from the biosolids value chain, the preparation of a biosolids master plan and implementing practices that will minimize or eliminate completely odor causing constituents in the biosolids product. The City has made progress on all of these goals.

The City has made considerable progress on its re-energized biosolids management program's goals and objectives and should see substantial cost and product quality benefits over the near term.

## **CONCLUSIONS AND RECOMMENDATIONS**

During the interim audit several minor non-conformities were identified. The review and approval of the corrective action notices for these findings have been prepared, reviewed and approved. Therefore, it is the recommendation of the audit team that the Village Creek Wastewater Treatment Plant's EMS for biosolids maintain its "Certification" status.

Discussions between the VCWWTP Biosolids EMS manager and the third party auditor resulted in agreement to the following proposed interim audit approach. Each interim audit will include a review of: the organization's progress toward goals and objectives; EMS outcomes (environmental performance; regulatory compliance; interested party relations; quality practices); actions taken to correct minor non-conformances; the management review process; corrective action requests and responses; and preventive actions. In addition to the above, the following elements will be audited according to the following tentative schedule:

Year 6 (third party) – Elements 5, 6, 9, 14, 16 (Completed)

Year 7 (third party) – Elements 1, 10, 12, 13 (Completed)

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

Year 9 (third party) – Elements 2, 4, 7, 11

Year 10 (third party)- Reverification – All elements

The results of the current 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.

Additionally, based on the timing of the City's biosolids management system annual cycle the anniversary date for all future interim and re-verification audits was shifted to October 15 with the intention of completing those audits during the first part of October each year.

## **Attachment 1**

### **Documents and Other Object Evidence Reviewed During the Eighth Interim Audit**

#### Element 1. BMP Manual

- Village Creek Water Reclamation Facility – Fort Worth – Environmental Management System (EMS) Manual – October 11, 2013.
- Documentation of EMS for Biosolids – EMS Procedure 1.0 – Rev 08 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Biosolids Policy – EMS Element 2.0 – Rev 05 – Aug 5, 2013.
- Critical Control Points – EMS Element 3.0 – Rev 09 – Aug 5, 2013.
- Legal and Other Requirements – EMS Element 4.0 – Rev 07 – Aug 5, 2013.
- Biosolids Goals & Objectives – EMS Element 5.0 – Rev 12 – Aug 5, 2013.
- Public Participation in Planning – EMS Element 6.0 – Rev 07 – Aug 5, 2013.
- Roles and Responsibilities – EMS Element 7.0 – Rev 08 – Aug 5, 2013.
- Training – EMS Element 8.0 – Rev 06 – Aug 5, 2013.
- Communications & Public Outreach – EMS Element 9.0 – Rev 09 – Oct 3, 2013.
- Operational Control of Critical Control Points – EMS Element 10.0 – Rev 08 – Oct 11, 2013.
- Emergency Preparedness & Response – EMS Element 11.0 – Rev 07 – Aug 5, 2013.
- EMS Documentation and Document Control – EMS Element 12.0 – Rev 07 – Aug 5, 2013.
- Monitoring and Measurement – EMS Element 13.0 – Rev 09 – Aug 5, 2013.
- Nonconformance: Preventive & Corrective Action – EMS Element 14.0 – Rev 07 – Aug 5, 2013.
- Biosolids Program & EMS Performance Report – EMS Element 15.0 – Rev 07 – Aug 5, 2013.
- Internal EMS Audit – EMS Element 16.0 – Rev 10 – Aug 26, 2013.
- Periodic Management Review – EMS Element 17.0 – Rev 07 – Aug 5, 2013.
- Village Creek Wastewater Treatment Plant Fort Worth EMS Planning Schedule (By Calendar Year) – August 26, 2013.

#### Element 2. Biosolids Management Policy

- Biosolids Policy – EMS Element 2.0 – Rev 05 – Aug 5, 2013.
- Interview with Sebastian “Buster” Fichera
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Website - City of Fort Worth Wastewater Biosolids EMS

### Element 3. Critical Control Points

- Critical Control Points – EMS Element 3.0 – Rev 09 – Aug 5, 2013.
- EMS Master Table – EMS Element 3.0 (Biosolids Value Chain, Critical Control Points, Roles and Responsibilities, Operational Controls, Environmental Impacts, Regulatory Documents, Standard Operating Procedures, Other Documents, Location of SOPs, Key Operational Parameters, Monitoring, including activity and frequency – August 5, 2013.
- Village Creek Water Reclamation Facility Biosolids Value Chain flow diagram including wastewater pretreatment and collection; wastewater treatment and solids generation; solids stabilization, conditioning and handling; solids storage and transportation; and biosolids use and disposal alternatives – August 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, Jerry Pressley, and Ben Davis.

### Element 4. Legal and Other Requirements

- Legal and Other Requirements – EMS Element 4.0 – Rev 07 – Aug 5, 2013.
- Table of Regulations Applicable to the VCWRF Biosolids Value Chain.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Interviews with Shane Isbell (Water Manger –TCEQ Region IV), Elizabeth Smith (Air Section Manager – TCEQ Region IV), Jason Neumann (Air Section Work Leader – TCEQ Waco/Austin Region), Katie Wooten (Air Section Environmental Investigator – TCEQ Waco/Austin Region), and Elizabeth Moman (Air Section Environmental Investigator – TCEQ Waco/Austin Region.)
- Petition for Adoption of Rules (Title 30 TAC 20.15).

### Element 5. Goals and Objectives

- Biosolids Goals & Objectives – EMS Element 5.0 – Rev 12 – Aug 5, 2013.
- Interview with Sebastian “Buster” Fichera.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Long-Term Biosolids Master Plan.
- Summary of Individual Facility Improvement Measures – Johnson Controls.
- Grit Characterization Proposal of Services – May 15, 2012.
- Biosolids Goals and Objectives Summary – EMS Element 5.0 Appendix 5a (Biosolids year 2012) – September 25, 2012.
- Biosolids Goals and Objectives Summary – EMS Element 5.0 Appendix 5a (Biosolids year 2013) – July 12, 2013.
- Biosolids Goals and Objectives Summary – EMS Element 5.0 Appendix 5a (Biosolids year 2013) – September 25, 2013.
- Biosolids Goals and Objectives Summary – EMS Element 5.0 Appendix 5a (Current) – October 10, 2013.
- Identification of basic components of 5 alternative biosolids processing options.
- Biosolids Management Program & Environmental Management System (EMS) 2012-2013 Annual Performance Report.
- Goals & Objectives progress status – 2012 through 2013.

## Element 6. Public Participation in Planning

- Public Participation in Planning – EMS Element 6.0 – Rev 07 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Interview with Ginger Laird – Training Specialist.
- Review results of comments received during plant tours during 2013 (Jan 18, May 23, and June 19).
- City of Fort Worth Website – Public invitation to observe audit of biosolids EMS audit Wednesday, October 16 through Friday, October 18, 2013 (website).
- E-mail invitation to observe interim audit dated October 2, 2013.
- Interviews with Shane Isbell (Water Manger –TCEQ Region IV), Elizabeth Smith (Air Section Manager – TCEQ Region IV), Jason Neumann (Air Section Work Leader – TCEQ Waco/Austin Region), Katie Wooten (Air Section Environmental Investigator – TCEQ Waco/Austin Region), and Elizabeth Moman (Air Section Environmental Investigator – TCEQ Waco/Austin Region).
- Petition for Adoption of Rules (Title 30 TAC 20.15).
- Biosolids Management Program & Environmental Management System (EMS) 2012-2013 Annual Performance Report.
- Reviewed odor complaint history for significant biosolids odor issues experienced in 2013.

## Element 7. Roles and Responsibilities

- Roles and Responsibilities – EMS Element 7.0 – Rev 08 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Table 1: Roles and Responsibilities – EMS Element 7.0 – September 19, 2012.
- EMS Appendix 7.0a: City of Fort Worth Biosolids Organizational Chart including Fort Worth Water Pollution Control Division – August 5, 2013.

## Element 8. Training

- Training – EMS Element 8.0 – Rev 06 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Interview with Ginger Laird – Training Specialist
- Interviews with biosolids contractor personnel; Mort Barnes – Turbine Operator, Eric Valdez – Dewatering Supervisor, Noel Castillo – Vehicle Operator, Jose Valdez – Land Application Supervisor, and Eugenio Rosas – Spreading Operator.
- Interviews with VCWWTP personnel: Jerry Pressley – Water System Superintendent, Anna Pena – Plant Engineer, and Gonzo Godinez – Graduate Engineer.

## Element 9. Communications

- Communications & Public Outreach – EMS Element 9.0 – Rev 09 – Oct 3, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.

- Fort Worth Water – Biosolids Technical Information brochure.
- Fort Worth Water – Biosolids Beneficial Reuse & Recycling Program brochure.
- Village Creek Water Reclamation Facility – EMS Introduction – overview of the facility and biosolids production. (Available on website).
- Biosolids Management Program & Environmental Management System (EMS) 2012-2013 Annual Performance Report.
- City of Fort Worth Website – section related to wastewater biosolids.
- Reviewed odor complaint history for significant biosolids odor issues experienced in 2013.

#### Element 10. Operational Control of Critical Control Points

- Operational Control of Critical Control Points – EMS Element 10.0 – Rev 08 – Oct 11, 2013.
- Evaluation of Co-digestion on odor parameters – October 2013.
- Evaluation of Lime Treatment on odor parameters – September 2013.
- Reviewed SOP Master Files Binder and SOP Binders (CCP Manuals).
- Reviewed Status Table for development and updating SOPs for all wastewater reclamation facilities operations.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Interview with Ginger Laird – Training Specialist
- Interviews with biosolids contractor personnel; Mort Barnes – Turbine Operator, Eric Valdez – Dewatering Supervisor, Noel Castillo – Vehicle Operator, Jose Valdez – Land Application Supervisor, and Eugenio Rosas – Spreading Operator.
- Interviews with VCWWTP personnel: Jerry Pressley – Water System Superintendent, Anna Pena – Plant Engineer, and Gonzo Godinez – Graduate Engineer.
- Field visit to land application site in Johnson County at William Mitchell farm (JCWM – 1).
- Renda Environmental EMS Standard Operating Procedure Manual.

#### Element 11. Emergency Preparedness and Response

- Emergency Preparedness & Response – EMS Element 11.0 – Rev 07 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Interviews with biosolids contractor personnel: Eric Valdez – Dewatering Supervisor, Noel Castillo – Vehicle Operator, Jose Valdez – Land Application Supervisor, and Eugenio Rosas – Spreading Operator.

#### Element 12. BMP Documentation and Document Control

- Village Creek Water Reclamation Facility – Fort Worth – Environmental Management System (EMS) Manual (Table of Content, List of Tables, and List of Figures) – October 11, 2013.

- EMS Documentation and Document Control – EMS Element 12.0 – Rev 07 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Interview with Ginger Laird – Training Specialist
- Village Creek Water Reclamation Facility – Fort Worth – Environmental Management System (EMS) Manual Issue Log – October 11, 2013.
- Review EMS Element Procedure revision history and revision descriptions for each element.
- Table - TPDES Permit – Required Report Summary – EMS Element 12.0 dated August 5, 2013.
- Figure 1 Pretreatment Data Management System – August 5, 2013.
- Table – Level 4 Documentation Master List – EMS Element 12.0 dated August 5, 2013.
- City of Fort Worth Village Creek Water Reclamation Facility Standard Operating Procedure for Standard Operating Procedures (Creation/Revision/Updates Procedure Rev 00, effective date 7/19/13.
- Reviewed obsolete files – stamped “inactive”

#### Element 13. Monitoring and Measurement

- Monitoring and Measurement – EMS Element 13.0 – Rev 09 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Review Digester Gas Production Rates for March 2013 through Sept 2013.
- Reviewed SOP Master Files Binder and SOP Binders (CCP Manuals).
- Review Steam Blower Runtime, Output and Savings (February through June 2013).
- Calculation methodology for kwh/year decrease and dollars saved associated with Turbine Waste Heat Recovery System.
- Interviews with biosolids contractor personnel; Mort Barnes – Turbine Operator, Eric Valdez – Dewatering Supervisor, Noel Castillo – Vehicle Operator, Jose Valdez – Land Application Supervisor, and Eugenio Rosas – Spreading Operator.
- Interviews with VCWWTP personnel: Jerry Pressley – Water System Superintendent, Anna Pena – Plant Engineer, and Gonzo Godinez – Graduate Engineer.
- Field visit to land application site in Johnson County at William Mitchell farm (JCWM – 1).
- Biosolids Management Program & Environmental Management System (EMS) 2012-2013 Annual Performance Report.
- Reviewed increase in methane production and BTU value associated with addition of high strength waste to digesters in 2013.

#### Element 14. Nonconformances: Preventive and Corrective Action

- Nonconformance: Preventive & Corrective Action – EMS Element 14.0 – Rev 07 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.

- Corrective Action Notice (CAN) Form – July 29, 2011.
- Corrective Action Notice (CAN) – Master List for non-conformance issues identified in 2012 interim biosolids EMS audit.
- National Biosolids Partnership EMS Pre-Interim Audit Report – September 19, 2012.
- Reviewed CAN associated with Pre-interim audit dated September 19, 2012.
- Reviewed status of 2012 interim audit finding close outs.

#### Element 15. Biosolids Management Program Report

- Biosolids Program & EMS Performance Report – EMS Element 15.0 – Rev 07 – Aug 5, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Biosolids Management Program & Environmental Management System (EMS) 2012-2013 Annual Performance Report.

#### Element 16. Internal BMP Audit

- Internal EMS Audit – EMS Element 16.0 – Rev 10 – Aug 26, 2013.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Table 1: Audit Schedule for Internal Audits – Village Creek (five year) – August 26, 2013.
- National Biosolids Partnership EMS Pre-Interim Audit Report – September 19, 2012.

#### Element 17. Management Review

- Periodic Management Review – EMS Element 17.0 – Rev 07 – Aug 5, 2013.
- Annual EMS Management Meeting – October 14, 2013 – Attendance sign in sheet.
- Biosolids Annual EMS Management Review Agenda held on October 14, 2013 for reporting period August 1, 2012 – July 31, 2013.
- Interview with Sebastian “Buster” Fichera.
- Interviews with Steven Nutter, Magan Lersch, and Ben Davis.
- Village Creek Wastewater Treatment Plant Fort Worth EMS Planning Schedule (By Calendar Year) – August 26, 2013.
- Biosolids Management Program & Environmental Management System (EMS) 2012-2013 Annual Performance Report.

## Attachment 2

### National Biosolids Partnership Appeals Process

To obtain Gold-level Recognition or Platinum-level Certification by the National Biosolids Partnership (NBP) Biosolids Management Program (BMP), biosolids organizations are required to undergo a BMP verification audit by an independent, third party auditor and yearly interim audits. The purpose of the audit is to determine whether or not the organization's BMP conforms to the NBP program, as defined in the BMP Elements. The spirit of these requirements includes a well-documented program and meaningful opportunities for interested party involvement.

The NBP provides an appeals process for biosolids organizations and interested parties that disagree with the findings of a third party BMP audit. The verification appeals process involves an Appeals Board; representing a balance of biosolids management interested parties and wastewater industry professionals.

To warrant an appeals action before the Board, the party bringing an appeal must set forth the specific BMP element(s) that they contend have not been evaluated and/or implemented consistent with NBP expectations and requirements as reflected in the BMP Elements, along with the objective evidence to support that claim. For example, a petitioner may believe that a major nonconformance exists but was not found by the auditor. In this case, the petitioner would need to identify in the petition the specific BMP element believed to be out of conformance and why.

To submit an appeal, petitioners must fill out and submit the standardized appeals petition form that is available on the NBP website at <http://www.wef.org/biosolids>. A notice of intent to appeal must be submitted within 30 days, and a formal appeal must be submitted within 60 days, of the public release of the third party audit report containing the verification decision or interim audit decision by the audit company.

The Appeals Board's Administrative Officer receives all appeals petitions on behalf of the Board and conducts a basic completeness check. Upon completion of this check, the petition is either forwarded to Appeals Board members or back to the petitioner with incomplete areas documented. Petitions should be sent via certified, return receipt requested mail to: The NBP Appeals Board, Attention: Board Administrative Officer, c/o Water Environment Federation, 601 Wythe Street, Alexandria, VA 22314.

The Appeals Board will examine the facts, interview parties involved, deliberate the case, and then make a determination as to whether a major nonconformance does or does not exist. Appeals cases vary in complexity. As a result, the time required for the Board to evaluate a case and make a decision might vary. However, the overall Board target for processing an appeal is approximately four months.

Appeal of minor nonconformances is through the third party audit company's internal appeals process. To place a minor nonconformance appeal the organization should provide the audit company with documentation or other objective evidence explaining why the finding at issue does not exist. These appeals are reviewed and resolved by an audit company representative who was not part of the third party audit team.

Note: The *EMS Elements* and other program materials are available on the NBP website at <http://www.biosolids.org>.