

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

INVESTIGATION OF THE OPERATING)	
CAPACITY OF MARTIN COUNTY WATER)	CASE NO. 2016-00142
DISTRICT PURSUANT TO KRS 278.280)	

ORDER

Martin County Water District ("Martin District"), a water district organized pursuant to KRS Chapter 74, owns and operates facilities that treat and distribute water to approximately 3,533 persons in Martin County, Kentucky.¹ It is a utility subject to the Commission's jurisdiction under KRS 278.010(3)(d), KRS 278.015, and KRS 278.040.

The Commission has had longstanding concerns with the operation and management of Martin District. As the result of numerous inspections and investigations since the late 1990s, the Commission has found lingering problems of significantly high water loss, lack of performance of routine maintenance and testing, and failure to follow acceptable management practices.

Following a utility inspection report issued by Commission Staff ("Staff") on April 5, 2002, that described Martin District "in general state of disrepair," the Commission opened Case No. 2002-00116² to investigate Martin District's operating capacity. A hearing was conducted in that case on July 1, 2002, after which the scope of

¹ *Annual Report of Martin County Water District to the Kentucky Public Service Commission for the Calendar Year Ended December 31, 2014* at 27.

² Case No. 2002-00116, *Investigation of the Operating Capacity of Martin County Water District Pursuant to KRS 278.280* (Ky. PSC Apr. 5, 2002).

investigation was expanded “to assess the current condition of Martin District’s operations and management, to determine the rules, methods and practices that are required to ensure the water district provides adequate and reasonable service, and to restore public confidence in the water district’s operations.”³

On October 20, 2003, Commission Staff and Martin District entered into a Settlement Agreement (“Settlement”) through which Commission Staff and Martin District, among other things, agreed that Martin District would fulfill 43 actions in order to ensure that Martin District “provides adequate and reasonable service.”⁴ The Settlement included specific timelines for Martin District’s implementation of the actions identified.⁵ On November 17, 2003, we entered an Order that accepted and adopted the Settlement reached between Commission Staff and Martin District.⁶

Although Martin District made some progress on the Settlement’s action items, this progress was slow and unsteady. Because Martin District had not satisfied all provisions of the Settlement and had failed to file required financial and statistical reports for 2004 and 2005, the Commission opened Case No. 2006-00303 and again initiated an investigation into the condition of Martin District.⁷ The purpose of the investigation was not only to identify existing deficiencies in Martin District’s management and operation but also to identify possible solutions to those deficiencies.

³ Case No. 2002-00116, *Investigation of the Operating Capacity of Martin County Water District Pursuant to KRS 278.280* (Ky. PSC July 1, 2002) at 2.

⁴ *Id.* (Nov. 17, 2003), Order, Appendix at 2–9.

⁵ *Id.*

⁶ *Id.* at 2.

⁷ Case No. 2006-00303, *An Investigation Into the Management and Operation of Martin County Water District* (Ky. PSC June 27, 2006).

To that end, the Commission ordered a management and operations audit to be conducted and solicited proposals for the performance of the audit. From the sealed bids submitted by management consultants, we selected Barrington-Wellesley Group, Inc. (“Barrington-Wellesley”) to perform a management audit. On April 18, 2007, the Management and Process Audit of Martin District (“Audit”) was submitted by Barrington-Wellesley. The Management Audit Action Plans were submitted on June 14, 2007.⁸ The Commission found the recommendations contained in the Audit would serve as the basis for a determination of the practices and methods that Martin District should employ to furnish water service.⁹ By Order entered April 2, 2008, we ordered Martin District to take the actions recommended in the Audit and to file annual status reports until all the required actions are completed.¹⁰ While Martin District has since addressed many of the action items, serious deficiencies remain, and the following categories of actions required by the April 2, 2008 Order are still incomplete:

- Eliminate the backlog of connection requests to permit connection within 3 days of receipt of tap or connection fees.
- Develop a comprehensive water loss reduction program.
- Implement a preventive maintenance program that includes upgrading the existing leak detection and repair program.
- Establish a watershed pollution control program.

⁸ Management Audit Action Plans, June 14, 2007, Barrington-Wellesley, attached as Appendix A to this Order.

⁹ Case No. 2006-00303, *An Investigation Into the Management and Operation of Martin County Water District* (Ky. PSC July 26, 2007).

¹⁰ *Id.* (Ky. PSC Apr. 2, 2008).

- Develop and implement a long-term plan to reduce Martin District's vulnerability to supply disruptions.
- Establish an in-house capital program planning and management function staffed by one engineer or provided through a regional resource.
- Prioritize water loss reduction programs over system expansion programs until water losses are reduced to 15 percent or less.
- Improve collections of past due accounts.
- Arrange for an external audit of Martin District's financial statements and continue such audits on a timely basis.
- Establish a position of bookkeeper/accountant with responsibility for accounting and other transactional accounting processes.

As of April 22, 2014, Martin District had failed to perform 37 of the recommendation steps specifically identified in the Audit, which are required under the action categories per the Commission's April 2, 2008 Order. On April 22, 2014, Staff issued a letter which included a list of the incomplete recommendation steps.¹¹ The letter was in response to the management audit progress report submitted by Martin District on February 19, 2013.

On September 15, 2015, two Commission Staff members met with representatives of Martin District at their offices in Inez, Kentucky. The purpose of the meeting was to discuss the actions taken by Martin District since the February 2013 progress report in order to determine the status of the recommendation steps and also

¹¹ Letter from Public Service Commission to Joe Hammond, Martin County Water District (Apr. 22, 2014), attached as Appendix B to this Order.

determine what additional information was needed to continue the progress reporting cycle.

As a result of that meeting, Commission Staff determined that 11 additional recommendation steps had been completed, thereby leaving 28 recommendation steps ongoing.¹² Questions related to the ongoing recommendation steps are included in Commission Staff's Initial Request for Information, attached as Appendix H to this Order.

Although KRS 278.255 and 807 KAR 5:013 specify progress reporting requirements for management audit follow-up, with the establishment of this investigation, all subsequent progress reporting will be addressed as part of this proceeding.

Staff further issued a Utility Inspection Report ("Inspection Report") dated December 12, 2014, following an inspection of Martin District's facilities and records conducted on December 10, 2014.¹³ The Inspection Report included findings of continued deficiencies for Martin District as follows:

- Martin District did not produce pressure charts that showed a continuous 24 hour pressure recording for one week per month. 807 KAR 5:066 Section 5(2).
- Martin District has not filed with the Commission a copy of its water purchase contracts where the utility purchases water from Mountain Water District and Kermit, WV as required by 807 KAR 5:013 Section 13.

¹² Kentucky Public Service Commission Response to Martin County Water District Management Audit Progress Report, Status as of April 12, 2016 (Apr. 12, 2016), attached as Appendix C to this Order.

¹³ Commonwealth of Kentucky Public Service Commission Utility Inspection Report (Dec. 12, 2014), attached as Appendix D to this Order.

- Martin District does not have a tariff in place requiring fire departments, who withdraw water from its water distribution system for fire protection or training purposes, to report usage or a penalty for failure to submit the reports. 807 KAR 5:095, Section 9(1)(2).

Staff also noted in the Inspection Report that water loss for 2012 was 60.87 percent and water loss for 2013 was 60.86 percent. On October 9, 2015, Staff sent a follow-up letter directing Martin District to provide by November 23, 2015, a plan to cure these deficiencies.¹⁴

Separately, on October 27, 2015, Gary Lee Ball, a customer of Martin District, tendered a formal complaint to the Commission wherein he alleges Martin District has failed to meet customer demand, provide notice of outages, issue necessary boil-water advisories, take required daily samples of the system, and otherwise comply with Commission and Kentucky Division of Water regulations.¹⁵ Mr. Ball also points to Martin District's water loss rate of 61 percent, and states that Martin District routinely reduces, or shuts off, service to portions of their service area to allow storage tanks to refill. A copy of Mr. Ball's Complaint is set forth in Appendix F of this Order and is hereby incorporated herein. As a remedy for these alleged deficiencies, Mr. Ball's complaint asks for a possible "re-drawing" of Martin District's boundaries to allow

¹⁴ Letter from Mark Rasche, P.E., Manager, Water and Sewer Branch, Division of Engineering, Kentucky Public Service Commission to William Harvey, Martin County Water District (Oct. 9, 2015), attached as Appendix E to this Order.

¹⁵ Complaint, *Gary Lee Ball v. Martin County Water District* (Oct. 27, 2015), attached as Appendix F to this Order.

adjoining water districts to serve a portion of Martin District's customers until the water loss rate is brought to an acceptable level.¹⁶

The Commission finds that Mr. Ball's complaint does not present a *prima facie* claim, as the Commission is unable to grant the relief requested therein. The Commission does not have authority to determine the boundaries of a water district; rather, it is a determination assigned to the exclusive authority of the county judge/executive pursuant to KRS 74.110.

Although Mr. Ball's complaint fails to present a *prima facie* case, the Commission does find that Mr. Ball's complaint raises service quality concerns that merit consideration and provide further support for an investigation by the Commission into the operations of Martin District. Mr. Ball's allegations will be considered as part of this investigation.¹⁷

Based upon a review of the remaining deficiencies for both the Audit recommendations and Inspection Report, the Commission finds that an investigation should be initiated for the purpose of examining these issues. We further find that the issues raised in Mr. Ball's complaint should be examined as part of the same investigation.

Accordingly, by this Order, we initiate this case to investigate the outstanding deficiencies in Martin District's operation; to determine the actions that must be taken by

¹⁶ *Id.*

¹⁷ On April 1, 2016, the Commission also received correspondence from Mr. Ball alleging that Martin District has been unable to serve a federal prison and is losing revenue as a result. A copy of Mr. Ball's April 1, 2016 letter is attached as Appendix G to this Order. The Commission will likewise consider this allegation as part of the investigation.

Martin District; and to ensure that all recommendations of the Audit will be met and all deficiencies noted in the Inspection Report are addressed and timely corrected.

We find that the records from Case No. 2002-00116 and Case No. 2006-00303, including the post case referenced correspondence files for the cases, should be incorporated into the record of the instant case.

IT IS THEREFORE ORDERED that:

1. This proceeding is initiated to investigate the deficiencies identified in the Commission's December 12, 2014 Inspection Report, Martin District's compliance with the Required Action plan set forth in Appendix A of the Commission's April 2, 2008 Order in Case No. 2006-00303, and the allegations of deficiencies identified by Gary Ball through his complaint.

2. Martin District shall appear at an informal conference with Commission Staff at the Commission's offices at 211 Sower Boulevard, Frankfort, Kentucky, on Tuesday, May 17, 2016, at 10:00 a.m. Eastern Daylight Time, for the purpose of discussing the actions necessary to cure the operating deficiencies of Martin District.

3. The complaint of Gary Ball is denied and dismissed.

4. The information requested in Appendix H of this Order is due within 14 days of the date of this Order.

a. Responses to requests for information shall be appropriately bound, tabbed and indexed and shall include the name of the witness responsible for responding to the questions related to the information provided, with copies to all parties of record, and the original and one copy to the Commission.

b. Each response shall be answered under oath or, for representatives of a public or private corporation or a partnership or association or a governmental agency, be accompanied by a signed certification of the preparer or the person supervising the preparation of the response on behalf of the entity that the response is true and accurate to the best of that person's knowledge, information, and belief formed after a reasonable inquiry.

c. A party shall make timely amendment to any prior response if it obtains information which indicates that the response was incorrect when made or, though correct when made, is now incorrect in any material respect.

d. For any request to which a party refuses to furnish all or part of the requested information that party shall provide a written explanation of the specific grounds for its failure to completely and precisely respond.

e. A party filing a paper containing personal information shall, in accordance with 807 KAR 5:001, Section 4(10), encrypt or redact the paper so that personal information cannot be read.

5. Service of any document or pleading required by this Order shall be filed with the Commission and served upon all parties of record in accordance with 807 KAR 5:001, Section 4(8).

6. Progress reporting requirements for the management audit follow-up will be addressed through this proceeding, and all future reports on open recommendations shall be filed into the record of the instant case.

By the Commission

ENTERED
APR 11 2016
KENTUCKY PUBLIC
SERVICE COMMISSION

ATTEST:

Caron D. Greenwell

Acting Executive Director *for*

Case No. 2016-00142

APPENDIX A

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED **APR 11 2016**



**Management and Process Audit of
Martin County Water District**

For the
Kentucky Public Service Commission

Management Audit Action Plans

June 14, 2007

Barrington-Wellesley Group, Inc.

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**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- **Chapter II**
- **Recommendation Number -- 1**
- **Priority – A**

II. Recommendation Statement

1. Through a combination of revenue increases and cost reductions, increase water provisioning process resources. (Reference Final Report Findings 5 and 9)
 - Increase rates above the RD Grant rate increase in process. (See Chapter V)
 - Consider selling unused property such as the old Tug Fork raw water intake site and the old Route 40 pump station site.
 - Prioritize water loss reductions (see below) to qualify for PSC rate increases and petition the PSC for interim relief from the water loss requirement if necessary.
 - Install paid tap requests in a timely manner. The District will begin collecting monthly payments sooner.
 - Support bill collection turn-offs and theft investigations in a timely manner to increase bill collections.
 - Reduce electricity, chemicals and leak repair costs by reducing water losses (see below).
 - Further reduce electricity costs by:
 - Adding additional capacitor banks on pumps as economically justified.
 - Exploring the possibility of time of day off peak rates and do as much required pumping as possible in lower rate periods.
 - Considering natural gas powered pump replacements for electric pumps if the total cost is lower.
 - Fill the vacant distribution supervisor position and add one four person distribution crew to reduce the work backlog and implement the water loss reduction program, damage prevention program, watershed management program and preventive maintenance program recommended below.
 - Add a fifth water treatment plant operator to reduce overtime and provide a resource for preventive maintenance and record keeping assistance.

- Add an additional back hoe or excavator and two trucks and trailers appropriate to haul the additional equipment.
- Add additional facilities, vehicles, equipment, materials, and supplies as necessary to make the distribution crews as efficient as possible. A service center with a garage for minor maintenance, warehouse, meeting/training rooms, computer access and offices would be ideal.

III. Background/Findings

Revenue is not adequate to support necessary water provisioning process work. Increased revenue is required to support specific increases in distribution resources. Relevant portions of the findings from the Chapter II of the Final Report are shown below.

5. There is a large backlog of distribution work. (Final Report page II-11)
 - There were approximately 50 tap requests not yet completed as of November 14, 2006; tap fees had been collected for 13 of these tap requests.
 - There were 246 work orders not yet completed for leak repairs, meter sets, meter rereads, meter pulls, low pressure, meter reads in, meter reads out, tap relocates, and similar distribution work.
 - Main leaks are prioritized for repair over other work. However, failing to reduce the backlog of work orders has allowed service leaks to continue un-repaired for a period of time and revenue from new and delinquent customers to be delayed.
9. Adequate resources – labor, materials and equipment – are not available for the water provisioning process. (Final Report page II-12)
 - Water provisioning process costs are low. The total operating expenses for MCWD in 2006 were \$1,032,404. The following table shows expense trends for the District. Accounting classification changes and reduction in treated water are responsible for the differences in individual accounts from 2005 to 2006.

**Exhibit II-8
MCWD Expense Trends**

Expense Account	2006	2005	2004	2003
Source of Supply & Pumping – Operation	\$74,968	\$170,763	\$125,523	\$109,583
Source of Supply & Pumping – Maintenance	13,376	7,666	59,109	121,394
Water Treatment – Operation	354,259	311,889	210,193	109,403
Water Treatment – Maintenance	909	5,587	57,767	110,060
Transmission & Distribution – Operation	179,285	181,178	178,055	116,989
Transmission & Distribution – Maintenance	179,666	163,936	170,269	184,625
Customer Accounts	96,434	98,489	120,020	120,437
Administrative & General	133,507	120,771	117,131	120,969
Total	1,032,404	1,060,279	1,038,067	993,460
Customers at Year End	3,506	3,411	3,434	3,376
Expenses per Customer	294	311	302	294

Source: Annual reports to the Commission and BWG calculations

- The largest expense categories in 2006 were:
 - Salaries, wages, pension and benefits for employees - \$534,426
 - Purchased power - \$179,697
 - Chemicals - \$51,187
 - These three categories accounted for 74 percent of the total operating expenses
- Unit costs for providing water in 2006 are shown in Exhibit II-9.

**Exhibit II-9
2006 Unit Operating Costs
(With No Administrative and General Overhead Costs Applied)**

Cost Area	Total Cost	Thousand Gallons Produced	Cost per Thousand Gallons Produced
Supply and Treatment	\$443,512	595,314	\$.745
		Thousand Gallons Produced and Purchased (Distributed)	Cost per Thousand Gallons Distributed
Transmission and Distribution	\$358,951	601,335	\$.597
	Total MCWD Operating Expense	Thousand Gallons of Water Sold	Cost per Thousand Gallons Sold

Cost Area	Total Cost	Thousand Gallons Produced	Cost per Thousand Gallons Produced
Total Cost for All Functions	\$1,032,404	271,046	\$3.81
			Cost per Thousand Gallons Distributed
			\$1.72

Sources: MCWD Annual Reports and BWG calculations

- Total inventory for plant materials and supplies at the end of 2006 was only \$17,529. A treatment and distribution operation the scale of MCWD requires a larger inventory of materials and supplies for efficient operations.
- There are only four full-time water treatment plant operators and two on-call part-time operators. A seven by 24 hour operation requires a minimum of five full-time operators to cover 21 shifts per week and have spare capacity for vacations, illness, training and other absences.
- There are only five distribution employees. The sixth distribution employee, the supervisor, recently became the fourth treatment plant operator and was not replaced in distribution. One of the distribution employees is largely occupied by sampling and other duties and is normally unavailable for main, service and meter work. Many jobs require a crew of four or more because of difficult traffic management conditions. With vacations and other absences, this often results in having a single crew doing one job at a time each day.
- The distribution crew does not have a trailer for its only backhoe and, even if there was a trailer, there is no vehicle capable of towing the backhoe and trailer. This results in highly inefficient and dangerous driving of the backhoe from job to job.
- The distribution crew does not have an assembly area or proper facilities for garaging equipment and storage of materials and supplies.

IV. Expected Improvement/Improvement Timeline

One year for adding the necessary revenue, hiring and beginning training for the new personnel, and adding the recommended equipment and materials. Two years to add the recommended service center.

V. Cost/Benefit Analysis and Support

Cost Analysis

- 2006 supply, treatment, transmission and distribution costs were \$802,463. This amount is estimated to increase by \$500,000 for the five additional employees (the distribution supervisor is in the 2006 amounts) and additional operations and maintenance expense for equipment and materials.

- The new service center and additional equipment is estimated to cost approximately \$500,000.

Benefit Analysis

- Sale of unused property is estimated to net \$50,000.
- Reduced backlog of customer related work orders and more timely taps, turnoffs, and theft investigations supporting increased revenue sooner and reduced bad debt write offs and water thefts estimated at \$25,000 per year savings.
- Reduced leaks through prompt response to leak calls will contribute to the water loss savings quantified in II-2 below.
- The benefits of the water loss reduction, preventive maintenance program, upgraded leak detection and repair program, damage prevention program, and watershed pollution control program are covered in the respective management audit action plans.
- Further reduction of electricity costs due to pump capacitor banks or a switch to natural gas pumping would have to be economically justified.
- The potential for implementing time of day rates must be investigated for feasibility.

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	\$500,000	\$500,000
Benefits	\$50,000	\$25,000

Other Costs or Benefits

- The above costs represent the bulk of the costs for Recommendations II-2, 3, 4, and 5 as well. The additional personnel, equipment and facilities will provide the resources necessary for the water loss reduction, preventive maintenance, upgraded leak detection and repair, damage prevention and watershed pollution control programs.

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

- The sale of surplus property needs additional investigation as to the disposal procedure. Tug River raw water intake should be renovated and be used as back-up for the present system.

VII. Implementation Steps

Step 1: Increase rates above the RD Grant rate in process.

- **Response:** Board approval has been granted to request assistance from the Public Service Commission. Letter sent to the Public Service Commission for assistance on May 22, 2007
- **Person Responsible:** Board and General Manager. Completion date will be determined by the PSC.

Step 2: Consider selling unused property such as the old Tug Fork raw water intake site and the old Route 40 pump station site.

- **Response:** The old Tug Fork raw water intake site needs to be evaluated for possible renovation to be used as a back-up to the New Raw Water Intake. The other unused property such as the old Route 40 Pump Station and the old Wolf Creek Tank site needs to be evaluated for liability purposes and a value applied to each site by the Board. This should be completed by July 2007.
- **Person Responsible:** Board and General Manager.

Step 3: Prioritize water loss reductions to qualify for PSC rate increases and petition the PSC for interim relief from the water loss requirement if necessary.

- **Response:** The District has a plan in effect at present. A bid package, for In-Line Master Meters is being prepared as of May 22, 2007. After the Master Meters has been installed, the meter books will be realigned to correspond with the Master Meters and monitoring of the usage and meters will be conducted each month to determine where the water loss is occurring. This will be an ongoing process.
- **Person Responsible:** Board and General Manager.

Step 4: Install paid tap requests in a timely manner.

- **Response:** The District's Policy is to collect the tap fee on the day the tap is completed. The Tariff states that if we collect the tap fee, we have 72 hours to complete the work. That's the reason we collect the day we install. When funds become available to hire additional help the process will be completed in a timely manner.
- **Person Responsible:** General Manager

Step 5: Support bill collection turn-offs and theft investigations in a timely manner to increase bill collections.

- Response: As funds become available, the Board has authorized a position for an Accounts Receivable person. The primary duties will be to monitor Accounts Receivable, pull and install meters that were pulled for non-payment. Also, monitor theft of services. December 2007 will be the target date for this position.
- Person Responsible: General Manager, District, and Accounts Receivable person.

Step 6: Reduced electricity, chemicals and leak repair costs by reducing water losses.

- Response: Reference Step 3.

Step 7: Further reduce electricity costs

- Response: Due to the water storage capacity, a more thorough research of the further reduction of electricity costs will need to be completed. December 2008.
- Person Responsible: General Manager

Step 8: Fill the vacant distribution supervisor position and add one four person distribution crew to reduce the work backlog and implement the water loss reduction program, damage prevention program, watershed management program and preventive maintenance program recommended below.

- Response: Due to funding, July 2008 could be the projected date for implementing this process.
- Person Responsible: General Manager

Step 9: Add a fifth water treatment plant operator to reduce overtime and provide a resource for preventive maintenance and record keeping assistance.

- Response: As funds become available. One year.
- Person Responsible: General Manager.

Step 10: Add an additional back hoe or excavator and two trucks and trailers appropriate to haul the additional equipment.

- Response: As funds become available. Two years.
- Person Responsible: General Manager

Step 11: Add additional facilities, vehicles, equipment, materials, and supplies as necessary to make the distribution crews as efficient as possible. A service center

with a garage for minor maintenance, warehouse, meeting/training rooms, computer access and offices would be ideal.

- Response: As funds become available, and with the plant upgrade within the next Two years, this would be a great asset to the District.
- Person Responsible: Board and General Manager

VIII. Comments/Clarification of Intent

Consultant Name: David Vondle

Discussion

Step 1: Increase rates above the RD Grant rate in process.

Most of the recommended improvements are dependent on increased revenue. If it appears that the PSC rate increase process will take several months or years or may be unsuccessful, the District should consider a second expedited RD Grant related increase.

Step 2: Consider selling unused property such as the old Tug Fork raw water intake site and the old Route 40 pump station site.

Renovating the old Tug Fork intake and the associated transmission line to the reservoir should be included in the vulnerability assessment. Any renovation should be included in the capital planning process.

Step 4: Install paid tap requests in a timely manner.

The spirit of this recommendation is to work down the backlog to the point where as soon as the site is ready for the tap, the District can collect the tap fee and do the tap to provide responsive service and begin collecting the new revenue.

Step 5: Support bill collection turn-offs and theft investigations in a timely manner to increase bill collections.

The management audit did not recommend an Accounts Receivable person. This recommendation was intended for the distribution section. Again, the backlog should be worked down to the point that services can be turned off and theft investigations made no later than the day after the request is made.

Step 8: Fill the vacant distribution supervisor position and add one four person distribution crew to reduce the work backlog and implement the recommended distribution improvements.

The July 2008 schedule date is too late. Many distribution improvements are contingent on increased distribution work capacity. The supporting rate increase should be accelerated to allow quicker implementation of this recommendation.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- II
- Recommendation Number -- 2
- Priority -- A

II. Recommendation Statement

2. Develop a comprehensive water loss reduction program. (Reference Final Report Finding 4)
 - Improve the metering of produced and distributed water to include in-line master meters from the Clearwell tank, all subsidiary distribution tanks and on all major distribution mains. Make immediate use of the existing A system meter for determining the relative water loss between the A and B systems.
 - Use the information from additional metering of distributed water as compared to metered consumed water to identify water losses by main. Rank them from highest to lowest water loss. The Kentucky Rural Water Association Peer Review Report contains detailed recommendations for this process.
 - Prioritize, based on volumes of water lost, the mains and services for replacement or repair.
 - Prior to commencing repair and replacement work on each main, identify and resolve any water theft, metering or related problems.
 - Replace or repair all excessively leaking mains and services over a three year period.

III. Background/Findings

4. MCWD has significantly reduced water losses, but the system still incurs excessive water losses. (Final Report page II-8)
 - The following table shows water production, purchase and sale trends as reported to the PSC.

**Exhibit II-6
Water Pumped and Sold
(Million Gallons)**

	2006	2005	2004	2003
Water Purchased	6.02	6.34	14.67	19.39
Water Pumped	595.31	635.82	654.92	651.60
Total Purchased and Pumped	601.33	642.17	669.59	670.99
Total Water Sold to Customers	271.05	224.02	N/A	N/A
Water Purchased or Pumped but not Sold	330.28	418.15	N/A	N/A
Percent not Sold	55	65	N/A	N/A
Maximum Gallons Pumped in One Day	1,849	1,948	1.99	N/A

Source: Annual reports to the PSC and BWG calculations

- MCWD has recently developed a more detailed water loss analysis. The results of this analysis for 2006 are shown in the following table.

**Exhibit II-7
MCWD 2006 Water Loss Analysis
(Million Gallons)**

	2006
Treated Water into Clearwells - Water Produced	595.3
Purchased Water:	
Kermit Water Purchases	2.0
Mountain Water Purchases	4.0
Net Purchased Water	6.0
Total Produced and Purchased Treated Water	601.3
Water Supply to End Users	
Plant Use	21.1
Fire Department Use (estimated)	2.7
Prison Tank Use	34.6
Books 9-18 A Side Customer Metered Use	87.6
Books 1-8 B Side Customer Metered Use	148.8
Total Treated Water Consumption	294.8
Total Treated Water Loss	306.5
Treated Water Percentage Loss	51.0%
Total Prison Tank and Customer Metered Use	271.0

	2006
Water Sold as a Percentage of Water Produced	45.1%
Average Gallons per Day Produced or Purchased	1.65
Average Gallons per Day Sold	.74

Source: MCWD Water Loss Analysis and BWG calculations

- Water purchased or produced but not sold fell from 65 percent in 2005 to 55 percent in 2006.
- From 2005 to 2006, MCWD purchased and produced less water, but sold more. This is largely due to reducing subsidiary distribution tank overruns, fixing main and service leaks and replacing meters (to get more accurate usage numbers).
- MCWD has reduced its water purchases 69 percent from 2003 to 2006.
- The metering of produced and distributed water is not comprehensive. There is only one transmission and distribution meter. It is at the pump station serving the A system. It has not been read and therefore has not been used for determining the A system water losses versus the B system water losses. More in-line "master" meters are planned, but have not yet been funded or installed. Additional transmission and distribution master meters will allow the pinpointing of water losses by distribution main. This will allow precise prioritization of leak reduction efforts.
- By long standing, but informal, practice, MCWD supplies water to the five volunteer fire department stations in the county at no charge. This is in addition to the customary practice of not charging for fire hydrant water used in fighting fires and training. At present, water used by the fire department stations is not metered.
- Water losses due to leaks and other causes are not reasonable. The PSC standard is to have water losses of less than 15 percent. Water professionals familiar with Eastern Kentucky (see footnote 9) are in agreement that MCWD could meet this standard. Now that the overflowing tank problem has been fixed, the remaining water losses are likely attributable to:
 - Main and service leaks, with the consensus that service leaks are the larger problem. Main leaks are easier to visually identify and typically cause water pressure problems for customers on the main, triggering an investigation. Services, however, can have relatively small leaks that are not readily identifiable because they are near creeks or streams and can still provide basic water pressure. Service line leaks are estimated (see footnote 9) to cause 50 to 90 percent of the water losses.
 - Customer metering problems and water theft is the other potential category of water losses. This category can include: slow meters,

meters that were never installed on service lines, unauthorized taps, and meter bypasses.

- In a PSC rate case, recovery of the costs of water losses in excess of 15 percent, excluding water used by the utility in its own operations, is not allowed according to PSC 807 KAR 5:066 Sec. 6(3). (See footnote 3 on page I-7).
- By achieving a 15 percent water loss target, 2006 water treated and purchased would have been 346.8 million gallons, rather than the actual amount of 601.3 million gallons, a reduction of 254.5 million gallons, or about 42 percent. A 42 percent reduction in water production would result in estimated direct savings of \$100,000 per year. These savings come from a reduced need for electricity for pumping and chemicals for treatment. Further indirect savings could be expected from fewer leak calls and repairs and less damage caused by leaks. An additional benefit would be that a larger proportion of the raw water would come from the Crum Reservoir watershed rather than the Tug Fork.

IV. Expected Improvement/Improvement Timeline

- Water losses should be less than 15 percent within three years.

V. Cost/Benefit Analysis and Support

Cost Analysis

- The additional employee personnel, equipment and facilities for this activity are covered in Recommendations II-1 and III-1
- Approximately \$100,000 for the additional in-line master meters
- Additional contractor assistance to supplement employees to make repairs as prioritized are estimated at \$250,000 per year for three years

Benefit Analysis

- Direct cost savings in electricity from pumping and chemicals from reduced water losses are estimated at \$100,000 per year
- Indirect cost savings will result from fewer leak calls

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	\$100,000	\$250,000 for three years
Benefits		\$100,000

Other Costs or Benefits

- MCWD's ability to utilize the normal PSC rate making process will be enabled

- Public and industry perception of MCWD will improve
- The additional contracted leak repair crew is likely eligible for grant funding (See Recommendation III-2)

VI. Company Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Improve the metering of produced and distributed water to include in-line master meters from the Clearwell tank, all subsidiary distribution tanks and on all major distribution mains. Make immediate use of the existing A system meter for determining the relative water loss between the A and B systems.

- **Response:** A plan was developed and presented to BSADD and DOW in February 2006 to install in-line Master Meters. (See p. 6, Step 3, Chapter II)
- **Person Responsible:** General Manager and O'Brien & Gere

Step 2: Use the information from additional metering of distributed water as compared to metered consumed water to identify water losses by main. Rank them from highest to lowest water loss. The Kentucky Rural Water Association Peer Review Report contains detailed recommendations for this process.

- **Response:** Same as Step 1 above.
- **Person Responsible:** General Manager

Step 3: Prioritize, based on volumes of water lost, the mains and services for replacement or repair.

- **Response:** After careful study of the plan implemented above, a prioritized list will be formulated and repairs will begin. December 2007.

Step 4: Prior to commencing repair and replacement work on each main, identify and resolve any water theft, metering or related problems.

- **Response:** Begin a public awareness program and stress to present customers, meter readers, and employees, to report any person or persons receiving water illegally. This will be an ongoing process.
- **Person Responsible:** General Manager

Step 5: Replace or repair all excessively leaking mains and services over a three year period.

- **Response:** The District concurs will progress as funds become available.
- **Person Responsible:** General Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** David Yondle
- **Discussion**

Step 4: Prior to commencing repair and replacement work on each main, identify and resolve any water theft, metering or related problems.

The response is good and an ongoing program is needed. However, the intent of this recommendation was specific to projects to repair or replace sections of main. Prior to commencing main repair or replacement projects, a patrol and survey of the affected line should be made to identify theft, metering, meter placement, or other related problems. Identified problems should be resolved prior to commencing work or the solution should be included in the project.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- II
- Recommendation Number -- 3
- Priority -- B

II. Recommendation Statement

3. Implement a preventive maintenance program including upgrading the leak detection and repair program. (Reference Final Report Finding 8)
 - Establish records for each piece of equipment (such as pumps, injectors and valves) and pipe segment.
 - Track all maintenance performed on each piece of equipment and pipe segment.
 - Develop preventive maintenance routines for select facilities including routine flushing and valve maintenance. Implement manufacturers' recommended maintenance and AWWA guidelines as available.
 - Establish an on going leak detection and repair program following the completion of the water loss reduction program (see above).

III. Background/Findings

- 8: There is no organized preventive maintenance program. (Final Report page II-12)
 - MCWD operates on a largely "repair it when it breaks" mode.
 - MCWD lacks organized equipment (e.g., tanks, pumps, valves, and filters) records and main and service records and recommended preventive maintenance routines.
 - Most MCWD equipment and mains would benefit from an organized preventive maintenance program. A preventive maintenance program would result in fewer service interruptions and lower costs in the future.
 - The Kentucky Rural Water Association Peer Review Report specifically recommended a Water Storage Tank Operation and Maintenance Program with the American Water Works Association recommended practices.

IV. Expected Improvement/Improvement Timeline

- Implemented preventive maintenance program operational by the end of the second year

V. Cost/Benefit Analysis and Support

Cost Analysis

- Cost of a preventive maintenance computer system and hardware is estimated at \$10,000
- Operation and maintenance costs for employees, equipment and facilities are included in Recommendations II-1 and III-1

Benefit Analysis

- Fewer water delivery outages due to equipment failures (e.g., pumps and transmission mains)
- Lower repair costs due to fewer repairs
- Fewer water quality problems due to equipment failures (e.g., clarifiers, filters, and chemical injectors) and fewer instances of water quality non-compliance
- Cost savings due to fewer equipment breakdowns (overtime, contractors, parts, etc.) and lost sales due to outages estimated at \$50,000 per year

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	\$10,000	0
Benefits	0	\$50,000

Other Costs or Benefits

- The preventive maintenance computer system and computer equipment is likely eligible for grant funding.

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Establish records for each piece of equipment (such as pumps, injectors, valves, pipe segments and vehicles.)

- **Response:** Using computer software records will be maintained to track all maintenance and inspections of all equipment in the District. December 2007 will be the target date for complete implementation of this item.

- Person Responsible: General Manager

Step 2: Track all maintenance performed on each piece of equipment and pipe segment.

- Response: Continuation of Step 1.
- Person Responsible: Distribution Supervisor

Step 3: Develop preventive maintenance routines for select facilities including routine flushing and valve maintenance. Implement manufacturers' recommended maintenance and AWWA guidelines as available.

- Response: Check all O & M Manuals and develop a preventive maintenance program according to manufacturing guide lines. One year to complete this task.
- Person Responsible: General Manager

Step 4: Establish ongoing leak detection and repair program following the completion of the water loss reduction program.

- Response: Continue to monitor the in-line meters and the customer usage records to determine if the water loss is in an acceptable range or not. On going process
- Person Responsible: Office personnel and General Manager.

VIII. Comments/Clarification of Intent

- **Consultant Name:** David Vondle
- **Discussion**

Good management action plan.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- **Chapter -- II**
- **Recommendation Number -- 4**
- **Priority -- C**

II. Recommendation Statement

4. Implement a damage prevention program. (Reference Final Report Finding 6)
- Join and actively participate in Kentucky's Call Before You Dig (one call) program.
 - Mark involved facilities in a timely manner as one call notices are received.
 - Develop and implement a damage prevention education program for State and County road crews and local civil contractors.
 - Bill perpetrators who damage marked District facilities.
 - Sue perpetrators who do not pay billed damages.

III. Background/Finding

6. MCWD does not have a damage prevention program. (Final Report page II-11)
- MCWD does not participate in Kentucky's one call – call before you dig - program and has no excavator education program.
 - MCWD does not normally mark its facilities in advance of excavation by others.
 - MCWD experiences many third party damages from dig-ins to its facilities.
 - The District has little recourse to collect damages if the perpetrator used the one call system and the District did not mark its facilities in a timely manner as required by the one call system.
 - When MCWD does have recourse against a party responsible for damage to its facilities, MCWD has generally chosen not to bill the perpetrators and sue to collect damages because of a lack of resources.

IV. Expected Improvement/Improvement Timeline

- Damage prevention program operational by the end of the second year

V. **Cost/Benefit Analysis and Support**

Cost Analysis

- Employee, equipment and facilities costs included in Recommendations II-1 and III-1.

Benefit Analysis

- Fewer third-party damages to facilities
- Lower damage repair costs
- Increased damage repair cost collected
- Fewer water outages due to third-party damages
- Total cost savings estimated at \$25,000 per year

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	\$25,000

Other Costs or Benefits

- None

VI. **Utility Response**

Recommended Action

Approved Approved with Exception Rejected

VII. **Implementation Steps**

Step 1: Join and actively participate in Kentucky's Call Before You Dig (one call) program.

- **Response:** We are now actively participating in this program. However, the District needs to stress this program to our Local and State road crews. Publication, concerning this program, should be published in our local newspapers. Timeline: This is a continuous process.
- **Person Responsible:** General Manager and Distribution Supervisor.

Step 2: Mark involved facilities in a timely manner as one call notices are received.

- Response: Facilities are being marked in a timely manner. However, all contractors are not following procedures. This will take time to educate all concern parties.
- Person Responsible: General Manager and Distribution Supervisor

Step 3: Develop and implement a damage prevention education program for State and County road crews and local civil contractors.

- Response: (See Step 1 above) Copies of water line maps will be distributed accordingly.
- Person Responsible: General Manager

Step 4: Bill perpetrators who damage marked District facilities:

- Response: This process will be implemented immediately.
- Person Responsible: Office Manager

Step 5: Sue perpetrators who do not pay billed damages.

- Response: The County Attorney will assist the District in this matter. Timeline: Immediately.
- Person Responsible: General Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** David Vondle
- **Discussion**
Good management action plan.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- II
- Recommendation Number -- 5
- Priority -- C

II. Recommendation Statement

5. Establish a watershed pollution control program. (Reference Final Report Finding 7)
 - Implement a Crum Reservoir pollution control program including annual septic tank system dye tests by the Health Department and mitigation of roadway runoff.
 - Regularly test creeks flowing into the reservoir and trace problems found back to the source.
 - Work cooperatively with other water districts to establish an upstream regional watershed management program for the Tug Fork including septic tank monitoring, solid waste disposal programs and tributary testing and remediation.

III. Background/Findings

7. There is no watershed management program. (Final Report page II-11)
 - All of MCWD's water supply is from surface water. Surface water is highly vulnerable to contamination.
 - As much as one-third of MCWD's water comes from water collected in the Crum Reservoir watershed.
 - The septic systems for the houses within the Crum Reservoir watershed are not tested for effectiveness.
 - There is no mitigation of runoff from the roads in the Crum Reservoir watershed.
 - Water in the Tug Fork is collected from a much larger watershed that includes several wastewater treatment plants.
 - There are many reports of raw sewage flowing into the Tug Fork watershed as well as possible pollution from improperly disposed solid waste. There is no enforcement of septic tank regulations other than for new installations and solid waste disposal facilities are limited.

- There is no regional watershed management program that addresses pollution control in the Tug Fork watershed prior to the MCWD intake. A comprehensive regional watershed management program would have to include the West Virginia side of the Tug Fork watershed as well as the Kentucky side.

IV. Expected Improvement/Improvement Timeline

- Implemented within one year

V. Cost/Benefit Analysis and Support

Cost Analysis

- Employee, equipment and facilities costs included in Recommendation II-1. Possible incidental costs for the Health Department to test septic tanks and mitigation of problems found..

Benefit Analysis

- Better quality raw water
- Easier treatment
- Fewer chances of water quality problems

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	0

Other Costs or Benefits

- Successful initiation of a regional watershed management program might lead to further regional cooperation
- Grant money may be available to low income homeowners to mitigate septic tank problems
- Grant money may be available to study regional watershed management options

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Implement a Crum Reservoir pollution control program including annual septic tank system dye test by the Health Department and mitigation of roadway runoff.

- **Response:** The District will work with the Health Department to design a plan that will help monitor and correct any problems associated with the pollution of Crum Reservoir. Timeline: December 2007.
- **Person Responsible:** General Manager

Step 2: Regularly test creeks flowing into the reservoir and trace problems found back to the source.

- **Response:** No creeks flow into Crum Reservoir.

Step 3: Work cooperatively with other water districts to establish an upstream regional watershed management program for the Tug Fork including septic tank monitoring, solid waste disposal programs and tributary testing and remediation.

- **Response:** The DOW monitors the Tug Fork River on a routine basis. Kermit Water Company and 911 Services keeps the District informed of any spills or other contaminants that would be harmful to the watershed. MCWD will initiate meetings with Kermit Water and Mountain Water to plan improvement for watershed protection. Timeline: This program is presently in effect.

VIII. Comments/Clarification of Intent

- **Consultant Name:** David Vondle
- **Discussion**

Step 2: Regularly test creeks flowing into the reservoir and trace problems back to the source.

Suggest patrolling the perimeter of the reservoir after a storm to identify and mark significant surface water runoffs into the reservoir. Then periodically test these sites after storms.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- II
- Recommendation Number -- 6
- Priority -- C

II. Recommendation Statement

6. Develop and implement a long-term plan to reduce the system's vulnerability to supply disruptions. (Reference Finding 2) Alternative to be considered include:

- Expand the Crum Reservoir capacity by raising and repairing the dam and/or dredging the reservoir.
- Install a Crum Reservoir bypass (pipe and valves).
- Expand the Treatment Plant capacity (in process).
- Install a second line to the Clearwell tank.
- Expand the Clearwell tank capacity (in process).
- Expand looping and valving of the transmission and distribution tanks.
- Expand distribution tank capacities or add additional distribution tanks.
- Expand the telemetry system to cover the Crum Reservoir, master meters and pressure control valves to provide early detection and resolution of problems.

III. Background/Findings

Raw water is taken from the Tug Fork of the Big Sandy River (Tug Fork) and is pumped approximately five miles up to the Crum Reservoir. The raw water intake is at 580 feet elevation and its pumping capacity is rated at 1400 gallons per minute (GPM). There is a single transmission line from the raw water intake to the Crum Reservoir. The Crum Reservoir water elevation ranges from 750 feet when full to 671 feet when empty. The raw water pumped into the Crum Reservoir is supplemented by precipitation falling within the Crum Reservoir watershed. The Crum Reservoir is an open impoundment reservoir behind a man made dam. It has a maximum cumulative storage capacity of 512 million gallons. The Crum Reservoir watershed contains approximately 10 homes and two roads.¹

The following table shows water supply statistics for October 2006.

¹ The background information was collected through interviews with and documents provided by the General Manager and O'Brien & Gere, the District's engineering consultant.

**Exhibit II-1
Water Supply for October 2006**

Factor	Value
Water Pumped from the Tug Fork into the Crum Reservoir	32.679 million gallons
Rainfall	5.34 inches
Water into the Treatment Plant from the Crum Reservoir	50.225 million gallons
Percentage of Raw Water from the Tug River Assuming the Crum Reservoir Level Stayed the Same	65 percent

Sources: October 2006 Reports: Monthly Operation Report to the Kentucky Division of Water and Monitoring Results Submittal Forms to the Kentucky Department of Environmental Protection for the Tug River and Crum Reservoir

There has been no ongoing measurement of the distribution of raw water supplies between the Tug Fork and the reservoir watershed. Approximately 65 percent of the water transmitted from the Crum Reservoir to the Water Treatment Plant was from the Tug Fork and 35 percent was collected in the watershed in October 2006, assuming the level of the Crum reservoir remained unchanged.

Recent annual rainfall amounts, as measured at the Treatment Plant, are shown in the following table.

**Exhibit II-2
Rainfall Trend**

Year	Rainfall in Inches
2003	48.8
2004	49.8
2005	41.6
2006	46.9

Source: Rainfall measurements taken at the Water Treatment Plant by the plant operators.

There is a gravity feed system from Crum Reservoir to the Water Treatment Plant, which is at 620 feet, utilizing two transmission lines. Raw water from the Crum Reservoir is treated in the Water Treatment Plant using two up-flow clarifiers. Plant capacity is rated at 2 million gallons per day. Chemicals are added to settled and filtered water to meet water quality guidelines and the finished water is pumped up to the 300,000 gallon Clearwell Tank by two high lift pumps rated at 1400 GPM each through a single transmission line. The Clearwell Tank feeds the entire MCWD system, typically through transmission lines and supplemental pumping to subsidiary distribution tanks. MCWD has 15 subsidiary distribution tanks as follows:

**Exhibit II-3
MCWD Subsidiary Distribution Tanks**

Number	Tank	Size	Overflow Elevation
T1A	Buck Creek	150	991
T2A	Little Rock Castle	150	1080
T3A	292 South	100	1113
T4A	Big Elk	100	1080
T5A	Wolf Creek	100	819
T7B	Coldwater	150	853
T8B	Turkey	50	983
T9B	Inez (1)	500	860
T10B	Inez (2)	150	860
T11B	KY 40 W	200	1171
T12B	Calloway	100	1164
T13B	Middle Fork	260	942
T14B	Buffalo Horn	50	950
T15B	Big Sandy Airport	1040	1360
T16B	KY645	60	985

Source: MCWD Water System Map by O'Brien & Gere

To the extent practical, the distribution system is designed to use gravity feed from the subsidiary distribution tanks to the customers. However, many distribution mains require in-line pumping to reach some customers on the main. MCWD, like similar Kentucky water utilities, is required to provide a minimum of 30 pounds per square inch (PSI) pressure to each customer at the meter.

MCWD has twelve pumping stations, as follow:

**Exhibit III-4
MCWD Pumping Stations**

Number	Name	GPM	Elevation
P1A	KY 40 B	670	660
P2A	Big Elk	240	720
P3A	Bone Hollow	40	690
P4A	KY 292 South	130	680
P5B	Turkey	90	620

P6B	KY 40 W	420	680
P7B	Calloway	90	650
P8B	Middle Fork	245	650
P9B	KY 645	90	680
P10B	Peter Cave	130	700
P11B	Buffalo Horn	60	800
P12B	Davella Road	350	700

Source: MCWD Water System Map by O'Brien & Gere

MCWD originally developed as two distinct distribution systems that were later merged. Common terminology is to refer to the Warfield, Kentucky side as the "A" system and the Inez, Kentucky side as the "B" system. All water is treated on the B system and the A system is served by pumping treated water over a hill to the A side. The P1A pump station located at KY 40 B pumps water treated at the Water Treatment Plant to the A system.

MCWD has recently installed and initiated operation of a new telemetry system. The system monitors storage tank levels and allows remote operation of the pumps that feed them. Water Treatment Plant operators can refill tanks as needed without risk of overflowing them. The use of the telemetry system has virtually eliminated the previous problem of inadvertently overflowing tanks by leaving the pumps on too long.

The Crum Reservoir level is not telemetered or metered in any other way. Visual observations of the Crum Reservoir level are relayed to the Water Treatment Plant operators daily.

MCWD has approximately 174 miles of transmission and distribution mains ranging in size from 2 to 16 inches. The distribution mains serve approximately 3,500 customers. Typically, each customer is served from the main by a service line to a meter at the property line. MCWD estimates that it serves approximately 95 percent of the Martin County population. The remainder of the county's citizens is served by wells or other means.

MCWD is interconnected to three other systems:

- City of Kermit, West Virginia (interconnected to the A system in the far southeast end)
- City of Prestonsburg, Kentucky (interconnected to the B system in the far southwest end)
- Mountain Water District (interconnected to the A side in the far southern end)

MCWD is able to purchase water from or sell water to these interconnected systems. There are no formal agreements regarding sales and purchases and the systems operate on a "good neighbor" basis in cases of emergency. For example, at the time of this writing, the Mountain Water District was serving approximately ninety MCWD customers from its interconnection because the MCWD main to the customers was broken.

MCWD has an agreement with Prestonsburg to jointly serve the prison near the Big Sandy Airport. Both MCWD and Prestonsburg supply water to the distribution tank and Prestonsburg distributes it to the prison and bills the customer. MCWD supplies about 25 million gallons per year to the prison.

Water purchases from the interconnected systems in recent years were as follows:

**Exhibit II-5
Water Purchases (Gallons)**

Interconnection	2005	2006
Kermit	2,087,000	2,036,000
Prestonsburg	0	0
Mountain Water	2,701,000	3,985,000

Source: MCWD Lost Water Reports

No sales from MCWD to the other systems were noted.

IV. Expected Improvement/Improvement Timeline

- Implemented within five years.

V. Cost/Benefit Analysis and Support

Cost Analysis

- None

Benefit Analysis

- A faster response to disruptions in service.

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	0

Other Costs or Benefits

- None

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Expand the Crum Reservoir capacity by raising and repairing the dam and/or dredging the reservoir.

- Response: The District is currently working with the Soil Conservation District to obtain funding to dredge the reservoir. Timeline: When funding becomes available.
- Person Responsible: General Manager

Step 2: Install a Crum Reservoir bypass (pipe and valves).

- Response: This process was in the planning stage, however due to funding being cut, this has not been completed. When funding becomes available this will be a number one priority.
- Person Responsible: General Manager

Step 3: Expand the Treatment Plant capacity (in process).

- Response: An upgrade of the Treatment Plant to increase the capacity was submitted for bids and all the bids were too high. The District is seeking additional funds to cover the increase in cost to upgrade. Timeline: One year.

Step 4: Install a second line to the Clearwell tank.

- Response: A new 16" line has been proposed to replace existing water line. Timeline: When funding becomes available.
- Person Responsible: General Manager

Step 5: Expand the Clearwell tank capacity (in process).

- Response: When funding becomes available
- Person Responsible: General Manager

Step 6: Expand looping and valving of the transmission and distribution system.

- Response: This practice is being utilized where practical.
- Person Responsible: General Manager

Step 7: Expand distribution tank capacities or add additional distribution tanks.

- Response: The District has initiated the first phase of increasing the distribution's tank capacity beginning with the Clearwell tank. The second phase will be the Buck Creek tank and then the Coldwater tank. Timeline: When funding becomes available.

- Person Responsible: The Board and General Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** David Vondle
- **Discussion**

Step 3: Expand the Treatment Plant capacity.

As an alternative to finding more money for the planned expansion, the District should consider reducing the scope to fit the money available. As a second alternative, it may be possible to redirect the available money to water loss reductions which reduce the stress on the Treatment Plant capacity.

Step 4: Install a second line to the Clearwell tank.

The District should consider retaining and rehabilitating the existing line after the new line is installed.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter III
- Recommendation Number – 1
- Priority – B

II. Recommendation Statement

1. Establish an in house capital program planning and management functions staffed by one engineer. Alternatively, this capital program management and function could be provided by a regional resource.

III. Background Findings

MCWD has an extensive capital program. The table below summarizes the current and recently completed major projects.

**Exhibit III-1
MCWD Capital Projects, Major Repairs and Improvements
Completed in the Last Five Years**

Completed Projects
• Replacement of Control Valves and Pressure Reducing Valves in the Distribution System
• Completion of Raw Water Intake and Transmission Main from the Tug Fork to Crum Reservoir
• Restoration and Maintenance of the Raw Water Intake Station
• County Wide Telemetry System Providing Automated Control of Pumping Stations and Monitoring of all Storage Tanks
• Rehabilitation of Peter Cave Branch Booster Pumping Station
• Replacement of Feed Line to Twin Water Storage Tanks
• Cleaning, Sterilization and Return to Service of Twin Water Storage Tanks
• Design of Replacement of Four Inch Water Main to Pike County Line (Flood Damage)
• Contract 12 - Water Main Extension Serving 230 Customers
• Eden School Tank
• KY 645 Water Main Extension, Booster Pump Station and Water Storage Tank
• Contract 14 - KY 40 Buck Creek Hill KDOH Water Main Relocation
• Water Meter Replacement Program (Over 1,000 Residential Meters Replaced to Date)

<ul style="list-style-type: none"> • County Wide Fire Hydrant Evaluation, Flow Testing and Certification
<ul style="list-style-type: none"> • Contract 16 - Water Main Extension to New KDOH Maintenance Garage on KY 645
<ul style="list-style-type: none"> • Contract 17 - Water Main Extension to Correct Low Pressure at Eden Subdivision
<ul style="list-style-type: none"> • Evaluation and Inspection of Twin Tanks, Buck Creek Hill and Clearwell Tank
<ul style="list-style-type: none"> • Upgrade of Otto Brown Booster Pumping Station to Correct a Flow Problem
<ul style="list-style-type: none"> • Installation of New Booster Pumping Station at Meathouse Branch to Correct Low Pressure and Flow Problem
<ul style="list-style-type: none"> • Security Vulnerability and Assessment and Emergency Response Plan Completed and Submitted to EPA
<ul style="list-style-type: none"> • Replacement of Drive Unit in Clarifier Number 2 in the Water Treatment Plant
<ul style="list-style-type: none"> • Various Minor Plant Improvements Required by the PSC Order
<ul style="list-style-type: none"> • Resolution of Numerous Low Pressure and Low Flow Customer Complaints
In Process
<ul style="list-style-type: none"> • KY 40 Warfield Road KDOH Water Main Relocation
<ul style="list-style-type: none"> • Upper Alpha Branch Water Main Replacement to Correct Low Pressure and Flow Problem
<ul style="list-style-type: none"> • Johnson Bottom Water Main Replacement to Correct Low Pressure and Flow Problem
<ul style="list-style-type: none"> • Water Treatment Plant Expansion and Improvements Phase I (Increases Capacity to 2.95 MGC per Day)
<ul style="list-style-type: none"> • Water Treatment Plant Expansion and Improvements Phase II (Renovate Building and Eq., Add Offices and Conf Area)
<ul style="list-style-type: none"> • RD Phase I - Clearwell Tank Replacement - Single 300,000 Gallon Tank to Two 500,000 Tanks
<ul style="list-style-type: none"> • Wolfe Creek Water Main and Services Replacement (To Reduce Water Loss)
<ul style="list-style-type: none"> • Master Meter Installation - 12 Distribution Master Meters
<ul style="list-style-type: none"> • RD Phase II - Upgrade and Replacement of Buck Creek Hill and Stepp Water Storage Tanks
<ul style="list-style-type: none"> • KDOH Water Main Relocation at KY 3 and KY 645 (Will Correct Saltwell Branch Low Pressure Problem)
<ul style="list-style-type: none"> • Residential and Commercial Radio Read Meter Trial
<ul style="list-style-type: none"> • New Automated Billing System and Hardware

Source: MCWD Management Audit Kickoff Meeting Presentation confirmed by a letter from OBG

Summary details (start and completion dates, change orders, funding sources and contractors) on these projects were unavailable.

Most of the MCWD capital projects are funded by grants. A small amount of capital expenditures is funded by debt. MCWD capitalizes all capital expenditures regardless of funding source and depreciates the assets. The following table shows the additions to gross plant and donated capital (grants and contributions in aid of construction) in recent years.

Exhibit III-2
MCWD Additions to Gross Utility Plant and Donated Capital
(in thousands)

Fiscal Year	2006	2005	2004	2003	2002	2001	2000
Utility Plant	\$21,809	\$20,634	\$19,150	\$18,415	\$18,240	\$17,987	\$17,040
Plant Additions	1,175	1,484	735	175	253	947	NA
Donated Capital (Contributions in Aid of Construction in 2001 and 2002)	17,294	16,721	14,966	14,198	13,997	13,880	12,651
Donated Capital Additions	573	1,755	768	201	117	1,229	NA

Source: MCWD Annual Reports to the PSC and BWG calculations

- Utility plant additions totaled \$4.8 million for the last six years. Donated capital / contributions in aid of construction totaled \$4.6 million for the last six years. As of the end of 2006, MCWD had just \$2.5 million in long-term debt on net plant of \$14.8 million (\$21.8 million gross plant less \$7.0 million accumulated depreciation and amortization). Depreciation and amortization is not net of amortization of contributions-in-aid-of-construction.
- The MCWD 2006 Budget lists state grant proceeds of \$768 thousand in 2004 and \$700 thousand and \$850 thousand budgeted for 2005 and 2006, respectively.
- MCWD has successfully addressed several of the KPSC concerns with its water provisioning process through its recent capital program.
- MCWD customer demand forecasting, system planning, capital project identification and prioritization, capital budgeting, capital program development and funding management resources are not adequate.
- Capital projects are not identified and prioritized properly.
- The past and current capital program has focused on system expansion over water loss reduction.
- Current capital funding does not adequately support needed capital programs.

IV. Expected Improvement/Improvement Timeline/Baseline

- A hope for better access of funding and may support Big Sandy ADD in better application for funds. Timeline: 6 months

V. Cost/Benefit Analysis and Support

Cost Analysis

- No cost for planning

Benefit Analysis

- Help to prioritize needs toward funding

VI. Company Response

Recommended Action

Approved Approved with Exception Rejected

- We agree that a Capital Program needs to be established, but do not agree that an in house engineer is necessary. We currently work with engineers through a contractual basis and they work closely with Big Sandy ADD toward capital projects deemed necessary by board approval.

VII. Implementation Steps

- This is already in progress.

VIII. Comments/Clarification of Intent

- **Consultant Name: David Vondle**
- **Discussion**

An engineer should be hired or a regionally provided engineering function should be established. In addition to establishing the capital management process and managing the capital program, the engineer would be expected to increase capital funding from the several available sources and provide maintenance engineering assistance to the treatment and distribution sections. The District does not have adequate in-house capacity or expertise to achieve these objectives. An in-house engineer or regionally provided engineering function is required. A portion of the cost of the in-house engineer or regional engineering service can be charged to capital projects.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- III
- Recommendation Number -- 2
- Priority -- A

II. Recommendation Statement

2. As practical, prioritize water loss reduction programs over system expansion programs until water losses are reduced to 15 percent or less. (Reference Findings 3 and 4)
- The 2007 IED grant money should be applied first to installing in-line master meters and pinpointing water losses by main.
 - After the water losses have been pinpointed, consider a service line leak repair / replacement program rather than a combined main and service line replacement program where practical. Service line repair/replacements are estimated to cost \$400-500 each. Repairing or replacing all 3,500 service lines (which is not necessary) would likely cost less than \$1.5 million. However, in some cases, it is impractical to fix the service line without repairing or replacing the main.

III. Background/Findings

3. Capital projects are not identified and prioritized properly. (Final Report page III-6)
- The last capital program planning effort was the Capital Improvement Plan developed by OB&G in June 2003. This plan included recommendations and cost estimates for capital improvements in the water treatment plant, Crum Reservoir, telemetry system, meter replacements, storage tank renovations, and water main replacements. Several of the projects have been completed and others are in process. However, the plan has not been updated since it was first written.
 - There is no formal capital budget.
 - There is no formal capital program planning process.
 - There is no customer demand forecast or long-term system plan.
 - Capital projects are suggested by many sources, including:
 - MCWD employees
 - MCWD Board Members

- MCWD customers
 - Kentucky DOW professionals
 - OB&G professionals
 - Big Sandy professionals
 - The availability of funding strongly impacts the capital projects selected for implementation. Certain funds can only be used for certain types of projects. When those funds are available, the applicable projects are implemented.
 - The Board members informally evaluate all potential capital projects and select the ones to be implemented based upon funding availability and their collective judgment.
4. The past and current capital program has focused on system expansion over water loss reduction. (Final Report page III-6)
- As noted in Chapter II, Water Provisioning Process, unaccounted for water losses are, and have chronically been, exceptionally high. This results in higher than necessary O&M costs for pumping, treatment chemicals and operations, and leak repairs.
 - Prior Boards exhibited a bias towards capacity expansions over water loss reduction projects.
 - Many of the past and planned capital projects are for system capacity expansion rather than for water loss reduction, for example:
 - Contract 12 Water Main Expansion
 - Contract 16 Water Main Expansion
 - Contract 17 water Main Expansion
 - Water Treatment Plant Expansion (planned)
 - Clearwell Tank Replacement and Expansion (Planned)
 - While MCWD has a clear mission to serve all County citizens, its prioritization of projects has been out of balance. It has continued to expand capacity before the major water loss problems have been solved.

IV. Expected Improvement/Improvement Timeline

- Decrease in water loss and increase in revenues to be an ongoing process.

V. Cost/Benefit Analysis and Support

Cost Analysis

- No cost for planning.

Benefit Analysis

Cost/Benefit Summary

Other Costs or Benefits

- None

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

- We agree that accomplishing this goal would be great!

VII. Implementation Steps

Step 1: The 2007 IED grant money should be applied first to installing in-line master meters and pinpointing water losses by main.

- **Response:** The board has approved this and Bid Packages are being prepared.
- **Person Responsible:** Board of Commissioners

Step 2: After the water losses have been pinpointed, consider a service line leak repair replacement program rather than a combined main and service line replacement program where practical.

- **Response:** MCWD agrees that this should be done.
- **Person Responsible:** General Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** David Vondle
- **Discussion**
Good management response.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 1
- Priority -- B

II. Recommendation Statement

1. Improve procedures to identify theft of service. (Refers to Finding No. 4)
 - Provide incentives to meter readers and other District employees to identify thefts of service that lead to the recovery of amounts owed to the District.
 - Use the County Attorney to recover amounts owed for the theft of service and publicize the District's intent to do so.
 - Use the 2007 Martin County enhanced 911 GIS/GPS initiative to identify premises receiving District-supplied water who are not being billed for that service.

III. Background/Findings²

4. Procedures to identify theft of service are incomplete.
 - Meter readers will report suspected theft of service based on evidence of meter tampering or neighbors reports. These reports are promptly investigated.
 - Customers found to have been involved in theft of service are not prosecuted. According to the County Attorney, he would be pleased to assist the District with the prosecution of these cases and at no cost other than court fees to the District.
 - District employees receive no financial incentive for the detection of theft of service and recovery of lost revenues.
 - The County's enhanced 911 service, which will be implemented in 2007, provides an opportunity to confirm who is receiving District-supplied water. This information could then be matched against District billing records to identify theft of service.
 - Based on interviews with District personnel, it does not appear that theft of service is a major contributor to the water loss problem. However, in addition to the use of "cheater" bars to bypass residential water meters

² See Final Report, pages IV-3 to IV-4

there are anecdotal reports of improper use of water from fire hydrants, that is, other than use by the fire departments.

IV. Expected Improvement/Improvement Timeline

- Implemented within one year

V. Cost/Benefit Analysis and Support

Cost Analysis

- Incentives paid to meter readers and other District employees to identify thefts of service that lead to the recovery of amounts owed to the District. (These amounts will be directly offset by collections of amounts owed)
- Court fees associated with using the County Attorney to recover amounts owed for the theft of service
- There will be no incremental costs associated with publicizing the District's intent to prosecute thefts of service.

Benefit Analysis

- Collections of amounts owed for theft of service
- Reduction of thefts of service going forward

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost - Court Fees	\$0	\$1,000
Cost - Incentives	\$0	\$5,000
Benefits - Recoveries	\$0	\$10,000

Other Costs or Benefits

- None

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Provide incentives to meter readers and other District employees to identify thefts of service that lead to the recovery of amounts owed to the District.

- **Response:** Offer to pay the meter readers or District employees a reward of 10% or \$25.00 for the recovery of amounts owed the

District, this would be for each occurrence. This would need Board approval. Timeline: Ninety days.

- Person Responsible: Office Manager

Step 2: Use the County Attorney to recover amounts owed for the theft of service and publicize the District's intent to do so.

- Response: The District will discuss the procedures with the County Attorney and initiate this procedure immediately. Timeline: Immediately
- Person Responsible: General Manager

Step 3: Use the 2007 Martin County enhance 911 GIS/GPS initiative to identify premises receiving District-supplied water who are not being billed for that service.

- Response: Once enhanced 911 system is implemented, MCWD will begin to determine theft through use of this system. Timeline: Completion of 911 system
- Person Responsible: Office Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

Step 1 should be clarified to indicate whether the \$25 is a minimum or maximum payout.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 2
- Priority -- B

II. Recommendation Statement

2. Establish procedures and take action necessary to assure compliance with MCWD Tariff Sheet No. 19. (Refers to Finding No. 2)

III. Background/Findings³

10. Controls are generally adequate to ensure the accuracy of customers' bills except that procedures to monitor for high usage may not be in compliance with the District's tariff.
 - Tariff Sheet 19 requires the District to monitor customer usage at least annually and, if usage is 100 percent or more above historical levels, test that meter for registration error.

IV. Expected Improvement/Improvement Timeline

- Implemented within one year

V. Cost/Benefit Analysis and Support

Cost Analysis

- Programming costs associated with exception reporting high usage
- Meter testing costs

Benefit Analysis

- Compliance with Tariff Sheet 19
- Increased customer satisfaction

Cost/Benefit Summary

Category	One Time	Annual Recurring
Costs -- Programming	\$500	\$0
Costs -- Meter Testing	\$0	\$500
Benefits	\$0	\$0

³ See Final Report, page IV-3

Other Costs or Benefits

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Establish procedures and take action necessary to assure compliance with MCWD Tariff Sheet No. 19. (Refers to Finding No. 2)

- **Response:** The District developed a plan to replace all meters in the system. The District purchased one thousand (1000) meters and replaced the first one thousand (1000) meters. Tracking the customer usage was to begin with those meters, however, a change of Management occurred and this did not happened. Procedures will be put into effect to ensure compliance with the Tariff Sheet No. 19. The new software billing system is now in place and this will be completed once we have one year's data. Timeline: November 2008.
- **Person Responsible:** Office Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

It would be helpful to provide an outline of what will be included in the procedures. Also, the process by which the new billing system will be used to test for high usage should be described. If the new billing system must be enhanced to perform the needed tests for high usage, the plan to add that functionality should be described.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- **Chapter -- IV**
- **Recommendation Number -- 3**
- **Priority -- A**

II. Recommendation Statement

3. Improve collection of past due accounts. (Refers to Finding No. 5)
- Change credit policy so that responsibility for the payment of water bills remains with the landlord rather than with the tenant for rental properties. This will help reduce the number of uncollectible accounts going forward.
 - Send disconnect notices to those customers who have not paid their bills on time as allowed by Commission-approved rules and regulations.
 - Use the County Attorney to recover delinquent past due accounts.

III. Background/Findings⁴

5. Procedures to collect past due accounts are inadequate.
- CSRs check past due accounts receivable for customers applying for new service and will not prepare a work order for service to be turned-on without having first collected the past due balance (or made payment arrangements for the collection of the past due balance) and a meter deposit.
 - The District has not sent out disconnect notices for six months. As a result, no customers have had their service disconnected for non-payment during that time.
 - Recently, the District has started printing notices on bills that past due accounts may be shut-off for non-payment. According to the Office Manager, this has prompted some customers to pay past due balances. Printing this notice avoids the cost of mailing a separate disconnect notice, but does not satisfy Commission requirements for notification prior to actual physical disconnection for non-payment.
 - The District does not call customers in an attempt to collect past due balances and does not turn accounts over to collection agencies.
 - Tenants rather than landlords are generally responsible for water bills in rental properties.

⁴ See Final Report, page IV-4

- The County Attorney has indicated a willingness to prosecute individuals for non-payment of bills.

IV. Expected Improvement/Improvement Timeline

- Implemented within one to two years

V. Cost/Benefit Analysis and Support

Cost Analysis

- Legal costs associated with changing credit policies and developing landlord agreements. These costs could be avoided if the County Attorney is used to provide these services.
- Costs (including printing and postage) to mail disconnect notices. The new Customer Information System should have the capability to print disconnect notices).
- Court fees associated with using the court system to recover past due accounts receivable.

Benefit Analysis

- Reduced bad debt expenses
- Improved cash flows

Cost/Benefit Summary

Category	One Time	Annual Recurring
Costs - Legal Fees	\$0	\$0
Costs - Mailing	\$0	\$1,800
Benefits	\$0	\$18,000

Other Costs or Benefits

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Change credit policy so that responsibility for the payment of water bills remains with the landlord rather than with the tenant for rental properties.

- **Response:** The PSC informed the District that this was not legal and we could not do this.

- Person Responsible: General Manager

Step 2: Send disconnect notices to those customers who have not paid their bills on time as allowed by Commission-approved rules and regulations.

- Response: The District has implemented this procedure effective May 2007.
- Person Responsible: Office Manager

Step 3: Use the County Attorney to recover delinquent past due accounts.

- Response: The County Attorney has assured the District that he will assist in any way he can to help with the past due accounts. Timeline: Immediately
- Person Responsible: General Manager

VII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

No comment, assuming the policies and procedures have been updated in writing for both the sending of disconnect notices and for the use of the County Attorney.

More detail should be provided on how the District intends to use the County Attorney to recover delinquent past due accounts.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 4
- Priority -- C

II. Recommendation Statement

4. Improve meter reading controls. (Refers to Finding No. 6)
- Perform periodic rotation of meter reading routes.
 - Develop and implement monthly performance reporting and analysis processes.
 - Perform supervisory test inspections of meter readings, including meters not read.

III. Background/Findings

6. Meter reading controls are inadequate.
- Meter reading routes are not rotated and meter readings are not spot-checked by supervisors for accuracy.
 - Prior meter readings are shown in the meter reading book which provides an opportunity for meter readers to "curb" meter readings. Curbing refers to the practice of entering a meter reading into the meter reading book without having actually read the meter. However, there is no evidence that suggests that the curbing of meter readings is occurring.
 - The Office Manager requested in October 2006 that meter readers write an explanation in the meter reading book when unable to obtain a meter reading. While this information will be valuable in monitoring meter reading performance, the information has not been compiled since October due to a lack of resources. In addition, no specific action has been taken based on the information reported for October.
 - In October 2006, 70 A-Section meters, or 5 percent of all A-Section meters, were not read and 46 B-Section meters, or 2 percent of all B-Section meters were not read.
 - All B-Section no-reads were explained with only one meter not read because it could not be located. Sixty-one percent of all A-Section no-reads did not have an explanation, and of the unread meters with an explanation, over one-half were because the meter could not be located.

- Routine reporting and analysis of meter reading performance does not include monitoring the percentage of meters read by meter reader by month, the percentage of meter reading errors per meter reader per month, and the identification of the number meters not read by reason (e.g., can't find, hazardous condition, covered by water).

IV. Expected Improvement/Improvement Timeline

- Implement within one year
- Develop guidelines for the meter readers to follow.

V. Cost/Benefit Analysis and Support

Cost Analysis

Benefit Analysis

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	0

- **Other Costs or Benefits**

VI. Utility Response

Recommended Action

Approved **Approved with Exception** **Rejected**

VII. Implementation Steps

Step 1: Perform periodic rotation of meter reading routes.

- **Response:** Guidelines will be developed and implemented August 2007.
- **Person Responsible:** Office Manager

Step 2: Develop and implement monthly performance reporting and analysis process.

- **Response:** Guidelines will be developed and implemented by August 2007.
- **Person Responsible:** Office Manager.

Step 3: Perform supervisory test inspections of meter readings, including meters not read.

- Response: Guidelines will be developed and implemented by August 2007.

VIII. Comments/Clarification of Intent

- Consultant Name: Joel F. Jeanson
- Discussion

No comments, but would suggest that the guidelines be provided to the PSC when completed.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 5
- Priority -- C

II. Recommendation Statement

5. Provide meter readers additional tools to complete their routes timely and safely. (Refers to Finding No. 5)
- Provide hand pumps for the removal of water from meter pits
 - Provide devices (e.g., pepper spray) that can be used to protect the meter readers from hazardous situations

III. Background/Findings

5. Meter reading costs are slightly below the industry average, and can be further reduced.
- Meter readers do not have all the tools needed to complete their routes timely and safely.
 - Meters readers do not have hand pumps for the removal of water from meter pits
 - Meter readers do not have devices (e.g., pepper spray) that can be used to protect the meter reader from hazardous situations

IV. Expected Improvement/Improvement Timeline

- Implement when funds become available

V. Cost/Benefit Analysis and Support

Cost Analysis

- Costs of hand pumps and pepper spray (or equivalent)

Benefit Analysis

- Reduced workers compensation costs
- Improved employee safety and satisfaction

Cost/Benefit Summary

Category	One Time	Annual Recurring
Costs – Hand Pumps	\$100	\$0
Costs – Pepper Spray	\$0	\$200
Benefits	\$0	\$0

Other Costs or Benefits

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Provide hand pumps for the removal of water from meter pits.

- **Response:** The District agrees the recommendation. Timeline: August 2007 or when funds become available.
- **Person Responsible:** General Manager

Step 2: Provide devices (e.g., pepper spray) that can be used to protect the meter reader from hazardous situations.

- **Response:** The District agrees the recommendation. Timeline: August 2007 or when funds become available.

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

The timeline should mean no later than August 2007, and sooner if funds become available. This should be a relatively low cost recommendation.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 6
- Priority -- C

II. Recommendation Statement

6. Consider implementing cycle billing to shorten the meter reading-to-billing cycle and improve cash flows to the District. (Refers to Finding No. 8).

III. Background/Findings

8. The meter reading-to-billing cycle does not maximize cash flow to the District.
- Meters are read from approximately the 15th to the 29th of each month and are billed at month-end.
 - For meters read on the 15th, it is over two weeks before those accounts are billed.
 - Cash flow could be improved

IV. Expected Improvement/Improvement Timeline

- Evaluate

V. Cost/Benefit Analysis and Support

Cost Analysis

- Programming costs associated with changing bill due dates.

Benefit Analysis

- Improved cash flows

Cost/Benefit Summary

Category	One Time	Annual Recurring
Costs -- Programming	\$500	\$0
Benefits -- Cash Flow	\$0	\$4,000

Other Costs or Benefits

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Step

Step 1: Consider implementing cycle billing to shorten the meter reading-to-billing cycle and improve cash flows to the District. (Refers to Finding No. 8).

- **Response:** The District will need to evaluate the cost to implement this procedure
- **Person Responsible:** General Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

The evaluation process and timeframe should be spelled out more clearly together with defining a process for reporting the status of the evaluation to PSC staff.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 7
- Priority -- C

II. Recommendation Statement

7. Consider implementing bi-monthly meter reading for residential customers while continuing to bill customers monthly. (Refers to Finding No. 7)

III. Background/Findings

7. Meter reading costs are slightly below the industry average, and can be further reduced.

- The District pays approximately \$0.81 per meter reading, including labor and transportation costs.⁵ The water industry average based on a 2005 study is \$0.82 per meter reading for comparable costs.
- The District's difficult terrain and lack of density suggests that costs to read meters should be higher than the industry average.
- The District attempts to read each meter monthly.
 - Water utilities commonly read residential meters less frequently than monthly. In some jurisdictions, meters are read bi-monthly or quarterly.
 - These utilities may then bill customers coincident with the meter readings or bill customers monthly using estimated meter readings in those months in which actual reads are not obtained.

IV. Expected Improvement/Improvement Timeline

- Timeline: December 2007

V. Cost/Benefit Analysis and Support

Cost Analysis

Benefit Analysis

Cost/Benefit Summary

⁵ BWG calculation based on payroll documents provided by the District.

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	0

Other Costs or Benefits

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

- **Step 1:** Consider implementing bi-monthly meter reading for residential customers while continuing to bill customers monthly.
 - **Response:** The District will investigate and evaluate this method. However, at this point, funding this process could be a problem.
 - **Person Responsible:** General Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

The nature of the perceived funding issue should be discussed in more detail. The new billing system should have the capacity to render a bill based on an estimated meter read. Implementation steps should include testing the new billing systems ability to render a reasonable estimated bill.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- **Chapter -- IV**
- **Recommendation Number -- 8**
- **Priority -- C**

II. Recommendation Statement

8. As services are replaced, those meters located in difficult to read locations should be moved to locations that are less difficult to reach and placed in a consistent manner relative to the main and customer's premises. (Refers to Finding No. 7)

III. Background/Findings

7. Meter reading costs are slightly below the industry average, and can be further reduced.
- The District pays approximately \$0.81 per meter reading, including labor and transportation costs.⁶ The water industry average based on a 2005 study is \$0.82 per meter reading for comparable costs.
 - The District's difficult terrain and lack of density suggests that costs to read meters should be higher than the industry average.
 - Some meters are difficult to locate and reach due to the inconsistent placement of meters and the terrain in which those meters are located.

IV. Expected Improvement/Improvement Timeline

- **Timeline: September 2007.**

V. Cost/Benefit Analysis and Support

Cost Analysis

Benefit Analysis

Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	0

Other Costs or Benefits

⁶ BWG calculation based on payroll documents provided by the District.

VI. Utility Response

Recommended Action

Approved **Approved with Exception** **Rejected**

VII. Implementation Steps

Step 1: As services are replaced, those meters located in difficult to read locations should be moved to locations that are less difficult to reach and placed in a consistent manner relative to the main and customer's premises. (Refers to Finding No. 7)

- **Response:** Adopt a policy to insure that the majority of taps made are placed in a consistent pattern. Timeline: September 2007
- **Person Responsible:** General Manager and Distribution Supervisor

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

No comment

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 9
- Priority - C

II. Recommendation Statement

9. Complete a cost-benefit study of AMR prior to making further investments in AMR technology. (Refers to Finding No. 13)

III. Background/Findings

13. While likely to provide some benefits, it is unlikely that the AMR pilot project can be cost-justified if the expenditure was based on borrowed or revenue-generated funds.

- The District has contracted for the installation of 400 AMR devices at a cost of \$94,500.
- The AMR pilot program is totally funded by grants. As a result, there was no cost-benefit study prepared to justify this expenditure.
- This meter requires that a meter reader drive by in order to pick-up the radio transmitted meter reading, thus resulting in some efficiency gains.
- The meters to be installed will be more tamper-proof, will generate a "tamper notice" if the wire is disconnected, and even if the wire disconnected, the meter will continue to record water consumption.⁷ Therefore, the AMR devices will be more effective against theft-of-service than the current meters.

IV. Expected Improvement/Improvement Timeline

- Timeline: This process will be on-going as funding becomes available.

V. Cost/Benefit Analysis and Support

Cost Analysis

Benefit Analysis

- The District will be able to detect theft of service easier.

Cost/Benefit Summary

⁷ Based on discussion with the Sensus area representative for Wisconsin and Minnesota on January 29, 2007.

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	0

Other Costs or Benefits

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Complete a cost-benefit study of AMR prior to making further investments in AMR technology. (Refers to Finding No. 13)

- **Response:** The District has purchased 326 AMR with grant monies. The District will evaluate the benefits of these meters and decide on the next step whether to invest more money in this technology.
Timeline: December 2007
- **Person Responsible:** Board and General Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

A step should be added to consider alternative uses for grant monies when making the investment decision.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- IV
- Recommendation Number -- 10
- Priority - C

II. Recommendation Statement

10. Process customer payments on the day received so the payments are posted to the District's account on the day received. (Refers to Finding No. 13)

III. Background/Findings

13. Customer payments could be processed more quickly, thereby making cash available sooner for bill payment and other District needs.
- Since moving to the new customer service office, mail is now delivered by the United States Postal Service at 2:30 PM rather than in the morning, as was the case at the former location.
 - Customer payments that arrive in the 2:30 PM mail are processed the next day.
 - After processing, customer payments will be taken to the bank for deposit. However, the bank deposit will be made at 4:00 PM, after the 2:30 PM bank cut-off for same day posting.
 - As a result, for example, payments delivered by mail on Tuesday will be processed and deposited on Wednesday but not posted to the District's account until Thursday.

IV. Expected Improvement/Improvement Timeline

- Timeline: Within one year

V. Cost/Benefit Analysis and Support

- Cost Analysis
- Benefit Analysis
- Cost/Benefit Summary

Category	One Time	Annual Recurring
Cost	0	0
Benefits	0	0

- **Other Costs or Benefits**

VI. Utility Response

Recommended Action

Approved Approved with Exception Rejected

VII. Implementation Steps

Step 1: Process customer payments on the day received so the payments are posted to the District's account on the day received. (Refers to Finding No. 13)

- **Response:** The District's account at the bank is a non-interest bearing account. The District attempts to process all payments on the day they arrive, however, during the busy part of the month, this does not always happen.
- **Person Responsible:** Office Manager

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**

This response does not appear to respond to the issues identified in the finding and recommendation.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- V
- Recommendation Number -- 1
- Priority -- A

II. Recommendation Statement

1. The District should file a rate case with the Kentucky Public Service Commission.

III. Background/Findings

**Exhibit V-4
Fiscal 2007 Budget Comparison**

	Fiscal 2006		Fiscal 2007		
	Budget	Actual	Budget	Variance From 2006 Budget	Variance From 2006 Actual
Operating Revenues	\$1,440,000	\$1,135,790	\$1,597,000	\$157,000	\$461,210
O&M Expenses:					
Salaries and Wages	575,000	431,633	600,000	25,000	168,367
Employee Pensions and Benefits	118,700	102,793	118,700	0	15,907
Purchased Water	14,000	8,688	12,000	(2,000)	3,312
Purchased Power	180,000	179,697	190,000	10,000	10,303
Chemicals	40,000	51,187	60,000	20,000	8,813
Materials and Supplies	85,000	54,430	90,000	5,000	35,570
Contractual Services - Engineering	0	0	0	0	0
Contractual Services - Accounting	39,000	39,050	39,000	0	(50)
Contractual Services - Legal	3,000	0	3,000	0	3,000
Contractual Services - Testing	13,000	17,807	30,000	17,000	12,193
Contractual Services - Other	20,000	5,734	10,000	(10,000)	4,266
Rental of Building and Equipment	4,000	2,000	10,100	6,100	8,100
Transportation Expenses	30,000	28,278	35,000	5,000	6,722

	Fiscal 2006		Fiscal 2007		
	Budget	Actual	Budget	Variance From 2006 Budget	Variance From 2006 Actual
Insurance – Vehicle	10,500	10,094	10,500	0	406
Insurance – General Liability	24,000	20,457	25,000	1,000	4,543
Insurance – Workers' Comp	30,000	21,584	30,000	0	8,416
Insurance – Other	35,000	4,907	10,000	(25,000)	5,093
Advertising	1,000	520	2,000	1,000	1,480
Bad Debt Expense	22,000	24,631	26,000	4,000	1,369
Miscellaneous Expenses	20,000	23,914	25,000	5,000	1,086
Total Operating Expenses	1,264,230	1,032,404	1,326,300	62,070	293,896
Operating Margin (EBITDA)	175,770	103,386	270,700	94,930	167,314
Depreciation Expense	535,000	552,015	560,000	25,000	7,985
Taxes Other Than Income Taxes	42,000	35,069	47,000	5,000	11,931
Interest Income	400	746	500	100	(246)
Interest Expense	110,500	115,644	115,700	5,200	56
Net Income	(511,330)	(598,596)	(451,500)	59,830	147,096
Capital Contributions	850,000	572,740	1,250,000	400,000	677,260
Change in Net Assets	\$338,670	\$(25,856)	\$798,500	\$459,830	\$824,356

Source: Budget Summary of Martin County Water District

Fiscal 2007 budgeted revenues exceed Fiscal 2006 actual revenues by 40.6 percent. Fiscal 2007 budgeted operating expenses exceed Fiscal 2006 actual operating expenses by 28.5 percent and Fiscal 2006 budgeted expenses by 4.9 percent. The budgeted Net Loss for Fiscal 2007 is 24.6 percent less than the actual Net Loss for Fiscal 2006. The increase in operating revenues is due to the anticipated rate increase associated with the RD loan.

Compared to Fiscal 2001 actual results, the compound annual growth rate for revenues is 8.7 percent and for operating expenses is 11.2 percent.

VI. Expected Improvement/Improvement Timeline/Baseline

- Within one year based on financial reports indication MCWD is in the red.

VII. Cost/Benefit Analysis and Support

Cost Analysis

- An increase will be beneficial in many ways. A Rate Case will help in determining this.

Benefit Analysis

- The district is in a financial crunch and additional funds are desperately needed in order to continue to function.

Cost/Benefit Summary

Other Costs or Benefits

VIII. Company Response

Recommended Action

Approved Approved with Exception Rejected

- MCWD agrees with the recommendation and plans to implement as intended.

IX. Implementation Steps

Step 1: Place Rate Case Analysis on the next MCWD Board agenda and determine if Board is willing to do so.

- Person Responsible: Board of Commissioners and General Manager
Timeline: May 21, 2007.

Step 2: Pending Board approval, send a letter of request to PSC for Rate Case Analysis.

- Person Responsible: Joe Hammond Timeline: May 22, 2007

Step 3: Pending response from PSC, schedule a time for completing a rate case.

- Person Responsible: Board of Commissioners and General Manager
Timeline: Pending PSC Approval

X. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson

- **Discussion**

No comment assuming the actions to be taken in May occurred as described.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- **Chapter -- V**
- **Recommendation Number -- 2**
- **Priority -- A**

II. Recommendation Statement

2. Clearly define the roles of the Commissioners and General Manager. The definitions should be explicit as to the scope and limits of authority, the types of decisions that can be made, and areas of responsibility. (Refers to Finding No. 3)
 - Change the District's management and governance processes so that the General Manager has responsibility for all functional areas, including finance and accounting and customer service. (See Recommendation No. 7)
 - Clearly define decision making responsibilities for the following:
 - Personnel matters (e.g., hiring and firing, authorizing overtime, pay raises for individuals, benefits)
 - Financial decisions (e.g., spending authorization, limits on the ability to commit the District to contracts, spending outside the budget)
 - Operating decisions (e.g., setting construction and maintenance priorities)
 - Expand the District's Fiscal Policies to fully define the role of the General Manager including roles related to budget development and approval, variance analysis, and disbursement approval.
 - The objective is to eliminate any overlap between the Board and the General Manager. The General Manager should have full authority for all decisions in his areas of responsibility, with the Board providing after-the-fact oversight.

III. Background/Findings

3. The roles and responsibilities of the General Manager and Board of Commissioners are not clearly defined and the organization is not appropriately structured as the District evolves from its crisis mode of operations.
 - The current organization structure in which all functional areas do not report to the General Manager and in which members of the Board of

Commissioners have significant hands-on involvement in the day to day operations of the District is not typical in the utility industry.

- As noted in Chapter One, many significant problems facing the District over the past few years have been fixed in large part by the active participation of the individual members of the Board of Commissioners.
- Given that so many of these problems have been resolved, the District should evolve back to a more traditional organization and management structure for the day-to-day operations of the District. That is, an organization structure in which all functional areas report to the General Manager and the Board of Commissioners becomes an oversight body rather than one involved in the day-to-day activities of the District.
- The General Manager does not currently direct accounting and finance and customer service activities (i.e., the business office activities).

IV. Expected Improvement/Improvement Timeline/Baseline

- Implemented immediately based on the need for a more standard organization.

V. Cost/Benefit Analysis and Support

Cost Analysis

- No cost necessary

Benefit Analysis

- Better communication with the General Manager regarding financial expenditures

Cost/Benefit Summary

Other Costs or Benefits

VI. Company Response

Recommended Action

Approved Approved with Exception Rejected

Because of the current financial strain, the district works very closely with our accounting firm to prioritize bills to be paid and orders to be processed. The manager will need to continue to do this until we are in a better financial status.

MCWD agrees with the recommendation and plans to implement as intended.

VII. Implementation Steps

Step 1: Change the District's management and governance processes so that the General Manager has responsibility for all functional areas, including finance, accounting and customer service. (See Recommendation No. 7) The district will begin to address all issues through board meetings involving the General Manager.

- Person Responsible: Board of Commissioners and General Manager
Timeline: Immediately

Step 2: Clearly define decision making responsibilities for the following:

- Personnel matters (e.g., hiring and firing, authorizing overtime, pay raises for individuals, benefits)
- Financial decisions (e.g., spending authorization, limits on the ability to commit the District to contracts, spending outside the budget)
- Operating decisions (e.g., setting construction and maintenance priorities)
- Person Responsible: Board of Commissioners and Joe Hammond
Timeline: Immediately

Step 3: Expand the District's Fiscal Policies to fully define the role of the General Manager including roles related to budget development and approval, variance analysis, and disbursement approval.

- Person Responsible: Board of Commissioners and General Manager
Timeline: Immediately

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson

- **Discussion**

No comment

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- V
- Recommendation Number -3
- Priority - C

II. Recommendation Statement

3. As soon as funding is available, begin to pay the members of the Board of Commissioners salaries based on guidelines provided by Kentucky Administrative Regulations. (Refers to Finding No. 4)

III. Background/Findings

4. The members of the Board of Commissioners are not properly compensated for services provided.
 - Board members receive no compensation from the District.
 - Board members view the services they provide to the District as a personal and civic responsibility. These services and the level of effort expended by the current Board on behalf of MCWD ratepayers has been significant.
 - MCWD ratepayers should not expect that Commissioners continue to provide these services on a volunteer basis.

IV. Expected Improvement/Improvement Timeline/Baseline

- Implemented within three years based on the fact that rates have not increased and current funding is needed to keep operations running.

V. Cost/Benefit Analysis and Support

Cost Analysis

- This would need to be determined by the Board of Commissioners when funding is available.

Benefit Analysis

- If the operation is financially successful, these positions should be compensated so that people will not be discouraged from giving of their time.

Cost/Benefit Summary

- The benefit would show Board Members an appreciation for service to the community.

Other Costs or Benefits

VI. Company Response

Recommended Action

Approved **Approved with Exception** **Rejected**

- MCWD agrees with the recommendation and plans to implement as intended.

VII. Implementation Steps

Step 1: The district will place on board agenda on May 21 to approve filing for rate case.

- Person Responsible: Board of Commissioners Timeline: 5-21-2007

Step 2: Once approved by board, send letter of request to PSC.

- Person Responsible: Joe Hammond Timeline: 5-23-2007

Step 3: Wait for approval and hopefully schedule with PSC for Rate Case analysis

- Person Responsible: Joe Hammond Timeline: 6-30--2007

VIII. Comments/Clarification of Intent

- **Consultant Name: Joel F. Jeanson**

- **Discussion**

The implementation steps should be reviewed and reconsidered. It is not clear how these implementation steps relate to the recommendation.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- V
- Recommendation Number – 4
- Priority – A

II. Recommendation Statement

4. As soon as funding is available, arrange for an external audit of the District's financial statements and then continue these audits on a timely basis going forward.

III. Background/Findings

4. The last audited financial statements are for the year ended December 31, 2001.
 - The District does not currently have the funds to pay for annual financial audits.
 - The CPA firm hired to complete the Fiscal 2001 audit was not fully paid as of September 30, 2006.
 - The local CPA firm's independence is impaired given their primary role in developing the District's financial statements. Therefore, they will be unable to be engaged to audit those financial statements

IV. Expected Improvement/Improvement Timeline/Baseline

- Within two years based on financial reports and the need for MCWD to build funds for this.

V. Cost/Benefit Analysis and Support

Cost Analysis

- This is an activity which would need to go through the bidding process.

Benefit Analysis

- This would benefit MCWD in protection of funds, the way they are processed, budgeted and expended.

Cost/Benefit Summary

Other Costs or Benefits

VI. Company Response

Recommended Action

Approved **Approved with Exception** **Rejected**

- MCWD agrees with the recommendation and plans to implement as intended.

VII. Implementation Steps

Step 1: Place on Board Agenda for discussion.

- Person Responsible: Board of Commissioners and General Manager
Timeline: When money becomes available.

Step 2: Pending board approval, take bids for an external audit

- Person Responsible: Board of Commissioners and Joe Hammond
Timeline: When money becomes available.

Step 3: Bring bids to board for approval.

- Person Responsible: Board of Commissioners and General Manager
Timeline: When money becomes available.

Step 4: Contact accepted bidder to schedule audit

- Person Responsible: General Manager Timeline: When money becomes available.

VIII. Comments/Clarification of Intent

- **Consultant Name: Joel F. Jeanson**
- **Discussion**

It is important to address the funding issue. The answer should be to include the pro forma expense in the rate case.

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter – V
- Recommendation Number – 5
- Priority – C

II. Recommendation Statement

5. As soon as funding becomes available, establish a position of bookkeeper / accountant with responsibility for accounting and other transactional accounting processes. (Refers to Finding No. 8)
 - Check signing and bank account reconciliations should remain separate from the duties of the bookkeeper / accountant.
 - In the event the District pursues the regionalization of certain functions, this could be a function that becomes regionalized. (See Recommendation 6)

III. Background/Findings

8. The District's Fiscal Policies are generally reasonable for a utility of its size.
 - The District has well-defined and up-to-date Fiscal Policies.
 - All finance and accounting services are provided by an outside CPA firm. According to the firm's response to the District's RFP, it will provide services to the District including but not limited to:

“(A)ccounts payable services with purchase order system development and maintenance, accounts receivable service development and reconciliation, cash reconciliation and internal control development and maintenance, complete payroll services and reporting, relative accounting services and general ledger maintenance in accordance with the PSC prescribed chart of accounts, special reporting as needed including PSC reports, budgeting and analysis, assistance with required audits, and other accounting services as required for a flat fee of \$3,250 per month.”

- While members of the Board of Commissioners interact frequently with the outside CPA firm, no one at the District appears to have the financial expertise needed to provide accounting direction or perform effective analyses of financial results.
- The District's Fiscal Policies do not provide for active involvement of the General Manager. For example, the role of the General Manager related to budget development and approval and the approval of disbursements is not defined in the Fiscal Policies. Also, the General Manager does not see

financial results and budget variances until the financial information is presented to the Board each month.

- The accuracy of accounts receivable balances is in question as a result of the difficulty reconciling information coming from the billing / customer information system.

IV. Expected Improvement/Improvement Timeline/Baseline

- Within three years based on financial reports and the need for MCWD to build revenue.

V. Cost/Benefit Analysis and Support

Cost Analysis

- Personnel Salary

Benefit Analysis

- *We are very satisfied with the work our current CPA is doing. This position might make things smoother for them.*

Cost/Benefit Summary

Other Costs or Benefits

VI. Company Response

Recommended Action

Approved Approved with Exception Rejected

- MCWD agrees with the recommendation and plans to implement as intended.

VII. Implementation Steps

Step 1: Place on Board Agenda for discussion.

- Person Responsible: Board of Commissioners and General Manager
Timeline: May 30, 2010.

Step 2: Pending board approval, go through the hiring process

- Person Responsible: Board of Commissioners and General Manager
Timeline: June 30, 2010.

VIII. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**
No comment

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter – V
- Recommendation Number – 6
- Priority – B

II. Recommendation Statement

- The District should encourage its management staff and the members of the Board of Commissioners to take better advantage of State sponsored training opportunities

III. Background/Findings

- While the District has taken advantage of some State sponsored training for management staff and members of the Board of Commissioners in the past, it has not taken full advantage of the training offered by the State and the Kentucky Rural Water Association.

IV. Expected Improvement/Improvement Timeline/Baseline

- Within one year based on the need for additional training.

V. Cost/Benefit Analysis and Support

Cost Analysis

- Registration Fees and Room and Board during the training.

Benefit Analysis

- Commissioners and personnel who are more informed and updated on training.

Cost/Benefit Summary

Other Costs or Benefits

VI. Company Response

Recommended Action

Approved Approved with Exception Rejected

- MCWD agrees with the recommendation and plans to implement as intended.

VII. Implementation Steps

Step 1: When trainings are scheduled, they will be brought to the Board's attention during meetings, so the Board can decide who needs to go.

- **Response:** District agrees this needs to be done.
- **Person Responsible:** Board of Commissioners and General Manager
Timeline: On-going.

IX. Comments/Clarification of Intent

- **Consultant Name:** Joel F. Jeanson
- **Discussion**
No comment

**Martin County Water District
Management Audit Action Plan**

I. Report Reference

- Chapter -- V
- Recommendation Number --7
- Priority -- A

II. Recommendation Statement

7. Consider increased regionalization to achieve economies of scale and reduce vulnerabilities to supply and personnel interruptions. (Refers to Chapter II, Findings 3 and 9)
- MCWD lacks adequate scale to provide consistently all professional functions necessary, such as engineering, laboratory, bookkeeping, and pollution control.
 - An unplanned loss of personnel in any section creates immediate problems in timely completion of work or performance of critical functions.
 - MCWD relies on free or low cost services not under its control for technical services. These services are provided by DOW, Kentucky Rural Water Association and Big Sandy.
 - MCWD lacks significant scale to leverage lower costs from suppliers and cannot maintain a full inventory of materials.

III. Background/Findings

3. MCWD makes good use of technical services available to assist it.
- MCWD has developed a good rapport with the Kentucky Department of Water (DOW) Drinking Water Branch. MCWD regularly receives and follows technical advice from Drinking Water Branch experts. DOW technical services are provided without charge.
 - MCWD extensively utilizes the assistance of the Big Sandy Area Development District (Big Sandy) in identifying, securing and administering grants and loans. The Authority also promotes economic development in the county. Funding and economic development is provided without charge and grant administration is provided by a fee taken from the grant.
 - MCWD regularly seeks the assistance of the Kentucky Rural Water Association. For example, the Association conducted a Peer Review of MCWD in 2005 and issued its report in January 2006. MCWD pays membership dues to the Association, but specific assistance activities, such as the peer review, are provided without additional charge.

- MCWD routinely receives technical assistance and advice from its principal engineering firm, O'Brien & Gere (OB&G). OB&G provides advice and counsel on many technical topics to the District. OB&G only receives payments for specific engineering and construction management projects once the project has been bid. The frequent advice and assistance is provided without charge.
9. Adequate resources – labor, materials and equipment – are not available for the water provisioning process.
- There are only four full-time water treatment plant operators and two on-call part-time operators. A seven by 24 hour operation requires a minimum of five full-time operators to cover 21 shifts per week and have spare capacity for vacations, illness, training and other absences.
 - There are only five distribution employees. The sixth distribution employee, the supervisor, recently became the fourth treatment plant operator and was not replaced in distribution. One of the distribution employees is largely occupied by sampling and other duties and is normally unavailable for main, service and meter work. Many jobs require a crew of four or more because of difficult traffic management conditions. With vacations and other absences, this often results in having a single crew doing one job at a time each day.

IV. Expected Improvement/Improvement Timeline/Baseline

- Never
- Cost Analysis
- Benefit Analysis
- Cost Benefit Summary
- Other Costs or Benefits

V. Company Response

Recommended Action

Approved Approved with Exception Rejected

- MCWD does not agree with this recommendation.

VI. Comments/Clarification of Intent

- Consultant Name: Joel F. Jeanson / David Vondle
- Discussion

BWG disagrees with the District's response. In our opinion, MCWD by itself cannot afford the availability of resources that larger entities benefit from. It is not necessary to fully merge MCWD with other entities to achieve the economies of scale and other benefits of a larger organization. MCWD could enter into resource sharing agreements with other like minded regional utilities for some or all of the areas that could benefit from larger scale.

Areas in which MCWD could benefit from regional resource sharing include:

- Capital program planning, funding and management, which MCWD does not have the capability for in-house
- Maintenance engineering and technical services – problem solving could be improved by sharing scarce technical resources with several utilities
- Water treatment plant control rooms – control rooms could be consolidated and the remote plants would not need 7 X 24 attendance
- Distribution crew reinforcement for emergencies and special projects - traveling crews with specialized equipment could assist MCWD
- Watershed management and pollution control programs upstream of MCWD to improve raw water quality
- Materials management – cooperative procurement could lower material, equipment and tool prices. A cooperative warehouse could provide better availability of critical, but rarely used items
- Information systems – cooperative billing, customer service and accounting systems could improve efficiency, customer responsiveness and financial integrity

APPENDIX B

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED **APR 11 2016**



Steven L. Beshear
Governor

Leonard K. Peters
Secretary
Energy and Environment Cabinet

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David L. Armstrong
Chairman

James W. Gardner
Vice Chairman

Linda Breathitt
Commissioner

April 22, 2014

Mr. John Mills
Martin County Water District
387 E. Main Street, STE 140
Inez, KY 41224

Dear Mr. Hammond,

The Management Audit Branch (MAB) has completed its review of the progress report filed on February 19, 2013, which describes the Company's actions to implement the recommendations contained in the March 19, 2007 management audit final report. As a result of our review, six additional recommendations or recommendation steps, have been placed in the COMPLETED category:

II-1.10 IV-2 IV-5.2 V-2.1 V-2.2 V-7

The format for the MAB's response has changed. As you know, several steps were outlined for many of the consultant's recommendations. In this response, each recommendation step has been addressed. In Martin County Water District's response, please follow the same format. If there is a step for which there has been No Reportable Action, please respond to that step accordingly. It is the MAB's belief that this format will aid both MCWD and MAB staff to better follow the progress in addressing the remaining recommendations.

I apologize for the delay in responding to MCWD's Progress Report. Changes to MAB staff have resulted in the re-assignment of responsibility for ongoing management audits, including MCWD. Commission Staff have reviewed the 2007 Barrington-Wellesley Group Final Report and each of MCWD's Progress Reports. Recognizing the extended duration of the MCWD management audit, it is the intent of Commission Staff to move the MCWD management audit process forward toward completion. Commission Staff proposes to schedule a meeting with appropriate MCWD Executives to discuss the progress made on the management audit to date and discuss all recommendation steps that remain Ongoing. I will contact you shortly to schedule a mutually convenient date and location of the meeting. The next filing date is September 30, 2014.

Please let me know if you have any questions.

Sincerely,



Daryl E. Newby, Director
Financial Analysis Division

502-782-2645

Encl.

Martin County Water District
Management Audit Recommendations

Status as of April 22, 2014

RECOMMENDATION STEPS COMPLETED THIS RESPONSE: (6)

II-1.10 IV-2 IV-5.2 V-2.1 V-2.2 V-7

ONGOING RECOMMENDATION STEPS: (37)

II-1.3 II-1.4 II-1.5 II-1.7 II-1.9 II-2.1

II-2.2 II-2.3 II-2.4 II-2.5 II-3.1 II-3.2

II-3.3 II-3.4 II-5.1 II-5.3 II-6.1 II-6.2

II-6.3 II-6.6 II-6.7 III-1 III-2.1 III-2.2

IV-1.1 IV-1.3 IV-3.2 IV-6 IV-7 IV-9

V-4.1 V-4.2 V-4.3 V-4.4 V-5.1 V-5.2

V-6.1

AGREE TO DISAGREE: (0)

MARTIN COUNTY WATER DISTRICT
MANAGEMENT AUDIT PROGRESS REPORT
COMPREHENSIVE MANAGEMENT AUDIT
December 2009

KENTUCKY PUBLIC SERVICE COMMISSION RESPONSE

Notation: The first part of each response is a summary of the Management Audit Branch's ("MAB") interpretation of Martin County's statements of implementation activity and status. The information in this part is for Commission use and may contain some background information. Any needed corrections to factual information should be reported to the Management Audit Branch immediately.

Martin County appears to be moving forward on some of the recommendations, especially with the filing of the Meter Testing Plan and the Water Loss and Leak Detection Program. In future progress reports, it is important to continue to provide as much narrative detail and supporting documentation as possible.

Recommendation Number II-1:

Through a combination of revenue increases and cost reductions, increase water provisioning process resources.

Step 3: Prioritize water loss reductions to qualify for PSC rate increases and petition the PSC for interim relief from the water loss requirement if necessary.

ONGOING

Provide an update on the hiring of additional employees and purchase of water loss and leak detection equipment.

Step 4: Install paid tap requests in a timely manner.

Staff notes that although the minutes of the Board Meeting in which the non-recurring charges were approved by the Martin County Utility Board Attachments 1 and 2), the cost support for those charges was not included in MCWD's response. MCWD notes that non-recurring charges have been approved in the Board's Minutes, but were not sent to the PSC,

ONGOING

Please explain when MCWD plans to submit the non-recurring charge tariffs to the Commission.

Step 5: Support bill collection turn-offs and theft investigations in a timely manner to increase bill collections.

Staff has previously noted that MCWD now has the ability to track accounts and meter pulls and service orders by category. In its response MCWD provided meter pull and Meter Setback data for non-payment 2011-2012 as requested. MCWD stated that there is an ongoing investigation on reconnections.

ONGOING

Provide any and all updates regarding the investigation referenced for Step 5. Also explain whether MCWD's account receivables are reviewed on a regular basis.

Step 7: Further reduce electricity costs.

ONGOING

Please explain whether MCWD has experienced any reduction in its electricity use and expenses. Cite any specific instances in which cost saving measures have been implemented.

Step 9: Add a fifth water treatment plant operator to reduce overtime and provide a resource for preventive maintenance and record keeping assistance.

MCWD states that due to the recent turnover of personnel, the District is unable to fill the training position for the treatment plant operator.

ONGOING

Provide an update on the status of hiring, training and certifying a fifth plant treatment operator.

Step 10: Add an additional back hoe or excavator and two trucks and trailers appropriate to haul the additional equipment.

MCWD states in its Progress Report that it has purchased a truck, excavator, and trailer for main and service repair and that contractors, using coal severance money, are being used to replace those lines.

COMPLETE

The District has fulfilled the intent of this step and it is being placed in the Complete category. No further reports are required for Recommendation II-1, Step 10.

Recommendation Number II-2:

Develop a comprehensive water loss reduction program.

Step 1: Improve the metering of produced and distributed water to include in-line master meters from the Clearwell tank, all subsidiary distribution tanks and on all major distribution mains. Make immediate use of the existing A system meter for determining the relative water loss between the A and B systems.

Staff notes that MCWD provided the requested Master Meter Location Map and Bid Tabulation sheet relating to Vanguard Construction's bid.

ONGOING

Provide an update on the progress made to date addressing the improvements outlined in Step 1.

Step 2: Use the information from additional metering of distributed water as compared to metered consumed water to identify water losses by main. Rank them from highest to lowest water loss. The Kentucky Rural Water Association Peer Review Report contains detailed recommendations for this process.

ONGOING

Provide an update on the progress made in addressing water losses as set out in Step 2.

Step 3: Prioritize, based on volumes of water lost, the mains and services for replacement or repair.

ONGOING

Provide an update on the progress made in prioritizing replacement or repair of mains as set out in Step 3.

Step 4: Prior to commencing repair and replacement work on each main, identify and resolve any water theft, metering or related problems.

ONGOING

Provide an update on the progress made in identifying and resolving water theft, metering or related problems.

Step 5: Replace or repair all excessively leaking mains and services over a three-year period.

MCWD states that it is in the process of developing a comprehensive water loss reduction program.

ONGOING

Provide an update of MCWD's progress in replacing or repairing all excessively leaking mains and services as outlined Step 5. Identify any decreases in water loss resulting from its efforts.

Recommendation Number II-3:

Implement a preventive maintenance program including upgrading the leak detection and repair program.

Steps 1 – 4: Staff notes that MCWD has completed the replacement of mains and service lines in the Wolf Creek area and has replaced approximately 50 hydrants in the area.

Step 1: Establish records for each piece of equipment (such as pumps, injectors, valves, pipe segments and vehicles.)

ONGOING

Step 2: Track all maintenance performed on each piece of equipment and pipe segment.

ONGOING

Step 3: Develop preventive maintenance routines for select facilities including routine flushing and valve maintenance. Implement manufacturers' recommended maintenance and AWWA guidelines as available.

ONGOING

Step 4: Establish ongoing leak detection and repair program following the completion of the water loss reduction program.

ONGOING

For each Step 1 – 4 please provide an update of any progress made toward addressing the step since MCWD's February 19, 2013 response was submitted. Include a discussion of preventative maintenance and leak detection upgrades.

Recommendation Number II-5:

Establish a watershed pollution control program.

Staff notes that for Steps 1 and 3 no responses were provided, but MCWD states an update (as of 2012) will be provided in the next report.

Step 1: Implement a Crum Reservoir pollution control program including annual septic tank system dye test by the Health Department and mitigation of roadway runoff.

ONGOING

Please provide an update of the status of Step 1.

Step 3: Work cooperatively with other water districts to establish an upstream regional watershed management program for the Tug Fork including septic tank monitoring, solid waste disposal programs and tributary testing and remediation.

ONGOING

Please provide an update of the status of Step 3.

Recommendation Number II-6:

Develop and implement a long-term plan to reduce the system's vulnerability to supply disruptions.

Step 1: Expand the Crum Reservoir capacity by raising and repairing the dam and/or dredging the reservoir.

ONGOING

Please provide the status of Step 1.

Step 2: Install a Crum Reservoir bypass (pipe and valves).

ONGOING

Please provide the status of Step 2.

Step 3: Expand the Treatment Plant capacity (in process).

ONGOING

Please provide the status of Step 3.

Step 6: Expand looping and valving of the transmission and distribution system.

MCWD responds it has installed 14 master meters and a total of 42 new valves.

ONGOING

Explain whether MCWD believes Step 6 is complete. If not complete, explain whether MCWD has substantially completed this step and what remains to be done.

Step 7: Expand distribution tank capacities or add additional distribution tanks.

MCWD responded in an earlier Progress Report that the Buck Creek tank was to be in operation by February 2011.

ONGOING

Provide an update as to whether the tank is in operation and if so, provide the date on which it went into operation.

MCWD provided an attachment (Attachment 7) to its response that showed its water loss for 2012 to be 58 percent. For the next progress report, provide the same support showing water loss for 2013.

Recommendation Number III-1:

Establish an in-house capital program planning and management function staffed by one engineer. Alternatively, this capital program planning and management function could be provided by a regional resource.

MCWD responds that Big Sandy ADD Water Management Council has the ability to block a MCWD project; however such an action has never occurred since the Council was formed. Projects are reviewed and if viable to the district the project pertains to, approved to be sent to the state for funding purposes. Staff notes that MCWD did not provide a copy of the 2011 and 2012 capital program plans as requested. MCWD did provide updates to the 2011 and 2012 Capital Project Plans. For 2012, MCWD reports it began replacing 3 miles of old 6" water lines in the Wolf Creek area with new 6" lines and began replacing all customer service lines in the area.

ONGOING

For the next progress report, provide a copy of the 2013 Capital Project Plans submitted to the Big Sandy ADD Water Management Council. If copies do not exist, explain how the projects are submitted to, and reviewed by the Council.

Recommendation Number III-2:

As practical, prioritize water loss reduction programs over system expansion programs until water losses are reduced to 15 percent or less.

MCWD reports that approximately 3 miles of 6" line has been replaced on Route 1714 and all service lines have been replaced, including setters and boxes.

Step 1: The 2007 IED grant money should be applied first to installing in-line master meters and pinpointing water losses by main.

ONGOING

Please provide an update including how many master meters and service lines have been replaced and how many remain to be replaced.

Step 2: After the water losses have been pinpointed, consider a service line leak repair replacement program rather than a combined main and service line replacement program where practical.

ONGOING

For the next Progress Report, please provide an update concerning progress toward addressing Step 2, including whether MCWD has been successful in pinpointing water losses. Also, please explain how service line leaks are identified and prioritized.

Recommendation Number IV-1:

Improve procedures to identify theft of service.

Step 1: Provide incentives to meter readers and other District employees to identify thefts of service that lead to the recovery of amounts owed to the District.

MCWD states this step would need to be investigated and policies written for all personnel to follow.

ONGOING

Please provide an update on MCWD's efforts in this investigation and provide copies of any written policies resulting from the investigation.

Step 3: Use the 2007 Martin County enhance 911 GIS/GPS initiative to identify premises receiving District-supplied water who are not being billed for that service.

MCWD reports that it is still working with the post office and DES to acquire 911 addresses for all water district customers. For the next Progress Report,

ONGOING

Provide an update on MCWD's efforts to acquire 911 addresses.

Recommendation Number IV-2:

Establish procedures and take action necessary to assure compliance with MCWD Tariff Sheet No. 19.

In its response, MCWD states that after meter readings have been entered and verified, a consumption report is printed. If an unusually high reading is detected, the customer is called and informed they may have a leak. If contact is not made, a work order is developed and placed into the system for action.

COMPLETE

The District has fulfilled the intent of this Recommendation and it is being placed in the Complete category. No further reports are required for Recommendation IV-2.

Recommendation Number IV-3:

Improve collections of past due accounts.

Step 2: Send disconnect notices to those customers who have not paid their bills on time as allowed by Commission-approved rules and regulations.

Step 2 MCWD states it is now sending out disconnect notices to all customers that are not paying on time. The customer is given 10 days to pay or make arrangements to pay. If the customer does not comply, the meter is pulled for non-payment. MCWD provided a total list of delinquent (pending disconnect) customers, but states it cannot break down its delinquent list by year. MCWD states its attorney to pursue the collections of the outstanding balances.

ONGOING

For the next Progress Report, provide a similar report (to Attachment No. 6) of pending disconnects, and explain whether it believes its attorney has been successful in collecting those delinquent accounts. If uncollected accounts remain on the list that are over 30 days old, explain whether payment arrangements have been made for those accounts, or whether service has been, or will be disconnected.

MCWD reports that regarding a tariff issue, it is working through the County Judge Executive to withhold fire department funding to enforce reporting procedures and is waiting a reply. For the next progress report, please provide an update of that effort.

Recommendation Number IV-5:

Provide meter readers additional tools to complete their routes timely and safely.

Step 2: Provide devices (e.g., pepper spray) that can be used to protect the meter reader from hazardous situations.

MCWD reports that it has purchased plastic tubes (to read submerged meters), shoes, boots, and hand pumps (to pump water out of boxes).

COMPLETE

The District has fulfilled the intent of this step, and it is being placed in the Completed category. No further reports are required for Recommendation IV-5, Step 2. Completion of Step 2 also completes the intent for Recommendation Number IV-5. No further reports are required for Recommendation IV-5.

Recommendation Number IV-6:

Consider implementing cycle billing to shorten the meter reading-to-billing cycle and improve cash flows to the District.

ONGOING

For the next progress report, please explain whether the actual meter reading to billing timeline has improved since the audit report was issued.

Recommendation Number IV-7:

Consider implementing bi-monthly meter reading for residential customers while continuing to bill customers monthly.

Previously, MCWD reported that bi-monthly billing was to be placed on the agenda for the February 2011 Board meeting. No further progress was reported in the current Progress Report.

ONGOING

Provide a copy of the Board minutes in which bi-monthly billing was discussed. If minutes are not available, provide the status of whether the issue has been discussed and the decision made by the Board concerning implementation.

Recommendation Number IV-9:

Complete a cost-benefit study of AMR prior to making further investments in AMR technology.

In its July 2011 response, the District reported that it had prioritized the Radio Read Meters as its top priority with the Big Sandy ADD. The District now is waiting for funding.

ONGOING

Explain whether there have been any developments regarding possible funding for the meters and if not whether MCWD considers funding likely or not. If funding is received and the project proceeds, explain whether MCWD believes it will need to obtain a CPCN for the project.

Recommendation Number V-2:

Clearly define the roles of the Commissioners and General Manager. The definitions should be explicit as to the scope and limits of authority, the types of decisions that can be made, and areas of responsibility.

In MCWD's response, a further discussion of the role for the General Manager was included. In a previous response, the District provided copies of the General Manager's job duties and the Policies and Procedures Manual.

Step 1: Change the District's management and governance processes so that the General Manager has responsibility for all functional areas, including finance, accounting and customer service. (See Recommendation No. 7) The district will begin to address all issues through board meetings involving the General Manager.

COMPLETE

Step 2: Clearly define decision making responsibilities for the following:

- Personnel matters (e.g., hiring and firing, authorizing overtime, pay raises for individuals, benefits)
- Financial decisions (e.g., spending authorization, limits on the ability to commit the District to contracts, spending outside the budget)
- Operating decisions (e.g., setting construction and maintenance priorities)

COMPLETE

The District has fulfilled the intent of this Recommendation, and it is being placed in the Completed category. No further reports are required for Recommendation V-2, Steps 1 and 2.

Recommendation Number V-4:

As soon as funding is available, arrange for an external audit of the District's financial statements and then continue these audits on a timely basis going forward.

Steps 1-4 In its July 2011 response, the District reported that Steps 1 – 4 will be addressed at the February Board meeting. MCWD noted the status of the recommendation was ongoing in its February 19, 2013 Progress Report.

Step 1: Place on Board Agenda for discussion.

ONGOING

Step 2: Pending board approval, take bids for an external audit

ONGOING

Step 3: Bring bids to board for approval.

ONGOING

Step 4: Contact accepted bidder to schedule audit.

ONGOING

For the next progress report, please provide an update on the status of each step, 1 – 4. If a financial audit has been performed, please provide the results. If an audit has not been performed, explain whether an audit is planned.

Recommendation Number V-5:

As soon as funding becomes available, establish a position of bookkeeper/accountant with responsibility for accounting and other transactional accounting processes.

No reportable action concerning this recommendation.

Step 1: Place on Board Agenda for discussion.

ONGOING

For the next progress report, provide all Board meeting minutes relating to the decision concerning whether the position of bookkeeper/accountant is to be established, or the minutes relating to the decision of whether to retain a local CPA firm to take care of the bookkeeping and financial tasks of the District. If minutes are not available, explain the status of the step.

Step 2: Pending board approval, go through the hiring process

ONGOING

If Step 1 has been completed, provide the status of Step 2.

Recommendation Number V-6:

The District should encourage its management staff and the members of the Board of Commissioners to take better advantage of State sponsored training opportunities.

Step 1: When trainings are scheduled, they will be brought to the board's attention during meetings, so the board can decide who needs to go.

The District previously reported that copies of State sponsored training dates and agenda were sent to Board members.

ONGOING

For the next progress report, please provide a list showing when each Board member attended State sponsored training workshops / events for the last three years, the title of each event attended and which Board member attended each event.

Recommendation Number V-7:

Consider increased regionalization to achieve economies of scale and reduce vulnerabilities to supply and personnel interruptions.

In a previous response, the District reported that the Big Sandy ADD (member representatives: Pike County, Floyd County, Johnson county, Magoffin county and Martin County) have quarterly meetings as part of the Water Management Council to discuss upcoming projects, concerns of any of the districts, State funding and any special concerns. A letter from the Big Sandy ADD announcing the quarterly Water Management Council meeting was attached to the response.

While it is acknowledged that the District participates in Quarterly Water Management Council meetings, the intent of the recommendation was, in part, to help produce savings for the District through cooperative efforts with its neighboring utilities. The consultant's report provided several areas where savings might be realized through cooperative effort. MAB staff realizes this may be a long-term goal for MCWD and encourages MACWD to keep the consultant's report in mind going forward.

COMPLETE

The District has fulfilled the intent of this Recommendation and it is being placed in the Complete category. No further reports are required for Recommendation V-7.

APPENDIX C

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED **APR 11 2016**

Martin County Water District
Management Audit Recommendations
Status as of April 12, 2016

COMPLETED RECOMMENDATIONS: (11)

II-1.10	II-5.3	II-6.7	IV-1.1	IV-1.3	IV-2
IV-3	IV-6	IV-7	IV-9	V-6	

ONGOING RECOMMENDATIONS: (28)

II-1.3	II-1.4	II-1.5	II-1.7	II-1.9	II-2.1
II-2.2	II-2.3	II-2.4	II-2.5	II-3.1	II-3.2
II-3.3	II-3.4	II-5.1	II-6.1	II-6.2	II-6.3
II-6.6	III-1	III-2.1	III-2.2	V-4.1	V-4.2
V-4.3	V-4.4	V-5.1	V-5.2		

AGREE TO DISAGREE: (0)

Martin County Water District
Management Audit Recommendations

Status as of April 22, 2014

RECOMMENDATION STEPS COMPLETED THIS RESPONSE: (6)

II-1.10 IV-2 IV-5.2 V-2.1 V-2.2 V-7

ONGOING RECOMMENDATION STEPS: (37)

II-1.3 II-1.4 II-1.5 II-1.7 II-1.9 II-2.1
II-2.2 II-2.3 II-2.4 II-2.5 II-3.1 II-3.2
II-3.3 II-3.4 II-5.1 II-5.3 II-6.1 II-6.2
II-6.3 II-6.6 II-6.7 III-1 III-2.1 III-2.2
IV-1.1 IV-1.3 IV-3.2 IV-6 IV-7 IV-9
V-4.1 V-4.2 V-4.3 V-4.4 V-5.1 V-5.2
V-6.1

AGREE TO DISAGREE: (0)

MARTIN COUNTY WATER DISTRICT
MANAGEMENT AUDIT PROGRESS REPORT
COMPREHENSIVE MANAGEMENT AUDIT
December 2009

KENTUCKY PUBLIC SERVICE COMMISSION RESPONSE

Notation: The first part of each response is a summary of the Management Audit Branch's ("MAB") interpretation of Martin County's statements of implementation activity and status. The information in this part is for Commission use and may contain some background information. Any needed corrections to factual information should be reported to the Management Audit Branch immediately.

Martin County appears to be moving forward on some of the recommendations, especially with the filing of the Meter Testing Plan and the Water Loss and Leak Detection Program. In future progress reports, it is important to continue to provide as much narrative detail and supporting documentation as possible.

Recommendation Number II-1:

Through a combination of revenue increases and cost reductions, increase water provisioning process resources.

Step 3: Prioritize water loss reductions to qualify for PSC rate increases and petition the PSC for interim relief from the water loss requirement if necessary.

ONGOING

Provide an update on the hiring of additional employees and purchase of water loss and leak detection equipment.

Step 4: Install paid tap requests in a timely manner.

Staff notes that although the minutes of the Board Meeting in which the non-recurring charges were approved by the Martin County Utility Board Attachments 1 and 2), the cost support for those charges was not included in MCWD's response. MCWD notes that non-recurring charges have been approved in the Board's Minutes, but were not sent to the PSC,

ONGOING

Please explain when MCWD plans to submit the non-recurring charge tariffs to the Commission.

Step 5: Support bill collection turn-offs and theft investigations in a timely manner to increase bill collections.

Staff has previously noted that MCWD now has the ability to track accounts and meter pulls and service orders by category. In its response MCWD provided meter pull and Meter Setback data for non-payment 2011-2012 as requested. MCWD stated that there is an ongoing investigation on reconnections.

ONGOING

Provide any and all updates regarding the investigation referenced for Step 5. Also explain whether MCWD's account receivables are reviewed on a regular basis.

Step 7: Further reduce electricity costs.

ONGOING

Please explain whether MCWD has experienced any reduction in its electricity use and expenses. Cite any specific instances in which cost-saving measures have been implemented.

Step 9: Add a fifth water treatment plant operator to reduce overtime and provide a resource for preventive maintenance and record keeping assistance.

MCWD states that due to the recent turnover of personnel, the District is unable to fill the training position for the treatment plant operator.

ONGOING

Provide an update on the status of hiring, training and certifying a fifth plant treatment operator.

Step 10: Add an additional back hoe or excavator and two trucks and trailers appropriate to haul the additional equipment.

MCWD states in its Progress Report that it has purchased a truck, excavator, and trailer for main and service repair and that contractors, using coal severance money, are being used to replace those lines.

COMPLETE

The District has fulfilled the intent of this step and it is being placed in the Complete category. No further reports are required for Recommendation II-1, Step 10.

Recommendation Number II-2:

Develop a comprehensive water loss reduction program.

Step 1: Improve the metering of produced and distributed water to include in-line master meters from the Clearwell tank, all subsidiary distribution tanks and on all major distribution mains. Make immediate use of the existing A system meter for determining the relative water loss between the A and B systems.

Staff notes that MCWD provided the requested Master Meter Location Map and Bid Tabulation sheet relating to Vanguard Construction's bid.

ONGOING

Provide an update on the progress made to date addressing the improvements outlined in Step 1.

Step 2: Use the information from additional metering of distributed water as compared to metered consumed water to identify water losses by main. Rank them from highest to lowest water loss. The Kentucky Rural Water Association Peer Review Report contains detailed recommendations for this process.

ONGOING

Provide an update on the progress made in addressing water losses as set out in Step 2.

Step 3: Prioritize, based on volumes of water lost, the mains and services for replacement or repair.

ONGOING

Provide an update on the progress made in prioritizing replacement or repair of mains as set out in Step 3.

Step 4: Prior to commencing repair and replacement work on each main, identify and resolve any water theft, metering or related problems.

ONGOING

Provide an update on the progress made in identifying and resolving water theft, metering or related problems.

Step 5: Replace or repair all excessively leaking mains and services over a three year period.

MCWD states that it is in the process of developing a comprehensive water loss reduction program.

ONGOING

Provide an update of MCWD's progress in replacing or repairing all excessively leaking mains and services as outlined Step 5. Identify any decreases in water loss resulting from its efforts.

Recommendation Number II-3:

Implement a preventive maintenance program including upgrading the leak detection and repair program.

Steps 1 – 4: Staff notes that MCWD has completed the replacement of mains and service lines in the Wolf Creek area and has replaced approximately 50 hydrants in the area.

Step 1: Establish records for each piece of equipment (such as pumps, injectors, valves, pipe segments and vehicles.)

ONGOING

Step 2: Track all maintenance performed on each piece of equipment and pipe segment.

ONGOING

Step 3: Develop preventive maintenance routines for select facilities including routine flushing and valve maintenance. Implement manufacturers' recommended maintenance and AWWA guidelines as available.

ONGOING

Step 4: Establish ongoing leak detection and repair program following the completion of the water loss reduction program.

ONGOING

For each Step 1 – 4 please provide an update of any progress made toward addressing the step since MCWD's February 19, 2013 response was submitted. Include a discussion of preventative maintenance and leak detection upgrades.

Recommendation Number II-5:

Establish a watershed pollution control program.

Staff notes that for Steps 1 and 3 no responses were provided, but MCWD states an update (as of 2012) will be provided in the next report.

Step 1: Implement a Crum Reservoir pollution control program including annual septic tank system dye test by the Health Department and mitigation of roadway runoff.

ONGOING

Please provide an update of the status of Step 1.

Step 3: Work cooperatively with other water districts to establish an upstream regional watershed management program for the Tug Fork including septic tank monitoring, solid waste disposal programs and tributary testing and remediation.

ONGOING

Please provide an update of the status of Step 3.

Recommendation Number II-6:

Develop and implement a long-term plan to reduce the system's vulnerability to supply disruptions.

Step 1: Expand the Crum Reservoir capacity by raising and repairing the dam and/or dredging the reservoir.

ONGOING

Please provide the status of Step 1.

Step 2: Install a Crum Reservoir bypass (pipe and valves).

ONGOING

Please provide the status of Step 2.

Step 3: Expand the Treatment Plant capacity (in process).

ONGOING

Please provide the status of Step 3.

Step 6: Expand looping and valving of the transmission and distribution system.

MCWD responds it has installed 14 master meters and a total of 42 new valves.

ONGOING

Explain whether MCWD believes Step 6 is complete. If not complete, explain whether MCWD has substantially completed this step and what remains to be done.

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ONGOING

Please provide an update on MCWD's efforts in this investigation and provide copies of any written policies resulting from the investigation.

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Provide an update on MCWD's efforts to acquire 911 addresses.

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In its response, MCWD states that after meter readings have been entered and verified, a consumption report is printed. If an unusually high reading is detected, the customer is called and informed they may have a leak. If contact is not made, a work order is developed and placed into the system for action.

COMPLETE

The District has fulfilled the intent of this Recommendation and it is being placed in the Complete category. No further reports are required for Recommendation IV-2.

Recommendation Number IV-3:

Improve collections of past due accounts.

Step 2: Send disconnect notices to those customers who have not paid their bills on time as allowed by Commission-approved rules and regulations.

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ONGOING

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MCWD reports that it has purchased plastic tubes (to read submerged meters), shoes, boots, and hand pumps (to pump water out of boxes).

COMPLETE

The District has fulfilled the intent of this step, and it is being placed in the Completed category. No further reports are required for Recommendation IV-5, Step 2. Completion of Step 2 also completes the intent for Recommendation Number IV-5. No further reports are required for Recommendation IV-5.

Recommendation Number IV-6:

Consider implementing cycle billing to shorten the meter reading-to-billing cycle and improve cash flows to the District.

ONGOING

For the next progress report, please explain whether the actual meter reading to billing timeline has improved since the audit report was issued.

Recommendation Number IV-7:

Consider implementing bi-monthly meter reading for residential customers while continuing to bill customers monthly.

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ONGOING

Provide a copy of the Board minutes in which bi-monthly billing was discussed. If minutes are not available, provide the status of whether the issue has been discussed and the decision made by the Board concerning implementation.

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Complete a cost-benefit study of AMR prior to making further investments in AMR technology.

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Explain whether there have been any developments regarding possible funding for the meters and if not whether MCWD considers funding likely or not. If funding is received and the project proceeds, explain whether MCWD believes it will need to obtain a CPCN for the project.

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Step 2: Clearly define decision making responsibilities for the following:

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COMPLETE

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As soon as funding is available, arrange for an external audit of the District's financial statements and then continue these audits on a timely basis going forward.

Steps 1-4 In its July 2011 response, the District reported that Steps 1 – 4 will be addressed at the February Board meeting. MCWD noted the status of the recommendation was ongoing in its February 19, 2013 Progress Report.

Step 1: Place on Board Agenda for discussion.

ONGOING

Step 2: Pending board approval, take bids for an external audit

ONGOING

Step 3: Bring bids to board for approval.

ONGOING

Step 4: Contact accepted bidder to schedule audit.

ONGOING

For the next progress report, please provide an update on the status of each step, 1 – 4. If a financial audit has been performed, please provide the results. If an audit has not been performed, explain whether an audit is planned.

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As soon as funding becomes available, establish a position of bookkeeper/accountant with responsibility for accounting and other transactional accounting processes.

No reportable action concerning this recommendation.

Step 1: Place on Board Agenda for discussion.

ONGOING

For the next progress report, provide all Board meeting minutes relating to the decision concerning whether the position of bookkeeper/accountant is to be established, or the minutes relating to the decision of whether to retain a local CPA firm to take care of the bookkeeping and financial tasks of the District. If minutes are not available, explain the status of the step.

Step 2: Pending board approval, go through the hiring process

ONGOING

If Step 1 has been completed, provide the status of Step 2.

Recommendation Number V-6:

The District should encourage its management staff and the members of the Board of Commissioners to take better advantage of State sponsored training opportunities.

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COMPLETE

The District has fulfilled the intent of this Recommendation and it is being placed in the Complete category. No further reports are required for Recommendation V-7.

MARTIN COUNTY WATER DISTRICT
MANAGEMENT AUDIT PROGRESS REPORT
COMPREHENSIVE MANAGEMENT AUDIT
December 2009

KENTUCKY PUBLIC SERVICE COMMISSION RESPONSE

Notation: The first part of each response is a summary of the Management Audit Branch's interpretation of Martin County's statements of implementation activity and status. The information in this part is for Commission use and may contain some background information. Any needed corrections to factual information should be reported to the Management Audit Branch immediately.

Martin County appears to be moving forward on some of the recommendations, especially with the filing of the Meter Testing Plan and the Water Loss and Leak Detection Program. In future progress reports, it is important to continue to provide as much narrative detail and supporting documentation as possible.

Recommendation Number II.1:

Through a combination of revenue increases and cost reductions, increase water provisioning process resources.

Step 1 The response to MCWD closed this Step because the rate case was filed.

Step 2 The response to MCWD closed this Step because the rate case was filed.

Step 3 The District is awaiting the approval of the rate case. Also, an excavator, a trailer and a truck to haul the equipment has been purchased. Once the rate case is approved, three additional employees will be hired.

Staff notes that the rate Case No. 2010-00300 has been completed and that the District should have additional funds available to hire additional employees and equipment. For the next progress report, please provide an update on the hiring of additional employees the purchase of additional equipment for water loss and leak detection projects.

Step 4 The response is related to Step 1 above. MCWD reports that due to an oversight, the non-recurring charge cost support was not included with the rate case material. It will be sent June 2011.

Staff notes that a progress report follow-up meeting was held at MCWD offices in August 2011. MCWD staff noted that it was believed that the non-recurring charge cost support had been sent to the Commission and no response had

been received. Subsequently, Commission staff investigated and could find no record of a non-recurring charge tariff change being submitted by MCWD.

Step 5 MCWD filed attachments #14 Pending Disconnects Includes All Accounts Past Due Over 60 Days or 90 Days (as of 2/17/2011) and #15 Service Orders Dated Between 1/1/2007 and 2/17/2011 – Meter Pull Non-Pay.

Staff notes that MCWD now has the ability to track accounts and meter pulls and service orders by category. Also, the reports show that 116 meters were pulled in 2010 for non-payment. For the next progress report, please provide a report for 2011 and for year-to-date 2012 showing the Delinquent Accounts 30 days - 90 days, those accounts that have been pulled for non-payment and those accounts that have been reconnected once delinquent amounts have been paid.

Step 6 Previously closed.

Step 7 MCWD reports that two High Service pumps were installed with VFD's that should help cut electricity use and cost. Also, two new pump stations (40 East and 40 West with VFD's) should help cut electricity use and cost. Additional time is needed to evaluate savings.

Staff notes that there are no additional questions at this time. Please provide an update on the District's efforts to cut its electricity use and expenses in the next progress report.

Step 8 Previously closed.

Step 9 MCWD provided the names of the certified treatment plant operators.

Staff notes that the treatment plant may still be short one certified treatment plant operator, which would contribute to excessive overtime and expense. For the next progress report, please provide an update as to whether a fifth treatment plant operator has been trained and certified.

Step 10 MC reports that it is contemplating having a second mechanized crew devoted to main and service line repair. Adequate funding is planned for the purchase of an excavator and a trailer to transport the equipment.

Step 11 Previously closed.

Recommendation Number II-2:

Develop a comprehensive water loss reduction program.

Steps 1-3 and Step 5 MC provided an update on its water loss detection and main and service replacement issues.

Step 4 The issue of theft is addressed in Recommendation IV-1.

In its July 2011 response, MC reported on several issues:

- Water Loss: See Bids attached to the response.
- In-Line Meters with by-pass and valves: Bids were taken and Vanguard Construction was awarded the contract. See attached bid. Also, the District has 14 Master Meters ranging from 2 – 6 inches. Problems are being experienced with the meters (reading correctly or not working) and the District is working with the Supplier and Manufacturer to correct the problems.
- Valve replacements and installation of new valves: This project was included with the In-Line Master Meters. Approximately 42 new valves have been added into the system which can be used for leak detection efforts.
- Monies for Upgrade of plant: The third clarifier has been completed and approximately 1500 feet of 14 inch water line was replaced going to the new clear well tanks.

ONGOING

Staff notes that the July 2011 responses to Steps 1-3 and 5 were incomplete. Bids related to water loss Vanguard Construction's bid was not attached to the response. Also, a copy of the system map showing the location of the Master Meters was not provided.

Also, Staff notes that on December 19, 2011, MCWD submitted a Meter Testing Plan (Program) and a Water Loss and Leak Detection Program.

Meter Testing Plan

The plan begins by stating that The District has approximately 3606 meters including 5/8" meters; 1" meters; 1.5", 2" and 3" commercial meters; and 3", 4", and 6" master meters. Of the 3606 meters on MCWD's system, 1,791 meters are at least 10 years old. Regarding its Meter Testing Program, MCWD stated that it had been following the 10% testing rule since 2002 and that it had been testing at least 350 meters per year and submitting quarterly reports to the state.

On a going forward basis, MCWD committed to:

- Identifying all meters 10 years old or older
- Each meter will be tested and the test results, as well as results from the meter inspection will determine whether the meter will be replaced with a new meter, repaired and/or placed back in the system.
- For meters returned to service, test data will be entered into MCWD's billing software and attached to the account, which is available to office and management personnel.
- Quarterly meter test reports will be provided by the 10th of the month following the quarter.

MCWD's Water Loss and Leak Detection Program (Program)

The Program begins by giving a brief overview of the system. It has purchase water agreements with Kermit Water in Kermit WV, Prestonsburg City Utilities and Mountain Water District. There are approximately 200 miles of transmission main, 3594 customer service accounts, 16 pumping stations and 16 water storage tanks. The program also stated that water loss has been a continual problem mainly due to old transmission lines and customer services. The program states that the District is committed to reducing water loss by allocating resources necessary to identify all causes of water loss and improved operating efficiency. The Program goes on to outline MCWD's processes and procedures including:

- **Routine Procedures (Monthly)**
 - **Communications:** Monthly meetings involving the General Manager, Assistant Distribution Supervisor, Plant Supervisor and Office Manager will be held to address status of water loss. The group will work as a team and provide input to address water loss. Board members will be included when needed and will be updated on a monthly basis.
 - **Master Meters:** There are 18 master meters currently with plans for additional meters. All will be read and the readings recorded approximately the same time daily.
 - **Recording Readings:** All master meters readings will be obtained using the radio reading system.
 - **Consistent Meter Reading Schedules:** the District has an established meter reading schedule. All customer meters are read at approximately the same time each month to ensure consistency and to identify any potential service line problems.
 - **Field Personnel Responsibilities:** All field distribution personnel (including meter readers and plant operators) shall immediately report to their supervisor any customer reported or observed water leaks, tank overflows, telemetry problems pressure problems or other problems that could result in water leaks or loss. A work order will be generated by the supervisor or responsible personnel to investigate the problem immediately or at the earliest possible time given the urgency of the problem reported.
 - **Office Personnel responsibilities:** All office personnel shall immediately report to their supervisor any customer reported or observed water leaks, tank overflows, observed or reported pressure problems or other observed or reported problems that could result in water leaks or loss. A work order will be generated by the office supervisor or office staff and coordinate with the field supervisor or manager to make a determination whether a field crew is warranted and dispatched immediately or later given the urgency of the problem reported.

- **Recording Data:** Daily and or monthly records shall be maintained by appropriate supervisory personnel to record and analyze the following as needed:
 - Daily, weekly or monthly master meter readings
 - Daily, weekly or monthly pump station run time logs
 - Estimated water losses from line breaks, tank overflows, hydrant usage, etc.
 - Other un-metered water usage
- **Data Analysis:** Water purchased and usage data obtained and recorded shall be evaluated and analyzed on a daily/weekly/ monthly basis to determine:
 - Water production and purchase amounts
 - Metered usage
 - Known un-metered usage
 - Known losses from line breaks, etc.
 - Water loss by distribution zone
- **Focus on Distribution System Zones:** The current MCWD system has 18 separate zones as determined by the master meter placement within the system.
 - Master meter readings will be entered into a database program on a daily/weekly/monthly basis to identify usage which may indicate a line break
 - Each master meter has assigned customers. After completion of monthly customer billing, reports will be generated to determine amounts passing through the zone as compared to amounts passing through customer meters, which will indicate zone water loss.
 - Monthly water loss reports will be compiled for each zone in the system.
 - Data analysis will be focused on water usage and loss in each zone in order to prioritize leak detection efforts based on potential water loss in each area.
- **Meter Testing and Replacement:** The District has a PSC certified meter testing bench and four (4) PSC certified meter testers on staff. Customer meters will be tested and/or replaced on a periodic. The following schedule applies:
 - Larger meters (master meters and 4" and larger customer meters) shall be read on an annual basis
 - All 3" meters will be tested every two years
 - All 2" meters will be tested every three years
 - All 1" and ¾" meters are to be tested or replaced new every ten years
 - All master meters will be replaced as warranted
- **Leak Detection Procedures**

- District Personnel: On a weekly or bi-weekly basis, District personnel will be assigned to detection shifts after hours (usually 12:00 midnight to 3:00 am) when customer usage is minimal and will allow field personnel to check valves, master meters and by-pass meters to detect abnormal flows. Personnel will perform leak detection in those areas with highest know water loss.
- Outside Consultants: Outside consultants will be used as circumstances and funding dictate. The KRWA has routinely been used in leak detection. Kentucky Engineering Group, LLC have been used for leak detection also.
- Capital Improvements: As funding permits, MCWD will prioritize and acquire / install the following:
 - Internal Master Meters: Additional master meters for subsections of the system will be prioritized and acquired to more accurately monitor water usage and identify water loss.
 - By-pass Meters: Additional by-pass meters will be installed to further isolate smaller portions of the distribution system as funding permits.
 - Flow Meters: A portable flow meter is considered one of the most important tools in detecting water usage and loss. An additional unit will be purchased as funding becomes available.
 - Gate Valves: All gate valves will be exercised as recommended in KY replaced as funding becomes available.
 - Maps: The District will maintain updated distribution system maps.
 - Replacement of Older Transmission Mains: All distribution mains remain original to the system. As funding permits, new projects to replace areas of line determined to be problematic will be developed.

Staff notes that the Meter Testing Plan and a Water Loss and Leak Detection Program appear to be comprehensive and complete. However, there are several tasks in the Water Loss and Leak Detection Program which appear to hinge on adequate funding and staffing levels. Since the District has recently received approval for a rate increase in Case No. 2010-00300, there should be some additional funds for certain Program items, such as additional master meters, by-pass meters, flow meters and additional field crew and equipment. For the next progress report, please provide a summary of the District's progress / actions toward implementing each of the task areas in the Water Loss and Leak Detection Program.

Recommendation Number II-3:

Implement a preventive maintenance program including upgrading the leak detection and repair program.

Steps 1-4 MCWD reported no action taken for this recommendation.

Staff notes that no response was provided for Steps 1-4 in the July 2011 response. However, this recommendation is related to Recommendation II-2. In the next progress report, please provide an update on the District's preventive maintenance program.

Recommendation II-4 Previously closed.

Recommendation Number II-5:

Establish a watershed pollution control program.

Staff notes that for Steps 1 and 3 no response was provided. Please update the status in the next report.

Step 2 was closed previously.

Recommendation Number II-6:

Develop and implement a long-term plan to reduce the system's vulnerability to supply disruptions.

MCWD reports:

Steps 1-2. The District monitors all pressure regulators throughout the system regularly and makes adjustments accordingly. Also, the telemetry system at the treatment plant is constantly monitored for variances in system pressure.

Step 3. The third clarifier was placed into service March 2009.

Step 6. As of July 2011, the District had installed 14 Master Meters and at each Master Meter Site, three new valves (for a total of 42) have been installed.

Step 7. The Buck Creek Tank will be in operation by February 2011. Also, the District's two 500,000 gallon clear well tanks (with the higher elevation) has allowed the Coldwater Tank, which is out of service, to remain out of service.

ONGOING

Staff notes that this recommendation is related to Recommendation II-2 and that the District has submitted a Meter Testing Plan and a Water Loss and Leak Detection Program. While the plans appear to be comprehensive and complete and represents progress, the District may be having trouble implementing the two programs.

Staff notes that on August 1, 2012, the District submitted a deficiency report response dated April 11, 2012. In the response, the District responds to three deficiencies regarding unaccounted for water loss of 63%, failure to update its tariffs to include an assessed penalty for the fire department to report its quarterly

water usage, and the District's failure to test all 5/8" meters at least once every ten years. Regarding the unaccounted for water loss, the District reports the cause due to old service lines and mains and theft. A lack of personnel and funding are contributing factors, but that money to replace old main lines and service lines is becoming available. The Wolf Creek area is slated to have lines replaced.

Regarding the tariff issue, the District reports that this has been an ongoing deficiency and the District is attempting to work through the County Judge Executive to withhold fire department funding to enforce reporting procedures. The District is awaiting a reply from the County Judge Executive.

Regarding the testing of meters, the District reports that its meter testing bench has been relocated and certified by the PSC representative and that meter testing is now online. The District reports that it is now testing old meters and replacing those showing high usage with new meters. To date, 1,500 new meters have been installed. As additional funds are obtained, the replacement of older meters will continue. The Big Sandy ADD is assisting the District in obtaining funds to replace older meters with radio read meters. Also, all meters will be entered into the Bill Express software in order to track and monitor the age and testing of meters.

Staff notes that a 63% unaccounted for water loss is greater than when the management audit was initiated. The District should have additional funds available for hiring additional personnel and equipment. Though it is not clear that the District's non-recurring charges have been updated or that it has moved to implement the temporary surcharge made available to it at the completion of the rate case. For the next progress report, please provide an update on the District's efforts to hire additional personnel, purchase necessary equipment and lower its excessive water loss.

Recommendation Number III-1:

Establish an in-house capital program planning and management function staffed by one engineer. Alternatively, this capital program planning and management function could be provided by a regional resource.

The District previously reported that the Big Sandy ADD sponsors quarterly Water Management Council (Council) meetings and, along with neighboring water utilities, the District's engineering needs are addressed. The District's projects are evaluated at the quarterly meetings and an approve or a disapprove recommendation is received. When the Council approves a project, it receives a WX number to be sent to the State for review and possible funding. A Preliminary Project Cost Estimate from Kentucky Engineering Group PLLC was attached to the response. In its July 2011 response the District reported that it understands of the process was that the ADD Council approves a project and a

WX number is assigned to the project. Then the project is forwarded on to funding agencies for grant funding.

ONGOING

For the next progress report, please provide an update on the status of this recommendation. Within the Big Sandy ADD project approval process, explain whether neighboring utility representatives have the ability to block District project plans. Also provide a copy of the District's 2011 and 2012 capital program plans that the Board has approved.

Recommendation Number III-2:

As practical, prioritize water loss reduction programs over system expansion programs until water losses are reduced to 15 percent or less. MCWD reports that approximately 1000 feet on old 6 inch line was replaced on Old Route 3 N (completed October 2010) and approximately 40 old service lines were replaced on Route 908 (completed December 2010).

ONGOING

For the next progress report, please provide a list of lines repaired and replaced and the location of the repair and replacement and the number and location of service lines repaired and replaced for 2010, 2011 and 2012.

Recommendation Number IV-1:

Improve procedures to identify theft of service.

MCWD reports that:

Step 1 There are no monetary incentives in place for meter readers to catch and report theft of service. However, the new General Manager will address the issue with the Board.

Step 2 Completed previously.

Step 3 The District is still working with 911 personnel to include customers in the 911 database.

ONGOING

For the next progress report, please provide an update:

Step 1 Whether there are any incentives for meter readers to report theft or suspected theft of service and whether the meter readers have reported any theft of service in 2011 and, if so, how each case was resolved. Also, provide a copy of the Board meeting minutes where the issue was discussed and the Board decided the issue. Finally, provide a copy of the Board approved policies and

procedures regarding the reporting theft of service and how the issue is to be resolved. Finally, since the District's response to the Deficiency Report dated April 11, 2012 stated that theft of water was a contributing factor in its high water loss; provide an update on how many customers have been prosecuted for theft, and the resolution of those proceedings.

Step 2 Whether the County has implemented 911 service and a status report on progress toward having the District's customer meter location information placed into the database.

Recommendation Number IV-2:

Establish procedures and take action necessary to assure compliance with MCWD Tariff Sheet No. 19.

The District reports that its Customer usage monitoring report was attached to the response. Also, the reporting of using Master Meters in regards to the Tariff Sheet No. 19 was in error.

ONGOING

Attachment No. 17 is the District's Meter Reading Verification Report which contains the usage for the billing period. Previous reports indicated that the new billing software had the ability to monitor billing and usage data for accuracy. It is not clear how this report accomplishes that task. For the next progress report, please describe how (the procedural steps taken) customer usage and billing accuracy is being monitored.

Recommendation Number IV-3:

Improve collections of past due accounts.

Step 1 Previously completed.

Step 2 There has been no reportable action taken on Step 2.

Step 3 This recommendation is related to Recommendation IV-1 Step 2.

ONGOING

Step 2 For the next progress report, please provide an update on the number of account delinquencies for non-payment in 2011 and 2012 and how the District is working to resolve those issues.

Recommendation Number IV-5:

Provide meter readers additional tools to complete their routes timely and safely.

Step 1 Previously completed.

Step 2: The District previously reported that the meter readers had requested better equipment to pump out meter boxes full of water and that the District would purchase DC inverters, 100 ft. extension cords and small sump pump. In its July 2011 response, the District reported that that DC inverters and sump pumps have not been purchased. Further evaluation of the need for this equipment is on-going. However, hand pumps have been purchased for the meter readers to pump water out of the meter boxes.

ONGOING

It still is not clear whether the meter readers have sufficient equipment to complete their routes in a timely and safe fashion. For the next progress report, please provide an update on whether the meter readers have all the equipment necessary to complete their routes in a timely fashion and to read meters quickly and accurately.

Recommendation Number IV-6:

Consider implementing cycle billing to shorten the meter reading-to-billing cycle and improve cash flows to the District.

The District provided no reportable action being taken on this recommendation.

ONGOING

The original intent of the recommendation was to attempt to shorten the billing cycle to improve the District's cash flow. For the next progress report, please provide an update on the actual meter reading to billing timeline to demonstrate that improvements have been achieved since the audit report was issued.

Recommendation Number IV-7:

Consider implementing bi-monthly meter reading for residential customers while continuing to bill customers monthly.

The District reports that the bi-monthly billing issue will be placed on the Agenda for the February 2011 board meeting.

ONGOING

The purpose of the recommendation was to shorten the meter reading – to-billing cycle and improve the District's cash flow. Since the new billing system is able to render an estimated bill, bi-monthly meter reading is possible. For the next progress report, please provide a copy of the February 2011 Board minutes where the issue was discussed and how the issue has been resolved.

Recommendation Number IV-9:

Complete a cost-benefit study of AMR prior to making further investments in AMR technology.

In its July 2011 response, the District reported that it had prioritized the Radio Read Meters as its top priority with the Big Sandy ADD. The District now is waiting for funding.

ONGOING

The recommendation contemplated a cost benefit study being conducted to justify the radio read meters. For the next progress report, please provide an update on the status of the District's efforts to purchase and install radio read meters. Also, provide a copy of the Board minutes showing that the Board approved the effort to move to radio read meters. Also provide any attachments or handouts given to the Board as support for the project.

Recommendation Number V-2:

Clearly define the roles of the Commissioners and General Manager. The definitions should be explicit as to the scope and limits of authority, the types of decisions that can be made, and areas of responsibility.

Steps 1-3

No reportable action has been taken on this recommendation.

ONGOING

In a previous response, the District provided copies of the General Manager's job duties and the Policies and Procedures Manual. However, it did not appear that the General Manager's job description fulfilled the intent of the recommendation. For the next progress report, please provide an update on how the General Manager's job description in the Policies and Procedures Manual satisfies the recommendation.

Recommendation Number V-4:

As soon as funding is available, arrange for an external audit of the District's financial statements and then continue these audits on a timely basis going forward.

Steps 1-4 In its July 2011 response, the District reported that Steps 1 – 4 will be addressed at the February Board meeting.

ONGOING

For the next progress report, please provide an update on the status and results of the external financial audit.

Recommendation Number V-5:

As soon as funding becomes available, establish a position of bookkeeper/accountant with responsibility for accounting and other transactional accounting processes.

Steps 1-2 The District reports that Steps 1 – 2 will be addressed at the February Board meeting.

ONGOING

For the next progress report, provide the Board meeting minutes showing that the Board chose not to establish the bookkeeper position and to retain a local CPA firm to take care of the bookkeeping and financial tasks of the District.

Recommendation Number V-6:

The District should encourage its management staff and the members of the Board of Commissioners to take better advantage of State sponsored training opportunities.

The District reports that copies of State sponsored training dates and agenda were sent to Board members.

ONGOING

For the next progress report, please provide a report showing when each Board member attended State sponsored training workshops / events for the last three years; the title of each event attended and which Board member attended each event.

Recommendation Number V-7:

Consider increased regionalization to achieve economies of scale and reduce vulnerabilities to supply and personnel interruptions.

In a previous response, the District reported that the Big Sandy ADD (member representatives: Pike County, Floyd County, Johnson county, Magoffin county and Martin County) have quarterly meetings as part of the Water Management Council to discuss upcoming projects, concerns of any of the districts, State funding and any special concerns. A letter from the Big Sandy ADD announcing the quarterly Water Management Council meeting was attached to the response. In its July 2011 response, there was no further reportable action taken on this recommendation.

ONGOING

While it is acknowledged that the District participates in Quarterly Water Management Council meetings, the intent of the recommendation was, in part, to help produce savings for the District through cooperative efforts with its neighboring utilities. The consultant's report provided several areas where savings might be realized through cooperative effort. For the next progress report, please provide an update on whether the District has undertaken any discussions with its neighbors on any joint / cooperative projects.

APPENDIX D

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED **APR 11 2016**

**COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
UTILITY INSPECTION REPORT**
Report Date: December 12, 2014
Report Number: MartinCountyWD121014

BRIEF

Inspector: Jason Pennell
Inspection Date: December 10, 2014
Type of Inspection: Periodic Regulatory Compliance Inspection
Type of Facility: Treatment and Distribution
Name of Utility: Martin County Water District
Location of Facility: 387 East Main Street Suite 140
Inez, KY 41224
Purpose of inspection: Periodic inspection of utility facilities operation and maintenance practices to verify compliance with PSC regulations.
Applicable Regulations: KRS Chapter 278 and 807 KAR Chapter 5

INSPECTION

Description of Utility: Distribution system
Number of Customers: 3,700
Area of Operation: Martin County
Supply Source: Martin County Water District Water Treatment Plant
Distribution Description: Average daily consumption of approximately 1,884,997 gallons; 300 miles of distribution line; total storage capacity of approximately 2,617,000
Workforce Summary: 13 Employees
Utility Reps. in Inspection: Joe Hammond, Consultant, John Mills, Superintendent, and Tom Alley, Water Plant Operator
Date of Last Inspection: April 11, 2012
DTR from Last Inspection: 5
DTRs not Cleared:

**COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
UTILITY INSPECTION REPORT**
Report Date: December 12, 2014
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FINDINGS

Utility did not produce pressure charts that showed a continuous 24 hour pressure recording for one week per month. 807 KAR 5:066, Section 5(2).

Martin County Water District has not filed with the Commission a copy of its water purchase contracts where the utility purchases water from Mountain Water District and Kermit, WV as required by 807 KAR 5:013, Section 13.

Utility does not have a tariff in place requiring fire departments, who withdraw water from its water distribution system for fire protection or training purposes, to report usage or a penalty for failure to submit the reports 807 KAR 5:095, Section 9(1)(2).

ADDITIONAL INSPECTOR COMMENTS

Water loss for 2012 was 60.87 percent and water loss for 2013 was 60.86 percent.

During the inspection visit, the utility was made aware of the regulatory change to 807 KAR 5:006, Section 26 Section (3) which requires the addition of the date, time of inspection, and the person conducting the inspection onto inspection logs/forms of facilities. Commission Staff will verify this on the next inspection visit.

The utility stated that they have added two meters to its system to help monitor leaks. The utility is also working with Kentucky Rural Water to help identify leaks.

In 2013 the utility replaced 3 miles of distribution main and the service connections on the main. The project was financed with Coal Severance money.

Submitted by:



Jason Pennell

Utility Regulatory and Safety Investigator III

**Division of Engineering
Water and Sewer Branch
Water Utility Inspection**

General Information

TREATMENT FACILITY

1. Source Water:

Reservoir lake supplied by pumping from the Tug River

2. Plant Capacity:

2.3 million gallons per day

3. Avg. Amount Produced:

1,884,997

4. Plant Constructed

1969

5. Plant Expansion (if any):

In 1987 clarifier # 2 was added and in 2000 clarifier # 3 was added.

DISTRIBUTION FACILITY

6. Source Water:

The utilities water treatment plant, but the utility has the ability to purchase water from Kermit, WV and Mountain Water District in an emergency situation.

7. Area of Operation

Martin County

8. Miles of Water Line

300 miles of 14"-1"

9. Avg. Amount Purchased:

Does not purchase water from another utility

10. Yearly Avg. Loss:

2013-60.86%

2012-60.87%

11. Does the utility's unaccounted-for water loss exceed fifteen percent (15%) of total water produced and purchased in accordance with 807 KAR 5:066, Section 6(3)?

Yes

12. How does the utility control its water loss in the system?

Leak detection, the utility has 16 master meters they use to help with leak detection. The utility is also starting to work with Kentucky Rural Water to help with locating leaks.

13. Does the utility have a proactive water loss prevention/leak detection program in place?

Yes

14. Does the utility have a tariff in place to require water users, for the purpose of fighting fires or training firefighters to any city, county, urban-county, charter county, fire protection district, or volunteer fire protection district, to maintain estimates of the amount of water used for fire protection and training, and to report this water usage to the utility on a regular basis per KRS 278.170(3)?

Yes, but no fine

15. Is the utility limited by contract to purchase a minimum amount of water per month? If so, List the minimum amount:

No

16. Is the utility limited by contract to a maximum amount of water per month? If so, what is the maximum amount allowed:

No

17. Does the utility wholesale water to other utilities? If so, what utilities:

No

NUMBER OF CUSTOMERS

18. List the number of customers last billing period:

3,700

19. List the number of requests for service (meter connections) received by the utility:

2013-467

LAST INSPECTION FOLLOW-UP

20. Date of last PSC inspection and number of deficiencies noted in the last report:

April 11, 2012, 5 deficiencies (Unaccounted for water loss, fire department tariff, insufficient meter testing, not providing safety training, not providing instruction for its employees in accepted methods of artificial respiration).

21. Did the utility respond to the deficiencies noted in the last inspection report?

Could not find a response from the Utility

OFFICE INFORMATION

22. Does the utility display its rates and conditions for service or a sign stating they are available for review in accordance with KRS 278.160(1)

Yes

23. Does the utility provide in its place of business a suitable area available to the public for inspection of its tariffs, rules and regulations, and statutes in accordance with 807 KAR 5:011Sec.12?

Yes

24. Does the utility have any special contracts in accordance with 807 KAR 5:011 Sec.13?

Yes

25. Has the utility filed these contracts with the Commission?

No

26. Is the utility posting and maintaining regular business hours and providing employees to assist their customers in accordance with 807 KAR 5:006 Sec. 13(1)?

Yes

27. Is a telephone number published in all areas served (if service area extends to other counties) to permit customers to contact the utility in accordance with 807 KAR 5:006 Sec. 14(1)?

Yes

28. Does the utility have at least one employee designated to resolve disputes, answer questions, and negotiate partial payment plans in accordance with 807 KAR 5:006 Sec.14 (1)(a):

Yes

29. How many employees does the utility have?

13- 4 water treatment operators, 6 distribution operators, and 3 office employees

30. How many days a week is the office open in accordance with 807 KAR 5:006 Sec. 14(1) (b)?

5

31. As a minimum for utilities under \$250,000 gross annual operating revenue, are the customers of the utility provided with a designated representative available during utility's established working hours at least one day a week for (7) hours to answer questions they may have?

N/A

32. If the utility finds a customer's usage unduly high, are they notifying the customer in writing during or immediately after they do an investigation in accordance with 807 KAR 5:006 Sec. 11(4)(a)?

Yes

33. Does utility have on file at its principal office an updated water distribution system map in accordance with 807 KAR 5:006 Sec.23?

Yes

34. Has utility filed a copy of such map upon request with the Commission?

Not requested

35. Are all records required by PSC regulations kept in the office of the utility and available to staff of the PSC upon reasonable notice at all reasonable hours per 807 KAR 5:006 Sec. 24?

Yes

36. Does the utility have an Operation and Maintenance Manual per DOW's regulation 401 KAR 8:020 Section 2(13) and PSC regulation 807 KAR 5:066 Section 3(1)?

Yes

37. Does this manual contain a proactive meter testing/replacement (change out) plan?

Yes

38. Does this manual contain a proactive leak detection/water loss prevention plan?

Yes

39. Does this manual contain a proactive asset management/replacement plan?

No

CONSTRUCTION

40. What was the last calendar year the utility performed any construction?

2013

41. How was the project financed?

Coal Severance

42. The construction project consists of:

Length of water line: 3 miles of water line and the service lines

Number of pump stations:

Number of water storage facilities

43. Additional construction:

N/A

44. Did the utility receive Commission approval for this project in accordance with KRS 278.020 or KRS 278.023?

No

45. If yes, were as-built plans and a certified statement submitted to the Commission within 60 days of substantial project completion?

No

46. If not, was a written opinion by Commission staff regarding ordinary course of business (807 KAR 5:001 Sec.9) received by utility?

No

47. Proposed construction projects:

None

48. Will the utility be applying for a Certificate of Public Convenience and Necessity (CPCN)? If not, explain.

N/A

49. Will the utility be requesting Commission staff opinion to see if proposed construction is within ordinary course of business per 807 KAR 5:001, Sec. 9

No

METER TESTING INFORMATION

50. Does the utility make quarterly reports on forms prescribed by the Commission, of meter tests, number of customers and amount of refunds in accordance with 807 KAR 5:006 Sec. 4(4)?

Yes

51. Does the utility test its own meters?

Yes up to a 1" meter

52. Are utility employees certified by the Commission to do their own meter testing in accordance with 807 KAR 5:006 Sec. 17(4)?

Yes

53. How do you ensure utility meter testing staff are trained and updated on the latest procedures?

Public Service Commission

54. How does the utility ensure that meter testing equipment remain in a condition to deliver reliable testing results?

Public Service Commission

55. Does the utility have an outside agency perform its meter testing per KAR 5:006 Sec. 16(2)? If yes, provide outside agency name:

CJ Thornburg on meters over 1"

56. Has the Commission been notified?

Yes

57. Is the utility storing any or all of its meter test and historical data in a computer storage and retrieval system in accordance with 807 KAR 5:006 Sec. 18(4)?

Yes

58. Has the utility notified the Commission of this?

Yes

59. Does the utility keep a backup of this information? If so how often is this information backed up?

Yes, daily

60. Does the utility have installed at each source of supply, a suitable measuring device (master meter) per 807 KAR 5:066 Sec. 6(1)?

Yes

61. Who is responsible for the testing of the master meters?

Martin County Water District

62. Is meter testing responsibility explicitly specified in water purchase contract?

Yes

63. Identify master meter, location, size and date last tested.

	<u>Master Meter Size (location)</u>	<u>Date Last Tested</u>
1	Kermit, WV 2"	Not in use
2	Mountain Water District 2"	Not in use

64. Is the utility testing all water meters periodically in accordance with the 807 KAR 5:066 Sec. 17(1)?

Yes

65. What test period is the utility on for meters 1" and smaller?

10 years

66. In the past year, how many meters 1" and smaller has the utility tested?

600 for 2014

67. How many 1" and smaller meters have been in service for 10 years without being tested?

None

SAFETY PROGRAM

68. Has the utility adopted and executed a safety program in accordance with 807 KAR 5:006 Sec. 25?

Yes

69. Does the utility have on site a safety manual with written guidelines for safe working practices and procedures to be followed by utility employees in accordance with 807 KAR 5:006 Sec. 25(1)?

Yes

70. How does the utility instruct its employees in safe methods of performing their work per 807 KAR 5:006, Section 25(2)?

Safety Meetings

71. Are regularly scheduled safety meetings held? (Give schedule and last meeting date)

Yes, November 2014

72. Do certain employees receive instruction in accepted methods of artificial respiration in accordance with 807 KAR 5:006 Sec.25 (3)?

Yes

73. Are all vehicles equipped with First Aid Kits?

Yes

74. Are all vehicles equipped with Fire Extinguishers?

Yes

75. Are safety lights used on all vehicles?

Yes

76. Identify the person responsible for the Utility's Safety Program?

Albert Osborne

77. Did the utility experience any work related accidents of its employees within the last 12 months?

No

78. Was there a record kept of these accidents?

N/A

79. Was the accident(s) reported to the Public Service Commission in accordance with 807 KAR 5:006 Sec. 27?

N/A

80. Do all employees have identification that will identify them as an employee of the utility in accordance with 807 KAR 5:006 Sec. 20?

Yes

INSPECTION PROCEDURES

81. Does the utility inspect all its facilities per 807 KAR 5:006 Sec. 26(6)(a), (b), and (c)?

Yes

82. Identify utility inspection personnel:

John Mills

83. Has the utility adopted a written inspection procedure to assure safe and adequate operation of its facilities per 807 KAR 5:006 Sec. 26(1)?

Yes

84. Has the utility conducted a vulnerability study for terrorist and other intentional acts in accordance with the Safe Drinking Water Act Title XIV Sec. 1433?

Yes

85. Is a written inspection record kept on the following per 807 KAR 5:006 Sec. 26(3)?

Wells and/or raw water pumps: Yes
Treatment Plants: Yes

Valves:	Yes-on work orders
Pump Stations:	Yes
Blow-Off Valves:	Yes-on work orders
Water Storage Facilities:	Yes
Vehicles & Construction Equipment:	Yes
Buildings:	Yes

86. **Has the utility filed a copy of its inspection procedure with the Commission in accordance with 807 KAR 5:006 Sec. 26(1)?**

Yes

87. **Do the inspection records identify the inspections made, deficiencies found and action taken to correct the deficiencies in accordance with 807 KAR 5:006 Sec. 26(3)?**

Yes

88. **Is the utility allowed access to all utility's equipment located on a customer's property during reasonable hours for operation and maintenance in accordance with 807 KAR 5:006 Sec. 20?**

Yes

89. **Does the utility inspect all service lines between the water meter and the place of consumption in accordance with 807 KAR 5:066 Sec. 9(3)?
If not, does the utility substitute its inspection for the inspection by an appropriate state health or local plumbing inspector?**

Health Department

90. **Is proof of this inspection presented to the utility?**

Yes

METER READING

91. How often are the utility's meters read?

Monthly

92. Who reads the utilities meters?

The utility reads all but approximately 2,000 meters. The meters that are not read are read by a contractor.

93. Is the utility keeping a record of all meter reading information per 807 KAR 5:006 Sec. 7(5)?

Yes

94. Is the meter registration the same units as used for billing per 807 KAR 5:006 Sec. 7(4)?

Yes

95. Does the utility verify customer-read-meters at least once in a calendar year per 807 KAR 5:006 Sec. 6(5)? Has the utility included the form of bill to be used in its tariffed rules per 807 KAR 5:006 Sec. 6(5)?

N/A

96. Does the utility charge any flat rates for unmetered service per 807 KAR 5:006, Sec. 7(2)?

No

97. Does your utility provide free or reduced rate service to any person or entity per KRS 278.170? If yes, who?

No

98. Do you have a PSC approved tariff setting those conditions?

N/A

CUSTOMER COMPLAINTS

99. Is the utility keeping a record of all customer complaints in accordance with 807 KAR 5:006 Sec. 10?

Yes

100. Does this record show the following in accordance with 807 KAR 5:006 Sec.10?

**Name of complainant:
Address of complainant:
Date and nature of complaint:
Adjustment or disposition:**

Yes

101. Are complaint records kept for two (2) years from the date of resolution?

Yes

102. Does the utility provide the complainant an oral or written notice of their right to file a complaint with the Commission including Commission's address and phone number for all complaints that are not resolved per 807 KAR 5:006 Sec. 10?

Yes

CUSTOMER SERVICE INFORMATION

103. Does the utility provide a schedule of rates for water service applicable to the service being rendered to the customer per 807 KAR 5:066 Sec. 2(2)?

Yes

104. Does the utility provide information to customers on the method of reading meters per 807 KAR 5:066 Sec. 2(3)?

Yes

105. Does the utility have a statement of the past meter reading of a customer for a period of two years per 807 KAR 5:066 Sec. 2(4)?

Yes

WATER QUALITY/RECORDS

106. Does the utility provide to any customer, upon request, a description in writing of chemical constituents and bacteriological standards of the treated water (such as the Consumer Confidence Reports "CCR" required by the Natural Resources Cabinet) per 807KAR 5:066 Sec. 2(1)?

Yes

107. Has the utility been in compliance with the water quality requirements of the Division of Water within the last twelve months per 807 KAR 5:066 Sec. 3(1)?

No

108. If not, how many violations did the utility receive, and what were they?

One for combined turbidity above the limit.

109. Is the utility under an Agreed Order with the Division of Water?

No

110. If yes, what are the issues?

N/A

111. Does DOW have utility on tap-on ban or a line extension ban?

No

112. Did the utility have any public notifications required by Division of Water regulations such as boil water advisories, notices, CCR, etc. that need to be reported to the Commission per 807 KAR 5:066Sec. 3(4)(b)?

No

113. Is the PSC notified of these public notifications?

Yes

114. Is a cross-connection prevention program available?

Yes

115. Has the utility made a physical connection between its distribution system and that of any other water supply in the past year per 807 KAR 5:066 Sec .3(3)(b)? If yes, what system?

No

116. Was the Commission notified prior to such connections?

N/A

117. Is there a contract between systems?

N/A

CONTINUITY OF SERVICE

118. Does the utility keep a record of all interruptions per 807 KAR 5:066 Sec. 4(5)?

On work orders

119. Does this record contain the following information:

Date of interruption:

Cause of interruption:

Time of interruption:

Duration of interruption:

Remedy and steps taken to prevent recurrence:

Yes

120. Does the utility notify all customers and fire officials, if applicable, affected by a scheduled interruption per 807 KAR 5:066 Sec. 4(2)?

Yes

121. If yes, does this information state time and anticipated duration?

Yes

122. Does utility notify fire protection officials, if applicable during emergency interruptions per 807 KAR 5:006 Sec. 4(1)?

Yes

123. Does the utility have available dual/standby pumps capable of providing the maximum daily pumping demand of system for use when any pump is out of service pursuant to 807 KAR 5:066, Sec. 4 (3)?

Yes

124. Will one pump meet the maximum daily pumping demand for its affected customers?

Yes

125. Do both pumps need be operated simultaneously to meet maximum daily demand?

No

126. Are both pumps operational at this time?

Yes

127. How does utility ensure that both pumps are operational?

Inspection of pumps and alternate when the pumps are operating

128. How does utility operate/control its pump stations?

SCADA

129. If utility does not have dual pumps, are standby pumps available to meet the maximum daily demand?

N/A

130. Identify those locations of pumping stations in your system where standby pumps are not available, if any.

N/A

131. Does the utility keep a record of all water flushed from hydrants?

No

132. Are all dead ends provided with a flushing device per 807 KAR 5:066 Sec. 8(2)? If no, how many need a flushing device?

Yes

133. Are all dead ends flushed at least annually per 807 KAR 5:066 Sec. 8(2)?

Yes

134. Are all flush hydrants properly sized in accordance with 807 KAR 5:066 Sec. 8(2)?

Yes

135. Does the utility keep a maintenance record on flush valves?

On work orders

136. Who is in charge of the flushing program?

Raymond Jude

137. Does the utility keep a record of its valves in its distribution system?

Yes

138. Does the utility have a periodic exercise program for its valves?

Yes

139. Does the utility mark the location of its valves?

Yes

140. Who is in charge of the valve program?

Raymond Jude

141. Does the utility provide fire hydrants for fire protection?

No

142. Do the local fire officials provide the utility with records of water used for fire protection?

Rarely

143. Are fire hydrants constructed after 1992 certified as having adequate and reliable fire flows by a professional engineer with a Kentucky registration per 807 KAR 5:066 Sec. 10(2)(b)?

N/A

144. Who is responsible for maintenance of fire hydrants?

N/A

145. Does fire protection adversely affect utility customers' service quality during use? If yes, how:

N/A

WATER PRESSURE

146. Does the utility own at least one recording pressure gauge per 807 KAR 5:066 Sec. 5(2)?

Yes

147. Number of pressure recorders owned by the utility?

1

148. Number of pressure recorders in working order by the utility?

1

149. Is the utility maintaining a recording pressure gauge in its distribution system at least one week per month per 807 KAR 5:066 Sec. 5(2)?

No

150. Number of pressure charts over the last twelve months?

0

151. Do pressure charts show the date and time of beginning and ending of the test and the location at which the test was made per 807 KAR 5:066 Sec. 5(3)?

N/A

152. Are pressure survey records maintained at the utility's principal office per 807 KAR 5:066 Sec. 5(3)?

N/A

153. Does the pressure at any customer's service pipe anywhere in system area fall below (30) psig or exceed (150) psig per 807 KAR 5:066 Sec. 5(1)?

Utility stated it does not

WATER SHORTAGE RESPONSE PLAN

154. Has the utility filed a Water Shortage Response Plan with the Natural Resources Cabinet?

Yes

155. Has the utility filed a copy of this plan with the Public Service Commission per 807 KAR 5:066 Sec. 17?

Yes

WATER STORAGE FACILITIES

156. Provide tank location, storage capacity, last inspection and maintenance performed on all storage facilities:

	<u>Tank and Location</u>	<u>Storage and Capacity Gallons</u>	<u>Last Inspection/ Maintenance</u>
1	Bucks Creek	500,000	10/20/14
2	Little Rockcastle	150,000	10/25/14
3	292 South	100,000	10/25/14
4	Big Elk	100,000	11/2/14
5	Clear Well Tanks (2)	(2) 500,000	11/20/14
6	Turkey	50,000	11/6/14
7	Marcus Wells	200,000	10/28/14
8	Calloway	100,000	11/1/14
9	Otto Brown	260,000	12/7/14
10	Buffalo Horn	50,000	10/31/14
11	Big Sandy Airport	1,040,000	11/2/14
12	KY 645	67,000	12/1/14

157. Total Storage Capacity

2,617,000

158. Average Daily Consumption

2013 annual report 1,884,997 gallons per day

159. Will more storage facilities be proposed and when will this be done?

No

160. If total storage capacity is less than average daily consumption, will a deviation from 807 KAR 5:066 Sec. 4(4) be requested and when will this be done?

N/A

PUMPING FACILITIES

161. Provide pump location, number of Pumps/GPM, last inspection and maintenance performed on all pumping facilities:

	<u>Pump Location</u>	<u>No. of Pumps</u> <u>GPM</u>	<u>Last Inspection/</u> <u>Maintenance</u>
1	KY 40 East	2/500	12/20/13
2	Big Elk	2/240	12/20/13
3	Bone Hollow	2/30	12/15/13
4	KY 292	2/130	12/29/13
5	Turkey	2/90	12/12/13
6	KY 40	2/420	12/20/13
7	Calloway	2/90	12/10/13
8	Otto Brown	2/245	11/2/14
9	KY 645	2/90	11/2/14
10	Peter Cave	2/30	11/2/14
11	Buffalo Horn	2/60	12/15/13
12	Davella	2/350	12/10/13
13	Cassell Branch	2/30	12/15/13
14	Big Lick Branch	2/30	12/15/13

15	Meathouse	2/25	12/15/13
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Field Review: (System - Storage Tanks - Pump Stations)

Facilities Reviewed:

1.

Tank: Clearwell #1
Capacity: 250,000
Condition: No visible issues

2.

Tank: Clearwell #2
Capacity: 250,000
Condition: No visible issues

3.

Pump Station: 40 West
Condition: No visible issues

**Martin County Water District
December 10, 2014**



Meter Test Bench



Water Plant Pumps



Clarifier #2 at Water Treatment Plant



Clarifiers at Water Treatment Plant

APPENDIX E

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED **APR 11 2016**



Steven L. Beshear
Governor

Leonard K. Peters
Secretary
Energy and Environment Cabinet

Commonwealth of Kentucky
Public Service Commission
211 Sower Blvd.
P.O. Box 615
Frankfort, Kentucky 40602-0615
Telephone: (502) 564-3940
Fax: (502) 564-3460
psc.ky.gov

David L. Armstrong
Chairman

James W. Gardner
Vice Chairman

Daniel E. Logsdon Jr.
Commissioner

October 9, 2015

Mr. William Harvey
Martin County Water District
387 East Main Street, Suite 140
Inez, KY 41224

Re: Periodic Water Inspection
Martin County Water District water system
Martin County, KY

Dear Mr. Harvey:

Public Service Commission staff performed a periodic inspection of the Martin County Water District water system on December 10, 2014, reviewing utility operations and management practices pursuant to Commission regulations. The report of this inspection is enclosed with this letter.

Based on the inspector's observations, the following deficiencies were identified:

1. Martin County Water District was not conducting pressure recordings through its system as required in 807 KAR 5:066 Section 5(2). This regulation requires that a pressure gauge be maintained for a minimum of one week per month in continuous service at some representative point on the utility's mains.
2. The tariff for Martin County Water District does not address penalties for fire departments not reporting their unmetered water usage to the District as required in 807 KAR 5:095 Section 9. This regulation requires fire departments to report their water use quarterly, and that the penalty for not submitting these reports shall be stated in the tariff.
3. Martin County Water District failed to obtain Certificates of Public Convenience and necessity on construction projects that extended the area where water service is available to customers in 2013. This is a violation of KRS 278.020 which requires a Certificate of Public Convenience and Necessity before beginning construction on water line projects.

The following deficiency was noted on the previous inspection on April 11, 2012. This deficiency from the previous inspection has not been addressed. It will need to be addressed with this inspection.

Periodic Water Inspection
Martin County Water District water facilities
October 9, 2015
Page 2 of 2

4. Unaccounted for water loss is over 60%, above the 15% recoverable water loss that is permitted to be recovered in rates as required in 807 KAR 5:066 Section 6(3).

For the four deficiencies listed above, you will need to inform PSC Staff how you will remedy these deficiencies. You will need to address each deficiency in a letter providing the following information for each deficiency:

- Why the deficiency occurred
- What is being done to correct the deficiency
- What action is being taken to prevent this deficiency from occurring again

The letter addressing the District's actions regarding the deficiencies needs to be returned by November 23, 2015.

These deficiencies were not addressed with the April 11, 2012 inspection. They appear to have been corrected in the December 10, 2014 inspection, but shall continue to be monitored by the Martin County Water District.

5. Martin County Water District needs to test all of its meters every ten years. While 600 meters were tested in 2014, it appears that this number is a catch up spurt. A regular, planned meter testing program needs to be established.
6. Employees need to be trained in accepted methods of artificial respiration. This needs to be a routine process for new employees and for necessary refresher training.

If you have any questions regarding this inspection, feel free to contact me at 502-782-2614 or via email at Mark.Rasche@ky.gov.

Sincerely,



Mark Rasche, P.E., Manager
Water and Sewer Branch
Division of Engineering

Enclosures

Copy: Mr. John Mills
Martin County Water District
387 East Main Street, Suite 140
Inez, KY 41224

APPENDIX F

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED

RECEIVED

OCT 27 2015

PUBLIC SERVICE
COMMISSION

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the matter of:

Gary Lee Ball

(Your Full Name)

COMPLAINANT

vs.

Martin County Water District

(Name of Utility)

DEFENDANT

COMPLAINT

The complaint of Gary Lee Ball respectfully shows:
(Your Full Name)

(a) Gary Lee Ball
(Your Full Name)

P.O. Box 16, Lovely Ky. 41231
(Your Address)

g1ball@bellsouth.net
(Your Email Address)

(b) Martin County Water District
(Name of Utility)

Inez, ky 41224
(Address of Utility)

(c) That: (See attached letters)
(Describe here, attaching additional sheets if necessary,

the specific act, fully and clearly, or facts that are the reason

and basis for the complaint.)

Formal Complaint

vs.

Page 2 of 2

Wherefore, complainant asks

See attached letter -

(Specifically state the relief desired.)

We need reliable service and I
ask that customers in the area
where I live be serviced by
adjacent water districts until Martin
County Water District can supply reliable service

Dated at

Lovely
(Your City)

Kentucky, this

23

day

of

October
(Month)

20

15

Hay J Ball

(Your Signature*)

(Name and address of attorney, if any)

10/23/15
Date

*Complaints by corporations or associations, or any other organization having the right to file a complaint, must be signed by its attorney and show his post office address. No oral or unsigned complaints will be entertained or acted upon by the commission.

The Martin County-Tug Valley

MOUNTAIN
CITIZEN

Main Street -- Cain Building

P.O. Box 1029

Inez, Kentucky 41224

PHONE (606) 298-7570 FAX (606) 298-3711

E-MAIL: mountaincitizen@bellsouth.net

Oct. 23, 2015

Kentucky Public Service Commission

Attn: Ginni Smith

P.O. Box 615, 211 Sower Blvd.

Frankfort, Ky., 40602-0615

I am sending this as a supplement for my formal complaint to the Kentucky Public Service Commission, along with a letter that I sent on Aug. 18, 2015.

As stated in my initial complaint, the water district simply cannot keep up with customer demand given its water-rate loss (currently down from roughly 62 percent to around 57 percent, according to its latest filing with your agency). Winter is approaching and with projections being frigid temperatures like we experienced last winter, I foresee customers in the eastern end of the county will experience outages through the night when they cut back pressure on the tanks serving that area to meet daytime demand.

This is a routine practice of the water district. Of course, they will not admit it, but the evidence bears this out. The latest incident occurred after midnight on Tuesday, Oct. 20. My wife was scheduled for out-patient surgery at King's Daughters Medical Center in Ashland and had to be there at 7:45 a.m. after showering and using antiseptic soap (instructions she received from her doctor) for removal of a kidney stone.

Our pressure dropped after midnight and was off by 3 a.m. I called the water district that morning after coming to work to see if a boil water advisory had been issued for our area. I was put through to Joe Hammond, former general manager for the water district who works now as a consultant. Hammond said he was told worker had been doing some leak detection in that area and were told they could shut water off at valves in an attempt to locate leaks. He added that the District, he was told, received permission from Damon White, regional inspector for the Division of Water in Hazard, that they could do this for two hours for a two-hour period without issuing a boil water advisory.

I don't believe that is the case. It's just another excuse for shutting down or cutting back service in our area. I believe by law the district is required to alert the public for any type of scheduled outage, which was not done in this case.

In closing, this newspaper has a history with the water district that dates back to around 2000-2001 when the PSC issued a rare emergency order requiring the district take immediate steps to correct very serious problems. There was some progress made after this was publicized statewide. Under the direction of Hammond, the water district made significant improvements in both service and water quality. Since his retirement a few years ago, conditions have slipped somewhat, although he still remains as a consultant.

At any rate, I am still asking that something be done to correct this problem. The water district will

cut corners and do anything to maintain a good public image while, in my opinion, routinely violating regulations by both the PSC and DOW. I have a suspicion that daily sampling the district is required to do in branches along its distribution system is not being done. An older employee, Samuel Abraham McGinnis (known by everyone as "Abe") used to perform this task. He left a few years ago, and I've checked areas where he used to take samples, and no one has visited these sites since his retirement due to health reasons.

Thank you for your assistance.

Gary Ball



Customer of the Martin County Water District

P.S. I forwarded a complaint to the Division of Water earlier today to a Lanny Brannock from me. The complaint was forwarded to Ginni Smith.

The Martin County-Tug Valley

**MOUNTAIN
CITIZEN**

Main Street -- Cain Building

P.O. Box 1029

Inez, Kentucky 41224

PHONE (606) 298-7570 FAX (606) 298-3711

E-MAIL: mountaincitizen@bellsouth.net

Aug. 18, 2015

Kentucky Public Service Commission
Attn: Ginni Smith
P.O. Box 615, 211 Sower Blvd.
Frankfort, Ky., 40602-0615

Dear Mrs. Smith:

My name is Gary Ball, editor of the Mountain Citizen, a weekly newspaper in Inez. I would like to file an usual complaint against the Martin County Water District. Before doing so, you can check your agency's records regarding this water district, particularly between 2000 and 2002, which resulted in the PSC then issuing a rare emergency order. We were on the threshold then of losing complete service to our county's roughly 3,000 customers. It made the news statewide.

I believe we face the same plight today, although not on the same scale. Let me explain. Our water district has a near 61 percent water-loss rate — by far the state's largest. Even with the addition of a third clarifier, which boosts our treatment capacity one third, I believe the district is unable to meet customer demand when any problem arises — say, a leak in the system anywhere — and, as a result, is forced to shut down service to one portion of the county in order to recharge the system.

Last week water service in the Warfield/Lovely area was off twice. We received no notice of a scheduled outage for repairs or nothing of that nature. We awakened to find our water either off or running at extremely low pressure.

We experienced the same outages back during the winter months when extremely frigid temperatures led to customers allowing their water to "drizzle" overnight to keep lines from freezing. Back then, they argued that they couldn't recharge tanks overnight and this was the reason for "valving back" on the outflow side of a tank on top of Buck Creek Hill, the tank that serves the Warfield/Lovely area.

The weather, of course, is not a factor now, but we are experiencing the same type of outages — low pressure at night followed by pressure being restored after 7 a.m. or so. (They don't issue boil-water advisories in that area when the pressure drops unless someone reports it and they're forced to do so. That is inexcusable. We expect them to follow regulations.)

This is a serious concern. I live in that area. Recently we had a countywide boil water advisory, with the exception of an area served by the Kermit (W.Va.) Water District — from the train tressel bridge in Lovely to the Martin County/Pike County line. In short, the only area unaffected by the outage was served by an adjoining water district.

My question is this: Since it's very obvious that the Martin County Water District is unable to service customers countywide in the event of any kind of outage due to its excessive water-rate loss, is it possible for customers in the eastern part of our county — the area where in the event they cannot meet demand, is the area that suffers when it cannot meet this demand — is it possible that we can be served by adjoining water districts — Mountain Water in Pike County, Kermit Water District in Kermit, W.Va., and even the Mingo County PSD, which has a new treatment plant across the Tug River from Oppy, Ky. (KY 292 Riverfront area) until the Martin County Water District "gets its act together?"

We simply cannot continue going down this same road. Our water district continues to petition

your agency for rate-hike increases for a number of services while, at the same time, refusing to address the most serious problem of all — an excessive water-rate loss. (On a side note: Throwing money at the problem won't fix it. Check your records and you'll find the water district was given \$3 million to upgrade the plant 15 years ago and squandered it.)

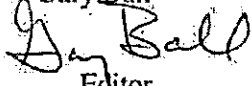
Allowing adjoining water districts to serve this portion of the county could alleviate some of the pressure on the water district so that it could concentrate its efforts on addressing the water-rate loss.

Your agency had a team of inspectors that visited here before issuing this "rare emergency order" well over a decade ago. Is it possible that a similar inspection could be done to address this problem — perhaps with a comprehensive temporary "re-drawing" of the district's boundaries of operations — the area it would serve — along with apportioning out areas that could be served by other water districts — until the water-rate loss is brought to an acceptable level?

This is just a suggestion.

I realize this is an unusual request, but something must be done before we reach a critical stage.

Thanks for your consideration.

Gary Ball

Editor
Mountain Citizen

APPENDIX G

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED **APR 11 2016**

Att. Gran Smith

The Martin County-Tug Valley

MOUNTAIN
CITIZEN

Main Street – Cain Building

P.O. Box 1029

Inez, Kentucky 41224

PHONE (606) 298-7570 FAX (606) 298-3711

E-MAIL: mountaincitizen@bellsouth.net

April 1, 2016

Kentucky Public Service Commission

Attn: Ginni Smith

P.O. Box 615, 211 Sower Blvd.

Frankfort, Ky., 40602-0615

Dear Ginni:

Please add this to my (Gary Ball) formal complaint that I filed in October 2015 with the Kentucky Public Service Commission against the Martin County Water District. I recently learned at a March 26, 2016 meeting with MCWD representatives and PSC and Division of Water officials of a matter that, in my opinion, costs our water district dearly in terms of needed revenue.

Our water district according to an interlocal agreement filed in 1998 (I may have found it in filings with your agency) with Prestonsburg City Utilities is to provide half of the water used by the U.S. Penitentiary — Big Sandy, a high-security federal prison located in Martin County with 1,500 inmates, plus a low-security satellite camp. At this meeting, a comment was made that our water district has gone for periods of "months" (according to statement by general manager Joe Hammond) without supplying water to the prison. MCWD Board Chairman said the prison is Prestonsburg's customer, which, in a billing sense, is correct; however, the agreement is that MCWD and Prestonsburg City Utilities are to equally share providing water to the prison.

There is a clause in the agreement that if one utility is unable to meet the 50 percent, the other utility can pick up the slack and provide all the water if needed. Apparently that is what Prestonsburg City Utilities has been doing according to Hammond's statement "for months."

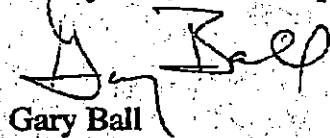
Here's the problem. The prison is a valuable revenue source for MCWD. In addition to the prison, there are other customers on the Honey Branch Industrial Park (complex located adjacent to the prison), along with the Big Sandy Regional Airport that are solely customers of the Martin County Water District. If MCWD is not supplying water to the prison, one can assume that Prestonsburg City Utilities is also

supplying water to other customers in that area, which means our water district is also losing money there.

This is important because it was mentioned that a rate increase for our customers could be in the works for funding all the needs of the district in the future. A rate increase some years ago was supposed to address the deficiencies we had — including a 50 percent water rate loss, which has since gotten worse.

As I stated, I wanted to add this to my complaint. At one time I suggested that, due to our loss and the district's inability to supply water to its customers, that the PSC consider checking to see if Prestonsburg City Utilities could provide water to the prison without our assistance. I had no idea this was already being done, and that is pretty alarming. Since Inez has a population of roughly 800, and the city of Warfield is about the same, losing the prison as a customer is pretty significant in the loss of potential revenue.

At any rate, I would appreciate your looking into this matter.



Gary Ball
Customer,
Martin County Water District

APPENDIX H

APPENDIX TO AN ORDER OF THE KENTUCKY PUBLIC SERVICE
COMMISSION CASE NO. 2016-00142 DATED **APR 14 2016**

COMMISSION STAFF'S INITIAL REQUEST FOR INFORMATION
TO MARTIN COUNTY WATER DISTRICT

Questions 1–17 are related to ongoing Management Audit recommendation steps.

1. Refer to the 2007 Management Audit Action Plan, Recommendation II-1, Step 3. Provide a current list of work orders for leak repairs, meter sets, meter rereads, meter pulls, low pressure, meter reads (in and out), tap relocates, and similar distribution work, and explain how Martin District addresses these work orders.

2. Refer to the 2007 Management Audit Action Plan, Recommendation II-1, Step 4. Provide the following:

a. The number of tap requests processed and completed since October 6, 2015 (the date the new NRC tariff was issued).

b. The number of tap requests pending as of November 13, 2015.

c. An estimate of when Martin District expects to complete the taps outstanding as of November 13, 2015.

3. Refer to the 2007 Management Audit Action Plan, Recommendation II-1, Step 5. Provide the following:

a. The number of turn-offs performed since October 6, 2015.

b. The number of outstanding or past-due accounts.

4. Refer to the 2007 Management Audit Action Plan, Recommendation II-1, Step 7. Provide the following:

a. Identify the number and location of additional pumps Martin District plans to install to allow pumping at night. For each, provide an estimate of when Martin District plans to install the pumps.

b. A comparison of electricity costs for each month for the past two years.

5. Refer to the 2007 Management Audit Action Plan, Recommendation II-1, Step 9. Provide the following:

a. Explain whether or not Martin District will reach the goal of five treatment plant operators.

b. If yes, provide a time line for achieving this goal.

6. Refer to the 2007 Management Audit Action Plan, Recommendation II-2, Step 1. Provide the following:

a. The amount and percentage of line loss on each system (A and B) through October 30, 2015.

b. The amount and percentage of line loss for calendar years 2014, 2013, and 2012.

7. Refer to the 2007 Management Audit Action Plan, Recommendation II-2, Steps 2 and 3. Provide the following:

a. Identify known leaks and prioritize the mains and services for replacement or repair based on volumes.

b. An estimate of when replacement or repair will be undertaken.

8. Refer to the 2007 Management Audit Action Plan, Recommendation II-2, Step 4. Other than identification (of cheater bars) when reading meters, explain how Martin District is addressing this recommendation.

9. Refer to the 2007 Management Audit Action Plan, Recommendation II-2, Step 5. Provide an update of Martin District's progress in replacing or repairing all excessively leaking mains and services as outlined in Step 5. Identify any decreases in water loss resulting from its efforts.

10. Refer to the 2007 Management Audit Action Plan, Recommendation II-3, Steps 1-4. Provide Martin District's formal, written preventive maintenance program.

11. Refer to the 2007 Management Audit Action Plan, Recommendation II-5. Provide an update on the planned follow-up contact with the Health Department.

12. Refer to the 2007 Management Audit Action Plan, Recommendation II-6, Steps 1, 2, 3, and 6. Other than working with the electric providers to reduce power outages, explain how Martin District is addressing this recommendation.

13. Refer to the 2007 Management Audit Action Plan, Recommendation III-1. Other than working with the Big Sandy ADD, explain what internal or other external steps Martin District is taking to address this recommendation.

14. Refer to the 2007 Management Audit Action Plan, Recommendation III-2, Steps 1 and 2. Provide the following:

a. Identify the water loss reduction related construction projects undertaken in the past year and identify those planned for the next six months.

b. Identify the expansion projects undertaken in the past year and identify those planned for the next six months.

c. For each expansion program identified, explain why it was undertaken rather than a water loss project.

15. Refer to the 2007 Management Audit Action Plan, Recommendation IV-3. Provide a report of pending disconnects for 30-60-90 days, for the most recent date available at the time of your response.

16. Refer to the 2007 Management Audit Action Plan, Recommendation V-4, Steps 1, 2, 3 and 4. Provide the following:

a. External audit reports for years 2013, 2014, and 2015 when completed.

b. If any of these reports are not complete, provide an estimate of when each audit will be completed.

17. Refer to the 2007 Management Audit Action Plan, Recommendation V-5, Steps 1 and 2. Provide a description of the duties of the Business Manager position.

18. Provide a copy of each written complaint or electronic mail message containing a complaint concerning water service received by Martin District during the period January 1, 2013, to the present. Include with the response a copy of Martin District's response to the complaint. If Martin District has not retained documentation of the complaints, explain why each document has not been retained.

19. Provide a schedule that contains the date, time, and duration of each event in which Martin District was not in compliance with 807 KAR 5:066, Section 5(1), during the period January 1, 2013, to present.

20. Provide a copy of each public notification that Martin District has been required to provide to its customers pursuant to federal or state drinking water regulations during the period January 1, 2013, to present.

21. Provide a copy of all communication between Martin District and the Kentucky Division of Water, including its regional offices, during the period January 1, 2013, to present.

22. Refer to the Public Service Commission's Utility Inspection Report for Martin District dated December 12, 2014. Provide the following:

a. Explain why Martin District failed to produce pressure surveys that showed a continuous 24-hour pressure recording for a minimum of one week per month as required by 807 KAR 5:066, Section 5(2).

b. Explain Martin District's procedure for monitoring and documenting withdrawals from Martin District by fire departments.

c. For each fire department that made a withdrawal from the Martin District system for the purpose of extinguishing fires or training fighters during the period January 1, 2013, to present, provide a copy of the fire department's estimate of its withdrawal.

d. For any instance in which a fire department failed to provide an estimate of a withdrawal during the period January 1, 2013, to present, state the actions that Martin District took concerning the failure.

e. Provide a copy of each record kept by Martin District pursuant to 807 KAR 5:006, Section 26(3), for the period January 1, 2015, to date.

23. Identify each contract that Martin District has with another water system for the purchase or sale of water. For each contract, state the date the contract was filed with the Commission.

24. Confirm whether Martin District is currently providing water service to the United States Penitentiary, Big Sandy, and if not, explain why Martin District is unable to provide water service to the federal prison.

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Inez, KY 41224

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