

COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF GRAVES COUNTY WATER )  
DISTRICT FOR AN ADJUSTMENT IN RATES ) CASE NO.  
PURSUANT TO THE ALTERNATIVE RATE ) 2012-00278  
FILING PROCEDURE FOR SMALL UTILITIES )

NOTICE OF FILING OF COMMISSION STAFF REPORT

Notice is hereby given that, in accordance with the Commission's Order of July 18, 2012, the attached report containing the findings and recommendations of Commission Staff regarding the Applicant's proposed rate adjustment has been filed in the record of the above-styled proceeding.



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Jeff Derouen  
Executive Director  
Public Service Commission  
P.O. Box 615  
Frankfort, KY 40602

DATED           AUG 08 2012          

cc: Parties of Record

STAFF REPORT  
ON  
GRAVES COUNTY WATER DISTRICT  
CASE NO. 2012-00278

On June 28, 2012, Graves County Water District ("Graves District") filed an application with the Commission requesting a two-phase adjustment to its rates for water service. In Phase 1, rates would be adjusted in order to produce \$145,526 in additional annual revenues, an increase of 16.12 percent over pro forma present rate revenues from water sales of \$902,733. In Phase 2, the Phase 1 rates would be adjusted in order to produce an additional \$69,883 in annual revenues, a 6.67 percent increase over the annual revenues to be produced by Phase 1 rates.

The application was prepared with the assistance of Commission Staff ("Staff") pursuant to a written request from Graves District dated August 16, 2011. To prepare the application, a limited financial review was conducted of Graves District's test-year operations for the year ending December 31, 2010. Staff performed the review with assistance from Graves District's contracted operator, Mayfield Electric and Water Systems. The scope of the review was limited to determining whether operations reported for the test year were representative of normal operations. Known and measurable changes to test-year operations were identified and adjustments were made when their effects were deemed to be material. Insignificant or immaterial discrepancies were not pursued and were not addressed.

After completing the financial review, Staff assisted Graves District in preparing a cost-of-service study using rate-making methods and principles historically accepted by

the Commission. The rates requested by Graves District are supported by the cost-of-service study included with its application. The cost-of-service study is attached to this report and includes:

- 1) The calculation of pro forma operating revenues and pro forma operating expenses, Attachment A;
- 2) The calculation of the overall revenue requirement and required revenue increase, Attachment B;
- 3) The allocation of costs of service to cost components and the calculation of rates, Attachment C; and
- 4) The recommended rates, Attachment D.

Graves District was created in 2008 by the merger of South Graves Water District, Fancy Farm Water District, Hardeman Water District, and Consumers Water District. The Commission approved the merger by Order dated May 21, 2008.<sup>1</sup> As part of their merger agreement, the four water districts agreed that the merged water district would develop a unified rate design and submit the design to the Commission for approval.<sup>2</sup>

Phase 1 rates unify the rates of the predecessor districts and are designed, on a cost basis, to recover current operating costs necessary to provide safe and reliable potable water service to all customers. The unified rate was developed by allocating the cost of service to a five-step declining block rate design for retail customers. The rate

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<sup>1</sup> Case No. 2007-00496, Joint Application of Consumers Water District, Fancy Farm Water District, Hardeman Water District, and South Graves Water District for Approval of Merger and Formation of Graves County Water District (Ky. PSC May 21, 2008).

<sup>2</sup> *Id.* at 7.

design has a customer charge with minimum usage that escalates for meters larger than 5/8-inch. Graves District also requests a single volumetric rate for its sole wholesale customer.

The table below shows the effects of the Phase 1 rates on the monthly bill of a residential customer using 5,000 gallons residing in each of the former district's service territories.

	Bill at Current Rate	Bill at Phase 1 Rate	Increase/ (Decrease)	Percentage
South Graves	\$ 34.86	\$ 27.49	\$ (7.37)	-21.14%
Hardeman	21.35	27.49	6.14	28.76%
Fancy Farm	23.15	27.49	4.34	18.75%
Consumers	20.86	27.49	6.63	31.78%

Graves District requests that Phase 2 rates become effective on the execution of a loan for \$1,000,000 from the Kentucky Infrastructure Authority ("KIA"). The proceeds from the loan will be used to finance a portion of the cost to install Automated Metering Infrastructure ("AMI").<sup>3</sup>

Phase 2 rates are necessary to produce revenue sufficient to repay the anticipated KIA loan and provide for recovery of depreciation on this portion of the AMI project. A monthly bill for 5,000 gallons would increase from \$27.49 to \$29.37, an increase of \$1.88 or 6.84 percent.

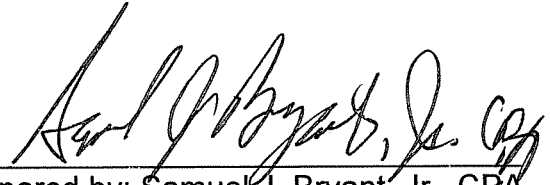
Staff members Samuel J. Bryant, Jr. and Sam Reid, Jr. performed the limited financial review of Graves District's test-year operations. This report summarizes Staff's review and recommendations. Mr. Bryant is responsible for Attachment A and Attachment B; Mr. Reid is responsible for Attachment C and Attachment D. As shown

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<sup>3</sup> Case No. 2011-00390, Application of Graves County Water District for Authority to Enter Into a Loan Agreement with the Kentucky Infrastructure Authority (Ky. PSC Nov. 3, 2011).

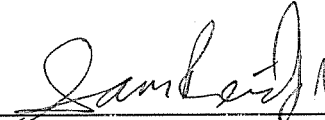
in these attachments, Staff recommends that the Commission approve the rates in Phase 1 and Phase 2 as requested in Graves District's Application and included in Attachment D of this report.

Signatures



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Prepared by: Samuel J. Bryant, Jr., CPA  
Financial Analyst, Water and Sewer  
Revenue Requirements Branch  
Division of Financial Analysis



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Prepared by: Sam Reid, Jr.  
Rate Analyst, Communications, Water  
and Sewer Rate Design Branch  
Division of Financial Analysis

ATTACHMENT A  
STAFF REPORT, CASE NO. 2012-00278

As shown in Table A1, adjustments to test-year revenues and test-year expenses were made to account for known and measurable changes that are applicable to Phase 1 operations. Adjustments to Phase 1 operations were then made that are applicable to Phase 2 operations. All adjustments are explained in the following table. Staff agrees with all of the adjustments and recommends that they be accepted by the Commission.

Table A1  
Pro forma Operating Statement

	Test Year December 31, 2010	Phase 1			Phase 2		
		Adjustments	Ref.	Pro forma	Adjustments	Ref.	Pro forma
Operating Revenue							
Water Sales	\$ 894,270	\$ 8,463	A	\$ 902,733	\$ 145,526	E	\$ 1,048,259
Other Operating Revenue	55,913			55,913			55,913
Total Water Sales	950,183	8,463		958,646	145,526		1,104,172
Operating Expenses							
Operation and Maintenance							
Salaries and Wages - Officers	15,750			15,750			15,750
Purchased Water	142,994	(8,851)	B	134,143			134,143
Purchased Power	65,813	(4,074)	B	61,739			61,739
Chemicals	65,880	(4,078)	B	61,802			61,802
Materials and Supplies	29,115			29,115			29,115
Contractual Services	486,994	(4,848)	C	482,146	(35,016)	F	447,130
Rental of Equipment	21,435			21,435			21,435
Insurance General Liability	11,056			11,056			11,056
Bad Debt	10,613			10,613			10,613
Miscellaneous Expense	9,667			9,667			9,667
Total Operation and Maintenance	859,317	(21,851)		837,466	(35,016)		802,450
Depreciation Expense	244,839	(42,982)	D	201,857	55,909	G	257,765
Amortization	1,475			1,475			1,475
Total Operating Expenses	1,105,631	(64,833)		1,040,798	20,893		1,061,690
Net Operating Income	(155,448)	73,296		(82,152)	124,634		42,482
Interest and Dividend Income	6,899			6,899			6,899
Income Available to Service Debt	\$ (148,549)	\$ 73,296		\$ (75,253)	\$ 124,634		\$ 49,381

(A) Water Sales. Graves District reported test-year water sales in the amount of \$894,270. This amount was increased by \$8,463 to restate reported revenues

to the amount calculated in the billing analysis and to account for the addition of 10 new residential customers.

A billing analysis was performed to verify the amount of water sales reported for the test year. To complete the billing analysis, each customer's monthly bill for the test year was recalculated. The sum of the recalculated bills was compared to reported water sales. The billing analysis demonstrates that test-year water sales should have been reported at \$900,230. Accordingly, the test-year amount was increased by \$5,960.

Subsequent to the test year, Graves District added 10 new residential customers to its distribution system. It is appropriate to add the revenue collected from these customers to test-year water sales when calculating pro forma operations. To account for the additional revenue, test-year water sales were increased by \$2,503, or .28 percent ( $\$2,503, \text{ new revenue} / \$894,270, \text{ test-year sales}$ ). The amount was calculated by applying Graves District's current residential rates to the average residential usage.

(B) Purchased Water, Purchased Power, and Chemicals. 807 KAR 5:066, Section 6(3), limits water loss for ratemaking purposes to 15 percent. The regulation allows for an alternative level if it is found to be reasonable. In its 2010 Annual Report, Graves District reported a 21.19 percent water loss, exceeding the allowable limit by 6.19 percent.

Graves District did not request that the Commission approve a level alternative to the 15 percent stated in the regulation. Instead, it proposed to remove 6.19 percent of the direct variable costs to purchase, treat, and deliver the excess water loss. Staff

agrees with the proposed adjustments to Purchased Water, Purchased Power, and Chemicals which are shown below.

Purchased Water	142,994	-6.19%	(8,851)
Purchased Power	65,813	-6.19%	(4,074)
Chemicals	65,880	-6.19%	(4,078)

Staff recognizes that an adjustment could be made to these three expense accounts to correspond with the customer growth revenue adjustment but did not recommend an adjustment. It is not material to Graves District's operations.

(C) Contractual Services. Graves District has no employees but contracts with Mayfield Electric and Water Systems ("MEWS") to operate and manage its water system. The amount charged against revenues during the test year for these services totaled \$486,994.

In Case No. 2011-00233,<sup>4</sup> Graves District received a certificate of public convenience and necessity to install an AMI Project with a total cost of \$1,330,491.<sup>5</sup> A portion of the project is to be funded with a \$1,000,000 loan from KIA.<sup>6</sup>

Prior to the issuance of the Order approving the construction and financing of the AMI project, Graves District completed a construction project that was separate from the AMI project. This project was funded by a KIA grant. The amount of the KIA grant unexpectedly exceeded the final cost of the project. Graves District received permission from KIA to use the excess funds to begin its AMI project. With this funding,

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<sup>4</sup> Case No. 2011-00233, Application of Graves County Water District for Approval of Construction and Issuance of a Certificate of Convenience and Necessity for the Purchase and Installation of Automated Meter Reading Equipment (Ky. PSC Nov. 3, 2011).

<sup>5</sup> *Id.* Appendix A to the Order stated the estimated project cost as \$1,749,794. This amount included the portion of the AMI project for Graves and Hickory Water District. Graves District's portion of the projected costs is \$1,330,491.

<sup>6</sup> Case No. 2011-00390, Application of Graves County Water District (Ky. PSC Nov. 3, 2011).



Graves District completed the installation of AMI assets for its 385 customers residing in the territory formerly served by Hardeman Water District. In Phase 1 rates, Graves District requests recovery of the cost of this portion of the AMI project through depreciation. These assets total \$212,319 and are included in the calculation of Phase 1 depreciation shown in Attachment G-2 of the Application. Accordingly, Graves District requests to adjust all other test-year expenses that will be affected by this portion of the AMI project in Phase 1.

The AMI project will likely produce savings; however, the only savings immediately identifiable are those related to meter reading. The meter reading savings are estimated to be \$1.05 per meter per month.<sup>7</sup> Test-year contractual services were reduced by \$4,848 (\$1.05 savings per meter x 385 customers x 12 months) to account for these savings in Phase 1. Savings related to costs other than meter reading will only be identifiable after the AMI system has been in service for a reasonable length of time. The AMI project has not been in place long enough to identify and quantify other savings at this time. No other adjustments were made.

(D) Depreciation Expense. Graves District reported test-year depreciation expense of \$244,839. This amount was calculated using the remaining-life method. The calculation is shown in Attachment G-1 of the Application. As shown in Attachment G-2 of the Application, Graves District proposes to decrease the test-year amount by \$42,982 when calculating Phase 1 revenue requirements to account for:

1) A change from the remaining-life depreciation method to the whole-life depreciation method;

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<sup>7</sup> *Id.*, Findings 19 and 20.

- 2) New whole-life depreciable lives assigned to each asset account group;
- and
- 3) Depreciation taken on assets placed into service subsequent to the test year.

Change in Depreciation Methods. When the water districts merged to create Graves District, the assets of each district were reported at net book value, original cost less accumulated depreciation, as of August 31, 2008. This action represented a “write-down” of assets in excess of \$4.5 million, approximately 46 percent of the plant’s original cost. The journal entry of this recording was submitted to the Commission by letter dated September 8, 2008. After recording the assets at net book value, Graves District was of the opinion that it was required to adopt the remaining-life method to calculate annual depreciation expense. Prior to the merger, each predecessor district used the whole-life method.

After using the remaining life method for the two years subsequent to the merger, Graves District believes that the whole-life method is more appropriate for calculating its annual depreciation expense. Graves District requests that the Commission allow it to restate its assets, and related accumulated depreciation, to their original balances at the time of merger, with adjustments made for additions subsequent to the merger, and begin calculating depreciation using the whole-life method. This method was used in Attachment G-2 of the Application to calculate pro forma depreciation expense for Phase 1 and Phase 2 operations.

In support of its request, Graves District argued that Accounting Instruction 21 of the Uniform System of Accounts (“USoA”) was violated when it first recorded its assets

using net plant values. Accounting Instruction 21 requires the accounts for plant, accumulated depreciation, and donated capital reported by a merged utility be stated at the balances reported by the former utilities at the time of merger. This ensures that the requirements of Accounting Instruction 18 of the USoA are met. Accounting Instruction 18 requires that all assets be stated at their original cost when first devoted to public service. To adhere to the requirements of the USoA, Graves District must restate its balances for plant and accumulated depreciation, otherwise, these accounts will remain understated in future reporting periods by a material amount and the original cost principal will remain violated.

After restating its plant balances, it only seems fitting that Graves District be allowed to begin applying the whole-life depreciation method as was used prior to the merger. The whole-life method is far less cumbersome to apply than the remaining-life method and is a superior method for a "small" utility with a less sophisticated fixed asset accounting system when compared to a "large" utility which often has an accounting department dedicated solely to asset management practices.

For these reasons, Staff agrees that Graves District should be allowed to restate its assets to their original cost and to begin applying the whole-life method of depreciation as has been applied in Attachment G-2 of the Application.

Change to Depreciable Lives. Generally, the Commission requires a "large" utility to perform a depreciation study to determine the appropriate depreciable lives to be assigned to each plant account group. Detailed property records specific to historic plant additions, plant retirements, and salvage practices are required to complete a depreciation study. Generally, "small" water utilities, such as Graves District, do not

maintain property records with enough detail to properly complete a formal study. Even if adequate records were maintained, “small” utilities do not have the financial resources to fund a formal study. Therefore, to evaluate the reasonableness of the depreciation practices of small utilities, the Commission has historically relied upon the report published in 1979 by NARUC entitled *Depreciation Practices for Small Water Utilities* (“NARUC Study”).<sup>8</sup>

Graves District referred to the NARUC study to determine the appropriate depreciable whole-life to be assigned to each asset group except for the AMI project. Graves District selected lives for each group that are at, or near, the mid-point of the recommended ranges. The middle of the ranges is representative of the depreciation practices of an “average” small water utility. Graves District requested that the Commission approve the lives selected using the NARUC study.

The NARUC study is not applicable to the AMI components. The NARUC study was prepared long before this infrastructure was designed and developed. Relying on information obtain from the manufacturer of the AMI components, Graves District requested that a 20-year depreciable life be assigned to these assets.

Staff agrees with the lives assigned by Graves District and has made the necessary adjustment to test-year expenses to account for these lives.

Post Test-Year Plant Additions. As shown in Attachment G-2 of the Application, subsequent to the end of the test year, Graves District placed the additional plant into service with a total cost of \$933,027. These assets consist of \$655,777 for an interconnection with the city of Mayfield, \$157,414 for the AMI project in the Hardeman

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<sup>8</sup> See, e.g., Case No. 2006-00398, Application of Northern Kentucky Water District for Approval of Depreciation Study (Ky. PSC Nov. 21, 2007).

area, and \$119,836 for locating and mapping transmission and distribution mains. Depreciation of these assets should be included in the calculation revenue requirements in Phase 1. The adjustment to test-year depreciation expense for each item is discussed below.

In 2011, Graves District completed the construction of pumping and main facilities that were necessary to connect its transmission and distribution system to the water system of the city of Mayfield. This interconnection provides Graves District with an alternative source of finished water and was paid with KIA grant funds.

As discussed at Reference Item C in Table A1, Graves District completed installation of the AMI project in the area formerly served by Hardeman Water District in 2011. The total cost of this portion of the AMI project was \$212,319, \$54,905 was capitalized in 2010 while the remaining \$157,414 was capitalized in 2011. This asset has been depreciated using a 20-year life.

Subsequent to the test year, in years 2011 and 2012, Graves District incurred significant costs for mapping the location of its existing transmission and distribution mains. As of May 31, 2012, these costs totaled \$119,836. This amount has been capitalized and depreciated over the 65-year depreciable life assigned to mains.

(E) Water Sales. Phase 1 rates will produce additional annual revenues in the approximate amount of \$145,526. This additional revenue should be included in normalized revenues when calculating the required revenue increase for Phase 2.

(F) Contractual Services. The Phase 2 rates requested in the Application are necessary after accounting for all known and measurable changes to operating costs that will result from completion of the AMI project. As previously discussed in

Reference Item C in Table A1, in Phase 1 Contractual Services were reduced by \$4,848 to account for savings in meter reading expenses resulting from the installation of the AMI project in the Hardeman area. Following this principle, Contractual Services were reduced in Phase 2 by an additional \$35,016<sup>9</sup> to account for the meter reading savings that will result from completion of the AMI project.

(G) Depreciation. In Phase 2, annual depreciation expense in the amount of \$66,525 for the entire estimated cost of the AMI project, \$1,330,491, has been included for recovery. Through the AMI project, Graves District will replace all of its mechanical meters. As previously discussed, the Commission has granted Graves District a certificate of public convenience and necessity to install AMI equipment. The manufacturer of the AMI meters estimates their life to be equal to 20 years. Based on this estimate, the AMI project has been depreciated over a 20-year period. As shown in Attachment G-2 of the Application, the additional depreciation adjustment required in Phase 2 is \$55,909. Depreciation in the amount of \$10,616 was included in the calculation of Phase 1 depreciation for the Hardeman area.

Graves District noted that, in addition to depreciating the AMI project in Attachment G-2, it also continues to depreciate the cost of the old mechanical meters even though they will be removed from service. Although this action violates Accounting Instruction 27 B(2) of the USoA, it is reasonable. It does not have a material effect on depreciation in the years immediately following the removal of the assets and has no effect on depreciation in the long term.

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<sup>9</sup> 3,164 total customers - 385 Hardeman Customers = 2,779 x \$1.05 x 12 months.

To explain, the cost of the mechanical meters is reported in the same account group as their installation costs. The total combined cost of the group is \$501,283 (annual depreciation totals \$10,616). There is no way to accurately separate the meter's cost to record their retirement.

Although the cost of meters cannot be accurately identified and separated, the majority of the cost of the account group is attributable to installations. This is evidenced by comparing the cost of a mechanical meter to the cost of installing a meter. The majority of Graves District's meters are 5/8-inch meters. The current average combined cost of a meter and meter installation is assumed to be equal to the current tap fee charged for a 5/8-inch connection, \$450. Of this amount, the cost of the mechanical meter is roughly \$35. The installation is then assumed to represent approximately \$415, or over 92 percent of the combined cost. Since the installations represent such a significant amount of the combined costs and will remain in service even after the mechanical meters are removed, it is appropriate and necessary to continue depreciation on this component of the asset group. Given the relatively small amount of the cost of meters in the asset group, their inclusion is of no material consequence to the annual depreciation expense.

Furthermore, this accounting treatment will result in the same amount charged to depreciation expense in the later years. If the cost of the meters could be separated and were accounted for in accordance with Accounting Instruction 27, a loss in the amount of the undepreciated balance of the meters would be reported. This loss would flow through the meter and meter installations accumulated depreciation account. This would increase the depreciable basis of the account group by an amount equal to the

loss. This loss would ultimately flow through to the income statement as a component of depreciation expense in future periods.

No matter which of the two accounting treatments is used, the “stranded cost” of the mechanical meters will be included in the calculation of future depreciation expense taken on the meter and meter installation account. The proposed method is of no material consequence in the immediate reporting periods or in the long term. It is therefore reasonable.



ATTACHMENT B

STAFF REPORT, CASE NO. 2012-00278

TABLE B1  
 Determination of Overall Revenue Requirement  
 and Required Revenue Increase

	Phase 1	Phase 2
Operating Expenses, Refer to Attachment A	\$ 1,040,798	\$ 1,061,690
Three-Year Average Debt Service Payments, See Table B2	<u>70,274</u>	<u>119,264</u>
Total Revenue Requirement	1,111,071	1,180,954
Less: Other Operating Revenue	(55,913)	(55,913)
Interest Income	<u>(6,899)</u>	<u>(6,899)</u>
Revenue Required from Rates	1,048,259	1,118,142
Less: Normalized Water Sales	<u>(902,733)</u>	<u>(1,048,259)</u>
Required Revenue Increase	<u>\$ 145,526</u>	<u>\$ 69,883</u>
Percentage Increase	<u>16.12%</u>	<u>6.67%</u>

As shown in Table B1, Graves District's overall revenue requirement for Phase 1 is calculated to be \$1,111,071. The overall revenue requirement was determined by adding pro forma operating expenses to the three-year average principal and interest payments payable to KIA for Loan No. B05-04 and Loan No. B07-03. By reducing the overall revenue requirement by pro forma other revenues and interest income, the revenue required from rates was determined to be \$1,048,259. This represents an increase of \$145,526, or 16.12 percent, over normalized test-year water sales revenue of \$902,773.

All of the components of these calculations are shown and explained in Attachment A of this report except for the payments to KIA. The calculation of the debt payments are shown in Table B2 and are explained following the table. The rates shown in Attachment D, page 1, are the unified rates that were designed to meet the Phase 1 revenue requirement.

Also shown in Table B1 is the calculation of the overall revenue requirement for Phase 2 in the amount of \$1,180,954. This amount was determined by adjusting the Phase 1 revenue requirement for known and measurable changes that will result from the installation of the AMI project. This project could be completed as early as December 31, 2013. The most critical adjustment for this project is for the future debt payments to KIA for the loan to finance the project. The calculation of this adjustment is shown on Table B2. The remaining adjustments are shown and explained in Attachment A.

The first payment on the KIA loan will be due one year after the loan is closed. Therefore, Graves District requested that the Phase 2 rates, as shown in Attachment D, page 2, be made effective on the closing date of the loan. This will allow Graves District the opportunity to accumulate enough funds to make the first loan payment when it becomes due.

Table B2  
Calculation of Three-Year Average Debt Payments

<u>KIA Loan No.</u>	<u>Average Debt Payment</u>	
	<u>Phase 1</u>	<u>Phase 2</u>
B05-04, Calculation of Averages Shown Below	\$ 17,223	\$ 17,223
B07-03	53,051	53,051
B11-02		48,990
<b>Total</b>	<b>\$ 70,274</b>	<b>\$ 119,264</b>

<u>Loan No. B05-04, See Amo. Sch. at Attachment H, Page 1 of App.</u>				
<u>Year</u>	<u>Principal</u>	<u>Interest</u>	<u>Servicing Fee</u>	<u>Total</u>
2012	\$19,500	\$ 1,379	\$ 574	\$ 21,453
2013	19,593	1,285	535	21,414
2014	19,688	1,391	496	21,575
Three-Year Average				\$ 21,480
Percent Allocated to Water Division				80.18%
Three-Year Average Allocated to Water Division				<u>\$ 17,223</u>
<u>Loan No. B07-03, See Amo. Sch. at Attachment H, Page 2 of App.</u>				
<u>Year</u>	<u>Principal</u>	<u>Interest</u>	<u>Servicing Fee</u>	<u>Total</u>
2012	\$48,855	\$ 2,863	\$ 1,431	\$ 53,149
2013	49,051	2,667	1,334	53,051
2014	49,247	2,471	1,235	52,953
Three-Year Average				<u>\$ 53,051</u>
<u>Loan No. B11-02, See Amo. Sch. at Attachment H, Page 3 of App.</u>				
<u>Year</u>	<u>Principal</u>	<u>Interest</u>	<u>Servicing Fee</u>	<u>Total</u>
1	\$32,070	\$15,440	\$ 1,544	\$ 49,055
2	32,715	14,796	1,480	48,990
3	33,372	14,138	1,414	48,925
Three-Year Average				<u>\$ 48,990</u>

The debt service requested by Graves District for Phase 1 is equal to the three-year average principal and interest payments due to KIA on Loan No. B05-04 and Loan No. B07-03.

Loan B05-04 originated from Fancy Farm's former service area where Fancy Farm provided water service and sewer service. Immediately prior to its merger into Graves District, Fancy Farm had long-term bonds payable to the United States Department of Agriculture's Rural Development ("RD") in the total amount of \$690,896. The water division's portion was \$553,976, or 80.18 percent of the total. The sewer division's portion was \$136,920, or 19.82 percent of the total.<sup>10</sup> Upon completion of the merger, Graves District refinanced the entire amount of the debt using grant funds and the proceeds from KIA Loan No. B05-04. The original KIA loan amount was \$596,776. In its Application, Graves District acknowledges that the Commission's approval to assume this loan was never sought by any parties of the merger.

Even though the Commission's approval of this loan was never obtained, the proceeds from the loan appear to have been used for lawful purposes. Staff recommends that the average principal and interest payments of the loan be included in the calculation of revenue requirements. The payments were split between the water and sewer divisions based on the percentage of the RD bonds outstanding at the time of refinancing. Therefore, the water division has been allocated 80.18 percent of the total debt service requirements for this loan.

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<sup>10</sup> See Case No. 2007-00496, Joint Application of Consumers Water District, Fancy Farm Water District, Hardeman Water District, and South Graves Water District (Ky. PSC May 21, 2008) at 3.

Loan No. B07-03 was secured by Graves District to refinance a KIA loan that had been originally awarded to South Graves Water District in 1994. This refinancing was approved by the Commission in Case No. 2008-00448.<sup>11</sup>

To calculate the debt service requirement for Phase 2, Graves District added to the Phase 1 requirement, the anticipated three-year average principal, and interest payments on Loan No. B11-02. The approved loan amount is \$1,000,000 with principal forgiveness from KIA of 20 percent. This loan has not yet been closed. It is expected to be closed on, or around, December 31, 2013, the anticipated completion date of the AMI project. The principal and interest payment included for this loan were taken from the loan amortization schedule provided by KIA on September 7, 2011.

It should be noted that there is no provision for a Debt Service Coverage (“DSC”) in the calculations shown in Table B1 or Table B2. KIA only requires its borrowers to maintain a DSC when its loans are subordinate to long-term indebtedness owed by its borrower to other funding agencies. Since Graves District has no other long-term indebtedness, the KIA loans are not subordinate and, therefore, require no DSC.

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<sup>11</sup> Case No. 2008-00448, Application of Graves County Water District for Approval of Financing (Ky. PSC Jan. 5, 2009).

ATTACHMENT C  
STAFF REPORT, CASE NO. 2012-00278

Allocation of costs of service. On pages 10-16 of this attachment, the allocation of allowable costs as determined by the pro forma revenue requirement for Phase 1 were made using methods historically accepted by the Commission to design uniform retail rates and a wholesale rate. The allocation of allowable costs as determined by the pro forma revenue requirement for Phase 2 rates appear on pages 21-25 of this attachment. The wholesale rate was first calculated by increasing the current wholesale rate by the percentage of the required revenue increase. The increase in revenue resulting from the new wholesale rate was then used to reduce the total revenue requirement. The remaining revenue requirement was allocated to the retail customers. Commodity costs and demand costs were allocated between the wholesale customer and retail customers. The amounts allocated to the retail customers were considered when formulating the retail rate design.

Rate Design. Graves District's proposed rate design is a five step declining block rate design. Retail customers are classified by meter size with minimum required usage levels and minimum bills. A volumetric rate is proposed for Graves District's wholesale customer. The proposed rate design for the merged district will promote fairness and equity to the utility's various classifications of customers, while recovering the costs associated with providing service to those various classes of customer. The Commission has historically accepted declining block rate designs as a fair and reasonable rate structure to reflect differences in water and capacity use of different classes of customers. The proposed unified rates will produce sufficient revenues to recover the allowable expenses determined when establishing the revenue requirement,

while providing reasonable equity between customer classes by considering the demand characteristics of each class.

Billing Analysis. As shown on pages 26-29 of this attachment, a billing analysis was used to verify that the proposed uniform rates will produce revenues sufficient to meet the revenue requirement. The proposed rates were applied to the test-year monthly usages of each customer.

To test the accuracy and completeness of the monthly usages included in the billing analysis, Graves District applied the rates in effect in each of the four former districts during the test year to the usages in the billing analysis. The results were compared to the test-year reported revenues. Each area's billing analysis, with the rates in effect during the test year, is shown in the foregoing tables. There were no material differences in the reported revenues and the recalculated revenues. This provides sufficient evidence that the usages included in the billing analysis are accurate.

Normalized Billing Analysis for: GRAVES COUNTY WATER DISTRICT  
 Test Period From: DECEMBER 1 - JANUARY 31, 2010

CURRENT RATES SUMMARY

<b>Meter Size</b>	<b>Bills</b>	<b>Gallons Sold</b>	<b>Revenue</b>
Consumers			
5/8 inch	20,536	95,634,700	\$418,964.44
1 inch	160	2,603,900	9,735.16
2 inch	53	1,360,800	4,984.52
Fancy Farm	5,222	26,025,400	122,473.65
Wholesale	12	8,259,300	17,922.68
Hardeman	4,620	22,102,700	94,356.86
South Graves	7,801	31,550,200	234,295.18
Totals	38,404	187,537,000	\$902,732.49



CONSUMERS AREA OF GRAVES COUNTY WATER DISTRICT

Meter  
Size: 5/8 inch

	USAGE	BILLS	GALLONS	FIRST 20	NEXT 80	NEXT 100	NEXT 300	OVER 500	TOTAL
FIRST	20	4,807	46,955	46,955					46,955
NEXT	80	14,388	682,026	287,760	394,266				682,026
NEXT	100	1,092	142,289	21,840	87,360	33,089			142,289
NEXT	300	223	62,685	4,460	17,840	22,300	18,085		62,685
OVER	500	26	22,392	520	2,080	2,600	7,800	9,392	22,392
TOTALS	Gallons x 100	20,536	95,634,700	36,153,500	50,154,600	5,798,900	2,588,500	939,200	95,634,700

CONSUMERS AREA OF GRAVES COUNTY WATER DISTRICT  
REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	2,000	20,536	36,153,500	\$12.01	\$246,637.36
NEXT	8,000		50,154,600	2.95	147,956.07
NEXT	10,000		5,798,900	2.73	15,831.00
NEXT	30,000		2,588,500	2.53	6,548.91
OVER	50,000		939,200	2.12	1,991.10
TOTAL		20,536	95,634,700		\$418,964.44

CONSUMERS AREA OF GRAVES COUNTY WATER DISTRICT

Meter Size: 1 inch

	USAGE	BILLS	GALLONS	FIRST 100	NEXT 100	NEXT 300	OVER 500	TOTAL
FIRST	100	101	3,609	3,609				3,609
NEXT	100	30	3,794	3,000	794			3,794
NEXT	300	7	2,309	700	700	909		2,309
OVER	500	22	16,327	2,200	2,200	6,600	5,327	16,327
TOTALS	Gallons x 100	160	2,603,900	950,900	369,400	750,900	532,700	2,603,900

CONSUMERS AREA OF GRAVES COUNTY WATER DISTRICT  
REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	10,000	160	950,900	\$35.61	\$5,697.60
NEXT	10,000		369,400	2.73	1,008.46
NEXT	30,000		750,900	2.53	1,899.78
OVER	50,000		532,700	2.12	1,129.32
TOTAL		160	2,603,900		\$9,735.16

CONSUMERS AREA OF GRAVES COUNTY WATER DISTRICT

Meter Size: 2 inch

	USAGE	BILLS	GALLONS	FIRST 200	NEXT 300	NEXT 500	TOTAL
FIRST	200	30	2,149	2,149			2,149
NEXT	300	18	6,885	3,600	3,285		6,885
OVER	500	5	4,574	1,000	1,500	2,074	4,574
TOTALS	Gallons x 100	53	1,360,800	674,900	478,500	207,400	1,360,800

CONSUMERS AREA OF GRAVES COUNTY WATER DISTRICT  
REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	20,000	53	674,900	\$62.91	\$3,334.23
NEXT	30,000		478,500	2.53	1,210.61
OVER	50,000		207,400	2.12	439.69
TOTAL		53	1,360,800		\$4,984.52

FANCY FARM AREA OF GRAVES COUNTY WATER DISTRICT

Meter Size: Fancy Farm

	USAGE	BILLS	GALLONS	FIRST 20	NEXT 30	NEXT 50	NEXT 100	OVER 200	TOTAL
FIRST	20	1,185	10,610	10,610					10,610
NEXT	30	2,221	77,821	44,420	33,401				77,821
NEXT	50	1,390	94,332	27,800	41,700	24,832			94,332
NEXT	100	339	44,299	6,780	10,170	16,950	10,399		44,299
OVER	200	87	33,192	1,740	2,610	4,350	8,700	15,792	33,192
TOTALS	Gallons x 100	5,222	26,025,400	9,135,000	8,788,100	4,613,200	1,909,900	1,579,200	26,025,400

FANCY FARM AREA OF GRAVES COUNTY WATER DISTRICT  
REVENUE BY RATE INCREMENT

		BILLS	GALLONS	per 1,000 gallon RATE	REVENUE
FIRST	2,000	5,222	9,135,000	\$13.10	\$68,408.20
NEXT	3,000		8,788,100	3.35	29,440.14
NEXT	5,000		4,613,200	3.18	14,669.98
NEXT	10,000		1,909,900	2.98	5,691.50
OVER	20,000		1,579,200	2.70	4,263.84
Total Retail		5,222	26,025,400		\$122,473.65
Wholesale		12	8,259,300	2.17	17,922.68
TOTAL		5,234	34,284,700		\$140,396.33

HARDEMAN AREA OF GRAVES COUNTY WATER DISTRICT

Meter Size: Hardeman

	USAGE	BILLS	GALLONS	FIRST 20	NEXT 30	NEXT 150	OVER 200	TOTAL
FIRST	20	1264	12,575	12,575				12,575
NEXT	30	1940	65,890	38,800	27,090			65,890
NEXT	150	1329	109,211	26,580	39,870	42,761		109,211
OVER	200	87	33,351	1,740	2,610	13,050	15,951	33,351
TOTALS	Gallons x 100	4,620	22,102,700	7,969,500	6,957,000	5,581,100	1,595,100	22,102,700

HARDEMAN AREA OF GRAVES COUNTY WATER DISTRICT  
REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	2,000	4,620	7,969,500	\$13.10	\$60,522.00
NEXT	3,000		6,957,000	2.75	19,131.75
NEXT	15,000		5,581,100	2.12	11,831.93
OVER	20,000		1,595,100	1.80	2,871.18
TOTAL		4,620	22,102,700		\$94,356.86

SOUTH GRAVES AREA OF GRAVES COUNTY WATER DISTRICT

Meter  
Size: South Graves

	USAGE	BILLS	GALLONS	FIRST 20	NEXT 30	NEXT 50	NEXT 100	NEXT 300	NEXT 500	Over 1000	TOTAL
FIRST	20	2,487	23,267	23,267							23,267
NEXT	30	3,294	113,756	65,880	47,876						113,756
NEXT	50	1,649	112,074	32,980	49,470	29,624					112,074
NEXT	100	301	39,246	6,020	9,030	15,050	9,146				39,246
NEXT	300	65	16,327	1,300	1,950	3,250	6,500	3,327			16,327
NEXT	500	5	3,341	100	150	250	500	1,500	841		3,341
OVER	1,000	3	7,491	60	90	150	300	900	1,500	4,491	7,491
TOTALS	Gallons x 100	7,801	31,550,200	12,960,700	10,856,600	4,832,400	1,644,600	572,700	234,100	449,100	31,550,200

REVENUE BY RATE  
INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	2,000	7,801	12,960,700	\$14.25	\$111,164.25
NEXT	3,000		10,856,600	6.87	74,584.84
NEXT	5,000		4,832,400	6.62	31,990.49
NEXT	10,000		1,644,600	6.38	10,492.55
NEXT	30,000		572,700	5.89	3,373.20
NEXT	50,000		234,100	4.91	1,149.43
OVER	100,000		449,100	3.43	1,540.41
TOTAL		7,801	31,550,200		\$234,295.18

COST OF SERVICE STUDY  
GRAVES COUNTY WATER DISTRICT  
ALLOCATION OF PLANT VALUE

PHASE 1

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Water Treatment Equipment	\$188,425		\$188,425	
Land & Land Rights	25,015		25,015	
Structures and Improvements	146,582		146,582	
Pumping Equipment	915,047		915,047	
Wells and Springs	1,400,000		1,400,000	
Transmission & Distribution Mains	2,414,274		2,414,274	
Power Operated Equipment	7,172		7,172	
Meters & Meter Installations	471,321			471,321
Services				0
<b>SUBTOTAL</b>	\$5,567,836	\$0	\$5,096,515	\$471,321
<b>PERCENT</b>	100.00%		91.53%	8.47%
General Plant (1)				
Transportation Equipment			0	0
Office Furniture & Equipment			0	0
Other Plant and Misc. Equipment	145		133	12
<b>TOTAL VALUE</b>	<b>\$5,567,981</b>	<b>\$0</b>	<b>\$5,096,648</b>	<b>\$471,333</b>

(1) General Plant allocated based on overall weighted allocation of all other plant.  
Note: Figures used were derived from 2010 annual report

GRAVES COUNTY WATER DISTRICT  
ALLOCATION OF DEPRECIATION EXPENSE

	PHASE 1			
	TOTAL	COMMODITY	DEMAND	CUSTOMER
Structures and Improvements	\$58,514		\$58,514	
Pumping Equipment	60,433		60,433	
Collecting and Impounding Reservoirs	2,731		2,731	
Wells and Springs	37,004		37,004	
Meters & Meter Installations	45,186			\$45,186
Water Treatment Equipment	83,183		83,183	
Services	2,336			2,336
Transmission & Distribution Mains	251,543		251,543	
<b>TOTAL DEPRECIATION</b>	\$540,930	\$0.00	\$493,408	\$47,522
<b>PERCENT</b>	100.00%		91.21%	8.79%

Note: Figures used were derived from 2010 annual report



GRAVES COUNTY WATER DISTRICT

ALLOCATION OF OPERATION AND MAINTENANCE EXPENSE

	PHASE 1			
	TOTAL	COMMODITY	DEMAND	CUSTOMER
Contractual services - Labor	294,070		294,070	
Contractual Services- Adm. Fee	146,846			146,846
Purchased Water	134,143	134,143		
Purchased Power	61,739	61,739		
Chemicals	61,802	61,802		
Bad Debt Expense	10,613			10,613
<b>SUBTOTAL</b>	<b>709,213</b>	<b>257,684</b>	<b>294,070</b>	<b>157,459</b>
<b>LESS COMMODITY</b>	<b>-257,684</b>			
<b>SUBTOTAL</b>	<b>451,529</b>		<b>294,070</b>	<b>157,459</b>
<b>PERCENT</b>	<b>100.00%</b>		<b>65.13%</b>	<b>34.87%</b>
Employee Salaries - Commissioners	15,750		10,258	5,492
Amortization Expense	1,475		961	514
Equipment Rental	21,435		13,960	7,475
Contractual Services- Eng.	26,833		17,476	9,357
Contractual Services - Materials	14,397		9,376	5,021
Materials & Supplies	29,115		18,962	10,153
Insurance General Liability	11,056		7,201	3,855
Miscellaneous Expense	9,667		6,296	3,371
<b>TOTAL</b>	<b>838,941</b>	<b>257,684</b>	<b>378,559</b>	<b>202,698</b>

GRAVES COUNTY WATER DISTRICT

SUMMARY OF ALLOCATIONS

PHASE 1

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Plant Percentages	100.00%		91.53%	8.47%
Debt Service Payments	\$70,274		\$64,325	\$5,949
Depreciation Percentages	100.00%		91.21%	8.79%
Total Depreciation	201,857		184,123	17,734
Total Operation & Maintenance	838,941	\$257,684.00	378,559	202,698
Total Revenue Requirement	1,111,072.00	257,684.00	627,007.37	226,380.63
				-6,899.00
				-55,913.00
<b>Revenue Requirement from retail water sales</b>	<b>\$1,048,260.00</b>	<b>\$257,684.00</b>	<b>\$627,007.37</b>	<b>\$163,568.63</b>

GRAVES COUNTY WATER DISTRICT

CALCULATION OF WHOLESALE RATE

Wholesale	Gallons Sold	Rate per 1,000	Revenue
	8,259,300	\$2.17	\$17,922.68
Revenue Requirement Increase		16.12%	
	8,259,300	\$2.52	\$20,813.44

GRAVES COUNTY WATER DISTRICT

SUMMARY OF ALLOCATIONS FOR RETAIL CUSTOMERS

PHASE 1

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Plant Percentages	100.00%		91.53%	8.47%
Debt Service Payment	\$70,274		\$64,325	\$5,949
Depreciation Percentages	100.00%		91.21%	8.79%
Total Depreciation	201,857		184,123	17,734
Total Operation & Maintenance	838,941	257,684	378,559	202,698
Total Revenue Requirement	1,111,072	257,684	627,007	226,381
	<i>Less: Other Income</i>			-6,899
	<i>Less: Other Operating Revenue</i>			-55,913
	<i>Less: Revenue from Wholesale Customer</i>	-20,813	-6,063	-14,750
<b>Revenue Requirement from retail water sales</b>	<b>\$1,027,447</b>	<b>\$251,621</b>	<b>\$612,257</b>	<b>\$163,569</b>

**NOTES:**

Wholesale Customer Revenues allocated based on percentage of the total of the Commodity and Demand components.

GRAVES COUNTY WATER DISTRICT  
CALCULATION OF RETAIL WATER RATES

		PHASE 1					
		TOTAL	FIRST 2,000	NEXT 8,000	NEXT 10,000	NEXT 30,000	OVER 50,000
FROM BILLING ANALYSIS:							
	COMMODITY PERCENTS	100.00%	37.14%	50.73%	6.59%	3.72%	1.82%
	<b>RETAIL COMMODITY SALES</b>	179,277,700	66,587,500	90,943,200	11,819,600	6,661,700	3,265,700
	PEAK DEMAND WEIGHTED FACTOR		2	1.75	1.5	1.25	1
	PEAK DEMAND WEIGHTED SALES	321,647,825	133,175,000	159,150,600	17,729,400	8,327,125	3,265,700
	<b>DEMAND PERCENTS</b>	100.00%	41.40%	49.48%	5.51%	2.59%	1.02%
	COMMODITY COSTS	\$251,621.05	\$93,457.34	\$127,641.21	\$16,589.12	\$9,349.87	\$4,583.50
	DEMAND COSTS	\$612,256.89	\$253,498.72	\$302,943.29	\$33,747.93	\$15,850.69	\$6,216.26
	CUSTOMER COSTS	\$163,568.63	\$163,568.63				
	<b>TOTAL COSTS</b>	<b>\$1,027,446.56</b>	<b>\$510,524.68</b>	<b>\$430,584.51</b>	<b>\$50,337.05</b>	<b>\$25,200.56</b>	<b>\$10,799.76</b>
	DIVIDE BY BILLS/GALLONS		38,404	90,943,200	11,819,600	6,661,700	3,265,700
	<b>CALCULATED RATES</b>		<b>\$13.2935</b>	<b>\$4.7347</b>	<b>\$4.2588</b>	<b>\$3.7829</b>	<b>3.3070</b>
	<b>RECOMMENDED RATES</b>		<b>FIRST 2,000</b>	<b>NEXT 3,000</b>	<b>NEXT 5,000</b>	<b>NEXT 10,000</b>	<b>Over 20,000</b>
			\$13.30	\$4.73	\$4.26	\$3.78	\$3.30

Verification Billing Analysis for Unified Rates for: GRAVES COUNTY WATER DISTRICT

Test Period From: January - December 2010  
PHASE 1

<b>Meter Size</b>	<b>Bills</b>	<b>Gallons Sold</b>	<b>Revenue</b>
5/8 inch	38,144	174,891,600	1,007,711.15
1 inch	172	2,719,400	12,832.88
2 inch	76	1,666,700	9,709.62
Wholesale	12	8,259,300	20,813.44
Totals	38,404	187,537,000	\$1,051,067.09

Meter Size: 5/8 inch

	USAGE	BILLS	GALLONS	FIRST 20	NEXT 80	NEXT 100	NEXT 300	OVER 500	TOTAL
FIRST	20	9741	93,407	93,407					93,407
NEXT	80	25924	1,217,246	518,480	698,766				1,217,246
NEXT	100	1986	260,328	39,720	158,880	61,728			260,328
NEXT	300	425	118,679	8,500	34,000	42,500	33,679		118,679
OVER	500	68	59,256	1,360	5,440	6,800	20,400	25,256	59,256
TOTALS	Gallons x 100	38144	174,891,600	66,146,700	89,708,600	11,102,800	5,407,900	2,525,600	174,891,600

REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	2,000	38144	66,146,700	\$13.30	\$507,315.20
NEXT	8,000		89,708,600	4.73	424,321.68
NEXT	10,000		11,102,800	4.26	47,297.93
NEXT	30,000		5,407,900	3.78	20,441.86
OVER	50,000		2,525,600	3.30	8,334.48
TOTAL		38144	174,891,600		\$1,007,711.15

Meter Size: 1 inch

	USAGE	BILLS	GALLONS	FIRST 50	NEXT 50	NEXT 100	NEXT 300	OVER 500	TOTAL
FIRST	50	79	1,915	1,915					1,915
NEXT	50	30	2,360	1,500	860				2,360
NEXT	100	34	4,283	1,700	1,700	883			4,283
NEXT	300	7	2,309	350	350	700	909		2,309
OVER	500	22	16,327	1,100	1,100	2,200	6,600	5,327	16,327
TOTALS	Gallons x 100	172	2,719,400	656,500	401,000	378,300	750,900	532,700	2,719,400

REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	5,000	172	656,500	\$27.49	\$4,728.28
NEXT	5,000		401,000	4.73	1,896.73
NEXT	10,000		378,300	4.26	1,611.56
NEXT	30,000		750,900	3.78	2,838.40
OVER	50,000		532,700	3.30	1,757.91
TOTAL		172	2,719,400		\$12,832.88



Meter Size: 2 inch

	USAGE	BILLS	GALLONS	FIRST 200	NEXT 300	OVER 500	TOTAL
FIRST	200	50	4,364	4,364			4,364
NEXT	300	21	7,729	4,200	3,529		7,729
OVER	500	5	4,574	1,000	1,500	2,074	4,574
TOTALS	Gallons x 100	76	1,666,700	956,400	502,900	207,400	1,666,700

REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	20,000	76	956,400	\$93.74	\$7,124.24
NEXT	30,000		502,900	3.78	1,900.96
OVER	50,000		207,400	3.30	684.42
TOTAL		76	1,666,700		\$9,709.62

GRAVES COUNTY WATER DISTRICT  
ALLOCATION OF OPERATION AND MAINTENANCE EXPENSE

PHASE 2

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Contractual services - Labor	294,070		294,070	
Contractual Services- Adm. Fee	111,830			111,830
Purchased Water	134,143	134,143		
Purchased Power	61,739	61,739		
Chemicals	61,802	61,802		
Bad Debt Expense	10,613			10,613
<hr/>				
<b>SUBTOTAL</b>	<b>674,197</b>	<b>257,684</b>	<b>294,070</b>	<b>122,443</b>
<b>LESS COMMODITY</b>	<b>-257,684</b>			
<hr/>				
<b>SUBTOTAL</b>	<b>416,513</b>		<b>294,070</b>	<b>122,443</b>
<b>PERCENT</b>	<b>100.00%</b>		<b>70.60%</b>	<b>29.40%</b>
Employee Salaries - Commissioners	15,750		11,120	4,630
Amortization Expense	1,475		1,041	434
Equipment Rental	21,435		15,134	6,301
Contractual Services- Eng.	26,833		18,945	7,888
Contractual Services - Materials	14,397		10,165	4,232
Materials & Supplies	29,115		20,556	8,559
Insurance General Liability	11,056		7,806	3,250
Miscellaneous Expense	9,667		6,825	2,842
<b>TOTAL</b>	<b>803,925</b>	<b>257,684</b>	<b>385,662</b>	<b>160,579</b>

GRAVES COUNTY WATER DISTRICT

SUMMARY OF ALLOCATIONS

PHASE 2

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Plant Percentages	100.00%		91.53%	8.47%
Debt Service Payments	\$119,264		\$109,168	\$10,096
Depreciation Percentages	100.00%		91.21%	8.79%
Total Depreciation	257,765		235,120	22,645
Total Operation & Maintenance	803,925	\$257,684.00	385,662	160,579
Total Revenue Requirement	1,180,954.00	257,684.00	729,949.60	193,320.40
<i>Less: Other Income</i>				-6,899.00
<i>Less: Other Operating Revenue</i>				-55,913.00
<b>Revenue Requirement from retail water sales</b>	<b>\$1,118,142.00</b>	<b>\$257,684.00</b>	<b>\$729,949.60</b>	<b>\$130,508.40</b>

GRAVES COUNTY WATER DISTRICT  
CALCULATION OF WHOLESALE RATE

PHASE 2

Wholesale <b>Gallons Sold</b>	<b>Rate per 1,000</b>	<b>Revenue</b>
8,259,300	\$2.52	\$20,813.44
Revenue Requirement Increase	6.67%	
8,259,300	\$2.69	\$22,217.52

GRAVES COUNTY WATER DISTRICT  
SUMMARY OF ALLOCATIONS FOR RETAIL CUSTOMERS

PHASE 2

	TOTAL	COMMODITY	DEMAND	CUSTOMER
Plant Percentages	100.00%		91.53%	8.47%
Debt Service Payment	\$119,264		\$109,168	\$10,096
Depreciation Percentages	100.00%		91.21%	8.79%
Total Depreciation	257,765		235,120	22,645
Total Operation & Maintenance	803,925	257,684	385,662	160,579
Total Revenue Requirement	1,180,954	257,684	729,950	193,320
	<i>Less: Other Income</i>			<i>-6,899</i>
	<i>Less: Other Operating Revenue</i>			<i>-55,913</i>
	<i>Less: Revenue from Wholesale Customer</i>	<i>-6,472</i>	<i>-15,746</i>	
<b>Revenue Requirement from retail water sales</b>	<b>\$1,095,924</b>	<b>\$251,212</b>	<b>\$714,204</b>	<b>\$130,508</b>

**NOTES:**

Wholesale Customer Revenues allocated based on percentage of the total of the Commodity and Demand components.

GRAVES COUNTY WATER DISTRICT  
CALCULATION OF RETAIL WATER RATES

PHASE 2

	TOTAL	FIRST 2,000	NEXT 8,000	NEXT 10,000	NEXT 30,000	OVER 50,000
FROM BILLING ANALYSIS:						
COMMODITY PERCENTS	100.00%	37.14%	50.73%	6.59%	3.72%	1.82%
<b>RETAIL COMMODITY SALES</b>	179,277,700	66,587,500	90,943,200	11,819,600	6,661,700	3,265,700
PEAK DEMAND WEIGHTED FACTOR		2	1.75	1.5	1.25	1
PEAK DEMAND WEIGHTED SALES	321,647,825	133,175,000	159,150,600	17,729,400	8,327,125	3,265,700
<b>DEMAND PERCENTS</b>	100.00%	41.40%	49.48%	5.51%	2.59%	1.02%
COMMODITY COSTS	\$251,212.04	\$93,305.42	\$127,433.73	\$16,562.16	\$9,334.68	\$4,576.05
DEMAND COSTS	\$714,204.04	\$295,708.90	\$353,386.51	\$39,367.31	\$18,489.99	\$7,251.34
CUSTOMER COSTS	\$130,508.40	\$130,508.40				
<b>TOTAL COSTS</b>	<b>\$1,095,924.48</b>	<b>\$519,522.72</b>	<b>\$480,820.24</b>	<b>\$55,929.47</b>	<b>\$27,824.67</b>	<b>\$11,827.38</b>
DIVIDE BY BILLS/GALLONS		38,404	90,943,200	11,819,600	6,661,700	3,265,700
<b>CALCULATED RATES</b>		<b>\$13.5278</b>	<b>\$5.2870</b>	<b>\$4.7319</b>	<b>\$4.1768</b>	<b>3.6217</b>
<b>RECOMMENDED RATES</b>		<b>FIRST 2,000</b>	<b>NEXT 3,000</b>	<b>NEXT 5,000</b>	<b>NEXT 10,000</b>	<b>Over 20,000</b>
		<b>\$13.53</b>	<b>\$5.28</b>	<b>\$4.73</b>	<b>\$4.18</b>	<b>\$3.62</b>

Verification Billing Analysis for: GRAVES COUNTY WATER DISTRICT  
 Test Period From: January - December 2010

PHASE 2

<b>Meter Size</b>	<b>Bills</b>	<b>Gallons Sold</b>	<b>Revenue</b>
5/8 inch	38,144	174,891,600	1,074,013.67
1 inch	172	2,719,400	14,025.42
2 inch	76	1,666,700	10,686.23
Wholesale	12	8,259,300	22,217.52
<b>Totals</b>	<b>38,404</b>	<b>187,537,000</b>	<b>\$1,120,942.83</b>

GRAVES COUNTY WATER DISTRICT

Meter Size: 5/8 inch

	USAGE	BILLS	GALLONS	FIRST 20	NEXT 80	NEXT 100	NEXT 300	NEXT 500	TOTAL
FIRST	20	9741	93,407	93,407					93,407
NEXT	80	25924	1,217,246	518,480	698,766				1,217,246
NEXT	100	1986	260,328	39,720	158,880	61,728			260,328
NEXT	300	425	118,679	8,500	34,000	42,500	33,679		118,679
OVER	500	68	59,256	1,360	5,440	6,800	20,400	25,256	59,256
TOTALS	Gallons x 100	38144	174,891,600	66,146,700	89,708,600	11,102,800	5,407,900	2,525,600	174,891,600

REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	2,000	38144	66,146,700	\$13.53	\$516,088.32
NEXT	8,000		89,708,600	5.28	473,661.41
NEXT	10,000		11,102,800	4.73	52,516.24
NEXT	30,000		5,407,900	4.18	22,605.02
OVER	50,000		2,525,600	3.62	9,142.67
TOTAL		38144	174,891,600		\$1,074,013.67



Meter Size: 1 inch

	USAGE	BILLS	GALLONS	FIRST 50	NEXT 50	NEXT 100	NEXT 300	OVER 500	TOTAL
FIRST	50	79	1,915	1,915					1,915
NEXT	50	30	2,360	1,500	860				2,360
NEXT	100	34	4,283	1,700	1,700	883			4,283
NEXT	300	7	2,309	350	350	700	909		2,309
OVER	500	22	16,327	1,100	1,100	2,200	6,600	5,327	16,327
TOTALS	Gallons x 100	172	2,719,400	656,500	401,000	378,300	750,900	532,700	2,719,400

REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	5,000	172	656,500	\$29.37	\$5,051.64
NEXT	5,000		401,000	5.28	2,117.28
NEXT	10,000		378,300	4.73	1,789.36
NEXT	30,000		750,900	4.18	3,138.76
OVER	50,000		532,700	3.62	1,928.37
TOTAL		172	2,719,400		\$14,025.42

Meter Size: 2 inch

	USAGE	BILLS	GALLONS	FIRST 200	NEXT 300	OVER 500	TOTAL
FIRST	200	50	4,364	4,364			4,364
NEXT	300	21	7,729	4,200	3,529		7,729
OVER	500	5	4,574	1,000	1,500	2,074	4,574
		76	1,666,700	956,400	502,900	207,400	1,666,700

REVENUE BY RATE INCREMENT

		BILLS	GALLONS	RATE	REVENUE
FIRST	20,000	76	956,400	\$103.07	\$7,833.32
NEXT	30,000		502,900	4.18	2,102.12
OVER	50,000		207,400	3.62	750.79
TOTAL		76	1,666,700		\$10,686.23

ATTACHMENT D  
STAFF REPORT, CASE NO. 2012-00278  
STAFF'S RECOMMENDED RATES

**Monthly Rates - Phase I:**

5/8" x 3/4" Meter

First	2,000 Gallons	\$13.30 Minimum Bill
Next	8,000 Gallons	4.73 per 1,000 Gallons
Next	10,000 Gallons	4.26 per 1,000 Gallons
Next	30,000 Gallons	3.78 per 1,000 Gallons
Over	50,000 Gallons	3.30 per 1,000 Gallons

1" Meter

First	5,000 Gallons	\$27.49 Minimum Bill
Next	5,000 Gallons	4.73 per 1,000 Gallons
Next	10,000 Gallons	4.26 per 1,000 Gallons
Next	30,000 Gallons	3.78 per 1,000 Gallons
Over	50,000 Gallons	3.30 per 1,000 Gallons

2" Meter

First	20,000 Gallons	\$93.74 Minimum Bill
Next	30,000 Gallons	3.78 per 1,000 Gallons
Over	50,000 Gallons	3.30 per 1,000 Gallons

WHOLESALE WATER RATE: \$2.52 per 1,000 Gallons

**Monthly Rates - Phase II:**

**5/8" x 3/4" Meter**

First	2,000 Gallons	\$13.53 Minimum Bill
Next	8,000 Gallons	5.28 per 1,000 Gallons
Next	10,000 Gallons	4.73 per 1,000 Gallons
Next	30,000 Gallons	4.18 per 1,000 Gallons
Over	50,000 Gallons	3.62 per 1,000 Gallons

**1" Meter**

First	5,000 Gallons	\$29.37 Minimum Bill
Next	5,000 Gallons	5.28 per 1,000 Gallons
Next	10,000 Gallons	4.73 per 1,000 Gallons
Next	30,000 Gallons	4.18 per 1,000 Gallons
Over	50,000 Gallons	3.62 per 1,000 Gallons

**2" Meter**

First	20,000 Gallons	\$103.07 Minimum Bill
Next	30,000 Gallons	4.18 per 1,000 Gallons
Over	50,000 Gallons	3.62 per 1,000 Gallons

**WHOLESALE WATER RATE:**

\$2.69 per 1,000 Gallons

Johnny Dowdy  
Chair  
Graves County Water District  
P. O. Box 329  
Mayfield, KY 42066