

**NATIONAL BIOSOLIDS PARTNERSHIP
RE-VERIFICATION AUDIT REPORT**

**City of Grand Rapids
Environmental Protection Services Department
Grand Rapids, Michigan**

Grand Rapids, Michigan

Audit conducted by

NSF-International Strategic Registrations

William R. Hancuff, Lead Auditor

References:

**National Biosolids Partnership (NBP) BMP Elements
NBP Third Party Verification Auditor Guidance – November 2001
(Latest Revision August 2011)
NBP Code of Good Practice
City of Grand Rapids
Environmental Services Department
Biosolids Management Program Manual
Last Revised October 2016**

Draft Report – October 16, 2016

INTRODUCTION

The purpose of the Biosolids Management Program (BMP) re-verification audit is to verify the Water Resource Recovery Facility Biosolids Management Program (BMP) conforms to the National Biosolids Partnership (NBP) Biosolids Management Program Standard requirements.

The methodology of the Third Party re-verification audit is to collect and evaluate objective evidence that determines whether the Water Resources Recovery Facility BMP is functioning as intended, that practices and procedures are conducted as documented, and that the EMS as implemented conforms to the NBP's BMP Elements, the Code of Good Practice and the program goals and objectives.

The scope of the re-verification audit includes evaluation of evidence to demonstrate continuous improvement of the management system and to review the entire BMP, including all 17 elements.

Continuous improvement is evaluated in the audit through assessment of the organization's progress toward goals and objectives, BMP outcomes, actions taken to correct minor nonconformances, the management review process, corrective action requests and responses and preventive action requests.

RECOMMENDATION

The results of the Grand Rapids' re-verification audit and review of corrective actions are positive, and it is the recommendation of the audit team that the City of Grand Rapids Environmental Protection Services BMP maintain its Platinum Level "Certification" recognition status.

AUDIT SCOPE

The NSF-International Strategic Registrations, Ltd. (NSF-ISR) conducted a third party re-verification audit of the City of Grand Rapids Environmental Services Department Water Resource Recovery Facility's BMP from October 11, 2016 through and including October 13, 2016. The on-site interim audit team consisted of Dr. William R. Hancuff, Lead Auditor.

The overarching scope related to continuous improvement included review of the following activities related to the identified core element requirements:

- The organization's progress toward goals and objectives (Element 5),
- BMS outcomes (environmental performance, regulatory compliance, interested party relations, and quality practices) (Element 5),
- Actions taken to correct minor non-conformances (Element 14),
- Management review process (Element 17), and

- Corrective and preventive action requests and responses (Element 14).

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 included in the re-verification audit and visited during the audit included the administration building, primary settling facilities, secondary treatment section, storage building, maintenance shop, service building, stock room, new WAS low energy/low shear volute thickener, centrifuges, the Central Sanitary Landfill in Pierson, Michigan, under design for a power generation facility, which will recover and use biosolids/landfill gas.

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

Mike Lunn – Environmental Services Department (ESD) Manager
Charles Schroeder – Water Resource Recovery Facility Assistant Manager
William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent
David Harris – Operations and Maintenance Supervisor
Tim Dryer – Operations and Maintenance Supervisor
Laron Morgan – Wastewater Technical Control Supervisor
Kurt Anderson – Water Pollution Control Officer
Kolene Allen – Office Assistant IV
Roger Rockburn – Operations Manager – Central Sanitary Landfill – Republic, Pierson, MI
Mike Worm – District Supervisor, Water Resources Division, Michigan Department of Environmental Quality
Melissa Whitaker – Wastewater Operator I
Max Turner – Wastewater Operator I
Matt Heugel – Wastewater Operator I
Jack Maskell – Wastewater Operator II

RE-VERIFICATION AUDIT FINDINGS

The re-verification audit identified 3 positive observations, no major non-conformances, 5 minor non-conformances and 10 opportunities for improvement.

The following is a review of the positive observation made during the interim audit. Minor non-conformances and opportunities for improvement follow, and are listed in accordance with the numbers associated with the minimum conformance standards contained in the Third Party Verification Auditor Guidance document.

Positive Observations

The Environmental Protection Services Department's Water Resource Recovery Facility personnel involved in biosolids management should be recognized for their outstanding achievements, and the exceptional features of their Biosolids Management

Program. The following three commendations were found to be noteworthy during this re-verification audit.

1) While not everyone at the water resource recovery facility had received training on the BMP, of those trained and interviewed 100 percent had an excellent understanding of the Critical Control Points, Biosolids Value Chain and the Grand Rapids Biosolids Mission Statement.

2) A post-incident audit was conducted on both a force main failure and a second sanitary sewer overflow (SSO). This review is an excellent tool for evaluating the effectiveness of the response activities that were well executed as well as the ones needing improvement. It provided recommendations for continuous improvement, including providing advance training for this type of emergency response, and improving communication between multiple job sites and management.

3) Grand Rapids personnel have substantially improved their recordkeeping and now have a color-coded filing system to identify all the BMP required records in file folders for each year.

Additionally, the hard work and dedication of the BMP management team must be acknowledged. While maintaining the BMP certification goal is obviously a team effort the leadership provided by the Environmental Services Department Manager assured maintenance of this common goal.

Minor Nonconformances

Requirement 5.5 and 5.7 – The standard requires that each program goal use the SMART criteria (Specific, Measureable, Achievable, Relevant and Time-bound); and that there be an action plan that describes improvement activities, containing schedules, milestones, and responsibilities for achieving biosolids goals and objectives. The goals and objectives for 2016 did not accurately describe the specific details of the goals and their measurability. Additionally, they did not provide a step-by-step action plan with schedules and milestones.

Requirement 6.2 – In the key areas of interpretation of the standard minimum conformance requirement for public participation in planning it indicates that auditors must verify that the biosolids organization has notified interested parties about their intent to receive an independent third party audit and have built into their BMP planning a discussion with interested parties about approaches for observing the third party audit. Grand Rapids' Element 6: Public Participation in Planning Procedure does not specifically describe the above process and there was no formal direct contact with the list of stakeholders regarding the opportunity to observe the 2016 third party audit.

Requirement 11.2 – The organization is required to review and evaluate the effectiveness of emergency preparedness and response procedures. Element 11 – Emergency Preparedness and Response does not currently address how the organization will evaluate

the effectiveness of the procedures in the Annual Biosolids Spill Drill Policy No. 3618. Additionally, a spill drill has not yet been conducted.

Requirement 12.2 – The standard requires that program documents be properly marked with version number, effective date(s), and reference to replaced or superseded versions. A review of several procedure documents revealed that the date the procedure was revised and approved did not appear on the document as the effective date.

Element 14 – The Grand Rapids BMP Element 14 – Nonconformance’s: Preventive and Corrective Action procedure requires certain NBP minimum conformance requirements (such as cause analysis, recommendation for corrective action, completion of corrective action plan, etc.) to be carried out exclusively by the “investigation committee.” The investigation committee has not been used to address minor nonconformances identified during audits, therefore several of the minimum conformance requirements have not been developed according to the procedure.

In order to address the above minor non-conformances, the City of Grand Rapids, Michigan, Environmental Services Department has prepared a non-conformance investigation report and will implement corrective actions according to their procedures to provide continual improvement to their BMP.

Opportunities for Improvement

Requirement 2.1 – Consider including in the list of references at the end of Element 2: Biosolids Management Policy procedure the commitment to the Code of Good Practice included in the December 17, 2004 letter from the Mayor of the City of Grand Rapids.

Requirement 5.1 – Consider developing a list of potential future Goals and Objectives for inclusion in a table in Element 5: Goals and Objectives.

Requirement 5.1 – Consider one of the operations staff suggestions for formulating a Goal and Objective related to establishing certain preventive maintenance (PM) activities based on operational information acquired through the supervisory control and data acquisition (SCADA) system.

Requirement 7.1 – Review the membership of the internal Biosolids Management Program (BMP) Team in Element 7 Roles and Responsibilities procedure 2, with those identified in Table 7.3 Internal BMP Team (Name and Contact information) for consistency (i.e. what role does the contractor play in the BMP Team.)

Requirement 7.1 – Consider identifying specific regularly scheduled meetings with an agenda to review the activities of the BMP Team as identified in Element 7 - Roles and Responsibilities procedure 8.

Requirement 8.2 – Consider having the BMP Coordinator attend a 36-hour ISO 14001 lead auditor-training course.

Requirement 9.5 – Consider documenting how relevant information about biosolids management activities such as Goals and Objectives, Action Plans and Progress Reports (required in Element 5 procedures) and tracking of corrective action plans progress (required in Element 14) are regularly communicated with appropriate employees at the monthly Operations Maintenance Group (OMG) meetings and the ESD manager’s meetings. (Agenda items)

Element 14 – Consider reviewing Grand Rapids BMP Element 14 – Nonconformance’s: Preventive and Corrective Action procedure for simplicity in defining how Grand Rapids will meet the minimum conformance requirements identified in the NBP standard.

Requirement 14.4 – the preventive and corrective action program was not implemented for problems identified during routine monitoring and maintenance, e.g. operational problems that require significant resources, such as parts, equipment, contracts, personnel or labor.

Requirement 14.6 – Consider developing a summary table of corrective actions that can be used to track status of preventive/corrective actions and presented at regularly scheduled meetings.

CITY OF GRAND RAPIDS ENVIRONMENTAL SERVICES DEPARTMENT COMMENTS

The City of Grand Rapids is, as always, grateful for the opportunity to have our BMP reviewed by Mr. William Hancuff. The interim and re-verification audits conducted by Mr. Hancuff are essential components in keeping the City on its desired path of continuous improvement.

The City’s biosolids management plan continues to mature and with experience the plan continues to evolve. The City is experiencing a large percentage of employee turnover giving us the opportunity to train and educate new staff on the biosolids value chain and the elements used in the plan. This year’s audit has shown that it would be wise for the City to evaluate and streamline the procedures for Corrective Action Plans (CAP), review goals and objectives as well as CAPs at scheduled meetings, and further define goals with more specific measurements and milestones.

The City continues to commit to the principals set forth in the National Biosolids Partnership code of good practice, and looks forward to future years of continued certification.

OUTCOMES MATTER

The City of Grand Rapids Environmental Services Department (ESD) has simplified its goals and objectives over the past few years and has continued to streamline its

program through 2016. The internal BMP team dropped several goals and objectives and modified others to reflect changes in the system. Continuing with the evolution will involve the addition and/or removal of goals and objectives as needed on a quarterly basis.

The modified goals and objectives were developed recognizing the need to optimize performance of solids processing and improve operation and maintenance to reduce the financial burden on taxpayers. Overall the goals and objectives are anticipated to result in gains in biosolids management and reduction in cost of operation.

The ESD Biosolids Management Program (BMP) established goals and objectives consistent with the required NBP outcome areas. The goals and objectives for 2016 were reduced to two with the intention of developing wholly new additions in 2017.

The 2016 goals were developed to a limited degree using Specific, Measurable, Achievable, Relevant, and Time-bound (SMART) criteria through input from the internal BMP Team and consideration of public concerns as they relate to costs. The goals were established cognizant of 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 accomplish all objectives established, it is a critical part of the system to make progress towards the overall goals. The Department's performance relative to each of the above groups is addressed below and the outcome groups affected by the goals and/or objectives are addressed at the end of each discussion.

CY 2016 – Compare Odor Loadings on the System with Different Sludge Feeds.

This goal was originally developed to attempt to identify the source of increased hydrogen sulfide loadings that were causing a significant depletion rate of the effectiveness of activated carbon used to control odors from the dewatering operations. After considerable discussion during the re-verification audit, it was determined that the goal would be more accurately defined using SMART criteria to be the following:

Optimize the Control of Odor at the Dewatering Facility through Reducing Hydrogen Sulfide while Decreasing the Cost of Activated Carbon Odor Treatment.

The background for this goal is centered on a major rise in hydrogen sulfide being contributed to the dewatering area resulting in an increase in odors and escalation in costs for regeneration of activated carbon. Historically hydrogen sulfide in the dewatering area had been in the range of 3 to 5 ppm. Most recently the level has risen to 15 to 20 ppm, which increases the odor in the area and has the potential of violating the facility's

permit. To maintain the required low concentration levels of hydrogen sulfide more activated carbon is consumed. The use of carbon has tripled or quadrupled (14 super sacks of 40 cubic feet each lasts about 3 months as opposed to a year).

The action plan developed to address this situation is as follows”

- Establish a baseline of hydrogen sulfide concentration through use of an “odologger”
- Evaluate alternatives for reducing hydrogen sulfide (including continued use of carbon treatment)
- Conduct a pilot scale operation of best alternative reduction processes
- Design and implement best option.

Outcome Areas: Environmental Performance, Regulatory Compliance, Relations with Interested Parties, and Quality Biosolids Management Practices.

CY 2016 – Real Time Nitrogen Control of North Plant

This goal was originally developed to control the operation of the North Plant by measuring the ammonia concentration. After discussion during the re-verification audit, it was determined that the specific measureable goal was actually:

Reduce the Energy Used to treat Wastewater in the North Plant by 10% measured in kilowatt-hours.

The action plan involves the balance of the air supplied to the biological treatment units to match the loading on a diurnal basis. The quantity of air supplied is controlled by the minimum amount required to maintain mixing of the tank contents during low loading periods, and increases as the waste load increases throughout the day. Controls are in place to match the air supplied to the oxygen demand based on nitrification requirements. Air supply control is governed by measurement of ammonia.

As part of the action plan high strength waste will be stored separately and fed into the treatment process during those times when the air is supplied to meet the low load mixing requirements, thus bringing the treatment load up to match the supply of air at low load times. Ultimately the energy demand will be reduced by 10% based on a Kwhr per pound of oxygen demand satisfied by the treatment process.

Outcome Areas: Environmental Performance, Regulatory Compliance, Relations with Interested Parties, and Quality Biosolids Management Practices.

CONCLUSIONS AND RECOMMENDATIONS

The results of the re-verification audit are positive. The review and approval of the corrective action plans for each of the non-conformances identified during the audit has been completed. The full implementation of the corrective actions for the minor non-conformances must be completed in accordance with their proposed schedules and closure will be verified during the next third party external audit.

As was mentioned previously, a BMP is a continuous improvement process. 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.

Discussions between the Department's BMP Coordinator and the third party auditor resulted in the following tentative agreement regarding the interim audit schedule:

Year 11 (internal) – Elements 5, 6, 9, 14, 16 (third party)

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

Year 13 (third party) – Elements 3, 8, 15, 17 (third party)

Year 14 (third party) – Elements 2, 4, 7, 11 (third party)

Year 15 – Re-verification Audit (third party)

Attachment 1

Documents and Other Object Evidence Reviewed During The Re-verification Audit

Element 1. BMP Manual

- City of Grand Rapids, Michigan Environmental Services Department Biosolids Management Program Manual – Updated October 2015?
- BMP Index
- Element 1 – Documentation of Biosolids Management Plan, Version 6.0, effective 10/7/15
- Table 1.1 BMP Elements
- Figure 1.1 – Letter of Understanding – NBP to City of Grand Rapids dated December 17, 2004.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent and David Harris – Operations and Maintenance Supervisor
- Document Management System – Policy Number: 1110, version 8.3, effective 12/19/2014.
- Appendix A: Glossary and Supplementary Definitions
- Appendix B: Tables, Figures, Forms.
- Appendix C: Index
- Appendix D: Nonconformances
- Introduction (including narrative description of wastewater treatment plant and aerial view of facilities.
- Commitment to the Code of Good Practice in letter dated December 17, 2004 signed by the Mayor of the City of Grand Rapids.
- Element 2 – Biosolids Management Policy, Version 7.0, effective 10/8/2015 (containing Biosolids Mission Statement and Code of Good Practice).

Element 2. Biosolids Management Policy

- Element 2 – Biosolids Management Policy, Version 7.0, effective 10/8/2015 (containing Biosolids Mission Statement and Code of Good Practice).
- Interviews with Mike Lunn – Environmental Services Department (ESD) Manager; Charles Schroeder – Water Resource Recovery Facility Assistant Manager; William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; and David Harris – Operations and Maintenance Supervisor.
- Commitment to the Code of Good Practice in letter dated December 17, 2004 signed by the Mayor of the City of Grand Rapids.

Element 3. Critical Control Points

- Element 3 – Critical Control Points, Version 7.0, effective 10/8/2015.
- Figure 3.1 CCP Periodic Review

- Table 3.1 Critical Control Points – with column headings of biosolids value chain, critical control points, operational controls (SOPs), environmental impacts, and monitoring and measurements.
- Critical Control Point Information sheet – Identification of each CCP and discussion of why it is important.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; Charles Schroeder – Water Resource Recovery Facility Assistant Manager; David Harris – Operations and Maintenance Supervisor; Tim Dryer – Operations and Maintenance Supervisor; Laron Morgan – Wastewater Technical Control Supervisor; Melissa Whitaker – Wastewater Operator I; Max Turner – Wastewater Operator I; Matt Heugel – Wastewater Operator I; Jack Maskell – Wastewater Operator II and Kolene Allen – Office Assistant IV.
- Field review of various critical control points, including primary settling facilities, secondary treatment section, solids storage tanks, centrifuges, TWAS thickener and the Republic Sanitary Landfill in Pierson, Michigan.
- Spot-check operations controls and monitoring and measurement in SOPs.

Element 4. Legal and Other Requirements

- Element 4 – Legal and Other Requirements, version 7.0, effective 10/8/15.
- Table 4.1 Legal and Other Requirements, including applicable requirements, document location, governing agency and areas of influence within biosolids value chain.
- Figure 4.1 – Annual Legal and Other Requirements Document Review form.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; David Harris – Operations and Maintenance Supervisor, and Kurt Anderson – Water Pollution Control Officer.
- Interview with State regulator - Mike Worm – District Supervisor, Water Resources Division, Michigan Department of Environmental Quality.

Element 5. Goals and Objectives

- Element 5: Goals and Objectives, version 11.0, effective 10/8/2015.
- Interviews with Mike Lunn – Environmental Services Department (ESD) Manager; William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; David Harris – Operations and Maintenance Supervisor, Tim Dryer – Operations and Maintenance Supervisor; Kurt Anderson – Water Pollution Control Officer, and Laron Morgan – Wastewater Technical Control Supervisor.
- Table 5.1 – Biosolids Goals and Objectives (dynamic template completed for 2016).
- Figure 5.1 – Action Plan Status Worksheets (form for Goals and Objectives).
- Figure 5.1 – Action Plan Status Worksheets (completed for 2016).
- Form 5.1 – Goals and Objectives Annual Review (form).
- Form 5.2 Public Participation – Annual Goals and Objectives Selection (form).
- Form 5.3 SMART Goals Assessment Worksheet (form).

- Reviewed quarterly progress reports for each goal and objective action plan for part of 2016.
- Assessment of outcomes in the four critical areas.
- Access and evaluation of website.
- Summary Table of Goals History from 2006 to 2016 (68 goals several of which were repeated.)

Element 6. Public Participation in Planning

- Element 6: Public Participation in Planning, version 8.0, effective 10/8/2015.
- Table 6.2 Interested Parties Contact Information (contact data spreadsheet).
- Table 6.3 – Public participation in planning worksheet (form)
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; and David Harris – Operations and Maintenance Supervisor.
- Interview with Mike Worm – District Supervisor, Water Resources Division, Michigan Department of Environmental Quality.
- Observed tour lecture.
- 2015 Periodic Biosolids Program Performance Report. Issued March 2016.
- City of Grand Rapids Website – Wastewater and Biosolids sections.

Element 7. Roles and Responsibilities

- Element 7: Roles and Responsibilities, version 10.0, effective 10/15/2015.
- Table 7.1 – Roles and Responsibilities – Internal BMP Team.
- Table 7.2 – Roles and Responsibilities grouped by Biosolids Value Chain Component.
- Table 7.3 – Internal BMP Team – Name and Contact Information.
- Figure 7.2 – Schedule of Annual Biosolids Activities.
- Environmental Services Organization Chart – October 10, 2016.
- Interviews with Mike Lunn – Environmental Services Department (ESD) Manager; William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; David Harris – Operations and Maintenance Supervisor; Tim Dryer – Operations and Maintenance Supervisor; Laron Morgan – Wastewater Technical Control Supervisor; Melissa Whitaker – Wastewater Operator I; Max Turner – Wastewater Operator I; Matt Heugel – Wastewater Operator I; Jack Maskell – Wastewater Operator II and Kolene Allen – Office Assistant IV.

Element 8. Training

- Element 8: Training, version 6.0, effective 10/8/2015.
- Figure 8.1 – Employee General Awareness Training (29 PowerPoint slides)
- Figure 8.2 – Employee General Awareness Training Attendance Sheet (form)
- Critical Control Point Information sheet – Identification of each CCP and discussion of why it is important.
- Reviewed ESD employee list for general awareness training: sign-in sheet for 2016.

- Reviewed SharePoint records that identify all employees training status – 2016.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; David Harris – Operations and Maintenance Supervisor; Tim Dryer – Operations and Maintenance Supervisor; Laron Morgan – Wastewater Technical Control Supervisor; Melissa Whitaker – Wastewater Operator I; Max Turner – Wastewater Operator I; Matt Heugel – Wastewater Operator I; and Jack Maskell – Wastewater Operator II.

Element 9. Communications

- Element 9: Communication and Public Outreach, version 8.0, effective 10/8/2015.
- Figure 9.1 Public Request for Information Form.
- Interviews with Mike Lunn – Environmental Services Department (ESD) Manager; William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; David Harris – Operations and Maintenance Supervisor; Tim Dryer – Operations and Maintenance Supervisor; Laron Morgan – Wastewater Technical Control Supervisor; Melissa Whitaker – Wastewater Operator I; Max Turner – Wastewater Operator I; Matt Heugel – Wastewater Operator I; Jack Maskell – Wastewater Operator II and Kolene Allen – Office Assistant IV.
- Interview with Mike Worm – District Supervisor, Water Resources Division, Michigan Department of Environmental Quality
- Table 6.2 Interested Parties Contact Information (contact data spreadsheet).
- Interested party notification of third party audit sent by email September 27, 2016.
- 2015 Periodic Biosolids Program Performance Report. Issued March 2016.
- City of Grand Rapids Website – Wastewater and Biosolids sections.
- Observed tour lecture.

Element 10. Operational Control of Critical Control Points

- Element 10: Operational Control of Critical Control Points, version 6.0, effective 10/8/2015.
- Form 10.1 – Annual Operational Controls Review.
- Form 10.2 – Contractor Compliance Inspection.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; David Harris – Operations and Maintenance Supervisor; Tim Dryer – Operations and Maintenance Supervisor; Laron Morgan – Wastewater Technical Control Supervisor; Melissa Whitaker – Wastewater Operator I; Max Turner – Wastewater Operator I; Matt Heugel – Wastewater Operator I; and Jack Maskell – Wastewater Operator II.
- Table 3.1 Biosolids Critical Control Points – lists operational controls related to each critical control point.

Element 11. Emergency Preparedness and Response

- Element 11 – Emergency Preparedness and Response, version 6.0, effective 10/8/2015.

- Table 11.1 – Emergency Response Information
- Table 11.2 – Emergency Equipment Inventory
- Annual Biosolids Spill Drill – Policy No. 3618, effective 10/4/16.
- Summary Report on the audit of the response to two sanitary sewer overflow events – Force Main Failure of 3/28/16 and a second SSO. (Interviewed 18 key people subsequent to incidents)
- Emergency Pumping Procedure – Policy No. 3107 Version 5.0 effective 12/12/14.
- Traffic Safety Control Devices – Policy No. 1106 Version 4.0 effective 6/1/06.
- Sanitary Sewer Overflows (SSO) - Policy No. 1108 Version 5.1 effective 1/4/06.
- Collection System Force Main and/or Catastrophic Lift Station Failure – Policy No. 3510 Version 8.0 effective 10/11/15.
- Emergency Response – Major Events – Supervisor in Charge – Policy No. 3165 Version 5.0 effective 06/06/07.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; and David Harris – Operations and Maintenance Supervisor.

Element 12. BMP Documentation and Document Control

- Document Management System – Policy Number: 1110, version 8.3, effective 12/19/2014.
- Element 12 – BMP Documentation and Document Control, version 6.0, effective 10/8/2015.
- Table 12.1 – Record Documentation System, which identifies SharePoint, report files, CMMS – Maximo, CMMS – Cityworks, employee training files, and safety equipment inspection files.
- Table 12.2 – BMP Related Documentation and Retention
- Management of Change Policy No. 1121 Version 1.0 dated June 15, 2010.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; and David Harris – Operations and Maintenance Supervisor.
- Review EMS Manual revisions and change logs.
- Review SharePoint document management system.
- Reviewed random Operations SOPs, Maintenance SOPs and contractor SOPs.

Element 13. Monitoring and Measurement

- Element 13: Monitoring and Measurement version 6.0, effective 10/8/2015.
- Table 13.1 – Action Plan – Quarterly Progress Report (form).
- Table 13.2 – Action Plan (form for planning goals and objectives)
- Reviewed completed Table 13.1 – Action Plan – Quarterly Reports completed for 2016.
- Figure 5.1 – Action Plan Status Worksheets (completed for 2016)
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent; David Harris – Operations and Maintenance Supervisor; Tim Dryer – Operations and Maintenance Supervisor; Laron Morgan – Wastewater Technical Control Supervisor; Melissa Whitaker – Wastewater Operator I; Max

Turner – Wastewater Operator I; Matt Heugel – Wastewater Operator I; and Jack Maskell – Wastewater Operator II.

- Reviewed randomly selected monitoring and measurement requirements in SOPs for plant operations.
- Reviewed quarterly progress reports used for tracking goals and objectives.

Element 14. Nonconformances: Preventive and Corrective Action

- Element 14: Nonconformances: Preventive and Corrective Action, version 7.0, effective 10/8/2015.
- Table 14.2 Nonconformance Investigation Worksheet.
- Figure 14.1 – Corrective Action Plan (form).
- Appendix D: Nonconformances
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent and David Harris – Operations and Maintenance Supervisor.
- Reviewed Table 14.2 – Nonconformance Investigation Worksheets for nonconformances for 2015 internal audit.
- Reviewed Table 14.2 – Nonconformance Investigation Worksheets for nonconformances for 2015 interim audit.

Element 15. Biosolids Management Program Report

- Element 15: Periodic Biosolids Program Performance Report, version 6.0, effective 10/8/2015.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent and David Harris – Operations and Maintenance Supervisor.
- 2015 Periodic Biosolids Program Performance Report. Issued March 2016.

Element 16. Internal BMP Audit

- Element 16: Internal BMP Audit, version 7.0, effective 10/8/2015.
- Table 16.1 – Internal Auditor’s Worksheet (including internal auditor’s minimum question checklist.)
- Table 16.1 – Internal Auditor’s Worksheet – completed for 2015.
- Interviews with William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent and David Harris – Operations and Maintenance Supervisor.
- 2015 Periodic Biosolids Program Performance Report. Issued March 2016.

Element 17. Management Review

- Element 17: Periodic Management Review of Performance, version 6.0, effective 10/8/2015.
- Table 17.1 – Periodic Management Review of Performance Report (template)
- Figure 17.1 – EMS Review Frequency (Memo dated February 27, 2009).
- Interviews with Mike Lunn – Environmental Services Department (ESD) Manager; Charles Schroeder – Water Resource Recovery Facility Assistant

Manager, and William R. Kaiser – BMP Coordinator/Wastewater Plant Superintendent.

- 2015 Periodic Biosolids Program Performance Report. Issued March 2016.