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BEFORE THE ARIZONA CORPORATI

COMMISSIONERS

- BOB STUMP - Chairman
- GARY PIERCE
- BRENDA BURNS
- BOB BURNS
- SUSAN BITTER SMITH

IN THE MATTER OF THE APPLICATION OF  
CORDES LAKES WATER COMPANY FOR  
APPROVAL OF A RATE INCREASE.

DOCKET NO. W-02060A-12-0356

STAFF'S NOTICE OF FILING  
DIRECT TESTIMONY

The Utilities Division ("Staff") of the Arizona Corporation Commission ("Commission") hereby files the Direct Testimony of Staff witnesses Mary J. Rimback, John A. Cassidy, and Delbert W. Smith in the above-referenced matter.

RESPECTFULLY SUBMITTED this 8<sup>th</sup> day of February, 2013.

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Original and thirteen (13) copies of the foregoing were filed this 8<sup>th</sup> day of February, 2013 with:

Docket Control  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Copies of the foregoing were mailed this 8<sup>th</sup> day of February, 2013 to:

Neil Folkman  
Cordes Lakes Water Company  
2501 East Palo Verde  
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**BEFORE THE ARIZONA CORPORATION COMMISSION**

BOB STUMP  
Chairman  
GARY PIERCE  
Commissioner  
BRENDA BURNS  
Commissioner  
BOB BURNS  
Commissioner  
SUSAN BITTER SMITH  
Commissioner

IN THE MATTER OF THE APPLICATION OF )  
CORDES LAKES WATER COMPANY FOR )  
AN INCREASE IN ITS RATES )  
\_\_\_\_\_ )

DOCKET NO W-02060A-12-0356

DIRECT  
TESTIMONY  
OF  
MARY J. RIMBACK  
PUBLIC UTILITIES ANALYST  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

FEBRUARY 8, 2013

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**EXECUTIVE SUMMARY**  
**CORDES LAKES WATER COMPANY**  
**DOCKET NO. W-02060A-12-0356**

Cordes Lakes Water Company (“Cordes Lakes” or “Company”) is an Arizona for-profit Class C public service corporation providing water to approximately 1,300 customers in and around the Town of Cordes Junction, Yavapai County, Arizona.

On August 6, 2012, the Company filed a rate increase application. On August 17, the Company docketed additions and revisions to the rate increase application. On August 30, 2012, the Company requested additional time to file revisions to the rate application. On September 25, 2012, the Company docketed additional information revising the rate application. On October 17, 2012, Staff filed a letter declaring the Company’s rate application sufficient. On November 8, 2012, the Company docketed Additions to the Rate Increase Application.

The Company-proposed rates, as filed, produce total operating revenue of \$498,366, a \$77,000 (19.06 percent) increase, over the test year revenue of \$403,993, to provide a \$37,000 operating income and an 8.0 percent rate of return on a proposed \$496,789 fair value rate base (“FVRB”) which is also the proposed original cost rate base (“OCRB”).<sup>1</sup> The rate application shows that Cordes Lakes incurred a \$17,373 operating loss for the test year ending December 31, 2011. Cordes Lakes requested 77,000 revenue increase includes: (1) \$17,373 to cover the test year operating loss; (2) \$20,000 for profit; (3) \$30,000 as a surcharge for 2 years for “leak detection and repair;” and (4) \$10,000 as a surcharge for 3 years for “meter loss prevention.”

The Utilities Division (“Staff”) recommends total operating revenue of \$428,739, a \$8,202 (1.95 percent) increase over the \$420,536 Staff-adjusted test year revenue, to provide an \$11,512 operating income and a 9.1 percent rate of return on the \$126,500 Staff-adjusted FVRB and OCRB. Staff’s recommendation reflects six rate base adjustments and nine operating income adjustments.

The Company currently has three meter sizes: 3/4-inch, 1-inch and 2-inch. Customers with 3/4-inch meters have a three-tiered commodity rate structure with break-over points at 3,000 gallons and at 8,000 gallons. The monthly minimum charge for 3/4-inch meters is \$11.00. The 1-inch and 2-inch customers have a two-tiered commodity rate structure with break-over points at 18,000 gallons for 1-inch meters and at 75,000 gallons for 2-inch meters. Monthly minimum charges are \$19.50 for 1-inch meters and \$62.50 for the 2-inch meters. The Company proposes to increase (varies between 22.7 percent and 25.6 percent) the monthly minimum charges for all meter sizes and to all commodity rate tiers. The application does not specify any surcharge rates.

Staff recommends no increase to the minimum monthly charge for all meter sizes. Staff recommends an increase to commodity rates in second and third tiers (as it applies to 3/4-inch meters and which represents the first and second tiers for larger meters). Second tier commodity tier rate would increase by \$0.20 (4.65 percent) from \$4.30 per 1,000 gallons to \$4.50 per 1,000 gallons. The third tier commodity rates would increase by \$0.40 (8.00

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<sup>1</sup> The Company’s as filed amounts are not mathematically accurate.

percent) from \$5.00 per 1,000 gallons to \$5.40 per 1,000 gallons. The typical 3/4-inch meter bill with a median use of 3,088 gallons would increase by \$.02 (.09 percent) from \$19.78 to \$19.80.

1 **I. INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is Mary J. Rimback; I am a Public Utilities Analyst Arizona Corporation  
4 Commission ("ACC" or "Commission") in the Utilities Division ("Staff"). My business  
5 address is 1200 West Washington Street, Phoenix, Arizona 85007.

6  
7 **Q. Briefly describe your responsibilities as a Public Utilities Analyst.**

8 A. In my capacity as a Public Utilities Rate Analyst, I analyze and examine accounting,  
9 financial, statistical and other information and prepare reports based on my analyses that  
10 present Staff's recommendations to the Commission on utility revenue requirements, rate  
11 design and other issues.

12  
13 **Q. Please describe your educational background and professional experience.**

14 A. I graduated from Arizona State University with a Bachelor of Science in Accounting and I  
15 am a Certified Public Accountant with the Arizona State Board of Accountancy. I have  
16 been employed with the Arizona Corporation since June 2012.

17  
18 **Q. What is the scope of your testimony in this case?**

19 A. I am presenting Staff's analysis and recommendations regarding Cordes Lakes Water  
20 Company ("Cordes Lakes" or "Company") application for a rate increase. I am presenting  
21 testimony and schedules addressing rate base, operating revenues and expenses, revenue  
22 requirement and rate design. Mr. John Cassidy is presenting the Staff's analysis and  
23 recommendation for the cost of capital analysis. Mr. Del Smith is presenting Staff's  
24 engineering analysis and related recommendations.

1 **Q. What is the basis of your testimony in this case?**

2 A. I performed a regulatory audit of the Company's application and records. The regulatory  
3 audit consisted of examining and testing financial information, accounting records, and  
4 other supporting documentation and verifying that the accounting principles applied were  
5 in accordance with the Commission-adopted National Association of Regulatory Utility  
6 Commissioners ("NARUC") Uniform System of Accounts ("USOA").

7  
8 **Q. How is your testimony organized?**

9 A. My testimony is presented in ten Sections. Section I is this introduction. Section II  
10 provides a background of the Company. Section III is a summary of consumer service  
11 issues. Section IV presents compliance status. Section V is a summary of proposed  
12 revenues. Section VI is a summary of Staff's rate base and operating income adjustments.  
13 Section VII presents Staff's rate base recommendations. Section VIII presents Staff's  
14 operating income recommendations. Section IX discusses rate design. Section X  
15 discusses the surcharge requested by the company.

16  
17 **II. BACKGROUND**

18 **Q. Please review the pertinent background information associated with the Company's'**  
19 **application for a rate increase.**

20 A The Company is a Class C water system servicing approximately 1,300 customers in  
21 Cordes Junction, Arizona. Prior to 2005, Cordes Lakes also included a second water  
22 system named Verde Lakes located in Cottonwood, Arizona. In 2004, the City of  
23 Cottonwood initiated condemnation proceedings and took over the servicing of the Verde  
24 Lakes water system. Decision No. 70170 (February 27, 2008) established the Company's  
25 current rates.

1 **Q. Please describe pertinent information provided with this application.**

2 A. The initial rate application requested funds to cover an operating loss, produce an  
3 operating income of \$20,000, plus additional funding of \$30,000 for leak repair plus \$10  
4 for leak repair.<sup>2</sup> Narrative accompanying the application indicated this request was a 20  
5 percent increase.

6  
7 On August 17, 2012, the Company docketed additional information pertaining to bill  
8 counts and service charges collected in the test year. This filing also included a request to  
9 increase Service Line and Meter Charges.

10  
11 On September 24, 2012, the Company docketed a revised Schedule A-1, requesting a  
12 \$77,000 gross revenue increase, inclusive of \$40,000 of surcharges. The narrative  
13 described the surcharges as \$30,000 per year for two years to cover leak repair and  
14 \$10,000 per year for three years to cover meter repair and replacement. Additional  
15 information on bill counts and sales was provided on September 24, 2012. A revised  
16 Schedule E-2 was also filed at that time.

17  
18 After Staff declared the application sufficient, the Company docketed additional  
19 information on November 8, 2012. The additional information included the detail of  
20 increases to Plant since the test year in the prior rate case.

21  
22 **Q. What test year did Cordes Lakes use in its filing?**

23 A. Cordes Lakes rate filing is based on the twelve months that ended December 31, 2011.  
24

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<sup>2</sup> The \$10 value is apparently a typographical error and was intended to be \$10,000 as shown in Schedule F-1.

1 **III. CONSUMER SERVICE**

2 **Q. Please provide a brief summary of customer complaints received by the Commission**  
3 **regarding Cordes Lakes.**

4 A. Staff reviewed the Commission's records for the period January 1, 2010, through  
5 December 31, 2012, and found the following:

6 **2012** - Zero complaints.

7 **2011** - Four complaints - one billing, two quality of service and one  
8 disconnect/termination.

9 **2010** - Zero complaints.

10  
11 All complaints have been resolved and closed.

12  
13 **IV. COMPLIANCE**

14 **Q. Please provide a summary of the compliance status of the Company.**

15 A. A review of the Commission's Compliance database indicates that there are currently no  
16 delinquencies for the Company.

17  
18 **V. SUMMARY OF COMPANY FILING AND STAFF RECOMMENDATIONS**

19 **Q. Please summarize the Cordes Lakes' proposals in this filing?**

20 A. The Company-proposed rates, as filed, produce total operating revenue of \$498,366, a  
21 \$77,000 (19.06 percent) increase, over the test year revenue of \$403,993, to provide a  
22 \$37,000 operating income and an 8.0 percent rate of return on a proposed \$496,789 fair  
23 value rate base ("FVRB") which is also the proposed original cost rate base ("OCRB").<sup>3</sup>  
24 The rate application shows that Cordes Lakes incurred a \$17,373 operating loss for the test  
25 year ending December 31, 2011. Cordes Lakes requested 77,000 revenue increase

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<sup>3</sup> The Company's as filed amounts are not mathematically accurate.

1 includes: (1) \$17,373 to cover the test year operating loss; (2) \$20,000 for profit;  
2 (3) \$30,000 as a surcharge for 2 years for "leak detection and repair;" and (4) \$10,000 as a  
3 surcharge for 3 years for "meter loss prevention."  
4

5 **Q. Please summarize Staff's recommendations.**

6 A. Staff recommends total operating revenue of \$428,739, an \$8,202 (1.95 percent) increase  
7 over the \$420,536 Staff-adjusted test year revenue, to provide an \$11,512 operating  
8 income and a 9.1 percent rate of return on the \$126,500 Staff-adjusted FVRB and OCRB.  
9 Staff further recommends that the Company be ordered to maintain its books and records  
10 in accordance with the National Association of Regulatory Utility Commissioners  
11 ("NARUC") Uniform System of Accounts ("USOA")  
12

13 **VI. SUMMARY OF STAFF'S RATE BASE AND OPERATING INCOME**  
14 **ADJUSTMENTS**

15 **Q. Please summarize Staff's rate base and operating income adjustments.**

16 A. **Rate Base:**

17 Land – This adjustment removes \$35,665 of land that is not used and useful.

18 Plant in Service – This adjustment reinstates \$582,872 in used and useful assets that the  
19 Company wrote off.

20 Additions to Plant - This adjustment decreases Plant additions by \$11,818, reflecting  
21 adjustments for items not properly included in Plant.

22 Accumulated Depreciation - This adjustment increases accumulated depreciation by  
23 \$755,284 to reflect Staff's calculation based on Staff's recommended plant, primarily  
24 amounts associated with plant the Company wrote off that remains in service.

1           Contributions in Aid of Construction (CIAC) - This adjustment increases CIAC by  
2           \$76,247 to recognize the amount authorized in Decision No. 54526 (May 22, 1985) which  
3           the Company omitted from its application.

4           Working Capital Allowance - This adjustment removes the Company's entire proposed  
5           working capital allowance of \$74,147 which is based on the formula method instead of a  
6           lead-lag study.

7  
8           **Operating Income:**

9           Contract Labor - This adjustment removes \$167,692 of salary reimbursements from  
10           affiliates from both revenue and payroll expense.

11           Repairs and Maintenance Expenses - This adjustment increases expenses by \$1,012 to  
12           provide a normalized level based on the past three years.

13           Metered Revenues - This adjustment increases metered revenue by \$9,093 to reflect bill  
14           count revenues.

15           Depreciation Expense - This adjustment decreases depreciation expense by \$18,648 to  
16           reflect application of Staff's recommended depreciation rates to Staff recommended plant  
17           amounts.

18           Property Taxes - This adjustment increases property taxes by \$5,242 to reflect application  
19           of the modified version of the Arizona Department of Revenue's property tax  
20           methodology which the Commission has consistently adopted.

21           Test Year Income Taxes - This adjustment increases test year income tax expense by  
22           \$1,317 to reflect application of statutory state and federal income tax rates to Staff  
23           adjusted taxable income.

24           Water Testing Expense - This adjustment increases water testing expense by \$4,052.

25           Unmetered Revenue Service Charges - This adjustment increases revenues by \$7,450 to  
26           reflect test year collections of unmetered revenues.

1            Interest on Customer Deposits – This adjustment increases interest expense in the amount  
2            of \$1,050 to reflect 6 percent interest on customer deposits.

3  
4        **VII. RATE BASE**

5        **Fair Value Rate Base**

6        **Q. Does Cordes Lakes' application include schedules with elements of a Reconstruction**  
7        **Cost New Rate Base?**

8        A. No. The Company's application does not request recognition of a Reconstruction Cost  
9        New Rate Base. Accordingly, Staff has treated the Company's original cost rate base as  
10       its fair value rate base.

11  
12       **Rate Base Summary**

13       **Q. Please summarize Staff's rate base recommendation.**

14       A. Staff recommends \$126,500 for a rate base, a \$370,289 reduction from the Company's  
15       proposed \$496,789 rate base. Staff's recommendation results from the six rate base  
16       adjustments as discussed below.

17  
18       **Rate Base Adjustment No. 1 – Land**

19       **Q. What did the Company propose for Land?**

20       A. The Company's application includes \$35,665 for land in rate base.

21  
22       **Q. Did the Company propose to include this same land in rate base in its prior rate case**  
23       **based on a 2006 test year?**

24       A. Yes.

1 **Q. Did the Commission adopt the Company's proposal to include this land in the rate**  
2 **base in the prior rate case?**

3 A. No. Decision No. 70170 (February 26, 2008) adopted Staff's rate base recommendations  
4 which included removal of \$35,665 of land as not used and useful. The Company asserted  
5 that the land was to be used for a future well site.

6  
7 **Q. Did Cordes Lakes add any well sites since the prior rate case as filed in 2007?**

8 A. No.

9  
10 **Q. Is the land still not used and useful?**

11 A. Yes.

12  
13 **Q. What is Staff Recommending?**

14 A. Staff recommends removing \$35,665 of land from the rate base, as shown in Schedule  
15 MJR-5.

16  
17 **Rate Base Adjustment No. 2 – Reinstate Used and Useful Asset**

18 **Q. Did the Company write off utility plant that remains in service?**

19 A. Yes. The Company does not maintain records in accordance with the NARUC USOA,  
20 and its practice is to write off fully depreciated assets regardless of whether they are still  
21 used and useful. As a consequence, the Company wrote off plant and related accumulated  
22 depreciation on plant that remains in service. No retirements of assets were shown in the  
23 Schedules provided to Staff nor in data responses provided to Staff.

1 **Q. Did Staff calculate an amount for the plant removed from the Company's records**  
2 **that remains in service?**

3 A. Yes, Staff calculated plant balances for the end of the test year using plant balances  
4 authorized in the Company's 2007 rate case and documented plant additions for the  
5 intervening years.

6  
7 **Q. What is Staff recommending?**

8 A. Staff recommends increasing plant in service by \$582,872, as shown in Schedule MJR-6.  
9 The associated adjustment to accumulated depreciation in the same amount is included  
10 rate base adjustment no. 4 discussed below.

11  
12 **Rate Base Adjustment No. 3 - Net Plant Additions**

13 **Q. Does the Company have records to support all of the additions to plant since the last**  
14 **rate Case?**

15 A. No, the Company provided Staff invoices for plant additions that included non-capitalized  
16 items. In addition, the invoices provided did not total to the amount of plant additions  
17 claimed. Staff recalculated the plant additions based on the supporting documentation.

18  
19 **Q. What does Staff recommend?**

20 A. Staff recommends removing \$11,818 from additions to plant in service, as shown in  
21 Schedule MJR-7.

1 **Rate Base Adjustment No. 4 – Accumulated Depreciation**

2 **Q. Did Cordes Lakes maintain adequate records to support its proposed Accumulated**  
3 **Depreciation balance of \$139,712?**

4 A. No. As noted above, Cordes Lakes does not maintain its records in accordance with the  
5 NARUC USOA. The Company primarily maintains its records on a tax basis, which is  
6 significantly different.

7  
8 **Q. How did Staff calculate its recommended Accumulated Depreciation?**

9 A. Staff began with the accumulated depreciation balance adopted by the Commission in the  
10 rate case and applied the Commission-authorized depreciation rates to depreciable plant  
11 and all documented additions in the intervening years. Staff's calculation includes  
12 \$582,872 associated with Staff rate base adjustment no. 2 to add back fully depreciated  
13 plant the Company wrote off that remains in service.

14  
15 **Q. What is Staff recommending?**

16 A. Staff recommends an Accumulated Depreciation balance of \$894,996, a \$755,284 increase  
17 over the Company's proposed balance of \$139,712, as shown on Schedule MJR-8.

18  
19 **Rate Base Adjustment No. 5 – Recognition of Contributions in Aid of Construction**  
20 **(“CIAC”)**

21 **Q. What did the Company propose for CIAC?**

22 A. The Company's rate base (Schedule B1) omits any mention of CIAC. That is, the  
23 Company proposes \$0 for CIAC.

1 **Q. Is Cordes Lakes' proposed CIAC consistent with Commission Decision No. 54526?**

2 A. No. Decision No. 54526 ordered the Company to cease amortizing advances that were no  
3 longer subject to refund and reclassify them as contributions in aid of construction. Since  
4 the \$76,247 CIAC balance is not being amortized, the balance remains at \$76,247.

5  
6 **Q. What is Staff recommending?**

7 A. Staff recommends a CIAC balance of \$76,247, as shown in Schedule MJR-9.  
8

9 **Rate Base Adjustment No. 6 – Working Capital Allowance**

10 **Q. What is Cordes Lakes proposing for a working capital allowance?**

11 A. The Company proposes a working capital allowance base on a formula method, i.e., one-  
12 twenty-fourth of electric power expense and one-eighth of other operating and  
13 maintenance expense.

14  
15 **Q. Is the formula method proposed by the Company a preferred method for calculating  
16 a working capital allowance?**

17 A. Staff does not recommend the use of the formula method of Class A, B and C size utilities.  
18 The formula method always results in a positive outcome. There is no basis for presuming  
19 that there is a need for ratepayer to provide a working capital allowance for utilities with  
20 reasonable cash management practices. In fact, since several relatively large expenses  
21 (e.g., property and income taxes) are usually paid long after cash is received from  
22 ratepayers, a negative working capital requirement is reasonably expected. Working  
23 capital requirements are best determined by a lead-lag study. In the absence of a lead-lag  
24 study demonstrating otherwise, there is no reason to expect a positive working capital  
25 requirement consistent with the outcome of the Company's proposed formula method.  
26

1 **Q. What is Staff recommending?**

2 A. Staff recommends \$0 for a cash working capital allowance, as shown in Schedule MJR-  
3 10.

4  
5 **VIII. OPERATING INCOME**

6 **Q. What are the results of Staff's analysis of test year revenues, expenses, and operating**  
7 **income?**

8 A. As shown in Schedules MJR-11 and MJR-12, Staff's analysis resulted in test year  
9 revenues of \$420,536, expenses of \$415,390 and operating income of \$5,146. The  
10 Company's application shows test year revenues of \$571,685, expenses of \$589,058 and  
11 an operating loss of \$17,373. Staff's recommendation results from the nine operating  
12 income adjustments discussed below.

13  
14 **Operating Income Adjustment No. 1 - Contract Labor**

15 **Q. What treatment does the Company propose for the \$167,692 of payments received**  
16 **from other entities for work provided by Cordes Lakes' employees?**

17 A. The Company included all of the \$167,692 in both operating revenues and operating  
18 expenses.

19  
20 **Q. Are these payments related to the operations of Cordes Lakes to provide service to**  
21 **its customers?**

22 A. No. Cordes Lakes received these payments for services provided by its employees to  
23 other entities. The payments are neither operating revenues nor operating expenses of the  
24 Company and should be removed.

1 **Q. What is Staff Recommending?**

2 A. Staff recommends removing \$167,692 from both operating revenues and operating  
3 expenses, as shown in Schedule MJR-13.

4

5 **Operating Income Adjustment No. 2 - Repairs and Maintenance Expense**

6 **Q. What is the Company proposing for Repairs and Maintenance Expense?**

7 A. The Company is proposing its actual recorded test year Repairs and Maintenance expense  
8 of \$12,650.

9

10 **Q. Is the test year expense representative of average on-going repairs and maintenance**  
11 **expense?**

12 A. The Company's annual reports show Repairs and Maintenance expenses for 2009, 2010  
13 and 2011 of \$11,116, \$17,221, and \$12,650, respectively, which indicates that these  
14 expenses can vary from year to year. Accordingly normalizing these expenses by using a  
15 three-year average (\$13,662) is a reasonable approach for estimating the average on-going  
16 amount.

17

18 **Q. What is Staff recommending?**

19 A. Staff recommends Repairs and Maintenance expense of \$13,662, an increase of \$1,012  
20 from the Company's proposed amount, as shown in Schedule MJR-14.

1 **Operating Income Adjustment No. 3 - Metered Revenue**

2 **Q. Did the test year bill counts presented in the Company's application reconcile to the**  
3 **test year metered revenue proposed by the Company?**

4 A. No, the billing determinants for metered water sales provided in the Company's February  
5 24, 2012 filing, generate \$412,446, \$9,093 more than the \$403,353 metered revenue  
6 shown in the Company's application.

7  
8 **Q. What is Staff's Recommendation?**

9 A. Staff recommends increasing test year revenue by the amount of \$9,093, as shown in  
10 MJR-15.

11

12 **Operating Income Adjustment No. 4 - Depreciation Expense**

13 **Q. What is the Company proposing for depreciation expense?**

14 A. The Company proposed \$37,195 for test year depreciation expense.

15

16 **Q. Does Staff recommend any modifications to the Company's proposed depreciation**  
17 **expense calculation?**

18 A. Yes. Staff calculated depreciation expense by applying its recommended depreciation  
19 rates (the same rates adopted by the Commission in the prior rate case) to its  
20 recommended plant balances.

21

22 **Q. What is Staff recommending?**

23 A. Staff recommends \$18,547 for depreciation expense, a \$18,648 reduction from the  
24 Company's proposed amount, as shown in Schedule MJR-16.

25

1 **Operating Income Adjustment No. 5 - Property Tax Expense**

2 **Q. What is Cordes Lakes proposing for Test Year Property Taxes?**

3 A. Cordes Lakes is proposing \$18,187 for test year property tax expense.  
4

5 **Q. Does the Commission normally use the actual property tax bill for the test year for**  
6 **ratemaking purposes of Class C water utilities?**

7 A. No. The Commission's practice in recent years has been to use a modified Arizona  
8 Department of Revenue ("ADOR") methodology for water and wastewater utilities. The  
9 results from using this methodology are primarily dependent upon the test year and  
10 proposed revenues. In other words, for each revenue requirement, there is a specific  
11 property tax expense in the same manner as each operating income has a specific income  
12 tax expense. Although the results for this methodology are frequently referred to as test  
13 year amounts, in fact, the results are representative of the average expected property tax  
14 over a subsequent three-year period based partially on proposed revenues. The modified  
15 ADOR calculation for property tax expense is static, i.e. it is representative only at a  
16 specific level.  
17

18 **Q. Has Staff developed a solution to address the dependent relationship between**  
19 **Property Tax expense and revenues?**

20 A. Yes. Staff has included a factor for property taxes in the Gross Revenue Conversion  
21 Factor ("GRCF") (See Schedule MJR-2) that automatically adjusts the revenue  
22 requirement for changes in revenue in the same way that income taxes are adjusted for  
23 changed in operating income. This flexible method will accurately reflect Property Tax  
24 expense at any authorized revenue level. This refinement removes the need to include  
25 proposed revenues in the calculation of test year Property Tax expense and allows for  
26 accurate calculation of Property Tax expense at the test year revenue level.

1 **Q. What is Staff recommending for test year Property Tax Expense?**

2 A. Staff recommends \$23,429 for test year property tax expense, a \$5,242 increase to the  
3 Company's proposed amount, as shown in Schedule MJR-17. Staff further recommends  
4 adoption of its GRCF that includes a factor for Property Tax Expense, as shown in  
5 Schedule MJR-2.

6

7 **Operating Income Adjustment No. 6 - Income Taxes**

8 **Q. Did Staff make an adjustment to test year Income Tax Expense?**

9 A. Yes.

10

11 **Q. How did Staff calculate test year income tax expense for the Company?**

12 A. Staff applied the statutory state and federal income tax rates to Staff's test year taxable  
13 income. Income tax expenses for the test year and recommended revenues are shown in  
14 MJR-2.

15

16 **Q. What adjustment does Staff recommend for test year income tax expense for the  
17 Company?**

18 A. Staff recommends increasing test year income tax expense by \$1,317, as shown in  
19 Schedule MJR-18.

20

21 **Operating Income Adjustment No. 7 - Water Testing Expense**

22 **Q. What is the Company proposing for Water Testing expense?**

23 A. The Company is proposing \$1,806 for Water Testing expense in the test year.

1 **Q. What is Staff's Recommendation?**

2 A. Staff recommends \$5,858 for Water Testing expense (See Staff testimony of Del Smith),  
3 an increase of \$4,052 to the Company's proposed amount. Staff's adjustment is shown in  
4 Schedule MJR-19.

5

6 **Operating Income Adjustment No. 8 - Un-metered Revenues**

7 **Q. What amount did the Company claim for Un-metered Revenue in its most recent**  
8 **revision of its application?**

9 A. The Company's most recent application update regarding Un-metered Revenue is in its  
10 September 24, 2012, filing. Specifically, the Company submitted a revised Schedule E-2,  
11 which is the schedule used by the Company for test year revenues and expenses. The  
12 revised Schedule E-2 shows \$640 as miscellaneous income.

13

14 **Q. Did the Company provide a breakout of the components of the \$640 in miscellaneous**  
15 **income?**

16 A. Yes, the breakout included the categories of: "non water company adjustment, bad  
17 checks, deposit account balance, meter refund account balance, miscellaneous account  
18 adjustment (estab, reconnect, etc) and sales tax collected." Unmetered revenue normally  
19 includes amounts for authorized service charges, such as: establishment, reconnection, re-  
20 establishment, meter re-read (if correct) and non-sufficient funds fees. With the exception  
21 of non-sufficient funds fees, the items noted by the Company are not items to include in  
22 un-metered revenue.

23

24 **Q. Did the Company's breakout of the \$640 amount for these service charges include an**  
25 **amount for miscellaneous revenues?**

26 A. Yes. The Companies breakout shows \$8,161 in miscellaneous revenues.

1 **Q. Had the Company previously provided better detail regarding its Un-metered service**  
2 **charges?**

3 A. Yes, the Company provided detail for \$8,090 of un-metered revenues in its August 17,  
4 2012, filing of additions to the rate increase application.

5  
6 **Q. What does Staff recommend for Un-metered Revenues?**

7 A. Staff recommends \$8,090 Un-metered Revenues, a \$7,450 increase to the Company  
8 proposed amount, as shown in Schedule MJR-20.

9  
10 **Operating Income Adjustment No. 9 - Interest on Customer Deposits**

11 **Q. Does the Company's application include a provision to recover interest on customer**  
12 **deposits?**

13 A. No.

14  
15 **Q. Is it a normal ratemaking practice to allow a utility to recover interest expense on**  
16 **customer deposits?**

17 A. Yes. Interest expense incurred on customer deposits is normally recognized as an  
18 operating expense when customer deposits are deducted in the calculation of rate base.

19  
20 **Q. Does Staff recommend including interest expense for Customer Deposits as an**  
21 **operating expense in this case?**

22 A. Yes, Staff recommends allowing \$1,050 for interest on customer deposits, as shown in  
23 Schedule MJR-21.

1 **IX. RATE DESIGN**

2 **Present Rate Design**

3 **Q. Please provide an overview of the Company's present rates.**

4 A. Present, Proposed, and Staff Recommended rate design are presented in Staff's Direct  
5 Testimony Schedule MJR-22. The present rates went into effect March 1, 2008. There  
6 are three meter sizes presently in use in the system: 3/4-inch, 1-inch and 2-inch. The 3/4-  
7 inch meter has a three-tiered commodity rate structure with break-over points at 3,000 and  
8 8,000 gallons. The tier rates are \$2.80, \$4.30 and \$5.00 with a monthly minimum of  
9 \$11.00. All other meters have a two-tiered rate structure. The 1-inch meter has a break-  
10 over point of 18,000 gallons and commodity rates of \$4.30 and \$5.00 with a monthly  
11 minimum of \$19.50. There is only one customer with a 2-inch meter. The break-over  
12 point is 75,000 gallons and commodity rates are \$4.30 and \$5.00 with a monthly minimum  
13 of \$62.50.

14  
15 **The Company's Proposed Water Rate Design**

16 **Q. Please provide an overview of the Company's proposed rate increases.**

17 A. The Company proposes to maintain the existing break-over points for all meter sizes and  
18 increase the commodity tier rates from \$2.80 to \$3.30 (a 17.9 percent increase) for the first  
19 tier, from \$4.30 to \$5.25 (a 22.1 percent increase) for the second tier and from \$5.00 to  
20 \$6.00 (a 20.0 percent increase) for the third tier. Minimum Monthly charges are proposed  
21 to increase from \$11.00 to \$13.50 (a 22.7 percent increase) for the 3/4-inch meter; from  
22 \$19.50 to \$24.50 (a 25.6 percent increase) for the 1-inch meter; from \$62.50 to \$78.00 (a  
23 24.8 percent increase) for the 2-inch meter. The Company proposes similar percentage  
24 increases in the minimum monthly charges for other meter sizes.

25

1 **Q. Did the Company propose any changes to Service Line and Meter Installation**  
2 **Charges?**

3 A. Yes. The Company proposes an increase to each meter size. Staff has reviewed the  
4 Company's proposed service line and meter installation charges and recommends  
5 approval of those charges, as shown in Schedule MJR-22.  
6

7 **Staff's Recommended Water Rate Design**

8 **Q. Please provide a description of Staff's recommended rate design.**

9 A. Staff recommends no increase to the minimum monthly charge for all meter sizes. Staff  
10 recommends maintaining the break-over points contained in present rates. Staff  
11 recommends an increase to commodity rates in second and third tiers (as it applies to 3/4-  
12 inch meters and which represents the first and second tiers for larger meters). Second tier  
13 commodity tier rate would increase by \$0.20 (4.65 percent) from \$4.30 per 1,000 gallons  
14 to \$4.50 per 1,000 gallons. The third tier commodity rates would increase by \$0.40 (8.00  
15 percent) from \$5.00 per 1,000 gallons to \$5.40 per 1,000 gallons. The typical 3/4-inch  
16 meter bill with a median use of 3,088 gallons would increase by \$.02 (.09 percent) from  
17 \$19.78 to \$19.80. Staff's recommended rates are shown in Schedule MJR-22 and the  
18 typical bill analysis for 3/4-inch meter customers is shown in Schedule MJR-23.  
19

20 **Q. Did the Company propose any changes to its Water System Service Charges?**

21 A. Yes. The Company proposes increases of \$5.00 each to: Establishment (\$30.00),  
22 Establishment-After Hours (\$40.00); Reconnection -Delinquent (\$20.00); Reconnection-  
23 Delinquent and After Hours (\$30.00); and a \$2.50 increase to NSF checks (\$15.00).  
24

1 **Q. Please provide a description of Staff's recommended Water System Service Charges.**

2 A. Staff recommends elimination of the Establishment (After Hours) Service Charge and the  
3 Reconnection (After Hours) tariff. Staff does support an after-hour service charge. An  
4 after-hour service charge is appropriate when it is at the customer's request. Such a  
5 charge compensates the utility for additional expenses incurred when providing after-  
6 hours service. Staff recommends the addition of a Service Charge (after hours) tariff in  
7 the amount of \$35.00 and that this charge be in addition to the charge for any utility  
8 service provided after hours at the customer's request. Staff recommends inserting the  
9 words (if correct) after Meter Re-Read and Meter test tariffs. Staff's recommended water  
10 system service charges are shown in Schedule MJR-22.

11  
12 **Q. Did Staff prepare a Schedule showing the average and median monthly bill for  
13 present rates, Company's proposed and Staff's recommended rates?**

14 A. Yes. Staff's Direct Testimony Schedule MJR-23 presents the average and median  
15 monthly bill for present rates, Company's proposed rates and Staff's recommended rates.

16  
17 **Q. What is the impact of Staff's recommended rates on the median customer bill?**

18 A. The typical 3/4-inch median bill with a median usage of 3,088 gallons will increase from  
19 \$19.78 to \$19.80 or \$.02 (.09 percent)

20  
21 **X. SURCHARGES**

22 **Q. Did Cordes Lakes request an amount for surcharges?**

23 A. Yes. The Company requested two surcharges.

1 **Q. Please describe the surcharges.**

2 A. The Company presented the surcharges in its September 24, 2012 Additions and Revisions  
3 to the rate application filing. The Company proposed a water loss repair surcharge in the  
4 amount of \$30,000 for a two-year period and a meter replacement surcharge in the amount  
5 of \$10,000 for a three-year period.

6  
7 **Q. Did the Company provide any support for obtaining surcharge revenues in addition  
8 to the revenues typically generated using a rate base/rate of return methodology?**

9 A. No. The Company did not provide any explanation to support a need for additional  
10 revenues.

11  
12 **Q. Did the Company incur water loss repair costs in the test year?**

13 A. Yes. These are normal on-going costs that are already included in the test year operating  
14 expense.

15  
16 **Q. What is Staff's recommendation?**

17 A. Staff recommends denying the Company's request for surcharges.

18  
19 **Q. Does this conclude your testimony?**

20 A. Yes, it does.

CORDES LAKES WATER COMPANY

Docket No. W-02060A-07-0256

Test Year Ended December 31, 2006

DIRECT TESTIMONY OF Mary J. Rimback

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MJR	22 Rate Design
MJR	23 Typical Bill Analysis - 3/4-inch Meter

**REVENUE REQUIREMENT**

LINE NO.	DESCRIPTION	(A) COMPANY ORIGINAL COST	(B) STAFF ORIGINAL COST
1	Adjusted Rate Base	\$ 496,789	\$ 126,500
2	Adjusted Operating Income (Loss) <sup>1</sup>	\$ (17,373)	\$ 5,146
3	Current Rate of Return (L2 / L1) <sup>2</sup>	0.00%	4.07%
4	Required Rate of Return	8.00%	9.10%
5	Required Operating Income (L4 * L1) <sup>3,4</sup>	\$ 37,000	\$ 11,512
6	Operating Income Deficiency (L5 - L2) <sup>5</sup>	\$ 68,000	\$ 6,365
7	Gross Revenue Conversion Factor	None	1.2886
8	Required Revenue Increase (L7 * L6) <sup>6</sup>	\$ 77,000	<b>\$ 8,202</b>
9	Adjusted Test Year Revenue	\$ 403,993	\$ 420,536
10	Proposed Annual Revenue (L8 + L9) <sup>7</sup>	\$ 498,366	\$ 428,738
11	Required Increase in Revenue (%)	19.06%	1.95%

References:

Column (A): Company Schedule B-1 Rate Base, Revised E-2 (9/24/2012) Income Statement  
Column (B): Staff Schedule MJR-3 & MJR-12

- <sup>1</sup> The Company's application (Schedule A-1) uses Net Income as Operating Income.
- <sup>2</sup> The Company's rate of return, as filed, is not a mathematical product of Operating Income divided by rate base.
- <sup>3</sup> Rate base (\$496,789) times ROR (8.0%) equals \$39,743.
- <sup>4</sup> The Company requests a \$30,000 water loss repair surcharge and a \$10,000 meter replacement surcharge.
- <sup>5</sup> The Company's amount is not mathematically correct.
- <sup>6</sup> The Company's amount is the total of Required Operating Income and both surcharges (\$37,000 + \$30,000 + \$10,000). However, the Company's request for a \$30,000 water loss surcharge only extends for two years and the \$10,000 meter replacement surcharge only extends for three years.
- <sup>7</sup> Company's amount represents test year revenue (\$403,993) plus adjusted operating loss (\$17,373) plus required operating income (\$37,000) plus annual water loss surcharge (\$30,000) plus annual meter replacement surcharge (\$10,000).

**GROSS REVENUE CONVERSION FACTOR**

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
<u>Calculation of Gross Revenue Conversion Factor:</u>					
1	Revenue	100.0000%			
2	Uncollectible Factor (Line 11)	0.0000%			
3	Revenues (L1 - L2)	100.0000%			
4	Combined Federal and State Tax Rate (Line 17) + Property Tax Factor (Line 22)	22.3951%			
5	Subtotal (L3 - L4)	77.6049%			
6	Revenue Conversion Factor (L1 / L5)	1.288578			
<u>Calculation of Uncollectible Factor:</u>					
7	Unity	100.0000%			
8	Combined Federal and State Tax Rate (Line 17)	20.9228%			
9	One Minus Combined Income Tax Rate (L7 - L8)	79.0772%			
10	Uncollectible Rate	0.0000%			
11	Uncollectible Factor (L9 * L10)	0.0000%			
<u>Calculation of Effective Tax Rate:</u>					
12	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%			
13	Arizona State Income Tax Rate	6.9680%			
14	Federal Taxable Income (L12 - L13)	93.0320%			
15	Applicable Federal Income Tax Rate (Line 53)	15.0000%			
16	Effective Federal Income Tax Rate (L14 x L15)	13.9548%			
17	Combined Federal and State Income Tax Rate (L13 + L16)	20.9228%			
<u>Calculation of Effective Property Tax Factor</u>					
18	Unity	100.0000%			
19	Combined Federal and State Tax Rate (Line 17)	20.9228%			
20	One Minus Combined Income Tax Rate (L18 - L19)	79.0772%			
21	Property Tax Factor (MJR-17, L24)	1.8618%			
22	Effective Property Tax Factor (L 21 * L 22)	1.4723%			
23	Combined Federal and State Tax and Property Tax Rate (L17+L22)		22.3951%		
24	Required Operating Income (Schedule MJR-1, Line 5)	\$ 11,512			
25	Adjusted Test Year Operating Income (Loss) (Schedule MJR-11, Line 40)	\$ 5,146			
26	Required Increase in Operating Income (L24 - L25)		\$ 6,365		
27	Income Taxes on Recommended Revenue (Col. (D), L52)	\$ 3,046			
28	Income Taxes on Test Year Revenue (Col. (B), L52)	\$ 1,362			
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		\$ 1,684		
30	Recommended Revenue Requirement (Schedule MJR-1, Line 10)	\$ 428,738			
31	Uncollectible Rate (Line 10)	0.0000%			
32	Uncollectible Expense on Recommended Revenue (L24 * L25)	\$ -			
33	Adjusted Test Year Uncollectible Expense	\$ -			
34	Required Increase in Revenue to Provide for Uncollectible Exp. (L32 - L33)		\$ -		
35	Property Tax with Recommended Revenue (MJR-17, L19)	\$ 23,581			
36	Property Tax on Test Year Revenue (MJR-17, L 16)	\$ 23,429			
37	Increase in Property Tax Due to Increase in Revenue (MJR-17, L22)		\$ 153		
38	Total Required Increase in Revenue (L26 + L29 + L34+L37)		\$ 8,202		
<u>Calculation of Income Tax:</u>					
		Test Year		STAFF Recommended	
39	Revenue (Schedule MJR-11, Col.(C), Line 5 & Sch. MJR-1, Col. (B), Line 10)	\$ 420,536	\$ 8,202	\$ 428,738	
40	Operating Expenses Excluding Income Taxes	\$ 414,028		\$ 414,181	
41	Synchronized Interest (L47)	\$ -		\$ -	
42	Arizona Taxable Income (L36 - L317- L38)	\$ 6,508		\$ 14,557	
43	Arizona State Income Tax Rate	6.9680%		6.9680%	
44	Arizona Income Tax (L39 x L40)		\$ 453	\$ 1,014	
45	Federal Taxable Income (L42- L43)	\$ 6,054		\$ 13,543	
46	Federal Tax on First Income Bracket (\$1 - \$50,000) @ 15%	\$ 908		\$ 2,031	
47	Federal Tax on Second Income Bracket (\$50,001 - \$75,000) @ 25%	\$ -		\$ -	
48	Federal Tax on Third Income Bracket (\$75,001 - \$100,000) @ 34%	\$ -		\$ -	
49	Federal Tax on Fourth Income Bracket (\$100,001 - \$335,000) @ 39%	\$ -		\$ -	
50	Federal Tax on Fifth Income Bracket (\$335,001 - \$10,000,000) @ 34%	\$ -		\$ -	
51	Total Federal Income Tax	\$ 908		\$ 2,031	
52	Combined Federal and State Income Tax (L44 + L51)	\$ 1,362		\$ 3,046	
53	Applicable Federal Income Tax Rate [Col. (D), L51 - Col. (B), L51] / [Col. (C), L45 - Col. (A), L45]				15.0000%
<u>Calculation of Interest Synchronization:</u>					
54	Rate Base (Schedule MJR-3, Col. (C), Line 17)	\$ 126,500			
55	Weighted Average Cost of Debt	0.00%			
56	Synchronized Interest (L54 X L56)	\$ -			

**RATE BASE - ORIGINAL COST**

LINE NO.	(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	REF	(C) STAFF AS ADJUSTED
1	Plant in Service	\$ 601,634	\$ 535,389	\$ 1,137,023
2	Less: Accumulated Depreciation	139,712	755,284	894,996
3	Net Plant in Service	<u>\$ 461,922</u>	<u>\$ (219,895)</u>	<u>\$ 242,027</u>
<u>LESS:</u>				
4	Contributions in Aid of Construction (CIAC)	\$ -	\$ 76,247	\$ 76,247
5	Less: Accumulated Amortization	-	-	-
6	Net CIAC	<u>-</u>	<u>76,247</u>	<u>76,247</u>
7	Advances in Aid of Construction (AIAC)	21,110	-	21,110
8	Customer Deposits	18,170	-	18,170
9	Deterred Income Tax Liabilites	-	-	-
<u>ADD:</u>				
10	Unamortized Finance Charges	-	-	-
11	Deferred Tax Assets	-	-	-
12	Working Capital	74,147	(74,147)	-
17	<b>Original Cost Rate Base</b>	<u>\$ 496,789</u>	<u>\$ (370,289)</u>	<u>\$ 126,500</u>

References:

Column (A), Company Schedule B-1,  
Column (B): Schedule MJR-4  
Column (C): Column (A) + Column (B)

SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS

LINE NO.	ACCT. NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] Rec & Res Land ADJ #1 Ref. Sch MJR-5	[C] Used & Useful ADJ #2 Ref. Sch MJR-6	[D] Net Plant Additions ADJ #3 Ref. Sch MJR-7	[E] Acc Depr ADJ #4 Ref. Sch MJR-8	[F] Recognize CIAC ADJ #5 Ref. Sch MJR-9	[G] Working Capital ADJ #6 Ref. Sch MJR-10	[H] STAFF ADJUSTED
<i>PLANT IN SERVICE.</i>										
1	301	Organization	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
2	302	Franchises	-	-	-	-	-	-	-	-
3	303	Land and Land Rights	35,665	(35,665)	-	-	-	-	-	-
4	304	Structures & Improvements	6,657	-	-	-	-	-	-	6,657
5	305	Collecting & Impounding Reservoirs	-	-	-	-	-	-	-	-
6	306	Lakes, Rivers, Other Intakes	-	-	-	-	-	-	-	-
7	307	Wells and Springs	187,340	-	-	-	-	-	-	187,348
8	308	Infiltration Galleries and Tunnels	-	-	-	-	-	-	-	-
9	309	Supply Mains	-	-	-	-	-	-	-	-
10	310	Power Generation Equipment	-	-	-	-	-	-	-	-
11	311	Pumping Equipment	26,588	-	-	-	-	-	-	26,588
12	312	Water Treatment Plant	-	-	-	-	-	-	-	-
13	320	Distribution Reservoirs & Standpipes	141,632	-	-	-	-	-	-	141,632
14	330	Transmission & Distribution Mains	15,089	-	562,940	3,898	-	-	-	581,937
15	331	Services	-	-	19,350	-	-	-	-	19,350
16	333	Meters & Meter Installation	70,842	-	-	(16,025)	-	-	-	54,817
17	334	Hydrants	-	-	-	-	-	-	-	-
18	335	Backflow Prevention Devices	-	-	-	-	-	-	-	-
19	336	Other Plant & Misc. Equipment	59,315	-	-	1,235	-	-	-	60,550
20	339	Office Furniture & Equipment	7,027	-	-	(926)	-	-	-	6,101
21	340	Transportation Equipment	71,461	-	-	-	-	-	-	71,461
22	341	Stores Equipment	-	-	-	-	-	-	-	-
23	342	Tools, Ship & Garage Equipment	-	-	-	-	-	-	-	-
24	343	Laboratory Equipment	-	-	-	-	-	-	-	-
25	344	Power Operated Equipment	-	-	-	-	-	-	-	-
26	345	Communication Equipment	-	-	-	-	-	-	-	-
27	346	Miscellaneous Equipment	-	-	582	-	-	-	-	582
28	347	Other Tangible Plant	-	-	-	-	-	-	-	-
29	348		-	-	-	-	-	-	-	-
30			601,634	(35,665)	582,872	(11,818)	-	-	-	1,137,023
31										
32	Add:	Post Test Year Plant	-	-	-	-	-	-	-	-
33		General Office Plant Allocation	-	-	-	-	-	-	-	-
34			-	-	-	-	-	-	-	-
35	Less:		-	-	-	-	-	-	-	-
36			-	-	-	-	-	-	-	-
37			-	-	-	-	-	-	-	-
38			-	-	-	-	-	-	-	-
39		Total Plant in Service	\$ 601,634	\$ (35,665)	\$ 582,872	\$ (11,818)	\$ 755,284	\$ -	\$ -	\$ 1,137,023
40		Less: Accumulated Depreciation	139,712	-	-	-	-	-	-	894,996
41										
42		Net Plant in Service (L59 - L 60)	\$ 461,922	\$ (35,665)	\$ 582,872	\$ (11,818)	\$ (755,284)	\$ -	\$ -	\$ 242,027
43	LESS:									
44		Contributions in Aid of Construction (CIAC)	-	-	-	-	-	-	-	-
45		Less: Accumulated Amortization	-	-	-	-	-	-	-	76,247
46		Net CIAC (L25 - L26)	-	-	-	-	-	-	-	76,247
47		Advances in Aid of Construction (AIAC)	21,110	-	-	-	-	-	-	21,110
48		Customer Deposits	18,170	-	-	-	-	-	-	18,170
49		Deferred Tax Liabilities	-	-	-	-	-	-	-	-
50			-	-	-	-	-	-	-	-
51			-	-	-	-	-	-	-	-
52	ADD:									
53		Unamortized Finance Charges	-	-	-	-	-	-	-	-
54		Deferred Tax Assets	-	-	-	-	-	-	-	-
55		Working Capital	74,147	-	-	-	-	-	(74,147)	-
56										
57		Original Cost Rate Base	\$ 486,789	\$ (35,665)	\$ 582,872	\$ (11,818)	\$ (755,284)	\$ (76,247)	\$ (74,147)	\$ 126,500

**RATE BASE ADJUSTMENT #1 - REMOVE NON-USED AND USEFUL LAND**

<u>Line No.</u>	<u>DESCRIPTION</u>	<u>[A] COMPANY PROPOSED</u>	<u>[B] STAFF ADJUSTMENTS</u>	<u>[C] STAFF RECOMMENDED</u>
1	Land	\$ 35,665	\$ (35,665)	\$ -

References:

- Col [A]: Company Schedule B-1
- Col [B]: Col [C] - Col [A]
- Col [C]: MJR Testimony

**RATE BASE ADJUSTMENT #2 REINSTATE USED AND USEFULL PLANT**

LINE NO.	ACCT NO.	DESCRIPTION	[A]	[B]	[C]
			COMPANY 2006 Balance AS FILED	Decision No. 70170 STAFF ADJUSTMENTS	STAFF RECOMMENDED
1	311	Pumping Equipment	\$ 10,558	\$ -	\$ 10,558
2	331	Transmission & Distribution Mains	9,444	562,940	572,384
3	333	Services	-	19,350	19,350
4	347	Miscellaneous Equipment	-	582	582
5		Totals	<u>\$ 20,002</u>	<u>\$ 582,872</u>	<u>\$ 602,874</u>

[A]: Company Schedule E-5 and Detail 11/8/2012

[B]: Col [C] - Col [A]

[C]:MJR Testimony

CORDES LAKES WATER COMPANY  
 Docket No. W-02060A-12-0356  
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MJR-7

**RATE BASE ADJUSTMENT #3 NET PLANT ADDITIONS**

LINE NO.	ACCT NO.	DESCRIPTION	[A]	[B]	[C]
			COMPANY Additions 11/8/2012	STAFF ADJUSTMENTS	STAFF RECOMMENDED
1	331	Transmission & Distribution Mains	\$ 5,655	\$ 3,898	\$ 9,553
2	334	Meters & Meter Installation	35,253	(16,025)	19,228
3	339	Other Plant & Misc. Equipment	5,166	1,235	6,401
4	340	Office Furniture & Equipment	2,537	(926)	1,611
5		Totals	<u>\$ 48,611</u>	<u>\$ (11,818)</u>	<u>\$ 36,793</u>

[A]: Company Schedule E-5 and Detail provided 11/8/2012

[B]: Col [C] - Col [A]

[C]:MJR Testimony

CORDES LAKES WATER COMPANY  
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MJR-8

**RATE BASE ADJUSTMENT #4 - ACCUMULATED DEPRECIATION**

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Accumulated Depreciation	<u>\$ 139,712</u>	<u>\$ 755,284</u>	<u>\$ 894,996</u>

References:

Col [A]: Company Schedule B-1  
Col [B]: Col [C] - Col [A]  
Col [C]: MJR Testimony

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**RATE BASE ADJUSTMENT #5 - CIAC**

<u>LINE</u> <u>NO.</u>	<u>DESCRIPTION</u>	<u>[A]</u> <u>COMPANY</u> <u>PROPOSED</u>	<u>[B]</u> <u>STAFF</u> <u>ADJUSTMENTS</u>	<u>[C]</u> <u>STAFF</u> <u>RECOMMENDED</u>
1	Contributions in aid of construction	\$ -	\$ 76,247	\$ 76,247

References:

Col [A]: Company Schedule B-1

Col [B]: Col [C] - Col [A]

Col [C]: Decision 70170

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MJR-10

**RATE BASE ADJUSTMENT #6 - WORKING CAPITAL ALLOWANCE**

<u>LINE</u> <u>NO.</u>	<u>DESCRIPTION</u>	<u>[A]</u> <u>COMPANY</u> <u>PROPOSED</u>	<u>[B]</u> <u>STAFF</u> <u>ADJUSTMENTS</u>	<u>[C]</u> <u>STAFF</u> <u>RECOMMENDED</u>
1	Working Capital Allowance	\$ 74,147	\$ (74,147)	\$ -

References:

Col [A]: Company Schedule B-1

Col [B]: Col [C] - Col [A]

Col [C]: MJR Testimony

OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED

MJR-11

LINE NO.	DESCRIPTION	[A] COMPANY ADJUSTED TEST YEAR AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
1	<b>REVENUES:</b>					
2	Metered Water Sales	\$ 403,353	\$ 9,093	\$ 412,446	\$ 8,202	\$ 420,648
3	Received for Contract Labor	167,692	(167,692)	-	-	-
4	Miscellaneous Revenue	640	7,450	8,090	-	8,090
5	<b>Total Operating Revenues</b>	<b>\$ 571,685</b>	<b>\$ (151,149)</b>	<b>\$ 420,536</b>	<b>\$ 8,202</b>	<b>\$ 428,738</b>
6	<b>OPERATING EXPENSES:</b>					
7	Payroll	\$ 309,095	\$ (167,692)	\$ 141,403	\$ -	\$ 141,403
10	Contract Labor	10,312	-	10,312	-	10,312
11	Employee Benefits	29,422	-	29,422	-	29,422
13	Purchased Power	31,723	-	31,723	-	31,723
14	Repairs and Maintenance	12,650	1,012	13,662	-	13,662
15	Office Supplies and Expense	14,491	-	14,491	-	14,491
16	Outside Services - Accounting	3,660	-	3,660	-	3,660
17	Outside Services - Billing Services	24,118	-	24,118	-	24,118
18	Outside Services - Computer Programming	3,511	-	3,511	-	3,511
19	Water Testing	1,806	4,052	5,858	-	5,858
20	Rents	28,150	-	28,150	-	28,150
21	Transportation Expenses	8,995	-	8,995	-	8,995
22	Insurance - General Liability	33,033	-	33,033	-	33,033
23	Insurance - Health and Life	14,936	-	14,936	-	14,936
24	Rate Case Expense	-	-	-	-	-
25	Regulatory Expense	-	-	-	-	-
26	Misc Expense - Permits	2,000	-	2,000	-	2,000
27	Misc Expense - Travel	-	-	-	-	-
28	Misc. Expenses - Utilities except Electricity	3,391	-	3,391	-	3,391
29	Misc. Expenses - Bank Charges	1,304	-	1,304	-	1,304
30	Misc. Expenses - Payroll Services	859	-	859	-	859
31	Depreciation Expense	37,195	(18,648)	18,547	-	18,547
32	Payroll Taxes	175	-	175	-	175
33	Taxes other than Income (Sales Tax)	-	-	-	-	-
34	Property Taxes	18,187	5,242	23,429	153	23,581
35	Income Tax	45	1,317	1,362	1,684	3,046
36	Interest Income	-	-	-	-	-
37	Interest Expense	-	1,050	1,050	-	1,050
38						
39	<b>Total Operating Expenses</b>	<b>\$ 589,058</b>	<b>\$ (173,668)</b>	<b>\$ 415,390</b>	<b>\$ 1,837</b>	<b>\$ 417,227</b>
40	<b>Operating Income (Loss)</b>	<b>\$ (17,373)</b>	<b>\$ 22,519</b>	<b>\$ 5,146</b>	<b>\$ 6,365</b>	<b>\$ 11,512</b>

**References:**

Column (A): Company Revised Schedule E-2, 11/8/2012  
Column (B): Schedule MJR-12  
Column (C): Column (A) + Column (B)  
Column (D): Schedules MJR-1 and MJR-2  
Column (E): Column (C) + Column (D)

CORDES LAKES WATER COMPANY  
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 Test Year: Ended December 31, 2011

SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	(A) COMPANY AS FILED 9/24/2012	(B) Contract Labor ADJ #1 Ref. Sch MJR-13	(C) Repairs & Maint ADJ #2 Ref. Sch MJR-14	(D) Metered Rev ADJ #3 Ref. Sch MJR-15	(E) Dear. Exp. ADJ #4 Ref. Sch MJR-16	(F) Prop. Tax ADJ #5 Ref. Sch MJR-17	(G) Inc. Tax ADJ #6 Ref. Sch MJR-18	(H) Water Testing ADJ #7 Ref. Sch MJR-19	(I) Un-metered Rev ADJ #8 Ref. Sch MJR-20	(J) ADJ #9 Ref. Sch MJR-21	(K) STAFF ADJUSTED
1	<u>REVENUES:</u>											
2	Metered Revenue	\$ 403,353			\$ 9,093							\$ 412,446
3	Received for Contract Labor	\$ 187,692	\$ (187,692)									
4	Other Water Revenue	640								7,450		8,090
5	Total Operating Revenues	\$ 571,685	\$ (187,692)		\$ 9,093					\$ 7,450		\$ 420,538
6	<u>OPERATING EXPENSES:</u>											
7	Payroll	\$ 309,095										\$ 141,403
8	Contract Labor	10,312	\$ (187,692)									10,312
9	Employee Benefits	29,422										29,422
10	Purchased Power	31,723										31,723
11	Repairs and Maintenance	12,650		1,012								13,662
12	Office Supplies and Expense	14,491										14,491
13	Outside Services - Accounting	3,660										3,660
14	Outside Services - Billing Services	24,118										24,118
15	Outside Services - Computer Programming	3,511										3,511
16	Water Testing	1,806						4,052				5,858
17	Rents	28,150										28,150
18	Transportation Expenses	8,995										8,995
19	Medical Insurance	33,033										33,033
20	Liability Insurance	14,938										14,938
21	Rate Case Expense	-										-
22	Regulatory Expense	-										-
23	Misc Expense - Permits	2,000										2,000
24	Misc Expense - Travel	-										-
25	Misc. Expenses - Utilities except Electricity	3,391										3,391
26	Misc. Expenses - Bank Charges	1,304										1,304
27	Misc. Expenses - Payroll Services	859										859
28	Depreciation Expense	37,195										37,195
29	Payroll Taxes	175										175
30	Taxes other than Income (Sales Tax)	-										-
31	Property Taxes	18,187					5,242					23,429
32	Income Tax	45										1,382
33	Interest Income	-										-
34	Interest Expense	-									1,050	-
35	Total Operating Expenses	\$ 589,058	\$ (187,692)	\$ 1,012	\$ 9,093	\$ (18,648)	\$ 5,242	\$ 1,317	\$ 4,052	\$ -	\$ 1,050	\$ 415,390
36	Operating Income (Loss)	\$ (17,373)	\$ -	\$ (1,012)	\$ -	\$ 18,648	\$ (5,242)	\$ (1,317)	\$ (4,052)	\$ 7,450	\$ (1,050)	\$ 5,146

References:

Column (A): Company Revised Schedule E-2, 11/8/2012

**OPERATING INCOME ADJUSTMENT #1 - REMOVE NON-UTILITY REVENUES AND EXPENSES FOR CONTRACT LABOR**

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Contract Labor Revenue	\$ 167,692	\$ (167,692)	\$ -
2	Payroll	\$ 167,692	(167,692)	\$ -
3	Operating Income Affect	\$ -	\$ -	\$ -

References:

Col [A]: Company Schedule E-2  
Col [B]: Col [C] - Col [A]  
Col [C]: MJR Testimony

**OPERATING INCOME ADJUSTMENT #2 - NORMALIZATION OF REPAIRS & MAINTENANCE EXPENSES**

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Repairs & Maintenance	\$ 12,650	\$ 1,012	\$ 13,662
2	Repairs & Maintenance - Company's Test Year: 2011			\$ 12,650
3	Repairs & Maintenance - 2010 Annual Stmt			17,221
4	Repairs & Maintenance - 2009 Annual Stmt			11,116
5	Repairs & Maintenance expenses, past three years			\$ 40,987
6	Average Repair & Maintenance expense (line 5/3)			\$ 13,662

References:

Col [A]: Company Schedule C-1

Col [B]: Col [C] - Col [A]

Col [C]: Normalized Repairs & Maintenance Expense Col [C] L6.

**OPERATING INCOME ADJUSTMENT #3 - METERED REVENUE**

<u>LINE NO.</u>	<u>DESCRIPTION</u>	<u>[A] COMPANY PROPOSED</u>	<u>[B] STAFF ADJUSTMENTS</u>	<u>[C] STAFF RECOMMENDED</u>
1	Metered Revenue	<u>\$ 403,353</u>	<u>\$ 9,093</u>	<u>\$ 412,446</u>

References:

Col [A]: Company Schedule E-2 Revised 9/24/2012

Col [B]: Col [C] - Col [A]

Col [C]: MJR Testimony

<u>Bill Count Revenue</u>	
3/4 inch Meter	\$ 404,597
1 inch Meter	2,397
2 inch Meter	5,452
Subtotal	<u>\$ 412,446</u>

**OPERATING INCOME ADJUSTMENT #4 - DEPRECIATION EXPENSE**

Line No.	ACCT NO.	DESCRIPTION	[A] AMOUNT	Depreciable Amount	[B] Projected RATE	[C] EXPENSE
<b>Plant In Service</b>						
1	301	Organization	\$ -	\$ -	0.00%	\$ -
2	302	Franchises	-	-	0.00%	-
3	303	Land and Land Rights	-	-	0.00%	-
4	304	Structures & Improvements	6,657	4,400	3.33%	147
5	305	Collecting & Impounding Reservoirs	-	-	2.50%	-
6	306	Lakes, Rivers, Other Intakes	-	-	2.50%	-
7	307	Wells and Springs	167,348	151,979	3.33%	5,061
8	308	Infiltration Galleries and Tunnels	-	-	6.67%	-
9	309	Supply Mains	-	-	2.00%	-
10	310	Power Generation Equipment	-	-	5.00%	-
11	311	Pumping Equipment	26,588	16,030	12.50%	2,004
12	320	Water Treatment Plant	-	-	3.33%	-
13	330	Distribution Reservoirs & Standpipes	141,632	94,458	2.22%	2,097
14	331	Transmission & Distribution Mains	581,937	19,442	2.00%	389
15	333	Services	19,350	-	3.33%	-
16	334	Meters & Meter Installation	54,817	47,078	8.33%	3,922
17	335	Hydrants	-	-	2.00%	-
18	336	Backflow Prevention Devices	-	-	6.67%	-
19	339	Other Plant & Misc. Equipment	60,550	60,550	6.67%	4,039
20	340	Office Furniture & Equipment	6,101	6,101	6.67%	407
21	341	Transportation Equipment	71,461	2,412	20.00%	482
22	342	Stores Equipment	-	-	4.00%	-
23	343	Tools, Shop & Garage Equipment	-	-	5.00%	-
24	344	Laboratory Equipment	-	-	10.00%	-
25	345	Power Operated Equipment	-	-	5.00%	-
26	346	Communication Equipment	-	-	10.00%	-
27	347	Miscellaneous Equipment	582	-	10.00%	-
28	348	Other Tangible Plant	-	-	0.00%	-
29		Subtotal General	\$ 1,137,023	\$ 402,450		\$ 18,547
30		Less: Non-depreciable Account(s) (L3)	-	-		-
31		Depreciable Plant (L29-L30)	\$ 1,137,023	\$ 402,450		
32		Contributions-in-Aid-of-Construction (CIAC) Per Decision No. 54526 (1/28/1985) - Not Amortized	\$ 76,247			
33		Composite Depreciation/Amortization Rate	0.00%			
34		Less: Amortization of CIAC (L32 x L33)				\$ -
35		<b>Depreciation Expense - STAFF [Col. (C), L29 - L34]</b>				<b>\$ 18,547</b>

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED	[B] STAFF ADJUSTMENT	[C] STAFF RECOMMENDED
36	Depreciation Expense	\$ 37,195	\$ (18,648)	\$ 18,547

**References:**

- Col [A]: MJR-4
- Col [B]: Decision No. 70170 and updated Plant Schedules
- Col [C]: MJR Testimony

**OPERATING INCOME ADJUSTMENT #5 - PROPERTY TAXES**

LINE NO.	Property Tax Calculation	(C)	
		STAFF AS ADJUSTED	STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues - 2011	\$ 420,536	\$ 420,536
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	841,073	\$ 841,073
4	Staff Recommended Revenue, Per Schedule MJR-1	420,536	\$ 428,738
5	Subtotal (Line 4 + Line 5)	1,261,609	1,269,811
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	420,536	423,270
8	Department of Revenue Multiplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	841,073	846,541
10	Plus: 10% of CWIP -	-	-
11	Less: Net Book Value of Licensed Vehicles	2,171	2,171
12	Full Cash Value (Line 9 + Line 10 - Line 11)	838,902	\$ 844,370
13	Assessment Ratio	20.0%	20.0%
14	Assessment Value (Line 12 * Line 13)	167,780	\$ 168,874
15	Composite Property Tax Rate	13.9638%	13.9638%
			\$ -
16	Staff Test Year Adjusted Property Tax (Line 14 * Line 15)	\$ 23,429	
17	Company Proposed Property Tax	18,187	
18	Staff Test Year Adjustment (Line 16-Line 17)	\$ 5,242	
19	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		\$ 23,581
20	Staff Test Year Adjusted Property Tax Expense (Line 16)		\$ 23,429
21	Increase in Property Tax Expense Due to Increase in Revenue Requirement		\$ 153
22	Increase to Property Tax Expense		\$ 153
23	Increase in Revenue Requirement		8,202
24	Increase to Property Tax per Dollar Increase in Revenue (Line 22/Line 23)		1.861840%

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**OPERATING INCOME ADJUSTMENT #6 - TEST YEAR INCOME TAXES**

<u>LINE NO.</u>	<u>DESCRIPTION</u>	<u>[A] COMPANY PROPOSED</u>	<u>[B] STAFF ADJUSTMENTS</u>	<u>[C] STAFF RECOMMENDED</u>
1	Income Tax Expense	<u>\$ 45</u>	<u>\$ 1,317</u>	<u>\$ 1,362</u>

References:

Col [A]: Company Schedule E-2 Revised 9/24/2012

Col [B]: Col [C] - Col [A]

Col [C]: Schedule MJR-2, Line 43

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**OPERATING INCOME ADJUSTMENT #7 WATER TESTING**

<u>LINE NO.</u>	<u>DESCRIPTION</u>	<u>[A] COMPANY PROPOSED</u>	<u>[B] STAFF ADJUSTMENTS</u>	<u>[C] STAFF RECOMMENDED</u>
1	Water Testing Expense	<u>\$ 1,806</u>	<u>\$ 4,052</u>	<u>\$ 5,858</u>

References:

Col [A]: Company Schedule E-2

Col [B]: Col [C] - Col [A]

Col [C]: Engineering Report

**OPERATING INCOME ADJUSTMENT #8 - NON-METERED REVENUE FEES**

LINE NO.	DESCRIPTION	[A] COMPANY PROPOSED 9/24/2012	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Misc Income Net	\$ 640	\$ (640)	\$ -
2	Establishment	-	\$ 6,825	6,825
3	Reconnection	-	\$ 1,045	1,045
4	After Hours Reconnection	-	\$ 150	150
5	Re-Establishment	-	\$ 70	70
6		\$ 640	\$ 7,450	\$ 8,090

	COMPANY Revised 8/17/2012
Misc Income Net	\$ -
Establishment	6,825
Reconnection	1,045
After Hours Reconnection	150
Re-Establishment	70

References:

- Col [A]: Company Schedule A-2 (B)
- Col [B]: Col [C] - Col [A]
- Col [C]: Schedule Column A plus Column B

**OPERATING INCOME ADJUSTMENT #9 - INTEREST ON CUSTOMER DEPOSITS**

LINE		[A]	[B]	[C]
<u>NO.</u>	<u>DESCRIPTION</u>	<u>COMPANY</u> <u>PROPOSED</u>	<u>STAFF</u> <u>ADJUSTMENTS</u>	<u>STAFF</u> <u>RECOMMENDED</u>
1	Interest on Customer Deposits	\$ -	\$ 1,050	\$ 1,050

References:

Col [A]: Company Schedule A-2 (B)  
Col [B]: Col [C] - Col [A]  
Col [C]: MJR Testimony

**RATE DESIGN**

Monthly Usage Charge	Present	-Proposed Rates-	
	Rates	Company	Staff
<u>5/8" x 3/4" Meter</u>	N/A	N/A	N/A
3/4" Meter	11.00	13.50	11.00
1" Meter	19.50	24.50	19.50
1½" Meter	39.00	48.75	39.00
2" Meter	62.50	78.00	62.50
3" Meter	125.00	156.00	125.00
4" Meter	220.00	275.00	220.00
6" Meter	390.00	485.00	390.00
8" Meter	N/A	N/A	N/A
10" Meter	N/A	N/A	N/A
12" Meter	N/A	N/A	N/A
Gallons Included in Minimum	0	0	0
<u>Commodity Rate Charge</u>			
<i>3/4" Meter</i>			
<i>Company</i>			
Tier 1	From 0 to 3,000 gallons	2.80	3.30
Tier 2	From 3,001 to 8,000 gallons	4.30	5.25
Tier 3	Over 8,000 gallons	5.00	6.00
<i>Staff</i>			
Tier 1	From 0 to 3,000 gallons		2.80
Tier 2	From 3,001 to 8,000 gallons		4.50
Tier 3	Over 8,000 gallons		5.40
<i>1" Meter</i>			
<i>Company</i>			
Tier 1	From 0 to 18,000 gallons	4.30	5.25
Tier 2	Over 18,000 gallons	5.00	6.00
<i>Staff</i>			
Tier 1	From 0 to 18,000 gallons		4.50
Tier 2	Over 18,000 gallons		5.40
<i>1½" Meter</i>			
<i>Company</i>			
Tier 1	From 0 to 43,500 gallons	4.30	5.25
Tier 2	Over 43,500 gallons	5.00	6.00
<i>Staff</i>			
Tier 1	From 0 to 43,500 gallons		4.50
Tier 2	Over 43,500 gallons		5.40
<i>2" Meter</i>			
<i>Company</i>			
Tier 1	From 0 to 75,000 gallons	4.30	5.25
Tier 2	Over 75,000 gallons	5.00	6.00
<i>Staff</i>			
Tier 1	From 0 to 75,000 gallons		4.50
Tier 2	Over 75,000 gallons		5.40
<i>3" Meter</i>			
<i>Company</i>			
Tier 1	From 0 to 160,000 gallons	4.30	5.25
Tier 2	Over 160,000 gallons	5.00	6.00
<i>Staff</i>			
Tier 1	From 0 to 160,000 gallons		4.50
Tier 2	Over 160,000 gallons		5.40
<i>4" Meter</i>			
<i>Company</i>			
Tier 1	From 0 to 290,000 gallons	4.30	5.25
Tier 2	Over 290,000 gallons	5.00	6.00
<i>Staff</i>			
Tier 1	From 0 to 290,000 gallons		4.50
Tier 2	Over 290,000 gallons		5.40
<i>6" Meter</i>			
<i>Company</i>			
Tier 1	From 0 to 530,000 gallons	4.30	5.25
Tier 2	Over 530,000 gallons	5.00	6.00
<i>Staff</i>			
Tier 1	From 0 to 530,000 gallons		4.50
Tier 2	Over 530,000 gallons		5.40

**RATE DESIGN**

Service Line and Meter Installation Charges			Service Meter		
			Line	Installation	Total
5/8" x 3/4" Meter	N/T	N/T	N/T	N/T	N/T
3/4" Meter	520.00	Same as Staff	426.00	198.00	624.00
1" Meter	610.00	Same as Staff	486.00	246.00	732.00
1½" Meter	855.00	Same as Staff	528.00	498.00	1,026.00
2" Meter	1,515.00	Same as Staff	720.00	1,098.00	1,818.00
3" Meter	2,195.00	Same as Staff	930.00	1,764.00	2,694.00
4" Meter	3,360.00	Same as Staff	1,332.00	2,700.00	4,032.00
6" Meter	6,115.00	Same as Staff	2,000.00	5,350.00	7,350.00

Service Charges			
Establishment	\$25.00	\$30.00	\$30.00
Establishment (After Hours)	\$35.00	\$40.00	NT
Reconnection (Delinquent)	\$15.00	\$20.00	\$20.00
Reconnection (Delinquent) After Hours	\$25.00	\$30.00	NT
NSF Check	\$12.50	\$15.00	\$15.00
Meter Re-Read (If Correct)	\$10.00	\$12.00	\$12.00
Meter Test (If Correct)	\$25.00	\$30.00	\$30.00
Deferred Payment (per Month)	1.5%	1.5%	***
Deposit Amount	*	*	*
Deposit Interest	*	*	*
Re-Establishment (Within 12 Months)	**	**	**
Late Fee (per Month)	1.5%	1.5%	***
Road Cutting or Boring	Cost	Cost	Cost
After Hours Service Charge (Customer Request)	N/T	N/T	\$35.00

NT = No Tariff

Monthly Service Charge for Fire Sprinkler			
4" or Smaller	\$0.00	\$0.00	****
6"	0.00	0.00	****
8"	0.00	0.00	****
10"	0.00	0.00	****
Larger than 10"	0.00	0.00	****

- \* Per Commission Rules (R14-2-403.B)
- \*\* Months off system times the minimum (R14-2-403.D)
- \*\*\* 1.5% on the unpaid balance per month
- \*\*\*\* 2.00% of Monthly Minimum for a Comparable Sized Meter Connection, but no less than \$10.00 per month. The Service Charge for Fire Sprinklers is only applicable for service lines separate and distinct from the primary water service line.

**TYPICAL BILL ANALYSIS**

General Service 3/4 - Inch Meter

Average Number of Customers: 1,291

<u>Company Proposed</u>	<u>Gallons</u>	<u>Present Rates</u>	<u>Proposed Rates</u>	<u>Dollar Increase</u>	<u>Percent Increase</u>
Average Usage	4,169	\$24.42	\$29.54	\$5.11	20.92%
Median Usage	3,088	\$19.78	\$23.86	\$4.08	20.65%
<u>Staff Recommend</u>					
Average Usage	4,169	\$24.42	\$24.66	\$0.23	0.96%
Median Usage	3,088	\$19.78	\$19.80	\$0.02	0.09%

Present & Proposed Rates (Without Taxes)  
General Service 3/4 - Inch Meter

<u>Gallons Consumption</u>	<u>Present Rates</u>	<u>Company Proposed Rates</u>	<u>% Increase</u>	<u>Staff Proposed Rates</u>	<u>% Increase</u>
0	\$11.00	\$13.50	22.73%	\$11.00	0.00%
1,000	13.80	16.80	21.74%	13.80	0.00%
2,000	16.60	20.10	21.08%	16.60	0.00%
3,000	19.40	23.40	20.62%	19.40	0.00%
4,000	23.70	28.65	20.89%	23.90	0.84%
5,000	28.00	33.90	21.07%	28.40	1.43%
6,000	32.30	39.15	21.21%	32.90	1.86%
7,000	36.60	44.40	21.31%	37.40	2.19%
8,000	40.90	49.65	21.39%	41.90	2.44%
9,000	45.90	55.65	21.24%	47.30	3.05%
10,000	50.90	61.65	21.12%	52.70	3.54%
15,000	75.90	91.65	20.75%	79.70	5.01%
20,000	100.90	121.65	20.56%	106.70	5.75%
25,000	125.90	151.65	20.45%	133.70	6.20%
50,000	250.90	301.65	20.23%	268.70	7.09%
75,000	375.90	451.65	20.15%	403.70	7.40%
100,000	500.90	601.65	20.11%	538.70	7.55%
125,000	625.90	751.65	20.09%	673.70	7.64%
150,000	750.90	901.65	20.08%	808.70	7.70%
175,000	875.90	1,051.65	20.07%	943.70	7.74%
200,000	1,000.90	1,201.65	20.06%	1,078.70	7.77%



**BEFORE THE ARIZONA CORPORATION COMMISSION**

**BOB STUMP**

Chairman

**GARY PIERCE**

Commissioner

**BRENDA BURNS**

Commissioner

**BOB BURNS**

Commissioner

**SUSAN BITTER SMITH**

Commissioner

IN THE MATTER OF THE APPLICATION OF )  
CORDES LAKES WATER COMPANY FOR )  
AN INCREASE IN ITS RATES )  
\_\_\_\_\_ )

DOCKET NO W-02060A-12-0356

DIRECT  
TESTIMONY

OF

JOHN A. CASSIDY

PUBLIC UTILITIES ANALYST  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION

FEBRUARY 8, 2013

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**EXECUTIVE SUMMARY  
CORDES LAKES WATER COMPANY  
DOCKET NO. W-02060A-12-0356**

The direct testimony of Staff witness John A. Cassidy addresses the following issues:

Capital Structure – Staff recommends that the Commission adopt a capital structure for Cordes Lakes Water Company (“Cordes Lakes” or “Company”) for this proceeding consisting of 0.0 percent debt and 100.0 percent equity.

Cost of Equity – Staff recommends that the Commission adopt a 9.1 percent return on equity (“ROE”) for the Company. Staff’s estimated ROE for the Company is based on the average of its discounted cash flow method (“DCF”) and capital asset pricing model (“CAPM”) cost of equity methodology estimates for the sample companies of 8.2 percent for the CAPM and 8.8 percent for DCF. Staff’s recommended ROE includes an upward economic assessment adjustment of 60 basis points.

Cost of Debt – Staff recommends that the Commission adopt a 0.0 percent cost of debt for the Company, as the Company has no debt in its capital structure.

Overall Rate of Return – Staff recommends that the Commission adopt a 9.1 percent overall rate of return.

Company-Proposed Cost of Capital – The Company’s application does not present testimony pertaining to the cost of capital. Schedule A-1 of the application shows the requested overall rate of return as 8.0 percent. Schedule D-1 “Summary of Cost of Capital” of the application shows a capital structure comprised of only \$18,170 for customer deposits at a 6.0 percent cost rate. Schedule E-1 “Comparative Balance Sheet” of the application shows \$651,634 for total shareholders’ equity. Staff has calculated the capital structure implied by the Company’s application comprised of 2.7 percent debt and 97.3 percent equity and has also calculated the implied ROE of 8.1 percent. Staff opposes including customer deposits as a component of the capital structure. The Commission has a long-standing record of treating customer deposits as a deduction in the calculation of rate base as opposed to the Company’s proposed treatment.

1 **I. INTRODUCTION**

2 **Q. Please state your name, occupation, and business address.**

3 A. My name is John A. Cassidy. I am a Public Utilities Analyst employed by the Arizona  
4 Corporation Commission (“Commission”) in the Utilities Division (“Staff”). My business  
5 address is 1200 West Washington Street, Phoenix, Arizona 85007.

6  
7 **Q. Briefly describe your responsibilities as a Public Utilities Analyst.**

8 A. I am responsible for the examination of financial and statistical information included in  
9 utility rate applications and other financial matters, including studies to estimate the cost  
10 of capital component in rate filings used to determine the overall revenue requirement, and  
11 for preparing written reports, testimonies and schedules to present Staff’s  
12 recommendations to the Commission on these matters.

13  
14 **Q. Please describe your educational background and professional experience.**

15 A. I hold a Bachelor of Arts degree in History from Arizona State University, a Master of  
16 Library Science degree from the University of Arizona, and an MBA degree with an  
17 emphasis in Finance from Arizona State University. While pursuing my MBA degree, I  
18 was inducted into Beta Gamma Sigma, the National Business Honor Society. I have  
19 passed the CPA exam, but opted not to pursue certification. I have worked professionally  
20 as a librarian, financial consultant, tax auditor, and, as a former Commission employee,  
21 served as Staff’s cost of capital witness in rate case evidentiary proceedings.

22  
23 **Q. What is the scope of your testimony in this case?**

24 A. My testimony provides Staff’s recommended capital structure, return on equity (“ROE”)  
25 and overall rate of return (“ROR”) for establishing the revenue requirements for Cordes  
26 Lakes Water Company’s (“Cordes Lakes” or “Company”) pending rate case application.

1 **Summary of Testimony and Recommendations**

2 **Q. Briefly summarize how Staff's cost of capital testimony is organized.**

3 A. Staff's cost of capital testimony is presented in eleven sections. Section I is this  
4 introduction. Section II discusses the concept of weighted average cost of capital  
5 ("WACC"). Section III presents the concept of capital structure and presents Staff's  
6 recommended capital structure for Cordes Lakes in this proceeding. Section IV presents  
7 Staff's cost of debt for Cordes Lakes. Section V discusses the concepts of ROE and risk.  
8 Section VI presents the methods employed by Staff to estimate Cordes Lakes' ROE.  
9 Section VII presents the findings of Staff's ROE analysis. Section VIII presents Staff's  
10 final cost of equity estimates for Cordes Lakes. Section IX presents Staff's ROR  
11 recommendation. Section X presents Staff's comments on the cost of capital aspects of  
12 the Company's application. Finally, section XI presents the conclusions.

13  
14 **Q. Have you prepared any schedules to accompany your testimony?**

15 A. Yes. I prepared nine schedules (JAC-1 to JAC-9) that support Staff's cost of capital  
16 analysis.

17  
18 **Q. What is Staff's recommended rate of return ("ROR") for Cordes Lakes?**

19 A. Staff recommends a 9.1 percent overall ROR, as shown in Schedule JAC-1. Staff's ROR  
20 recommendation is based on cost of equity estimates for the sample companies of 8.8  
21 percent from the discounted cash flow method ("DCF") and 8.2 percent from the capital  
22 asset pricing method ("CAPM") estimation methodologies. Staff recommends adoption of  
23 a 60 basis point upward Economic Assessment Adjustment, resulting in a 9.1 percent  
24 return on equity.

1 **Cordes Lakes' Proposed Overall Rate of Return**

2 **Q. Briefly summarize Cordes Lakes' proposed capital structure, cost of debt, ROE and**  
3 **overall ROR for this proceeding.**

4 **A. Table 1 summarizes the Company's proposed capital structure, cost of debt, ROE and**  
5 **overall ROR in this proceeding:**

6  
7 **Table 1**

	<b>Weight</b>	<b>Cost</b>	<b>Weighted Cost</b>
Long-term Debt	2.7%	6.0%	0.2%
Common Equity	97.3%	8.1%	<u>7.8%</u>
<b>Cost of Capital/ROR</b>			<b>8.0%</b>

8  
9 Cordes Lakes is proposing an overall rate of return of 8.0 percent.<sup>1</sup>

10  
11 **II. THE WEIGHTED AVERAGE COST OF CAPITAL**

12 **Q. Briefly explain the cost of capital concept.**

13 **A. The cost of capital is the opportunity cost of choosing one investment over others with**  
14 **equivalent risk. In other words, the cost of capital is the return that stakeholders expect**  
15 **for investing their financial resources in a determined business venture over another**  
16 **business venture.**

<sup>1</sup> The Company's application does not present testimony pertaining to the cost of capital. Schedule A-1 of the application shows the requested overall rate of return as 8.0 percent. Schedule D-1 "Summary of Cost of Capital" of the application shows a capital structure comprised of only \$18,170 for customer deposits at a 6.0 percent cost rate. Schedule E-1 "Comparative Balance Sheet" of the application shows \$651,634 for total shareholders' equity. Staff has calculated the capital structure implied by the Company's application comprised of 2.7 percent debt and 97.3 percent equity and has also calculated the implied ROE of 8.1 percent.

1 **Q. What is the overall cost of capital?**

2 A. The cost of capital to a company issuing a variety of securities (i.e., stock and  
3 indebtedness) is an average of the cost rates on all issued securities adjusted to reflect the  
4 relative amounts for each security in the company's entire capital structure. Thus, the  
5 overall cost of capital is the WACC.

6  
7 **Q. How is the WACC calculated?**

8 A. The WACC is calculated by adding the weighted expected returns of a firm's securities.  
9 The WACC formula is:

10 Equation 1.

11  
12 
$$\text{WACC} = \sum_{i=1}^n W_i * r_i$$
  
13

14 In this equation,  $W_i$  is the weight given to the  $i^{\text{th}}$  security (the proportion of the  $i^{\text{th}}$  security  
15 relative to the portfolio) and  $r_i$  is the expected return on the  $i^{\text{th}}$  security.

1 **Q. Can you provide an example demonstrating application of Equation 1?**

2 A. Yes. For this example, assume that an entity has a capital structure composed of 60  
3 percent debt and 40 percent equity. Also, assume that the embedded cost of debt is 6.0  
4 percent and the expected return on equity, i.e., the cost of equity, is 10.5 percent.  
5 Calculation of the WACC is as follows:

6 
$$\text{WACC} = (60\% * 6.0\%) + (40\% * 10.5\%)$$

7 
$$\text{WACC} = 3.60\% + 4.20\%$$

8 
$$\text{WACC} = 7.80\%$$

9  
10 The weighted average cost of capital in this example is 7.80 percent. The entity in this  
11 example would need to earn an overall rate of return of 7.80 percent to cover its cost of  
12 capital.

13  
14 **III. CAPITAL STRUCTURE**

15 **Background**

16 **Q. Please explain the capital structure concept.**

17 A. The capital structure of a firm is the relative proportions of each type of security - short-  
18 term debt, long-term debt (including capital leases), preferred stock and common stock--  
19 that are used to finance the firm's assets.

20  
21 **Q. How is the capital structure expressed?**

22 A. The capital structure of a company is expressed as the percentage of each component of  
23 the capital structure (capital leases, short-term debt, long-term debt, preferred stock and  
24 common stock) relative to the entire capital structure.

1 As an example, the capital structure for an entity that is financed by \$20,000 of short-term  
2 debt, \$85,000 of long-term debt (including capital leases), \$15,000 of preferred stock and  
3 \$80,000 of common stock is shown in Table 2.

4  
5 **Table 2**

Component			%
Short-Term Debt	\$20,000	(\$20,000/\$200,000)	10.0%
Long-Term Debt	\$85,000	(\$85,000/\$200,000)	42.5%
Preferred Stock	\$15,000	(\$15,000/\$200,000)	7.5%
Common Stock	\$80,000	(\$80,000/\$200,000)	40.0%
Total	\$200,000		100%

6  
7 The capital structure in this example is composed of 10.0 percent short-term debt, 42.5  
8 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.

9  
10 **Cordes Lakes' Capital Structure**

11 **Q. What capital structure does Cordes Lakes propose?**

12 A. The Company proposes a capital structure composed of 2.7 percent debt and 97.3 percent  
13 common equity,<sup>2</sup> as of the December 31, 2011, test-year end date.

14  
15 **Q. How does Cordes Lakes' capital structure compare to capital structures of publicly-  
16 traded water utilities?**

17 A. Schedule JAC-4 shows the capital structures of six publicly-traded water companies  
18 ("sample water companies" or "sample water utilities") as of December 2011. The

<sup>2</sup> Staff has inferred this to be the Company's proposed capital structure, based on Service Deposit debt of \$18,170 reported in Schedule D-1 of the Company's application, and total stockholder's equity amounting to \$651,634 in Schedule E-1 of the Company's filing.

1 average capital structure for the sample water utilities is comprised of approximately 51.6  
2 percent debt and 48.4 percent equity.

3  
4 **Staff's Capital Structure**

5 **Q. What is Staff's recommended capital structure for Cordes Lakes?**

6 A. Staff recommends a capital structure composed of 0.0 percent debt and 100.0 percent  
7 equity which reflects the Company's actual capital structure as of the December 31, 2011,  
8 the test year end, as shown in Schedule E-1 "Comparative Balance Sheet" of the  
9 Company's application.

10  
11 **IV. COST OF DEBT**

12 **Q. What is the basis for the Company's proposed 6.0 percent cost of debt?**

13 A. The Company's proposed debt is comprised entirely of customer deposits. Arizona  
14 Administrative Code ("A.A.C") R14-2-403(B) provides for the Company to pay interest  
15 on customer deposits at 6 percent per annum.

16  
17 **Q. Does the Commission normally treat customer deposits as a component of the capital  
18 structure?**

19 A. No. The Commission has a long-standing practice of treating customer deposits as a  
20 deduction in the calculation of rate base as opposed to as a component of the capital  
21 structure, and Staff advocates that the Commission continue its usual practice in this case.  
22 Thus, the Company has no debt in its capital structure.

1 **V. RETURN ON EQUITY**

2 **Background**

3 **Q. Please define the term “cost of equity capital.”**

4 A. The cost of equity is the rate of return that investors expect to earn on their investment in a  
5 business entity given its risk. In other words, the cost of equity to the entity is the  
6 investors’ expected rate of return on other investments of similar risk. As investors have a  
7 wide selection of stocks to choose from, they will choose stocks with similar risks but  
8 higher returns. Therefore, the market determines the entity’s cost of equity.

9  
10 **Q. Is there a correlation between interest rates and the cost of equity?**

11 A. Yes, there is a positive correlation between interest rates and the cost of equity, as the two  
12 tend to move in the same direction. This relationship is reflected in the CAPM formula.  
13 The CAPM is a market-based model employed by Staff for estimating the cost of equity.  
14 The CAPM is further discussed in Section VI of this testimony.

15  
16 **Q. What has been the general trend of interest rates in recent years?**

17 A. A chronological chart of interest rates is a good tool to show interest rate history and  
18 identify trends. Chart 1 graphs intermediate U.S. treasury rates from January 18, 2002, to  
19 January 27, 2012.

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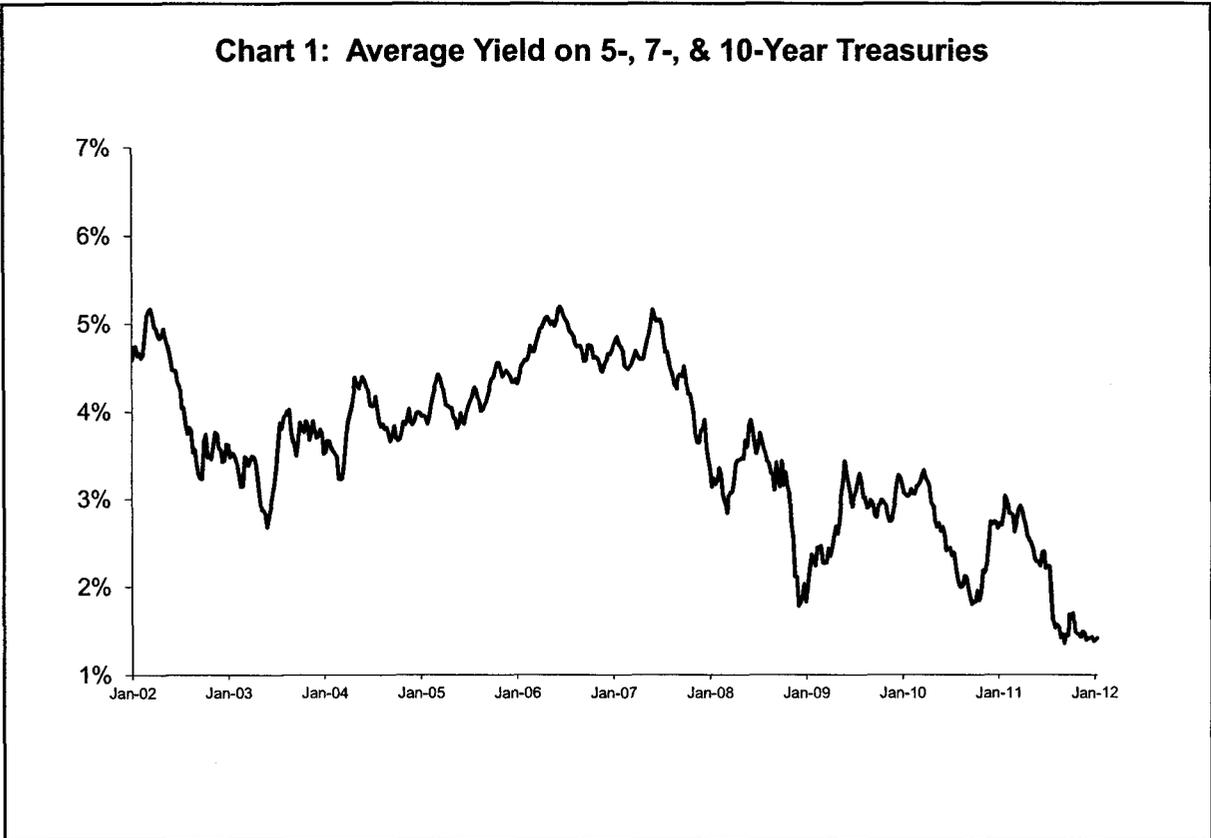
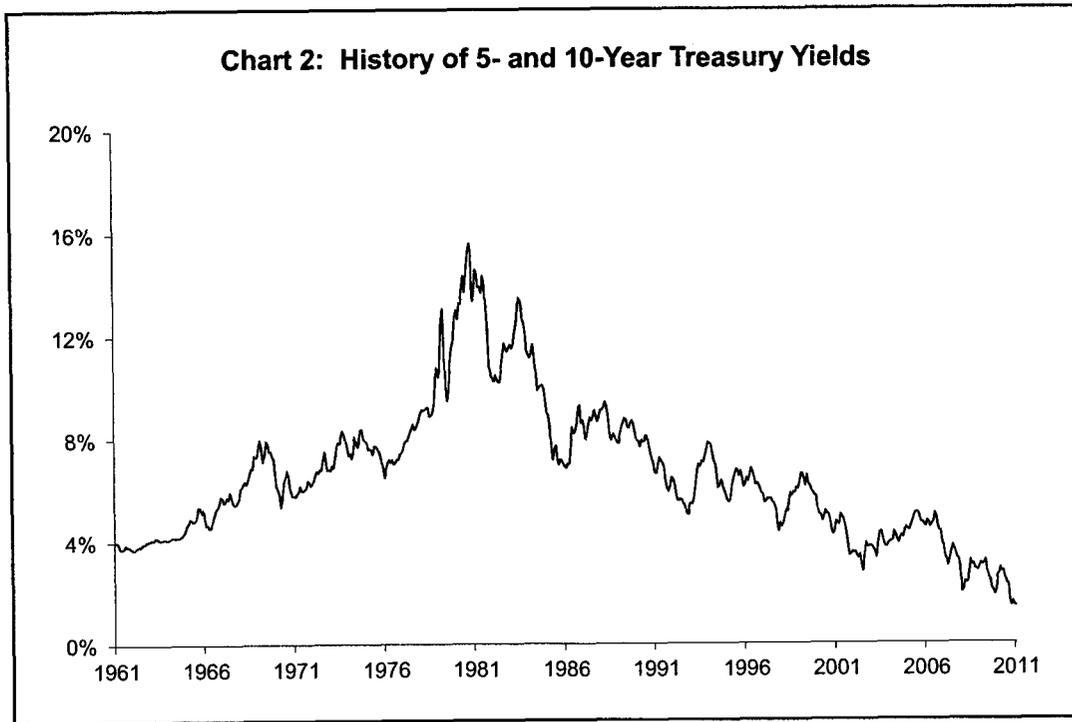


Chart 1 shows that intermediate-term interest rates trended downward from 2002 to mid-2003, trended upward through early-2008, trended downward through early-2009, trended upward through mid-2010, trended downward through late 2010, trended upward to mid-2011, and are currently trending down from the existing, relatively low rates.

**Q. What has been the general trend in interest rates longer term?**

A. U.S. Treasury rates from December 1961 - December 2011 are shown in Chart 2. The chart shows that interest rates trended upward through the mid-1980s and have trended downward over the last 25 years.

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Source: Federal Reserve

**Q. Do these trends suggest anything in terms of cost of equity?**

A. Yes. As previously noted, interest rates and cost of equity tend to move in the same direction; therefore, the cost of equity has declined in the past 25 years.

**Q. Do actual returns represent the cost of equity?**

A. No. The cost of equity represents investors' *expected* returns and not realized returns.

1 **Q. Is there any information available that leads to an understanding of the relationship**  
2 **between the equity returns required for a regulated water utility and those required**  
3 **in the market as a whole?**

4 A. Yes. A comparison of betas, a component of the CAPM discussed in Section VI, for the  
5 water utility industry and the market provide insight into this relationship. In theory, the  
6 market has a beta value of 1.0, with stocks bearing greater risk (less risk) than the market  
7 having beta values higher than (lower than) 1.0, respectively. Furthermore, in accordance  
8 with the CAPM, the cost of equity capital moves in the same direction as beta. Therefore,  
9 because the average beta value (0.71)<sup>3</sup> for a water utility is less than 1.0, the required  
10 return on equity for a regulated water utility is below that of the market as a whole.

11  
12 **Risk**

13 **Q. Please define risk in relation to cost of capital.**

14 A. Risk, as it relates to an investment, is the variability or uncertainty of the returns on a  
15 particular security. Investors are risk averse and require a greater potential return to invest  
16 in relatively greater risk opportunities, i.e., investors require compensation for taking on  
17 additional risk. Risk is generally separated into two components. Those components are  
18 market risk (systematic risk) and non-market risk (diversifiable risk or firm-specific risk).

19  
20 **Q. What is market risk?**

21 A. Market risk or systematic risk is the risk of an investment that cannot be reduced through  
22 diversification. Market risk stems from factors that affect all securities, such as  
23 recessions, war, inflation and high interest rates. Since these factors affect the entire  
24 market they cannot be eliminated through diversification. Market risk does not impact  
25 each security to the same degree. The degree to which a given security's return is affected

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<sup>3</sup> See Schedule JAC-7.

1 by market fluctuations can be measured using Beta. Beta reflects the business risk and the  
2 financial risk of a security.

3  
4 **Q. Please define business risk.**

5 A. Business risk is the fluctuation of earnings inherent in a firm's operations and  
6 environment, such as competition and adverse economic conditions that may impair its  
7 ability to provide returns on investment. Companies in the same or similar line of  
8 business tend to experience the same fluctuations in business cycles.

9  
10 **Q. Please define financial risk.**

11 A. Financial risk is the fluctuation of earnings, inherent in the use of debt financing, that may  
12 impair a firm's ability to provide adequate return; the higher the percentage of debt in a  
13 company's capital structure, the greater its exposure to financial risk.

14  
15 **Q. Do business risk and financial risk affect the cost of equity?**

16 A. Yes.

17  
18 **Q. Is a firm subject to any other risk?**

19 A. Yes. Firms are also subject to unsystematic or firm-specific risk. Examples of  
20 unsystematic risk include losses caused by labor problems, nationalization of assets, loss  
21 of a big client or weather conditions. Investors can eliminate firm-specific risk by holding  
22 a diverse portfolio; thus, it is not of concern to diversified investors.

1 **Q. How does Cordes Lakes' financial risk exposure compare to that of Staff's sample**  
2 **group of water companies?**

3 A. JAC-4 shows the capital structures of the six sample water companies as of December 31,  
4 2011, and Cordes Lakes' adjusted capital structure as of the end of the test year, December  
5 31, 2011. As shown, the sample water utilities were capitalized with approximately 51.6  
6 percent debt and 48.4 percent equity, while Cordes Lakes' capital structure consists of 0.0  
7 percent debt and 100.0 percent equity. Thus, because Cordes Lakes' capital structure  
8 contains no debt, the Company has no exposure to financial risk.

9  
10 **Q. Is firm-specific risk measured by beta?**

11 A. No. Firm-specific risk is not measured by beta.

12  
13 **Q. Is the cost of equity affected by firm-specific risk?**

14 A. No. Since firm-specific risk can be eliminated through diversification, it does not affect  
15 the cost of equity.

16  
17 **Q. Can investors expect additional returns for firm-specific risk?**

18 A. No. Investors who hold diversified portfolios can eliminate firm-specific risk and,  
19 consequently, do not require any additional return. Since investors who choose to be less  
20 than fully-diversified must compete in the market with fully-diversified investors, the  
21 former cannot expect to be compensated for unique risk.

1 **VI. ESTIMATING THE COST OF EQUITY**

2 **Introduction**

3 **Q. Did Staff directly estimate the cost of equity for Cordes Lakes?**

4 A. No. Since Cordes Lakes is not a publicly-traded company, Staff is unable to directly  
5 estimate its cost of equity due to the lack of firm-specific market data. Instead, Staff  
6 estimated the Company's cost of equity indirectly, using a representative sample group of  
7 publicly traded water utilities as a proxy, taking the average of the sample group to reduce  
8 the sample error resulting from random fluctuations in the market at the time the  
9 information is gathered.

10  
11 **Q. What companies did Staff select as proxies, or comparables, for Cordes Lakes?**

12 A. Staff's sample consists of the following six publicly-traded water utilities: American  
13 States Water, California Water, Connecticut Water Services, Middlesex Water, Aqua  
14 America and SJW Corp. Staff chose these companies because they are publicly-traded  
15 and receive the majority of their earnings from regulated operations.

16  
17 **Q. What models did Staff implement to estimate Cordes Lakes' cost of equity?**

18 A. Staff used two market-based models to estimate the cost of equity for Cordes Lakes: the  
19 DCF model and the CAPM.

20  
21 **Q. Please explain why Staff chose the DCF and CAPM models.**

22 A. Staff chose to use the DCF and CAPM models because they are widely-recognized  
23 market-based models and have been used extensively to estimate the cost of equity. An  
24 explanation of the DCF and CAPM models follows.

1 **Discounted Cash Flow Model Analysis**

2 **Q. Please provide a brief summary of the theory upon which the DCF method of**  
3 **estimating the cost of equity is based.**

4 A. The DCF method of stock valuation is based on the theory that the value of an investment  
5 is equal to the sum of the future cash flows generated from the aforementioned investment  
6 discounted to the present time. This method uses expected dividends, market price and  
7 dividend growth rate to calculate the cost of capital. Professor Myron Gordon pioneered  
8 the DCF method in the 1960s. The DCF method has become widely used to estimate the  
9 cost of equity for public utilities due to its theoretical merit and its simplicity. Staff used  
10 the financial information for the relevant six sample companies in the DCF model and  
11 averaged the results to determine an estimated cost of equity for the sample companies.

12

13 **Q. Does Staff use more than one version of the DCF?**

14 A. Yes. Staff uses two versions of the DCF model: the constant-growth DCF and the multi-  
15 stage or non-constant growth DCF. The constant-growth DCF assumes that an entity's  
16 dividends will grow indefinitely at the same rate. The multi-stage growth DCF model  
17 assumes the dividend growth rate will change at some point in the future.

18

1 ***The Constant-Growth DCF***

2 **Q. What is the mathematical formula used in Staff's constant-growth DCF analysis?**

3 A. The constant-growth DCF formula used in Staff's analysis is:

4 Equation 2 :

$$K = \frac{D_1}{P_0} + g$$

where :     $K$     = the cost of equity  
               $D_1$     = the expected annual dividend  
               $P_0$     = the current stock price  
               $g$      = the expected infinite annual growth rate of dividends

5  
6 Equation 2 assumes that the entity has a constant earnings retention rate and that its  
7 earnings are expected to grow at a constant rate. According to Equation 2, a stock with a  
8 current market price of \$10 per share, an expected annual dividend of \$0.45 per share and  
9 an expected dividend growth rate of 3.0 percent per year has a cost of equity to the entity  
10 of 7.5 percent reflected by the sum of the dividend yield ( $\$0.45 / \$10 = 4.5$  percent) and the  
11 3.0 percent annual dividend growth rate.

12  
13 **Q. How did Staff calculate the expected dividend yield ( $D_1/P_0$ ) component of the**  
14 **constant-growth DCF formula?**

15 A. Staff calculated the expected yield component of the DCF formula by dividing the  
16 expected annual dividend ( $D_1$ ) by the spot stock price ( $P_0$ ) after the close of market on  
17 January 23, 2013, as reported by *MSN Money*.

1 **Q. Why did Staff use the January 23 2013, spot price rather than a historical average**  
2 **stock price to calculate the dividend yield component of the DCF formula?**

3 A. The current, rather than historic, market price is used in order to be consistent with  
4 financial theory. In accordance with the Efficient Market Hypothesis, the current stock  
5 price is reflective of all available information on a stock, and as such reveals investors'  
6 expectations of future returns. Use of historical average stock prices illogically discounts  
7 the most recent information in favor of less recent information. The latter is stale and is  
8 representative of underlying conditions that may have changed.

9  
10 **Q. How did Staff estimate the dividend growth (g) component of the constant-growth**  
11 **DCF model represented by Equation 2?**

12 A. The dividend growth component used by Staff is determined by the average of six  
13 different estimation methods, as shown in Schedule JAC-8. Staff calculated historical and  
14 projected growth estimates on dividend-per-share ("DPS"),<sup>4</sup> earnings-per-share ("EPS")<sup>5</sup>  
15 and sustainable growth bases.

16  
17 **Q. Why did Staff examine EPS growth to estimate the dividend growth component of**  
18 **the constant-growth DCF model?**

19 A. Historic and projected EPS growth are used because dividends are related to earnings.  
20 Dividend distributions may exceed earnings in the short run, but cannot continue  
21 indefinitely. In the long term, dividend distributions are dependent on earnings.

---

<sup>4</sup> Derived from information provided by *Value Line*.

<sup>5</sup> Derived from information provided by *Value Line*.

1 **Q. How did Staff estimate historical DPS growth?**

2 A. Staff estimated historical DPS growth by calculating a compound annual DPS growth rate  
3 for each of its sample companies over the 10-year period, 2003-2012.<sup>6</sup> As shown in  
4 Schedule JAC-5, the average historical DPS growth rate for the sample was 3.4 percent.

5  
6 **Q. How did Staff estimate projected DPS growth?**

7 A. Staff calculated an average of the projected DPS growth rates for the sample water utilities  
8 from *Value Line* through the period, 2015-2017. The average projected DPS growth rate  
9 is 3.7 percent, as shown in Schedule JAC-5.

10  
11 **Q. How did Staff estimate historical EPS growth rate?**

12 Staff estimated historical EPS growth by calculating a compound annual EPS growth rate  
13 for each of its sample companies over the 10-year period, 2002-2011.<sup>7</sup> As shown in  
14 Schedule JAC-5, the average historical EPS growth rate for the sample was 4.2 percent.

15  
16 **Q. How did Staff estimate projected EPS growth?**

17 A. Staff calculated an average of the projected EPS growth rates for the sample water utilities  
18 from *Value Line* through the period, 2015-2017. The average projected EPS growth rate  
19 is 7.0 percent, as shown in Schedule JAC-5.

20  
21 **Q. How does Staff calculate its historical and projected sustainable growth rates?**

22 A. Historical and projected sustainable growth rates are calculated by adding their respective  
23 retention growth rate terms (br) to their respective stock financing growth rate terms (vs),  
24 as shown in Schedule JAC-6.

---

<sup>6</sup> Staff updated its 10-year historical dividend growth calculation to cover the period, 2003-2012, as the annual dividend paid by each sample company in 2012 is known and measurable.

<sup>7</sup> The 10-year historical EPS growth calculation covers the period, 2002-2011, as the 2012 annual EPS number for each sample has yet to be announced.

1 **Q. What is retention growth?**

2 A. Retention growth is the growth in dividends due to the retention of earnings. The  
3 retention growth concept is based on the theory that dividend growth cannot be achieved  
4 unless the company retains and reinvests some of its earnings. The retention growth is  
5 used in Staff's calculation of sustainable growth shown in Schedule JAC-6.

6  
7 **Q. What is the formula for the retention growth rate?**

8 A. The retention growth rate is the product of the retention ratio and the book/accounting  
9 return on equity. The retention growth rate formula is:

10 Equation 3:

$$\text{Retention Growth Rate} = br$$

where :  $b$  = the retention ratio (1 – dividend payout ratio)  
 $r$  = the accounting/book return on common equity

11  
12 **Q. How did Staff calculate the average historical retention growth rate (br) for the  
13 sample water utilities?**

14 A. Staff calculated the mean of the 10-year average historical retention rate for each sample  
15 company over the period, 2002-2011. As shown in Schedule JAC-6, the historical  
16 average retention (br) growth rate for the sample is 2.9 percent.

17  
18 **Q. How did Staff estimate its projected retention growth rate (br) for the sample water  
19 utilities?**

20 A. Staff used the retention growth projections for the sample water utilities for the period,  
21 2015-2017, from *Value Line*. As shown in Schedule JAC-6, the projected average  
22 retention growth rate for the sample companies is 4.4 percent.

1 **Q. When can retention growth provide a reasonable estimate of future dividend**  
2 **growth?**

3 A. The retention growth rate is a reasonable estimate of future dividend growth when the  
4 retention ratio is reasonably constant and the entity's market price to book value ("market-  
5 to-book ratio") is expected to be 1.0. The average retention ratio has been reasonably  
6 constant in recent years. However, the market-to-book ratio for the sample water utilities  
7 is 2.1, notably higher than 1.0, as shown in Schedule JAC-7.

8  
9 **Q. Is there any financial implication of a market-to-book ratio greater than 1.0?**

10 A. Yes. A market-to-book ratio greater than 1.0 implies that investors expect an entity to  
11 earn an accounting/book return on its equity that exceeds its cost of equity. The  
12 relationship between required returns and expected cash flows is readily observed in the  
13 fixed securities market. For example, assume an entity contemplating issuance of bonds  
14 with a face value of \$10 million at either 6 percent or 8 percent and, thus, paying annual  
15 interest of \$600,000 or \$800,000, respectively. Regardless of investors' required return on  
16 similar bonds, investors will be willing to pay more for the bonds if issued at 8 percent  
17 than if the bonds are issued at 6 percent. For example, if the current interest rate required  
18 by investors is 6 percent, then they would bid \$10 million for the 6 percent bonds and  
19 more than \$10 million for the 8 percent bonds. Similarly, if equity investors require a 9  
20 percent return and expect an entity to earn accounting/book returns of 13 percent, the  
21 market will bid up the price of the entity's stock to provide the required return of 9  
22 percent.

1 **Q. How has Staff generally recognized a market-to-book ratio exceeding 1.0 in its cost of**  
2 **equity analyses in recent years?**

3 A. Staff has assumed that investors expect the market-to-book ratio to remain greater than  
4 1.0. Given that assumption, Staff has added a stock financing growth rate (vs) term to the  
5 retention ratio (br) term to calculate its historical and projected sustainable growth rates.

6  
7 **Q. Do the historical and projected sustainable growth rates Staff uses to develop its**  
8 **DCF cost of equity in this case continue to include a stock financing growth rate**  
9 **term?**

10 A. Yes.

11

12 **Q. What is stock financing growth?**

13 A. Stock financing growth is the growth in an entity's dividends due to the sale of stock by  
14 that entity. Stock financing growth is a concept derived by Myron Gordon and discussed  
15 in his book *The Cost of Capital to a Public Utility*.<sup>8</sup> Stock financing growth is the product  
16 of the fraction of the funds raised from the sale of stock that accrues to existing  
17 shareholders (v) and the fraction resulting from dividing the funds raised from the sale of  
18 stock by the existing common equity (s).

19

---

<sup>8</sup> Gordon, Myron J. *The Cost of Capital to a Public Utility*. MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

1 **Q. What is the mathematical formula for the stock financing growth rate?**

2 A. The mathematical formula for stock financing growth is:

Equation 4:

$$\text{Stock Financing Growth} = vs$$

where:  $v$  = Fraction of the funds raised from the sale of stock that accrues  
to existing shareholders

$s$  = Funds raised from the sale of stock as a fraction of the existing  
common equity

3

4 **Q. How is the variable  $v$  presented above calculated?**

5 A. Variable  $v$  is calculated as follows:

Equation 5:

$$v = 1 - \left( \frac{\text{book value}}{\text{market value}} \right)$$

6

7 For example, assume that a share of stock has a \$30 book value and is selling for \$45.

8 Then, to find the value of  $v$ , the formula is applied:

$$v = 1 - \left( \frac{30}{45} \right)$$

9 In this example,  $v$  is equal to 0.33.

10

11 **Q. How is the variable  $s$  presented above calculated?**

12 A. Variable  $s$  is calculated as follows:

13 Equation 6:

14

15

$$s = \frac{\text{Funds raised from the issuance of stock}}{\text{Total existing common equity before the issuance}}$$

1 For example, assume that an entity has \$150 in existing equity, and it sells \$30 of stock.  
2 Then, to find the value of  $s$ , the formula is applied:

$$s = \left( \frac{30}{150} \right)$$

3 In this example,  $s$  is equal to 20.0 percent.  
4

5 **Q. What is the  $\nu s$  term when the market-to-book ratio is equal to 1.0?**

6 A. A market-to-book ratio of 1.0 reflects that investors expect an entity to earn a  
7 book/accounting return on their equity investment equal to the cost of equity. When the  
8 market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the  
9 entity accrues to the benefit of existing shareholders, i.e., the term  $\nu$  is equal to zero (0.0).  
10 Consequently, the  $\nu s$  term is also equal to zero (0.0). When stock financing growth is  
11 zero, dividend growth depends solely on the  $br$  term.  
12

13 **Q. What is the effect of the  $\nu s$  term when the market-to-book ratio is greater than 1.0?**

14 A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a  
15 book/accounting return on their equity investment greater than the cost of equity.  
16 Equation 5 shows that, when the market-to-book ratio is greater than 1.0, the  $\nu$  term is also  
17 greater than zero. The excess by which new shares are issued and sold over book value  
18 per share of outstanding stock is a contribution that accrues to existing stockholders in the  
19 form of a higher book value. The resulting higher book value leads to higher expected  
20 earnings and dividends. Continued growth from the  $\nu s$  term is dependent upon the  
21 continued issuance and sale of additional shares at a price that exceeds book value per  
22 share.

1 **Q. What  $vs$  estimate did Staff calculate from its analysis of the sample water utilities?**

2 A. Staff estimated an average stock financing growth of 2.0 percent for the sample water  
3 utilities, as shown in Schedule JAC-6.

4  
5 **Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result  
6 of investors expecting earnings to exceed its cost of equity, and subsequently  
7 experienced newly-authorized rates equal only to its cost of equity?**

8 A. *Ceteris paribus*, holding all other factors constant, one would expect market forces to  
9 move the company's stock price lower, closer to a market-to-book ratio of 1.0, to reflect  
10 investor expectations of reduced expected future cash flows.

11  
12 **Q. If the average market-to-book ratio of Staff's sample water utilities were to fall to 1.0  
13 due to authorized ROEs equaling their cost of equity, would inclusion of the  $vs$  term  
14 be necessary to Staff's constant-growth DCF analysis?**

15 A. No. As discussed above, when the market-to-book ratio is equal to 1.0, none of the funds  
16 raised from the sale of stock by the entity accrues to the benefit of existing shareholders  
17 because the  $v$  term equals to zero and, consequently, the  $vs$  term also equals zero. When  
18 the market-to-book ratio equals 1.0, dividend growth depends solely on the  $br$  term.  
19 Staff's inclusion of the  $vs$  term assumes that the market-to-book ratio continues to exceed  
20 1.0 and that the water utilities will continue to issue and sell stock at prices above book  
21 value with the effect of benefitting existing shareholders.

22  
23 **Q. What are Staff's historical and projected sustainable growth rates?**

24 A. Staff's estimated historical sustainable growth rate is 4.9 percent based on an analysis of  
25 earnings retention for the sample water companies. Staff's projected sustainable growth

1 rate is 6.5 percent based on retention growth projected by *Value Line*. Schedule JAC-6  
2 presents Staff's estimates of the sustainable growth rate.

3  
4 **Q. What is Staff's expected infinite annual growth rate in dividends?**

5 A. Staff's expected dividend growth rate (g) is 5.0 percent, which is the average of historical  
6 and projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the  
7 expected infinite annual growth rate in dividends is shown in Schedule JAC-8.

8  
9 **Q. What is Staff's constant-growth DCF estimate for the sample utilities?**

10 A. Staff's constant-growth DCF estimate is 8.1 percent, as shown in Schedule JAC-3.

11  
12 ***The Multi-Stage DCF***

13 **Q. Why did Staff implement the multi-stage DCF model to estimate Cordes Lakes' cost**  
14 **of equity?**

15 A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends  
16 may not grow at a constant rate. The multi-stage DCF uses two stages of growth, the first  
17 stage (near-term) has a four-year duration, followed by a second stage (long-term) of  
18 constant growth.

19

1 **Q. What is the mathematical formula for the multi-stage DCF?**

2 A. The multi-stage DCF formula is shown in the following equation:

Equation 7 :

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K-g_n} \left[ \frac{1}{(1+K)} \right]^n$$

Where :  $P_0$  = current stock price  
 $D_t$  = dividends expected during stage 1  
 $K$  = cost of equity  
 $n$  = years of non – constant growth  
 $D_n$  = dividend expected in year n  
 $g_n$  = constant rate of growth expected after year n

3

4 **Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?**

5 A. First, Staff projected future dividends for each of the sample water utilities using near-  
6 term and long-term growth rates. Second, Staff calculated the rate (cost of equity) which  
7 equates the present value of the forecasted dividends to the current stock price for each of  
8 the sample water utilities. Lastly, Staff calculated an overall sample average cost of  
9 equity estimate.

10

11 **Q. How did Staff calculate near-term (stage-1) growth?**

12 A. The stage-1 growth rate is based on *Value Lines*'s projected dividends for the next twelve  
13 months, when available, and on the average dividend growth (g) rate of 5.0 percent,  
14 calculated in Staff's constant DCF analysis for the remainder of the stage.

1 **Q. How did Staff estimate long-term (stage-2) growth?**

2 A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in Gross  
3 Domestic Product (“GDP”) from 1929 to 2011.<sup>9</sup> Using the GDP growth rate assumes that  
4 the water utility industry is expected to grow at the same rate as the overall economy.

5  
6 **Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?**

7 A. Staff used 6.5 percent to estimate the stage-2 growth rate.

8  
9 **Q. What is Staff’s multi-stage DCF estimate for the sample utilities?**

10 A. Staff’s multi-stage DCF estimate is 9.5 percent, as shown in Schedule JAC-3.

11  
12 **Q. What is Staff’s overall DCF estimate for the sample utilities?**

13 A. Staff’s overall DCF estimate is 8.8 percent. Staff calculated the overall DCF estimate by  
14 averaging the constant growth DCF (8.1%) and multi-stage DCF (9.5%) estimates, as  
15 shown in Schedule JAC-3.

16  
17 **Capital Asset Pricing Model**

18 **Q. Please describe the CAPM.**

19 A. The CAPM is used to determine the prices of securities in a competitive market. The  
20 CAPM model describes the relationship between a security’s investment risk and its  
21 market rate of return. Under the CAPM, an investor requires the expected return of a  
22 security to equal the rate on a risk-free security plus a risk premium. If the investor’s  
23 expected return does not meet or beat the required return, the investment is not  
24 economically justified. The model also assumes that investors will sufficiently diversify

---

<sup>9</sup> www.bea.doc.gov.

1 their investments to eliminate any non-systematic or unique risk.<sup>10</sup> In 1990, Professors  
2 Harry Markowitz, William Sharpe, and Merton Miller earned the Nobel Prize in  
3 Economic Sciences for their contribution to the development of the CAPM.  
4

5 **Q. Did Staff use the same sample water utilities in its CAPM and DCF cost of equity**  
6 **estimation analyses?**

7 A. Yes. Staff's CAPM cost of equity estimation analysis uses the same sample water  
8 companies as its DCF cost of equity estimation analysis.  
9

10 **Q. What is the mathematical formula for the CAPM?**

11 A. The mathematical formula for the CAPM is:  
12

Equation 8 :

$$K = R_f + \beta (R_m - R_f)$$

where:  $R_f$  = risk free rate  
 $R_m$  = return on market  
 $\beta$  = beta  
 $R_m - R_f$  = market risk premium  
 $K$  = expected return

13  
14 The equation shows that the expected return (K) on a risky asset is equal to the risk-free  
15 interest rate ( $R_f$ ) plus the product of the market risk premium ( $R_m - R_f$ ) multiplied by beta  
16 ( $\beta$ ) where beta represents the riskiness of the investment relative to the market.

---

<sup>10</sup> The CAPM makes the following assumptions: 1) single holding period; 2) perfect and competitive securities market; 3) no transaction costs; 4) no restrictions on short selling or borrowing; 5) the existence of a risk-free rate; and 6) homogeneous expectations.

1 **Q. What is the risk-free rate?**

2 A. The risk-free rate is the rate of return of an investment free of default risk.

3

4 **Q. What does Staff use as surrogates to represent estimations of the risk-free rates of**  
5 **interest in its historical and current market risk premium CAPM methods?**

6 A. Staff uses separate parameters as surrogates for the estimations of the risk-free rates of  
7 interest for the historical market risk premium CAPM cost of equity estimation and the  
8 current market risk premium CAPM cost of equity estimation. Staff uses the average of  
9 three (5-, 7-, and 10-year) intermediate-term U.S. Treasury securities' spot rates in its  
10 historical market risk premium CAPM cost of equity estimation, and the 30-year U.S.  
11 Treasury bond spot rate in its current market risk premium CAPM cost of equity  
12 estimation. Rates on U.S. Treasuries are largely verifiable and readily available.

13

14 **Q. What does beta measure?**

15 A. Beta is a measure of a security's price volatility, or systematic risk, relative to the market  
16 as a whole. Since systematic risk cannot be diversified away, it is the only risk that is  
17 relevant when estimating a security's required return. Using a baseline market beta  
18 coefficient of 1.0, a security having a beta value less than 1.0 will be less volatile (i.e., less  
19 risky) than the market. A security with a beta value greater than 1.0 will be more volatile  
20 (i.e., more risky) than the market.

21

22 **Q. How did Staff estimate Cordes Lakes' beta?**

23 A. Staff used the average of the *Value Line* betas for the sample water utilities as a proxy for  
24 the Company's beta. Schedule JAC-7 shows the *Value Line* betas for each of the sample  
25 water utilities. The 0.71 average beta coefficient for the sample water utilities is Staff's

1 estimated beta value for Cordes Lakes. A security with a beta value of 0.71 has less  
2 volatility than the market.

3  
4 **Q. What is the market risk premium ( $R_m - R_f$ )?**

5 A. The market risk premium is the expected return on the market, minus the risk-free rate.  
6 Simplified, it is the return an investor expects as compensation for market risk.

7  
8 **Q. What did Staff use for the market risk premium?**

9 A. Staff uses separate calculations for the market risk premium in its historical and current  
10 market risk premium CAPM methods.

11  
12 **Q. How did Staff calculate an estimate for the market risk premium in its historical  
13 market risk premium CAPM method?**

14 A. Staff uses the intermediate-term government bond income returns published in the  
15 Ibbotson Associates' *Stocks, Bonds, Bills, and Inflation 2012 Yearbook* to calculate the  
16 historical market risk premium. Ibbotson Associates calculates the historical risk  
17 premium by averaging the historical arithmetic differences between the S&P 500 and the  
18 intermediate-term government bond income returns for the period 1926-2011. Staff's  
19 historical market risk premium estimate is 7.2 percent, as shown in Schedule JAC-3.

20  
21 **Q. How did Staff calculate an estimate for the market risk premium in its current  
22 market risk premium CAPM method?**

23 A. Staff solves equation 8 above to arrive at a market risk premium using a DCF-derived  
24 expected return (K) of 12.87 (2.2 + 10.67<sup>11</sup>) percent using the expected dividend yield (2.2  
25 percent over the next twelve months) and the annual per share growth rate (10.67 percent)

---

<sup>11</sup> The three to five year price appreciation is 50%.  $1.50^{0.25} - 1 = 10.67\%$ .

1 that *Value Line* projects for all dividend-paying stocks under its review<sup>12</sup> along with the  
2 current long-term risk-free rate (30-year Treasury note at 3.02 percent) and the market's  
3 average beta of 1.0. Staff calculated the current market risk premium as 9.8 percent,<sup>13</sup> as  
4 shown in Schedule JAC-3.

5  
6 **Q. What is the result of Staff's historical market risk premium CAPM and current**  
7 **market risk premium CAPM cost of equity estimations for the sample utilities?**

8 A. Staff's cost of equity estimates are 6.4 percent using the historical market risk premium  
9 CAPM and 10.0 percent using the current market risk premium CAPM.

10  
11 **Q. What is Staff's overall CAPM estimate for the sample utilities?**

12 A. Staff's overall CAPM cost of equity estimate is 8.2 percent which is the average of the  
13 historical market risk premium CAPM (6.4 percent) and the current market risk premium  
14 CAPM (10.0 percent) estimates, as shown in Schedule JAC-3.

15  
16 **VII. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS**

17 **Q. What is the result of Staff's constant-growth DCF analysis to estimate the cost of**  
18 **equity for the sample water utilities?**

19 A. Schedule JAC-3 shows the result of Staff's constant-growth DCF analysis. The result of  
20 Staff's constant-growth DCF analysis is as follows:

21  
22 
$$k = 3.1\% + 5.0\%$$

23  
24 
$$k = 8.1\%$$

25  

---

<sup>12</sup> January 25, 2013 issue date.

<sup>13</sup> 12.87% = 3.02% + (1) (9.8%).

1 Staff's constant-growth DCF estimate of the cost of equity for the sample water utilities is  
2 8.1 percent.

3

4 **Q. What is the result of Staff's multi-stage DCF analysis to estimate of the cost of equity**  
5 **for the sample utilities?**

6 A. Schedule JAC-9 shows the result of Staff's multi-stage DCF analysis. The result of  
7 Staff's multi-stage DCF analysis is:

8

9	<b>Company</b>	<b>Equity Cost</b>
10		<b>Estimate (k)</b>
11	American States Water	9.0%
12	California Water	9.8%
13	Aqua America	9.0%
14	Connecticut Water	9.7%
15	Middlesex Water	10.3%
16	SJW Corp	<u>9.2%</u>
17		
18	<b>Average</b>	<b>9.5%</b>

19

20 Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.5  
21 percent.

22

23 **Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?**

24 A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 8.8 percent.  
25 Staff calculated an overall DCF cost of equity estimate by averaging Staff's constant  
26 growth DCF (8.1 percent) and Staff's multi-stage DCF (9.5 percent) estimates, as shown  
27 in Schedule JAC-3.

28

1 **Q. What is the result of Staff's historical market risk premium CAPM analysis to**  
2 **estimate of the cost of equity for the sample utilities?**

3 A. Schedule JAC-3 shows the result of Staff's CAPM analysis using the historical risk  
4 premium estimate. The result is as follows:

5  
6  $k = 1.3\% + 0.71 * 7.2\%$

7  $k = 6.4\%$

8  
9 Staff's CAPM estimate (using the historical market risk premium) of the cost of equity to  
10 the sample water utilities is 6.4 percent.

11  
12 **Q. What is the result of Staff's current market risk premium CAPM analysis to**  
13 **estimate the cost of equity for the sample utilities?**

14 A. Schedule JAC-3 shows the result of Staff's CAPM analysis using the current market risk  
15 premium estimate. The result is:

16  $k = 3.0\% + 0.71 * 9.8\%$

17  $k = 10.0\%$

18  
19 Staff's CAPM estimate (using the current market risk premium) of the cost of equity to the  
20 sample water utilities is 10.0 percent.

21

1 **Q. What is Staff's overall CAPM estimate of the cost of equity for the sample utilities?**

2 A. Staff's overall CAPM estimate for the sample utilities is 8.2 percent. Staff's overall  
3 CAPM estimate is the average of the historical market risk premium CAPM (6.4 percent)  
4 and the current market risk premium CAPM (10.0 percent) estimates, as shown in  
5 Schedule JAC-3.

6  
7 **Q. Please summarize the results of Staff's cost of equity analysis for the sample utilities.**

8 A. The following table shows the results of Staff's cost of equity analysis:

9 **Table 2**

<b>Method</b>	<b>Estimate</b>
Average DCF Estimate	8.8%
Average CAPM Estimate	8.2%
<b>Overall Average</b>	<b>8.5%</b>

10 Staff's average estimate of the cost of equity to the sample water utilities is 8.5 percent.

11  
12 **VIII. FINAL COST OF EQUITY ESTIMATES FOR CORDES LAKES**

13 **Q. Please compare Cordes Lakes' capital structure to that of the six sample water**  
14 **companies.**

15 A. The average capital structure for the sample water utilities is composed of 48.4 percent  
16 equity and 51.6 percent debt, as shown in Schedule JAC-4. Cordes Lakes' capital  
17 structure is composed of 100.0 percent equity and 0.0 percent debt. In this case, since  
18 Cordes Lakes' capital structure contains no debt, its stockholders have no exposure to  
19 financial risk. In contrast, the average sample water utilities' capital structure is more  
20 highly leveraged, and thus common stock shareholders in those sample companies are  
21 exposed to financial risk.

1 **Q. Does Cordes Lakes' reduced financial risk affect its cost of equity?**

2 A. Yes. As previously discussed, financial risk is a component of market risk and investors  
3 require compensation for market risk. Since Cordes Lakes' financial risk exposure is less  
4 than that of the average sample water companies, its cost of equity is lower than that of the  
5 sample water companies. However, Staff is not recommending a downward financial risk  
6 adjustment in this proceeding, as the Company does not have access to the capital  
7 markets.

8  
9 **Q. Did Staff consider factors other than the results of its technical models in its cost of  
10 equity analysis?**

11 A. Yes. In consideration of the relatively uncertain status of the economy and the market that  
12 currently exists, Staff is proposing an Economic Assessment Adjustment to the cost of  
13 equity. In this case, Staff recommends a 60 basis point (0.6 percent) upward Economic  
14 Assessment Adjustment, as shown in Schedule JAC-3.

15  
16 **Q. What is Staff's ROE estimate for Cordes Lakes?**

17 A. Staff determined an ROE estimate of 9.1 percent for Cordes Lakes based on cost of equity  
18 estimates for the sample companies of 8.5 percent for both the CAPM and the DCF and  
19 adoption of a 60 basis point upward Economic Assessment Adjustment, as shown in  
20 Schedule JAC-3.

1 **IX. RATE OF RETURN RECOMMENDATION**

2 **Q. What overall rate of return did Staff determine for Cordes Lakes?**

3 A. Staff determined a 9.1 percent ROR for the Company, as shown in Schedule JAC-1 and  
4 the following table:

5 **Table 3**

6

	<b>Weight</b>	<b>Cost</b>	<b>Weighted Cost</b>
Long-term Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	9.1%	<u>9.1%</u>
<b>Overall ROR</b>			<b><u>9.1%</u></b>

7  
8 **X. STAFF RESPONSE TO COMPANY'S PROPOSED COST OF CAPITAL**

9 **Q. Please summarize the Company's cost of capital request.**

10 A. The Company's application does not present testimony pertaining to the cost of capital.  
11 Schedule A-1 of the application shows the requested overall rate of return as 8.0 percent.  
12 Schedule D-1 "Summary of Cost of Capital" of the application shows a capital structure  
13 comprised of only \$18,170 for customer deposits at a 6.0 percent cost rate. Schedule E-1  
14 "Comparative Balance Sheet" of the application shows \$651,634 for total shareholders'  
15 equity. Staff has calculated the capital structure implied by the Company's application  
16 comprised of 2.7 percent debt and 97.3 percent equity and has also calculated the implied  
17 ROE of 8.1 percent. As discussed in Section IV above, the Commission has a long-  
18 standing practice of treating customer deposits as a deduction in the calculation of rate  
19 base as opposed to as a component of the capital structure, and Staff advocates that the  
20 Commission continue its usual practice in this case. Thus, the Company has no debt in its  
21 capital structure. In summary, the Company has supported neither the capital structure nor  
22 the cost of equity implied in its application, and those proposals should be rejected.

1 **XI. CONCLUSION**

2 **Q. Please summarize Staff's recommendations.**

3 A. Staff recommends that the Commission adopt a 9.1 percent overall rate of return<sup>14</sup> for the  
4 Company based on a capital structure composed of 0.0 percent debt and 100.0 percent  
5 equity.

6  
7 **Q. Does this conclude your direct testimony?**

8 A. Yes, it does.

---

<sup>14</sup> Sum of cost of equity estimate (8.5%) and economic assessment adjustment (0.6%).

**Cordes Lakes Cost of Capital Calculation**  
 Capital Structure  
 And Weighted Average Cost of Capital  
 Staff Recommended and Company Proposed

[A]	[B]	[C]	[D]
<u>Description</u>	<u>Weight (%)</u>	<u>Cost</u>	<u>Weighted Cost</u>
Staff Recommended Structure			
Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	9.1%	9.1%
Weighted Average Cost of Capital			9.1%
Company Proposed Structure			
Debt	2.7%	6.0%	0.2%
Common Equity	97.3%	8.1%	7.8%
Weighted Average Cost of Capital			<b>8.0%</b>

[D] : [B] x [C]

Supporting Schedules: JAC-3 and JAC-4.

Note: Schedule D-1 filed in the Company's application reflects a last year capital structure consisting only of \$18,170 of Service Deposit debt at a cost of 6 percent. The above Company proposed capital structure includes this debt component, and common equity of \$657,634, representing last year stockholder's equity as reported in the Company's Schedule E-1 Comparative Balance Sheet. Schedule A-1 of the Company's application shows 8.0% as the requested rate of return.

Intentionally left blank

Cordes Lakes Cost of Capital Calculation  
Final Cost of Equity Estimates  
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
<b>DCF Method</b>				
Constant Growth DCF Estimate		$\frac{D_1/P_0}{1}$	+	$g^2$
Multi-Stage DCF Estimate		3.1%	+	5.0%
Average DCF Estimate				<u>8.1%</u>
				<u>9.5%</u>
				<u>8.8%</u>
<b>CAPM Method</b>				
Historical Market Risk Premium <sup>3</sup>	<b>Rf</b>	+	$\beta^5$	<b>(Rp)</b>
Current Market Risk Premium <sup>4</sup>	1.3%	+	0.71	7.2% <sup>6</sup>
Average CAPM Estimate	3.0%	+	0.71	9.8% <sup>7</sup>
				<u>6.4%</u>
				<u>10.0%</u>
				<u>8.2%</u>
Average of Overall Cost of Equity Estimates				
Economic Assessment Adjustment				
Sub-Total				
Financial risk adjustment				
<b>ROE</b>				
				<u>8.5%</u>
				<u>0.6%</u>
				<u>9.1%</u>
				<u>0.0%</u>
				<u>9.1%</u>

1 MSN Money and Value Line  
 2 Schedule JAC-8  
 3 Risk-free rate (Rf) for 5, 7, and 10 year Treasury rates from the U.S. Treasury Department at [www.ustreas.gov](http://www.ustreas.gov)  
 4 Risk-free rate (Rf) for 30 Year Treasury bond rate from the U.S. Treasury Department at [www.ustreas.gov](http://www.ustreas.gov)  
 5 Value Line  
 6 Historical Market Risk Premium (Rp) calculated from Ibbotson Associates S&P 2012 Yearbook data  
 7 Testimony

Cordes Lakes Cost of Capital Calculation  
Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
<u>Company</u>	<u>Debt</u>	Common <u>Equity</u>	<u>Total</u>
American States Water	46.0%	54.0%	100.0%
California Water	53.3%	46.7%	100.0%
Aqua America	53.9%	46.1%	100.0%
Connecticut Water	57.1%	42.9%	100.0%
Middlesex Water	43.3%	56.7%	100.0%
SJW Corp	<u>55.7%</u>	<u>44.3%</u>	<u>100.0%</u>
Average Sample Water Utilities	<b>51.6%</b>	<b>48.4%</b>	<b>100.0%</b>
Cordes Lakes - Actual Capital Structure	<b>0.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source:  
Sample Water Companies from Value Line

Cordes Lakes Cost of Capital Calculation  
Growth in Earnings and Dividends  
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
<u>Company</u>	Dividends Per Share 2003 to 2012 <u>DPS<sup>1,2</sup></u>	Dividends Per Share Projected <u>DPS<sup>1,3</sup></u>	Earnings Per Share 2002 to 2011 <u>EPS<sup>1</sup></u>	Earnings Per Share Projected <u>EPS<sup>1</sup></u>
American States Water	3.9%	5.9%	5.1%	4.7%
California Water	1.2%	3.4%	6.2%	8.6%
Aqua America	7.7%	4.5%	7.3%	5.6%
Connecticut Water	1.7%	3.5%	0.4%	9.1%
Middlesex Water	1.7%	1.9%	2.4%	8.3%
SJW Corp	4.4%	3.0%	3.7%	5.5%
<b>Average Sample Water Utilities</b>	<b>3.4%</b>	<b>3.7%</b>	<b>4.2%</b>	<b>7.0%</b>

<sup>1</sup> Value Line

<sup>2</sup> Value Line -- Ten-year historical dividend growth updated from 2003-2012 as it is known and measurable.

<sup>3</sup> Value Line -- Projected DPS growth covers the four-year period, 2012-2016.

Cordes Lakes Cost of Capital Calculation  
Sustainable Growth  
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
Company	Retention Growth 2002 to 2011 br	Retention Growth Projected br	Stock Financing Growth vs	Sustainable Growth 2002 to 2011 br + vs	Sustainable Growth Projected br + vs
American States Water	3.6%	5.3%	2.5%	6.1%	7.8%
California Water	2.2%	4.8%	2.2%	4.4%	7.0%
Aqua America	4.4%	5.2%	2.3%	6.7%	7.6%
Connecticut Water	2.2%	No Projection	1.0%	3.2%	No Projection
Middlesex Water	1.3%	3.3%	3.7%	5.0%	7.0%
SJW Corp	3.7%	3.2%	0.1%	3.8%	3.3%
Average Sample Water Utilities	2.9%	4.4%	2.0%	4.9%	6.5%

[B]: Value Line  
 [C]: Value Line  
 [D]: Value Line and MSN Money  
 [E]: [B]+[D]  
 [F]: [C]+[D]

Cordes Lakes Cost of Capital Calculation  
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
Company	Symbol	Spot Price 1/23/2013	Book Value	Mkt To Book	Value Line Beta	Raw Beta
American States Water	AWR	<u>51.03</u>	22.26	2.3	<b>0.70</b>	0.52
California Water	CWT	<b>19.35</b>	11.40	1.7	<b>0.65</b>	0.45
Aqua America	WTR	<b>26.99</b>	9.49	2.8	<b>0.60</b>	0.37
Connecticut Water	CTWS	<b>29.76</b>	13.67	2.2	<b>0.75</b>	0.60
Middlesex Water	MSEX	<b>19.52</b>	11.97	1.6	<b>0.70</b>	0.52
SJW Corp	SJW	<b>26.77</b>	15.36	<u>1.7</u>	<u><b>0.85</b></u>	<u>0.75</u>
Average				<b>2.1</b>	<b>0.71</b>	<b>0.53</b>

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

[G]: (-0.35 + [F]) / 0.67

Cordes Lakes Cost of Capital Calculation  
 Calculation of Expected Infinite Annual Growth in Dividends  
 Sample Water Utilities

[A]	[B]
<u>Description</u>	g
DPS Growth - Historical <sup>1</sup>	3.4%
DPS Growth - Projected <sup>1</sup>	3.7%
EPS Growth - Historical <sup>1</sup>	4.2%
EPS Growth - Projected <sup>1</sup>	7.0%
Sustainable Growth - Historical <sup>2</sup>	4.9%
<u>Sustainable Growth - Projected<sup>2</sup></u>	<u>6.5%</u>
Average	<b>5.0%</b>

<sup>1</sup> Schedule JAC-5

<sup>2</sup> Schedule JAC-6

Cordes Lakes Cost of Capital Calculation  
Multi-Stage DCF Estimates  
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[H]	[I]
Company	Current Mkt. Price (P <sub>0</sub> ) <sup>1</sup> 1/23/2013	Projected Dividends <sup>2</sup> (Stage 1 growth) (D <sub>t</sub> )				Stage 2 growth <sup>3</sup> (g <sub>a</sub> )	Equity Cost Estimate (K) <sup>4</sup>
		d <sub>1</sub>	d <sub>2</sub>	d <sub>3</sub>	d <sub>4</sub>		
American States Water	51.0	1.30	1.36	1.43	1.50	6.5%	9.0%
California Water	19.4	0.66	0.69	0.73	0.76	6.5%	9.8%
Aqua America	27.0	0.69	0.73	0.76	0.80	6.5%	9.0%
Connecticut Water	29.8	0.98	1.03	1.08	1.14	6.5%	9.7%
Middlesex Water	19.5	0.77	0.81	0.85	0.89	6.5%	10.3%
SJW Corp	26.8	0.75	0.78	0.82	0.86	6.5%	9.2%

$$P_0 = \sum_{t=1}^n \frac{D_t}{(1+K)^t} + \frac{D_n(1+g_n)}{K - g_n} \left[ \frac{1}{(1+K)^n} \right]$$

Average **9.5%**

Where : P<sub>0</sub> = current stock price  
 D<sub>t</sub> = dividends expected during stage 1  
 K = cost of equity  
 n = years of non - constant growth  
 D<sub>n</sub> = dividend expected in year n  
 g<sub>n</sub> = constant rate of growth expected after year n

1 [B] see Schedule JAC-7  
 2 Derived from Value Line Information  
 3 Average annual growth in GDP 1929 - 2011 in current dollars.  
 4 Internal Rate of Return of Projected Dividends



**BEFORE THE ARIZONA CORPORATION COMMISSION**

BOB STUMP

Chairman

GARY PIERCE

Commissioner

BRENDA BURNS

Commissioner

BOB BURNS

Commissioner

SUSAN BITTER SMITH

Commissioner

IN THE MATTER OF THE APPLICATION OF )  
CORDES LAKES WATER COMPANY FOR )  
AN INCREASE IN ITS RATES )  
\_\_\_\_\_ )

DOCKET NO. W-02060A-12-0356

DIRECT TESTIMONY

OF

DEL SMITH

UTILITIES ENGINEER SUPERVISOR

ARIZONA CORPORATION COMMISSION

UTILITIES DIVISION

FEBRUARY 8, 2013

**EXECUTIVE SUMMARY  
CORDES LAKES WATER COMPANY  
DOCKET NO. W-02060A-12-0356**

**CONCLUSIONS**

1. According to the Arizona Department of Environmental Quality (“ADEQ”) the Cordes Lakes Water Company (“Cordes Lakes” or “Company”) water system has no major deficiencies and is delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
2. The Company reported 87,375,000 gallons pumped and 65,097,000 gallons sold during the 2011 test year, resulting in a water loss of 25.5 percent. The Company’s non-account water has steadily increased since 2006. The Company proposes to spend \$30,000 in 2013 and another \$30,000 in 2014 on leak repairs and \$10,000 each year for three years beginning in 2012 on meter repair and replacement. These proposed expenditure levels are a good starting point. However, the Company should monitor its water loss closely and adjust its plan if needed. This does not imply a specific treatment of rate base for rate making purposes in the Company’s future rate filings.
3. The Arizona Corporation Commission (“ACC” or “Commission”) Utilities Division Staff (“Utilities Staff” or “Staff”) concludes that the Company’s current well production and storage capacities are adequate to serve the present customer base and reasonable growth.
4. Cordes Lakes is not within an Active Management Area (“AMA”), and consequently is not subject to Arizona Department of Water Resources (“ADWR”) AMA reporting and conservation requirements. ADWR has determined that the Company is currently compliant with departmental requirements governing water providers and/or community water systems.
5. A check with the Commission Utilities Division Compliance Section showed that there are currently no delinquent compliance items for Cordes Lakes.
6. The Company has curtailment plan and backflow prevention tariffs on file with the Commission.

**RECOMMENDATIONS**

1. Staff recommends that Cordes Lakes closely monitor its water system to ensure that pump over-cycling does not occur due to inadequate pressure tank capacity. Staff further recommends that prior to filing its next rate case the Company review the sizing of its pressure tanks and file, with the Commission’s Docket Control as a compliance item in this

docket, the results of its review including actions the Company plans to take to prevent pump over-cycling.

2. Staff recommends an annual water testing expense of \$5,858 be used for purposes of this proceeding. This expense amount includes the ADEQ Monitoring Assistance Program fee.
3. In its prior rate case, the Company adopted Staff's typical and customary water depreciation rates. These rates are presented in Table C and it is recommended that the Company continue to use these depreciation rates by individual National Association of Regulatory Utility Commissioners category.
4. Staff recommends that the meter and service line charges listed under "Company Proposed and Staff's Recommendation" in Table D be adopted.
5. Staff recommends that the Cordes Lakes file with Docket Control, as a compliance item in this docket and within 45 days of the effective date of a decision in this proceeding, at least five BMPs in the form of tariffs that substantially conform to the templates created by Staff for Commission's review and consideration. The templates created by Staff are available on the Commission's website at <http://www.azcc.gov/Divisions/Utilities/forms.asp> . Staff further recommends that a maximum of two BMPs may come from the "Public Awareness/Public Relations" or "Education and Training" categories.
6. Cordes Lakes is currently providing service to customers outside its Certificate of Convenience and Necessity ("CC&N") in the Southwest Quarter of the Northwest Quarter of Section 24, Township 11 North, Range 2 East of the Gila and Salt River Base and Meridian, Yavapai County, Arizona. Staff recommends that the Company file an application to extend its CC&N to include this area within 90 days of the effective date of a decision in this proceeding.

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1 **INTRODUCTION**

2 **Q. Please state your name and business address.**

3 A. My name is Del Smith. My business address is 1200 West Washington Street, Phoenix,  
4 Arizona 85007.

5  
6 **Q. By whom are you employed and what is your position?**

7 A. I am employed by the Arizona Corporation Commission (the "Commission") in its  
8 Utilities Division. My title is Engineering Supervisor.

9  
10 **Q. Briefly describe your responsibilities as Engineering Supervisor.**

11 A. In my capacity as Engineering Supervisor, I provide recommendations and technical  
12 assistance to the Commissioners and to other staff members on matters that come before  
13 the Commission involving utilities such as the Cordes Lakes Water Company ("Cordes  
14 Lakes" or "Company") and other water service providers operating in the State. In  
15 addition, I am responsible for supervising other Staff members who work in the  
16 Engineering Section of the Utilities Division. Those Staff members include water and  
17 wastewater engineers, electrical engineers and an information technology specialist.

18  
19 **Q. Please describe your educational background and professional experience.**

20 A. I graduated from Arizona State University in 1976 with a Bachelor of Science Degree in  
21 Engineering Technology. Prior to joining the Commission in 1985 as a Utilities  
22 Consultant, I had worked for a telephone operating company for twelve years where I held  
23 positions in network planning and design. Since joining the Commission, I have worked  
24 on hundreds of issues that have come before this Commission.

1 **PURPOSE OF TESTIMONY**

2 **Q. Were you assigned to provide the Utilities Division Staff's ("Utilities Staff" or**  
3 **"Staff") engineering analysis and recommendation for Cordes Lakes in this**  
4 **proceeding?**

5 A. Yes. I reviewed the Company's application and responses to data requests, and I visited  
6 the water system on November 14, 2012. This testimony and its attachment present  
7 Staff's engineering evaluation.

8

9 **ENGINEERING REPORT**

10 **Q. Please describe the attached Engineering Report, Exhibit DS.**

11 A. Exhibit DS presents details and Staff's analysis and findings, and is attached to this direct  
12 testimony. Exhibit DS contains the following major topics: (1) a description and analysis  
13 of the water system, (2) water use, (3) growth, (4) compliance with the rules of the  
14 Arizona Department of Environmental Quality, Arizona Department of Water Resources,  
15 and the Commission, and (5) depreciation rates.

16 Staff's conclusions and recommendations from the Engineering Report are contained in  
17 the "Executive Summary".

18

19 **Q. Does this conclude your direct testimony?**

20 A. Yes, it does.



**ENGINEERING REPORT FOR CORDES  
LAKES WATER COMPANY**

**DOCKET NO. W-02060A-12-0356**

**FEBRUARY 8, 2013**

**CONCLUSIONS**

1. According to the Arizona Department of Environmental Quality (“ADEQ”) the Cordes Lakes Water Company (“Cordes Lakes” or “Company”) water system has no major deficiencies and is delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4.
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**RECOMMENDATIONS**

1. Staff recommends that Cordes Lakes closely monitor its water system to ensure that pump over-cycling does not occur due to inadequate pressure tank capacity. Staff further recommends that prior to filing its next rate case the Company review the sizing of its pressure tanks and file, with the Commission's Docket Control as a compliance item in this docket, the results of its review including actions the Company plans to take to prevent pump over-cycling.
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**A. INTRODUCTION AND LOCATION OF COMPANY**

On August 6, 2012, Cordes Lakes Water Company (“Cordes Lakes” or “Company”) filed a rate application with the Arizona Corporation Commission (“ACC” or “Commission”). The Company’s existing rates were ordered in Commission Decision No. 70170 issued February 27, 2008. The Cordes Lakes water system serves the Cordes Lakes subdivision east of Interstate Highway 17 in Cordes Junction. Figure 1 shows the location of the Company within Yavapai County and Figure 2 delineates the approximate two square miles of certificated service area. The ACC Utilities Division Staff (“Utilities Staff” or “Staff”) engineering review and analysis of the pending application is presented in this report.

Figure1

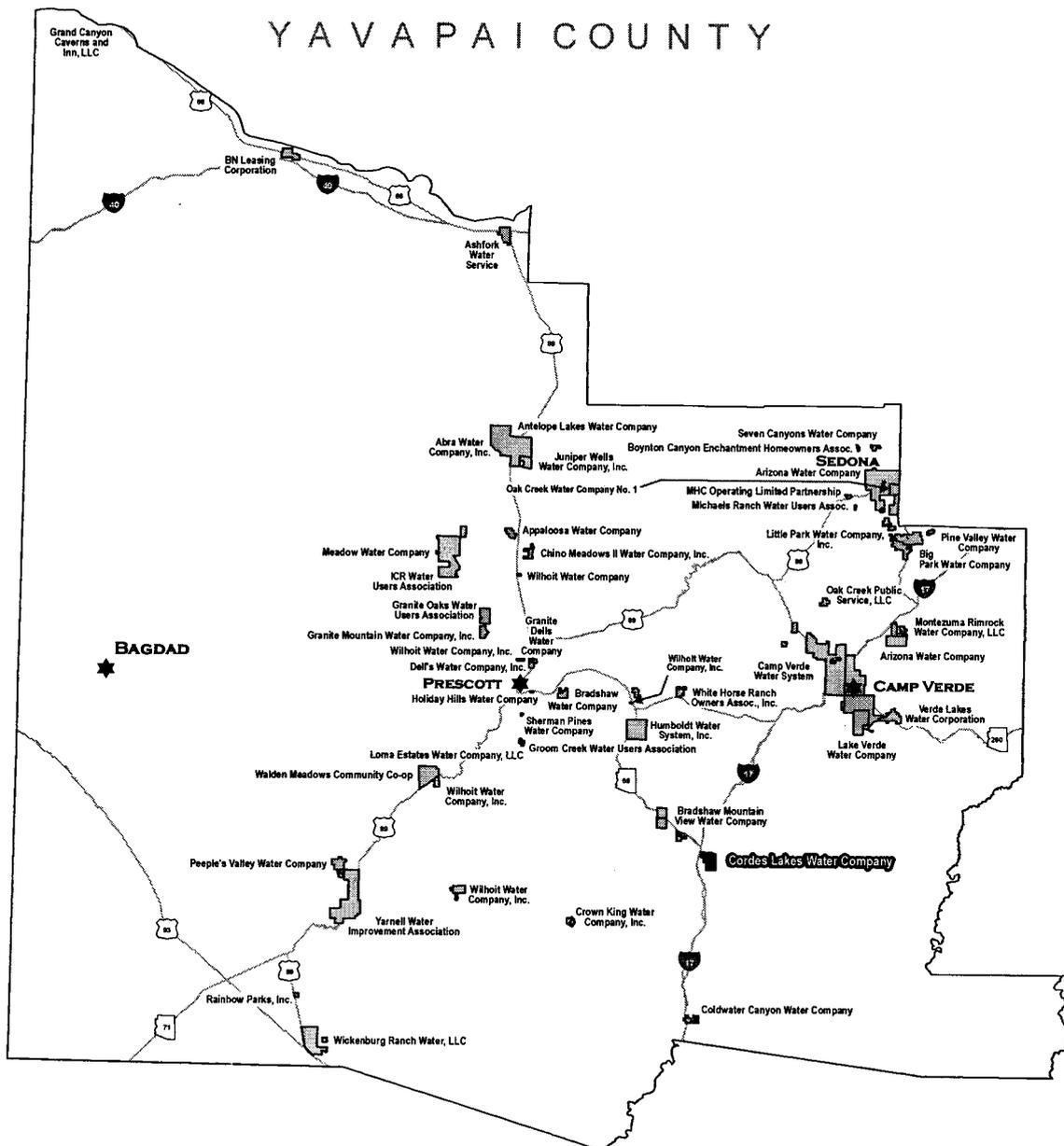
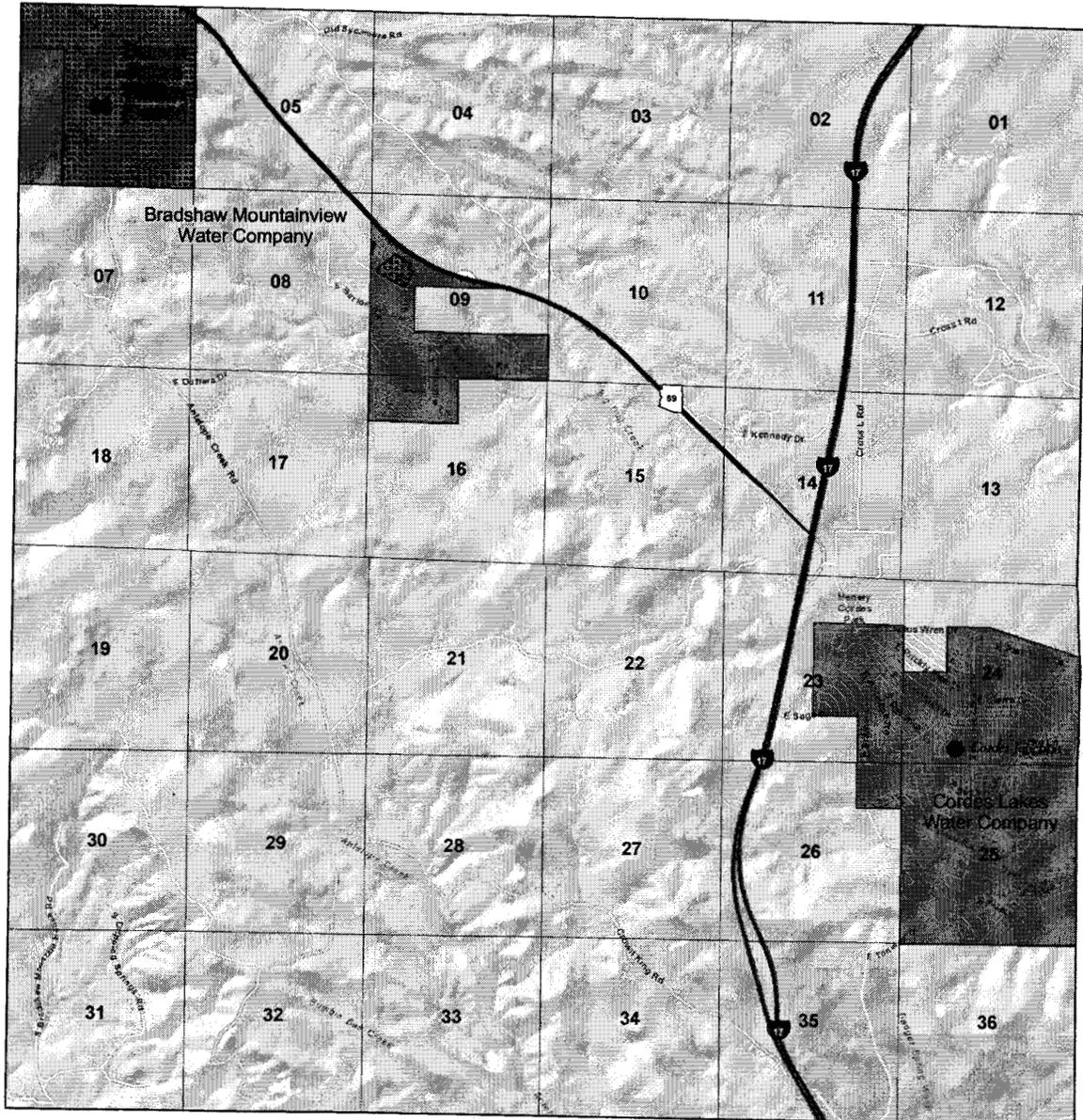


Figure2

# YAVAPAI COUNTY



## B. DESCRIPTION OF THE WATER SYSTEMS

The plant facilities were visited on November 14, 2012, by Staff members Mary Rimback and Del Smith. Staff was accompanied by Neil and Brad Folkman, owners of the Company and Richard Ross the water system's operator. The Cordes Lakes water system has four active pumping sites consisting of four active wells and five active storage tanks. The system also has two active pumping stations and a distribution system serving over 1,300 customers. Figure 3 provides a process schematic for the water system. Table A below shows the plant facilities summary.<sup>1</sup>

Table A. Plant Facilities Summary

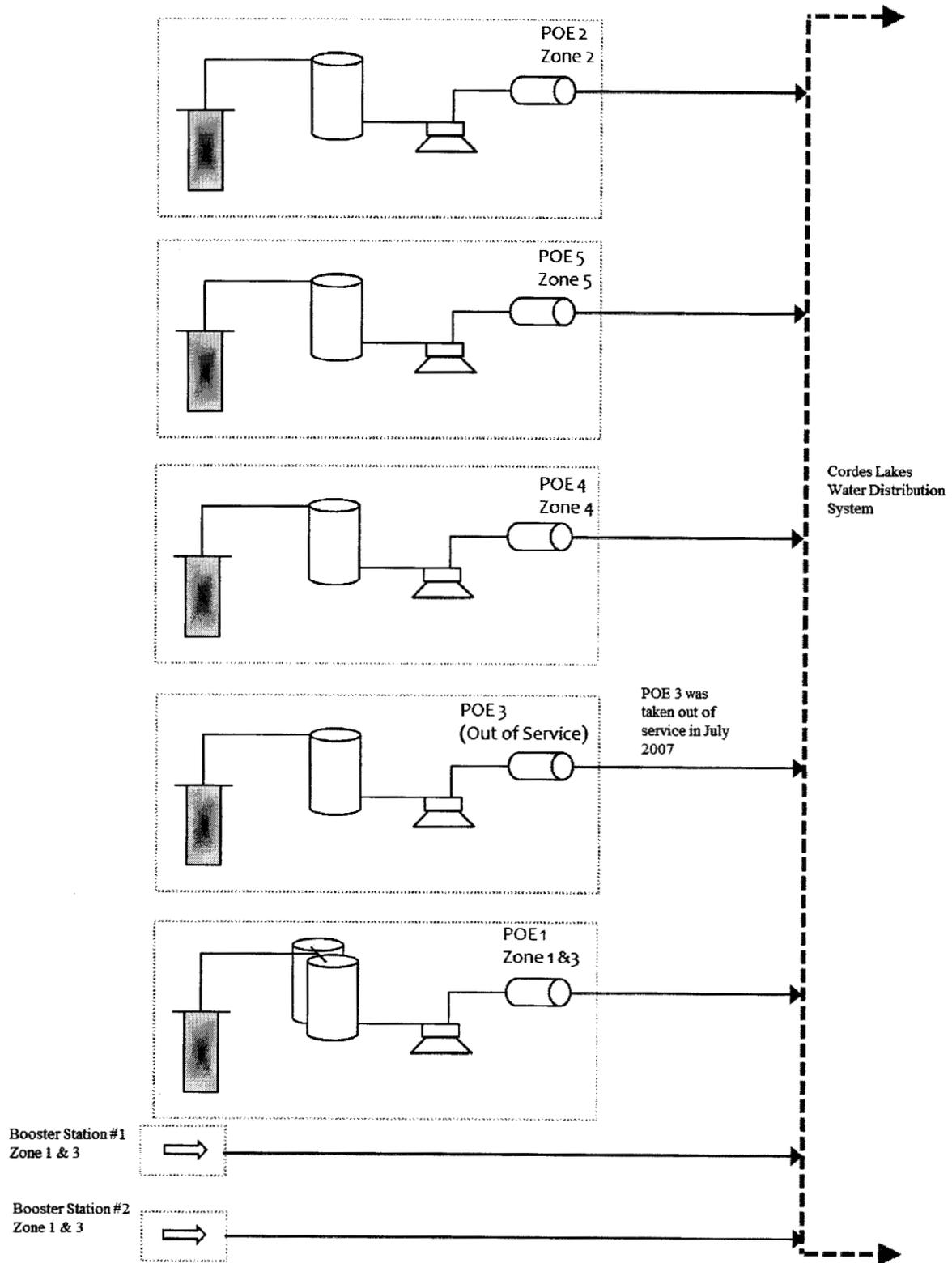
Public Water System ("PWS") No. 13-023								
Location	POE#1 Point of Entry ("POE")	POE #2	POE #3 <sup>2</sup>	POE #4	POE #5	Booster Stations		
						#1 ('A' Tract)	#2 (lot 1545)	#3 (lot 2115) <sup>3</sup>
Well ADWR #	55-690346	55-518196	55-609234	55-609347	55-565855	NA	NA	
Casing Size (inch)	14	8	6	12	10	NA	NA	
Casing Depth (feet)	unknown	380	343	500	343	NA	NA	
Meter Size (inch)	3	3	3	3	3	NA	NA	
Pump Size (HP)	(1) 7.5	(1) 7.5	(1) 2	(1) 7.5	(1) 10	NA	NA	
Pump Yield (GPM)	65	95	12	94	65	NA	NA	
Well Yield (GPM)	85	86	0	100	45	NA	NA	
Storage tank (gallons)	(2) 45,000	(1) 30,000	(1) 16,000	(1) 30,000	(1) 100,000	NA	NA	
Booster Pumps (HP)	(2) 7.5	(2) 7.5	(2) 5	(2) 10	(2) 7.5	(2) 5	(2) 5	
Pressure Tanks (gallons)	(1) 5,000	(1) 3,000	(1) 2,000	(1) 5,000	(1) 5,000	(1) 500	(1) 500	
Chlorinators	Yes	Yes	No	Yes	Yes	NA	NA	
Pump House	8'x 8' wood	8'x 8' block	10'x 12' wood	12'x12' block	8'x 8' wood	NA	NA	
Fencing (chain link)	Fencing	Fencing	Fencing	Fencing	Fencing	Fencing	Fencing	Fencing
Distribution Mains				Customer Meters				
Size (in inches)	Material	Length (in feet)		Size (in inches)		Quantity		
4	PVC	168,100		3/4		1401		
6	PVC	230,040		1		5		

<sup>1</sup> The plant information presented in Table A was provided in the application and during Staff's site visit.

<sup>2</sup> The plant items listed for POE #3 were disconnected from the system in 2007 and left in-place at the well site.

<sup>3</sup> Booster Station #3 was disconnected from the system in 2007, all plant has been removed from the site.

Figure 3 System Schematic



## C. WATER USE

### Water Sold

Figure 4 represents the water consumption data for the test year ending December 31, 2011, provided by the Company in its water use data sheet. Customer consumption included a high monthly water use of 198 gallons per day (“GPD”) per connection in June, and the low water use was 95 GPD per connection in December. The average annual use was 138 GPD per connection.

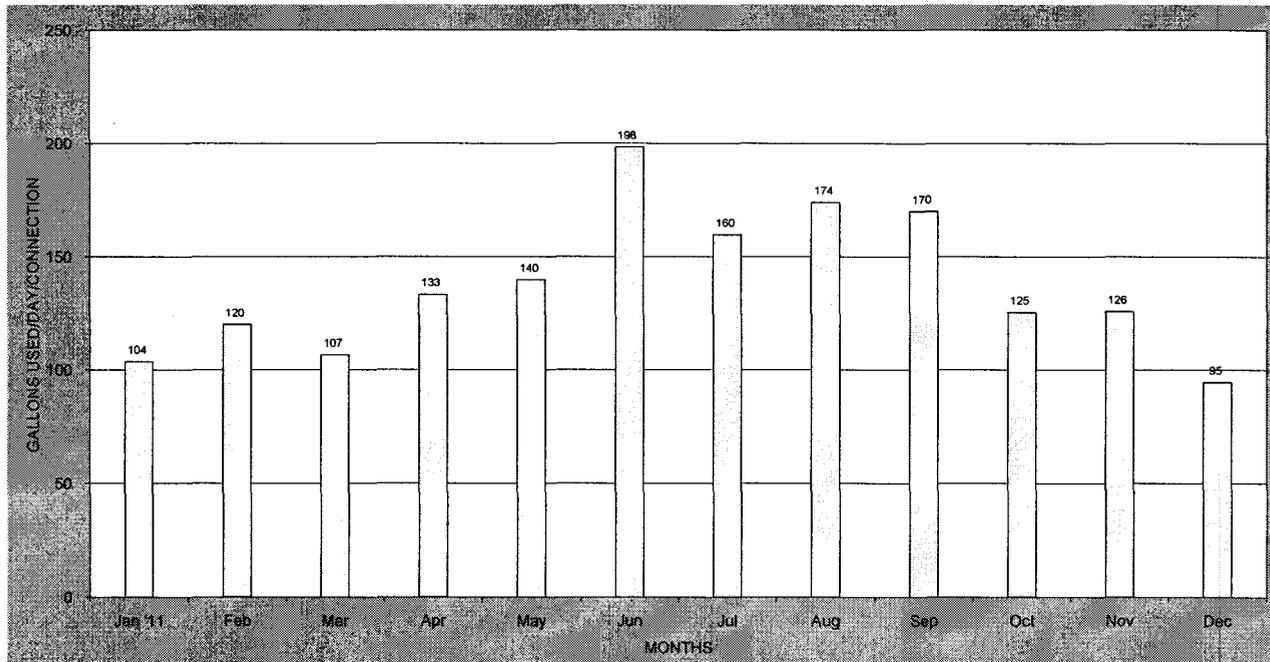


Figure 4 Water Use

### Non-account Water

Non-account water should be 10 percent or less. It is important to be able to reconcile the difference between water sold and the water produced by the source. A water balance will allow a company to identify water and revenue losses due to leakage, theft and flushing.

The Company reported 87,375,000 gallons pumped and 65,097,000 gallons sold during the 2011 test year, resulting in a water loss of 25.5 percent. In its prior rate case the Company reported a 10.1 percent water loss during the 2006 test year and was ordered to monitor its water system closely and take action to ensure the loss remained 10 percent or less in the future. If the water loss at any time before the next rate case exceeded 10 percent, the Company was further ordered to prepare a plan to reduce water loss to less than 10 percent, or prepare a report containing a detailed analysis and explanation demonstrating why a water loss reduction to 10 percent or less was not feasible or cost effective. A copy of either the reduction plan or the feasibility report was to be filed with the Commission’s Docket Control as a compliance item.

The following table shows that the Company's non-account water has steadily increased since 2006.

Table B. Non-Account Water

Year	Gallons Sold	Gallons Pumped	Non-account Water
2006	74,133,000	82,488,000	10.1%
2007	76,778,000	86,698,000	11.4%
2008	71,504,000	86,684,000	17.5%
2009	74,682,000	89,325,000	16.4%
2010	64,023,000	83,594,000	23.4%
2011	65,097,000	87,375,000	25.5%

On February 22, 2012, Cordes Lakes filed a water loss reduction plan. According to the plan the Company intends to implement the following in 2012:

- Monitor Water pumped versus water delivered to customers on a monthly basis;
- Begin to identify those portions of the Company's distribution system in most need of replacement, including all mains and storage facilities, and develop a five year capital improvement plan;
- Look for and eliminate any unauthorized connections; and,
- Test all water meters and repair or replace defective meters.

The Company would like to establish a surcharge mechanism in the pending rate case to hire a leak detection company, to pay for leak repairs and to pay for the repair and replacement of defective meters. The Company proposes to spend \$30,000 in 2013 and another \$30,000 in 2014 on leak repairs and \$10,000 each year for three years beginning in 2012 on meter repair and replacement. These proposed expenditure levels are a good starting point. However, the Company should monitor its water loss closely and adjust its plan if needed. This does not imply a specific treatment of rate base for rate making purposes in the Company's future rate filings.

### System Analysis

#### Storage and Production

Based on the data provided by the Company, the system's current well production capacity is 290 GPM<sup>4</sup> and storage capacity is 250,000 gallons<sup>5</sup>. The system had 1,295 connections during the test year peak month of June 2011. Staff concludes that the Company's current well production and storage capacities are adequate to serve the present customer base and reasonable growth.<sup>6</sup>

<sup>4</sup> Staff used the lesser number listed for pump yield versus well yield to determine well/source production capacity.

<sup>5</sup> Staff reduced total storage to remove the 16,000 gallon storage tank at abandoned well site POE #3.

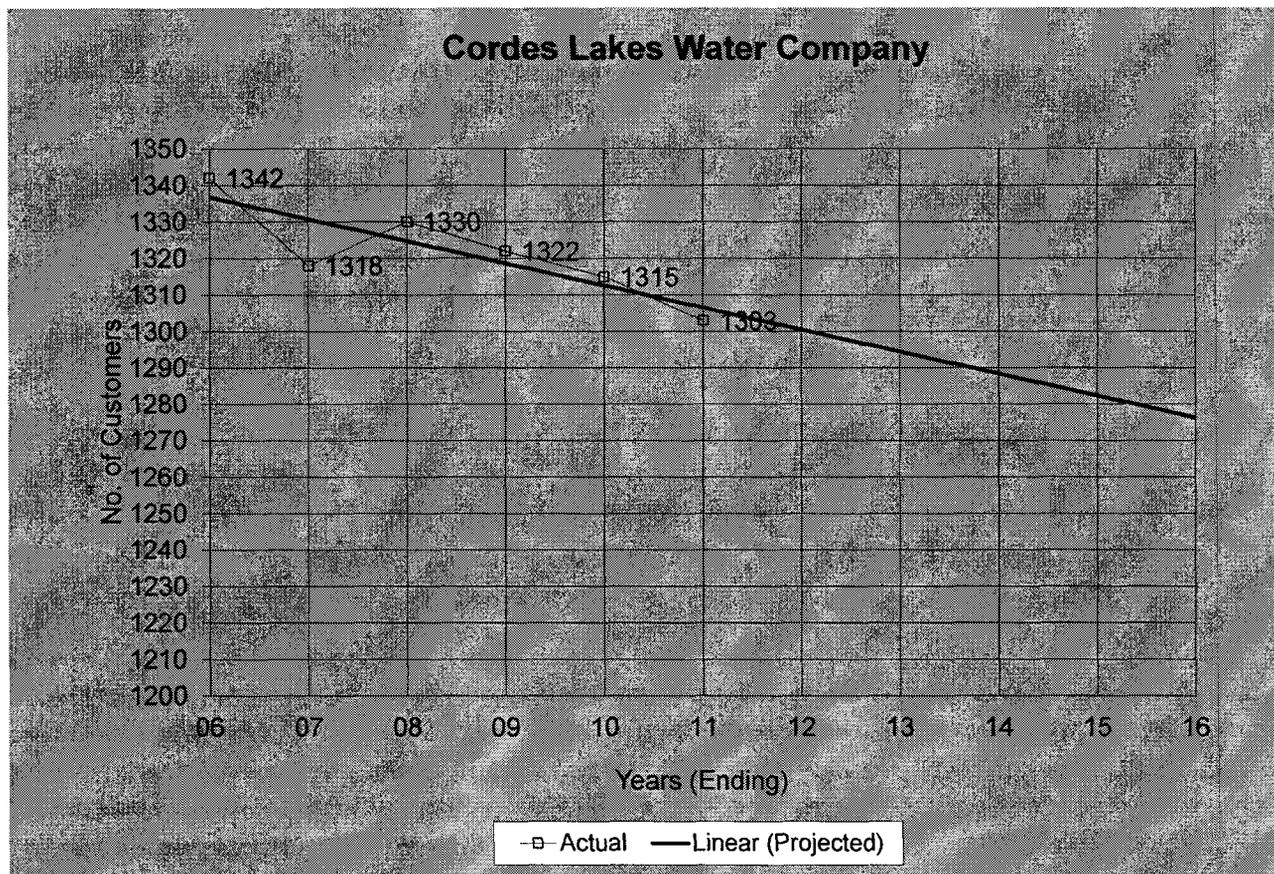
<sup>6</sup> Staff did not include a fire flow requirement in its capacity calculation.

### Hydropneumatic (Pressure) Tanks

The Cordes Lakes water system uses multiple pressure tanks to maintain adequate water pressure through three pressure zones in its distribution system. Correct sizing of these pressure tanks is important because the size of the tank directly determines the frequency of pump cycling (more on-off cycling of the pump may shorten the life of the pump). The Cordes Lakes water system does not have adequate pressure tank capacity. Staff recommends that the Company closely monitor its water system to ensure that pump over-cycling does not occur due to inadequate pressure tank capacity. Staff further recommends that prior to filing its next rate case the Company review the sizing of its pressure tanks and file, with the Commission's Docket Control as a compliance item in this docket, the results of its review including actions the Company plans to take to prevent pump over-cycling.

### **D. GROWTH**

Based on customer data obtained from annual reports the Company submits to the Commission, the number of customers served by the Company has declined every year since 2006 the peak number of customers each year declined from 1,342 to 1,303. According to the Company no new meters were installed in 2011. Unless the economic climate improves the number of customers served by the Company could continue to decline (see Figure 5 below).



**Figure 5 Growth Projection**

## E. ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (“ADEQ”) COMPLIANCE

### Compliance

ADEQ regulates the Cordes Lakes water system under Public Water System Identification (“PWS ID”) No. 13-023. According to ADEQ the Cordes Lakes water system has no major deficiencies and is delivering water that meets water quality standards required by 40 CFR 141/Arizona Administrative Code, Title 18, Chapter 4 and the PWS is in compliance.<sup>7</sup>

### Water Testing Expense

The Company is subject to mandatory participation in ADEQ’s Monitoring Assistance Program (“MAP”).<sup>8</sup> Therefore the system is only required to obtain distribution samples, and any increased monitoring parameters identified through the MAP sampling. The Company reported its water testing expense during the test year at \$1,806, less the MAP fee.<sup>9</sup> Staff has reviewed the Company’s testing expense and has recalculated the expense. Table B below shows Staff’s annual water testing expense estimate of \$5,858 with participation in the MAP program.

Table B. Water Testing Cost

Monitoring	Cost per test	Quantity of tests per 3 years	Annual Testing Cost
Coliform (Monthly)	\$26.25	108 (Note 1)	\$945
MAP	MAP	MAP	\$3,622 (Note 3)
Lead & Copper (Triennially)	\$43	30	\$430
DBPs (Annually)	\$861 (Note 2)	3	\$861
Total Testing Cost	-	-	<b>\$5,858</b>

- Notes: 1) Cordes Lakes is currently taking three Total Coliform samples per month.  
 2) Cordes Lakes is required to take four DBP (TTHM + HAA5) samples annually.  
 3) The ADEQ MAP invoice for Calendar Year 2011 was \$3,621.84.

<sup>7</sup> ADEQ Drinking Water Compliance Status Report, dated October 2, 2012.

<sup>8</sup> Participation in the MAP program is mandatory for water systems, which serve less than 10,000 persons (approximately 3,300 service connections).

<sup>9</sup> See Schedule E-2 in the Application.

**F. ARIZONA DEPARTMENT OF WATER RESOURCES (“ADWR”) COMPLIANCE**Compliance

Cordes Lakes is not within an Active Management Area, and consequently is not subject to ADWR reporting and conservation requirements. ADWR has determined that the Company is currently compliant with departmental requirements governing water providers and/or community water systems.<sup>10</sup>

Well Ownership<sup>11</sup>

<u>Well Reg. No.</u>	<u>Location (POE #)</u>	<u>Registered Owner</u>
55-609346	1	Cordes Lakes Water Co
55-518196	2	Cordes Lakes Water Co
55-609234 (Note 1)	3	JA Bren
55-609347	4	Cordes Lakes Water Co
55-565855	5	Cordes Lakes Water Co

Note: 1) Well taken out of service in 2007.

**G. ACC COMPLIANCE**

A check with the Commission’s Utilities Division Compliance Section showed that there are currently no delinquent compliance items for Cordes Lakes.<sup>12</sup>

**H. DEPRECIATION RATES**

In the prior rate case, the Company adopted Staff’s typical and customary water depreciation rates. These rates are presented in Table C and it is recommended that the Company continue to use these depreciation rates by individual National Association of Regulatory Utility Commissioners category.

**TABLE C  
TYPICAL DEPRECIATION RATES FOR WATER COMPANIES**

NARUC Account No.	Depreciable Plant	Average Service Life (Years)	Annual Accrual Rate (%)
304	Structures & Improvements	30	3.33
305	Collecting & Impounding Reservoirs	40	2.50
306	Lake, River, Canal Intakes	40	2.50
307	Wells & Springs	30	3.33
308	Infiltration Galleries	15	6.67

<sup>10</sup> Per ADWR Water Provider Compliance Report dated October 22, 2012.

<sup>11</sup> ADWR Well Registry Report Run Date: October 30, 2012.

<sup>12</sup> Per ACC compliance status check dated August 9, 2012.

309	Raw Water Supply Mains	50	2.00
310	Power Generation Equipment	20	5.00
311	Pumping Equipment	8	12.5
320	Water Treatment Equipment		
320.1	Water Treatment Plants	30	3.33
320.2	Solution Chemical Feeders	5	20.0
330	Distribution Reservoirs & Standpipes		
330.1	Storage Tanks	45	2.22
330.2	Pressure Tanks	20	5.00
331	Transmission & Distribution Mains	50	2.00
333	Services	30	3.33
334	Meters	12	8.33
335	Hydrants	50	2.00
336	Backflow Prevention Devices	15	6.67
339	Other Plant & Misc Equipment	15	6.67
340	Office Furniture & Equipment	15	6.67
340.1	Computers & Software	5	20.00
341	Transportation Equipment	5	20.00
342	Stores Equipment	25	4.00
343	Tools, Shop & Garage Equipment	20	5.00
344	Laboratory Equipment	10	10.00
345	Power Operated Equipment	20	5.00
346	Communication Equipment	10	10.00
347	Miscellaneous Equipment	10	10.00
348	Other Tangible Plant	----	----

## NOTES:

1. These depreciation rates represent average expected rates. Water companies may experience different rates due to variations in construction, environment, or the physical and chemical characteristics of the water.
2. Acct. 348, Other Tangible Plant may vary from 5% to 50%. The depreciation rate would be set in accordance with the specific capital items in this account.

**I. OTHER ISSUES****1. Service Line and Meter Installation Charges**

Cordes Lakes proposed an increase in the amount it would charge going forward for service line and meter installations.<sup>13</sup> Service line and meter installation charges are refundable advances and the charges the Company proposed are within the typical range for these charges.<sup>14</sup> The Company's current and proposed charges include separate service line and meter charges. Staff recommends

<sup>13</sup> See "Additions to Rate Increase Application" submitted on November 8, 2012.

<sup>14</sup> Except for the 6-inch meter where the Company proposed a slightly higher charge.

that the charges listed under “Company Proposed and Staff’s Recommendation” in Table D be adopted.

**Table D. Service Line and Meter Installation Charges**

Meter Size	Present Charges			Company Proposed and Staff’s Recommendation		
	Service Line Charge	Meter Charge	Total Charge	Service Line Charge	Meter Charge	Total Charge
5/8 x 3/4-inch	-	-	-	-	-	-
3/4-inch	\$355	\$165	\$520	\$426	\$198	\$624
1-inch	\$405	\$205	\$610	\$486	\$246	\$732
1-1/2-inch	\$440	\$415	\$855	\$528	\$498	\$1,026
2-inch	\$600	\$915	\$1,515	\$720	\$1,098	\$1,818
3-inch	\$775	\$1,420	\$2,195	\$930	\$1,764	\$2,694
4-inch	\$1,110	\$2,250	\$3,360	\$1,332	\$2,700	\$4,032
6-inch	\$1,670	\$4,445	\$6,115	\$2,000	\$5,350	\$7,350

Notes: 1) The Company reported that it has no 5/8 x 3/4 inch meters.

## 2. Curtailment Plan Tariff

The Company has an approved curtailment tariff on file with the Commission.

## 3. Backflow Prevention Tariff

The Company has an approved backflow tariff on file with the Commission.

## 4. Best Management Practices (“BMP”) Tariff

Staff recommends that the Company file with Docket Control, as a compliance item in this docket and within 45 days of the effective date of a decision in this proceeding, at least five BMPs in the form of tariffs that substantially conform to the templates created by Staff for Commission’s review and consideration. The templates created by Staff are available on the Commission’s website at <http://www.azcc.gov/Divisions/Utilities/forms.asp>.

Staff further recommends that a maximum of two BMPs may come from the “Public Awareness/Public Relations” or “Education and Training” categories. The Company may request cost recovery of the actual costs associated with the BMPs implemented in its next general rate application.

**5. Service Outside Certificated Service Area**

The Company is currently providing service to customers outside its Certificate of Convenience and Necessity ("CC&N") in the Southwest Quarter of the Northwest Quarter of Section 24, Township 11 North, Range 2 East of the Gila and Salt River Base and Meridian, Yavapai County, Arizona. Staff recommends that the Company file an application to extend its CC&N to include this area within 90 days of the effective date of a decision in this proceeding.