CMOM PLAN AND ANNUAL REPORT FY2013

September 27, 2013

Albuquerque Bernalillo County
Water Utility Authority

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Section 1: Capacity, Management, Operations and Maintenance (CMOM) Plan Overview

In accordance with NPDES Permit No. NM0022250 (Permit), the Albuquerque Bernalillo County Water Utility Authority (Water Authority) has prepared a Capacity, Management, Operations and Maintenance (CMOM) Plan with Emphasis on the Fats, Oils and Grease (FOG) Policy. The effective date of the Water Authority's permit is October 1, 2012.

The CMOM Plan consists of:

1. FOG Policy
2. CMOM Annual Report
3. CMOM Program Self-Assessment

This is the Water Authority's first CMOM Plan (2013).

1.1 Report Purpose

This CMOM Annual Report covers the July 1, 2012 to June 30, 2013 time period. The CMOM Annual Report provides summary descriptions of CMOM activities (past and planned) and is intended to be a continuous communication tool. The report is intended for Water Authority staff, regulatory authorities, customers, and the general public. The objectives of this CMOM Annual Report are to:

1. Fulfill the requirements of the Permit.
2. Describe the CMOM Plan with Emphasis on the FOG Policy.
3. Describe the status of the commitments made in the Response to Audit and Corrective Action Plan, November 2012.

As indicated by its name, the CMOM Annual Report will be reissued by each October 1 to describe CMOM activities in the previous fiscal year (July 1 to June 30).

1.2 Permit Requirements

The Water Authority discharges to the Rio Grande under authority of NPDES Permit No. NM0022250 (Permit). Under this Permit, the Water Authority operates the Southside Water Reclamation Plant (SWRP), including the collection system. The following are the new requirements from the Permit that impact the collection system.

1. The Water Authority must submit a (monthly) Discharge Monitoring Report (DMR) in tabular form for all overflows. (Part I, Paragraph C.6).
    a. The US Environmental Protection Agency (EPA) provided clarification that all overflows must be reported regardless of volume.
    b. The EPA provided clarification that all overflows must be reported in 12 or 24 hours to Pueblo of Isleta, US Fish & Wildlife Service, New Mexico Environment Department (NMED) and EPA.
    c. The EPA provided clarification that written notification is required in five (5) calendar days.

2. The Water Authority must, by October 1, 2013, develop a CMOM Plan with Emphasis on the FOG Policy. The FOG Policy will be a re-evaluation of the existing FOG Sewer Use and Wastewater Control Ordinance (SCO) ordinance. The goal of the FOG Policy will be to reduce Sanitary Sewer Overflows (SSOs). The FOG Policy may address such items as an inventory of repeat Food Service Establishments (FSE) sources of SSOs, routine grease trap inspection programs at FSE with increased frequencies at repeat FOG SSO FSEs. Additional elements of the FOG Policy may be sewer line inspections, such as video recording and required sewer line cleaning activities if warranted at repeat sites. Inspection may include determination that a suitable sized grease trap is in place for the FSE it treats. The FOG Policy will be sent to the EPA and NMED for review, but will automatically be deemed approved if no action is received from the EPA and/or NMED, sixty (60) days after receipt. The FOG Policy will be part of the NPDES Permit and will become effective either thirty (30) days after EPA and/or NMED approval; or ninety (90) days after submission to the EPA and NMED, whichever is earlier. (Part II, Paragraph F.)

1.3 Audit and Corrective Action Plan

The Water Authority was audited by the EPA on September 25 and 26, 2012. This audit focused on Sanitary Sewer Overflows (SSOs) of the collection system, and included an audit of the Industrial Pretreatment Program and an inspection of the SWRP and the Water Quality Laboratory. At the Exit Interview, verbal comments were provided by the EPA team on September 26, 2012; to date the Water Authority has not received a written report from the audit.

The attached Corrective Action Plan (CAP) provides the Water Authority proposal to address the verbal comments. This CAP also addresses the new Permit required CMOM Plan with Emphasis on FOG Policy.

1.4 Request for Information

On March 21, 2013, the Water Authority received an Information Request Pursuant to Section 308 of the Clean Water Act. A response was submitted to EPA on April 18, 2013. An electronic copy is available on the Water Authority SharePoint website. The following were provided:

1. Cover letter
2. Response to Information Request
3. Appendix 1: Procedures and CMMS
4. Appendix 2: Dispatch Call Log
5. Appendix 3: Control Room Call Log
6. Appendix 4: Notification Call Log
7. Appendix 5: Completed Work Orders – *Sewer App* CMMS (1/1/2008-4/5/2009)
8. Appendix 6: Completed Work Orders – Maximo CMMS (4/6/2009-3/21/2013)
9. Appendix 7: SSO Reports to EPA / NMED
10. Appendix 8: Non-Reported (Greater Than 50 Gallons).
11. Appendix 9: Non-Reported (Less Than 50 Gallons)

The above appendices are very large (more than 2,700 pages) and therefore are not included. Included as appendices are the:

1. Information Request
2. Transmittal Letter
3. Questions & Responses (Note: This document includes the certification and identifies the appendices that were included in the response)
4. Procedures and CMMS (Appendix 1)

Section 2: CMOM Program Self-Assessment

Attached is the CMOM Program Self-Assessment (Self-Audit) prepared by the Water Authority. The Self-Audit was included in the CAP because it is encouraged by EPA as part of a CMOM. See EPA link:

http://cfpub.epa.gov/npdes/sso/featuredinfo.cfm?program_id=4. Near the bottom of this webpage, under "CMOM Program Self-Assessment Checklist", the following link provides a pdf document: http://www.epa.gov/npdes/pubs/cmomselfreview.pdf. This document from EPA includes a discussion of what CMOM is and how to use this checklist (Self-Audit).

The cited document was the basis of creating the Self-Audit. EPA supports the Self-Audit for two (2) purposes. The primary purpose is for a utility to perform a self-examination in an organized way and see where proactive improvements are needed. The second purpose is that if and when EPA audits in the future, the Self-Audit provides a fundamental description of the status of the Authority's collection system, history, and performance.

While the basic self-audit format and structure were kept so the EPA will be familiar with the structure, the following modifications were made:

1. Every system has unique features. For instance, the Water Authority added information on the vacuum system.

2. Similarly, the collection system is a separate system, i.e., does not handle storm drainage, and has minimal inflow-infiltration (I-I) problems.

3. EPA's discussion states that a significant number of "no" answers will be an indication of an area of weakness. In many cases, the questions are inappropriate for the SWRP collection system. Therefore, a "NA" column was added in addition to the "Yes" and "No" columns so the questions could be answered without causing undue concern.

Comments were added to many questions to allow for explanations and clarifications.

Section 3: FOG Policy

The Water Authority's FOG Policy is a separate document. The FOG Policy was developed as a requirement of the NPDES Permit effective on October 1, 2012. The policy was developed to work in conjunction with the Water Authority Sewer Use and Wastewater Control Ordinance (SUO) and Enforcement Response Plan (ERP) to reduce the rate of SSOs in the collection system and decrease FOG loading at the SWRP. The policy describes expectations for FOG dischargers such as Food Service Establishments (FSEs) and waste haulers, and the steps the Water Authority is taking to mitigate FOG.

The FOG Policy sets a Water Authority goal of inspecting every FSE once every three (3) years. Details of what is expected of the FSE in terms of Grease Removal System (GRS) functionality, pumping schedule, maintenance, and recordkeeping are identified. The FOG policy explains the Water Authority use of the 25% solids and grease rule (25 Percent Rule) to determine if a GRS is filled to capacity. The policy also contains Best Management Practices (BMPs) such as scraping plates, using screens, and not using emulsifiers, etc.

Pumper requirements are also covered in the FOG Policy. Full evacuation of a GRS is required each time a pumping occurs. The pumper must leave the FSE documentation in the form of manifests that contain pertinent information such as date, time, volume pumped, and the condition of the GRS. The FOG Policy lists the minimum service to be provided by the pumper. Enforcement of FOG violations and hauled wastewater violations is described in the FOG Policy. The FOG Policy works in conjunction with the ERP to set administrative assessments for violations.

The FOG Policy also sets forth the process for identifying new sources of FOG. The Water Authority Industrial Pretreatment Program will update the FOG database on an annual basis. The FOG Policy sets a goal that the Water Authority will meet with the City of Albuquerque, Bernalillo County, the Village of Los Ranchos, the Village of Corrales, plumbers, and the New Mexico Restaurant Association on a semiannual basis to discuss FOG issues.

Presentations that included information about the proposed FOG Policy were made to the Customer Advisory Committee of the Water Authority on March 7, 2013 and the Water Protection Advisory Board on March 11, 2013. A public meeting was held on July 25, 2013 that discussed the proposed Policy. On July 22, 2013, the Water Authority held a meeting with hauled wastewater permit holders to discuss the draft FOG policy. The FOG Policy will be sent to the EPA for review by October 1, 2013. Once the Policy is reviewed by the EPA it will be presented to the Water Authority Board for approval and then implemented.

Section 4: FOG Enforcement

In FY13 (July 1, 2012 – June 30, 2013), the Water Authority Industrial Pretreatment Program inspected 1206 FSEs. Of those inspected, 94% had a GRS in place. Approximately 10% or 17 of these inspections were conducted in response to an SSO. Also during FY 13, the Water Authority issued 161 Notices of Violation (NOVs) to FSEs that did not have a GRS in place. Some of these FSEs were inspected in previous years.

Currently the Water Authority is focusing on FSEs without GRSs. After all NOVs are sent out to FSEs without a GRS, NOVs will be sent to FSEs that are not adequately maintaining the GRS or documenting maintenance.

Section 5: SSO Analyses

The Permit requires a CMOM Plan with an emphasis on FOG Policy. The Plan goal is to reduce impacts on the collection system caused by FOG and the Policy goal is to reduce SSOs. The FOG Policy is to incorporate, at repeat FOG SSO FSEs, additional items such as an inventory of FSEs that are the source of SSOs and increased grease

trap inspections. Additional items of the FOG Policy include addressing the sewer main line inspections and cleaning.

To meet these requirements, the Water Authority has created an SSO Study Team. The Team is comprised of:

1. Collection Section – Assistant Superintendent, Closed Circuit Television (CCTV) Supervisor, and Research Analyst;
2. Industrial Pretreatment Program – Industrial Waste Engineer and Pollution Prevention Specialist.

The Mission Statement for the SSO Study Team is: *The SSO Study Team will work interdivisionally to study, analyze and determine causes of previous SSOs to mitigate future SSOs in the Collection System.*

The SSO Study Team procedure is:

Tabulate all 10-40s, 10-42s and 10-48s (see table for definition).
Coordinate with CCTV Supervisor to ensure all segments responsible for causing 10-42s and 10-48s are televised (if possible).

1. Review and analyze all CCTV inspections to determine causes and document findings (if possible).
2. Conduct meetings with the SSO Study Team to review and analyze CCTV inspections that need further investigation for resolution.
3. Recommend/implement and document mitigations based on analysis (if possible).
4. Coordinate with the Industrial Pretreatment Program staff concerning grease issues discovered during analysis.

Sewer Trouble Definitions		
10-40	Sewer Backup	A gravity line blockage that does not result in a spill, or in the vacuum system, a low vacuum (low vac) that causes a customer service disruption. Does not result in an SSO Reportable (10-42) or a Property Damage (10-48).
10-42	SSO Reportable	An overflow of sewage from the system that may impact the waters of the US.

10-48	Property Damage	An overflow of sewage from the system that results in damage to private property.

Prior to October 1, 2012, a spill of less than 50 gallons was recorded as a 10-40 and was not reported to EPA/NMED. As of October 1, 2012, all spills that may impact the waters of the US have been recorded as a 10-42 and have been reported. In some cases, the same spill can both impact the waters of the US and also result in property damage. These are all reported to the EPA/NMED. When documenting the number of Sewer Troubles of different types, for example in the FY13 Sewer Trouble graph on page //, the 10-42 item includes all overflows that may impact the waters of the US and the 10-48 item includes overflows that only resulted in property damage. Put another way, a 10-42 may include property damage, but a 10-48 cannot impact the waters of the US.

For FY13, all 10-42s and -48s, were inspected by Water Authority CCTV crews, although only 10-42s are "reportable", i.e., required to be reported to the EPA, et al. All 10-42s and -48s were then studied by the SSO Study Team and a Cause and a Mitigation were determined. In addition, most 10-40s were also televised and major obvious defects were identified and mitigated.

Cause(s) of SSO from DMR		**Causes determined from CCTV**
CO - Construction	**DB** - Debris	**SC** - Surcharged
CU-Cause Unknown	**RK**-Rocks	**SL** - Sag in Line
EQ - Equipment Failure	**GR** - Grease	**IT** - Intruding Tap
SGG-Sand, grit or gravel	**RT** - Roots	**MH** - Manhole
LF - Line Failure	**RN** - Rainfall	**OJ** - Offset Joint
V - Vandalism	**RGS**-Rags	
RGR - Roots / Grease		

The Cause was selected from the above table that identifies SSO causes from the DMR and CCTV. The monthly SSO DMR has a specific list of Causes that are based on system observations made by an Operator or Supervisor at the site of an SSO. The CCTV data provided to the SSO Study Team often results in a different, more refined

Cause. The following table provides the causes determined by the SSO Study team for FY13.

FY13 10-42, 10-48 Causes	Total	% of total
Construction	2	2.53%
Cause Unknown	11	13.92%
Debris	7	8.86%
Debris/Grease	2	2.53%
Debris/Roots	1	1.27%
Equipment Failure	3	3.80%
Grease	9	11.39%
Grease/Roots/Debris	1	1.27%
Grease/Sag In Line	1	1.27%
Intruding Tap/Roots	3	3.80%
Intruding Tap	2	2.53%
Line Failure	1	1.27%
Manhole/Surcharged	1	1.27%
Offset Joint/Grease	1	1.27%
Roots	23	29.11%
Roots/Debris	1	1.27%
Roots/Grease	1	1.27%
Roots/Grease/Debris	2	2.53%
Roots/Intruding Tap	1	1.27%
Roots/Line Failure	1	1.27%
Surcharged	3	3.80%
Sag In Line/Debris	1	1.27%
Sag In Line/Grease	1	1.27%
Grand Total	**79**	**100.00%**

Mitigations are the steps that the SSO Study Team identified to prevent a recurrence of an SSO, at least for the identified Cause. Specific Mitigations are not prescribed by the SSO DMR form and are very dependent on the conditions observed from the CCTV video and report. The following table provides the definitions of the various Mitigations.

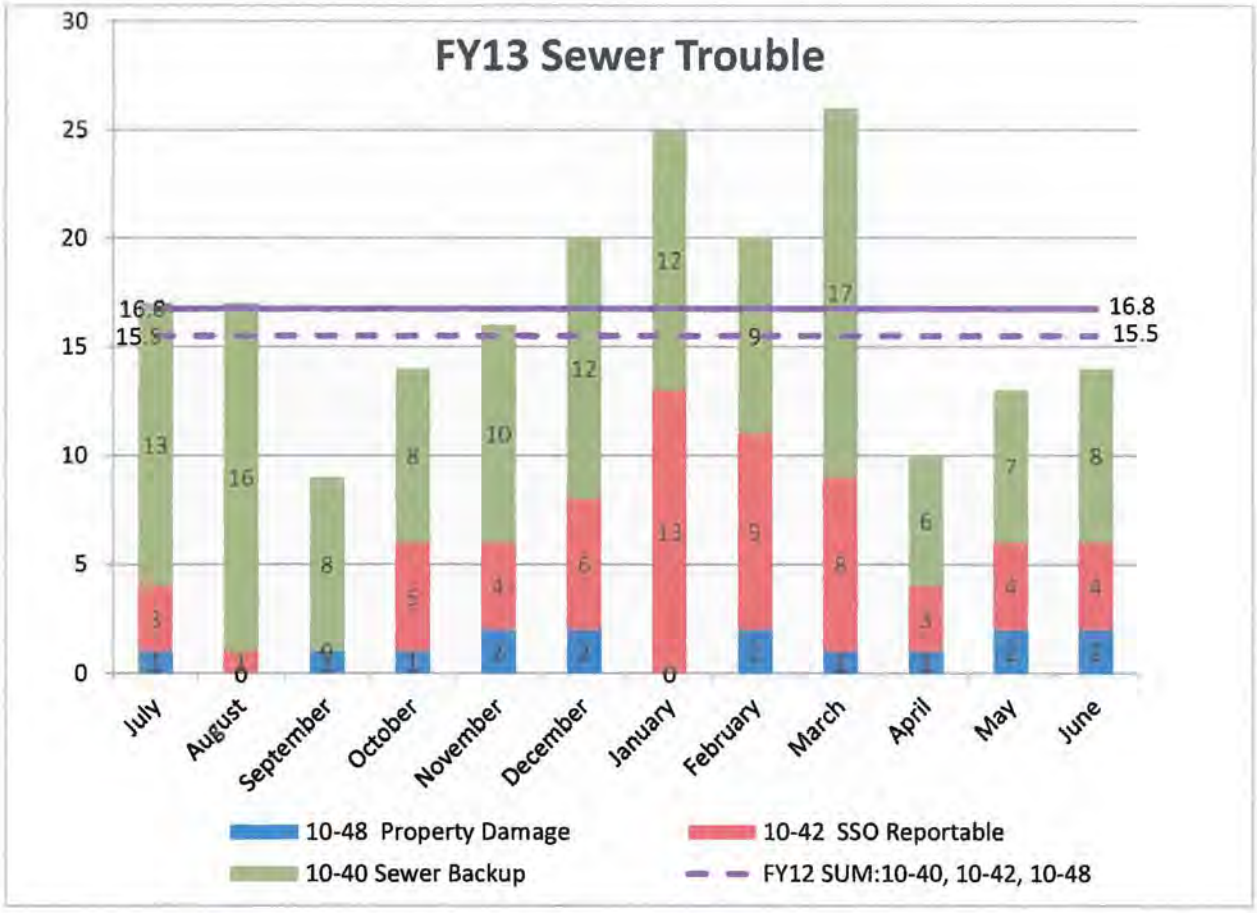
FY13 10-42, 10-48 Mitigations	Total	% of total
Cut Intruding Tap	2	2.53%
Cut Intruding Tap/Special Instructions	3	3.80%

No Follow Up Needed	12	15.19%
Industrial Pretreatment Notified	1	1.27%
Industrial Pretreatment Notified/Special Instructions	2	2.53%
Industrial Pretreatment Notified/Special Instructions/Short Interval	2	2.53%
Rehab or Replace	4	5.06%
Rehab or Replace/Short Interval	1	1.27%
Short Interval	10	12.66%
Special Instructions	18	22.78%
Special Instructions/ Short Interval	24	30.38%
Grand Total	**79**	**100.00%**

A Sanitary Sewer Overflow Analysis Table is included as an appendix. Listed is every 10-42 and 10-48 in FY13, as well as the January 1 through June 30, 2012 portion of FY12. The table columns are grouped as follows:

1. The type, i.e., 10-42 or -48, is identified on the left. In some cases a single event was both a 10-42 and a 10-48, as indicated.
2. To the right are the data included in the monthly SSO DMRs. It is noted that a "Reported Cause" is listed. This is typically based on the observations of the Operator that reported to the SSO.
3. To the right is data determined by the SSO Study Team:
    a. Cause
    b. Mitigation
    c. If Industrial Pretreatment follow-up is necessary
4. To the far right are follow up by Industrial Pretreatment Program staff:
    a. FSEs visited
    b. Notice of Violation issued

The following graph shows the sewer troubles for each month of FY13, along with the averages for FY12. As noted above, the definition of a 10-42 changed on October 1, 2012, therefore some sewer troubles that were previously recorded as a 10-40s are now a 10-42.



The SSO Rate is defined as 100 times the number of SSOs in a year divided by the miles of sewer in the system. The Water Authority system has a total of approximately 2,400 miles of line. There were 39 10-42s reported in FY12 and 60 reported in FY13. Therefore the SSO rate in FY12 was 1.6 (100 x 39 SSOs / 2400 miles) and in FY13 was 2.5. The Water Authority publishes an annual Performance Plan in which the Water Authority performance is benchmarked against peer utilities in many categories, one of which is the SSO Rate. The FY12 median SSO rate was 1.1 for utilities serving a population greater than 500,000 and 1.8 for western utilities. It is pertinent to note that there is not a consistent standard of what is a reportable SSO. See the Declaration of SSO Independence (http://www.weat.org/Presentations/07_Forbes_DeclofSSOIndependence.pdf) which documents that depending on the state, a spill may need to exceed 1000 gallons to be reportable, or be one drop, as is now the case for the Water Authority. Arizona Department of Environmental Quality states that a spill need not be reported until it exceeds the 50 gallons (see R18-9-C305.E in

http://www.azsos.gov/public_services/title_18/18-09.htm). The Water Authority commits to a long term goal of zero SSOs.

Section 6: Corrective Action Plan (CAP) Status

The CAP was created by the Water Authority after receipt of the Permit, which stated the requirement for a CMOM Plan and the September 25-26, 2012 Audit in which specific deficiencies were noted by the EPA. The CAP functions as a near-term program to elevate the Water Authority's performance.

The Response to Audit and Corrective Action Plan is composed of two Sections:

1. Audit Comments & Responses.
2. CMOM Plan with Emphasis on FOG Policy.

The following are narratives for new efforts.

6.1 Overflow Emergency Response Plan (OERP)

A formal written Overflow Emergency Response Plan (OERP) is a part of a typical CMOM plan and is encouraged by the EPA. The Water Authority provides an in-house training and certification program that is required for all maintenance staff. The training includes procedures for SSO response and reporting. While the Water Authority did respond to and report SSOs in a reasonably consistent manner, the Water Authority committed in the CAP to develop a written OERP. The OERP is formatted as a flow chart because it is easy to understand, focuses on the sequence of decisions/actions to be made, identifies who is responsible, the next appropriate step, and it is easy to train employees and update. The completed portions of the OERP have been posted to Maximo which is the Water Authority's Computerized Maintenance Management System (CMMS) where it can be accessed in the field by workers and updated on an as-needed basis. The Collection Section is the "owner" of the OERP. The Collection Section creates the components of the OERP, routes for internal Water Authority review, and the completed portions are approved for posting by the Collection Section Manager. To date the following components of the OERP have been approved and posted to Maximo.

1. Page 1. Call is received by Dispatch. Collection Section begins response and complete work order.
2. Page 2. Unblock and cleanup.
3. Page 4. Cleanup from SSO that reaches a storm drain.
4. Page 7. Notification process.
5. Page 10. Spill has entered storm pump station.

In addition, the first flow chart created and posted (Private vs. Public SSOs) addresses the process to be taken when an SSO is reported to Dispatch that may (or may not) be in a private system for which the Water Authority by Ordinance has no responsibility.

The OERP is continuing to be developed and updated as new information is obtained. The following are processes that are being developed and will continue to be addressed in FY14 and following years. Please note that in most cases the Water Authority staff are following processes for which they have been trained, that are identical or very similar to the draft (but not issued) flow charts.

1. Page 3. Spill contained above ground.
2. Page 5. Spill has entered a waterway.
3. Page 6. Follow up study and mitigation.
4. Page 8. Industrial Pretreatment involvement.
5. Page 9 is not a process but instead is the legend of boxes.

The OERP has been used for the following purposes:

1. Internal WUA communications to clarify processes.
2. Training and instructing staff.
3. Discussions with the City of Albuquerque (COA) and Albuquerque Municipal Flood Control Authority (AMAFCA).

Many of the EPA Audit comments have been addressed in the process of creating the OERP.

6.2 Volume Spilled and Recovered

The EPA Audit noted a need to compute the volume of sewage spilled in an SSO and recover this sewage. The Water Authority implemented a revised reporting program of estimating specific volume spilled rather than the previous practice of estimating a range. This change was implemented May 1, 2013. In conjunction, a training program was developed based on practice by California peer utilities. The following table summarizes the range of spill volumes. Because FY13 included spills that were estimated as a range, e.g., 1-50 gallons and as a specific value, e.g., 72 gallons, the specific values since May 1, 2013 were fit to the ranges previously used in FY13.

Volume of Sewage Spilled for SSOs July 1, 2012 – June 30, 2013		
Gallons Spilled	**% of total SSOs**	**Count of SSOs**
1-100 Gallons	**54.7%**	**35**

101-500 Gallons	**32.8%**	21
Over 1000 Gallons	**9.4%**	6
501-1000 Gallons	**3.1%**	2
Grand Total	**100%**	**64**

As noted above, the Water Authority developed a cleanup process (OERP page 4) for spills that reach a storm drain. The process was tested in January 2013 and has recently been implemented as a standard practice.

The only volume known to have been recovered in FY13 was in the January 2013 test. The spill volume was estimated as 51-100 gallons. (At this time, spill volumes were still estimated as a range. Under the new criteria, a specific volume is estimated and not a range.) The sewage settled in the storm drain and, prior to the next rain, wash water was applied and removed at a downstream manhole. Therefore, all 51-100 gallons spilled are estimated as having been recovered.

6.3 Force Main Inspection Program

The Water Authority will implement a program of visually inspecting the surface of each force main route. This inspection will be at a minimum on a semiannual basis.

In discussions with EPA representatives during the EPA Audit, the "Core Attributes of Effectively Managed Wastewater Collection Systems" was identified as a good document for use in examining and improving the Water Authority Operations and Maintenance (O&M). Implementation of a program to visually inspect force main surfaces is in compliance with "Core Attributes of Effectively Managed Wastewater Collection Systems" which states: "While difficult to clean due to the typically limited access points, force main preventive maintenance should include routine visual inspection of the force main route for evidence of potential leaks or surface depressions." (Core Attribute No. 5: Collection System Maintenance.)

6.4 Cleaning Program

A gap identified in the EPA Audit is that there is no evidence that the Water Authority cleaning goal is being met. A cleaning goal would be set in terms of how many years are required on average to clean the system. By this definition, the Water Authority currently does not have an established cleaning goal. However, the Water Authority has

established a cleaning program that utilizes an asset management approach for scheduling and implementing maintenance and cleaning of the system.

To address the cleaning goal gap, the Water Authority will establish a goal of cleaning the entire small diameter system every 10 years. In addition, a separate program of cleaning hot spots will be continued to provide high-frequency maintenance of known problem locations within the system.

These programs and goals are in accordance with "Core Attribute 5: Collection System Maintenance" of the "Core Attributes of Effectively Managed Wastewater Collection Systems."

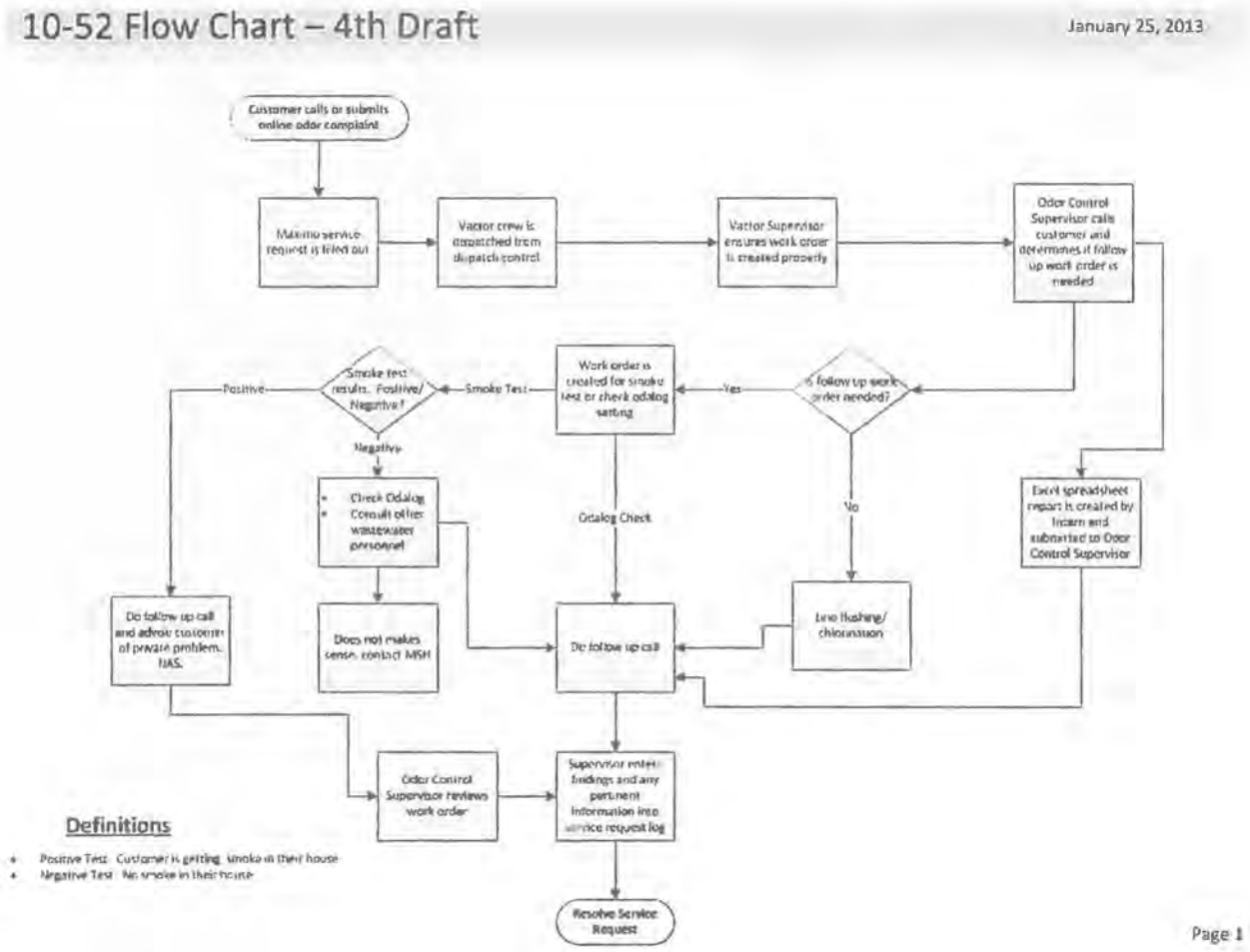
A further discussion of the Water Authority cleaning program in comparison to the Core Attributes is provided as an appendix.

6.5 Odor Complaints

While not noted as an issue by the EPA in the Audit, the Water Authority committed in the CAP to tabulate odor complaints by month. The EPA has consistently considered odor and corrosion control an issue in collection system O&M, as indicated in the CMOM Program Self-Assessment standard template from the EPA website includes the Hydrogen Sulfide Monitoring and Control (HSMC) section.

Odor control is a major issue in warm weather systems, such as Albuquerque's. A high correlation has been demonstrated between odor complaints and the sewage temperature. Odor complaints are also known as a 10-52. The following graphic shows the odor complaints received by the Water Authority in FY12 and FY13. All odor complaints received are included in this graphic; however, study has indicated that approximately ¾ of the complaints received originate in the private and not the public system.

The following flow chart describes the process followed by the Water Authority in response to an odor complaint. This specific process in the immediate response and the follow-up to odor complaints is due to the importance placed on customer service. Also, the Water Authority has found that some odor complaints are due to a blockage prior to an overflow; therefore, a quick response can prevent an SSO.



Section 7: Actions Implemented

As counterpoint to the following section in which gaps are identified, the following is a partial list of the many actions the Water Authority has implemented to improve its performance. These can be considered "un-Gaps" or accomplishments.

1. A policy to utilize Asset Management.
2. Implementation of 12/24-hour SSO reporting.
3. Development of auto-populated SSO reporting script used in phone and E-mail reporting.
4. Completion of in-house construction of manhole base to improve hydraulics and reduce SSO likelihood.

5. OERP posted to Maximo and additional training.
6. Development of SOPs to describe processes. Posted to Maximo where SOP is accessible in field.
7. Development of process of capturing overflow that reaches a storm drain.
8. Increased coordination with AMAFCA resulting in capture and the cooperative treating of a significant spill (~180,000 gallon) that prevented any of the flow from reaching the Rio Grande prior to treatment and testing. This spill was contained in a concrete lined channel that only serves nuisance or storm flows.
9. Transitioned CCTV inspections to Pipeline Assessment Certification Program (PACP) criteria.
10. The Water Authority developed a unique PACP training program to improve observation coding, particularly where it is critical to tool selection and risk analyses.
11. In-house GIS allowing real time mapping updates.
12. Development and implementation of state-of-the-art software module that selects the proper cleaning nozzle based on CCTV identified conditions in a pipe segment. Therefore, CCTV inspection will allow for better cleaning of a sewer line.
13. Required Contractor's to report construction caused SSOs, which were then reported to EPA, et al.

Section 8: Identified Gaps in the Water Authority Processes with Recommendation to Close

In the process of continuous improvement, the Water Authority is committed to identifying and closing gaps. The following gaps have been identified, along with recommendations to close.

8.1 Prohibited Discharges, i.e., SSOs

All discharges from the collection system that may impact the waters of the US are prohibited. As discussed above, the Water Authority designates these as 10-42s and all are reported in accordance with the Permit. While not reportable, the Water Authority also takes very seriously the 10-48s which are releases from the collection system that are contained on private property and do not reach the street right-of-way or a water course such as an arroyo or a drain.

The EPA has consistently stated that the only acceptable number of prohibited discharges is zero. The Water Authority acknowledges EPA's authority in setting this requirement and accepts the goal of reaching zero SSOs. Similarly, the Water Authority recognizes the national controversy on the zero discharge standard and the possibility that zero SSOs is unattainable in large collection systems such as is operated by the Water Authority.

Recommendation: The Water Authority will strive to meet a long term goal of zero SSOs. The Water Authority will address this goal through:

1. Annual CMOM reports that examine the Water Authority performance and set specific steps to improve in decreasing SSOs and mitigating the impact.
2. A program of continuous improvement in which the steps that are selected for implementation are those steps needed to provide the most improvement.

8.2 Collection System Capital Implementation Program (CIP) Funding

The Water Authority completed an Asset Management plan that identified that the current level of CIP funding was insufficient to address the backlog and current needs.

Recommendation: Based on the need for additional funding, the Water Authority Board approved rate increases for three (3) of the next five (5) fiscal years beginning in FY14. The rate increases assist the Water Authority in increasing CIP funding for the collection system.

8.3 Overflow Emergency Response Plan

As described above, in FY13 the Water Authority developed and implemented portions of the OERP. The OERP developed to date has focused on the most frequent SSOs, i.e., those that impact the City of Albuquerque (COA) and Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA).

Recommendation: In FY14, continue the development and implementation of the OERP.

1. Meet with COA and AMAFCA to review the current OERP and associated procedures and make revisions as necessary.
2. Subsequently meet to review the OERP with Middle Rio Grande Conservancy District (MRGCD), Bernalillo County, and New Mexico Department of Transportation (NMDOT).

3. Implement removal of spilled sewage from storm drains.

8.4 CCTV Inspection

CCTV inspection is encouraged by EPA. CCTV of the existing system will allow the Water Authority to better maintain its system for the following reasons:

1. Broken pipes will be identified and repaired prior to collapse.
2. The Water Authority is committed to Asset Management in which the highest risk lines are identified and repaired first. Risk is a function of likelihood and consequence. CCTV allows improved likelihood score. Therefore, CCTV inspection allows higher risk lines to be identified and rehabilitated first.

Recommendation: CCTV inspections of the collection system as follows:

1. Small diameter main lines less than 15": In four (4) of five (5) years, televise approximately 5% per year of the small diameter system. Televise high risk lines based on current Asset Management Plan and subsequent in-house analysis.
2. Large diameter lines 15" and larger: Every fifth year, televise as much as possible acknowledging access limitations of the unlined concrete lines 15" and larger.

Anticipated schedule:

1. FY14-17: 5% of the small diameter each year.
2. FY18: Large diameter unlined concrete pipe.

8.5 Cleaning Tools

Effective cleaning of the Water Authority's collection system is necessary to minimize sewer overflows and the resultant damage claims and EPA reporting. The Water Authority crews clean sewers utilizing Vactor jetters, most in conjunction with vacuum systems to remove debris, i.e., combination units. These jetters clean the sewers through the use of specialized nozzles that propel the jetter hose the length of the sewer and flush out the debris. The nozzles are a fundamental but often overlooked component of the cleaning process. These nozzles are specialized to specific tasks and do wear out, requiring testing and repair.

The existing nozzles are old and largely worn out and not appropriate to the specialized cleaning required. It is proposed to provide each operator a lock box with four (4)

nozzles under the operator's ownership and control. Maintenance can then be monitored by the operator. The commonly used nozzles are:

1. A general purpose flushing nozzle;
2. A root saw for removing roots;
3. A turbo nozzle for grease removal; and
4. A grenade nozzle for moving large quantities of flow and flushing through dips in a line. Each supervisor will have a penetrator nozzle for special use. The two (2) interceptor cleaning units need to be equipped with a specialized nozzle for use in high flow conditions.

Recommendation: In FY15, assign each Vactor Operator a set of nozzles. Test regularly. Replace inserts when needed.

8.6 Root Foaming

Root foaming is encouraged by the EPA and is a requirement of typical consent decrees.

Root foaming is an accepted maintenance method and is especially useful in locations that are root infested or inaccessible.

Recommendation: Starting in FY15, implement a 3-year pilot program. Root foam selected lines that meet the root infested and / or inaccessibility criteria. Compare effectiveness to mechanical cleaning currently practiced and provide recommendation.

8.7 FOG Buster

Vactor has introduced the FOG Buster System which installs directly on the Collection Section's combination cleaners. This System introduces an environmentally friendly emulsifier that decreases the impacts of FOG. FOG Buster Systems are proposed for utilization on a portion of the Short Interval cleaning.

Recommendation: Starting in FY15, implement a 3-year pilot program. Equip two (2) units with FOG Buster equipment and utilize to clean lines known to be impacted by FOG. Compare effectiveness to mechanical cleaning currently practiced and provide recommendation.

8.8 Force Main Inspection program

As noted above, the EPA identified as a gap the lack of a formal force main inspection program.

Recommendation: In FY14, develop and implement a Maximo force main inspection program.

8.9 Sub-Basin Cleaning Program

The Sub-Basin cleaning program requires a functional connection between the CMMS program and the GIS system utilized for mapping updates. The connection was lost approximately 10 years ago; therefore, newer lines are not currently included in the Sub-Basin program, although if needed, could be added to the Short Interval program. New lines have been shown to be less prone to SSOs therefore this has not been critical; however this will change with time.

Recommendation: By the end of FY15, integrate GIS with Maximo and commence with the process of incorporating all appropriate lines in the Sub-Basin program.

8.10 Cleaning Program Goal

A gap identified in the EPA Audit is that there is no evidence that the Water Authority cleaning goal is being met.

Recommendation: The Water Authority will establish and monitor a goal of cleaning all gravity small diameter lines every 10 years. (This will be accomplished through the existing Sub-Basin program.) The Water Authority will continue the program of high-frequency maintenance of known problem locations within the system. (This will be accomplished through the existing Short Interval program.) The frequency of Short Interval cleaning will vary in accordance with system performance and risk factors, maintenance history, and the latest maintenance findings.

8.10CCTV of 10-40s

Lines that have previously had a 10-40 have been shown to have a higher risk of a future 10-42 or -48.
Recommendation: CCTV all 10-40s.

8.11FOG Policy Implementation

As described above, in FY13 the Water Authority has developed and implemented a FOG Policy.

Recommendations: In FY14, continue the implementation of enforcement activities.

1. Continue enforcement on FSEs that do not have GRSs.
2. Initiate enforcement on FSEs that have non-functional GRSs.

Long term recommendations:

1. Develop link between the Linko FOG database utilized by the Industrial Pretreatment Program and the Maximo work order system used by the Collection Section.
2. Develop FSE flyers in languages other than English.
3. Add requirement to Satellite Community agreements that FSE connections be coordinated with the Water Authority.

Albuquerque Bernalillo County
Water Utility Authority

PO Box 1293
Albuquerque, NM 87103
(505) 768-2500
www.abcwua.org

November 19, 2012

James Zimny
Environmental Scientist
United States Environmental Protection Agency
Water Enforcement Division
1200 Pennsylvania Ave., N.W.
MC-2243A
Washington, DC 20460

Re: Corrective Action Plan in Response to September 2012 Audit

Dear Mr. Zimny:

The Albuquerque Bernalillo County Water Utility Authority (Water Authority) was audited by the United States Environmental Protection Agency (EPA) on September 25 and 26, 2012. This audit focused on Sanitary Sewer Overflows (SSOs) involving the Collection System. Verbal comments were provided by the EPA team on September 26 with the understanding that a written report is forthcoming. It is understood that the written report may include items in addition to those discussed verbally.

The attached Corrective Action Plan (CAP) provides the Water Authority proposal to address the verbal comments. This CAP also addresses the new Permit required "Capacity Management Operation and Maintenance (CMOM)"CMOM Plan with Emphasis on Fats, Oils, and Grease (FOG) Policy.

If you have any questions or need additional information, please contact me at jstomp@abcwua.org or (505) 768-3631.

Sincerely,

John M. Stomp, III, PE
Chief Operations Officer

Enclosure

Appendix 1

cc:
Mr. John Blevins
EPA Region 6
1445 Ross Avenue, Suite 1200
Mail Code: 6EN
Dallas, TX 75202-2733

Mr. Robert Houston
EPA Region 6
1445 Ross Avenue, Suite 1200
Mail Code: 6EN
Dallas, TX 75202-2733

Mr. James Hogan
Surface Water Quality Bureau
New Mexico Environment Department
P.O. Box 5469
Santa Fe, NM 87502-5469

Mark S. Sanchez, Executive Director
Charles W. Kolberg, General Counsel
Dr. James H. Olsen, Jr., Field Division Manager
Barbara Gastian, Compliance Division Manager

Albuquerque Bernalillo County Water Utility Authority
Response to Audit and Corrective Action Plan
November 2012

The Albuquerque Bernalillo County Water Utility Authority (Water Authority) submits the following response to the EPA Audit conducted on September 25-26, 2012. The responses constitute a Corrective Action Plan (CAP) that identifies changes that are underway or will be made in the future to address the noted deficiencies.

Also provided is a draft outline of the new Capacity Management Operation and Maintenance (CMOM) Plan with emphasis on Fats, Oils and Grease (FOG) policy as required in the NPDES permit effective as of October 1, 2012.

Audit Comments & Responses

Comment 1: **Accurately and consistently completing and processing documentation and reporting forms.**

Response:

A. The Water Authority has implemented a program of increased diligence and Quality Assurance / Quality Control (QA/QC) in completing and processing these forms.

B. The Water Authority has recognized the need to move away from paper forms. Therefore, the forms and associated processes will be integrated into Maximo, which is the Water Authority's Computerized Maintenance Management System (CMMS). The first step of this transition will be the April 1, 2013 implementation of Maximo populated script to be utilized in making the required 12- and 24-hour reports.

Comment 2: **Need better determination and documentation of the volume spilled. This includes determining and documenting the actual start time of SSO, as well development of training and criteria.**

Response:

A. Dispatch and Collection System staff have been directed to question if a spill started before the time a call is received to Dispatch. In the event that a difference is determined, a process has been identified for adding the time the spill was estimated to begin.

B. Collection Section staff has been directed to document the volume of a spill that is subsequently captured and removed.

C. A definitive process to estimate the volume spilled will be developed. Typically this will be a computation of either: 1) Flow rate x duration = volume, or 2) Length x width x height = volume. The new process will be in place, and staff trained, by May 1, 2013. In the interim, these computations have been discussed with the Supervisors responding to spills.

Comment 3: **Recover and remove spilled sewage.**

Response:

A. The Water Authority will work with the City of Albuquerque to address spills that reach the City's storm drainage system. The City's system does ultimately drain to the Rio Grande. However, due to infrequent rainfall, this sewage is not believed to typically reach the Rio Grande.
   a. Staff level discussions have been initiated to allow the Water Authority access to the City's gravity storm drains for the purpose of removing spilled sewage. The following actions are proposed:
      i. Agreement with City for Water Authority access to storm drains for removal of sewage.
      ii. Acquire storm drainage system maps and provide them to the Supervisors who respond to sewage overflows.

B. The Water Authority will similarly and subsequently meet with the following entities less frequently impacted by SSOs:
   a. Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA).
   b. Bernalillo County.
   c. Middle Rio Grande Conservancy District (MRGCD).
   d. New Mexico Department of Transportation (NMDOT).

C. The Water Authority has typically prevented sewage from reaching the Rio Grande via the City's pump stations.
   a. This is because under an MOU with the City, the Water Authority Collection Section has responsibility for operation and maintenance of the City's storm drain pump stations.
   b. The Water Authority typically shuts down the pumps at a station receiving a sewage spill and subsequently removes the spilled sewage from the wet well, followed up by a washing down of the wet well and removal of the wash water.

D. The Water Authority is developing an Overflow Emergency Response Plan (OERP).
   a. The OERP will formalize the Water Authority program for recovery and removal of spilled sewage.
   b. The goal is to recover sewage in a manner appropriate for the regional topography, considering environmental impacts and public exposure.
   c. The OERP is further described below.

Comment 4: No force main inspection program.

Response:

A. The Water Authority will implement a program of visually inspecting the surface of each force main route. This inspection will be on a minimum semi-annual basis.

B. This is in compliance with "Core Attributes of Effectively Managed Wastewater Collection Systems" which states: "While difficult to clean due to the typically limited access points, force main preventive maintenance should include routine visual inspection of the force main route for evidence of potential leaks or surface depressions." (Core Attribute No. 5: Collection System Maintenance.)

Comment 5: **No evidence cleaning goals are met.**

Response:

A. It is recognized that setting and meeting measurable goals is appropriate and necessary. The Water Authority will establish an annual cleaning goal and document actual cleaning rates versus the goal. This will be addressed in the Annual Report which is discussed below. The Water Authority reviewed Core Attribute 5: Collection System Maintenance, and expects to establish an annual cleaning goal within the parameters described therein.

B. The Water Authority does not have a specific goal of cleaning a certain length or portion of the system. Rather, the goal is to operate and maintain the system in the most effective manner possible and the quantity of line cleaning is one operation and maintenance component. The Water Authority focus is on increasing the quality of the work before increasing the quantity. Each step of increasing quality can reduce the quantity.

C. Internal Water Authority studies show that the problem is not one of cleaning too little but rather that there is a greater need to increase the effectiveness (quality) of cleaning.

Comment 6: **Lack of communication between the Water Authority Pretreatment and the City Building Department.**

Response:

A. The Water Authority is actively reevaluating the FOG related provisions of the existing Sewer Use and Wastewater Control Ordinance. In this process, the Water Authority together with the City and other entities will update or develop appropriate communication processes.

B. This is in response to the new NPDES Permit which requires the Water Authority to develop a "CMOM Plan with Emphasis on FOG Policy". This CMOM Plan is to be in effect no later than October 1, 2013.

C. Therefore, improved, informal procedures are in place and will be further strengthened by the development of the CMOM Plan.

Comment 7: **Need Sewer Master Plan**

Response:

A. While the Water Authority does not have a Master Plan in a single document, many of the components/document of a Master Plan are available and guide decision making.

B. The service boundary is established.

C. The Water Authority already has and maintains complete construction specification and design guidance documents.

D. A calibrated hydraulic model is in place. The model has been used for rehab design, analysis of available interceptor capacity versus future development, and specifying by-pass pumping flow rates.

E. The Water Authority has a contract with a national engineering firm to update the Sanitary Sewer Master Plan. The work is ongoing and a draft Sewer Master Plan is expected to be complete by the end of December 2013. Individual components of the Master Plan will be available as work progresses.

Comment 8: **Lack of SOPs for regular work.**

Response:

A. The Water Authority Collection Section has developed and implemented a simple-to-follow flow charts to convey standard operating procedures (SOPs).

B. The first issued flow chart SOP addressed the process to follow when a crew arrives at an SSO and is unsure if the overflowing system is owned by the Water Authority.

C. To assure uniform access to the latest revision, the Water Authority is in the process of implementing a system in which these SOP flow charts are accessible through Maximo However, inclusion of flow charts is a new functionality for Maximo. The first SOP flow chart is expected to be accessible via Maximo by January 16, 2013.

D. The Overflow Emergency Response Plan (OERP) is discussed below.

Comment 9: **SSOs are frequently ranked as a Priority 4 when the highest priority is Priority 5.**

Response:

A. The Authority has implemented this change. Reported overflows will be assigned a Priority 5 ranking.

B. It is noted that very few Work Orders are assigned a Priority 5 and that some SSOs did receive a Priority 5 under the old system. Priority 4 is actually a very high ranking and the Water Authority crews always did respond immediately to reported overflows.

Comment 10: Contractors do not have emergency response training nor are instructed on how to respond.

Response:

A. Section 911 (Immediate Notification of Sanitary Sewer Overflows) has been added to the Water Authority standard specifications. Contractors will be further instructed in the process at each Pre-Construction meeting.

B. Section 911 is being included in Water Authority's On-Call contracts as they are renewed.

Comment 11: O&M staff is not trained on response procedure.

Response:

A. As described below, the Water Authority is developing a formal OERP as a CMOM component.

B. Collection Section staff will be trained in the OERP requirements. The training will be complete by May 1, 2013.

Comment 12: The Water Authority has prohibited discharges, i.e., SSOs.

Response:

A. The Water Authority is working to eliminate SSOs to the greatest degree possible with the implementation of the described processes.

Comment 13: The Water Authority is not reporting SSOs that are less than 50 gallons.

Response:

A. Modified processes were implemented October 1, 2012. All SSOs are being reported regardless of the volume spilled.

B. The Water Authority became aware that the minimum volume reporting requirement is unevenly applied across the United States. The Water Authority requested clarification of this criterion in an August 29, 2011 comment letter to EPA on the proposed NPDES permit. On September 4, 2012, EPA provided clear direction on this issue in the response to comments and permit renewal. The Water Authority implemented changes in conjunction with the NPDES permit effective October 1, 2012.

Comment 14: **The Water Authority is not making required reports to the Pueblo of Isleta and the US Fish and Wildlife Service.**

Response:

A. Modified processes were implemented October 1, 2012. All SSOs are being reported to the Pueblo of Isleta and the US Fish and Wildlife Service, regardless of the volume spilled and irrespective of reaching the Rio Grande.

B. In August 29, 2011 comments submitted on the proposed NPDES permit, the Water Authority expressed concern that the EPA may desire a more stringent reporting criterion than the one then in place and requested clarification. On September 4, 2012, EPA provided clear direction on this issue. The Water Authority implemented changes in conjunction with the NPDES Permit effective October 1, 2012 and notifies Pueblo of Isleta and US Fish and Wildlife Service of all SSOs. Subsequently, the US Fish and Wildlife wrote to the Water Authority requesting a return to the prior process. This request was denied by the Water Authority.

CMOM Plan with Emphasis on Fats, Oils, and Grease (FOG) Policy

The new NPDES Permit requires a "CMOM Plan with Emphasis on FOG Policy " The following describes the components that have been identified in which the Collection System O&M staff will work with the NPDES Pretreatment staff directly responsible for FOG control

1. Self-Audit
    a. The Water Authority is in the process of performing a self-audit based on the "CMOM Program Self Assessment Checklist" (see http://www.epa.gov/npdes/pubs/cmomselfreview.pdf)
    b. The Water Authority has found this document to be effective in identifying gaps in the system. For example, the "Satellite Communities and Sewer Use Ordinance (SUO)" portion will be utilized in development of the required FOG Ordinance update
    c. The results of the Self-Audit will be reported in the Annual Report (see below).

2. Overflow Emergency Response Plan (OERP)
    a. The Water Authority recognizes the need for a formal and documented OERP.
    b. A partially completed OERP now exists that is a simple but comprehensive flow chart. The Water Authority will issue portions for use as they are complete.
    c. The Water Authority recently completed and issued in hard copy form the portion that specifies the 12- and 24-hour and five-day reporting processes.

3. SSO Study Team
    a. The Water Authority has created a new team to study SSOs to identify for each the cause and appropriate mitigation. The new team replaces the committee that since February 2009 studied 131 SSOs.
    b. The Team will investigate all overflows from the Collection System starting with 2012. Repeat SSOs, if any, will be subject to additional study and scrutiny.
    c. The output from the Team will be a key input to Annual Report.

4. FOG Policy Outline
    a. Purpose
    b. Legal Authority - Ordinance and NPDES Permit
    c. Identifying Sources – process for identifying new sources or sources with increased FOG (with City of Albuquerque, Bernalillo County and Water Authority staff).
    d. Specifications – grease trap minimum sizing, who approves plans, relevant codes
    e. Inspections – training, checklists, frequency goals
    f. Maintenance and Recordkeeping Requirements – minimum pumping frequency, repair guidelines (baffles, tees), records retention requirement, requirements for self-cleaners
    g. Pumper Requirements – complete evacuation, manifests, grease at the Southside Water Reclamation Plant (SWRP)
    h. Best Management Practices
    i. SSOs – notification by Collection Staff, SSO Committee, Repeat SSOs, Annual Report
    j. Enforcement – NOVs, Fees, terminating service
    k. Records Management and Reporting – database, follow-up, reporting

5. Annual Report
    a. SSOs
        i. Tabulate number of SSOs of various kinds.
        ii. Compare SSO rate to peer utilities.
        iii. Summarize volume spilled/recovered.
        iv. Document causes and mitigations.
        v. SSO Study Team Review and Recommendations
    b. FOG enforcement. Document number of grease traps inspected, Notices of Violation (NOVs) issued and SSO follow-ups.
    c. Summary of Force Main Inspection
    d. Report of Self Audit
    e. Discussion of Actual Cleaning Rates versus Cleaning Goals
    f. Odor complaints
        i. Tabulate number of odor complaints by month.
    g. Identify gaps in the Water Authority processes.
    h. Provide recommendations to close the gaps. This may result in modified O&M processes or CIP.

Albuquerque Bernalillo County
Water Utility Authority

PO Box 568
Albuquerque, NM 87103
505-768-2500
www.abcwua.org

April 18, 2013

VIA FEDEX PRIORITY: Signature Confirmation Receipt

James Blevins
Director
Compliance Assurance and Enforcement Division
U.S. EPA, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Re: Response to Information Request Pursuant to Section 308 of the Clean Water Act

Dear Mr. Blevins:

The Albuquerque Bernalillo County Water Utility Authority received the Information Request dated March 21, 2013 sent by your office dated March 14, 2013. This response to the information request is submitted as requested.

If you have any further questions or need additional information, please contact me at (505) 768-3631 or jstomp@abcwua.org.

Sincerely,

John M. Stomp III, P.E.
Chief Operating Officer

Enclosure

Appendix 2

Albuquerque Bernalillo County
Water Utility Authority

Response to Information Request
Pursuant to Section 308 of the Clean Water Act

Albuquerque Bernalillo County Water Utility Authority
April 2013

The Albuquerque Bernalillo County Water Utility Authority (Water Authority) submits the following response to the EPA Information Request received on March 21, 2013.

CERTIFICATION

I certify under penalty of law that I have examined and am familiar with the information in the enclosed documents, including all attachments. Based on my inquiry of those individuals with primary responsibility for obtaining the information. I certify that the statements and information are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false statements and information, including the possibility of fines or imprisonment.

4/17/13
Date

Signature

Questions & Responses

Question 1: **With regard to the person providing answers to these questions, state your name, business address, business telephone number, and position with Albuquerque Bernalillo County Water Utility Authority.**

Response:

John M. Stomp III, PE
P.O. Box 568, Albuquerque, NM 87103
(505) 768-3631
Chief Operating Officer

Question 2: With regard to any person who participated in or contributed to your response to this Information Request, provide that person's name, business address, business telephone number, and position with Albuquerque Bernalillo County Water Utility Authority, including whether the person is an employee or a contractor.

Response:

NAME	BUSINESS ADDRESS	BUSINESS PHONE	POSITION TITLE	EMPLOYEE/ CONTRACTOR	QUESTION NO. RESPONDED TO
Stomp, John M.	P.O. Box 568, Albuq., NM 87103	(505) 768-3631	Chief Operating Officer, Operations	Employee	1, 2, 3, 4, 5
Gastlan, Barbara J.	P.O. Box 568, Albuq., NM 87103	(505) 873-6958	Compliance Manager, Compliance	Employee	1, 2, 3, 4, 5
DeRose-Bamman, Jane	P.O. Box 568, Albuq., NM 87103	(505) 873-6936	Program Manager/NPDES, Compliance	Employee	1, 2, 3, 4, 5
Olsen, James H.	P.O. Box 568, Albuq., NM 87103	(505) 857-8235	Engineering Division Manager, Field	Employee	1, 2, 3, 4, 5
Holstad, Mark S.	P.O. Box 568, Albuq., NM 87103	(505) 873-7013	Chief Engineer, Field	Employee	1, 2, 3, 4, 5
Gallegos, Mark S.	P.O. Box 568, Albuq., NM 87103	(505) 873-6906	O/M Support - Water Reclamation Collections, Field	Employee	3, 4, 5
Baca, Angelo R.	P.O. Box 568, Albuq., NM 87103	(505) 873-7003	Asst. O/M Support - Water Reclamation Collections, Planner/Scheduler, Field	Employee	3, 4, 5
Lukow, Kevin J.	P.O. Box 568, Albuq., NM 87103	(505) 873-7014	GIS Specialist, Field	Employee	3, 4, 5
Bramlett, Kirsty	P.O. Box 568, Albuq., NM 87103	(505) 873-7018	Intern, Field	Employee	3, 4, 5
Hovey, Karen M.	P.O. Box 568, Albuq., NM 87103	(505) 857-8287	Communications Center Supervisor, Field	Employee	3, 4, 5
Garcia, Daniel S.	P.O. Box 568, Albuq., NM 87103	(505) 342-3003	Control Systems Supervisor, Plant	Employee	3, 4, 5
Houston, Barbara L.	P.O. Box 568, Albuq., NM 87103	(505) 768-3627	Executive Assistant, Operations	Employee	3, 4
Herrera, Yvonne E.	P.O. Box 568, Albuq., NM 87103	(505) 873-7006	Senior Office Assistant, Field	Employee	3, 4, 5
Apodaca, Dolores A.	P.O. Box 568, Albuq., NM 87103	(505) 873-7068	Administrative Specialist, Compliance	Employee	3, 4
Dalin, Tracey A.	P.O. Box 568, Albuq., NM 87103	(505) 873-7007	Senior Office Assistant, Compliance	Employee	3, 4

Question 3: **Provide a copy of all records documenting sanitary sewer overflows (SSOs) during the period of January 1, 2008, to present regardless of (a) volumes/quantity, (b) impact to surface water body, (c) reporting status [e.g., reported to the New Mexico Environment Department (NMED), EPA], (d) location, (e) cause and (f) rainfall amount.**

Response:

Appendix 1: Procedures and CMMS
Appendix 2: Dispatch Call Log
Appendix 3: Control Room Call Log
Appendix 4: Notification Call Log
Appendix 5: Completed Work Orders – *Sewer App* CMMS (1/1/2008-4/5/2009)
Appendix 6: Completed Work Orders – Maximo CMMS (4/6/2009-3/21/2013)
Appendix 7: SSO Reports to EPA / NMED

Question 4: **"Records" include, but are not limited to, call logs, internal communication logs, work order requests, completed work orders, SSO reports to the NMED and/or EPA.**

Response:

The required records are addressed under Question 3.

Question 5: **Provide an explanation regarding any failure on your part as owner and/or operator of Albuquerque Bernalillo County Water Utility Authority to document and/or report SSOs at any time, during the period of January 1, 2008, to the present. Such explanation shall include a discussion of how you addressed this problem at Albuquerque Bernalillo County Water Utility Authority to prevent further non-reporting of SSOs as required by NPDES Permit Number NM0022250.**

Response:

A. The Water Authority reports all known SSOs in accordance with the requirements as understood at that time. However, in over five (5) years since 1/1/2008, human errors have occurred and the understanding of the requirements has changed.
B. To determine if there were unrecognized failures to report, the Water Authority:
   1. Created Appendix 5 (Completed Work Orders – *Sewer App* CMMS[1] (1/1/2008-4/5/2009)) and Appendix 6 (Completed Work Orders – Maximo CMMS (4/6/2009-3/21/2013))
   2. Compared the list of SSO to the hard copy reports for all 10-Codes for the Reporting Period. (See Appendix 1 for a discussion of 10-Codes.) Some non-reported SSOs that should have been reported based on the criteria then in place were thereby identified and are compiled in Appendix 8: Non-Reported (Greater Than 50 Gallons).
   3. Examined the Dispatch Call Log.
      a. These calls can result in one of the following outcomes:

[1] CMMS = Computerized Maintenance Management System

i. A problem is found with the Water Authority sewer and a 10-40, 10-42, or 10-48 report is made. (See Appendix 1 for a discussion of the 10-Code designations used by the Water Authority.)
ii. A Water Authority sewer problem is found that is not a 10-40, 10-42, or 10-48, e.g., a flipped manhole cover.
iii. The actual problem reported was not a sewer overflow but a water overflow, i.e., a water line break or an overflowing valve box.
iv. The problem is with the private sewer.

b. A total of 17 days of the Dispatch Call Log were examined. Each call on those days was traced through the CMMS system and a determination was made of the actual reason for the call. This analysis is further described in Appendix 2. No calls were found for Water Authority SSOs that should have been reported.

4. Examined the Control Room Log and cross referenced to the reported SSOs. No calls were found for Water Authority SSOs that should have been reported.

C. Non-reported SSOs were found.
1. SSOs that met the criteria in place at the time are compiled in Appendix 8 (Non-Reported (Greater Than 50 Gallons).
a. Explanation: Human error.
b. Explanation of corrective action:
i. The Water Authority has implemented a program of increased diligence and Quality Assurance / Quality Control (QA/QC) in completing and processing these forms.
ii. The Water Authority has recognized the need to move away from paper forms. Therefore, the forms and associated processes will be integrated into Maximo, which is the current Water Authority's CMMS.
2. SSOs less than 50 gallons are compiled in Appendix 9 (Non-Reported (Less Than 50 Gallons).
a. Explanation:
i. Until 10/1/2012, the Water Authority operated under the understanding that SSOs less than 50 gallons were not reportable.
ii. The Water Authority became aware that the minimum volume reporting requirement is unevenly applied across the United States. The Water Authority requested clarification of this criterion in an August 29, 2011 comment letter to EPA on the proposed NPDES permit. On September 4, 2012, EPA provided clear direction on this issue in the response to comments and permit renewal. The Water Authority implemented changes in conjunction with the NPDES permit effective October 1, 2012.
iii. The EPA should be aware that the minimum volume criterion is still not evenly applied.
a. See R18-9-C305. 2.05 at: http://www.azsos.gov/public_services/title_18/18-09.htm.
b. See: www.tawwa.org/TW12Proceedings/The%20Declaration%20of%20SSO%20Independence.pdf
b. Explanation of corrective action: Processes were modified effective October 1, 2012. All SSOs are being reported regardless of the volume spilled.

CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE (CMOM) PROGRAM SELF-ASSESSMENT

September 27, 2013

Albuquerque Bernalillo County
Water Utility Authority

Appendix 3

CAPACITY, MANAGEMENT, OPERATION AND MAINTENANCE (CMOM) Program Self-Assessment

Albuquerque Bernalillo County Water Utility Authority Self-Audit

Compiled By
Mark S. Holstad, PE
Collection Section Manager

Table of Contents

Executive Summary

This is a Self-Assessment (Self-Audit) of the Albuquerque Bernalillo County Water Utility Authority (Water Authority) Collection System. This Self-Audit is required by the Water Authority's Corrective Action Plan to EPA, dated November 19, 2012. This Self-Audit is a part of the Capacity, Management, Operation and Maintenance (CMOM) Plan that is to be submitted to EPA by October 1, 2013.

A Self-Audit is encouraged by EPA as part of a CMOM. See EPA link: http://cfpub.epa.gov/npdes/sso/featuredinfo.cfm?program_id=4 . Near the bottom of this web page, under "CMOM Program Self-Assessment Checklist" the following link provides a pdf document: http://www.epa.gov/npdes/pubs/cmomselfreview.pdf. This document from EPA includes a discussion of what CMOM is, and how to use this checklist (Self-Audit).

This Self-Audit format is based on the EPA template found at: www.epa.gov/npdes/sso. The pdf was converted to Word for editing. The basic format and structure were kept and portions were modified as appropriate to the Water Authority system.

This Self-Audit :

1. Provides an overview of several aspects of the Water Authority Collection System.
2. Identifies areas for improvement.

General Information

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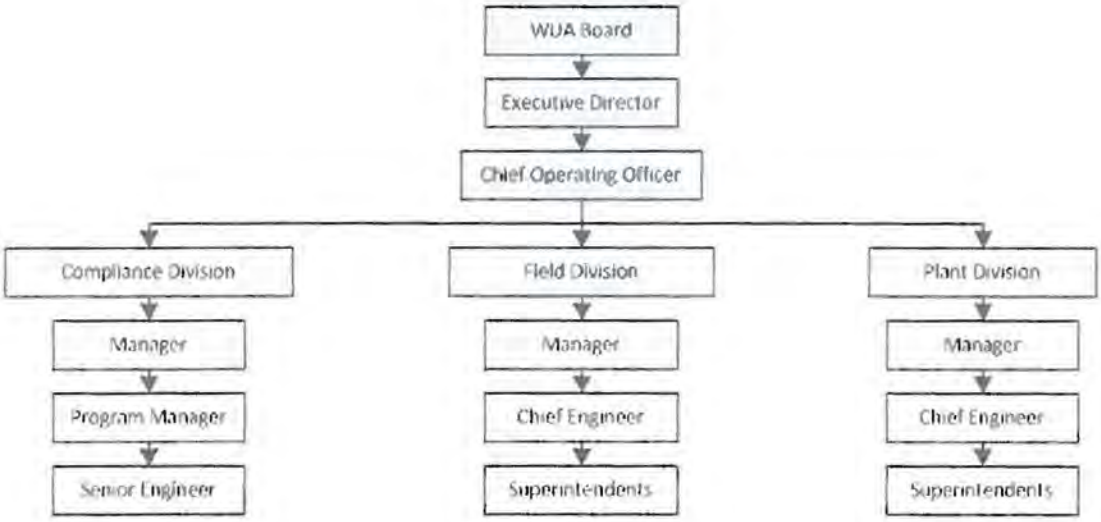


Permitted Treatment, Collection Facilities, and Collection Systems

NPDES Permit # NM0022250

Collection System Description

System Inventory

Treatment Facilities

# of Treatment Facilities	1 NUMBER	WWTP design capacity	76 MGD
Average Daily Flow	55 MGD	Average dry weather flow	55 MGD

Access & Maintenance

Manholes	46,899 NUMBER	Number of air vacuum relief valves	48 NUMBER

Conveyance & Pumping

		Pump Stations		Vacuum Stations		
	Gravity Sewers	Stations	Force Mains	Stations	Vacuum Lines	Force Mains
Pipes and pumps: Length/quantity	2,209+	34	36.5+	10	154+	14.5+
	MILES	NUMBER	MILES	NUMBER	MILES	MILES
Age of system: 0-25 years old	42.4%	24#	80.8%	10	100%	100.0%
	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	PERCENT
26-50 years old	38.0%	9#	18.8%	N/A	0	0
	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	PERCENT
51-75 years old	18.9%	13#	0.4%	N/A	0	0
	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	PERCENT
>75 years old	0.7%	N/A	N/A	N/A	0	0
	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT	PERCENT
Number of inverted siphons	8					
	NUMBER					

Service Area Characteristics

Service area	303	Service population	606,000
	SQ. MILES		PEOPLE
Annual precipitation	8.67 inches*		
	NUMBER		

Notes

+ Total pipe length 2414 miles is used for computing the SSO Rate.

Ages are based on installation dates. Older facilities have been upgraded and rehabilitated.

* http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?nmalbu

Number of Service Connections

Residential	172,951 NUMBER	Commercial	9,773 NUMBER
Industrial	96 NUMBER	Residential + Commercial + Industrial = Total	182,820 NUMBER

Collection system service lateral responsibility (check one)	
At main line connection only	
From main line to property line or easement/cleanout	
Beyond property line/clean out	
Other: Main line only. Not connection	X
Comments: See Water Authority Sewer Use and Wastewater Control Ordinance	

Combined Sewer System

What percent of sewer system is served by combined sewers (i.e., sanitary sewage and storm water in the same pipe)?	0 % PERCENT

Pipe Diameter

	Gravity Sewers	Force Mains	Vacuum Lines
8 inches or less	82.60% PERCENT	69.53% PERCENT	99.42% PERCENT
9 - 18 inches	11.00% PERCENT	18.80% PERCENT	0.58% PERCENT
19 - 36 inches	3.80% PERCENT	11.67% PERCENT	N/A PERCENT
> 36 inches	2.60% PERCENT	N/A PERCENT	N/A PERCENT

Pipe Materials

	Gravity Sewers	Force Mains	Vacuum Lines
Prestressed concrete cylinder pipe (PCCP)	N/A	N/A	N/A
	PERCENT	PERCENT	PERCENT
High density polyethylene (HDPE)	5.30%	N/A	N/A
	PERCENT	PERCENT	PERCENT
Reinforced concrete pipe (RCP)	3.70%	N/A	N/A
	PERCENT	PERCENT	PERCENT
Polyvinyl Chloride (PVC)	39.80%	84.68%	100.00%*
	PERCENT	PERCENT	PERCENT
Vitrified Clay Pipe	32.00%	N/A	N/A
	PERCENT	PERCENT	PERCENT
Ductile iron	0.70%	12.66%	N/A
	PERCENT	PERCENT	PERCENT
Non-reinforced concrete pipe	13.20%	N/A	N/A
	PERCENT	PERCENT	PERCENT
Asbestos cement pipe	1.30%	N/A	0.00%*
	PERCENT	PERCENT	PERCENT
Cast iron	0.30%	2.65%	0.01%
	PERCENT	PERCENT	PERCENT
Brick	N/A	N/A	N/A
	PERCENT	PERCENT	PERCENT
Fiberglass	0.40%	N/A	N/A
	PERCENT	PERCENT	PERCENT
> 36 inches	3.40%	N/A	0.00%*
	PERCENT	PERCENT	PERCENT

*GIS indicates a small quantity of asbestos cement (0.13%) and unknown (0.07%) that are likely PVC.

Engineering Design (ED)

	Checklist Item	Yes	No	N/A
ED-01	Is there a document which includes design criteria and standard construction details?	X		
	Comments:			
ED-02	Is there a document that describes the procedures that the utility follows in construction design review?	X		
	Comments:			
ED-03	Are WWTP and O&M staff involved in the design review process?	X		
	Comments:			
ED-04	Is there a procedure for testing and inspection new or rehabilitated system elements both during and after the construction is completed?	X		
	Comments:			
ED-05	Are construction sites supervised by qualified personnel (such as professional engineers or certified engineering technicians) to ascertain that the construction is taking place in accordance with agreed upon plans and specifications?	X		
	Comments:			
ED-06	Are new manholes tested for inflow and infiltration?	X		
	Comments:			
ED-07	Are new gravity sewers checked using closed circuit TV inspection?	X		
	Comments: However, post-construction CCTV video and observations are not stored in Maximo for later use.			
ED-08	Does the utility have documentation on private service lateral design and inspection?		X	
	Comments:			
ED-09	Does the utility attempt to standardize equipment and sewer system components?	X		
	Comments: E.g., Flygt pumps and Vactor combination units.			

Satellite Communities and Sewer Use Ordinance (SUO)

Checklist Item		Yes	No	N/A
SUO-01	Does the utility receive flow from satellite communities? IF NO, GO TO NEXT SECTION	X		
	Comments:			
SUO-02	What is the total area from satellite communities that contribute flow to the collection system? *(Acres or square miles)*			
	Comments: Sandia Heights = 1,912 acres; KAFB = 50,352 acres; Tierra West = 102 acres; Village of Tijeras = 20 acres Total acreage = 52,386			
SUO-03	Does the utility require satellite communities to enter into an agreement? IF NO, GO TO QUESTION SUO-06	X		
	Comments: Pursuant to the utility's System Expansion Ordinance, all developments or communities are required to enter into a development agreement for service.			
SUO-04	Does the agreement include the requirements listed in the sewer use ordinance?	X		
	Comments: Agreements state that the user is subject to the ordinances, policies and regulations of the Water Authority and payment of the rates and charges imposed by the Water Authority for wholesale wastewater service. Therefore, all requirements are in current ordinances.			
SUO-05	Do the agreements have a date of termination and allow for renewal under different terms?		X	
	Comments: These agreements are in effect unless one of the parties desires to terminate the agreement.			
SUO-06	Does the utility maintain a legal authority to control the maximum flow introduced into the collection system from satellite communities?		X	
	Comments: This is not considered a problem in the Water Authority system. Systems are sized to receive the maximum possible for the development density. The flows are typically metered and/or the user is billed based on the Water and Sewer Rate Ordinance.			
SUO-07	Are standards, inspections, and approval for new connections clearly documented in a SUO?	X		
	Comments: Significant industrial users are required to do so as a condition of their Wastewater Discharge Permit.			
SUO-08	Does the SUO require satellite communities to adopt the same industrial and commercial regulatory discharge limits as the utility?	X		
	Comments: Each contract requires the satellite system to comply with all appropriate ordinances, including the SUO.			

Checklist Item		Yes	No	N/A
SUO-09	Does the SUO require satellite communities to adopt the same inspection and sampling schedules as required by the industrial pretreatment ordinance?	X		
	Comments: Each contract requires the satellite system to comply with all appropriate ordinances, including the SUO.			
SUO-10	Does the SUO require that satellite communities or the utility to issue control permits for significant industrial users?	X		
	Comments: Each contract requires the satellite system to comply with all appropriate ordinances, including the SUO.			
SUO-11	Does the SUO contain provisions for addressing overstrength wastewater from satellite communities?	X		
	Comments: Each contract requires the satellite system to comply with all appropriate ordinances, including the SUO.			
SUO-12	Does the SUO contain procedures for the following?			
	Inspection standards			X
	Industrial Pretreatment requirements	X		
	Building/sewer permit issues	X		
	Comments: Inspection forms are an Industrial Pretreatment requirement and are part of the Water Authority Industrial Pretreatment Program.			
SUO-13	Does the SUO contain general prohibitions of the following materials?			
	Fire and explosion hazards	X		
	Corrosive materials	X		
	Obstructive materials	X		
	Oils or petroleum	X		
	Material which may cause interference at the wastewater treatment plant	X		
	Comments:			
SUO-14	Does the SUO contain procedures and enforcement actions for the following?			
	Fats, oils, and grease (FOG)	X		
	Infiltration and inflow	X		
	Building structures over the sewer lines			X
	Storm water connections to sanitary lines (downspouts)	X		
	Defects in service laterals located on private property			X
	Sump pumps, air conditioner connections	X		
	Comments: Service lines are private property and as such fall under the jurisdiction of the code enforcement of the governing entity for each industry.			

Organizational Structure (OC)

Checklist Item		Yes	No	N/A
OC-01	Is an organizational chart available that shows the overall personnel structure for the utility, including operation and maintenance staff?	X		
	Comments: Yes. The Water Authority's Human Resources Division maintains an organization chart for all employees in a program called OrgPlus9 which is available on the utility's SharePoint site.			
OC-02	Are up-to-date job descriptions available that delineate responsibilities and authority for each position?	X		
	Comments:			
OC-03	Are the following items discussed in the job descriptions?			
	Nature of work to be performed	X		
	Minimum requirements for the position	X		
	Necessary special qualifications or certifications	X		
	Examples of the type of work	X		
	List of licenses required for the position	X		
	Performance measures or promotion potential			X
	Comments: Performance measures are part of the Employee Performance Evaluation process which is based on competencies aligned with the utility's organization strategies.			
OC-04	What percent of staff positions are currently vacant?	4.7		
	Comments:			
OC-05	On average how long do positions remain vacant? *(months)*	2.5		
	Comments:			
OC-06	What percent of utility work is contracted out?	Varies		
	Comments: 0% Preventive maintenance cleaning. Most pipe rehab is contracted out. In-house construction crews replace manhole covers and perform some pipe repairs.			

Internal Communications (IC)

	Checklist Item	Yes	No	N/A
IC-01	Which of the following methods are used to communicate with utility staff?			
	Regular meetings	X		
	Bulletin boards	X		
	E-mail	X		
	Other (walkie talkie/pager)	X		
	Comments: SharePoint provides up-to-date news and events. The employee newsletter called the Flow is published and provided on a monthly basis. Bulletin boards are used to keep employees informed of programs. The Public Affairs Manager keeps all employees informed on recent events related to the Water Authority.			
IC-02	How often are the staff meetings held? *(e.g., Daily, Weekly, Monthly, etc.)*			
	Comments: Collection section meetings are typically scheduled every 2-3 weeks.			
IC-03	Are incentives offered to employees for performance improvements?	X		
	Comments:			
IC-04	Does the utility have an "Employee of the Month/Quarter/Year" program?	X		
	Comments: Every quarter, employees can submit Employee of the Quarter nominations. An internal panel reviews the nominations and allocates reward money and/or vacation time.			
IC-05	How often are performance reviews conducted? *(e.g. Semi-annually, Annually, etc.)*			
	Comments: The Water Authority is implementing performance reviews. The reviews will be completed annually beginning in FY14.			
IC-06	Does the utility regularly communicate/coordinate with other municipal departments?	X		
	Comments:			

Budgeting (BUD)

	Checklist Item	Yes	No	N/A
BUD-01	What is the average annual fee for residential users?			
	Comments: Water = $293.40; Sewer = $210.72 for 6,000 gallons			
BUD-02	How often are user charges evaluated and adjusted? *(e.g. annually, biannually. etc.)*			X
	Comments: Every two years, the utility reviews and updates its rates based on a rate study which is reviewed by the utility's Customer Advisory Committee which is received by the utility governing board. User charges may be adjusted every two to three years. Connection charges (UEC) and water supply charges may be adjusted annually by building cost or construction cost indices.			
BUD-03	Are utility-generated funds used for non-utility programs?		X	
	Comments: The Water Authority is a state created entity separate from any other governmental entity. The utility operates similar to an enterprise fund. Therefore, no utility-generated funds are used for non-utility programs.			
BUD-04	Are costs for collection system operation and maintenance (O&M) separated from other utility services such as water, storm water, and treatment plants? IF NO, GO TO BUD-07	X		
	Comments:			
BUD-05	What is your average annual (O&M) budget?			
	Comments: $6.35 million (Collection Section)			
BUD-06	What percentage of the utility's overall budget is allocated to maintenance of the collection system?			
	Comments: Total collections budget is $6,954,416 which is 3.6% of the overall Utilities Operating Budget.			
BUD-07	Does the utility have a Capital Improvement Plan (CIP) that provides for system repairs/replacements on a prioritized basis?	X		
	Comments: The Water Authority has a ten year CIP that is updated every two years. Replacement/Rehabilitation is based on a risk assessment based on the probability and consequence of failure. In addition, the Water Authority completed a comprehensive Asset Management Plan for all utility assets in 2011. Moreover, the utility developed a ten-year asset management plan for the sanitary sewer system lines in 2011.			
BUD-08	What is your average annual CIP budget?			
	Comments: Currently total average annual basic CIP Budget is $43 million.			

BUD-09	What percentage of the maintenance budget is allotted to the following maintenance?			
	Predictive maintenance - tracking design, life span, and scheduled parts replacements	11%		
	Preventive maintenance - identifying and fixing system weakness which, if left unaddressed, could lead to overflows	66%		
	Corrective maintenance - fixing system components that are functioning but not at 100% capacity/efficiency; for example partially blocked lines	13%		
	Emergency maintenance - reactive maintenance, overflows, equipment breakdowns	6%		
	Comments: Approximate ratios based on assignments of staff within Collection Section.			
BUD-10	Does the utility have a budgeted program for the replacement of under-capacity pipes?			X
	Comments:			
BUD-11	Does the utility have a budgeted program for the replacement of over-capacity pipes?			X
	Comments:			

Training (TR)

	Checklist Item	Yes	No	N/A
TR-01	Does the utility have a formal job knowledge, skills, and abilities (KSA) training program?	X		
	Comments: Formal training programs are available for the Wastewater workersand new supervisors.			
TR-02	Does the training program address the fundamental mission, goals, and policies of the utility?	X		
	Comments:			
TR-03	Does the utility have mandatory training requirements identified for key employees?	X		
	Comments: Supervisor training (see above). Also maintain required licenses or certifications, e.g., PE or Operator Certification.			
TR-04	What percentage of employees met or exceeded their annual training goals during the past year?			
	Comments: Typically 100% of personnel requiring Water Authority training receive that training.			

	Checklist Item	Yes	No	N/A
TR-05	Does the utility provide training in the following areas? (See Comments)			
	Safety	X		
	Routine line maintenance	X		
	Confined space entry	X		
	Traffic control	X		
	Record keeping	X		
	Electrical and instrumentation			X
	Pipe repair	X		
	Bursting / CIPP	X		
	Public relations		X	
	SSO/Emergency response	X		
	Pump station operations and maintenance	X		
	CCTV and trench/shoring	X		
	Other			
	Comments: Answer for Collection Section. Formal training is provided through the wastewater workers training program. Specialized training is also provided through attendance at workshops, equipment shows, factory training, etc.			
TR-06	Are operator and maintenance certification programs used? IF NO GO TO TR-08	X		
	Comments: For appropriate personnel.			
TR-07	Are operator and maintenance certification programs required?	X		
	Comments: For appropriate personnel.			
TR-08	Is on-the-job training progress and performance measured?	X		
	Comments: For affected personnel.			
TR-09	Which of the following methods are used to assess the effectiveness of the training?			
	None	X		
	Periodic testing	X		
	Drills	X		
	Demonstrations	X		
	Comments:			
TR-10	What percentage of the training offered by the utility is in the form of the following?			
	Manufacturer training	10%		
	On-the-job training	40%		
	In-house classroom training	40%		
	Industry-wide training	10%		

	Checklist Item	Yes	No	N/A
	Comments: Approximate			

Safety (SAF)

	Checklist Item	Yes	No	N/A
SAF-01	Does the utility have a written safety policy?	X		
	Comments:			
SAF-02	How often are safety procedures reviewed and revised?			
	Annually			X
	Quarterly			X
	Comments: As appropriate.			
SAF-03	Does the utility have a safety committee?	X		
	Comments:			
SAF-04	Are regular safety meetings held with the utility employees?	X		
	Comments:			
SAF-05	Does the utility have a safety training program?	X		
	Comments:			
SAF-06	Are records of employee safety training kept up to date?	X		
	Comments:			
SAF-07	Does the utility have written procedures for the following?			
	Lockout/tagout	X		
	Material safety data sheets (MSDS)	X		
	Chemical handling	X		
	Confined spaces permit programs	X		
	Trenching and excavations safety	X		
	Biological hazards in wastewater	X		
	Traffic control and work site safety	X		
	Electrical and mechanical systems	X		
	Pneumatic and hydraulic system safety	X		
	Comments: Written procedures are utilized in the training that every Wastewater Worker receives through the Water Authority's in-house training program. However, SOPs need to be developed for use by staff.			
SAF-08	What is your agency's lost-time injury rate?			
	Comments: 2			
SAF-09	Are the following equipment items available and in adequate supply?			
	Rubber/disposable gloves	X		
	Confined space ventilation equipment	X		
	Hard hats, safety glasses, rubber boots	X		
	Antibacterial soap and first aid kit	X		

	Checklist Item	Yes	No	N/A
	Tripods or non-entry rescue equipment	X		
	Fire extinguishers	X		
	Equipment to enter manholes	X		
	Portable crane/hoist	X		
	Atmospheric testing equipment and gas detectors	X		
	Oxygen sensors	X		
	H2S Monitors	X		
	Full body harness	X		
	Protective clothing	X		
	Traffic/public access control equipment	X		
	5-minute escape breathing devices		X	
	Life preservers for lagoons	X		
	Life preservers at activated sludge plants	X		
	Fiberglass or wooden ladders for electrical work	X		
	Respirators and/or self-contained breathing apparatus	X		
	Methane gas or optical vector (OVA) analyzer	X		
	Lower explosion limit (LEL) metering	X		
	Comments:			
SAF-10	Are safety monitors clearly identified?	X		
	Comments: Presume this is in reference to H2S monitoring equipment. In the AVOPS group, each Operator has own gas detector that is regularly calibrated. In the Gravity group, gas detectors are checked out from the Warehouse which is responsible for calibrating and maintaining the battery charge. The Warehouse also provides this service for gas detectors used by SWRP staff.			

Customer Service (CS)

	Checklist Item	Yes	No	N/A
CS-01	Does the utility have a customer service and public relations program? IF NO GO TO CS-03	X		
	Comments: The Water Authority has a customer service division, dispatch, and a public affairs manager.			
CS-02	Does the customer service program include giving formal presentations on the wastewater field to the following?			
	Schools and universities	X		
	Community gatherings	X		
	Local officials	X		
	Businesses	X		

Checklist Item		Yes	No	N/A
	Media	X		
	Citizens	X		
	Building Inspector(s)	X		
	Public utility officials	X		
	Comments: The Water Authority's education program provides formal presentations on the whole wastewater system.			
CS-03	Are employees of the utility specifically trained in customer service?	X		
	Comments: Particularly in Dispatch and Customer Services.			
CS-04	Are there sample correspondence, Q/A's, or "scripts" to help guide staff through written or oral responses to customers?	X		
	Comments: Customer Care Representatives are provided "quick scripts" and trained in the use thereof.			
CS-05	What methods are used to notify the public of major construction or maintenance work?			
	Door hangers	X		
	Public radio or T.V. announcements		X	
	Newspaper		X	
	Fliers	X		
	Signs	X		
	Other			X
	None			X
	Comments: Answers for typical projects.			
CS-06	Is a homeowner notified prior to construction that his/her property may be affected?	X		
	Comments:			
CS-07	Do you provide information to residents on cleanup and safety procedures following basement backups and overflows from manholes when they occur?	X		
	Comments: In the event of a spill into private property that is determined to be caused by a blockage in the Water Authority main, the resident is immediately contacted and given a list of companies that can perform the required cleanup. The Water Authority assures that the company is hired and paid.			
CS-08	Does the utility have a customer service evaluation program to obtain feedback from the community?	X		
	Comments:			
CS-09	Do customer service records include the following information?			
	Personnel who received the complaint or request	X		
	Nature of the complaint or request	X		

Checklist Item		Yes	No	N/A
	To whom the follow-up action was assigned	X		
	Date of the complaint or request	X		
	Date the complaint or request was resolved	X		
	Total days to end the problem	X		
	Name, address, and telephone number of the customer	X		
	Location of the problem	X		
	Date the follow up action was assigned	X		
	Cause of the problem	X		
	Feedback to customer	X		
	Comments: Answer for calls to Dispatch.			
CS-10	Does the utility have a goal for how quickly customer complaints (or emergency calls) are resolved? IF NO, GO TO NEXT SECTION			X
	Comments: This is not considered a problem in the Water Authority system. Many types of calls are received. Emergency items are addressed and resolved immediately. Odor complaints are addressed immediately or the next day, depending on the type. Information requests, e.g. service line location, and roach spraying are scheduled.			
CS-11	What percentage of customer complaints (or emergency calls) are resolved within the timeline goals?			X
	Comments: This is not considered a problem in the Water Authority system. All emergency calls are issued from Dispatch immediately and a crew is immediately sent to address the issue.			

quipment and Collection System Maintenance (ESM)

Checklist Item		Yes	No	N/A
ESM-01	Is a maintenance card or record kept for each piece of mechanical equipment within the collection system? IF NO, GO TO ESM-03	X		
	Comments: A modern CMMS program (Maximo) has replaced old style cards.			
ESM-02	Do equipment maintenance records include the following information?			
	Maintenance recommendations	X	X	
	Instruction on conducting the specific maintenance activity	X	X	
	Other observations on the equipment	X	X	
	Maintenance schedule	X	X	
	A record of maintenance on the equipment to date	X	X	
	Comments: Maximo will include all the above. However, population data is a work in progress and is not complete at all stations.			
ESM-03	Are dated tags used to show out-of-service equipment?	X		

	Checklist Item	Yes	No	N/A
	Comments: Typical practice is to remove out-of-service equipment for repair or to identify with a LOTO (Lock Out Tag Out) tag.			
ESM-04	Is there an established system for prioritizing equipment maintenance needs?	X		
	Comments: Plant Maintenance uses a Priority 1-5 system for CM work orders to serve the Collection Section. The entire rehab program is risk based per the Water Authority's Asset Management program. PACP is used for all CCTV inspections => populates Maximo => assigns cleaning tools.			
ESM-05	What percent of repair funds are spent on emergency repairs?			
	Comments: Answer varies by component. Pump station repairs have not been due to failure, therefore 0%. Piping repairs may be identified due to failure, therefore, 20-75%			
ESM-06	Are collective repair work orders backlogged more than six months?	X	X	
	Comments: No for high priority, i.e. priority 4 and 5. Yes for lower priority items.			
ESM-07	Do collection system personnel coordinate with state, county, and local personnel on repairs, before the street is paved?	X		
	Comments: Work in streets requires a barricade permit. Pavement is replaced by a licensed contractor.			

Equipment Parts (EPI)

	Checklist Item	Yes	No	N/A
EPI-01	Have critical spare parts been identified?	X		
	Comments: Examples Are: A stockpile of root saws is maintained. Selected replacement pumps.			
EPI-02	Are adequate supplies on hand to allow for two point repairs in any part of the system?	X	X	
	Comments: Depends on the repair. Yes for replacing a pipeline break.			
EPI-03	Is there a parts standardization policy in place?	X	X	
	Comments: Depends on the part. All pumps are Flygt.			
EPI-04	Does the utility have a central location for storing spare parts?	X		
	Comments: Location varies. Many parts are stored at the warehouse. Construction materials are stored in a covered and locked location.			
EPI-05	Does the utility maintain a stock of spare parts on its maintenance vehicles?	X		
	Comments:			
EPI-06	Does the utility have a system in place to track and maintain an accurate inventory of spare parts?		X	
	Comments: Utility is currently in the process developing a way of keeping inventory through the use of Maximo.			
EPI-07	For those parts which are not kept in inventory, does the utility have a readily available source or supplier?	X		
	Comments:			

Management Information System (MIS)

	Checklist Item	Yes	No	N/A
MIS-01	Does the utility have a management information system (MIS) in place for tracking maintenance activities? *(Either electronic or good paper files)* IF NO, GO TO NEXT SECTION	X		
	Comments: Maximo			
MIS-02	Are the MIS records maintained for a period of at least three years?	X		
	Comments: Maximo			
MIS-03	Is the MIS able to distinguish activities taken in response to an overflow event?	X		
	Comments:			

MIS-04	Are there written instructions for managing and tracking the following information? (See Comments)			
	a. Complaint work orders	X		
	b. Scheduled work orders	X		
	c. Customer service		X	
	d. Scheduled preventive maintenance	X		
	e. Scheduled inspections	X		
	f. Sewer system inventory	X		
	g. Safety incidents	X		
	h. Scheduled monitoring/sampling	X		
	i. Compliance/overflow tracking	X		
	j. Equipment/tools tracking	X		
	k. Parts inventory	X		
	Comments: Answers are for the Collection Section. Answers will differ for other portions of the Water Authority. a. Flow chart for Maximo work orders b. General Maximo work order process flow chart c. For Dispatch, a high-level SOP is in development. Also, see comment for MIS-05. d. General Maximo work order process flow chart e. General Maximo work order process flow chart f. General Maximo work order process flow chart g. In worker's comp data base. h. Industrial Pretreatment does have a method of scheduling monitoring of Grease Removal Devices (GRDs) but does not sample them. Industrial Pretreatment does monitoring and sampling of industrial users for which written procedures (SOPs) are used and samples are scheduled and tracked in LINKO. i. Flow charts j. Each person responsible for Pump Station maintenance, are provided a hand tool allowance and are responsible for those tools. k. The Warehouse maintains minimum inventory of specific parts.			
MIS-05	Do the written instructions for tracking procedures include the following information?			
	Accessing data and information	X		
	Instructions for using the tracking system	X		
	Updating the MIS	X		
	Developing and printing reports	X		
	Comments: Written instructions are contained in the "Maximo 6.2.5 Work Order User Guide" that is used in training new Maximo users. However, no			

	written guide can keep up with the continuing updates and modifications of a modern CMMS like Maximo. The Collection Section Planner/Scheduler/Assistant Superintendent is a Maximo "Super User" and, along with WUA-IT, is responsible and available to train and mentor the Collection Section staff.			
MIS-06	How often is the management information system updated?			
	Immediately	X		
	Monthly			
	Within one week of the "incident"			
	As time permits			
	Comments: Upon receipt of a public report, e.g., an SSO, Dispatch creates a Service Request. This updates Maximo.			

System Mapping (MAP)

	Checklist Item	Yes	No	N/A
MAP-01	Are "as built" plans (record drawings) or maps available for use by field crews in the office and in the field?	X		
	Comments: Record drawings are available via Image Repository. Currently this requires logging in at the office.			
MAP-02	Is there a procedure for field crews to record changes or inaccuracies in the maps and update the mapping system?	X		
	Comments: This is reported to and updated by the in-house Research Analyst.			
MAP-03	Do the maps show the date the map was drafted and the date of the last revision?			X
	Comments: GIS mapping is via computer access.			
MAP-04	Do the sewer line maps include the following? (See comments)			
	Scale	X		
	North arrow	X		
	Date the map was drafted			X
	Date of last revision			X
	Service area boundaries	X		
	Property lines	X		
	Other landmarks (Roads, water bodies, etc.)	X		
	Manhole and other access points	X		
	Location of building laterals		X	
	Street names	X		
	SSOs occurrences/CSOs outfalls		X	
	Flow monitors			X
	Force mains	X		
	Pump stations	X		

	Checklist Item	Yes	No	N/A
	Lined sewers	X		
	Main, trunk, and interceptor sewers	X		
	Easement lines and dimensions		X	
	Pipe material	X		
	Pipe diameter	X		
	Installation date	X		
	Slope	X		
	Manhole rim elevation	X		
	Manhole coordinates	X		
	Manhole invert elevation	X		
	Distance between manholes	X		
	Comments: Answers are for the GIS-based mapping accessed using mobile devices. For clarity in field use, some items, e.g., manhole coordinates are not shown but are available.			
MAP-05	Are the following sewer attributes recorded?			
	Size	X		
	Shape	X		
	Invert elevation	X		
	Material	X		
	Separate/combined sewer			X
	Installation date	X		
	Comments: In GIS			
MAP-06	Are the following manhole attributes recorded?			
	Shape	X		
	Type (e.g., precast, cast in place, et.)	X		
	Depth	X		
	Age	X		
	Material	X		
	Comments: In GIS			
MAP-07	Is there a systematic numbering and identification method/system established to identify sewer system manhole, sewer lines, and other items (pump station, etc.)	X		
	Comments:			

Internal TV Inspection (TVI)

	Checklist Item	Yes	No	N/A
TVI-01	Does the utility have a standardization pipeline condition assessment program?	X		
	Comments: PACP			
TVI-02	Is internal TV inspection used to perform condition assessment? IF NO, GO TO NEXT SECTION	X		
	Comments:			
TVI-03	Are there written operation procedures and guidelines for the internal TV inspection program?	X		
	Comments:			
TVI-04	Do the internal TV record logs include the following?			
	Pipe size, type, length, and joint spacing	X	X	
	Distance recorded by internal TV	X		
	Results of the internal TV inspection (including a structural rating)	X	X	
	Internal TV operator name	X		
	Cleanliness of the line	X		
	Location and identification of line being televised by manholes	X		
	Comments: Joint spacing is not recorded but can be determined from observation of the CCTV. Joint spacing is an issue for grouting programs, which are neither needed nor utilized in Albuquerque. See MAN-06 for further discussion. Structural rating is determined through the Asset Management program.			
TVI-05	Is a rating system used to determine the severity of the defects found during the inspection process?	X		
	Comments: PACP			
TVI-06	Is there documentation explaining the codes used for internal TV reporting?	X		
	Comments: PACP			
TVI-07	Approximately what percent of the total defects/issues determined by TV inspection during the past 5 years were the following?			
				Percent
	Debris		7	11.11%
	Debris/Grease		2	3.17%
	Debris/Roots		1	1.59%
	Grease		9	14.29%
	Grease/Roots/Debris		1	1.59%
	Grease/Sag In Line		1	1.59%
	Intruding Tap/Roots		3	4.76%

Checklist Item		Yes	No	N/A
	Intruding Tap		2	3.17%
	Line Failure		1	1.59%
	Offset Joint/Grease		1	1.59%
	Roots		23	36.51%
	Roots/Debris		1	1.59%
	Roots/Grease		1	1.59%
	Roots/Grease/Debris		2	3.17%
	Roots/Intruding Tap		1	1.59%
	Roots/Line Failure		1	1.59%
	Surcharged		4	6.35%
	Sag In Line/Debris		1	1.59%
	Sag In Line/Grease		1	1.59%
	Total		**63**	**100.00%**
	Comments: The best information is from SSO Study Team analysis and therefore only results from FY13 are shown. Remainder of FY13 SSOs: 11 were Cause unknown, 2 were Construction caused and 3 were Equipment failure.			
TVI-08	Are main line and lateral repairs checked by internal TV inspection after the repair(s) have been made?	X		
	Comments: Laterals are private and therefore repairs are typically the responsibility of property owner and not CCTVed after repair.			

Sewer Cleaning (CLN)

Checklist Item		Yes	No	N/A
CLN-01	What is the system cleaning frequency? (the entire system is cleaned every "X" years)			
	Comments: As addressed in the 2013 Annual Report: The Sub-Basin cleaning rate equates to less than ten years. However, portions of the system are not included in the Sub-Basin program and need to be added...			
CLN-02	What is the utility's plan for system cleaning (% or frequency in years)?			
	Comments: As addressed in the 2013 Annual Report: The Water Authority commits to a goal to clean the entire small diameter gravity within the next ten years.			
CLN-03	What percent of the sewer lines are cleaned, even high/repeat cleaning trouble spots, during the past year?			
	Comments: As addressed in the 2013 Annual Report: The average cleaning rates for the past two years are 275 miles / year for Sub-Basin cleaning and 215 miles / year for Short Interval. The small diameter portion of the gravity system is			

	Checklist Item	Yes	No	N/A
	approximately 1980 miles. This equates to approximately 25%.			
CLN-04	Is there a program to identify sewer line segments, with chronic problems, that should be cleaned on a more frequent schedule?	X		
	Comments: Short Interval			
CLN-05	Does the utility have a root control program?	X	X	
	Comments: Remove through periodic cleaning. No current foaming program.			
CLN-06	Does the utility have a fats, oils, and grease (FOG) program?	X		
	Comments:			
CLN-07	What is the average number of stoppages experienced per 100 miles of sewer pipe per year?			
	Comments: As provided in the FY2013 CMOM Annual Report, the SSO rate in FY13 was 2.5. The SSO Rate has risen but this is primarily due to a change in Reportable SSO criteria (see 2013 Annual Report).			
CLN-08	Has the number of stoppages increased, decreased, or stayed the same over the past 5 years?			
	Increased			
	Decreased			
	Stayed the same	X		
	Comments: A detailed study of recent blockages is provided in the FY2013 Annual Report. The total sewer troubles is reasonably constant over the past two years.			
CLN-09	Are stoppages plotted on maps and correlated with other data such as pipe size and material or location?	X		
	Comments: SSOs are carefully studied by the SSO Study Team and are correlated to many factors, including pipe parameters and location. Stoppages (10-40s, -42s, and -48s) are plotted using GIS.			
CLN-10	Do the sewer cleaning records include the following information?			
	Date and time	X		
	Cause of stoppage	X		
	Method of cleaning	X		
	Location of stoppage or routine cleaning activity	X		
	Identity of cleaning crew	X		
	Further actions necessary/initiated	X		
	Comments:			
CLN-11	If sewer cleaning is done by a contractor are videos taken before and after cleaning?	X		
	Comments:			

Manhole Inspection and Assessment (MAN)

	Checklist Item	Yes	No	N/A
MAN-01	Does the utility have a routine manhole inspection and assessment program? IF NO, GO TO MAN-06		X	
	Comments: Pipeline assessment is underway and is higher priority than manhole assessment.			
MAN-02	Are the results and observations from the routine manhole inspection recorded?			X
	Comments:			
MAN-03	Does the utility have a goal for the number of manholes inspected annually?			X
	Comments:			
MAN-04	How many manholes were inspected during the past year?			X
	Comments:			
MAN-05	Do the records for manholes/pipe inspection include the following?			
	Conditions of the frame and cover			X
	Evidence of surcharge			X
	Offsets or misalignments			X
	Atmospheric hazards measurements (especially hydrogen sulfide)			X
	Details on the root cause of cracks or breaks in the manhole or pipe including blockages			X
	Recording conditions of (corbel, walls, bench, trough, and pipe seals)			X
	Presence of corrosion			X
	If repair is necessary			X
	Manhole identifying number/location			X
	Wastewater flow characteristics (flowing freely or backed up)			X
	Accumulation of grease, debris, or grit			X
	Presence of infiltration, location, and estimated quantity			X
	Inflow from manhole covers			X
	Comments:			
MAN-06	Does the utility have a grouting program?		X	
	Comments: Grouting programs address infiltration at pipe joints. This would address a problem the Water Authority does not experience, therefore no.			

Pump Stations (PS)

	Checklist Item	Yes	No	N/A
PS-01	Are Standard Operating Procedures (SOPs) and Standard Maintenance Procedures (SMPs) used for each pump station?	X	X	
	Comments: Written SOPs are not available for operations. However, the Water Authority does have an Operator training program that standardizes procedures. SOJPs are utilized while making many of the standard maintenance repairs at the pump stations. Maintenance uses SMJP's for preventative and repetitive maintenance actions. All PM'S have a job plan attached to the work order. For corrective maintenance and repairs, the maintenance section uses general maintenance troubleshooting and product manufacturer's technical documents (equipment O&M Manuals).			
PS-02	Are there enough trained personnel to properly maintain all pump stations?	X		
	Comments:			
PS-03	Is there an emergency operating procedure for each pump station?		X	
	Comments:			
PS-04	Is there an alarm system to notify personnel of pump station failures and overflow?	X		
	Comments:			
PS-05	Percent of pump stations with backup power sources	100%		
	Comments: Four have standby generators on-site. The remainder have connections to portable generators.			
PS-06	Does the utility use the following methods when loss of power occurs?			
	On-site electrical generators	X		
	Portable electric generators	X		
	Vacuum trucks to bypass pump station	X		
	Alternate power source	X		
	Other			
	Comments:			
PS-07	Is there a procedure for manipulating pump operations (manually or automatically) during wet weather to increase in-line storage of wet weather flows?			X
	Comments:			
PS-08	Are wet well operating levels set to limit pump start/stops?	X		
	Comments:			
PS-09	Are the lead, lag, and backup pumps rotated regularly?	X		
	Comments:			
PS-10	Are operation logs maintained for all pump stations?	X		

	Checklist Item	Yes	No	N/A
	Comments:			
PS-11	Are the original manuals that contain the manufacturers recommended maintenance schedules for all pump station equipment easily available?	X	X	
	Comments: Gap. Will be adding to Maximo or Image Repository.			
PS-12	On average, how often were pump stations inspected during the past year?			X
	Comments: 3 times/week / per station is a reasonable estimate.			
PS-13	Are records maintained for each inspection?		X	
	Comments:			
PS-14	Average annual labor hours spent on pump station inspections			X
	Comments: This information is not available from the current CMMS.			
PS-15	Percent of pump stations with pump capacity redundancy	98%		
	Comments: All but one.			
PS-16	Percent of pump stations with dry weather capacity limitations	0%		
	Comments:			
PS-17	Percent of pump stations with wet weather capacity limitations	0%		
	Comments:			
PS-18	Percent of pump stations calibrated annually			
	Comments: 1) At the non-manhole stations, pump meters allow the Operator to periodically check the pump discharge and, if the rate drops, something needs to be fixed. Generally this is a wear ring. 2) In the AirVac system, pit controllers are routinely calibrated (approximately every work day) and balanced when a lack of vacuum is detected at the end of the system. Chart recorders are checked at each station during every Operator visit to check for vacuum levels.			
PS-19	Percent of pump stations with permanent flow meters	5%		
	Comments:			

Capacity Assessment (CA)

	Checklist Item	Yes	No	N/A
CA-01	Does the utility have a flow monitoring program?		X	
	Comments: The Water Authority does not have an on-going flow monitoring program. This is because a sewer model was developed which included flow monitoring throughout the system which was used for calibration. Additional flow rate monitoring has been obtained during rehab design. Flow rates do not change quickly enough to justify on-going monitoring.			
CA-02	Does the utility have a comprehensive capacity assessment and planning program?	X		
	Comments: The Water Authority owns and maintains a sewer model. This model has been calibrated to existing conditions and has the capability to project future flow conditions under various scenarios selected by the modeler.			
CA-03	Are flows measured prior to allowing new connections?			X
	Comments: There are no capacity limitations in the system that would make this appropriate.			
CA-04	Do you have a tool (hydraulic model, spreadsheet, etc.) for assessing whether adequate capacity exists in the sewer system? IF NO, GO TO CA-06.	X		
	Comments:			
CA-05	Does your capacity assessment tool produce results consistent with conditions observed in the system?	X		
	Comments:			
CA-06	What is the ratio of peak wet weather flow to average dry weather flow at the wastewater treatment plant?			
	Comments: No difference is noted by SWRP O&M.			
CA-07	How many permanent flow meters are currently in the system? *(Include meters at pump stations and wastewater treatment plants)*			
	Comments: There are four permanent ultrasonic meters at the SWRP. Two meters on the flow to the Primary Clarifiers provide a measurement of the flow into the SWRP. Two meters on the channels to the Rio Grande provide a measurement of flow discharged from the SWRP. There are also permanent mag meters at the two largest pump stations in the Collection System, i.e., LS24 and LS20.			
CA-08	How frequently are the flow meters checked?			
	Comments: Estimated at 1-2 times / year.			
CA-09	Do the flow meter checks include the following?			
	Independent water level			X
	Checking the desiccant			X
	Velocity reading		X	

Checklist Item		Yes	No	N/A
	Cleaning away debris			X
	Downloading data			X
	Battery condition			X
	Comments: The meters are checked per manufacturer recommendations.			
CA-10	Are records maintained for each inspection? IF NO, GO TO CA-12	X		
	Comments:			
CA-11	Do the flow monitoring records include the following?			
	Descriptive location of flow meter	X		
	Type of flow meter	X		
	Frequency of flow meter inspection	X		
	Frequency of flow meter calibration	X		
	Comments:			
CA-12	Does the utility maintain any rain gauges or have access to local rainfall data?		X	
	Comments: Other than the publicly accessible Weather Service data on the Internet.			
CA-13	Does the utility have any wet weather capacity problems?		X	
	Comments:			
CA-14	Are low points or flood-plain areas monitored during rain events?	X		
	Comments: Rainfall in Albuquerque is associated with electrical power failures; therefore, crews and operators are aware that rainfall likely means stations will need power to be reset. Therefore, the Pump Station Supervisor and AVOPS Superintendent do proactively monitor conditions.			
CA-15	Does the utility have any dry weather capacity problems?		X	
	Comments:			
CA-16	Is flow monitoring used for billing purposes, capacity analysis, and/or inflow and infiltration investigations?	X		
	Comments: Flow monitoring is described in CA-01. Inflow and infiltration is not considered a problem in the Water Authority system.			

Tracking SSOs (TRK)

Checklist Item		Yes	No	N/A
TRK-01	How many SSO events have been reported in the past 5 years?			
	Comments: 216 - Reported SSOs in the past 5 years. 7/01/2008 – 6/30/2013			

Checklist Item		Yes	No	N/A
TRK-02	What percent of the SSOs were less than 1,000 gallons in the past 5 years?			
	Comments: 90.63% of the SSOs (10-42s) for FY13 spilled less than 1000 gallons.			
TRK-03	Does the utility document and report all SSOs regardless of size?	X		
	Comments:			
TRK-04	Does the utility document basement backups?	X		
	Comments:			
TRK-05	Are there areas that experience frequent basement or street flooding?		X	
	Comments: However, repeat locations receive additional study beyond normal SSO study.			
TRK-06	Approximately what percent of SSOs discharges were from each of the following in the last 5 years?			
	Manholes		1	1.27%
	Lift/Vacuum Systems (Revised term)		2	2.53%
	Main and trunk sewers		76	96.20%
	Lateral and branch sewers		0	0.0%
	Grand Total		**79**	**100%**
	Comments: This is answered based on which part of the system experienced the problem that caused the SSO. Otherwise, the answer would be predominantly "manhole" as the sewage typically flows from a manhole, regardless of where the problem occurs. In that regard, manholes very seldom cause an SSO. Pumps stations typically do so in the event of a power failure. Main & trunk sewers are defined as 15" & larger and typically only result in an SSO in the case of a collapse. Most SSOs are due to blockages in 8" sewers, i.e., branch sewers. Service line sewers from buildings to the main are defined as laterals and, because private, are not included in this analysis. The best information for the cause of an SSO is from the SSO Study Team analysis and therefore only results from FY13 are shown.			
TRK-07	Approximately what percent of SSOs discharges were caused by each of the following in the last 5 years? (Revised terms)			
	Cause			**Percent**
	Construction		2	2.53%
	Cause Unknown		11	13.92%
	Debris		7	8.86%
	Debris/Grease		2	2.53%
	Debris/Roots		1	1.27%
	Equipment Failure		3	3.80%
	Grease		9	11.39%
	Grease/Roots/Debris		1	1.27%

	Checklist Item	Yes	No	N/A
	Grease/Sag In Line		1	1.27%
	Intruding Tap/Roots		3	3.80%
	Intruding Tap		2	2.53%
	Line Failure		1	1.27%
	Manhole/Surcharged		1	1.27%
	Offset Joint/Grease		1	1.27%
	Roots		23	29.11%
	Roots/Debris		1	1.27%
	Roots/Grease		1	1.27%
	Roots/Grease/Debris		2	2.53%
	Roots/Intruding Tap		1	1.27%
	Roots/Line Failure		1	1.27%
	Surcharged		3	3.80%
	Sag In Line/Debris		1	1.27%
	Sag In Line/Grease		1	1.27%
	Grand Total		**79**	**100.00%**
	Comments: Based on SSO Study Team analysis for FY13 only.			
TRK-07A	What percentage of SSOs were released to:			
	Ultimate Discharge Location	%		
	Arroyo (Concrete)		5	6.33%
	AD - Arroyo (Dirt)		5	6.33%
	Street (Dirt)		3	3.80%
	Private Property		15	18.99%
	Street(Pavement)		32	40.51%
	Storm Sewer		18	22.78%
	Yard		1	1.27%
	Grand Total		**79**	**100.00%**
	Comments: Based on SSO Study Team analysis for FY13 only.			
TRK-07B	For surface water releases, what percent are to areas that could affect:			
	Contact recreation (beaches, swimming areas)			X
	Drinking water sources			X
	Shellfish growing areas			X
TRK-08	How many chronic SSO locations are in the collection system?			
	Comments: Only one (1) SSO out of 79 (10-42s and 10-48s) studied in FY13 had a repeat (10-40, 10-42 or 10-48) within one year prior to the studied event.			
TRK-09	Are pipes with chronic SSOs being monitored for sufficient capacity and/or structural condition?			X

Checklist Item		Yes	No	N/A
	Comments: System does not have chronic capacity issues. Structural condition issues are examined and evaluated by post-SSO CCTV.			
TRK-10	Prior to collapse, are structurally deteriorating pipelines being monitored for renewal or replacement?	X	X	
	Comments: Some lines are identified and rehabilitated prior to collapse. Others are not.			

Overflow Emergency Response Plan (OERP)

Checklist Item		Yes	No	N/A
OERP-01	Does the utility have a documented OERP available for utility staff to use? IF NO, GO TO OERP-04	X		
	Comments:			
OERP-02	How often is the OERP reviewed and updated? *(Annually, Biannually, etc.)*			X
	Comments: The OERP is partially complete and is being completed.			
OERP-03	Are specific responsibilities detailed in the OERP for personnel who respond to emergencies?	X		
	Comments:			
OERP-04	Are staff continuously trained and drilled to respond to emergency situations?	X		
	Comments: Substitute "regularly" for "continuously".			
OERP-05	Do work crews have immediate access to tools and equipment during emergencies?	X		
	Comments:			
OERP-06	Does the utility have standard procedures for notifying state agencies, local health departments, the NPDES authority, the public, and drinking water authorities of significant overflow events?	X		
	Comments:			
OERP-07	Does the procedure include a current list of the names, titles, phone numbers, and responsibilities of all personnel involved?	X		
	Comments:			
OERP-08	Does the utility have a public notification plan?		X	
	Comments: This will be addressed in the OERP.			
OERP-09	Does the utility have procedures to limit public access to and contact with areas affected with SSOs? *(procedure can be delegated to another authority)*		X	

Checklist Item		Yes	No	N/A
	Comments: This will be addressed as the OERP is updated. See FY2013 CMOM Annual Report.			
OERP-10	Does the utility use containment techniques to protect the storm drainage system?			X
	Comments: The OERP includes removal of spills that may impact a storm drain.			
OERP-11	Do the overflow records include the following information?			
	Date and time	X		
	Cause(s)	X		
	Names of affected receiving water(s)	X		
	Location	X		
	How it was stopped	X		
	Any remediation efforts	X		
	Estimated flow/volume discharged	X		
	Duration of overflow	X		
	Comments:			
OERP-12	Does the utility have signage to keep public from affected area?		X	
	Comments:			

Smoke and Dye Testing (SDT)

Checklist Item		Yes	No	N/A
SDT-01	Does the utility have a smoke testing program to identify sources of inflow and infiltration?			X
	Comments: The smoke testing program is utilized but not to identify inflow and infiltration which is believed to not be issue in this system.			
SDT-01A	Does the utility have a smoke testing program to identify sources of inflow and infiltration in illegal connectors?			X
	Comments: The smoke testing program is utilized but not to identify inflow and infiltration which is believed to not be an issue in this system.			
SDT-01B	Does the utility have a smoke testing program to identify sources of inflow and infiltration in house laterals (private service laterals)?			X
	Comments: The smoke testing program is utilized but not to identify inflow and infiltration which is believed to not be an issue in this system.			
SDT-02	Are there written procedures for the frequency and schedule of smoke testing?			X

Checklist Item		Yes	No	N/A
	Comments:			
SDT-03	Is there a documented procedure for isolating line segments?			X
	Comments:			
SDT-04	Is there a documented procedure for notifying local residents that smoke testing will be conducted in their area?	X		
	Comments:			
SDT-05	What is the guideline for maximum amount of the line to be tested at one time? *(Feet or Miles)*			X
	Comments:			
SDT-06	Are there guidelines for the weather conditions under which smoke testing should be conducted?			X
	Comments:			
SDT-07	Does the utility have a goal for the percent of the system smoke tested each year?			X
	Comments:			
SDT-08	What percent of the system has been smoke tested over the past year?			X
	Comments:			
SDT-09	Do the written records contain location, address, and description of the smoking element that produced a positive result?			X
	Comments:			
SDT-10	Does the utility have a dye testing program?	X		
	Comments: The dye testing program is utilized as needed but not to identify inflow and infiltration which is believed to not be an issue in this system.			
SDT-11	Are there written procedures for dye testing?			
	Comments: Written procedures are utilized in the training that every Wastewater Worker receives through the Water Authority's in-house training program. However, SOPs need to be developed for use by staff.			
SDT-12	Does the utility have a goal for the percent of the system dye tested each year?			X
	Comments:			
SDT-13	What percent of the main collection system had been dye tested over the past year?			X
	Comments:			
SDT-14	Does the utility share smoke and dye testing equipment with another utility?		X	

Checklist Item		Yes	No	N/A
	Comments:			

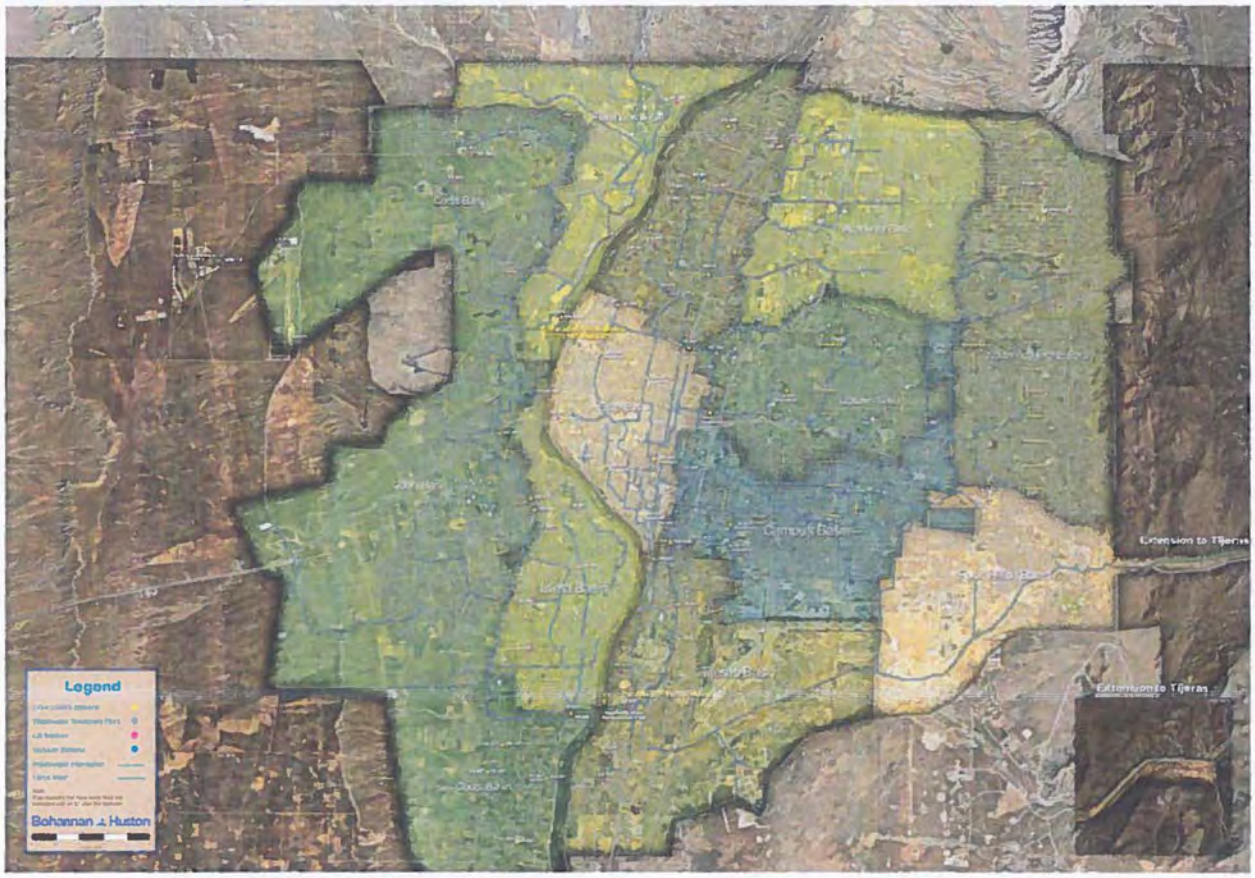
Hydrogen Sulfide Monitoring and Control (HSMC)

Checklist Item		Yes	No	N/A
HSMC-01	How would you rate the system vulnerability for hydrogen sulfide corrosion?			
	Not a problem			
	Only in a few isolated areas			
	A major problem		X	
	Comments:			
HSMC-02	Does the utility have a corrosion control program?	X		
	Comments: New and rehab design incorporate corrosion resistant materials. An aggressive odor program results in significant corrosion reductions.			
HSMC-03	Does the utility take hydrogen sulfide corrosion into consideration when designing new or replacement sewers?	X		
	Comments: Only corrosion resistant pipe materials are used. Manholes are coated where corrosion is anticipated.			
HSMC-04	Does the utility have written procedures for the application of chemical dosages?			X
	Comments: 1) The Water Authority utilizes a sophisticated system of odor control in which specific chemicals are implemented based on the system needs. The largest system is the Peroxide Regenerated Iron – Sulfide Control (PRI-SC) process in which ferric chloride is dosed from three stations and regenerated at five stations (plus two that are currently off-line). Dosing sufficiency is determined by monitoring at 12 locations that are downloaded and uploaded on a bi-weekly basis. 2) Written procedures are utilized in the training that every Wastewater Worker receives through the Water Authority's in-house training program. However, SOPs need to be developed for use by staff.			
HSMC-05	Are the chemical dosages, dates, and locations documented?	X		
	Comments:			
HSMC-06	Does the utility document where odor is a continual problem in the system?			X
	Comments: All odor complaints (10-52s) are documented in Maximo. Complaints are resolved and while some are recurring, none are continual.			
HSMC-07	Does the utility have a program in place for renewing or replacing severely corroded sewer lines to prevent collapse?	X		

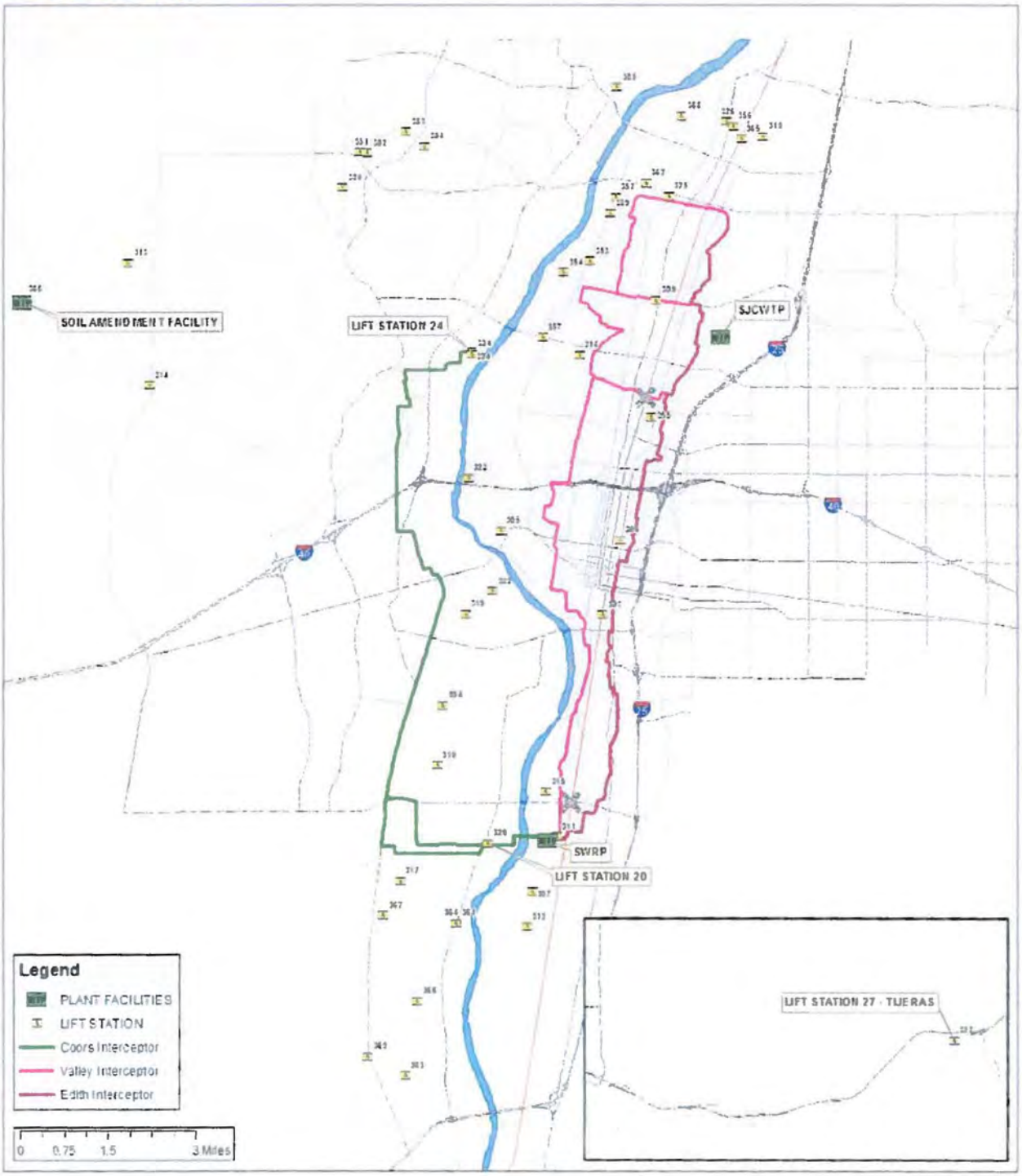
Checklist Item		Yes	No	N/A
	Comments:			
HSMC-08	Are the following methods used for hydrogen sulfide control?			
	Aeration		X	
	Iron Salts	X		
	Enzymes		X	
	Activated charcoal canisters	X		
	Chlorine		X	
	Sodium hydroxide		X	
	Hydrogen peroxide	X		
	Potassium permanganate		X	
	Biofiltration	X		
	Other			
	Comments:			
HSMC-09	Does the system contain air relief valves at the high points of the force main system?	X		
	Comments:			
HSMC-10	How often are the valves maintained and inspected? *(Weekly, Monthly, etc.)*			X
	Comments: The Water Authority will be developing an ARV PM program.			
HSMC-11	Does the utility enforce industrial pretreatment requirements?	X		
	Comments:			

Summary
Attachments and Appendixes

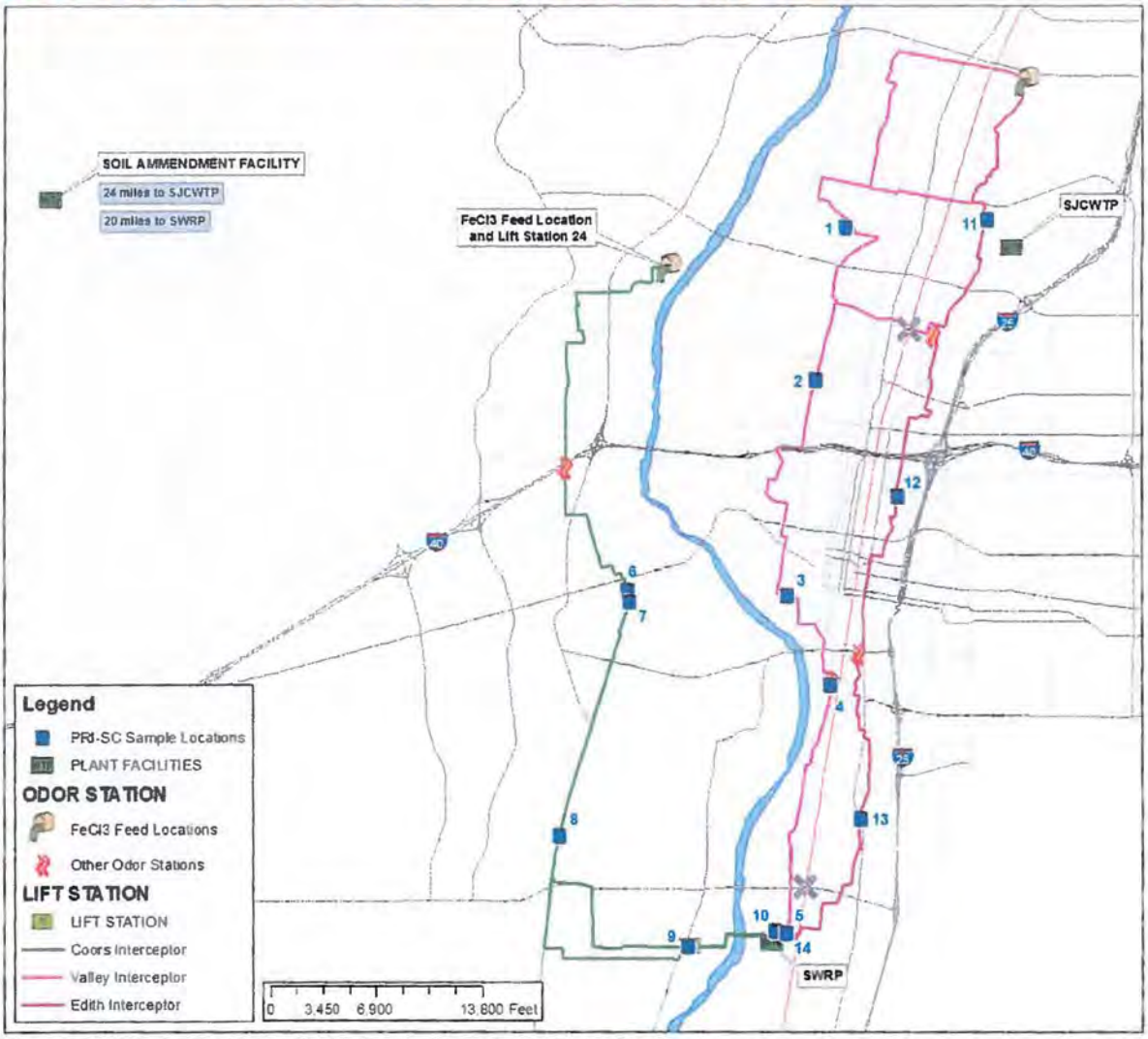
Service Area map



Lift Station Map

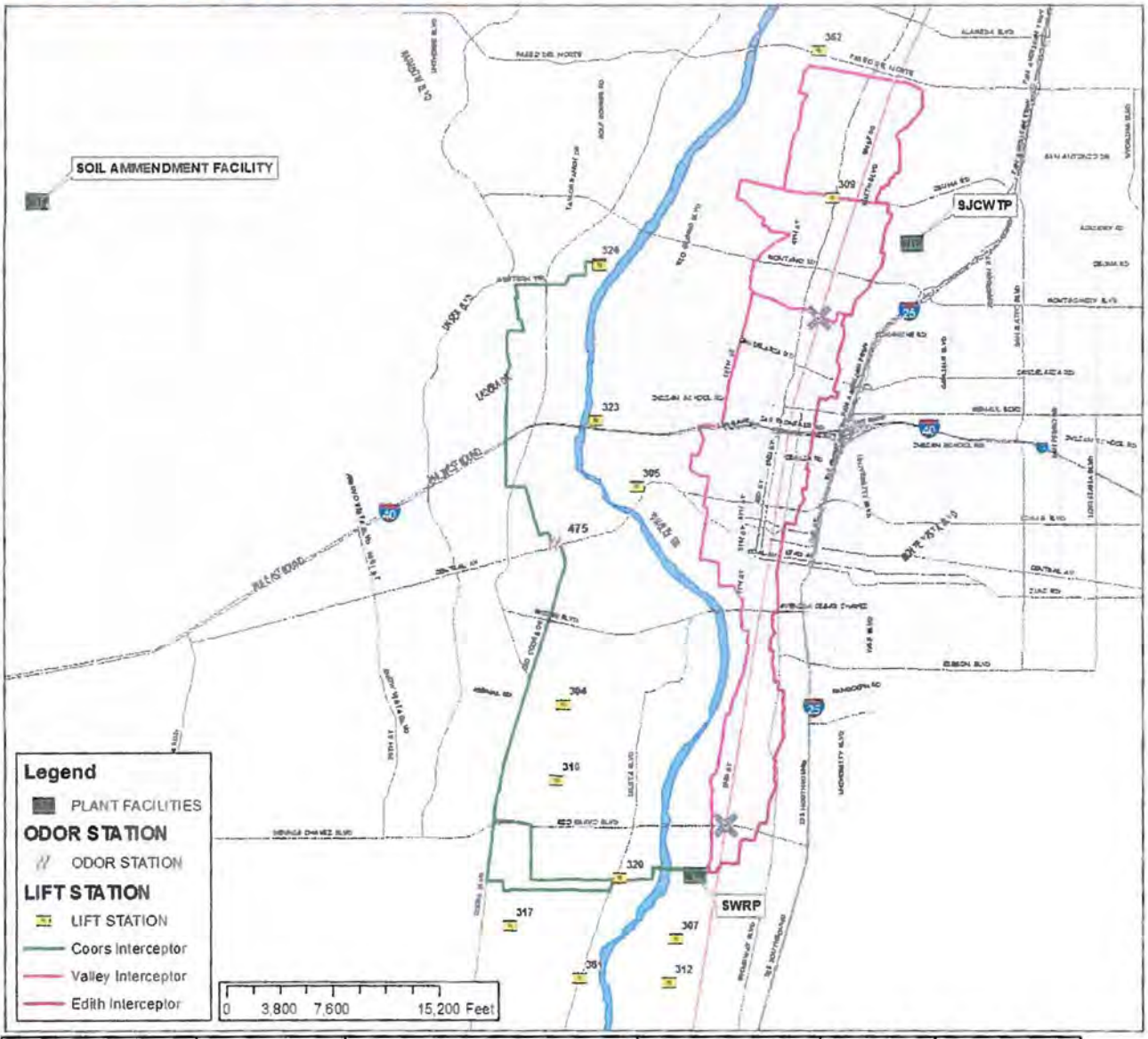


Peroxide Regenerated Iron-Sulfide Control (PRI-SC) map



Map Ref #	Location
1	Floretta & Kensington
2	CS # 4
3	12th. & Stover
4	2nd Street
5	Treatment Plant 2.1 (Valley Interceptor)
6	Old Coors before Lift Station #1 Injection
7	Old Coors (North of Gonzales)
8	Blake & Coors Rd.
9	Lift Station 20
10	Plant Influent
11	Willow & Locust
12	Edith & Cordero
13	Broadway
14	Treatment Plant 2.1 (Tijeras Interceptor)

Carbon Odor Control Locations



Station Number	Location	Address	Carbon Filter Type	# of Carbon Tanks	Weight per Vessel (LBs)
Lift Station #4	Arenal	2255 Arenal Rd SW	Vessel	1	225
Lift Station #5	New York	2502 New York Ave NW	PE Barrels	6	160
Lift Station #7	Heather	621 Heather Ln SW	Long Vessel	1	225
Lift Station #9	2nd and Osuna	201 Sandia View Rd SW	Vessel	1	350
Lift Station #10	Blake	2700 Blake Rd SW	Vessel	1	225
Lift Station #12	Cuatro	5931 Barr Rd SW	Long Vessel	1	225
Lift Station #17	Apple Valley	2709 Apple Valley SW		1	240
Lift Station #20	Isleta	4022 Isleta SW	Vessel	1	2500
Lift Station #23	Duranes	3241 Duranes NW	Vessel	1	225
Vacuum Station #61		5816 Isleta Blvd SW	Vessel	1	4500
Vacuum Station #62		1011 Paseo del Norte NE	FRP Canister	1	2500
Odor Station #75	Yucca/Central		Vessel	2	3000

Sanitary Sewer Overflow Analysis Table
10-42s and 10-48s (01/01/2012 - 06/30/2013)

Type			DMR												SSO Team Study				Enforce-ment	
10-42	10-48	10-42 &10-48	Maximo WO #	Diameter	Repeat within 1 year	Date of SSO	Time of SSO	Duration (HH:MM)	Location	Estimated Volume (gallons)	Reported Cause of Overflow	Observed Environmental Impacts	Action Taken	Ultimate Discharge Location	Volume Recovered (gallons)	Cause	Mitigation	Repeat	Pretreatment Follow Up Requested	FSEs Visited	Notice of Violation
x			11186685	8	NO	01/03/2012	11:22 AM	3:00	10500 Rio Puerco Trail SW	101 - 500	RGR/RGS	NEAH	CC/RS/WD	YD		CU	NF				
x			11186621	8	NO	01/03/2012	2:55 PM	2:15	110 Altez St SE	51 - 100	RGS/GR	NEAH	CC/RP/HTH/WD	PST		SL	PT/SP/SI		x	5	
	x		11188448	8	NO	01/09/2012	7:20 PM	1:10	432 64th St SW		GR		CC	PP		LF	RH	x			
x			11191241	8	NO	01/13/2012	1:30 PM	1:45	6027 San Mateo Blvd NE	1 - 50	GR	NEAH	CC/HTH	PL/PST		GR	SP	x			
x			11191811	8	NO	01/14/2012	12:00 PM	1:30	Claremont Ave NE	101 - 500	GR	NEAH	CC/HTH	PST		SC	SI	x			
x			11191777	8	NO	01/15/2012	3:45 PM	:45	Conchas St SE & Cochiti Rd SE	1 - 50	GR	NEAH	CC	PST		SL	PT/SP		x	5	
	x		11190856	8	NO	01/17/2012	9:51 AM	0:00	2824 Truman St NE		High Flow		Inspect	PP		SC	SP	x			
x			11191841	8	YES	01/19/2012	11:26 AM	1:04	64th & Bluewater Road NW	101 - 500	GR	NEAH	CC/HTH	PST/SD		MH	RH	x			
x			11192348	8	NO	01/20/2012	8:30 PM	1:00	7212 Menaul Blvd NE	1 - 50	GR	NEAH	CC/WD	PST		GR	PT/SP/SI		x	1	
x			11193057	8	NO	01/23/2012	2:45 PM	2:45	417 Griegos Rd NW	101 - 500	GR/SGG	NEAH	CC/HTH	PST		DB/GR	SP/SI	x			
x			11195523	8	NO	01/25/2012	8:10 AM	1:20	11523 Nassau Dr NE	101 - 500	RGR	NEAH	CC/HTH/RP	PST		RT	SP/SI				
		x	11195734	NA	NO	01/29/2012	6:00 PM	7:30	2469 Corrales Rd NW	Over - 1000	CU		RP/HTH	YD/PL		EQ	NF				
x			11196223	8	NO	01/31/2012	12:30 PM	1:00	10233 Las Casitas St NE	1 - 50	RT	NEAH	CC/RP	PST		RT	SI				
	x		11196593	8	NO	02/01/2012	5:00 PM	1:30	922 Amo St SE		RGS/GR		CC	PP		RT	SP/SI	x			
x			11197270	8	NO	02/03/2012	5:20 PM	:55	8225 Central Ave NE	1 - 50	GR	NEAH	CC/HTH/WD	PST		OJ	RH				
x			11197808	8	NO	02/06/2012	10:23 AM	1:30	10028 Central Ave SE	1 - 50	GR	NEAH	CC/RP	PL		SL/GR	SP/SI	x			
x			11198403	6	NO	02/08/2012	11:00 AM	3:00	2309 Luchetti Rd SW	Over - 1000	LF		ENC/WD	AD		LF	RH	x			
x			11200576	8	NO	02/12/2012	2:00 PM	2:40	7507 Trail Ridge Rd NE	1 - 50	RGS/GR	NEAH	CC/HTH	SD/AC		RT/DB	SP/SI	x			
x			11200569	8	NO	02/12/2012	3:55 PM	3:35	2000 Fonner Dr SE	1 - 50	RGS/GR	NEAH	CC/HTH	SD		CU	NF				

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x			11200557	8	YES	02/12/2012	4:50 PM	:55	2420 Comanche Rd NE	1 - 50	RK	NEAH	CC	SD		OJ	SI				
x			11202369	NA	NO	02/14/2012	4:00 PM		5615 DONNA MARLANE DR SW	1-50	CU	NEAH	Change Controller /Valve	YD		CU	RH				
x			11203556	8	NO	02/23/2012	3:25 PM	:55	Sunport Blvd SE & Yale Blvd SE	51 - 100	RK	NEAH	CC/RP/HTH	SD		CU	NF				
		x	11203555	8	NO	02/19/2012	4:56 PM	1:30	10323 Chandler Dr NW	51 - 100	GR	NEAH	CC/HTH/WD	AC		CU	NF				
x			11203763	10	NO	02/23/2012	10:20 AM	:50	4201 Montano Rd NW	1 - 50	GR	NEAH	CC/HTH	DST		OJ	SP/SI				
x			11204016	8	NO	02/23/2012	10:20 AM	3:00	10644 Capricorn Pl NW	1 - 50	GR	NEAH	CC/HTH	AC		GR	SP/SI				
x			11204309	8	NO	02/25/2012	10:00 AM	2:50	4009 Pitt St NE	1 - 50	RT	NEAH	CC	PST		RT	NF				
x			11204471	8	NO	02/26/2012	11:30 AM	2:30	San Lorenzo & Cherokee Rd NW	1 - 50	RGS/GR	NEAH	CC	SD		DB/GR	SP/SI				
x			11205436	12	NO	02/27/2012	11:00 AM	4:00	915 Broadway Blvd NE	Over - 1000	DB		CC/BR/HTH	SD		DB	NF				
x			11206559	8	NO	03/02/2012	8:20 AM	2:40	5555 Montgomery Blvd NE	1 - 50	RGS/GR	NEAH	CC/HTH	PST		SC	SP				
x			11208144	8	NO	03/07/2012	7:50 AM	:55	6051 Osuna Rd NE	51 - 100	RGR	NEAH	CC/HTH	PST		RT	SP/SI				
x			11207925	8	NO	03/07/2012	3:00 PM	:47	11504 San Victorio Ave NE	1 - 50	GR	NEAH	CC/WD	PST		CU	NF				
x			11208320	8	NO	03/08/2012	9:00 AM	:45	7507 Trail Ridge Rd NE	1 - 50	RGR	NEAH	CC/HTH	PST		RT/GR	SP/SI	x			
x			11209076	8	NO	03/10/2012	10:30 AM	4:00	300 Aliso St SE	1 - 50	SGG	NEAH	CC	PST		LF	RH	x			
x			11209074	8	NO	03/10/2012	4:00 PM	2:10	1200 Riverview Dr NW	51 - 100	SGG	NEAH	CC/HTH	SD		SC	SP				
x			11209075	8	NO	03/10/2012	7:45 PM	:25	3800 Shenandoah Pl NE	1 - 50	RT	NEAH	CC/HTH	PST		RT	SP/SI				
x			11210109	8	NO	03/13/2012	7:45 AM	1:25	7100 Menaul Blvd NE	1 - 50	RT	NEAH	CC	DST		CU	NF				

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10-42s and 10-48s (01/01/2012 - 06/30/2013)

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x			11209598	8	NO	03/13/2012	5:05 PM	1:00	Cagua & Mountain NE	1 - 50	GR	NEAH	CC	PST		GR	SP	x			
x			11322836	8	NO	03/23/2012	9:09 AM	2:00	400 Lomas NE	1 - 50	GR/SGG/RK	NEAH	CC	PST		OJ	RH				
x			11213616	8	NO	03/23/2012	12:05 PM	2:00	11516 Riviera St NE	1 - 50	RT	NEAH	CC	PST		RT	SP				
x			11214325	NA	NO	03/25/2012	7:30 PM	1:30	6316 Orfeo Trail NW	101 - 500	CU	NEAH	CC/RP/HTH	PST/AD		EQ	RH				
x			11219010	8	NO	04/03/2012	3:50 PM	1:00	630 General Hodges St SE	1 - 50	GR	NEAH	CC	PST		RT	SP/SI				
x			11219681	8	NO	04/05/2012	1:15 PM	6:00	1830 Tramway Terrace Loop NE	501 - 1000	RT	NEAH	CC/RP	DST		CU	NF				
		x	11221277	12	NO	04/07/2012	9:00 AM	3:00	2925 Juan Tabo Blvd NE	501 - 1000	RGS	NEAH	CC/HTH	PST/SD		DB	SP				
	x		11222850	8	NO	04/11/2012	8:30 PM	1:30	8810 Sonya Ave SW		RGS		CC	PP		CU	NF				
x			11222651	8	NO	04/12/2012	2:30 PM	1:30	Bluewater & 62nd NW	1 - 50	GR	NEAH	CC/HTH	PST		MH	RH				
x			11225263	8	NO	04/19/2012	2:00 PM	1:05	8801 Sonya Ave SW	1 - 50	GR	NEAH	CC	PST		DB	RH	x			
x			11225150	8	NO	04/19/2012	6:25 PM	1:35	Four Hills Rd & Pinon Creek Ct SE	101 - 500	RK	NEAH	CC/HTH	AD		RT	SP/SI	x			
x			11226369	8	NO	04/22/2012	11:20 PM	2:14	Mary Ellen & Aspen NE	Over - 1000	RGS		CC	PST		SL	SP	x			
	x		11227379	8	NO	04/25/2012	9:45 AM	1:35	1705 Spence Ave SE		RGR		CC	PP		RT	SP/SI	x			
		x	11227365	8	NO	04/25/2012	8:30 AM	2:00	1704 Spence Ave SE	501 - 1000	RGR	NEAH	CC/RP	PST		RT	SP/SI	x			
x			11227427	21	NO	04/25/2012	7:00 PM	:45	1203 Mary Ellen St NE	Over - 1000	CO		CC/RS/RP/HTH/WD	PST/SD		CO	NF				
x			11227687	6	YES	04/26/2012	7:30 AM	4:00	2427 Jensen Dr & Los Padillos Drain	1 - 50	LF	NEAH	RCS/ENC	AD		LF	RH				
x			11234445	8	NO	05/09/2012	10:35 AM	1:05	Veranda & Hoyle NE	1 - 50	GR	NEAH	CC/RP	PST		SC	SP	x			
	x		11240718	8	NO	05/18/2012	12:20 PM	:45	12604 Cloudview Ave NE		RGS		CC	PP		RT	SP/SI	x			
	x		11237869	8	NO	05/18/2012	1:50 PM	:55	12600 Cloudview Ave NE		RGS		CC	PP		RT	SP/SI	x			

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		x	11237871	8	NO	05/18/2012	12:20 PM	1:25	13008 Cloudview Ave NE	1 - 50	RGS	NEAH	CC	PST		RT	SP/SI				
x			11236487	NA	NO	05/18/2012	2:00 PM	2:00	10500 4th St NW	1 - 50	CU	NEAH	RP/HTH	YD		CU	NF				
x			11238412	8	NO	05/19/2012	8:10 PM	25:10	5401 Sevilla Ave NW	Over - 1000	GR		CC/HTH	AC		CU	NF				
x			11239354	8	NO	05/22/2012	9:45 AM	1:00	6500 Montgomery Blvd NE	Over - 1000	RGS/GR/ RK		CC/HTH	PST/SD		GR	SP				
x			11242161	8	NO	05/26/2012	8:00 AM	2:25	Jade Park Ave & Ray St NE	101 - 500	RGS	NEAH	CC/HTH	PST		CU	NF				
x			11242164	8	NO	05/29/2012	6:50 AM	1:40	1605 Eastridge Dr NE	101 - 500	RT	NEAH	CC	PST		RT	SP				
x			11242217	8	NO	05/29/2012	11:30 AM	1:30	4101 Roberta Pl NE	1 - 50	GR	NEAH	CC/HTH	YD		RT	SP/SI				
x			11250305	8	NO	06/18/2012	2:30 PM	1:30	4805 Driftwood Ave NW	1 - 50	RT	NEAH	RP/CC	PST		CO	RH				
x			11251363	8	NO	06/19/2012	10:30 AM	1:45	2846 Moya Rd NW	1 - 50	GR	NEAH	CC	PST		RT/OJ	SP				
x			11253367	12	NO	06/23/2012	8:00 AM	4:00	Irving Blvd & Rainbow Blvd NW	51 - 100	CU	NEAH	CC/HTH	PST		CU	NF				
	x		11253525	8	YES	06/24/2012	4:00 PM	2:00	1728 Coors Blvd SW		CU		Inspect	PP		CU	NF	x			
	x		11256262	8	NO	06/28/2012	4:00 PM	2:30	310 Bryn Mawr Dr SE		DB		CC	PP		RT/IT	SP/CT	x			
x			11256221	15	NO	06/28/2012	9:45 AM	:45	113 Eubank Blvd NE	51 - 100	GR/RGS	NEAH	CC/HTH	PST		DB/SC	SP				
		x	11260768	8	NO	07/07/2012	10:30 AM	2:30	3401 Lafayette Drive NE	101 - 500	GR	NEAH	CC	AD		RT/GR/DB	SP/SI				
x			11268228	8	NO	07/25/2012	10:00 AM	1:00	5601 Taylor Ranch Rd NW	101 - 500	GR	NEAH	CC/HTH	PST		CU	NF				
x			11274016	12	NO	07/29/2012	10:00 AM	:05	Wyoming Blvd & Comanche Rd NE	51 - 100	CU	NEAH	RP	PST		EQ	NF				
	x		11270358	48	NO	07/31/2012	8:45 PM	1:35	5806 Avalon Rd NW		GR		CC	PP		GR	SP/SI				
x			11270730	10	NO	08/01/2012	10:00 AM	1:30	13104 Hidden Valley Dr SE	101 - 500	RT	NEAH	CC/HTH/WD	DST		RT	SP	x			
x			11279960	8	NO	08/20/2012	10:10 PM	:35	5324 SAN MATEO BLVD NE	1-50	GR	NEAH	HTH	SD		CU	NF				

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	x		11289348	8	NO	09/04/2012	10:30 AM	1:10	219 Central Ave NW		GR		CC	PP		SL/GR	PT/SP/SI	x	x	1	
x			11313733	NA	NO	09/20/2012	11:15 AM	1:00	Coors Blvd & Pajarito Rd SW	1 - 50	EQ	NEAH	RP/HTH	PST		EQ	RH				
x			11305335	8	NO	09/26/2012	9:33 AM	2:00	5809 VISTA BONITA NE	1-50	GR	NEAH	HTH/RP	PST		RT	SP/SI				
x			11312140	10	NO	09/30/2012	12:00 AM	:50	4117 SUNNINGDALE AVE NE	1-50	CU	NEAH	HTH	SD		CU	NF				
x			11315529	8	NO	10/06/2012	11:00 AM	1:45	1401 Coors Blvd. NW	101 - 500	GR	NEAH	CC/HTH	SD		GR	PT		x	4	
	x		11319452	8	NO	10/11/2012	2:44 PM	1:00	1608 Broadway Blvd NE		GR		CC	PP		SC	SP				
x			11322361	12	NO	10/17/2012	3:30 PM	:20	4320 Lakeview Place SW	101 - 500	RGS	NEAH	CC/HTH/WD	DST		GR	SP/SI				
x			11328548	8	NO	10/26/2012	9:10 AM	:20	714 Iron Street SE	1 - 50	RGS	NEAH	CC/RS/HTH	PST		GR/RT/DB	RH				
		x	11327803	8	NO	10/29/2012	5:38 PM	1:00	2738 San Joaquin Ave. SE	101 - 500	GR	NEAH	CC/HTH/WD	SD		RT	SP/SI				
x			11327804	10	NO	10/29/2012	5:50 PM	:20	1204 Richmond Drive SE	101 - 500	GR	NEAH	CC/HTH/WD	PST		DB	SP				
x			11329407	8	NO	11/01/2012	7:51 AM	1:24	1200 Richmond Dr. SE	51-100	GR	NEAH	CC/RS/HTH	SD		DB	SP/SI	x			
x			11330019	8	NO	11/03/2012	9:30 AM	5:08	528 Juan Tabo Blvd. SE	101 - 500	DB	NEAH	CC/RP/WD/ HTH	SD		CU	SP/SI				
x			11334090	8	NO	11/12/2012	6:30 PM	1:45	217 Kathryn Ave. SE	1-50	GR	NEAH	CC/WD/HTH	SD		GR/SL	PT/SP	x	x		
x			11337376	12	NO	11/16/2012	10:27 AM	5:33	608 Willow Ct. SE	Over - 1000	RK	NEAH	CC/HTH/WD	AD		RT	SP/SI				
	x		11344617	8	NO	11/24/2012	5:30 PM	1:00	405 Alcazar St NE		GR		CC	PP		RT	SP				
	x		11341972	NA	YES	11/26/2012	1:52 PM		1724 POTOMAC RD SW		DB		RS	PP		DB	NF				
	x		11347151	8	NO	12/02/2012	4:00 PM	1:40	2935 Madeira Dr NE		GR/RK/DB		CC	PP		IT	CT				
x			11347555	8	NO	12/03/2012	10:30 AM	3:00	Lead Ave. & University Blvd. SE	1-50	RGS/SGG/ RK/DB	NEAH	CC/WD	PST		IT	CT				

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10-42s and 10-48s (01/01/2012 - 06/30/2013)

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10-42	10-48	10-42 &10-48	Maximo WO #	Diameter	Repeat within 1 year	Date of SSO	Time of SSO	Duration (HH:MM)	Location	Estimated Volume (gallons)	Reported Cause of Overflow	Observed Environmental Impacts	Action Taken	Ultimate Discharge Location	Volume Recovered (gallons)	Cause	Mitigation	Repeat	Pretreatment Follow Up Requested	FSEs Visited	Notice of Violation
x			11351192	8	NO	12/08/2012	11:30 AM	4:05	1424 Stagecoach Lane SE	1-50	RGS/GR	NEAH	CC/WD/HTH	PST		RT/LF	RH				
	x		11353197	10	NO	12/14/2012	2:00 PM	2:00	400 Wyoming Blvd NE		GR		CC	PP		SC	SP				
x			11353996	8	NO	12/17/2012	3:00 PM	1:00	Coal & Interstate I-25 SE	1-50	SGG	NEAH	CC/WD	PST		DB	SP				
x			11355366	8	NO	12/19/2012	9:10 AM	:40	Bermuda & Vienna NE	51-100	GR	NEAH	CC/WD	SD		RT/GR/DB	SP/SI				
x			11355630	12	NO	12/20/2012	9:50 AM	:40	13205 Lomas Verde Avenue NE	1-50	GR	NEAH	CC/WD/HTH	PST		RT	SP/SI				
x			11360763	8	NO	12/30/2012	10:46 AM	1:24	8814 Horizon Blvd. NE	51- 100	GR	NEAH	CC/WD/HTH	AD		CU	NF				
x			11361847	8	NO	01/04/2013	10:56 AM	3:39	7th Street & Candelaria Road NW	1-50	GR	NEAH	CC/WD/HTH	PST		CU	NF				
x			11361826	8	NO	01/04/2013	11:19 AM	2:19	4200 Spanish Bit Street NE	Over-1000	RGS	NEAH	CC/RS/WD/ HTH	AC		RT	SP				
		x	11361831	8	NO	01/04/2013	1:31 PM	1:01	3737 Mt. Rainier Drive NE	1-50	RGS	NEAH	CC/WD/HTH	AC		RT	SI				
x			11366205	8	NO	01/10/2013	11:45 AM	:30	10243 Las Casitas Drive NE	1-50	RT/GR	NEAH	CC/HTH	PST		RT	SI				
x			11367118	8	NO	01/12/2013	3:10 AM	3:50	9215 Layton Avenue NE	Over-1000	GR	NEAH	CC/WD/HTH	PST		LF	RH	x			
x			11367120	8	NO	01/12/2013	3:29 PM	5:01	Georgia & Summer Avenue NE	101-500	RGS/GR	NEAH	CC/WD/HTH	PST		IT/RT	CT/SP				
		x	11367436	8	NO	01/13/2013	2:20 PM	2:40	2437 Central Avenue NW	1-50	GR	NEAH	CC/RP/WD/ HTH	PST		GR	PT/SP		x	1	1
x			11369566	8	NO	01/15/2013	8:10 PM	1:05	Chelwood & Palo Duro NE	1-50	RGS/GR	NEAH	CC/HTH	SD		RT	SP/SI				
x			11370688	8	NO	01/16/2013	1:00 PM	1:30	Yale & Kathryn SE	51-100	GR	NEAH	CC/WD/HTH	PST		DB	SP/SI				
x			11372465	15	NO	01/17/2013	2:13 PM	24:00	4741 Pan American NE	Over-1000	LF	NEAH	CC/WD/HTH/ ENC	AC		MH/SC	SP/SI				
x			11373551	8	NO	01/19/2013	11:00 AM	1:00	7708 Pickard Avenue NE	1-50	RT	NEAH	CC/WD/HTH	PST		RT	SI				

Sanitary Sewer Overflow Analysis Table
10-42s and 10-48s (01/01/2012 - 06/30/2013)

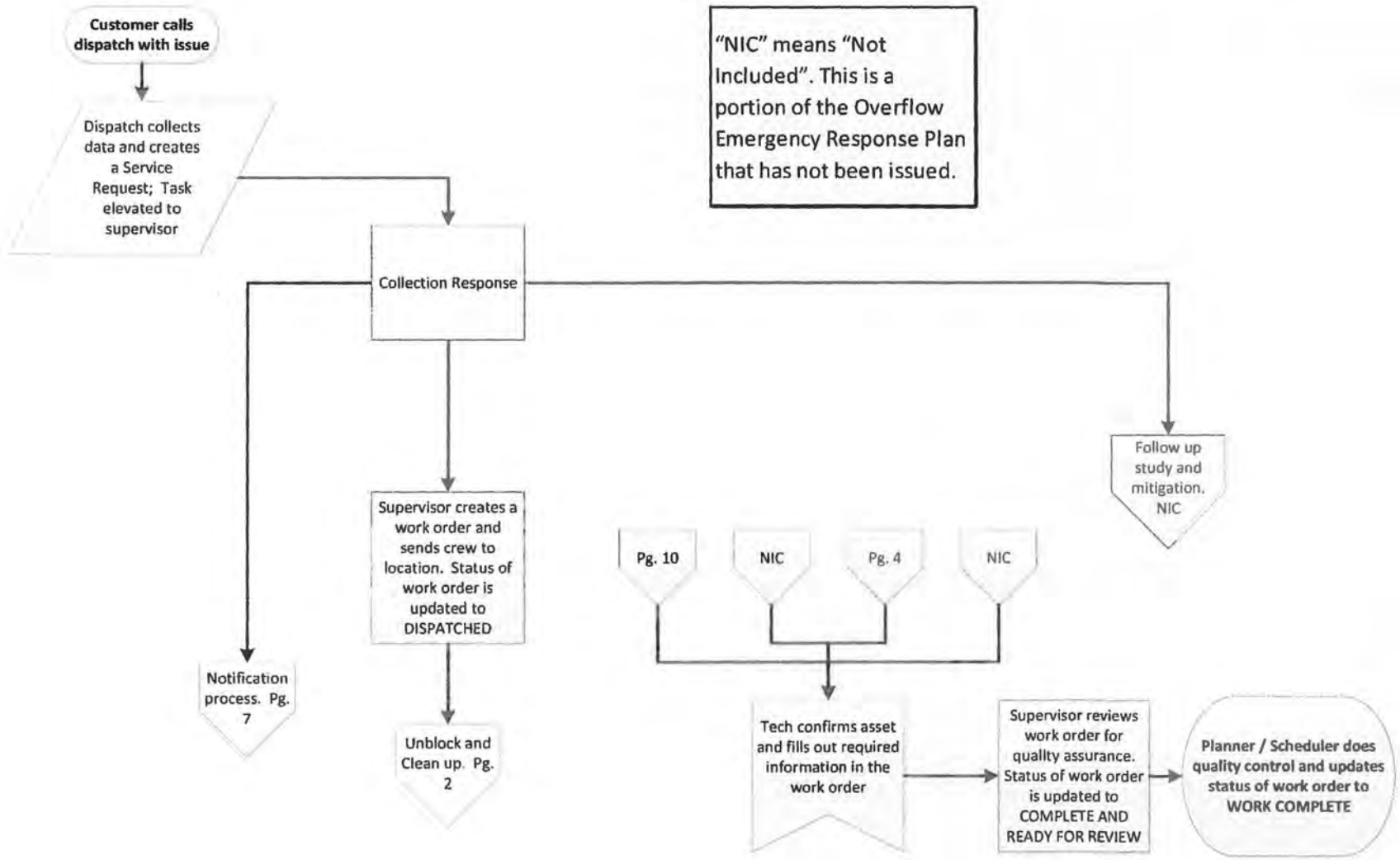
Type			DMR													SSO Team Study				Enforce-ment	
10-42	10-48	10-42 &10-48	Maximo WO #	Diameter	Repeat within 1 year	Date of SSO	Time of SSO	Duration (HH:MM)	Location	Estimated Volume (gallons)	Reported Cause of Overflow	Observed Environmental Impacts	Action Taken	Ultimate Discharge Location	Volume Recovered (gallons)	Cause	Mitigation	Repeat	Pretreatment Follow Up Requested	FSEs Visited	Notice of Violation
x			11373789	15	NO	01/20/2013	9:00 AM	1:00	4712 Pan American Freeway West NE	101-500	EQ	NEAH	ENC	AD		EQ	NF				
x			11377014	8	NO	01/24/2013	9:00 AM	1:00	6500 Cochiti Road SE	101-500	RT/GR	NEAH	CC/WD/HTH	PST		IT/RT	CT/SP				
x			11386936	8	NO	02/01/2013	8:40 AM	:30	2400 Kathryn Ave. SE	51-100	RGS	NEAH	CC/RS/WD/ HTH	SD		RT	SP				
x			11386335	8	NO	02/01/2013	10:00 AM	1:30	6118 Zimmerman Ave. NE	51-100	RGS	NEAH	CC/RS/WD/ HTH	SD		CU	NF				
x			11390550	8	NO	02/03/2013	8:20 AM	1:35	Indian School Rd. & Rita Dr. NE	51-100	GR	NEAH	CC/RS/WD/H TH	SD		CU	SI				
x			11385767	12	NO	02/04/2013	1:00 PM	3:30	Zuni & Palomas SE	1-50	CO	NEAH	ENC/HTH	PST		CO	NF				
x			11385720	8	NO	02/04/2013	1:30 PM	:45	Juan Tabo & Lomas Blvd. NE	101-500	GR	NEAH	CC/WD/HTH	PST		GR	PT/SP/SI	x	x	7	
x			11387940	8	NO	02/06/2013	9:00 AM	:45	2103 Carlisle Blvd.NE	51-100	RGS	NEAH	CC/WD/HTH	PST		CU	SI				
	x		11389826	8	NO	02/08/2013	6:00 PM	1:40	423 Maple St NE		RT		CC	PP		IT/RT	CT/SP	x			
x			11390691	10	NO	02/11/2013	3:25 PM	:55	Indian School & Broadway NE	51-100	GR/SGG	NEAH	CC/WD/HTH	SD		OJ/GR	SP				
x			11394416	12	NO	02/16/2013	7:33 AM	1:27	218 Montano Rd. NW	1-50	GR	NEAH	CC/WD/HTH	PST		GR	SP/SI				
x			11396552	8	NO	02/22/2013	9:10 AM	:46	13701 Skyline Rd. NE	101-500	RT/RGS	NEAH	CC/WD/HTH	AC		RT	SI				
	x		11397429	8	NO	02/24/2013	8:20 PM	2:25	117 Chama St NE		GR/SGG		CC	PP		SL/DB	SP/SI				
	x		11418766	8	NO	03/02/2013	1:43 PM	1:15	115 Canyon View Pl NE		RGS		CC	PP		RT	SP/SI				
		x	11400241	8	NO	03/02/2013	11:00 AM	2:30	109 Canyon View Pl NE	101-500	RGS	NEAH	CC/WD/HTH	AC		RT	SP/SI				
x			11400673	8	NO	03/04/2013	8:30 AM	1:00	Copper & Camino Del Norte NE	101-500	GR	NEAH	CC/WD/HTH	PST		RT/DB	SP/SI				
		x	11401943	8	NO	03/06/2013	10:30 AM	:45	4512 Ponderosa Ave. NE	51-100	RT/GR	NEAH	CC/WD/HTH	PST		CU	SP				

Sanitary Sewer Overflow Analysis Table
10-42s and 10-48s (01/01/2012 - 06/30/2013)

Type			DMR													SSO Team Study				Enforce-ment	
10-42	10-48	10-42 &10-48	Maximo WO #	Diameter	Repeat within 1 year	Date of SSO	Time of SSO	Duration (HH:MM)	Location	Estimated Volume (gallons)	Reported Cause of Overflow	Observed Environmental Impacts	Action Taken	Ultimate Discharge Location	Volume Recovered (gallons)	Cause	Mitigation	Repeat	Pretreatment Follow Up Requested	FSEs Visited	Notice of Violation
x			11403515	8	NO	03/09/2013	2:00 PM	:45	1300 Del Monte Trl. SW	1-50	RGS/RT/GR	NEAH	CC/WD/HTH	PST		RT	RH/SI				
x			11404755	8	NO	03/12/2013	7:10 AM	:25	Morris & Montgomery Blvd. NE	501-1000	GR	NEAH	CC/WD/HTH	PST		SC	SP	x			
x			11405804	12	NO	03/14/2013	2:59 PM	:31	Pan American Frontage Rd.& Bogan NE	101-500	CO	NEAH	WD/HTH	SD		CO	NF				
x			11409171	8	NO	03/19/2013	2:29 PM	9:26	3600 Central Ave. SE	101-500	GR/RGS	NEAH	CC/BR/WD/ HTH	SD		DB/GR	SP				
x			11411817	8	NO	03/23/2013	1:50 PM	2:00	4200 Edith Blvd. NE	1-50	CU	NEAH	CC/WD/HTH	PST		DB	SP				
x			11423333	8	NO	04/11/2013	3:00 PM	:45	Acoma & Conchas SE	501-1000	GR	NEAH	CC/WD	PST		GR	SI	x			
x			11426225	12	NO	04/17/2013	3:24 PM	1:01	3520 Montgomery NE	1-50	RGS	NEAH	CC	PST		DB	SP				
	x		11428877	8	NO	04/22/2013	6:00 PM	:40	4705 Brookwood St NE		RT		CC	PP		RT	SP/SI				
x			11431431	10	NO	04/26/2013	8:30 AM	3:30	2811 Ridgecrest Dr. SE	1-50	RT	NEAH	CC/BR/RP/ WD/HTH	DST		RT	NF				
		x	11434233	8	NO	05/02/2013	1:10 PM	5:20	6501 Pino Ave. NE	8000	RGS	NEAH	CC/RP/WD/ HTH	SD		RT	SP/SI				
x			11436316	8	NO	05/07/2013	1:00 PM	1:15	175 Monte Largo Place NE	3750	RGS	NEAH	CC/WD/HTH	AD		RT	SI	x			
	x		11439833	8	NO	05/10/2013	1:45 PM	1:45	3813 Glen Canyon Rd NE		RT		CC	PP		RT	SI				
		x	11442392	8	NO	05/15/2013	9:33 PM	1:12	2121 Americas Pkwy NE	360	GR	NEAH	CC/CWW/RP/ RS/ WD/HTH	SD		GR	SI	x			
	x		11446663	8	NO	05/23/2013	5:00 PM	1:30	10504 Karen Ave NE		RT		CC	PP		RT	SP/SI				
x			11448150	8	NO	05/28/2013	12:20 PM	1:00	1521 Spence Road SE	60	RGS	NEAH	CC/WD/HTH	PST		RT/IT	SP				
x			11454484	8	NO	06/05/2013	2:02 PM	:28	6219 Aztec Road NE	300	DB	NEAH	CC/ENC/WD/ HTH	PST		CU	SP				
x			11457093	8	NO	06/10/2013	8:23 AM	1:22	1316 Stagecoach Lane SE	410	RGS/RT	NEAH	CC	YD		DB/RT	SP/SI				

Sanitary Sewer Overflow Analysis Table
10-42s and 10-48s (01/01/2012 - 06/30/2013)

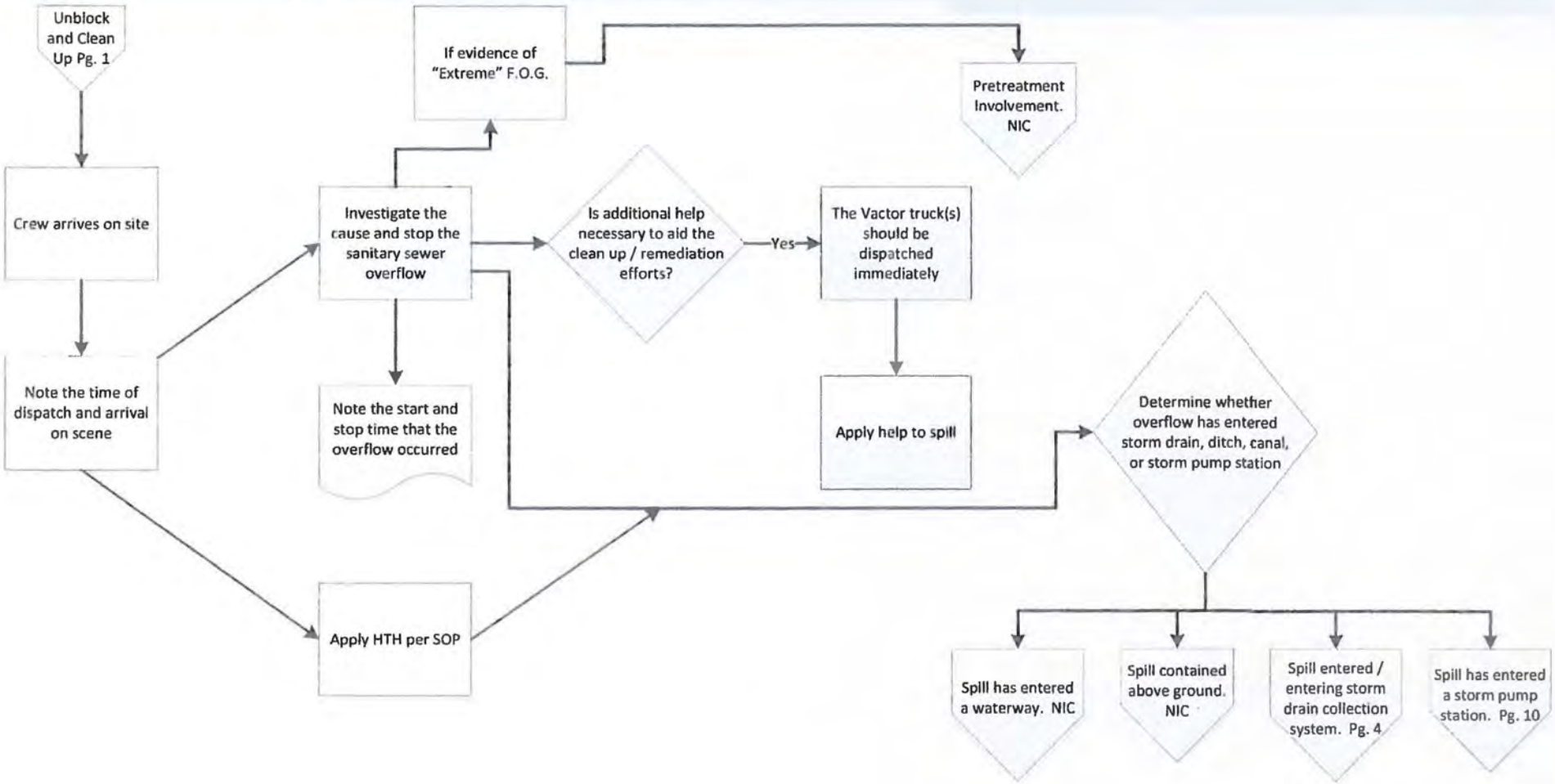
Type			DMR													SSO Team Study				Enforce-ment	
10-42	10-48	10-42 &10-48	Maximo WO #	Diameter	Repeat within 1 year	Date of SSO	Time of SSO	Duration (HH:MM)	Location	Estimated Volume (gallons)	Reported Cause of Overflow	Observed Environmental Impacts	Action Taken	Ultimate Discharge Location	Volume Recovered (gallons)	Cause	Mitigation	Repeat	Pretreatment Follow Up Requested	FSEs Visited	Notice of Violation
x			11459522	8	NO	06/13/2013	9:08 AM	:52	1336 Lobo Place NE	20	DB	NEAH	CC/WD/HTH	PST		GR	SP				
	x		11460400	8	NO	06/14/2013	3:25 PM	1:17	1605 Hiawatha St NE		RGS/RT		CC	PP		RT	SP/SI				
	x		11462977	8	NO	06/20/2013	10:20 PM	1:15	2118 Walter St SE		GR		CC	PP		RT/GR	SP/SI				
x			11465946	8	NO	06/26/2013	6:29 PM	:51	65th Street b/w Churchill & Gonzales SW	255	GR/SGG	NEAH	CC/WD/HTH	SD		DB/GR	SP	x			


Customer calls dispatch with issue
Dispatch collects data and creates a Service Request; Task elevated to supervisor
"NIC" means "Not Included". This is a portion of the Overflow Emergency Response Plan that has not been issued.
Collection Response
Follow up study and mitigation. NIC
Supervisor creates a work order and sends crew to location. Status of work order is updated to DISPATCHED
Pg. 10
NIC
Pg. 4
NIC
Notification process. Pg. 7
Unblock and Clean up. Pg. 2
Tech confirms asset and fills out required information in the work order
Supervisor reviews work order for quality assurance. Status of work order is updated to COMPLETE AND READY FOR REVIEW
Planner / Scheduler does quality control and updates status of work order to WORK COMPLETE

Appendix 5

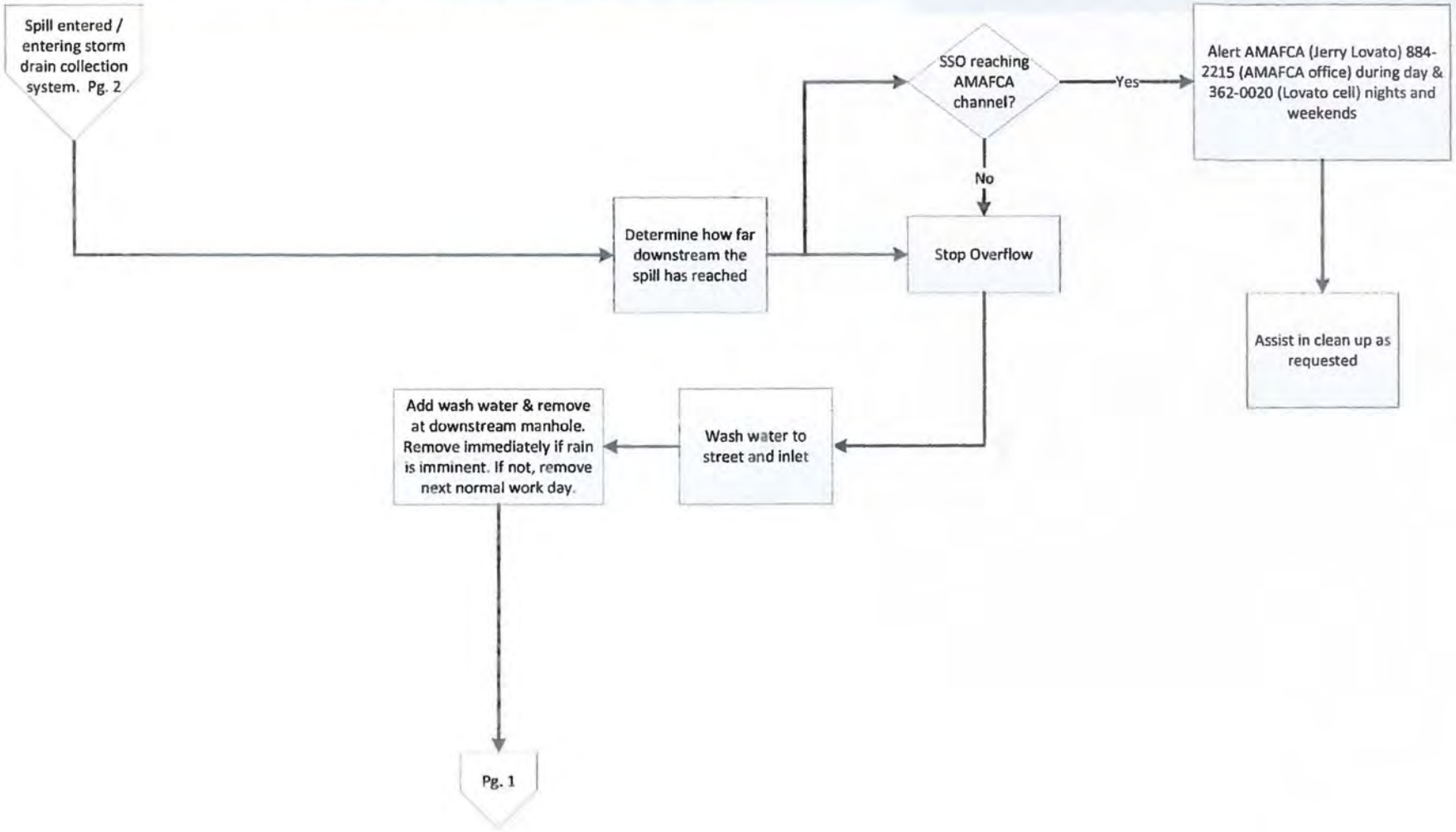
Overflow Emergency Response Plan

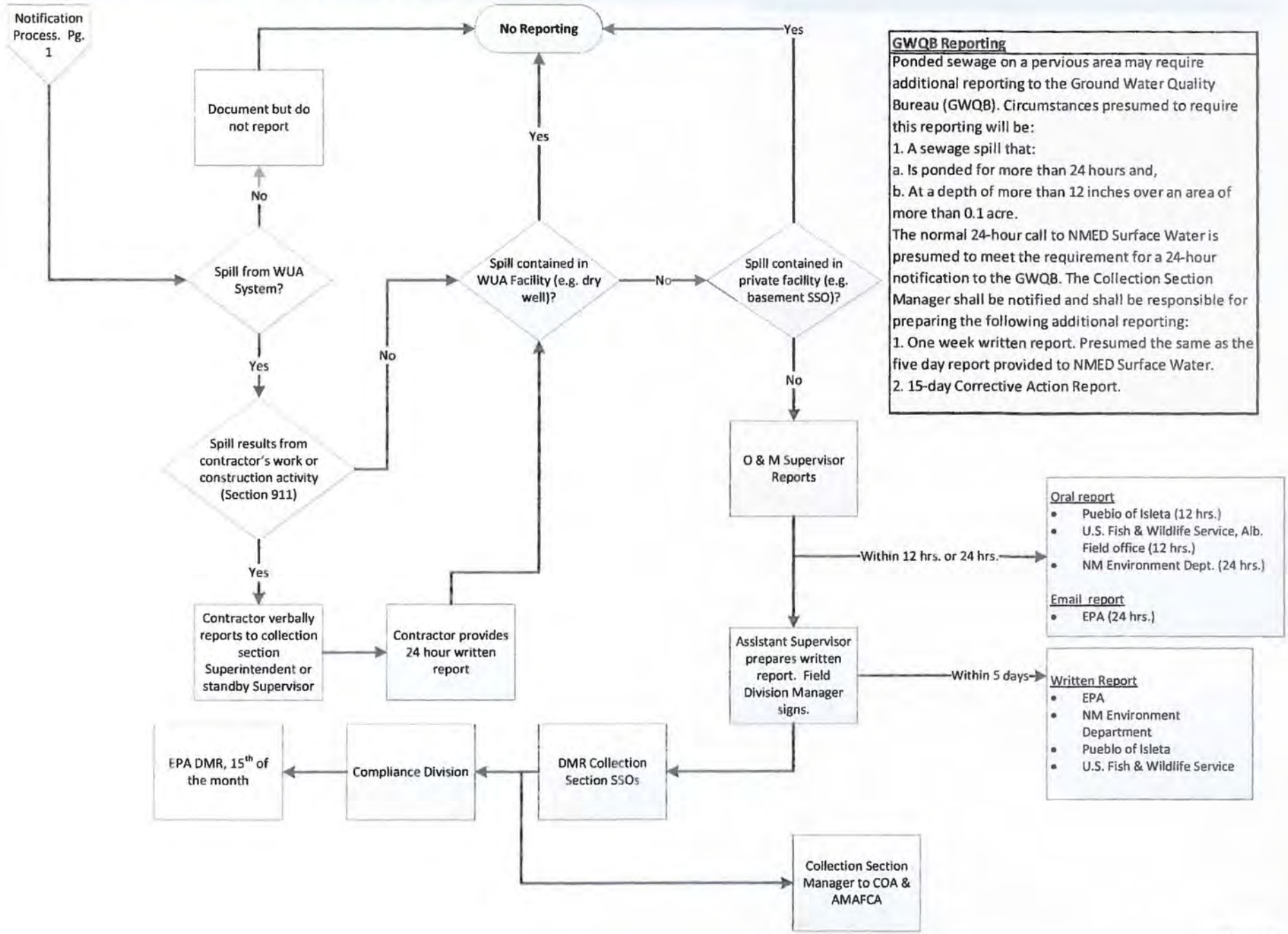
5-1-2013



Overflow Emergency Response Plan

5-1-2013





GWQB Reporting

Ponded sewage on a pervious area may require additional reporting to the Ground Water Quality Bureau (GWQB). Circumstances presumed to require this reporting will be:

1. A sewage spill that:

a. Is ponded for more than 24 hours and,

b. At a depth of more than 12 inches over an area of more than 0.1 acre.

The normal 24-hour call to NMED Surface Water is presumed to meet the requirement for a 24-hour notification to the GWQB. The Collection Section Manager shall be notified and shall be responsible for preparing the following additional reporting:

1. One week written report. Presumed the same as the five day report provided to NMED Surface Water.
2. 15-day Corrective Action Report.


Spill has entered storm pump station. Pg. 2
Shut down pumps
Remove sewage with Vactor or pump to SAS
Wash down wet well and remove wash water
Pg. 1

Cleaning Program

The Water Authority has compared its current cleaning program to the "Core Attributes of Effectively Managed Wastewater Collection Systems" (Core Attributes). Core Attribute 5: Collection System Maintenance identifies the following elements of effective maintenance programs that are included in the Water Authority's program:

1. Maintenance of collection system hot spots, or high-priority areas, is an important element of maintenance and typically is the most time and resource consuming.
2. Maintenance of hot spots requires high-frequency maintenance of known problem locations within the system.
3. The frequency of maintenance for these hot spots varies.
4. Routine maintenance schedule and frequency depends on system performance and risk factors, maintenance history, and the latest maintenance findings.
5. The cause of the frequent blockages should be determined and eliminated if possible. Hydraulic cleaning typically is used for debris buildup and grease accumulation. High-velocity flushing machines most typically are used with various types of cleaning nozzles.
6. Mechanical cleaning typically is used to remove roots and heavy debris from collection systems. Bucketing machines are used mainly for debris removal from large collection systems.
7. As part of this proactive maintenance program, a regular, system-wide cleaning should be developed and implemented. Wastewater agencies often target a five- to 10-year cleaning cycle, but longer or shorter intervals may be needed based on site-specific conditions and parameters, especially for small-diameter, local systems.
8. Maintenance should be done based on either a sewer-shed or a specific geographic area to increase effectiveness and minimize cost.

The Water Authority Preventive Maintenance program meets all the above criteria. The "hot spot" cleaning program is identified as the "Short Interval" program. Since development of the Short Interval program, the cleaning frequency has been determined by Collection Section personnel based on their observations and in some cases, in response to continuing SSOs in a specific pipe. Hydraulic cleaning is the primary cleaning method used, while bucket machines and combination units are both used for interceptor cleaning. The "regular, system-wide cleaning" program is identified as the Sub-Basin program. The Sub-Basin program is based on sewer-shed areas. Both the Short Interval and Sub-Basin programs are described in more detail below.

Implemented in 1990, the PM program has two (2) main components:

1. The Short Interval program in which segments experiencing repeat SSOs are cleaned more frequently. As shown in the attached GIS generated graphic, short interval lines are scattered.
2. The Sub-Basin program in which an area is cleaned from top to bottom in sequence, before moving on. This is a major advance because no lines are overlooked until there is a problem. Previously the practice was to clean the

lines in the area of an SSO, but area-wide cleaning was neither organized nor proactive.

The Water Authority's Preventive Maintenance sewer cleaning is based on the Short Interval and the Sub-Basin programs. Shown are the forty-four sub-basins.

As is seen above, the Water Authority is performing Preventive Maintenance comparable to the recommendations of the Core Attributes. The goal of the Water Authority is to clean the system effectively. A process of continuous improvement is aimed at identifying and focusing on the highest risk lines that are more difficult to clean. Internal Water Authority studies show that the problem is not one of cleaning too little but rather that there is a greater need to increase the effectiveness (quality) of cleaning. The productivity of the Short Interval program is lower in length of pipe cleaned per day because it necessarily involves scattered sites that require more drive time. However, the effectiveness increases because the highest risk line is cleaned. Similarly, the Water Authority is embarked on multiple programs that will reduce risk and increase effectiveness while decreasing the length of line cleaned. These programs include:

1. Cleaning a line with the specific nozzle appropriate to that line, in some cases requiring utilizing two (2) different nozzles under different passes.
2. Identifying problem lines and adding to the Short Interval program.
3. The Water Authority is studying the benefit of reconstructing manhole inverts, improving system hydraulics and thereby eliminating a potential cause of an SSO. This was applied to a repeat SSO location in 2013. Manhole benches were reformed by Water Authority crews at two (2) manholes, K11-112 on April 15, 2013 and K11-212 on July 15, 2013. No subsequent SSOs have occurred. This may be an example of effective maintenance to a gravity system that does not entail cleaning.
4. The Short Interval and Sub-Basin programs focus on the small diameter system, i.e., the portion that is smaller than 15". This portion of the gravity system is

approximately 1,980 miles. The per year average over the last two years is 275 miles / year for Sub-Basin and 215 miles / year for Short Interval. This footage is equivalent to 25% of the system being cleaned each year; however, Short Interval lines are cleaned multiple times a year. The Sub-Basin cleaning is equivalent to cleaning the entire small diameter system every 7.2 years; however, as noted in the Gaps section, some portions of the system need to be added to the Sub-Basin program.

The Water Authority will base cleaning decisions on the most effective means to reduce risk.