



0000150890

BEFORE THE ARIZONA CORPORATION

COMMISSIONERS

- BOB STUMP, CHAIRMAN
- GARY PIERCE
- BRENDA BURNS
- BOB BURNS
- SUSAN BITTER SMITH

RECEIVED

2014 JAN 17 P 4:06

ARIZONA CORPORATION COMMISSION DOCKET CONTROL

ORIGINAL

IN THE MATTER OF THE APPLICATION OF LAGO DEL ORO WATER COMPANY, AN ARIZONA CORPORATION, FOR A DETERMINATION OF THE FAIR VALUE OF ITS UTILITY PLANT AND PROPERTY AND FOR INCREASES IN ITS WATER RATES AND CHARGES FOR UTILITY SERVICE BASED THEREON.

DOCKET NO. W-01944A-13-0215

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 Rimback, Michael Thompson, and John Cassidy, in the above-captioned matter.

RESPECTFULLY SUBMITTED this 17th day of January, 2014.

Arizona Corporation Commission

DOCKETED

JAN 17 2014

DOCKETED BY

Robin R. Mitchell
 Attorney, Legal Division
 Arizona Corporation Commission
 1200 West Washington Street
 Phoenix, Arizona 85007
 (602) 542-3402

Original and thirteen (13) copies of the foregoing filed this 17th day of January, 2014, with:

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

Copy of the foregoing mailed and/or emailed on the 17th day of January, 2014, to:

Jay L. Shapiro
 FENNEMORE CRAIG
 2394 East Camelback Road, Suite 600
 Phoenix, AZ 85016
 Attorneys for Lago Del Oro Water Co.

Steven Soriano
 Vice President and General Manager
 Lago Del Oro Water Company
 9532 East Riggs Road
 Sun Lakes, AZ 85248

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)
LAGO DEL ORO WATER COMPANY, AN)
ARIZONA CORPORATION FOR A)
DETERMINATION OF THE)
FAIR VALUE OF ITS UTILITY PLANT AND)
PROPERTY AND FOR INCREASES IN ITS)
WATER RATES AND CHARGES FOR UTILITY)
SERVICE BASED THEREON)
_____)

DOCKET NO W-01944A-13-0215

DIRECT

TESTIMONY

OF

MARY J. RIMBACK

PUBLIC UTILITIES ANALYST

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

JANUARY 17, 2014

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION	1
II. BACKGROUND	2
III. CONSUMER SERVICE.....	4
IV. COMPLIANCE.....	4
V. RATE APPLICATION.....	5
VI. SUMMARY OF PROPOSED REVENUES	5
VII. RATE BASE.....	7
Fair Value Rate Base.....	7
Rate Base Summary	7
Rate Base Adjustment No. 1 – Staff adjusted value of plant purchased from an affiliate in 2012.....	8
Rate Base Adjustment No. 2 – Accumulated depreciation for fully depreciated plant.	10
Rate Base Adjustment No. 3 – CIAC and amortization of CIAC	11
Rate Base Adjustment No. 4 – Accumulated deferred income tax (“ADIT”).....	12
VIII. OPERATING INCOME	12
Operating Income Summary.....	12
Operating Income Adjustment No. 1 – Water Testing expense	12
Operating Income Adjustment No. 2 – Depreciation expense	13
Operating Income Adjustment No. 3 – Property tax expense	13
Operating Income Adjustment No. 4 – Income tax expense	14

SCHEDULES

Revenue Requirement.....	MJR-1
Gross Revenue Conversion Factor.....	MJR-2
Rate Base – Original Cost.....	MJR-3
Summary of Original Cost Rate Base Adjustments.....	MJR-4
Rate Base Adjustment No. 1 – Adjust plant purchased from Affiliate.....	MJR-5
Rate Base Adjustment No. 2 – Accumulated depreciation on fully depreciated plant.....	MJR-6
Rate Base Adjustment No. 3 – CIAC and amortization of CIAC	MJR-7
Rate Base Adjustment No. 4 – Accumulated deferred income taxes	MJR-8
Operating Income Statement – Test Year and Staff Recommended	MJR-9
Summary of Operating Income Statement Adjustments – Test Year.....	MJR-10
Operating Income Adjustment No. 1 Water testing expense.....	MJR-11
Operating Income Adjustment No. 2 – Depreciation Expense.....	MJR-12
Operating Income Adjustment No. 3 – Property tax expense	MJR-13
Operating Income Adjustment No. 4 – Income tax Expense.....	MJR-14

**EXECUTIVE SUMMARY
LAGO DEL ORO WATER COMPANY
DOCKET NO. W-01944A-13-0215**

Lago Del Oro Water Company ("LDO" or "Company") is an Arizona C-corporation and a for-profit Class B public service corporation providing water service to approximately 6,350 customers in the master planned community of Saddlebrooke in Pinal County, the community of Catalina in Pima County, and a smaller residential community, surrounded by Saddlebrooke, known as Loma Serena.

On June 27, 2013, the Company filed a rate increase application. On July 24, 2013, the Company docketed a revised Schedule H-3 regarding commodity rates. On July 26, 2013, Staff filed a letter declaring the Company's rate application sufficient.

RATE APPLICATION:

The Company-proposed rates, as filed, produce total operating revenue of \$3,075,271, an \$1,193,033 (63.38 percent) increase over the test year revenue of \$1,882,238, to provide a \$716,971 operating income and an 8.65 percent rate of return on a proposed \$8,287,733 fair value rate base ("FVRB") which is also the proposed original cost rate base ("OCRB"). The rate application shows that LDO incurred a \$3,470 operating loss for the test year ending December 31, 2012.

The Utilities Division ("Staff") recommends total operating revenue of \$2,829,778, a \$947,540 (50.34 percent) increase over the \$1,882,238 test year revenue, to provide a \$580,094 operating income and a 7.9 percent rate of return on the \$7,342,962 Staff-adjusted OCRB.

Staff further recommends that the rates not become effective until the Company is in compliance with ADWR.

1 **I. INTRODUCTION**

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

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

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

9 **A.** In my capacity as a Public Utilities Analyst, I analyze and examine accounting, financial,
10 statistical and other information included in utility rate, financing and other applications.
11 In addition, I prepare written reports based on my analyses and present Staff's
12 recommendations to the Commission on utility revenue requirements, rate design, and
13 other issues.

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

16 **A.** I graduated from Arizona State University with a Bachelor of Science in Accounting and I
17 am a Certified Public Accountant with the Arizona State Board of Accountancy. I began
18 employment with the Arizona Corporation Commission in June of 2012. I have
19 participated in rate, financing and other regulatory proceedings since joining the
20 Commission. I attended the National Association of Regulatory Utility Commissioners
21 ("NARUC") Utilities Rate School.

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

24 **A.** I am presenting Staff's analysis and recommendations regarding Lago Del Oro Water
25 Company's ("LDO" or "Company") application for a rate increase. I am presenting
26 testimony and schedules addressing rate base, operating revenues and expenses, revenue
27 requirement and rate design. Mr. John Cassidy is presenting the Staff's analysis and

1 recommendation for the cost of capital. Mr. Michael Thompson is presenting Staff's
2 engineering analysis and related recommendations.

3
4 **Q. What is the basis of your testimony in this case?**

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

10
11 **Q. How is your testimony organized?**

12 A. My testimony is presented in eight Sections. Section I is this introduction. Section II
13 provides a background of the Company. Section III is a summary of consumer service
14 issues. Section IV presents compliance status. Section V is a summary of proposed
15 revenues. Section VI is a summary of Staff's rate base and operating income adjustments.
16 Section VII presents Staff's rate base recommendations. Section VIII presents Staff's
17 operating income recommendations.

18
19 **II. BACKGROUND**

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

22 A. LDO is an affiliate of Robson Communities, Inc. ("Robson"). Robson is best known as a
23 developer of master planned retirement communities in Arizona and Texas. The
24 ownership of LDO is comprised of a number of shareholders; each shareholder is in the
25 form of a trust. As of the filing, there were 20 shareholders/trusts of LDO, each with
26 various ownership percentages. The LDO water system serves the unincorporated master
27 planned community of SaddleBrooke ("SaddleBrooke"), the unincorporated community

1 of Catalina ("Catalina"), and a smaller residential community, surrounded by
2 SaddleBrooke, known as Loma Serena. The three (3) communities are located off State
3 Route 77 ("SR-77") approximately 25 miles north of the City of Tucson in Pinal and
4 Pima Counties, Arizona. SaddleBrooke Development Company ("SDC") developed the
5 master planned community of SaddleBrooke, which is also a Robson affiliate.

6
7 In addition to LDO, the Robson affiliates include the following water and wastewater
8 utilities:

9
10 Ridgeview Utility Company

11 SaddleBrooke Utility Company

12 Quail Creek Water Company, Inc.

13 Picacho Water Company

14 Picacho Sewer Company

15 Pima Utility Company

16 Mountain Pass Utility Company

17 Santa Rosa Water Company

18 Santa Rosa Utility Company

19
20 The Company is also seeking a debt financing approval in a separate application, Docket
21 No. W-01944A-13-0242, filed July 10, 2013. The proposed financing seeks authority to
22 issue evidence of indebtedness in an amount not to exceed \$3,900,000 and to encumber its
23 real property and utility plant as security for the indebtedness. The financing application
24 is not consolidated with this rate case. However, certain elements of the financing
25 application have relevance in this rate application as discussed later.
26

1 LDO's current rates were established in Decision No. 56464 effective May 1, 1989, with
2 the exception of separate irrigation rates which were established in Decision No. 57766,
3 effective March 16, 1992. The Company had 700 connections as of the date of Decision
4 No. 56464. Over the years, the Company has added major plant to accommodate the
5 current connections. The Company used SDC to construct and initially fund the water
6 facilities. In 2012, LDO purchased from SDC, a significant portion of the system at a cost
7 of \$3,887,000. Prior to the purchase, LDO plant in service was \$14,313,198.
8

9 **Q. What test year did LDO use for the rate application?**

10 A. LDO's rate filing is based on the twelve months that ended December 31, 2012.
11

12 **III. CONSUMER SERVICE**

13 **Q. Please provide a brief summary of customer complaints received by the Commission**
14 **regarding LDO.**

15 A. Staff reviewed the Commission Consumer Service records for the period of January 1,
16 2011 through December 13, 2013, and found the following:

17 2011 – No complaints

18 2012 – No complaints

19 2013 – Two complaints – One Rates & Tariffs, One Billing

20 All complaints are resolved and closed.

21 Nine Opinions – All opposed to the proposed rate increase
22

23 **IV. COMPLIANCE**

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

25 A. A review of the Utilities Division Compliance Section's database as of August 27, 2013,
26 showed no delinquent compliance items for LDO.

1 **V. RATE APPLICATION**

2 **Q. What is the primary reason for the Company's requested permanent rate increase?**

3 A. The Company states that it is not earning an adequate rate of return on its investment.
4

5 **VI. SUMMARY OF PROPOSED REVENUES**

6 **Q. Please summarize the Company's rate application.**

7 A. The Company-proposed rates, as filed, produce total operating revenue of \$3,075,271, a
8 \$1,193,033 (63.38 percent) increase, over the test year revenue of \$1,882,238, to provide a
9 \$716,971 operating income and an 8.65 percent rate of return on a proposed \$8,287,733
10 fair value rate base ("FVRB") which is also the proposed original cost rate base
11 ("OCRB"). The rate application indicates that LDO incurred a \$3,470 operating loss for
12 the test year ending December 31, 2012.
13

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

15 A. Staff recommends total operating revenue of \$2,829,778, a 947,540 (50.34 percent)
16 increase over the \$1,882,238 test year revenue, to provide a \$580,094 operating income
17 and a 7.9 percent rate of return on the \$7,342,962 Staff-adjusted FVRB and OCRB.
18

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

20 A. My testimony addresses the following issues:
21

22 Staff adjusted value of plant purchased from affiliated company – The plant LDO
23 purchased from SDC had an original cost of \$3,887,998. The plant was purchased in
24 2012, but some of the purchased assets were placed in service as early as 1997. No
25 consideration was given to the level of accumulated depreciation that would have been
26 recorded between the time the plant was placed in service and the time the plant was

1 actually purchased by LDO. Staff believes the decrease in the useful economic life of
2 these assets, represented by accumulated depreciation, should be given consideration.
3 Staff removed \$1,136,587 from the original cost of these facilities and \$28,415 from
4 accumulated depreciation relating to the half year of depreciation in test year 2012 in
5 order to assure that the value attributable this purchased plant properly reflects only
6 LDO's net investment in these transferred facilities.

7
8 Accumulated Depreciation—Fully Depreciated Plant – This adjustment removes the
9 amount of \$371,263 from accumulated depreciation to recognize plant that is fully
10 depreciated.

11
12 Contributions In Aid of Construction (“CIAC”) – Adjust for fully amortized CIAC, net
13 increase to CIAC of \$87,724.

14
15 Accumulated Deferred Income Taxes (“ADIT”) – Adjusts deferred income taxes as a
16 result of adjustments 1, 2 and 3 to increase the deferred income tax liability by \$120,138
17 to \$399,497.

18
19 Contract Services-Engineering Services Water Testing Expense – This adjustment reduces
20 water testing expense to \$21,885, a decrease of \$548.

21
22 Depreciation Expense - This adjustment decreases depreciation expense by \$76,505 to
23 reflect application of Staff's recommended depreciation rates to Staff recommended plant
24 amounts.

1 Property Taxes - This adjustment decreases property taxes by \$4,929 to reflect application
2 of the modified version of the Arizona Department of Revenue's property tax
3 methodology which the Commission has consistently adopted. This adjustment is based
4 on a 19 percent assessment ratio as opposed to the 20 percent assessment ratio proposed
5 by the Company.

6
7 Test Year Income Taxes - This adjustment increases income tax expense from a negative
8 \$128,849 to a negative \$45,891 an increase of \$82,958 to reflect Staff proposed operating
9 income.

10
11 **VII. RATE BASE**

12 **Fair Value Rate Base**

13 **Q. Does LDO's application include schedules with elements of a Reconstruction Cost**
14 **New Rate Base?**

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

18
19 **Rate Base Summary**

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

21 **A.** Staff recommends \$7,342,962 for a rate base, a decrease of \$944,771 from the Company's
22 proposed \$8,287,733 rate base. Staff's recommendation results from the four rate base
23 adjustments below.

1 **Rate Base Adjustment No. 1 – Staff adjusted value of plant purchased from an affiliate in**
2 **2012.**

3 **Q. What value did the Company propose for plant purchased from the affiliated**
4 **company, Saddlebrooke Development Company, in 2012?**

5 A. The Company proposed a cost of \$3,887,998 for these assets.

6
7 **Q. Did the Company provide the details of this transaction?**

8 A. Yes.

9
10 **Q. Describe the details provided.**

11 A. The Company provided general ledger transactions by NARUC account and by project
12 and a detailed listing of plant values. Further, in response to a Staff engineering data
13 request, the Company provided the dates the various projects were placed in service.

14
15 **Q. From the information provided by the Company, was Staff able to determine the**
16 **year that the various projects were placed in service by NARUC account?**

17 A. Yes, the Company indicated that the assets involved were placed in service at various
18 times beginning in 1997 and continuing through 2009.

19
20 **Q. For ratemaking purposes, did Staff adjust the amount of gross plant purchased from**
21 **the affiliated company?**

22 A. Yes.

1 **Q. Please explain.**

2 **A.** As referenced in the Engineering Report Section J, the assets were placed in service as
3 follows:

4		
5	1997 Phase 2 – Offsite Water Mains	\$537,979
6	2002 Unit 46 – Desert Reflections	\$228,171
7	2005 Unit 47 – Desert Vista	\$323,381
8	2006 Unit 48 – Desert Views and	
9	Unit 48 – A Hidden Vista	\$227,131
10	2007 Transmission Mains	\$261,625
11	2007 Unit 46 – A Fairway Valley	\$ 7,386
12	2008 Unit 49 – Sun Ridge Hills	\$501,861
13	2009 Water Plant #5	\$983,357
14	2009 Well #22	\$817,107

15

16 Staff requested several documents pertaining to the above transactions and noted that
17 these documents did not reflect any depreciation being taken on these assets since the time
18 the assets were placed in service.

19

20 Since the assets were placed in service in the prior years of 1997, 2002, 2005, 2006, 2007,
21 2008, and 2009, the original gross plant investment levels are not the appropriate values to
22 be addressed for ratemaking purposes in 2012. Plant investments begin depreciating as of

1 the date the plant is placed in service, or capable of providing needed service.
2 Depreciation expense represents the decrease in future deliverable economic value that
3 results as assets are employed in the provision of service or otherwise consumed in the
4 development of units of production. As a result, Staff adjusted the original plant values to
5 reflect the level of accumulated depreciation that would have been booked assuming that a
6 depreciation rate of 5 percent had applied to these assets. The 5 percent annual
7 depreciation rate aligns with the rate in effect since the last rate case. Details of this
8 adjustment by NARUC account are shown on Schedule MJR-W5.
9

10 **Rate Base Adjustment No. 2 – Accumulated depreciation for fully depreciated plant.**

11 **Q. What did the Company propose for accumulated depreciation?**

12 A. The Company's application proposes \$8,840,798 for Accumulated Depreciation.
13

14 **Q. How did the Company calculate the accumulated depreciation in the application?**

15 A. The Company began with its last rate case, Decision No. 56464, effective May 1, 1989.
16 The test year for its last rate case ended April 30, 1988. The Company detailed changes in
17 plant and accumulated depreciation from May 1, 1988 through December 31, 2012, a
18 period of over twenty-four years. Plant was depreciated at 5 percent per year using a half-
19 year convention.
20

21 **Q. Does Staff recommend an adjustment to this calculation?**

22 A. Yes
23

24 **Q. Why is Staff recommending an adjustment to accumulated depreciation?**

25 A. Those items that were in gross plant twenty-four years ago and were never removed from
26 service, if depreciated at 5 percent per year, were fully depreciated at twenty years.

1 **Q. Did Staff adjust the amounts proposed for accumulated depreciation?**

2 A. Yes

3

4 **Q. How did Staff calculate the adjustment?**

5 A. Staff re-calculated each year's depreciation expenses by NARUC account taking into
6 account additions and retirements with information provided by the Company. Staff
7 stopped depreciating plant still in service with over 20 years of depreciation.

8

9 **Q. What amount of adjustment to accumulated depreciation is Staff recommending?**

10 A. Staff recommends an adjustment to accumulated depreciation downward in the amount of
11 \$371,263, which had the effect of increasing rate base by \$371,263 as shown on schedule
12 MJR-W6.

13

14 **Rate Base Adjustment No. 3 – CIAC and amortization of CIAC**

15 **Q. Did the Company provide a schedule of CIAC since the last rate case?**

16 A. Yes. The Company provided a schedule showing CIAC added since the last rate case and
17 amortization of CIAC since the last rate case.

18

19 **Q. Did Staff recalculate an amount for CIAC and CIAC amortization?**

20 A. Yes, Staff calculated the CIAC balance for the end of the test year using schedules
21 provided by the Company including the balance of accumulated amortization of CIAC.

22

23 **Q. Did Staff's calculations match the Company's proposed net CIAC?**

24 A. No, Staff found that the Company calculations continued to amortize CIAC that was
25 completely amortized in 1995.

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

2 A. Staff recommends decreasing gross CIAC by \$99,158 and decreasing CIAC amortization
3 by \$186,882 a net increase of \$87,524 as shown on MJR-W7.
4

5 **Rate Base Adjustment No. 4 – Accumulated deferred income tax (“ADIT”)**

6 **Q. Did Staff adjust the ADIT calculation based on the adjustment of plant purchased**
7 **from an affiliate, removal of accumulated depreciation on fully depreciated plant,**
8 **and CIAC?**

9 A. Yes, Staff increased the amount of ADIT by \$120,138, from \$279,359 to \$399,497 as
10 shown on Schedule MJR-W8.
11

12 **VIII. OPERATING INCOME**

13 **Operating Income Summary**

14 **Q. What are the results of Staff’s analysis of test year revenues, expenses, and operating**
15 **income?**

16 A. As shown in Schedules MJR-9 and MJR-10, Staff’s analysis resulted in test year revenues
17 of \$1,882,238, expenses of \$1,886,683 and operating loss of \$4,445. The Company’s
18 application shows test year revenues of \$1,882,238, expenses of \$1,885,708 and an
19 operating loss of \$3,470. Staff’s recommendation results from the four operating income
20 adjustments discussed below.
21

22 **Operating Income Adjustment No. 1 – Water Testing expense**

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

24 A. The Company is proposing \$22,433 for Water Testing expense in the test year.

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

2 A. Staff recommends an annual amount of \$21,885 for Water Testing expenses (See Staff
3 engineering testimony of Michael Thompson), a decrease of \$548. The adjustment to
4 water testing expense is on Schedule MJR-W11.

5

6 **Operating Income Adjustment No. 2 – Depreciation expense**

7 **Q. What is LDO proposing for depreciation expense?**

8 A. LDO proposes \$861,127 for depreciation expense.

9

10 **Q. What is Staff's recommendation?**

11 A. Staff recommends \$784,622 for depreciation expense as reflected on Schedule MJR-W12.

12

13 **Q. What are the components of the adjustment?**

14 A. As previously discussed, rate base adjustments to purchased plant and accumulated
15 depreciation were used to arrive at the depreciable plant amounts. Amortization of CIAC
16 was adjusted to recommended CIAC amounts. Staff used recommended depreciation
17 rates shown in Table E, Section H of the Engineering report.

18

19 **Operating Income Adjustment No. 3 – Property tax expense**

20 **Q. What is LDO proposing for test year property taxes?**

21 A. LDO is proposing \$98,597 for test year property tax expense.

22

23 **Q. Did the Company use the modified ADOR calculation for property tax expense?**

24 A. For the most part Staff and the Company used the same methodology to calculate the
25 property taxes with one exception. The Company proposes an assessment ratio of 20

1 percent; Staff is recommending a 19 percent assessment ratio in keeping with Arizona
2 Revised Statutes (“ARS”) § 42-15001.

3
4 **Q. What is Staff recommending for test year Property Tax Expense?**

5 A. Staff recommends \$93,668 for test year property tax expense, a \$4,929 decrease to the
6 Company’s proposed amount, as shown in Schedule MJR-13.

7
8 **Operating Income Adjustment No. 4 – Income tax expense**

9 **Q. What is LDO proposing for income tax expense?**

10 A. LDO proposes a negative amount of \$128,849 for test year income taxes.

11
12 **Q. Did Staff make an adjustment to test year Income Tax Expense?**

13 A. Yes.

14
15 **Q. What was the basis of Staff’s adjustment to income taxes?**

16 A. Staff applied the statutory state and federal income tax rates to Staff’s test year taxable
17 income. Income tax expenses for the test year and recommended revenues are shown in
18 MJR-2.

19
20 **Q. Did the Company and Staff use the same methodology to calculate income taxes?**

21 A. For the most part, however Staff calculated the State tax rate using 6.5 percent corporate
22 income tax rate rather than the Company proposed State corporate tax rate of 6.968
23 percent.

24
25 **Q. Why the difference in state corporate income tax rates?**

26 A. Staff refers to ARS§ 43-1111 to determine the tax rate to use for State Corporate taxes.

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

3 A. Staff recommends an adjustment of \$82,958 from (\$128,849) to (\$45,891) as shown in
4 Schedule MJR -W14.

5

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

7 A. Yes, it does.

Lago Del Oro Water Company
Docket No. W-01944A-13-0215
Test Year Ended December 31, 2012

Direct Testimony of Mary J. Rimback

TABLE OF CONTENTS TO SCHEDULES

<u>SCH #</u>	<u>TITLE</u>
MJR-W	1 REVENUE REQUIREMENT
MJR-W	2 GROSS REVENUE CONVERSION FACTOR
MJR-W	3 RATE BASE - ORIGINAL COSTS
MJR-W	4 SUMMARY OF ORIGINAL COST RATE BASE ADJUSTMENTS
MJR-W	5 RATE BASE ADJUSTMENT NO. 1 - STAFF ADJUSTED VALUE OF PLANT PURCHASED FROM AFFILIATED COMPANY
MJR-W	6 ORIGINAL COST RATE BASE ADJUSTMENT # 2 - ACCUMULATED DEPRECIATION - FULLY DEPRECIATED PLANT
MJR-W	7 ORIGINAL COST RATE BASE ADJUSTMENT # 3 - CIAC AND ACCUMULATED AMORTIZATION OF CIAC
MJR-W	8 ORIGINAL COST RATE BASE ADJUSTMENT # 1 - ACCUMULATED DEFERRED INCOME TAXES
MJR-W	9 OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED
MJR-W	10 SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR
MJR-W	11 OPERATING INCOME ADJUSTMENT # 1 - WATER TESTING EXPENSE
MJR-W	12 OPERATING INCOME ADJUSTMENT # 3 - DEPRECIATION EXPENSE
MJR-W	13 OPERATING INCOME- ADJUSTMENT #4 - PROPERTY TAX EXPENSE
MJR-W	14 OPERATING INCOME ADJUSTMENT # 5 - INCOME TAX EXPENSE

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	(A) COMPANY FAIR VALUE	(B) STAFF FAIR VALUE
1	Adjusted Rate Base	\$ 8,287,733	\$ 7,342,962
2	Adjusted Operating Income (Loss)	\$ (3,470)	\$ (4,445)
3	Current Rate of Return (L2 / L1)	-0.04%	-0.06%
4	Required Rate of Return	8.65%	7.90%
5	Required Operating Income (L4 * L1)	\$ 716,971	\$ 580,094
6	Operating Income Deficiency (L5 - L2)	\$ 720,441	\$ 584,539
7	Gross Revenue Conversion Factor	1.6560	1.6210
8	Required Revenue Increase (L7 * L6)	\$ 1,193,033	\$ 947,540
9	Adjusted Test Year Revenue	\$ 1,882,238	\$ 1,882,238
10	Proposed Annual Revenue	\$ 3,075,271	\$ 2,829,778
11	Required Increase in Revenue (%)	63.38%	50.34%

References:

Column (A): Company Schedule A-1

Column (B): Staff Schedules MJR-W3 and MJR-W9

GROSS REVENUE CONVERSION FACTOR

LINE NO.	DESCRIPTION	(A)	(B)	(C)	(D)
<i>Calculation of Gross Revenue Conversion Factor:</i>					
1	Revenue	100.0000%			
2	Uncollectible Factor	0.0000%			
3	Revenues (L1 - L2)	100.0000%			
4	Combined Federal and State Income Tax and Property Tax Rate (Line 18)	38.2965%			
5	Subtotal (L3 - L4)	61.7035%			
6	Revenue Conversion Factor (L1 / L5)	1.620655			
<i>Calculation of Uncollectible Factor:</i>					
7	Unity	100.0000%			
8	Combined Federal and State Tax Rate (Line 17)	37.2231%			
9	One Minus Combined Income Tax Rate (L7 - L8)	62.7769%			
10	Uncollectible Rate	0.0000%			
11	Uncollectible Factor (L9 * L10)	0.0000%			
<i>Calculation of Effective Tax Rate:</i>					
12	Operating Income Before Taxes (Arizona Taxable Income)	100.0000%			
13	Arizona State Income Tax Rate	6.5000%			
14	Federal Taxable Income (L12 - L13)	93.5000%			
15	Applicable Federal Income Tax Rate (Line 48)	32.8589%			
16	Effective Federal Income Tax Rate (L9 x L10)	30.7231%			
17	Combined Federal and State Income Tax Rate (L13 +L16)		37.2231%		
<i>Calculation of Effective Property Tax Factor</i>					
18	Unity	100.0000%			
19	Combined Federal and State Income Tax Rate (L17)	37.2231%			
20	One Minus Combined Income Tax Rate (L13-L14)	62.7769%			
21	Property Tax Factor (MJR-W13, L27)	1.7099%			
22	Effective Property Tax Factor (L20*L21)		1.0734%		
23	Combined Federal and State Income Tax and Property Tax Rate (L17+L22)			38.2965%	
24	Required Operating Income (Schedule MJR-W1, Line 5)	\$ 580,094			
25	Adjusted Test Year Operating Income (Loss) (MJR-W10, L40)	(4,445)			
26	Required Increase in Operating Income (L24 - L25)		\$ 584,539		
27	Income Taxes on Recommended Revenue (Col. [C], L52)	\$ 300,707			
28	Income Taxes on Test Year Revenue (Col. [C], L52)	(45,891)			
29	Required Increase in Revenue to Provide for Income Taxes (L27 - L28)		346,597		
30	Recommended Revenue Requirement (Schedule MJR-W1, Line 10)	\$ 2,829,778			
31	Uncollectible Rate	0.0000%			
32	Uncollectible Expense on Recommended Revenue (L30*L31)	\$ -			
33	Adjusted Test Year Uncollectible Expense	\$ -			
34	Required Increase in Revenue to Provide for Uncollectible Exp. (L32-L33)				
35	Property Tax with Recommended Revenue (Schedule MJR-W18, L21)	\$ 109,870			
36	Property Tax on Test Year Revenue (Schedule MJR-W13, Line 17)	93,668			
37	Increase in Property Tax Due to Increase in Revenue (L30-31)		16,202		
38	Total Required Increase in Revenue (L21 + L24 + L29 + L32)		\$ 947,338		

	Test Year	Staff Recommended
<i>Calculation of Income Tax:</i>		
39	Revenue (Schedule MJR-W1, Col. [B], Line 9 & Sch. MJR-W1, Col. [B] Line 10)	\$ 1,882,238
40	Operating Expenses Excluding Income Taxes	\$ 1,932,574
41	Synchronized Interest (L57)	\$ 95,459
42	Arizona Taxable Income (L34 - L35 - L36)	\$ (145,794)
43	Arizona State Income Tax Rate	6.5000%
44	Arizona Income Tax (L37 x L38)	\$ (9,477)
45	Federal Taxable Income (L37- L39)	\$ (136,318)
46	Federal Tax on First Income Bracket (\$1 - \$50,000) @ 15%	\$ (7,500)
47	Federal Tax on Second Income Bracket (\$51,001 - \$75,000) @ 25%	\$ (6,250)
48	Federal Tax on Third Income Bracket (\$75,001 - \$100,000) @ 34%	\$ (8,500)
49	Federal Tax on Fourth Income Bracket (\$100,001 - \$335,000) @ 39%	\$ (14,164)
50	Federal Tax on Fifth Income Bracket (\$335,001 - \$10,000,000) @ 34%	\$ -
51	Total Federal Income Tax	\$ (36,414)
52	Combined Federal and State Income Tax (L43 + L51)	\$ (45,891)

53	Applicable Federal Income Tax Rate [Col. [C], L51 - Col. [A], L51] / [Col. [C], L45 - Col. [A], L45]	32.8592%
54	Synchronized Interest Calculation	
55	Rate Base	\$ 7,342,962
56	Weighted Average Cost of Debt	1.30%
57	Synchronized Interest	\$ 95,459

RATE BASE - ORIGINAL COST

LINE NO.	(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	(C) STAFF AS ADJUSTED
1	Plant in Service	\$ 18,200,198	\$ 17,063,612
2	Less: Accumulated Depreciation	8,840,798	8,441,120
3	Net Plant in Service	<u>\$ 9,359,400</u>	<u>\$ 8,622,492</u>
<u>LESS:</u>			
4	Contributions in Aid of Construction (CIAC)	\$ 852,693	\$ 753,535
5	Less: Accumulated Amortization	469,879	\$ 282,997
6	Net CIAC	<u>\$ 382,814</u>	<u>\$ 470,538</u>
7	Advances in Aid of Construction (AIAC)	297,640	297,640
8	Customer Deposits	111,854	111,854
9	Accumulated Deferred Income Tax	279,359	399,497
<u>ADD:</u>			
10	Working Capital Allowance	-	-
11	Defered Regulatory Assets	-	-
12	Original Cost Rate Base	<u>\$ 8,287,733</u>	<u>\$ 7,342,962</u>

References:

Column [A]: Company Application Schedule B-1

Column [B]: Testimony MJR

Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 1 - Staff adjusted value of plant purchased from affiliated company

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		STAFF AS ADJ NO. 1	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	304 Structures and Improvements	\$ 110,051	\$ (16,508)	\$ 93,543
2	307 Wells and Springs	496,541	(74,481)	422,060
3	310 Power Generation Equipment	62,481	(9,372)	53,109
4	311 Electric Pumping Equipment	547,976	(82,196)	465,779
5	330.1 Storage Tanks	323,184	(48,478)	274,706
6	330.2 Pressure Tanks	89,247	(13,387)	75,860
7	331 Transmission and Distribution Mains	1,774,780	(747,934)	1,026,846
8	333 Services	270,250	(79,977)	190,273
9	335 Hydrants	189,964	(60,726)	129,238
10	346 Communications Equipment	23,525	(3,529)	19,996
11				
12	Subtotal	<u>\$ 3,887,998</u>	<u>\$ (1,136,587)</u>	<u>\$ 2,751,411</u>
13				
14	Accumulated Depreciation	\$ 97,200	\$ (28,415)	\$ 68,785

References:

Column [A]: Company Schedule B-2, Page 3.29

Column [B]: Testimony MJR

Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 1 - Accumulated depreciation - fully depreciated plant

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Accumulated Depreciation	\$ 8,840,798	\$ (371,263)	\$ 8,469,535

References:

Column [A]: Company Schedule B-2, Page 3.29

Column [B]: Testimony MJR

Column [C]: Column [A] + Column [B]

RATE BASE ADJUSTMENT NO. 3 - CIAC and accumulated amortization of CIAC

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	CIAC	\$ 852,693	\$ (99,158)	\$ 753,535
2	AMORTIZATION OF CIAC	469,879	(186,882)	282,997
3	NET CIAC	<u>\$ 382,814</u>	<u>\$ 87,724</u>	<u>\$ 470,538</u>

References:

Columns [A]: Company Schedule B-2, Page 5.1 thru 5.3

Column [B]: Column [C] less Column [A]

Column [C]: Testimony MJR

RATE BASE ADJUSTMENT NO. 4 - Adit adjustment

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	ADIT	\$ 279,359	\$ 120,138	\$ 399,497

References:

Column [A]: Company Schedule B.1, Page 1

Column [B]: Column [C] less Column [A]

Column [C]: Column [A] + Column [B]

OPERATING INCOME STATEMENT - ADJUSTED TEST YEAR AND STAFF RECOMMENDED

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	REVENUES:					
2	Metered Water Sales	\$ 1,865,121	\$ -	\$ 1,865,121	\$ 947,540	\$ 2,812,661
3	Water Sales-Unmetered	-	-	-	-	-
4	Other Water Revenue	17,117	-	17,117	-	17,117
5	Intentionally Left Blank	-	-	-	-	-
6	Total Operating Revenues	<u>\$ 1,882,238</u>	<u>\$ -</u>	<u>\$ 1,882,238</u>	<u>\$ 947,540</u>	<u>\$ 2,829,778</u>
7			##			
8	OPERATING EXPENSES:					
9	Salaries and Wages	\$ 169,991	\$ -	\$ 169,991	\$ -	\$ 169,991
10	Employee Benefits and Pensions	35,228	-	35,228	-	35,228
11	Purchased Water	-	-	-	-	-
12	Purchased Power	442,823	-	442,823	-	442,823
13	Fuel for Power Production	-	-	-	-	-
14	Chemicals	21,969	-	21,969	-	21,969
15	Materials and Supplies	80,299	-	80,299	-	80,299
16	Office Supplies and Expense	66,431	-	66,431	-	66,431
17	Contractual Services-Engineering	-	-	-	-	-
18	Contractual Services -Accounting	533	-	533	-	533
19	Contractual Services- Legal	166	-	166	-	166
20	Contractual Services-Other	57,785	-	57,785	-	57,785
21	Contractual Services-Testing	22,433	(548)	21,885	-	21,885
22	Rents	9,435	-	9,435	-	9,435
23	Rents-Equipment	-	-	-	-	-
24	Transportation Expenses	42,440	-	42,440	-	42,440
25	Insurance - Vehicle	5,165	-	5,165	-	5,165
26	Insurance - General Liability	20,083	-	20,083	-	20,083
27	Regulatory Commission Expense-Other	855	-	855	-	855
28	Regulatory Commission Expense - Rate Case	55,000	-	55,000	-	55,000
29	Bad Debt Expense	4,922	-	4,922	-	4,922
30	Miscellaneous Expense	19,274	-	19,274	-	19,274
31	Depreciation and Amortization Expense	861,127	(76,505)	784,622	-	784,622
33	Taxes Other than Income	-	-	-	-	-
34	Property Taxes	98,597	(4,929)	93,668	16,202	109,870
35	Income Taxes	(128,849)	82,958	(45,891)	346,597	300,707
36	Interest on Customer Deposits	-	-	-	-	-
37	Total Operating Expenses	<u>\$ 1,885,708</u>	<u>\$ 976</u>	<u>\$ 1,886,683</u>	<u>\$ 362,799</u>	<u>\$ 2,249,482</u>
38	Operating Income (Loss)	<u>\$ (3,470)</u>	<u>\$ (976)</u>	<u>\$ (4,445)</u>	<u>\$ 584,741</u>	<u>\$ 580,295</u>
39						
40	Other Income(Expense)					
	Interest Income	\$ -	\$ -	\$ -	-	-
	Other Income(Expense)	-	-	-	-	-
	Interest Expense	(204,322)	-	(204,322)	-	(204,322)
	Other Expense	-	-	-	-	-
	Total Other Income (Expense)	<u>\$ (204,322)</u>	<u>\$ -</u>	<u>\$ (204,322)</u>	<u>\$ -</u>	<u>\$ (204,322)</u>
	Net Profit (Loss)	<u>\$ (207,792)</u>	<u>\$ (976)</u>	<u>\$ (208,767)</u>	<u>\$ 584,741</u>	<u>\$ 375,973</u>

References:

Column (A): Company Schedule C-1
Column (B): Schedule MJR-W10
Column (C): Column (A) + Column (B)
Column (D): Schedules MJR-W1, MJR-W2 and MJR-W13
Column (E): Column (C) + Column (D)

SUMMARY OF OPERATING INCOME STATEMENT ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] Water Testing Expenses ADJ #1 Ref: Sch MJR-W11	[C] Depreciation Expense ADJ #2 Ref: Sch MJR-W12	[D] Property Tax Expense ADJ #3 Ref: Sch MJR-W13	[E] Income Tax Expense ADJ #4 Ref: Sch MJR-W14	[F] STAFF ADJUSTED
1	REVENUES:						
2	Metered Water Sales	\$ 1,865,121					1,865,121
3	Water Sales-Unmetered	-					-
4	Other Water Revenue	17,117					17,117
5	Intentionally Left Blank	-					-
6	Total Operating Revenues	\$ 1,882,238					1,882,238
7							
8	OPERATING EXPENSES:						
9	Salaries and Wages	\$ 169,991	0				169,991
10	Employee Benefits and Pensions	\$ 35,228					35,228
11	Purchased Water	-					-
12	Purchased Power	442,823					442,823
13	Chemicals	-					-
14	Materials and Supplies	21,969					21,969
15	Office Supplies and Expense	80,299					80,299
16	Contractual Services-Engineering	66,431					66,431
17	Contractual Services-Accounting	-					-
18	Contractual Services-Legal	533					533
19	Contractual Services-Other	166					166
20	Contractual Services-Testing	57,785	(548)				57,785
24	Rents	22,433					21,885
25	Rents-Equipment	9,435					9,435
26	Transportation Expenses	42,440					42,440
27	Insurance - Vehicle	5,165					5,165
28	Insurance - General Liability	20,083					20,083
29	Regulatory Commission Expense-Other	855					855
30	Regulatory Commission Expense - Rate Case	55,000					55,000
31	Bad Debt Expense	4,922					4,922
32	Miscellaneous Expense	19,274					19,274
33	Depreciation and Amortization Expense	861,127		(76,505)			784,622
35	Taxes Other than Income	-					-
36	Property Taxes	98,597			(4,929)		93,668
37	Income Taxes	(128,849)				82,958	(45,891)
38	Interest on Customer Deposits	-					-
39	Total Operating Expenses	\$ 1,885,708	(548)	(76,505)	(4,929)	82,958	1,886,683
40	Operating Income (Loss)	\$ (3,470)	548	76,505	4,929	(82,958)	(4,445)
	Other Income(Expense)						
	Interest Income	\$ -					-
	Other Income(Expense)	(204,322)					(204,322)
	Interest Expense	-					-
	Other Expense	-					-
	Total Other Income (Expense)	\$ (204,322)	\$ -	\$ -	\$ -	\$ -	(204,322)
	Net Profit (Loss)	\$ (207,792)	548	76,505	4,929	(82,958)	(208,767)

OPERATING ADJUSTMENT NO. 1 - Water testing expense

Line No.	Description	[A]	[B]	[C]
		COMPANY PROPOSED	STAFF ADJUSTMENTS	STAFF RECOMMENDED
1	Contractual Services-Testing	\$ 22,433	\$ (548)	\$ 21,885
2				
3		<u>\$ 22,433</u>	<u>\$ (548)</u>	<u>\$ 21,885</u>

References:

- Column [A]: Company Schedule C-1, Page 1
- Column [B]: Testimony Staff Engineering Testimony
- Column [C]: Column [A] + Column [B]

OPERATING ADJUSTMENT NO. 3 - Depreciation expense

LINE NO.	ACCT NO.	DESCRIPTION	[A]	[B]	[C]	[D]	[E]
			PLANT In SERVICE Per Staff	NonDepreciable or Fully Depreciated PLANT	DEPRECIABLE PLANT (Col A - Col B)	DEPRECIATION RATE	DEPRECIATION EXPENSE (Col C x Col D)
1	301.0	Organization Cost	\$ -	\$ -	\$ -	0.00%	\$ -
2	302.0	Franchise Cost	-	-	-	0.00%	-
3	303.0	Land and Land Rights	42,608	42,608	-	0.00%	-
4	304.0	Structures and Improvements	343,173	11,667	331,506	3.33%	11,039
5	305.0	Collecting and Impounding Res.	-	-	-	2.50%	-
6	306.0	Lake River and Other Intakes	0	-	0	2.50%	0
7	307.0	Wells and Springs	2,089,942	134,725	1,955,217	3.33%	65,109
8	308.0	Infiltration Galleries and Tunnels	-	-	-	6.67%	-
9	309.0	Supply Mains	-	-	-	2.00%	-
10	310.0	Power Generation Equipment	178,492	-	178,492	5.00%	8,925
11	311.0	Electric Pumping Equipment	3,503,464	-	3,503,464	12.50%	437,933
12	320.1	Water Treatment Equipment	-	-	-	3.33%	-
13	320.2	Chemical Solution Feeders	24,640	-	24,640	20.00%	4,928
14	330.0	Distribution Reservoirs & Standpipe	-	-	-	2.22%	-
15	330.1	Storage Tanks	1,709,697	222,970	1,486,727	2.22%	33,005
16	330.2	Pressure Tanks	308,582	-	308,582	5.00%	15,429
17	331.0	Transmission and Distribution Mains	5,335,871	805,218	4,530,653	2.00%	90,613
18	333.0	Services	1,808,764	247,045	1,561,719	3.33%	52,005
19	334.0	Meters	504,321	80,024	424,297	8.33%	35,344
20	335.0	Hydrants	658,131	148,034	510,097	2.00%	10,202
21	336.0	Backflow Prevention Devices	-	-	-	6.67%	-
22	339.0	Other Plant and Miscellaneous Equipment	-	-	-	6.67%	-
23	340.0	Office Furniture and Fixtures	36,758	-	36,758	6.67%	2,452
24	340.1	Computers and Software	-	-	-	20.00%	-
25	341.0	Transportation Equipment	89,569	-	89,569	20.00%	17,914
26	342.0	Stores Equipment	-	-	-	4.00%	-
27	343.0	Tools and Work Equipment	-	-	-	5.00%	-
28	344.0	Laboratory Equipment	-	-	-	10.00%	-
29	345.0	Power Operated Equipment	55,787	-	55,787	5.00%	2,789
30	346.0	Communications Equipment	347,690	-	347,690	10.00%	34,769
31	347.0	Miscellaneous Equipment	26,122	-	26,122	10.00%	2,612
32	348.0	Other Tangible Plant	-	-	-	10.00%	-
33		Total Plant	<u>\$ 17,063,612</u>	<u>\$ 1,692,291</u>	<u>\$ 15,371,321</u>		<u>\$ 825,068</u>
38		CIAC = Depreciation Expense/Depreciable Plant		5.37%			
39		CIAC Balance	\$ 753,535				
40		Depreciation Expense Before Amortization of CIAC:	\$ 825,068				
41		Less Amortization of CIAC:	\$ 40,447				
42		Test Year Depreciation Expense - Staff:	\$ 784,622				
43		Depreciation Expense - Company:	\$ 861,127				
44		Staff's Total Adjustment:	\$ (76,505)				

Note:

* Indicates items that were fully depreciated per Company Schedule C-2.

References:

- Column [A]: Schedule MJR-W4
- Column [B]: Testimony MJR From Column [A]
- Column [C]: Column [A] - Column [B]
- Column [D]: Staff Engineering Testimony
- Column [E]: Column [C] x Column [D]

OPERATING INCOME ADJUSTMENT NO. 4- Property tax expense

LINE NO.	Property Tax Calculation	[A] STAFF AS ADJUSTED	[B] STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues	\$ 1,882,238	\$ 1,882,238
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	3,764,476	\$ 3,764,476
4	Staff Recommended Revenue, Per Schedule MJR-1	1,882,238	\$ 2,829,778
5	Subtotal (Line 4 + Line 5)	5,646,714	6,594,254
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	1,882,238	\$ 2,198,085
8	Department of Revenue Mutilplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	3,764,476	\$ 4,396,169
10	Plus: 10% of CWIP -	-	-
11	Less: Net Book Value of Licensed Vehicles	112,728	\$ 112,728
12	Full Cash Value (Line 9 + Line 10 - Line 11)	3,651,748	\$ 4,283,441
13	Assessment Ratio	19.0%	19.0%
14	Assessment Value (Line 12 * Line 13)	693,832	\$ 813,854
15	Composite Property Tax Rate (Per Company Schedule)	13.5000%	13.5000%
16			\$ -
17	Staff Test Year Adjusted Property Tax (Line 14 * Line 15)	\$ 93,668	
18	Company Proposed Property Tax	98,597	
19			
20	Staff Test Year Adjustment (Line 17-Line 18)	\$ (4,929)	
21	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		\$ 109,870
22	Staff Test Year Adjusted Property Tax Expense (Line 17)		\$ 93,668
23	Increase in Property Tax Expense Due to Increase in Revenue Requirement		\$ 16,202
24			
25	Increase to Property Tax Expense		\$ 16,202
26	Increase in Revenue Requirement		947,540
27	Increase to Property Tax per Dollar Increase in Revenue (Line 25/Line 26)		1.709894%

References:

Column [A]: Company Schedule C-2, Page 3
Column [B]: Testimony MJR
Column [C]: Column [A] + Column [B]

MENT NO. 5 - Test year income taxesRATE BASE ADJUSTMENT NO. 1 - Staff adjusted value of plant purc

LINE NO.	DESCRIPTION	[A] COMPANY TEST YEAR	[B] STAFF ADJUSTMENTS	[C] STAFF RECOMMENDED
1	Income Tax Expense	\$ (128,849)	\$ 82,958	\$ (45,891)

References:
 Column (A): Company Schedule C-1
 Column (B): Column [C] - Column [A]
 Column (C): Schedule MJR-W2

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)
LAGO DEL ORO WATER COMPANY FOR AN)
INCREASE IN ITS WATER RATES)
_____)

DOCKET NO. W-01944A-13-0215

DIRECT TESTIMONY

OF

MICHAEL THOMPSON, P. E.

UTILITIES ENGINEER

UTILITIES DIVISION

ARIZONA CORPORATION COMMISSION

JANUARY 17, 2014

**EXECUTIVE SUMMARY
LAGO DEL ORO WATER COMPANY
DOCKET NO. W-01944A-13-0215**

CONCLUSIONS

1. The Arizona Corporation Commission (“ACC” or “Commission”) Utilities Division Staff (“Utilities Staff” or “Staff”) concludes that the Lago Del Oro Water Company, Inc. (“LDO” or “Company”) water system has adequate production and storage capacity to serve the present customer base and any reasonable growth.
2. According to the Arizona Department of Environmental Quality (“ADEQ”) Compliance Status Report (“CSR”), dated January 7, 2014, the CSR indicates that the LDO water system is currently delivering water that meets water quality standards required by 40 CFR 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.
3. The Arizona Department of Water Resources (“ADWR”) has reported that LDO is currently non-compliant with departmental requirements governing water providers and/or community water systems regarding the non-submittal of its Water System Plan.
4. LDO’s service area is located within ADWR’s Tucson Active Management Area (“TAMA”).
5. According to the Utilities Division Compliance Section database LDO currently has no delinquent Commission compliance items.
6. LDO has approved Curtailment and Backflow Tariffs on file with the Commission.
7. Staff concludes that the costs associated with the installation of the plant infrastructure and backbone, listed in Table H, are reasonable. Staff further concludes that the costs do not appear to consider accumulated depreciation. (See Page 20, Section J Financing).
8. Staff estimates that LDO’s total cost associated with the sampling and testing of the Unregulated Contaminant Monitoring Rule 3 contaminants required by the Environmental Protection Agency amounts to \$32,280, as illustrated in Table G.
9. Staff concludes that the plant infrastructure and backbone, listed in Table H, are currently in operation and considered used and useful. (See Page 20, Section J Financing).

RECOMMENDATIONS

1. Staff recommends an annual water testing expense of \$21,885 presented in Table D be used for purposes of this application (See Page 15, Section E ADEQ Compliance).
2. Staff recommends that LDO use the depreciation rates presented in Table E (See Page 16, Section H Depreciation Rates).
3. Staff recommends that the meter and installation charges listed under "Staff's Recommendation" in Table F be adopted (See Page 17, Section I Other Issues).
4. Staff recommends that LDO file with Docket Control, as a compliance item in this docket and within 90 days of the effective date of a decision in this proceeding, at least seven (7) 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>. LDO may request cost recovery of the actual costs associated with the BMPs implemented in its next general rate application.
5. Staff recommends that LDO revise its Volatile Organic Compound ("VOC") sampling and testing schedule to conform to ADEQ's schedule.
6. Staff recommends that LDO revise its Radiochemical ("RAD") sampling and testing schedule to conform to ADEQ's schedule.
7. Staff recommends that any increase in rates approved by the Commission not become effective until ADWR has determined that LDO is in compliance with departmental requirements governing water providers and/or community water systems.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
PURPOSE OF TESTIMONY	3
ENGINEERING REPORT	3

EXHIBITS

Engineering Report for Lago Del Oro Water Company	MT-1
---	------

1 **INTRODUCTION**

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

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

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

7 A. I am employed by the Arizona Corporation Commission (“Commission” or “ACC”) as a
8 Utilities Engineer - Water/Wastewater in the Utilities Division.

9
10 **Q. How long have you been employed by the Commission?**

11 A. I have been employed by the Commission since June 2013.

12
13 **Q. What are your responsibilities as a Utilities Engineer - Water/Wastewater?**

14 A. As a Utilities Engineer, specializing in water and wastewater engineering, my
15 responsibilities include: the inspection, investigation, and evaluation of water and
16 wastewater systems; obtaining data, and preparing investigative reports; providing
17 technical recommendations and suggesting corrective action for water and wastewater
18 systems; and providing written and oral testimony in rate cases and other cases before the
19 Commission.

20
21 **Q. How many companies have you analyzed for the Utilities Division?**

22 A. I have analyzed 8 companies covering various responsibilities for the Utilities Division
23 Staff (“Staff”).

24
25 **Q. Have you previously testified before this Commission?**

26 A. Yes, I have testified before this Commission.

1 **Q. What is your educational background?**

2 A. I graduated from the SUNY College of Environmental Science and Forestry (ESF) at
3 Syracuse, New York, and Syracuse University (SU) at Syracuse, New York. I have a
4 Bachelor of Science Degree in Pulp and Paper Engineering from ESF and Chemical
5 Engineering from SU.

6
7 **Q. Briefly describe your pertinent work experience.**

8 A. Prior to my employment with the Commission, I was the Operations Engineer, from 2009
9 to 2012, for the Southwest and Central Districts of Golden State Water Company
10 ("GSWC"), located in Gardena and Santa Fe Springs, California, respectively. As the
11 Operations Engineer, I provided technical assistance and support to the districts'
12 operations departments with primary focus on resolving operational problems and
13 optimizing the efficiency of the water system operations. Prior to my employment with
14 GSWC, I was employed with Chaparral City Water Company ("Chaparral"), from 2002 to
15 2009 as District Operations Engineer. While at Chaparral, I performed all capital, new
16 business, and water quality activities within the district. I served as field
17 engineer/construction manager for all capital and new business projects under
18 construction. I also managed all water quality activities including monitoring, sampling,
19 and reporting as required by 40 CFR (National Primary Drinking Water Regulations) and
20 Arizona Administrative Code, Title 18, Chapter 4.

21
22 From 2000 to 2002, I was employed with the Fountain Hills Sanitary District as
23 Engineering Assistant. I performed plan review of all commercial and residential projects
24 in the Town of Fountain Hills, and managed the district's construction projects.

25

1 From 1996 to 2000, I was employed as an Environmental Engineering Specialist with the
2 Arizona Department of Environmental Quality (“ADEQ”). During that time period, I
3 performed operations and maintenance site inspections of public water systems in Gila,
4 LaPaz, Mohave, and Southwestern Yavapai Counties.

5
6 **Q. Please state your professional membership, registrations, and licenses.**

7 A. I am registered as a Professional Engineer (Civil) in the State of Arizona, and a Grade 2
8 Certified Water Treatment Plant Operator, and a Grade 3 Certified Water Distribution
9 System Operator. I am a member of the American Water Works Association and Arizona
10 Water Association.

11

12 **PURPOSE OF TESTIMONY**

13 **Q. What was your assignment in this rate proceeding?**

14 A. My assignment was to provide Staff’s engineering evaluations for the Lago Del Oro Water
15 Company (“LDO”) rate proceedings.

16

17 **Q. What is the purpose of your testimony in this proceeding?**

18 A. To present the findings of Staff’s engineering evaluation of the operations for LDO. I
19 visited the LDO water system on October 24, 2013. The findings are contained in the
20 Engineering Report that I have prepared for this proceeding. The report is included as
21 Exhibit MT-1 to this pre-filed testimony.

22

23 **ENGINEERING REPORT**

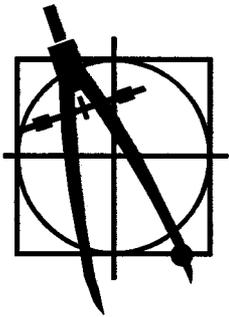
24 **Q. Please describe the attached Engineering Report, Exhibit MT-1?**

25 A. Exhibit MT-1 presents the details and Staff’s analysis and findings for LDO’s water
26 system, and is attached to the direct testimony. Exhibit MT-1 contains the following

1 major topics: 1) Introduction and Location of LDO, 2) Description of the Water System,
2 2) Water Use, 3) Growth, 4) Compliance Status with ADEQ, the Arizona Department of
3 Water Resources, and the Commission, 5) Depreciation Rates, 6) Other Issues, and 7)
4 Financing. The Conclusions and Recommendations from the Engineering Report are
5 contained in the "Executive Summary".
6

7 **Q. Does this conclude your Direct Testimony?**

8 **A.** Yes, it does.



**ENGINEERING REPORT FOR
Lago Del Oro Water Company**

Docket No. W-01944A-13-0215 (Rates)

By Michael Thompson, P. E.

January 8, 2014

EXECUTIVE SUMMARY

CONCLUSIONS

1. The Arizona Corporation Commission (“ACC” or “Commission”) Utilities Division Staff (“Utilities Staff” or “Staff”) concludes that the Lago Del Oro Water Company, Inc. (“LDO” or “Company”) water system has adequate production and storage capacity to serve the present customer base and any reasonable growth.
2. According to the Arizona Department of Environmental Quality (“ADEQ”) Compliance Status Report (“CSR”), dated January 7, 2014, the CSR indicates that the LDO water system is currently delivering water that meets water quality standards required by 40 CFR 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.
3. The Arizona Department of Water Resources (“ADWR”) has reported that LDO is currently non-compliant with departmental requirements governing water providers and/or community water systems regarding the non-submittal of its Water System Plan.
4. LDO’s service area is located within ADWR’s Tucson Active Management Area (“TAMA”).
5. According to the Utilities Division Compliance Section database LDO currently has no delinquent Commission compliance items.
6. LDO has approved Curtailment and Backflow Tariffs on file with the Commission.
7. Staff concludes that the costs associated with the installation of the plant infrastructure and backbone, listed in Table H, are reasonable. Staff further concludes that the costs do not appear to consider accumulated depreciation. (See Page 20, Section J Financing).

8. Staff estimates that LDO's total cost associated with the sampling and testing of the Unregulated Contaminant Monitoring Rule 3 contaminants required by the Environmental Protection Agency amounts to \$32,280, as illustrated in Table G.
9. Staff concludes that the plant infrastructure and backbone, listed in Table H, are currently in operation and considered used and useful. (See Page 20, Section J Financing).

RECOMMENDATIONS

1. Staff recommends an annual water testing expense of \$21,885 presented in Table D be used for purposes of this application (See Page 15, Section E ADEQ Compliance).
2. Staff recommends that LDO use the depreciation rates presented in Table E (See Page 16, Section H Depreciation Rates).
3. Staff recommends that the meter and installation charges listed under "Staff's Recommendation" in Table F be adopted (See Page 17, Section I Other Issues).
4. Staff recommends that LDO file with Docket Control, as a compliance item in this docket and within 90 days of the effective date of a decision in this proceeding, at least seven (7) 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>. LDO may request cost recovery of the actual costs associated with the BMPs implemented in its next general rate application.
5. Staff recommends that LDO revise its Volatile Organic Compound ("VOC") sampling and testing schedule to conform to ADEQ's schedule.
6. Staff recommends that LDO revise its Radiochemical ("RAD") sampling and testing schedule to conform to ADEQ's schedule.
7. Staff recommends that any increase in rates approved by the Commission not become effective until ADWR has determined that LDO is in compliance with departmental requirements governing water providers and/or community water systems.

TABLE OF CONTENTS

	PAGE
A. INTRODUCTION AND LOCATION OF COMPANY	4
B. DESCRIPTION OF THE WATER SYSTEM	4
C. WATER USE	13
<i>WATER SOLD</i>	13
<i>NON-ACCOUNTED FOR WATER</i>	13
<i>SYSTEM ANALYSIS</i>	14
D. GROWTH	14
E. ADEQ COMPLIANCE	14
<i>COMPLIANCE</i>	14
<i>WATER MONITORING AND TESTING</i>	15
<i>WATER TESTING EXPENSE</i>	16
F. ARIZONA DEPARTMENT OF WATER RESOURCES (“ADWR”) COMPLIANCE	18
G. ACC COMPLIANCE	18
H. DEPRECIATION RATES	19
I. OTHER ISSUES	20
1. <i>SERVICE LINE AND METER INSTALLATION CHARGES</i>	20
2. <i>CURTAILMENT TARIFF</i>	21
3. <i>BACKFLOW PREVENTION TARIFF</i>	21
4. <i>BEST MANAGEMENT PRACTICES (“BMP”) TARIFF</i>	21
5. <i>UNREGULATED CONTAMINANT MONITORING</i>	21
J. FINANCING (DOCKET NO. W-01944A-13-0242)	22

A. INTRODUCTION AND LOCATION OF COMPANY

On June 27, 2013, Lago Del Oro Water Company, Inc. ("LDO" or "Company") filed an application with the Arizona Corporation Commission ("ACC" or "Commission") to increase its rates (Docket No. W-01944A-13-0215). LDO's current rates were approved in Commission Decision No. 56464, dated April 26, 1989.

On July 10, 2013, LDO filed a financing application (Docket No. W-01944A-13-0242) requesting approval to borrow \$3,900,000 from the most likely lender, Wells Fargo Bank ("Wells Fargo"). The purpose for the loan is to fund significant asset purchases (water infrastructure and plant facilities in the Saddlebrooke service area) from Saddlebrooke Development. The request was amended on October 9, 2013, to reflect updated loan terms and conditions by the likely lender, Wells Fargo.

The ACC Utilities Division Staff ("Utilities Staff" or "Staff") engineering review and analysis of the pending rate and financing applications are presented in this report.

LDO is a Class B water utility company that provides public utility water service to approximately 6,348 metered connections.¹ The LDO water system serves the unincorporated master planned community of Saddlebrooke ("Saddlebrooke"), the unincorporated community of Catalina ("Catalina"), and a smaller residential community, surrounded by Saddlebrooke, known as Loma Serena. The three (3) communities are located off State Route 77 ("SR-77") approximately 25 miles north of the City of Tucson in Pinal and Pima Counties, Arizona. The LDO water system is a groundwater-based system bisected by the county line between Pinal and Pima Counties. The Saddlebrooke and Loma Serena service areas of the LDO water system are located in Pinal County and the Catalina service area of the LDO water system is located in Pima County. Saddlebrooke is a two (2) phased development consisting of approximately forty nine (49) sub-divisions ("Units"), and two (2) golf courses. Loma Serena is a separate residential community unaffiliated with Saddlebrooke. Catalina is a larger and older developed community than Saddlebrooke. The location of LDO and the area covered by its Certificate of Convenience and Necessity ("CC&N"), which covers approximately 11,125 acres, are shown in Figures 1 and 2, respectively. The original CC&N was granted in Commission Decision No. 35472 dated November 6, 1964.

B. DESCRIPTION OF THE WATER SYSTEM²

The LDO water system was visited on October 24, 2013, by Staff member Michael Thompson. Mr. Thompson was accompanied by Mr. Edward E. MacMeans. Mr. MacMeans is the LDO superintendent that currently handles the day-to-day operations of the water system,

¹ Per plant data submitted with the application.

² The description of the water system is based on one, or a combination of, the following sources: 1) Company's Application, 2) Direct Testimony of Ray Jones, dated June 27, 2013, 3) Direct Testimony of Steven Soriano, dated June 27, 2013, 4) Information contained in the Company's Response to Staff Data Requests and, 5) Information collected during Staff's site visit.

and is also the certified operator.³ Mr. MacMeans currently supervises twelve (12) employees, which consist of one (1) secretary and eleven (11) operators.

The LDO water system is comprised of two (2) interconnected service areas; Saddlebrooke and Catalina. The Saddlebrooke service area consists of four (4) water plant sites, seven (7) wells, and a looped distribution system with six (6) pressure zones. The Catalina service area consists of one (1) water plant site, four (4) well/storage and booster pump station sites, three (3) independent booster pump stations, nine (9) wells, and a looped distribution system with three (3) pressure zones.

The Saddlebrooke and Catalina service area distribution systems consist of 5,943 linear feet ("lf") of 2-inch poly vinyl chloride ("PVC") water main pipe, 20,497 lf of 3-inch PVC water main pipe, 86,007 lf of 4-inch PVC water main pipe, 163,648 lf of 6-inch PVC water main pipe, 122,222 lf of 8-inch PVC water main pipe, 23,676 lf of 10-inch PVC water main pipe, and 4,903 lf of 12-inch PVC water main pipe which currently serve approximately 6,350 metered connections. The Saddlebrooke and Catalina service area distribution systems include a total of 391 standard fire hydrants, with a designed fire flow of 1,250 gallons per minute ("gpm").

The in-service plant facilities (i.e., wells, tanks, pumps, and visible pipe) within the Saddlebrooke and Catalina service areas appeared to be in proper working order, properly maintained, and in excellent condition. Staff did not observe any leaks at the water plants, well sites, or in the distribution system.

Saddlebrooke Service Area

Water Plants #1, #2, #3, & #4 contain storage tanks, hydro-pneumatic pressure tanks, and electric powered booster pumps. In addition, Water Plants #2 and #4 have backup generators and Water Plants #1, #2 & #3 also have diesel powered booster pumps; all of which were designed to provide reliable and uninterrupted service. The four (4) water plants pump water to an interconnected and looped distribution system, designed to provide system reliability and consistent water quality, which serves Saddlebrooke and Loma Serena.

The water plant sites are fed by seven (7) wells (Well #4, #15, #16, #17, #18 & #19). Well #4 pumps water, via a transmission main, to Water Plant #2, and also pumps water directly to the Saddlebrooke Phase I Golf Course Lake. Well #16, located at Water Plant #2, pumps directly to the two (2) 250,000 gallon storage tanks located at the plant site. Well #15, #17, #18, & #19 pump water, via transmission mains, to Water Plant #1, #3, & #4 and also directly to the Saddlebrooke Phase II Golf Course and irrigation customers.

³ Mr. MacMean is a Certified Grade 4 Water Distribution System Operator, a Grade 4 Treatment Plant Operator, a Grade 4 Wastewater Treatment Plant Operator, and a Grade 3 Wastewater Collection System Operator. ADEQ Operator Identification No. OP025081.

The facilities located at Water Plant #2 are shared by LDO, and an affiliated company, Ridgeview Utility Company ("RUC").⁴ RUC provides service to The Preserve at Saddlebrooke and The Preserve Golf & Country Club, which are immediately adjacent to and located northeast of Saddlebrooke Phase I. Water Plant #2 also pumps water to a small booster station (Unit #14 Booster Pump Station) that serves residential customers located in a small isolated area within Saddlebrooke Phase I known as Unit #14.

Catalina Service Area

The Catalina service area has nine (9) wells (Well #1, #3, #5, #6, #7, #8, #11, #13 and #22). Five (5) of the wells feed the water plant and the well/storage & booster pump stations, with the remaining four (4) feeding directly to the distribution system.

Water Plant #5, which is located off a cul-de-sac on Border Rock Road in the southwest section of Saddlebrooke Phase II, contains a storage tank, a hydro-pneumatic pressure tank, booster pumps, and a backup generator. Well #22 pumps water, via a transmission main, directly to Water Plant #5. Although located in the Saddlebrooke service area, Water Plant #5 provides water to the Catalina service area and not Saddlebrooke.

Well/Storage & Booster Pump Station #1, #3, and #7 contain storage tanks, hydro-pneumatic pressure tanks, electric powered booster pumps, and wells. Well #1, #3, and #7 are located at their respective well/storage & booster pump stations. Well #11 pumps directly to Well/Storage & Booster Pump Station #3.

Well #5, #6 and #13, Water Plant #5, and the well/storage & booster pump stations pump water to an interconnected and looped distribution system that serves the majority of Catalina.

Well #8 supplies water to Booster Pump Stations #9 and #10, which in turn pump water to an isolated distribution system within Catalina that is independent of the interconnected and looped distribution system.

A detailed listing of the Saddlebrooke and Catalina plant facilities are included in Table A, and a schematic of the Saddlebrooke and Catalina service areas are illustrated in Figure 3 and 4, respectively.

⁴ According to Ray Jones Direct Testimony, dated June 27, 2013, LDO and RUC entered into a Water Facilities Sharing Agreement ("Sharing Agreement") on November 27, 2000. The Sharing Agreement has a term of 50 years.

Table A. Saddlebrooke & Catalina Plant Facilities Summary⁵

Well Data – Saddlebrooke Serve area								
Well ID	ADEQ POE*	ADWR Well ID	Pump (hp)	Pump Yield (gpm)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled
4	004	55-613454	150	350	800	16	8	1963
14	014	55-518207	200	1,385	800	16	8	1987
15	015	55-526451	200	1,000	804	16	8	1990
16	004	55-547494	300	1,300	959	16	10	1996
17	017	55-548874	200	1,100	1,100	16	10	1995
18	017	55-548873	100	330	1,109	16	6	1996
19	019	55-573651	150	490	1,200	20	6	1999

*POE signifies Point of Entry into the distribution system.

Well Data – Catalina Service Area								
Well ID	ADEQ POE	ADWR Well ID	Pump (hp)	Pump Yield (gpm)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled
1	001	55-613452	75	560	804	16	6	1963
3	003	55-613459	2	15	241	8	1	1973
5	005	55-613455	15	75	300	10	3	1972
6	006	55-613456	30	120	450	8	3	1973
7	007	55-613460	10	25	495	8	2	1972
8	008	55-613457	8	120	225	8	3	1972
11	003	55-613458	3	35	609	8	1	1981
13	013	55-623397	15	70	310	10	2	1971
22	019	55-206036	250	1,200	1,340	16	10	2005

Water Storage, Booster Systems, & Structures – Saddlebrooke Service Area					
Location	Storage Tanks (Gallons)	Pressure Tanks (Gallons)	Booster Pumps	Wells	Emergency Back-up Generator
Plant #1	1 – 286,000	1 – 2,500 1 – 200	5 – Electric 1 – Diesel	Well #14	None
Plant #2**	2 – 250,000	1 – 7,000	6 – Electric 1 – Diesel	Well #16	1
Plant #3	1 – 500,000	1 – 10,000	4 – Electric 1 – Diesel	None	None
Plant #4	2 – 200,000	1 – 15,000	4 – Electric	Well #19	1
Unit #14 BPS	None	1 – 60	2 – Electric	None	None

*BPS signifies Booster Pump Station.

**Water Plant #2 is shared by LDO, and affiliated water company, Ridgeview Utility Company.

⁵ The information listed was based on one, or a combination of, the following sources: 1) Company's Application, 2) Commission Annual Reports, 3) Arizona Department of Water Resources Records, 4) Information contained in the Company's response to a Staff Data Requests and, 5) Information collected during Staff's site visit.

Water Storage, Booster Systems, & Structures – Catalina Service area					
Location*	Storage Tanks (Gallons)	Pressure Tanks (Gallons)	Booster Pumps	Wells	Emergency Back-up Generator
Plant #5	1 – 500,000	1 – 7,000	3 – Electric	None	1
Well #1 BPS	1 – 100,000	1 – 6,000	3 – Electric	Well #1	None
Well #3 BPS	2 – 12,000	1 – 1,000	4 – Electric	Well #3	None
Well #5 BPS	None	1 – 1,500	2 – Electric	Well #5	None
Well #6	None	1 – 2,000	None	Well #6	None
Well #7 BPS	2 – 12,000	1 – 2,000	4 – Electric	Well #19	None
Well #8	None	1 – 2,000	None	Well #8	None
BPS #9	None	1 – 1,000	1 - Electric	None	None
BPS #10	None	1 – 1,000	1 - Electric	None	None
Well #13	None	1 – 2,000	None	Well #13	None

*Plant #5 is located within the Saddlebrooke development, but serves the Catalina water system. BPS signifies Booster Pump Station.

Saddlebrooke and Catalina Service Areas Distribution Mains		
Diameter (inches)	Material	Length (feet)
2	PVC – C900	5,943
3	PVC – C900	20,497
4	PVC – C900	86,007
6	PVC – C900	163,648
8	PVC – C900	122,222
10	PVC – C900	23,676
12	PVC – C900	4,903
Total Length		426,896

Note: PVC is poly vinyl chloride pipe used in water distribution systems and in general construction.

Saddlebrooke and Catalina Service Areas Meters	
Size	Quantity
3/4 inch	6,199
1	71
1 ½	15
2	54
3 Compound	4
4 Compound	1
6 Compound	4
Total Quantity	6,348

Saddlebrooke and Catalina Service Area Fire Hydrants	
Size/Description	Quantity
Standard	391

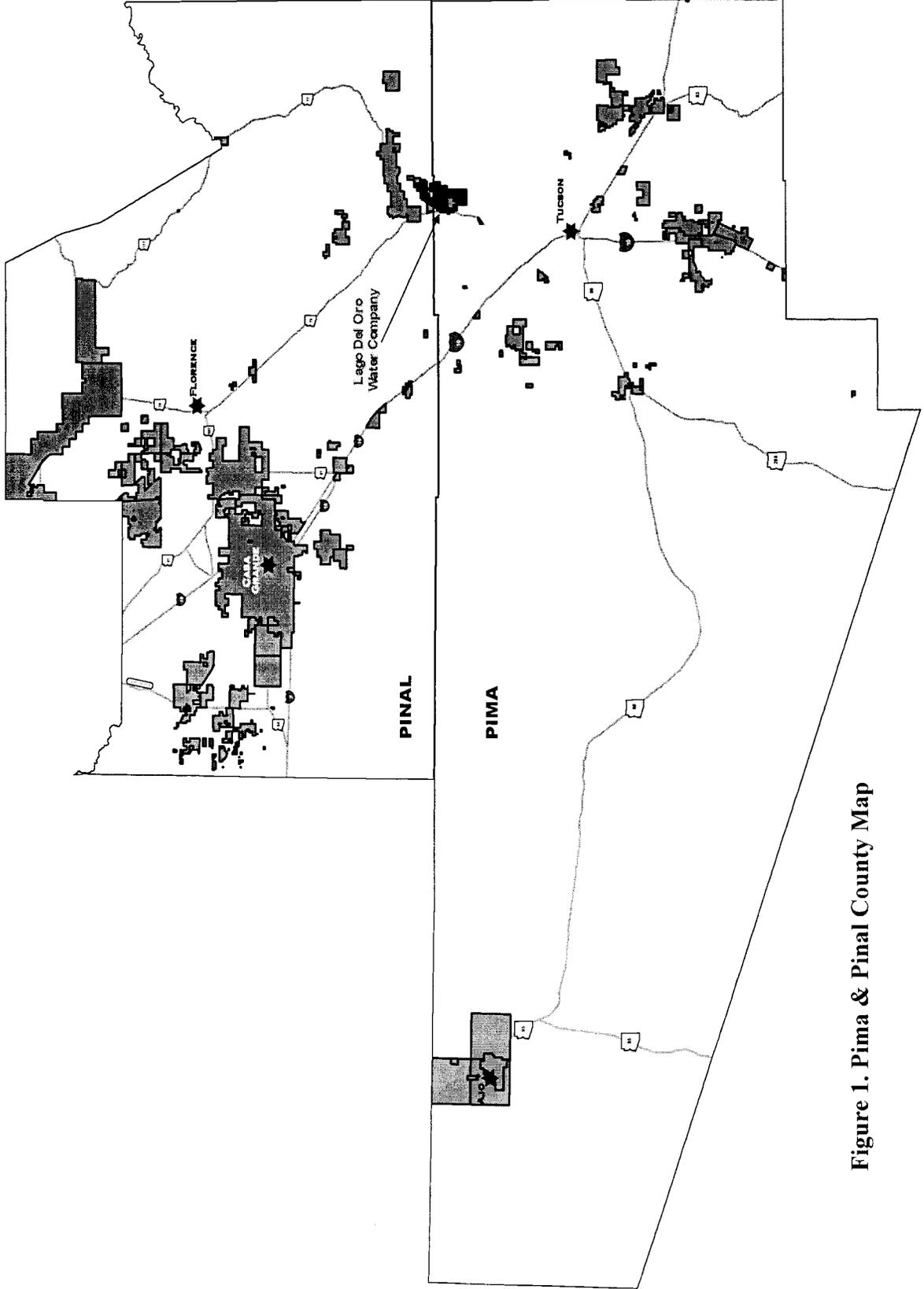


Figure 1. Pima & Pinal County Map

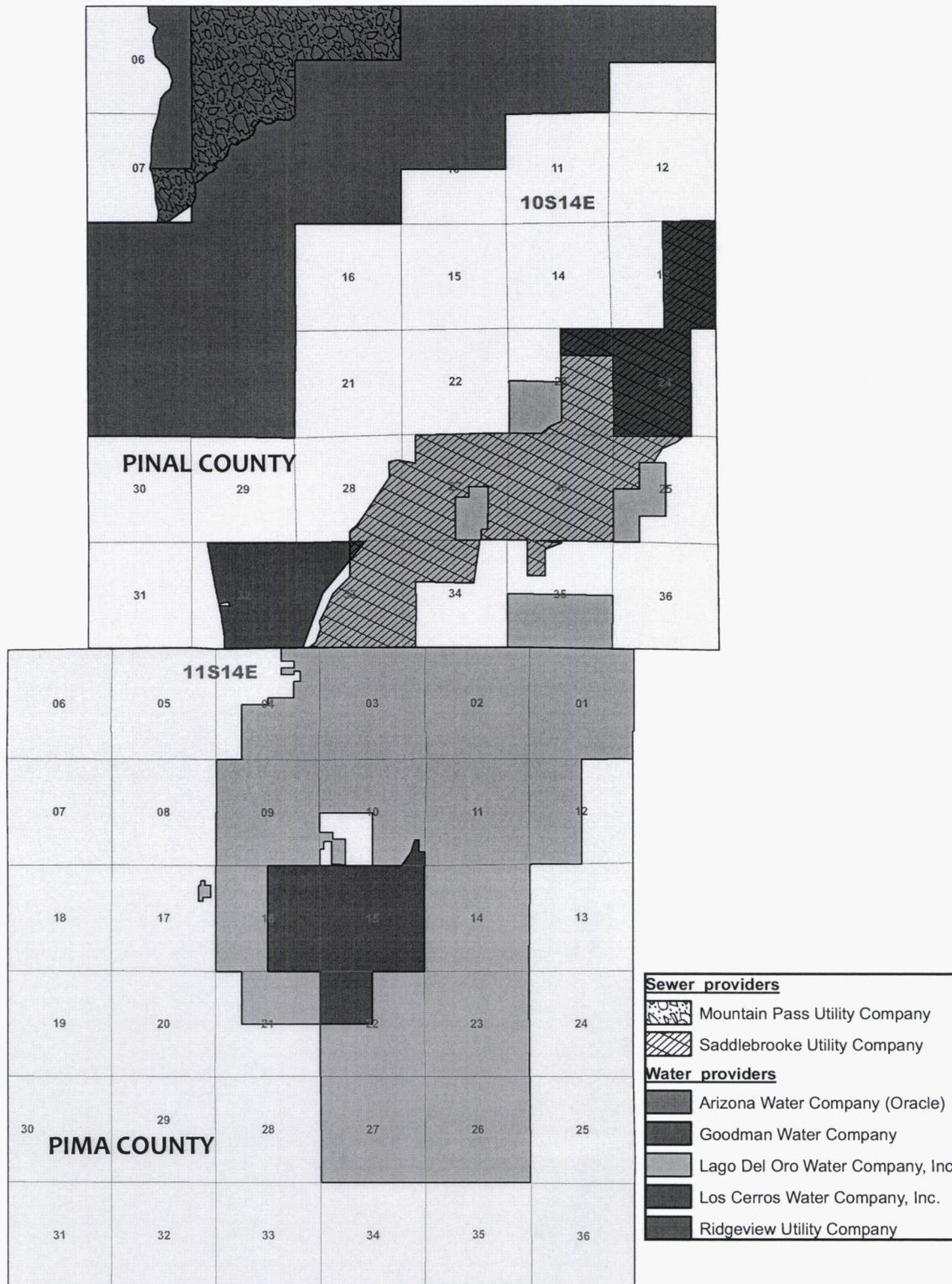


Figure 2. Certificated Area

Saddlebrooke Service Area

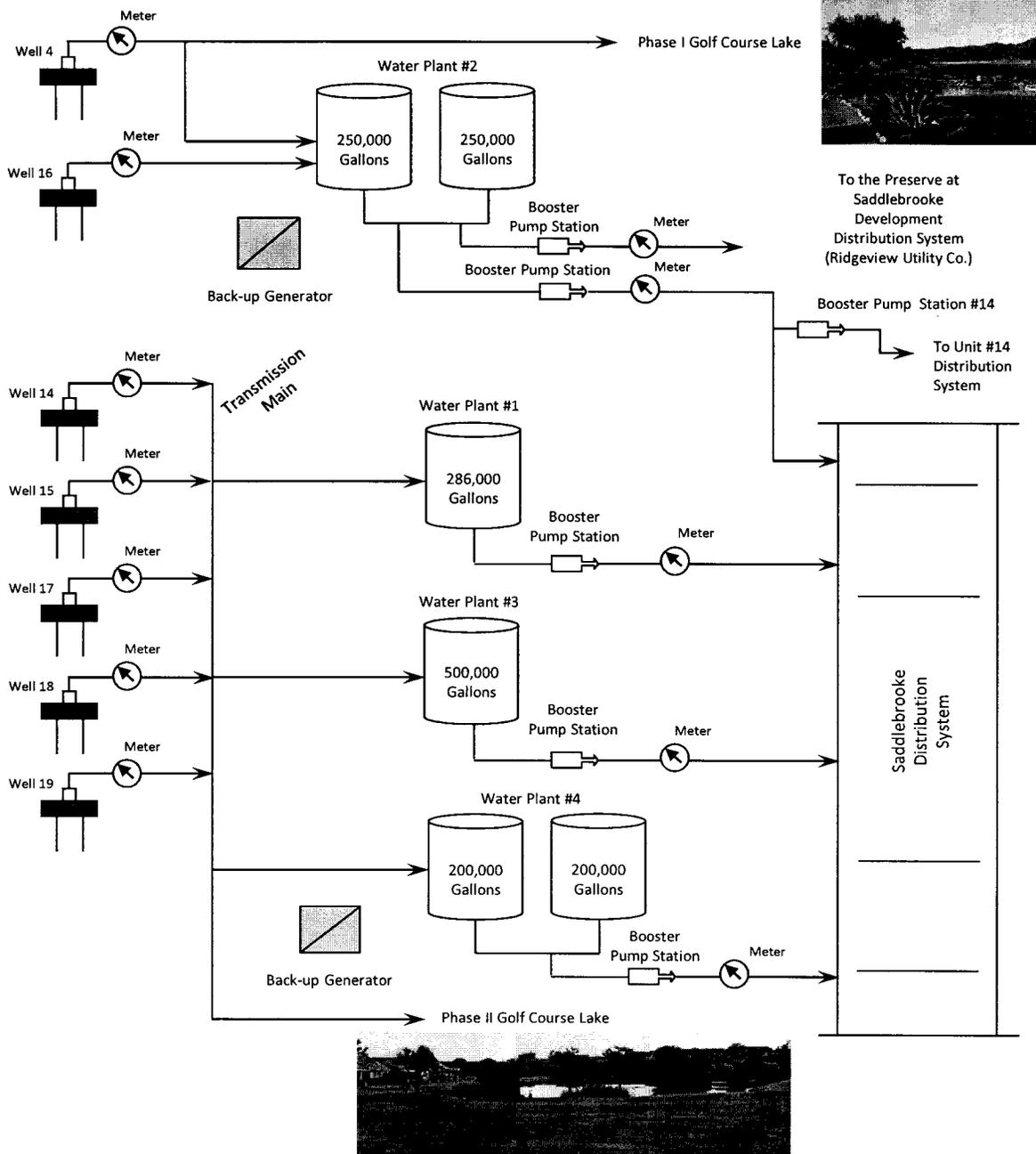


Figure 3. Saddlebrooke Service Area Schematic

Catalina Service Area

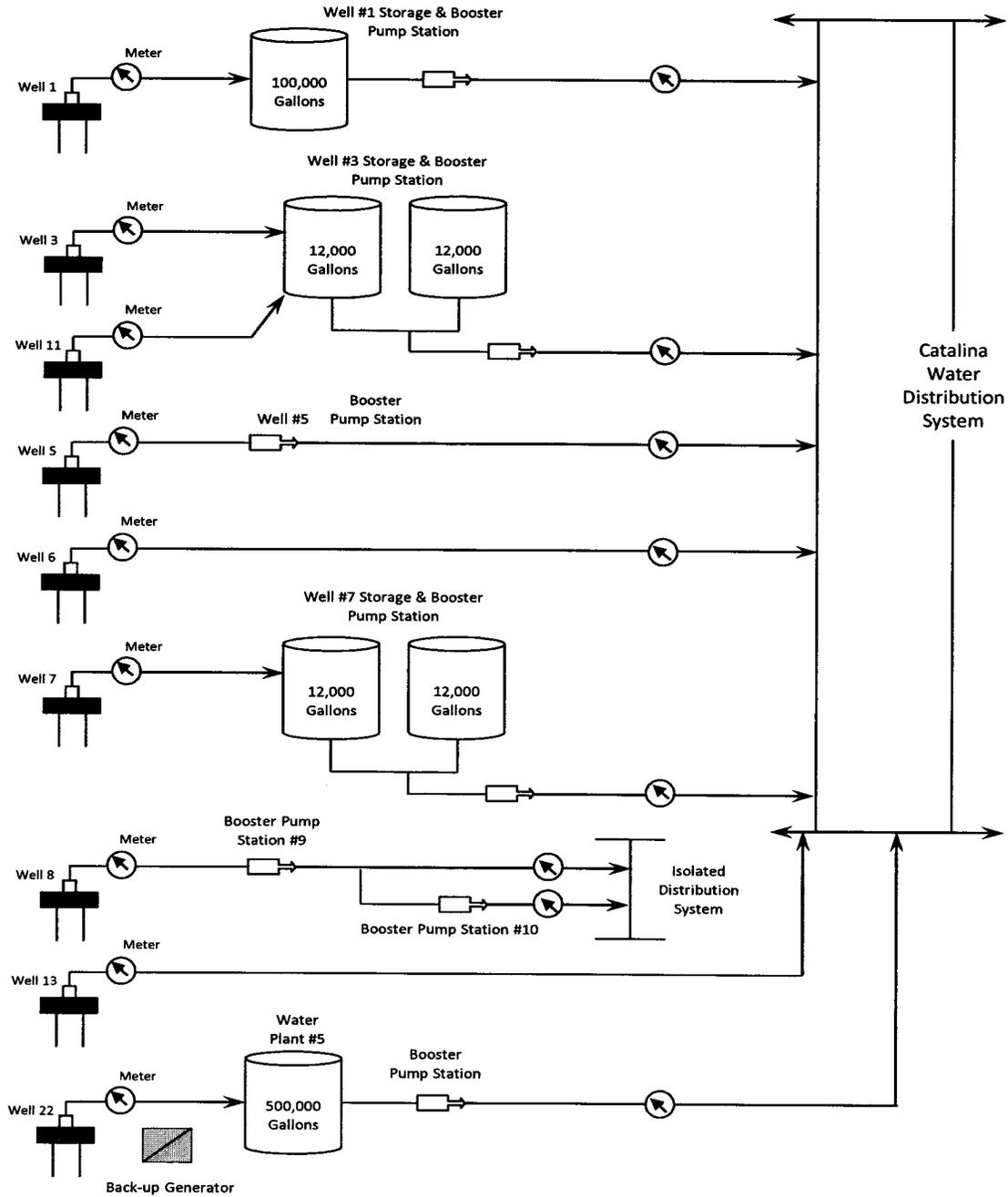


Figure 4. Catalina Service Area Schematic

C. WATER USE

Water Sold

Figure 4 represents the water consumption data, for the unincorporated master planned community of Saddlebrooke, Loma Serena, and the unincorporated community of Catalina, provided by LDO for the test year ending December 31, 2012. Customer consumption included a high monthly water use of 449 gallons per day (“gpd”) per connection (6,327 connections) in June, and the low water use of 184 gpd per connection (6,326 connections) in February. The average daily demand during the twelve-month period was approximately 272 gpd per connection. LDO reported 629,606,059 gallons of water sold during the test year.⁶

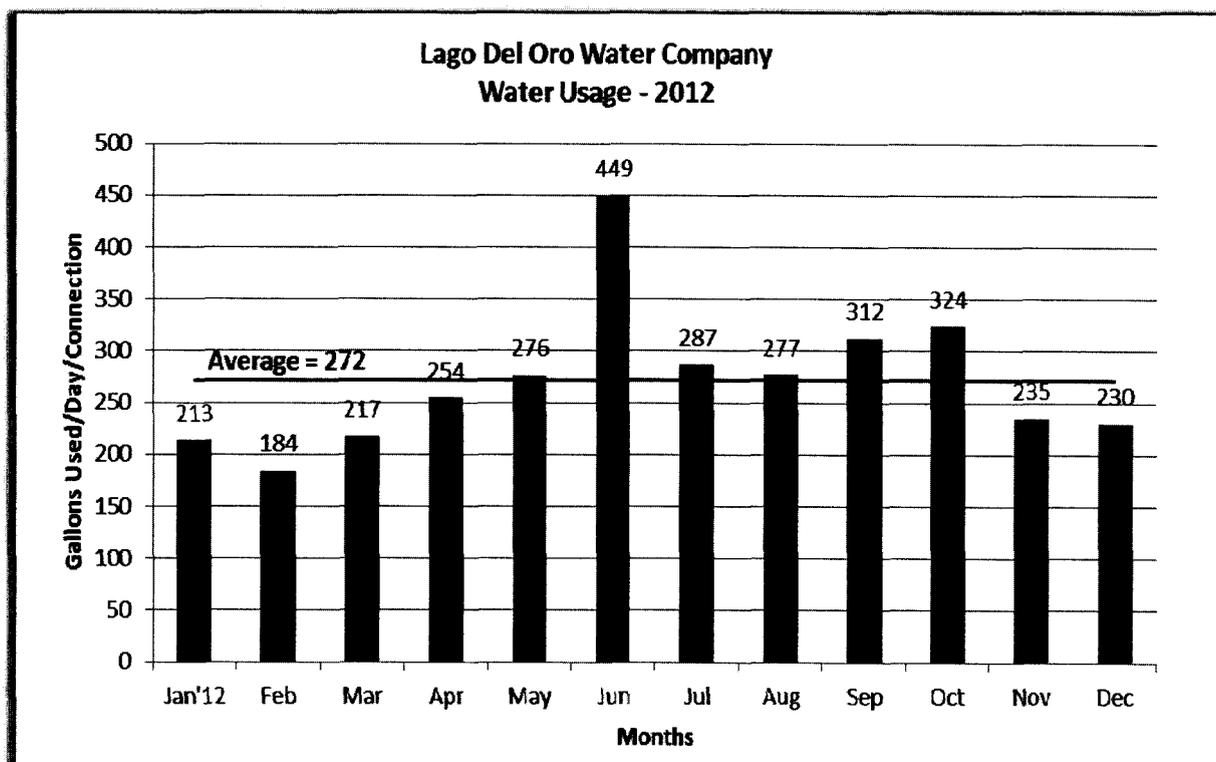


Figure 4. Water Use

Non-accounted For Water

LDO reported 676,207,050 gallons of water pumped and 629,606,059 gallons of water sold, during the test year ending December, 2012, resulting in a water loss of 6.89%, which is within acceptable limits.

⁶ Total water sold during the test year is based on the monthly data from the meter reads as reported in the LDO 2012 Water Statistics.

System Analysis

The total well production capacity of the sixteen (16) LDO wells is approximately 8,175 gpm (11,772,000 gpd). The LDO water system, which includes the Saddlebrooke and Catalina service areas, has a total of twelve (12) storage tanks providing a total storage capacity of 1,834,000 gallons. There are 391 fire hydrants in the distribution systems. The fire flow requirement is 1,250 gpm with a minimum duration of 2 hours.

During the peak month, June 2012, the water system was serving 6,327 connections when LDO reported 85,309,769 gallons of water sold. Average daily demand for the month of June 2012 was determined to be 2,843,659 gpd. Staff concludes that the LDO water systems have adequate production and storage capacity to serve the current customer base and reasonable growth.

D. GROWTH⁷

LDO experienced steady growth from 1992 to 2012. LDO reported 1,417 metered connections served in 1992 and 6,348 metered connections served in 2012; an increase of 4,931 metered connections. On average, metered connections have increased approximately 247 per year. The greatest growth occurred between 1992 and 2006, where the number of metered connections increased by a total of 4,629. From 2008 to 2012, LDO has experienced a moderate, but steady increase in growth.

Currently, the Saddlebrooke service area is close to build-out, with approximately 120 to 140 lots remaining to be developed. Should the economy continue to stabilize, LDO anticipates modest growth in the Saddlebrooke and Catalina service areas.

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

Compliance

ADEQ regulates the LDO and RUC water systems under ADEQ Public Water System Identification (“PWS ID”) No. 11-117. ADEQ inspected the LDO water system on December 17, 2010. During the inspection no major deficiencies were found in the operation, maintenance, or certified operator status of the water system.

According to ADEQ Compliance Status Report (“CSR”), dated January 7, 2014, the CSR indicates that the LDO water system is currently delivering water that meets water quality standards required by 40 CFR 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.

⁷ Staff’s historical growth figures are based on the data reported by LDO in their annual reports submitted to the commission.

Water Monitoring and Testing

Table B provides a comparison of ADEQ's and LDO's monitoring for various contaminants within the LDO and RUC distribution systems and entry points to the distribution systems. Samples to be tested for the various contaminants are collected from both LDO and RUC distribution systems.

Table B. Comparison of ADEQ and LDO/RUC Monitoring Schedules⁸

Monitoring	LDO and RUC Sampling Schedule		ADEQ Sampling Schedule		Sample Locations
	Sample Frequency	Number of Samples	Sample Frequency	Number of Samples	
Total Coliform	Monthly	20	Monthly	20	Distribution
Lead & Copper	Every 3 Years	30	Every 3 Years	30	Distribution
Disinfection By-Products (TTHMs)	Annually	11	Annually	9	Distribution
Disinfection By-Products (HAA5s)	Annually	11	Annually	9	Distribution
Asbestos	Every 9 Years	11	Every 9 Years	11	All Entry Points
Nitrate	Annually	11	Annually	11	All Entry Points
Nitrite	Every 9 Years	11	Every 9 Years	11	All Entry Points
Inorganic Compounds (IOCs)	Every 3 Years	11	Every 3 Years	11	All Entry Points
Synthetic Organic Compounds (SOCs)	Every 3 Years	22	Every 3 Years	22	All Entry Points
Volatile Organic Compounds (VOCs) ²	Every 9 Years	11	Every 6 Years	10	All Entry Points
Volatile Organic Compounds (VOCs)	Annually	0	Annually	1	¹ EPDS022
Radiochemicals (RADs)	Every 9 Years	0	Every 9 Years	2	EPDS001 & EPDS017
Radiochemicals (RADs) ³	Every 4 Years	11	Every 6 Years	8	All Entry Points
Radiochemicals (RADs)	Annually	0	Annually	4	EPDS022
Sulfate ⁴	Every 5 Years	11	-	11	All Entry Points
UCMR3 (Required by the EPA)	2014 ⁵	22	2014 ⁵	22	All Entry Points
UCMR3 (Required by the EPA)	2014 ⁵		2014 ⁵		Distribution

¹EPDS is the abbreviation for Entry Point Distribution System. ²Includes all entry points with the exception of EPDS022. ³Includes all entry points with the exception of EPDS001, EPDS017, and EPDS022. ⁴Sulfate is an unregulated contaminant that ADEQ required of LDO, which LDO continues to monitor. ⁵The Unregulated Contaminant Monitoring Rule 3 (UCMR3) required by the Environmental Protection Agency (EPA) begins in 2014. Samples to be tested for the presence of UCMR3 contaminants are to be taken twice from all entry points within one (1) consecutive twelve month period. (See Page 18, Section I Other Issues, 4. Unregulated Contaminant Monitoring).

⁸ The information listed was based on one, or a combination of, the following sources: 1) Company's Application, 2) Commission Annual Reports, 3) Arizona Department of Water Resources Records, 4) Information contained in the Company's response to a Staff Data Requests and, 5) Information collected during Staff's site visit.

Samples that are to be tested for the presence of Total Coliform, Total Trihalomethanes (TTHM), and Haloacetic Acids (HAA5) are taken from within the LDO distribution system.

Samples that are to be tested for the presence of Asbestos, Nitrate/Nitrite, Inorganic Compounds (IOC), Synthetic Compounds (SOC), Volatile Compounds (VOC), Radiochemicals (RAD), and Sulfate are taken from all entry points into the LDO distribution system. All samples are submitted to and tested by Legend Technical Services, Inc.

As indicated in Table B, LDO is following ADEQ's Contaminant Sampling Schedule, with the exception of VOCs, and RADs. According to the ADEQ Sampling Schedule, and illustrated in Table B, LDO is required to:

- 1) Sample and test the distribution system entry points for VOCs every six (6) years, with the exception of entry point EPDS022, which is currently required to be sampled and tested each quarter annually. LDO has chosen to sample and test each entry point for VOCs every nine (9) years. Since ADEQ requirements take precedence, Staff recommends that LDO revise its VOC sampling and testing schedule to conform to ADEQ's schedule.
- 2) Sample and test the distribution system entry points for RADs every six (6) years, with the exception of entry points EPDS001, EPDS017, and EPDS022. EPDS001 and EPDS017 are currently required to be sampled and tested every nine (9) years, and EPDS022 is required to be sampled and tested each quarter annually. Since ADEQ requirements take precedence, Staff recommends that LDO revise its RAD sampling and testing schedule to conform to ADEQ's schedule.

Water Testing Expenses

LDO reported water testing expenses of \$50,082.00 during the test year. Approximately \$2,740 of the expenses was for testing of samples from the RUC distribution system and the LDO & RUC shared facilities at Water Plant #2 in Saddlebrooke. Accordingly, water testing expenses during the test year for LDO were \$47,342.

The monitoring and testing expenses, that were reviewed, evaluated, and recalculated by Staff, are represented in Tables C and D.

The costs indicated in Table C are reflective of ADEQ sampling requirements for both LDO and RUC. The total annual water testing costs, which includes the combined expenses for LDO and RUC, amounts to \$23,820.

LDO and RUC are each assigned an allocation for each of the monitored contaminants. For example, there are a total of twenty (20) Total Coliform samples collected each month (total of 240 per year) from the LDO and RUC distribution systems. Ten (10) percent, or two (2), of the Total Coliform samples are allocated from RUC. The remaining ninety (90) percent, or eighteen (18), Total Coliform samples are allocated from LDO.

Table C. LDO/RUC Water Testing Costs

Monitoring	Testing Cycle	Cost per Test	Quantity of Tests taken during the Testing Cycle	LDO Cost per Testing Cycle	LDO & RUC Annual Costs
Total Coliform ¹	Annually	\$16	240	\$3,840	\$3,840
Lead & Copper	Once/3 Years	\$34	30	\$1,020	\$340
Disinfection By-Products (TTHMs)	Annually	\$80	11	\$880	\$880
Disinfection By-Products (HAA5s)	Annually	\$200	11	\$2,200	\$2,200
Asbestos	Once/9 Years	\$160	11	\$1,760	\$196
Nitrate & Nitrite ²	Annually	\$32	11	\$352	\$352
Inorganic Compounds (IOCs)	Once/3 Years	\$217	11	\$2,387	\$796
Synthetic Organic Compounds (SOCs)	Once/3 Years	\$1,794	22	\$39,468	\$13,156
Volatile Organic Compounds (VOCs)	Once/6 Years	\$176	10	\$1,760	\$294
Volatile Organic Compounds (VOCs)	Annually	\$176	1	\$176	\$176
Radiochemicals (RADs)	Once/6 Years	\$280	8	\$2,240	\$373
Radiochemicals (RADs) ³	Once/9 years	\$280	2	\$560	\$62
Radiochemicals (RADs) ⁴	Annually	\$280	4	\$1,120	\$1,120
Sulfate	Once/5 Years	\$16	11	\$176	\$35
Total Annual Water Testing Costs					\$23,820

¹Eighteen (18) samples are taken from within the LDO distribution system and two (2) are taken from within the RUC distribution system each month for Total Coliform testing (240 per year). ²This sample is first analyzed to determine the concentration of Total Nitrogen, and then analyzed for the concentration of Nitrite. The Nitrite concentration is then subtracted from the concentration of Total Nitrogen to obtain the concentration of Nitrate present in the sample. According to the ADEQ Sampling Schedule, Nitrite is required once every nine (9) years. However, since Nitrite is needed to determine Nitrate, Nitrite is included in the Annual results. ³According to the ADEQ Sampling Schedule, one (1) sample is to be taken from Entry Point EPDS001 and EPDS017 (Well #1 & #17) once every nine (9) years. ⁴According to the ADEQ Sampling Schedule, one (1) sample is to be taken from Entry Point EPDS022 (Well #22) each quarter during the annual testing cycle.

LDO's proposed annual water testing expenses, as presented in its rate application, totaled \$22,433. However, RUC's water testing expenses were also included in the proposed testing expenses. In response to a Staff Data Request, LDO provided an updated annual water testing cost of \$21,613, which excluded the water testing expenses for RUC.⁹

Table D provides a comparison of LDO's and RUC's adjusted total annual water testing costs as per the allocations. Based on the total annual water testing cost of \$23,280, RUC's allocated share of the total costs is \$1,935, with the remaining balance of \$21,885 being allocated to LDO. Staff recommends an annual water testing expense of \$21,885, for LDO, be used for purposes of this application.

⁹ The updated annual water testing expenses were provided in response to a Staff Data Request MST-2 email, dated December 13, 2013.

Table D. LDO & RUC Adjusted Water Testing Costs

Monitoring	LDO & RUC Costs	RUC Costs	LDO Costs	RUC Allocation
Total Coliform ¹	\$3,840	\$384	\$3,456	1
Lead & Copper	\$340	\$102	\$238	3
Disinfection By-Products (TTHMs)	\$880	\$40	\$840	2
Disinfection By-Products (HAA5s)	\$2,200	\$100	\$2,100	2
Asbestos	\$196	\$9	\$187	2
Nitrate & Nitrite ²	\$352	\$16	\$336	2
Inorganic Compounds (IOCs)	\$796	\$36	\$760	2
Synthetic Organic Compounds (SOCs)	\$13,156	\$598	\$12,558	2
Volatile Organic Compounds (VOCs)	\$294	\$0	\$294	2
Volatile Organic Compounds (VOCs) ³	\$176	\$88	\$88	2
Radiochemicals (RADs)	\$62	\$0	\$62	2
Radiochemicals (RADs)	\$373	\$0	\$373	2
Radiochemicals (RADs)	\$1,120	\$560	\$560	2
Sulfate	\$35	\$2	\$33	2
Total Cost	\$23,820	\$1,935	\$21,885	-

¹Two (2) samples per month are allocated to RUC (10%). ²There are a total of 11 POE's. RUC has been allocated a factor of 0.5/11 = 0.4545 for each POE. ³Three (3) samples are allocated to RUC (10%)

F. ARIZONA DEPARTMENT OF WATER RESOURCES ("ADWR") COMPLIANCE

The LDO service area is located within ADWR's Tucson Active Management Area ("TAMA"). ADWR's Water Provider Compliance Report, dated August 28, 2013, indicates that LDO is currently non-compliant with departmental requirements governing water providers and/or community water systems, regarding the non-submittal of its Water System Plan.

Staff recommends that any increase in rates approved by the Commission not become effective until ADWR has determined that LDO is in compliance with departmental requirements governing water providers and/or community water systems.

G. ACC COMPLIANCE

A check of the Utilities Division Compliance Section database showed that there are no delinquent Commission compliance items for LDO.¹⁰

¹⁰ Per Compliance Section email, dated August 27, 2013.

H. DEPRECIATION RATES

Staff's typical and customary depreciation rates, which vary by National Association of Regulatory Utility Commissioners ("NARUC") plant categories, are illustrated in Table E. These rates represent typical and customary values within a range of anticipated equipment life. Staff recommends that LDO use the depreciation rates presented in Table E.

Table E. Depreciation Rate Table for Water Companies

NARUC Acct. 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
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	20.00
320.3	Point-of-Use Treatment Devices	10	10.00
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	---	-----

I. OTHER ISSUES

1. Service Line and Meter Installation Charges

LDO has proposed to increase its existing service line and meter installation charges.¹¹ The proposed charges are refundable advances, and are similar to the Staff's typical range of charges for service line and meter installations. Since LDO may at times install meters on existing service lines, it would be appropriate for some customers to only be charged for the meter installation. Those charges are included in Table D listed under "Staff's Recommendations".

Staff recommends that meter sizes 8-inches and larger be priced on an individual case basis ("ICB") at cost. Staff further recommends that the charges listed under "Staff's Recommendation" in Table F be adopted.

Table F. Service Line and Meter Installation Charges

Meter Size	Company Proposed			Staff's Recommendation			
	Company Current Tariff	Service Line Charge	Meter Charge	Total Charge	Service Line Charge	Meter Charge	Total Charge
5/8 x 3/4-inch	\$250	\$385	\$135	\$520	\$415	\$105	\$520
3/4-inch	\$275	\$415	\$205	\$620	\$415	\$205	\$620
1-inch	\$300	\$465	\$265	\$730	\$465	\$265	\$730
1-1/2-inch	\$450	\$520	\$475	\$995	\$520	\$475	\$995
2-inch	\$625	-	-	-	-	-	-
2-inch Turbine	-	\$800	\$995	\$1,795	\$800	\$995	\$1,795
2-inch Compound	-	\$800	\$1,840	\$2,640	\$800	\$1,840	\$2,640
3-inch	\$800	-	-	-	-	-	-
3-inch Turbine	-	\$1,015	\$1,620	\$2,635	\$1,015	\$1,620	\$2,635
3-inch Compound	-	\$1,135	\$2,495	\$3,630	\$1,135	\$2,495	\$3,630
4-inch	\$975	-	-	-	-	-	-
4-inch Turbine	-	\$1,430	\$2,570	\$4,000	\$1,430	\$2,570	\$4,000
4-inch compound	-	\$1,610	\$3,545	\$5,155	\$1,610	\$3,545	\$5,155
5-inch	\$1,150	-	-	-	-	-	-
6-inch	\$1,325	-	-	-	-	-	-
6-inch Turbine	-	\$2,150	\$4,925	\$7,075	\$2,150	\$4,925	\$7,075
6-inch Compound	-	\$2,270	\$6,820	\$9,090	\$2,270	\$6,820	\$9,090
8-inch	\$1,500	-	-	-	-	-	-
8-inch or Larger	-	ICB*	ICB*	ICB*	ICB*	ICB*	ICB*

ICB* Indicates Individual Case Basis at Cost.

¹¹ The Company's current charges were approved in Decision No. 56464 & 56478, effective May 1, 1989.

2. *Curtailment Tariff*

LDO has an approved Curtailment Tariff on file with the Commission. This tariff became effective November 6, 2013.

3. *Backflow Prevention Tariff*

LDO has an approved Backflow Prevention Tariff on file with the Commission. This tariff became effective November 12, 2013.

4. *Best Management Practices ("BMP") Tariff*

LDO is regulated, by ADWR, under the modified Non-per Capita Conservation Program (MNPCCP) and is required to implement a basic public education program plus five (5) additional best management practices ("BMPs").¹² On August 24, 2009, ADWR approved LDO's Public Education Program and the five (5) BMPs. The BMPs include:

- 1) Customer Inquiry Resolution for High Consumption (BMP #3.6)
- 2) High Consumption Notification for Customers (BMP #3.7)
- 3) Water Waste Investigations and Information (BMP #3.8)
- 4) Leak Detection Program (BMP #4.1)
- 5) Meter Repair and Replacement (BMP #4.2)

For the Public Education Program, LDO provides water conservation tips and ideas in the customer water bill each month. LDO also distributes Water Wise pamphlets at all clubhouses in Saddlebrooke and the LDO Office. Customers who request pamphlets are instructed to pick them up at one of the clubhouses or the LDO Office. If requested by a customer, LDO will mail a pamphlet.

Staff recommends that LDO file with Docket Control, as a compliance item in this docket and within 90 days of the effective date of a decision in this proceeding, seven (7) BMP's (five that are listed above and two (2) additional) 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>. LDO may request cost recovery of the actual costs associated with the BMPs implemented in its next general rate application.

4. *Unregulated Contaminant Monitoring*

On May 2, 2012, the Environmental Protection Agency ("EPA") revised and implemented the Unregulated Contaminant Monitoring Rule 3 ("UCMR3"). ADEQ does not regulate the UCMR3 program. The purpose of the UCMR3 (monitoring and sampling assessment) is for water systems to collect occurrence data for contaminants suspected to be

¹² Information provided by Ray Jones Direct Testimony, dated June 27, 2013, and ADWR via email, dated December 23, 2013.

present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (“SDWA”). The UCMR3 program is the primary source of drinking water contaminant occurrence data used by the EPA in regulatory determinations. The UCMR3 program requires water systems to perform the monitoring and sampling assessment only once during the time frame between January 2013 – December 2015.

Beginning in 2014, LDO is required by the EPA to conduct assessment monitoring and sampling for the presence of UCMR3 contaminants. Samples to be tested for the presence of twenty one (21) of the UCMR3 contaminants are to be taken twice (2) from each EPDS within one (1) consecutive twelve (12) month period. Samples to be tested for the presence of seven (7) of the UCMR3 contaminants are to be taken twice (2) from the distribution system maximum residence time sampling locations within the same consecutive twelve (12) month period. Each sampling event must occur five (5) to seven (7) months apart. Sampling can span more than one calendar year, as long as the sampling is conducted during a twelve (12) month period. Currently, LDO is scheduled to conduct sampling in March and November, 2014.

Staff estimates that LDO’s total cost associated with the sampling and testing of the UCMR3 contaminants, required by the EPA, amounts to \$32,280, as illustrated in Table G. LDO was not made aware of the UCMR3 monitoring, sampling, and testing requirements until after its submittal of the rate application. Therefore, the costs were not included in the application.

Table G. EPA Mandated UCMR3

Sample Locations	Number of Samples	Sample Frequency	Total Samples	Cost Per Sample	Total Cost
Distribution System	12	Twice	24	\$300	\$7,200
Point of Entry (POE)	11	Twice	22	\$1,140	\$25,080
					\$32,280

J. FINANCING

On July 10, 2013, LDO filed with the Commission a financing application requesting authority to incur indebtedness in an amount not to exceed \$3,900,000 to fund asset purchases (water infrastructure and plant facilities in the Saddlebrooke service area) from Saddlebrooke Development. The financing application was amended on October 9, 2013, to reflect updated loan terms and conditions by the likely lender, Wells Fargo.

1. *Project Cost Information*

Table H provides in-service dates and installation costs for the assets purchased from Saddlebrooke Development. The purchased assets, infrastructure and backbone, are primarily located in the southwestern section of Saddlebrooke Phase 2, with the exception of the Phase 2 Offsite Water Mains. The Phase 2 Offsite Water Mains run from the intersection of saddlebrooke Boulevard and Mountain View Boulevard, located in the northern section of Saddlebrooke Phase 2, down Mountain View Boulevard to Lago Del Oro Parkway, and then runs

north on Lago Del Oro Parkway until it ties-in with Water Plant #1 located in the southwestern section of Saddlebrooke Phase 1.

Table H. Capital Costs to be Financed¹³

Asset Description - Infrastructure	In-Service Date	Installation Cost
Unit 46 – Desert Reflections	June 2002	\$ 228,171
Unit 46-A – Fairway Valley	June 2007	\$ 7,386
Unit 47 – Desert Vista	June 2005	\$ 323,381
Unit 48 – Desert Views and Unit 48- A – Hidden Vistas	June 2006	\$ 227,131
Unit 49 – Sun Ridge Hills	June 2008	\$ 501,861
Subtotal – Infrastructure Costs		\$ 1,287,930
Asset Description - Backbone		
Water Plant #5	September 2009	\$ 983,357
Well #22	September 2009	\$ 817,107
Phase 2 – Offsite Water Mains	December 1997	\$ 537,979
Transmission Mains	December 2007	\$ 261,625
Subtotal – Backbone Costs		\$ 2,600,068
Total Cost – Infrastructure and Backbone Costs		\$ 3,887,998

Staff concludes that the costs associated with the installation of the plant infrastructure and backbone are reasonable. However, the costs do not appear to consider accumulated depreciation.

Based on the October 24, 2013 site visit and inspection of the LDO water system, Staff concluded that the plant infrastructure and backbone, listed in Table H, are currently in operation and considered used and useful. The plant infrastructure and backbone are included in the Saddlebrooke and Catalina Plant Facilities Summary, Table A.

¹³ Installation and asset descriptions included in the Financing Application, dated July 10, 2013. In-service dates provided from a response to Staff Data Request MST-8 email, dated December 20, 2013.

BEFORE THE ARIZONA CORPORATION COMMISSION

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

IN THE MATTER OF THE APPLICATION OF) DOCKET NO. W-01944A-13-0215
LAGO DEL ORO WATER COMPANY, AN)
ARIZONA CORPORATION, FOR A)
DETERMINATION OF THE FAIR VALUE OF)
ITS UTILITY PLANT AND PROPERTY AND)
FOR INCREASES IN ITS WATER RATES AND)
CHARGES FOR UTILITY SERVICE BASED)
THEREON.)

DIRECT
TESTIMONY
OF
JOHN A. CASSIDY
PUBLIC UTILITIES ANALYST
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

JANUARY 17, 2014

TABLE OF CONTENTS

	<u>PAGE</u>
I. INTRODUCTION	1
Summary of Testimony and Recommendations	2
LDO's Proposed Overall Rate of Return	4
II. THE WEIGHTED AVERAGE COST OF CAPITAL	5
III. CAPITAL STRUCTURE	6
Background	6
LDO's Capital Structure	7
Staff's Capital Structure	9
IV. COST OF DEBT	11
V. RETURN ON EQUITY	12
Background	12
Risk	15
VI. ESTIMATING THE COST OF EQUITY	17
Introduction	17
Discounted Cash Flow Model Analysis	18
<i>The Constant-Growth DCF</i>	19
<i>The Multi-Stage DCF</i>	28
VII. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS	30
VIII. FINAL COST OF EQUITY ESTIMATES FOR LDO	31
IX. RATE OF RETURN RECOMMENDATION	32
X. STAFF RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA	33
XI. CONCLUSION	43

SCHEDULES

Capital Structure and Weighted Cost of Capital.....	JAC-1
Intentionally Left Blank.....	JAC-2
Final Cost of Equity Estimates for Sample Water Utilities	JAC -3
Average Capital Structure of Sample Water Utilities.....	JAC -4
Growth in Earnings & Dividends of Sample Water Utilities	JAC -5
Sustainable Growth for Sample Water Utilities.....	JAC -6
Selected Financial Data of Sample Water Utilities.....	JAC -7
Calculation of Expected Infinite Annual Growth in Dividends.....	JAC -8
Multi-Stage DCF Estimates	JAC -9

**EXECUTIVE SUMMARY
LAGO DEL ORO WATER COMPANY
DOCKET NO. W-01944A-13-0215**

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 Lago Del Oro Water Company (“Company”) for this proceeding consisting of 29.0 percent debt and 71.0 percent equity.

Cost of Equity – Staff recommends that the Commission adopt a 9.3 percent return on equity (“ROE”) for the Company. Staff’s estimated ROE for the Company is based on the 8.7 percent average of its discounted cash flow method (“DCF”) cost of equity methodology estimates for the sample companies of 8.1 percent for the constant-growth DCF model and 9.3 percent for the multi-stage DCF model. Staff’s recommended ROE includes an upward economic assessment adjustment of 60 basis points (0.6 percent).

Cost of Debt – Staff recommends that the Commission adopt a 4.6 percent cost of debt for the Company.

Overall Rate of Return – Staff recommends that the Commission adopt a 7.9 percent overall rate of return.

Mr. Bourassa’s Testimony – The Commission should reject the Company’s proposed 10.5 percent ROE for the following reasons:

Mr. Bourassa’s primary Future Growth DCF estimates rely exclusively on analysts’ forecasts of earnings per share growth. Effectively, Mr. Bourassa’s overall DCF estimate is weighted 75 percent by his Future Growth DCF estimates. The current market risk premium in Mr. Bourassa’s current MRP CAPM model is not reflective of current market conditions and serves to overstate his CAPM cost of equity estimate. Mr. Bourassa’s proposed ROE has been inflated by an implicit upward adjustment for financial risk and small company risk premium.

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

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

25 A. My testimony provides Staff’s recommended capital structure, return on equity (“ROE”)
26 and overall rate of return (“ROR”) for establishing the revenue requirements for Lago Del

1 Oro Water Company (“LDO” or “Company”) in the Company’s pending water rate
2 application.

3
4 **Q. Please provide a brief description of LDO.**

5 A. LDO is a Class “B” public service corporation engaged in providing water utility service
6 in portions of Pima County and Pinal County, Arizona, pursuant to a certificate of
7 convenience and necessity granted by the Arizona Corporation Commission
8 (“Commission”). During the test year ending December 31, 2012, the Company served
9 approximately 6,400 water connections.

10
11 Summary of Testimony and Recommendations

12 **Q. Briefly summarize how Staff’s cost of capital testimony is organized.**

13 A. Staff’s cost of capital testimony is presented in ten sections. Section I is this introduction.
14 Section II discusses the concept of weighted average cost of capital (“WACC”). Section
15 III presents the concept of capital structure and presents Staff’s recommended capital
16 structure for LDO in this proceeding. Section IV presents Staff’s cost of debt for LDO.
17 Section V discusses the concepts of ROE and risk. Section VI presents the methods
18 employed by Staff to estimate LDO’s ROE. Section VII presents the findings of Staff’s
19 ROE analysis. Section VIII presents Staff’s final cost of equity estimates for LDO.
20 Section IX presents Staff’s ROR recommendation. Finally, Section X presents Staff’s
21 comments on the direct testimony of the Company’s witness, Mr. Thomas J. Bourassa.

22
23 **Q. Have you prepared any exhibits to accompany your testimony?**

24 A. Yes. I prepared nine schedules (JAC-1 to JAC-9) which support Staff’s cost of capital
25 analysis.

26

1 **Q. What is Staff's recommended rate of return for LDO?**

2 A. Staff recommends a 7.9 percent overall ROR, as shown in Schedule JAC-1. Staff's ROR
3 recommendation is based on the following: (1) a capital structure composed of 29.0
4 percent debt and 71.0 percent equity; (2) a cost of equity of 9.3 percent, calculated as the
5 simple average of the two cost of equity estimates for the sample companies derived from
6 Staff's discounted cash flow ("DCF") estimation methodologies (8.1 percent from Staff's
7 constant growth DCF model and 9.3 percent from Staff's multi-stage DCF model), plus
8 the adoption of a 60 basis point upward economic assessment adjustment; and (3) a cost of
9 debt of 4.6 percent.

10

11 Staff continues to develop and analyze the indicated cost of equity estimates derived from
12 the two capital asset pricing model ("CAPM") estimation methodologies historically
13 considered and relied upon by Staff. However, at the present time Staff is recommending
14 that the Commission de-emphasize the CAPM driven results due to the continuing
15 divergence of the CAPM-indicated cost of equity results relative to those derived by the
16 DCF model.

17

18 **Q. Mr. Cassidy, briefly explain why the cost of equity estimates derived from the CAPM**
19 **have become problematic in today's economic environment.**

20 A. In an effort to recover from the economic recession of 2008, the United States Federal
21 Reserve ("The Fed") initiated a monetary policy intended to stimulate economic growth
22 and reduce unemployment by keeping the federal funds rate at a level between 0 to ¼
23 percent.¹ The federal funds rate is the central bank's key tool to spur the economy and a
24 low rate is thought to encourage spending by making it cheaper to borrow money. In
25 addition, in an effort to put downward pressure on longer-term interest rates, the Fed

¹ The federal funds rate is the interest rate charged to banks by the Fed for overnight transfers of funds.

1 initiated a policy of quantitative easing² wherein the U.S. central bank would purchase
2 U.S. Treasury mortgage-backed securities by reinvesting the principal payments from its
3 holdings of agency debt and agency mortgage-backed securities, and of rolling over
4 maturing Treasury securities at auction.³ As a consequence, the low interest rate
5 environment engineered by the Fed has compelled investors to seek out higher yields on
6 investment wherever they may be found, resulting in the equity markets having recently
7 achieved new all-time highs⁴ and forecasted dividend yields falling to new lows.⁵ At
8 present, these factors, in combination with one another, have led to abnormally low cost of
9 equity estimates being obtained from the CAPM model. Accordingly, in Staff's judgment
10 the cost of equity estimates derived from the CAPM should not be given their traditional
11 weighting for purposes of setting rates until such time that market conditions change.

12
13 LDO's Proposed Overall Rate of Return

14 **Q. Briefly summarize LDO's proposed capital structure, cost of debt, ROE and overall**
15 **ROR for this proceeding.**

16 **A.** Table 1 summarizes the Company's proposed capital structure, cost of debt, ROE and
17 overall ROR in this proceeding:
18
19

² Quantitative easing is an unconventional monetary policy in which a central bank purchases government securities or other securities from the market in order to lower interest rates and increase the money supply. Quantitative easing increases the money supply by flooding financial institutions with capital in an effort to promote increased lending and liquidity. Quantitative easing is considered when short-term interest rates are at or approaching zero, and does not involve the printing of new banknotes.

³ At present, the Fed purchases \$40 billion of agency mortgage-backed securities per month and \$45 billion of longer-term Treasury securities per month. (<http://www.federalreserve.gov/newsevents/press/monetary/20131030a.htm>)

⁴ The Dow Jones Industrial Average closed above 16,000 for the first time ever on November 27, 2013 (16,097.33), and reached an all-time intra-day high of 16,588.25 on December 31, 2013. Similarly, the S&P 500 Index recently reached a new all-time high of 1,849.44, and closed at 1837.88 on January 7, 2014 (Source: CNNMoney).

⁵ As reported in the *Value Line Investment Survey, Summary & Index*, the median estimated dividend yield (next 12 months) of all dividend paying stocks under its review fell to 2.0 percent on November 1, 2013, and has since fallen to a level of 1.9 percent (*Value Line*, January 3, 2014 issue).

Table 1

	Weight	Cost	Weighted Cost
Long-term Debt	41.09%	6.00%	2.47%
Common Equity	58.91%	10.50%	6.19%
Cost of Capital/ROR			8.65%

LDO is proposing an overall rate of return of 8.65 percent.

II. THE WEIGHTED AVERAGE COST OF CAPITAL

Q. Briefly explain the cost of capital concept.

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

Q. What is the overall cost of capital?

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

Q. How is the WACC calculated?

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

Equation 1.

$$WACC = \sum_{i=1}^n W_i * r_i$$

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

3
4 **Q. Can you provide an example demonstrating application of Equation 1?**

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

9
$$\text{WACC} = (60\% * 6.0\%) + (40\% * 10.5\%)$$

10
$$\text{WACC} = 3.60\% + 4.20\%$$

11
$$\text{WACC} = 7.80\%$$

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

16
17 **III. CAPITAL STRUCTURE**

18 Background

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

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

1 **Q. How is the capital structure expressed?**

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

5
6 As an example, the capital structure for an entity that is financed by \$20,000 of short-term
7 debt, \$85,000 of long-term debt (including capital leases), \$15,000 of preferred stock and
8 \$80,000 of common stock is shown in Table 2.

9
10 **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%

11
12 The capital structure in this example is composed of 10.0 percent short-term debt, 42.5
13 percent long-term debt, 7.5 percent preferred stock and 40.0 percent common stock.

14
15 LDO's Capital Structure

16 **Q. What was LDO's actual capital structure as of the test year ending December 31,**
17 **2012?**

18 A. As of the December 31, 2012 test-year end, the Company's capital structure consisted of
19 0.0 percent debt and 100 percent equity.

1 **Q. What capital structure does LDO propose for purposes of this proceeding?**

2 A. The Company proposes a pro forma capital structure composed of 41.09 percent debt and
3 58.91 percent common equity.

4
5 **Q. Why is LDO proposing a pro forma capital structure in this rate proceeding rather**
6 **than its actual capital structure as of the December 31, 2012 test-year end?**

7 A. LDO's proposed pro forma capital structure gives recognition to events expected to take
8 place subsequent to the Company's December 31, 2012, test year end which would render
9 use of its actual capital structure as of that date to be inappropriate for purposes of this
10 proceeding. Specifically, on July 10, 2013, the Company filed a financing application⁶
11 seeking authority to issue evidence of indebtedness in an amount not to exceed
12 \$3,900,000. In December 2012, the Company purchased a significant portion of its water
13 system from an affiliate⁷, and as contemplated in the financing application LDO plans to
14 repay shareholders for this asset purchase by means of a capital structure rebalancing
15 wherein \$3.9 million of equity capital is to be replaced with \$3.9 million of debt financing
16 through a loan with Wells Fargo at an interest rate not to exceed 6.0 percent. LDO's
17 proposed financing is beneficial to ratepayers, as the cost of debt is less than the cost of
18 equity, and a rebalancing of the Company's equity-rich capital structure will serve to
19 lower the equity component in the capital structure.

20
21 **Q. Has the Company requested formal consolidation of its financing application and its**
22 **rate application?**

23 A. No. The Company has requested that the two dockets not be consolidated.
24

⁶ Docket No. W-01944A-13-0242.

⁷ The assets were purchased from Saddlebrooke Development, an LDO affiliate, at a price of \$3,887,998 (See LDO Financing Application, Exhibit 2 (Docket No. W-01994A-13-0242)).

1 **Q. Does Staff anticipate recommending approval of the Company's proposed financing?**

2 A. Yes, but with certain modifications. As proposed, the \$3.9 million financing reflects the
3 original cost of the assets purchased by the LDO affiliate. However, the purchased plant
4 had been placed in service in prior years by the affiliate, and LDO's proposed financing
5 gave no consideration to the level of accumulated depreciation that would, or should, have
6 been recorded in a contra account between the time the various plant assets were
7 originally placed in service and subsequently purchased by LDO. Accordingly, Staff
8 expects to recommend approval of the financing but in the amount of \$2,751,411, a figure
9 which reflects the original cost of the assets (\$3,887,998), net of accumulated depreciation
10 (\$1,136,587). Details of Staff's adjustment to plant may be found in the direct testimony
11 filed by Staff witness, Mary Rimback.

12
13 **Q. How does Staff's recommended pro forma capital structure for LDO compare to
14 capital structures of publicly-traded water utilities?**

15 A. Schedule JAC-4 shows the capital structures of seven publicly-traded water companies
16 ("sample water companies" or "sample water utilities") as of December 2012. The
17 average capital structure for the sample water utilities is comprised of approximately 50.3
18 percent debt and 49.7 percent equity.

19
20 Staff's Capital Structure

21 **Q. Does Staff favor the use of a pro forma capital structure in this proceeding?**

22 A. Yes. Staff considers the use of a pro forma capital structure to be appropriate in this rate
23 proceeding, as it gives recognition to the prospective events noted above, and as such
24 better reflects the Company's on-going capital costs.

1 **Q. What is Staff's recommended capital structure for LDO?**

2 A. Staff recommends a pro forma capital structure composed of 29.0 percent debt and 71.0
3 percent equity. Staff's recommended pro forma capital structure is reflective of a debt
4 component of \$2,751,411 and an equity component of \$6,740,138.⁸

5
6 **Q. For purposes of setting rates in this proceeding, what are the implications associated**
7 **with Staff's recommended pro forma capital structure relative to the pro forma**
8 **capital structure proposed by the Company?**

9 A. As noted above, the debt component in Staff's recommended pro forma capital structure
10 reflects the net book value of the assets purchased from the LDO affiliate, and not the
11 original cost of the assets as proposed by the Company. As a consequence, the debt
12 component in Staff's recommended pro forma capital structure (i.e., 29.0 percent) is less
13 than that proposed by LDO (i.e., 41.09 percent), with the equity component recommended
14 by Staff necessarily being higher (i.e., 71.0 percent) than that proposed by the Company
15 (i.e., 58.91 percent). Equity capital is more costly than debt capital; thus, Staff's
16 recommended pro forma capital structure allows LDO to earn an equity return on a higher
17 equity component in the capital structure. Conversely, however, Staff's recommended pro
18 forma capital structure would necessarily be applied to a lower rate base than that
19 proposed by the Company, as Staff's recommended rate base is computed on the net book
20 value of the assets purchased from the affiliate, and not their original cost as proposed by
21 the Company.

⁸ As shown in Company Schedule D-1, as of the December 31, 2012 test-year end, LDO had equity of \$9,699,341. As shown in LDO's projected capital structure, the Company anticipated a net operating loss of \$207,792 in the coming year, as the equity balance had fallen to \$9,491,549. Thus, Staff's \$6,740,138 equity component represents this \$9,491,549 figure less the \$2,751,411 debt component.

1 **IV. COST OF DEBT**

2 **Q. What is the cost of debt proposed by the Company in this proceeding?**

3 A. As shown in Company Schedule D-1, LDO proposes a cost of debt of 6.0 percent. This is
4 the same cost of debt proposed by the Company in its financing application.

5
6 **Q. Did the Company subsequently amend its financing application, and if so, why?**

7 A. Yes. LDO filed an amendment to its financing application on October 9, 2013. The
8 reason for the amended filing concerned LDO's request that the financing docket not be
9 consolidated with the rate docket; however, the loan terms as originally proposed by the
10 Company precluded this due to the debt service coverage ratio ("DSC") being insufficient
11 to allow for non-consolidation. Accordingly, LDO met with its lender to arrange for new
12 lending terms, and the Company filed its amendment to propose new financing terms
13 sufficient to generate a DSC high enough to allow for non-consolidation.⁹

14
15 **Q. In light of the above, what cost of debt does Staff recommend for LDO in this
16 proceeding?**

17 A. Staff recommends a cost of debt of 4.6 percent. Staff's recommended cost of debt was
18 obtained pursuant to a data request issued the Company subsequent to LDO's amended
19 filing. Because the final loan terms are unknown at this time, Staff may find it necessary
20 to change its recommended cost of debt and, if necessary, is prepared to do so when filing
21 surrebuttal testimony based upon input from the Company.

22

⁹ In the financing docket, Staff's initial DSC calculations were predicated on the understanding that the loan principal was to be \$3.9 million. Pursuant to a data request issued by Staff Engineering, details as to when the assets purchased by LDO from an affiliate were first placed into service were not obtained until late December 2013. If Staff had made its initial DSC calculations based upon the understanding that the loan principal would have been the lower net book value figure, there would have been no need for the Company to amend its financing application as the original loan terms when applied to that lower principal would have generated a DSC sufficient to allow for non-consolidation.

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?**

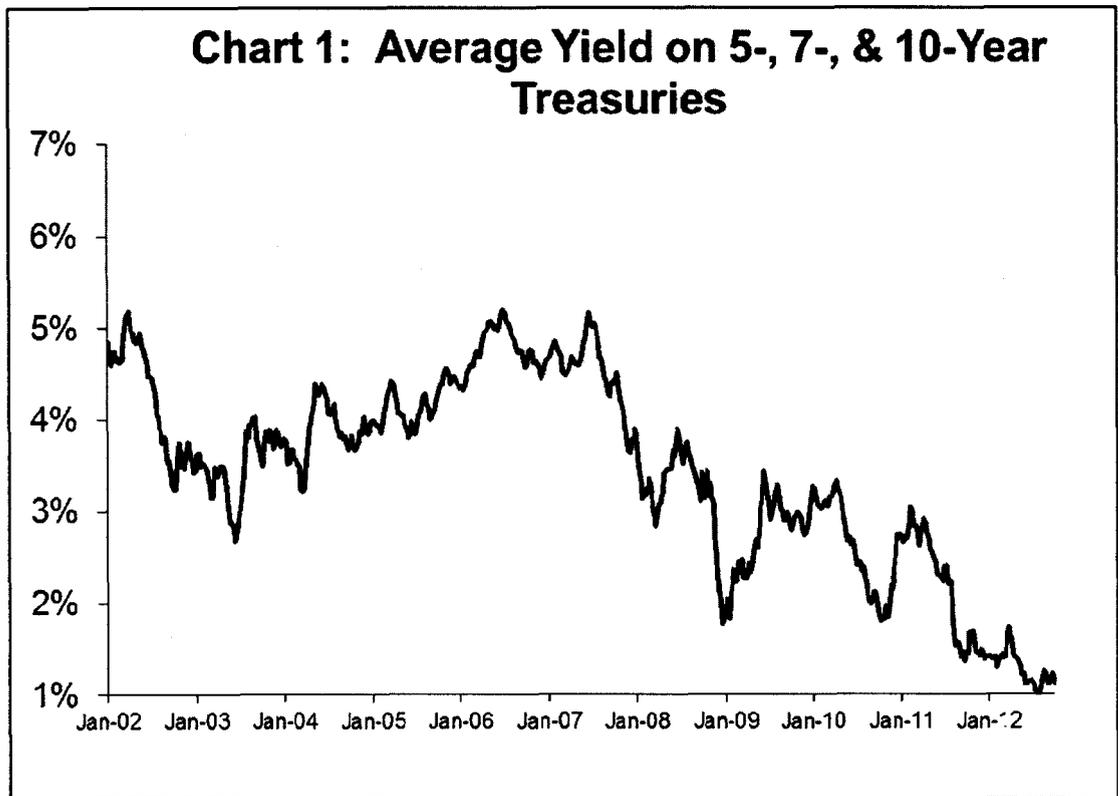
11 A. Yes, there is a positive correlation between interest rates and the cost of equity, as the two
12 tend to move in the same direction.

13
14 **Q. What has been the general trend of interest rates in recent years?**

15 A. A chronological chart of interest rates is a good tool to show interest rate history and
16 identify trends. Chart 1 graphs intermediate U.S. treasury rates from January 4, 2002, to
17 May 31, 2013.

18
19
20
21
22
23
24
25
26

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26

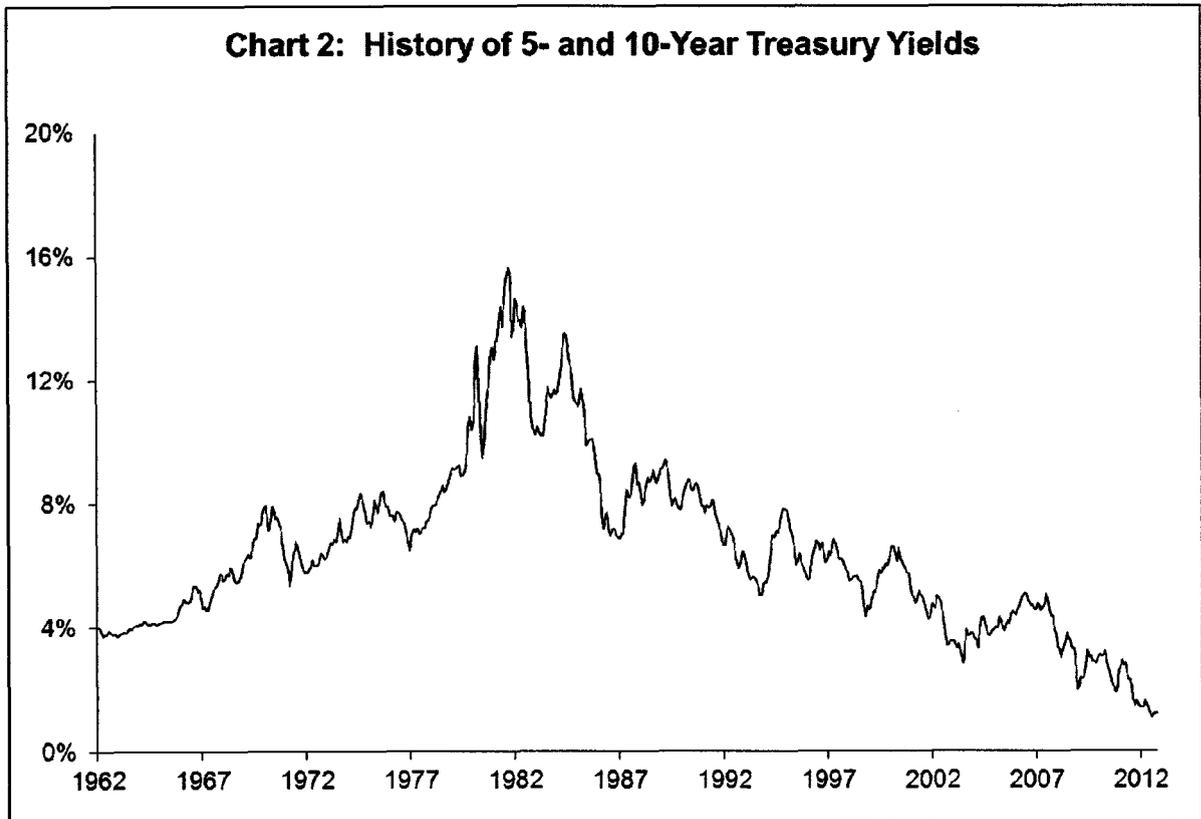


As shown in Chart 1, intermediate-term interest rates trended downward from 2002 to mid-2003, trended upward through mid-2007, and have generally trended downward since that time.

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

A. U.S. Treasury rates from January 1962- May 2013 are shown in Chart 2. The chart shows that interest rates trended upward through the mid-1980s and have trended downward since that time.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22



Source: Federal Reserve

Q. Do these trends have relevance to the cost of equity?

A. Yes. As previously noted, interest rates and the cost of equity tend to move in the same direction; therefore, it can be concluded that the cost of equity has also declined over 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 Risk

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

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

9
10 **Q. What is market risk?**

11 A. Market risk, or systematic risk, is the risk associated with an investment that cannot be
12 reduced through diversification. Market risk stems from factors that affect all securities,
13 such as recessions, war, inflation and high interest rates. These factors affect the entire
14 market. However, market risk does not impact each security to the same degree.

15
16 **Q. Please define business risk.**

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

21
22 **Q. Please define financial risk.**

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

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

2 A. Yes.

3

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

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

9

10 **Q. How does LDO's financial risk exposure compare to that of Staff's sample group of**
11 **water companies?**

12 A. JAC-4 shows the capital structures of the seven sample water companies as of December
13 2012, and LDO's capital structure as of the test year ending December 31, 2012. As
14 shown, the sample water utilities were capitalized with approximately 50.3 percent debt
15 and 49.7 percent equity, while LDO's capital structure consists of 29.0 percent debt and
16 71.0 percent equity. Thus, compared to Staff's sample companies, LDO has significantly
17 less exposure to financial risk.

18

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

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

22

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

24 A. No. Investors who hold diversified portfolios can effectively eliminate firm-specific risk
25 and, consequently, do not require any additional return. Since investors who choose to be

1 less than fully-diversified must compete in the market with fully-diversified investors, the
2 former cannot expect to be compensated for unique risk.

3
4 **VI. ESTIMATING THE COST OF EQUITY**

5 Introduction

6 **Q. Did Staff directly estimate the cost of equity for LDO?**

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

13
14 **Q. What sample companies did Staff select as proxies for LDO?**

15 A. Staff's sample consists of the following seven publicly-traded water utilities: American
16 States Water, California Water, Aqua America, Connecticut Water Service, Middlesex
17 Water, SJW Corporation and York Water. Staff selected these companies because they
18 are publicly-traded and receive the majority of their earnings from regulated operations.

19
20 **Q. What models did Staff implement to estimate LDO's cost of equity?**

21 A. Staff used two variations of the DCF model, both of which are market-based, to estimate
22 the cost of equity for LDO: the constant-growth DCF model and the multi-stage DCF
23 model.

1 **Q. Please explain why Staff chose the DCF model.**

2 A. Staff chose to use the DCF model because it is a widely-recognized market-based model
3 and has been used extensively to estimate the cost of equity. For the reasons noted earlier,
4 Staff has not incorporated estimates derived from the CAPM into its cost of equity
5 analysis for LDO. An explanation of the DCF model is provided below.

6

7 Discounted Cash Flow Model Analysis

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

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

18

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

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

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 December 18, 2013, as reported by *MSN Money*.

1 **Q. Why did Staff use the December 18, 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.

7
8 **Q. How did Staff estimate the dividend growth (g) component of the constant-growth**
9 **DCF model represented by Equation 2?**

10 A. The dividend growth component used by Staff is determined by the average of six
11 different estimation methods, as shown in Schedule JAC-8. Staff calculated historical and
12 projected growth estimates on dividend-per-share ("DPS"),¹⁰ earnings-per-share ("EPS")¹¹
13 and sustainable growth bases.

14
15 **Q. Why did Staff examine EPS growth to estimate the dividend growth component of**
16 **the constant-growth DCF model?**

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

20
21 **Q. How did Staff estimate historical DPS growth?**

22 A. Staff estimated historical DPS growth by calculating a compound annual DPS growth rate
23 for each of its sample companies over the 10-year period, 2002-2012. As shown in
24 Schedule JAC-5, the average historical DPS growth rate for the sample was 3.6 percent.

25

¹⁰ Derived from information provided by *Value Line*.

¹¹ Derived from information provided by *Value Line*.

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

2 A. Staff calculated an average of the projected DPS growth rates for the sample water utilities
3 from *Value Line* through the period, 2016-2018. The average projected DPS growth rate
4 is 5.5 percent, as shown in Schedule JAC-5.

5
6 **Q. How did Staff estimate historical EPS growth rate?**

7 A. Staff estimated historical EPS growth by calculating a compound annual EPS growth rate
8 for each of its sample companies over the 10-year period, 2002-2012. As shown in
9 Schedule JAC-5, the average historical EPS growth rate for the sample was 5.1 percent.

10

11 **Q. How did Staff estimate projected EPS growth?**

12 A. Staff calculated an average of the projected EPS growth rates for the sample water utilities
13 from *Value Line* through the period, 2016-2018. The average projected EPS growth rate
14 is 5.6 percent, as shown in Schedule JAC-5.

15

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

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

20

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

22 A. Retention growth is the growth in dividends due to the retention of earnings. The
23 retention growth concept is based on the theory that dividend growth cannot be achieved
24 unless the company retains and reinvests a portion of its earnings. The retention growth is
25 used in Staff's calculation of sustainable growth shown in Schedule JAC-6.

26

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

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

4

5

Equation 3 :

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

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

6

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

9 A. Staff calculated the mean of the 10-year average historical retention rate for each sample
10 company over the period, 2002-2012. As shown in Schedule JAC-6, the historical
11 average retention (br) growth rate for the sample is 2.7 percent.

12

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

15 A. Staff used the retention growth projections for the sample water utilities for the period,
16 2016-2018, from *Value Line*. As shown in Schedule JAC-6, the projected average
17 retention growth rate for the sample companies is 3.8 percent.

18

19 **Q. When can retention growth provide a reasonable estimate of future dividend**
20 **growth?**

21 A. The retention growth rate is a reasonable estimate of future dividend growth when the
22 retention ratio is reasonably constant and the entity's market price to book value ("market-

1 to-book ratio”) is expected to be 1.0. The average retention ratio has been reasonably
2 constant in recent years. However, the market-to-book ratio for the sample water utilities
3 is 2.3, notably higher than 1.0, as shown in Schedule JAC-7.
4

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

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

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

22 A. Staff has assumed that investors expect the market-to-book ratio to remain greater than
23 1.0. Given that assumption, Staff has added a stock financing growth rate (vs) term to the
24 retention ratio (br) term to calculate its historical and projected sustainable growth rates.
25

1 Q. Do the historical and projected sustainable growth rates Staff uses to develop its
2 DCF cost of equity in this case continue to include a stock financing growth rate
3 term?

4 A. Yes.

5
6 Q. What is stock financing growth?

7 A. Stock financing growth is the increase in an entity's dividends attributable to the sale of
8 stock by that entity. Stock financing growth is a concept derived by Myron Gordon and
9 discussed in his book *The Cost of Capital to a Public Utility*.¹² Stock financing growth is
10 the product of the fraction of the funds raised from the sale of stock that accrues to
11 existing shareholders (v) and the fraction resulting from dividing the funds raised from the
12 sale of stock by the existing common equity (s).

13
14 Q. What is the mathematical formula for the stock financing growth rate?

15 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

16
17 Q. How is the variable v presented above calculated?

18 A. Variable v is calculated as follows:
19

¹² Gordon, Myron J. *The Cost of Capital to a Public Utility*. MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

Equation 5:

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

1

2

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

3

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

4

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

5

In this example, v is equal to 0.33.

6

7

Q. How is the variable s presented above calculated?

8

A. Variable s is calculated as follows:

9

Equation 6:

10

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

11

12

13

For example, assume that an entity has \$150 in existing equity, and it sells \$30 of stock.

14

Then, to find the value of s , the formula is applied:

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

15

In this example, s is equal to 20.0 percent.

16

17

Q. What is the vs term when the market-to-book ratio is equal to 1.0?

18

A. A market-to-book ratio of 1.0 reflects that investors expect an entity to earn a

19

book/accounting return on their equity investment equal to the cost of equity. When the

1 market-to-book ratio is equal to 1.0, none of the funds raised from the sale of stock by the
2 entity accrues to the benefit of existing shareholders, i.e., the term v is equal to zero (0.0).
3 Consequently, the vs term is also equal to zero (0.0). When stock financing growth is
4 zero, dividend growth depends solely on the br term.

5
6 **Q. What is the effect of the vs term when the market-to-book ratio is greater than 1.0?**

7 A. A market-to-book ratio greater than 1.0 reflects that investors expect an entity to earn a
8 book/accounting return on their equity investment greater than the cost of equity.
9 Equation 5 shows that, when the market-to-book ratio is greater than 1.0, the v term is also
10 greater than zero. The excess by which new shares are issued and sold over book value
11 per share of outstanding stock is a contribution that accrues to existing stockholders in the
12 form of a higher book value. The resulting higher book value leads to higher expected
13 earnings and dividends. Continued growth from the vs term is dependent upon the
14 continued issuance and sale of additional shares at a price that exceeds book value per
15 share.

16
17 **Q. What vs estimate did Staff calculate from its analysis of the sample water utilities?**

18 A. Staff estimated an average stock financing growth of 2.4 percent for the sample water
19 utilities, as shown in Schedule JAC-6.

20
21 **Q. What would occur if an entity had a market-to-book ratio greater than 1.0 as a result
22 of investors expecting earnings to exceed its cost of equity, and subsequently
23 experienced newly-authorized rates equal only to its cost of equity?**

24 A. Holding all other factors constant, one would expect market forces to move the company's
25 stock price lower, closer to a market-to-book ratio of 1.0, to reflect investor expectations
26 of reduced expected future cash flows.

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

4 A. No. As discussed above, when the market-to-book ratio is equal to 1.0, none of the funds
5 raised from the sale of stock by the entity accrues to the benefit of existing shareholders
6 because the *v* term equals to zero and, consequently, the *vs* term also equals zero. When
7 the market-to-book ratio equals 1.0, dividend growth depends solely on the *br* term.
8 Staff's inclusion of the *vs* term assumes that the market-to-book ratio continues to exceed
9 1.0 and that the water utilities will continue to issue and sell stock at prices above book
10 value with the effect of benefitting existing shareholders.

11
12 **Q. What are Staff's historical and projected sustainable growth rates?**

13 A. Staff's estimated historical sustainable growth rate is 5.1 percent based on an analysis of
14 earnings retention for the sample water companies. Staff's projected sustainable growth
15 rate is 6.2 percent based on retention growth projected by *Value Line*. Schedule JAC-6
16 presents Staff's estimates of the sustainable growth rate.

17
18 **Q. What is Staff's expected infinite annual growth rate in dividends?**

19 A. Staff's expected dividend growth rate (*g*) is 5.2 percent, which is the average of historical
20 and projected DPS, EPS, and sustainable growth estimates. Staff's calculation of the
21 expected infinite annual growth rate in dividends is shown in Schedule JAC-8.

22
23 **Q. What is Staff's constant-growth DCF estimate for the sample utilities?**

24 A. Staff's constant-growth DCF estimate is 8.1 percent, as shown in Schedule JAC-3.
25

1 The Multi-Stage DCF

2 **Q. Why did Staff implement the multi-stage DCF model to estimate LDO's cost of**
3 **equity?**

4 A. Staff generally uses the multi-stage DCF model to consider the assumption that dividends
5 may not grow at a constant rate. The multi-stage DCF uses two stages of growth; the first
6 stage (near-term) having a duration of four years, followed by a second stage (long-term)
7 of constant growth.

8
9 **Q. What is the mathematical formula for the multi-stage DCF?**

10 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

11
12 **Q. What steps did Staff take to implement its multi-stage DCF cost of equity model?**

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

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

2 A. The stage-1 growth rate is based on *Value Line*'s projected dividends for the next twelve
3 months, when available, and on the average dividend growth (g) rate of 5.2 percent,
4 calculated in Staff's constant DCF analysis for the remainder of the stage.

5
6 **Q. How did Staff estimate long-term (stage-2) growth?**

7 A. Staff calculated the stage-2 growth rate using the arithmetic mean rate of growth in Gross
8 Domestic Product ("GDP") from 1929 to 2012.¹³ Using the GDP growth rate assumes
9 that the water utility industry is expected to grow at the same rate as the overall economy.

10
11 **Q. What is the historical GDP growth rate that Staff used to estimate stage-2 growth?**

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

13
14 **Q. What is Staff's multi-stage DCF estimate for the sample utilities?**

15 A. Staff's multi-stage DCF estimate is 9.3 percent, as shown in Schedule JAC-3.

16
17 **Q. What is Staff's overall DCF estimate for the sample utilities?**

18 A. Staff's overall DCF estimate is 8.7 percent. Staff calculated the overall DCF estimate by
19 averaging the constant growth DCF (8.1%) and multi-stage DCF (9.3%) estimates, as
20 shown in Schedule JAC-3.

21

¹³ www.bea.doc.gov.

1 **VII. SUMMARY OF STAFF'S COST OF EQUITY ANALYSIS**

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

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

6
7 $k = 2.9\% + 5.2\%$

8
9 $k = 8.1\%$

10
11 Staff's constant-growth DCF estimate of the cost of equity for the sample water utilities is
12 8.1 percent.

13
14 **Q. What is the result of Staff's multi-stage DCF analysis to estimate of the cost of equity**
15 **for the sample utilities?**

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

18
19

Company	Equity Cost Estimate (k)
American States Water	9.1%
California Water	9.3%
Aqua America	8.9%
Connecticut Water	9.4%
Middlesex Water	10.3%
SJW Corp	9.0%
York Water	<u>9.2%</u>
Average	9.3%

20
21
22
23
24
25
26
27
28
29
30

1 Staff's multi-stage DCF estimate of the cost of equity for the sample water utilities is 9.3
2 percent.

3
4 **Q. What is Staff's overall DCF estimate of the cost of equity for the sample utilities?**

5 A. Staff's overall DCF estimate of the cost of equity for the sample utilities is 8.7 percent.
6 Staff calculated an overall DCF cost of equity estimate by averaging Staff's constant
7 growth DCF (8.1 percent) and Staff's multi-stage DCF (9.3 percent) estimates, as shown
8 in Schedule JAC-3.

9
10 **VIII. FINAL COST OF EQUITY ESTIMATES FOR LDO**

11 **Q. Please compare LDO's capital structure to that of Staff's seven sample companies.**

12 A. The average capital structure for the sample water utilities is composed of 50.3 percent
13 debt and 49.7 percent equity, as shown in Schedule JAC-4. In contrast, LDO's capital
14 structure is composed of 29.0 percent debt and 71.0 percent equity. Since the Company's
15 capital structure is less highly leveraged than that of the average sample water utility,
16 LDO's stockholders bear *less* financial risk than do equity shareholders of the sample
17 utilities.

18
19 **Q. Is Staff recommending a downward financial risk adjustment to the Company's cost
20 of equity to recognize its lower financial risk?**

21 A. No. Staff normally applies two criteria in assessing whether application of a downward
22 financial risk adjustment is appropriate. The first consideration is whether the utility has a
23 reasonably economical capital structure. Staff considers a capital structure composed of
24 no more than 60 percent equity to meet this condition. If equity exceeds 60 percent, as it
25 does for LDO, Staff considers application of a downward financial risk adjustment to be
26 appropriate if the utility meets the second criteria. The second condition is whether the

1 utility has access to the capital markets. Although LDO's equity exceeds 60 percent, it
2 does not have access to the capital markets; accordingly, Staff is not recommending a
3 downward financial risk adjustment to the Company's cost of equity. Staff's methodology
4 for applying a downward financial risk adjustment encourages a utility with access to the
5 capital markets to use that access to manage its capital structure with economic efficiency
6 and encourages a utility that lacks access to the capital markets to maintain a healthy
7 capital structure.

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 upward economic assessment adjustment to the cost
13 of 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 LDO?**

17 A. Staff determined an ROE estimate of 8.7 percent for LDO based on cost of equity
18 estimates for the sample companies of 8.1 percent for the constant-growth DCF model and
19 9.3 percent for the multi-stage DCF model. Staff recommends adoption of a 60 basis
20 point upward economic assessment adjustment, resulting in a 9.3 percent Staff-
21 recommended cost of equity, as shown in Schedule JAC-3.

22
23 **IX. RATE OF RETURN RECOMMENDATION**

24 **Q. What overall rate of return did Staff determine for LDO?**

25 A. Staff determined an 8.0 percent ROR for the Company, as shown in Schedule JAC-1 and
26 the following table:

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23

Table 3

	Weight	Cost	Weighted Cost
Long-term Debt	29.0%	4.6%	1.3%
Common Equity	71.0%	9.3%	<u>6.6%</u>
Overall ROR			<u>7.9%</u>

X. STAFF RESPONSE TO COMPANY'S COST OF CAPITAL WITNESS MR. THOMAS J. BOURASSA

Q. Please summarize Mr. Bourassa's analyses and recommendations.

A. Mr. Bourassa recommends a 10.50 percent ROE based on estimates derived from two constant growth DCF analyses (median estimate 8.7%), two CAPM analyses (median estimate 9.5%), and two Build-up risk premium models (median estimate 11.1%) designed as a check for reasonableness to his DCF and CAPM results, using a proxy sample of six publicly-traded water companies. He proposes a pro forma capital structure consisting of 41.09 percent debt and 58.91 percent equity; his proposed cost of debt is 6.00 percent. Mr. Bourassa determined that the cost of equity for publicly traded water utilities lies within the range of 8.7 percent to 11.1 percent, with the mid-point of his range being 9.9 percent. Mr. Bourassa makes no explicit adjustments to his 9.9 percent mid-point cost of equity estimate; however, in arriving at his recommended 10.5 percent cost of equity figure he gives consideration to (a) prospective economic conditions, (b) LDO's exposure to financial risk, (c) LDO's small size, and (d) LDO's business risk relative to his sample companies.¹⁴ His overall recommended rate of return for the Company is 8.65 percent.

For purposes of his constant growth DCF analyses, Mr. Bourassa gives a 50 percent weight to the estimates derived from his Future Growth DCF model and a 50 percent

¹⁴ See Bourassa Direct, p. 4, lines 4-13)

1 weight to the estimates derived from his Past and Future Growth DCF Model. In his
2 primary Future Growth DCF model, Mr. Bourassa relies exclusively on analysts' forecasts
3 of EPS growth to estimate the dividend growth (g) component (See TJB Schedule D-4.6).
4 In his Past and Future Growth DCF model, Mr. Bourassa estimates his dividend growth
5 (g) rate by giving 50 percent weight to historical measures of growth in annual share price,
6 book value, EPS and DPS over a five-year period, and 50 percent weight to the dividend
7 growth rate obtained from his primary Future Growth DCF model (See TJB Schedule D-
8 4.4). Thus, for purposes of the overall dividend growth (g) rate used in his constant
9 growth DCF analyses, Mr. Bourassa effectively gives a 75 percent weight to the results
10 obtained from analysts forecasts' for EPS growth and only a 25 percent weight to the
11 results obtained from historical measures of dividend growth (See TJB Schedule D-4.8).
12 In each of his two constant growth DCF analyses, Mr. Bourassa uses a 60-day average
13 stock price to calculate the current dividend yield (D_0/P_0) (See TJB Schedule D-4.7).

14
15 For purposes of his CAPM analyses, Mr. Bourassa presents estimates based upon both
16 historical and current market risk premia. In both, he uses a 3.80 percent forecasted risk
17 free (R_f) rate based, in part, upon estimates from Value Line and Blue Chip Consensus
18 Forecasts for the 30-year long-term Treasury yield covering the period, 2013-2015 (See
19 TJB Schedule D-4.10).

20
21 **Q. Does Staff have any comments on Mr. Bourassa's sole reliance on analysts' forecasts**
22 **of EPS growth rates to estimate dividend growth rate (g) in his Future Growth DCF**
23 **analysis?**

24 **A.** Yes. Exclusive reliance on analysts' forecasts of earnings growth to forecast DPS is
25 inappropriate because it assumes that investors do not look at other relevant information
26 such as historical dividend and earnings growth. Generally, analysts' forecasts are known

1 to be overly optimistic. Sole use of analysts' forecasts to calculate the expected dividend
2 growth rate, (g), serves to inflate that component of the DCF model and, consequently, the
3 estimated cost of equity. The appropriate growth rate to use in the DCF model is the
4 dividend growth rate expected by *investors*, not by analysts. Investors are assumed to be
5 rational, and as such will want to take into consideration all relevant available information
6 prior to making an investment decision. Therefore, it is reasonable to assume that
7 investors would consider both historical measures of past growth, as well as analysts'
8 forecasts of future growth.

9
10 **Q. Does the narrative of Mr. Bourassa's direct testimony state that he relies exclusively**
11 **on analysts' forecasts of EPS growth to estimate the expected dividend growth rate**
12 **(g) in his Future Growth DCF model?**

13 A. No. Mr. Bourassa states only that "I have used analyst growth forecasts, where
14 available,"¹⁵ and that "I use analysts' forecasts of growth as a primary estimate of
15 growth."¹⁶ Only when referring to TJB Schedule D-4.6 does one learn that he has relied
16 exclusively on analysts' forecasts of EPS growth to estimate the dividend growth (g) rate
17 in his Future Growth DCF model.

18
19 **Q. Does Staff have evidence to support its assertion that exclusive reliance on analysts'**
20 **forecasts of earnings growth in the DCF model would result in inflated cost of equity**
21 **estimates?**

22 A. Yes. Experts in the financial community have commented on the optimism in analysts'
23 forecasts of future earnings.¹⁷ A study cited by David Dreman in his book *Contrarian*

¹⁵ See Bourassa Direct, page 34, lines 16-17.

¹⁶ See Bourassa Direct, page 35, lines 4-5.

¹⁷ Seigel, Jeremy J. *Stocks for the Long Run*. 2002. McGraw-Hill. New York. p. 100. Dreman, David. *Contrarian Investment Strategies: The Next Generation*. 1998. Simon & Schuster. New York. pp. 97-98. Malkiel, Burton G. *A Random Walk Down Wall Street*. 2003. W.W. Norton & Co. New York. p. 175.

1 *Investment Strategies: The Next Generation* found that *Value Line* analysts were
2 optimistic in their forecasts by 9 percent annually, on average for the 1987 – 1989 period.
3 Another study conducted by David Dreman found that between 1982 and 1997, analysts
4 overestimated the growth of earnings of companies in the S&P 500 by 188 percent.

5
6 Burton Malkiel, of Princeton University, conducted a study of the 1- and 5-year earnings
7 forecasts made by some of the most respected names in the investment business. His
8 results showed that when compared with actual earnings growth rates, the 5-year forecasts
9 made by professional analysts were far less accurate than estimates derived from several
10 naïve forecasting models, such as the long-run growth rate in national income. In the
11 following excerpt from his book, *A Random Walk Down Wall Street*, Professor Malkiel
12 discusses the results of his study:

13 When confronted with the poor record of their five-year growth
14 estimates, *the security analysts honestly, if sheepishly, admitted*
15 *that five years ahead is really too far in advance to make reliable*
16 *projections.* They protested that although long-term projections
17 are admittedly important, they really ought to be judged on their
18 ability to project earnings changes one year ahead. Believe it or
19 not, it turned out that their one-year forecasts were even worse than
20 their five-year projections.

21 The analysts fought back gamely. They complained that it was
22 unfair to judge their performance on a wide cross section of
23 industries, because earnings for high-tech firms and various
24 “cyclical” companies are notoriously hard to forecast. *“Try us on*
25 *utilities,” one analyst confidently asserted. At the time they were*
26 *considered among the most stable group of companies because of*
27 *government regulation. So we tried it and they didn’t like it. Even*
28 *the forecasts for the stable utilities were far off the mark.*¹⁸
29 (Emphasis added)

30

1 **Q. Are investors aware of the problems related to analysts' forecasts?**

2 A. Yes. In addition to books, there are numerous published articles appearing in *The Wall*
3 *Street Journal* and other financial publications that cast doubt on the accuracy of research
4 analysts' forecasts.¹⁹ Investors, being keenly aware of these inherent biases in forecasts,
5 will use other methods to assess future growth.

6
7 **Q. Should DPS growth be considered in a DCF analysis?**

8 A. Yes. As previously stated in section VI of this testimony, the current market price of a
9 stock is equal to the present value of all expected future dividends, not future earnings.

10 Professor Jeremy Siegel from the Wharton School of Finance stated:

11
12 Note that the price of the stock is always equal to the present value
13 of all future *dividends* and not the present value of future earnings.
14 Earnings not paid to investors can have value only if they are paid
15 as dividends or other cash disbursements at a later date. Valuing
16 stock as the present discounted value of future earnings is
17 manifestly wrong and greatly overstates the value of the firm.²⁰
18

19 For valuation purposes, therefore, earnings paid out in the form of a dividend have
20 paramount relevancy to investors. Dividends, unlike earnings, cannot be manipulated or
21 overstated. Thus, historical DPS growth should receive appropriate consideration when
22 estimating the market cost of equity in the DCF model.

¹⁹ Smith, Randall & Craig, Suzanne. "Big Firms Had Research Ploy: Quiet Payments Among Rivals." *The Wall Street Journal*. April 30, 2003. Brown, Ken. "Analysts: Still Coming Up Rosy." *The Wall Street Journal*. January 27, 2003. p. C1. Karmin, Craig. "Profit Forecasts Become Anybody's Guess." *The Wall Street Journal*. January 21, 2003. p. C1. Gasparino, Charles. "Merrill Lynch Investigation Widens." *The Wall Street Journal*. April 11, 2002. p. C4. Elstein, Aaron. "Earnings Estimates Are All Over the Map." *The Wall Street Journal*. August 2, 2001. p. C1. Dreman, David. "Don't Count on those Earnings Forecasts." *Forbes*. January 26, 1998. p. 110.

²⁰ Siegel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. P. 93.

1 **Q. How does Mr. Bourassa calculate the expected dividend growth (g) rate used in his**
2 **Past and Future Growth DCF model?**

3 A. As shown in TJB Schedule D-4.4, Mr. Bourassa estimates the expected dividend growth
4 (g) rate in his Past and Future Growth DCF model²¹ by providing a 50 percent weight²² to
5 historical measures of growth in average annual share price, book value, EPS and DPS for
6 his sample companies over a five-year period²³ and a 50 percent weight²⁴ to the average of
7 analysts' forecasts for EPS growth derived from his Future Growth DCF model.

8
9 **Q. For purposes of his overall DCF estimate, what percentage weight does Mr. Bourassa**
10 **allocate to the dividend growth (g) component derived from analysts' forecasts of**
11 **EPS growth in his Future Growth DCF model?**

12 A. Effectively, for purposes of his overall DCF estimate Mr. Bourassa allocates a 75 percent
13 weight to the results derived from analysts' forecasts of EPS growth in his Future Growth
14 DCF Model. As noted above, TJB Schedule D-4.4 presents the results of Mr. Bourassa's
15 Past and Future Growth DCF model, which provides for an equal weighting (i.e., 50
16 percent) between historical and projected measures of dividend growth. However, as
17 shown in TJB Schedule D-4.8, for purposes of his overall dividend growth (g) estimate,²⁵
18 Mr. Bourassa combines the average of his Past and Future Growth DCF estimate²⁶ with
19 his average Future Growth DCF estimate.²⁷ In so doing, Mr. Bourassa effectively gives a
20 75 percent weight to the dividend growth (g) estimate derived from analysts' forecasts of
21 EPS growth in his Future Growth DCF model and only a 25 percent weight to the

²¹ See TJB Schedule D-4.4, Column 7.

²² See TJB Schedule D-4.4, Column 5.

²³ In TJB Schedule D-4.5, Mr. Bourassa presents this same dividend growth information over a ten-year period, but elects not to use it for purposes of his recommended cost of equity.

²⁴ See TJB Schedule D-4.4, Column 6.

²⁵ See TJB Schedule D-4.8, Column 3.

²⁶ See TJB Schedule D-4.8, Line 8.

²⁷ See TJB Schedule D-4.8, Line 10.

1 dividend growth estimate derived from historical measures of growth in his Past and
2 Future Growth DCF model.

3
4 **Q. Does Staff have any comment on Mr. Bourassa's use of growth in average annual**
5 **share price to estimate the expected dividend growth (g) component in his Past and**
6 **Future Growth DCF model?**

7 A. Yes. In and of itself, share price appreciation is not a determinant of dividend growth, and
8 for this reason Staff considers its use as a growth parameter to be inappropriate. However,
9 as Mr. Bourassa has utilized it as a growth parameter by which to estimate dividend
10 growth, Staff would point out that in both his five- and ten-year historical growth DCF
11 analyses, share price growth has exceeded that of dividend growth. Specifically, in his
12 five-year historical growth analysis (See TJB Schedule D-4.4), average share price growth
13 (5.69%) exceeds average DPS growth (3.33%) by 71 percent ($((.0569/.0333) - 1) = 71\%$),
14 and in his ten-year historical growth analysis (See TJB Schedule D-4.5), average share
15 price growth (6.88%) exceeds average DPS growth (3.25%) by 112 percent
16 ($((.0688/.0325) - 1) = 112\%$).

17
18 **Q. As it relates to the cost of equity, what is the significance of Mr. Bourassa's sample**
19 **water companies having experienced share price growth in excess of DPS growth**
20 **over both the last five- and ten-year periods?**

21 A. Simply stated, it is an indication that the cost of equity for publicly-traded water utilities
22 has fallen over each of the last 5- and 10-year periods. When the market price per share of
23 common stock for a given firm rises faster than does the dividend paid on a per share
24 basis, the dividend yield falls. As dividend yields fall, investors pay more for an
25 equivalent unit of return on their investment, resulting in a lower cost of equity. Markets
26 are efficient, and because prices for publicly traded stocks can rise only if investors are

1 willing to bid up the share price, when share price growth exceeds DPS growth over a
2 five- or ten-year period, the willingness of investors to continue to bid up share prices is
3 reflective of investor expectations that market returns have fallen. Thus, Mr. Bourassa's
4 use of share price growth increases his cost of equity estimate at a time when share price
5 growth actually reflects a decrease in cost of equity. This incongruous outcome is the
6 result of choosing an inappropriate parameter for dividend growth in the DCF model.
7

8 **Q. Turning to Mr. Bourassa's CAPM analyses, in view of the recent strength in the U.S.**
9 **equity markets, does Staff consider the 9.31 percent²⁸ current market risk premium**
10 **component in his current MRP CAPM model to be reflective of current market**
11 **conditions?**

12 A. No. As an input into his current market risk premium CAPM model, Mr. Bourassa
13 employs *Value Line's* median 3-5 year price appreciation potential estimate to compute
14 the market risk premium (MRP) component.²⁹ As shown in TJB Schedule D-4.11, Mr.
15 Bourassa presents historical data covering the period December 2011 - May 2013, and for
16 purposes of his recommended 9.31 current MRP value, elects to use a 6-month average
17 estimate covering the period, December 2012-May 2013.³⁰ Staff conducted a check of
18 *Value Line* data and found that during the 6-month period, December 2012 – May 2013,
19 the *Value Line* median 3-5 year price appreciation potential estimate averaged 50.0
20 percent. However, given the strength in the equity markets, over the next 6-month period
21 (i.e., June 2013 - November 2013) *Value Line's* price appreciation potential estimate fell
22 to an average of 38.1 percent, and over the last 11-week period (November 1, 2013 –
23 January 10, 2014), has remained at a level of 30.0 percent. Thus, given the methodology

²⁸ See TJB Schedule D-4.12, line 5.

²⁹ See TJB Schedule D-4.11, footnote 3.

³⁰ See TJB Schedule D-4.11, lines 23 and 28.

1 employed by Mr. Bourassa, the 9.31 percent market risk premium in his current MRP
2 CAPM model is not reflective of current market conditions.
3

4 **Q. Although Mr. Bourassa makes no explicit adjustments to his 9.9 percent midpoint**
5 **cost of equity estimate in arriving at his recommended 10.5 percent ROE, does Staff**
6 **have any comment on the implicit upward adjustments he makes for financial risk**
7 **and small size?**

8 A. Yes. First, it is Staff's position that LDO's exposure to financial risk is minimal, and thus
9 does not warrant an upward financial risk adjustment. As noted earlier, Staff's
10 recommended pro forma capital structure comprised of 29.0 percent debt and 71.0 percent
11 equity is considerably less leveraged than that of Staff's sample average capital structure,
12 and relatively equity rich by comparison.

13
14 Second, while Staff would agree with the general proposition that smaller companies are
15 riskier than larger companies, empirical research has demonstrated that a small company
16 risk premium adjustment to the cost of equity is unwarranted for regulated utilities. Annie
17 Wong, of Western Connecticut State University, conducted a study on utility stocks to
18 determine if the so-called size effect exists in the utility industry, and she writes as
19 follows:

20 The fact that the two samples show different, though weak, results
21 indicates that utility and industrial stocks do not share the same
22 characteristics. First, given firm size, utility stocks are consistently less
23 risky than industrial stocks. Second, industrial betas tend to decrease with
24 firm size but utility betas do not. These findings may be attributed to the
25 fact that all public utilities operate in an environment with regional
26 monopolistic power and regulated financial structure. As a result, the
27 business and financial risks are very similar among the utilities regardless

1 of their size. Therefore, utility betas would not necessarily be expected to
2 be related to firm size.
3

4 The object of this study is to examine if the size effect exists in the utility
5 industry. After controlling for equity values, there is some weak evidence
6 that firm size is a missing factor from the CAPM for the industrial but not
7 for the utility stocks. *This implies that although the size phenomenon has*
8 *been strongly documented for industrials, the findings suggest that there is*
9 *no need to adjust for the firm size in utility regulations.* [emphasis
10 added].³¹
11

12 To underscore this point, Paschall and Hawkins write as follows:

13 A size premium does not automatically apply in every case. Each privately
14 held company should be analyzed to determine if a size premium is
15 appropriate in its particular case. There can be unusual circumstances
16 where a small company has risk characteristics that make it far less risky
17 than the average company, warranting the use of a very low equity risk
18 premium. One possible example of this is a private water utility
19 (monopoly situation, very low risk, near-guarantee of payments).³²
20

21 **Q. Has the Commission previously ruled on the issue of firm size and whether it**
22 **warrants a risk premium adjustment to the cost of equity?**

23 **A.** Yes. The Commission previously ruled in Decision No. 64282³³ for Arizona Water that
24 firm size does not warrant recognition of a risk premium stating, "We do not agree with
25 the Company's proposal to assign a risk premium to Arizona Water based on its size
26 relative to other publicly traded water utilities..." The Commission confirmed its
27 previous ruling in Decision No. 64727³⁴ for Black Mountain Gas agreeing with Staff that
28 "the 'firm size phenomenon' does not exist for regulated utilities, and that therefore there
29 is no need to adjust for risk for small firm size in utility regulation." All companies have
30 firm-specific risks; therefore, the existence of unique risks for a company does not lead to

³¹ Annie Wong, "Utility Stock and the Size Effect: An Empirical Analysis," *Journal of the Midwest Finance Association*, (1993), p.98.

³² Michael A. Paschall and George B. Hawkins, "Do Smaller Companies Warrant a Higher Discount Rate for Risk?: The 'Size Effect' Debate," *CCH Business Valuation Alert*, Vol. 1, Issue No. 2, December 1999.

³³ Dated December 28, 2001.

³⁴ Dated April 17, 2002.

1 the conclusion that its total risk is greater than other entities. Moreover, as previously
2 discussed, investors cannot expect compensation for firm-specific risk since it can be
3 eliminated through diversification.
4

5 **XI. CONCLUSION**

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

7 A. Staff recommends that the Commission adopt a 7.9 percent overall rate of return for the
8 Company based on a capital structure composed of 29.0 percent debt and 71.0 percent
9 equity, Staff's 4.6 percent cost of debt, Staff's 8.7 percent cost of equity estimate, and
10 Staff's 60 basis point (0.60 percent) upward economic assessment adjustment.
11

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

13 A. Yes, it does.

Lago Del Oro Water Company 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	29.0%	4.6%	1.3%
Common Equity	71.0%	9.3%	<u>6.6%</u>
Weighted Average Cost of Capital			7.9%
Company Proposed Structure			
Debt	41.09%	6.00%	2.47%
Common Equity	58.91%	10.50%	<u>6.19%</u>
Weighted Average Cost of Capital			8.65%

[D] : [B] x [C]

Supporting Schedules: JAC-2, JAC-3 and JAC-4.

Intentionally left blank

Lago Del Oro Water Company Cost of Capital Calculation
 Average Capital Structure of Sample Water Utilities

[A]	[B]	[C]	[D]
<u>Company</u>	<u>Debt</u>	<u>Common Equity</u>	<u>Total</u>
American States Water	43.3%	56.7%	100.0%
California Water	54.2%	45.8%	100.0%
Aqua America	55.2%	44.8%	100.0%
Connecticut Water	55.3%	44.7%	100.0%
Middlesex Water	43.1%	56.9%	100.0%
SJW Corp	56.2%	43.8%	100.0%
York Water	45.0%	55.0%	100.0%
Average Sample Water Utilities	50.3%	49.7%	100.0%
Lago Del Oro - Actual Capital Structure	29.0%	71.0%	100.0%

Source:

Sample Water Companies from Value Line

Lago Del Oro Water Company Cost of Capital Calculation
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
<u>Company</u>	Dividends Per Share 2002 to 2012 <u>DPS¹</u>	Dividends Per Share Projected <u>DPS¹</u>	Earnings Per Share 2002 to 2012 <u>EPS¹</u>	Earnings Per Share Projected <u>EPS¹</u>
American States Water	3.9%	8.4%	7.7%	3.8%
California Water	1.2%	7.4%	5.0%	5.8%
Aqua America	7.7%	9.7%	7.3%	10.7%
Connecticut Water	1.7%	2.9%	3.2%	3.3%
Middlesex Water	1.6%	1.6%	2.1%	5.0%
SJW Corp	4.4%	4.9%	4.2%	6.3%
York Water	<u>4.4%</u>	<u>3.8%</u>	<u>6.1%</u>	<u>4.6%</u>
Average Sample Water Utilities	3.6%	5.5%	5.1%	5.6%

¹ Value Line

Lago Del Oro Water Company Cost of Capital Calculation
Sustainable Growth
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]
<u>Company</u>	Retention Growth 2002 to 2012 <u>br</u>	Retention Growth Projected <u>br</u>	Stock Financing Growth <u>vs</u>	Sustainable Growth 2002 to 2012 <u>br + vs</u>	Sustainable Growth Projected <u>br + vs</u>
American States Water	3.8%	5.2%	1.6%	5.4%	6.8%
California Water	2.4%	3.2%	1.7%	4.1%	4.9%
Aqua America	3.9%	5.3%	1.9%	5.8%	7.2%
Connecticut Water	2.0%	3.3%	4.2%	6.2%	7.5%
Middlesex Water	1.2%	2.8%	2.9%	4.2%	5.7%
SJW Corp	3.5%	3.8%	0.1%	3.6%	3.9%
York Water	<u>2.2%</u>	<u>2.8%</u>	<u>4.6%</u>	<u>6.8%</u>	<u>7.5%</u>
Average Sample Water Utilities	2.7%	3.8%	2.4%	5.1%	6.2%

[B]: Value Line

[C]: Value Line

[D]: Value Line, MSN Money, and Form 10-Ks filed with the Securities and Exchange Commission (<http://www.sec.gov>)

[E]: [B]+[D]

[F]: [C]+[D]

Lago Del Oro Water Company Cost of Capital Calculation
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]
		Spot Price		Mkt To	<i>Value Line</i>	Raw
<u>Company</u>	<u>Symbol</u>	<u>12/18/2013</u>	<u>Book Value</u>	<u>Book</u>	<u>β</u>	<u>β_{raw}</u>
American States Water	AWR	28.60	11.94	2.4	0.70	0.52
California Water	CWT	22.37	11.75	1.9	0.65	0.45
Aqua America	WTR	23.76	8.05	3.0	0.60	0.37
Connecticut Water	CTWS	34.33	14.06	2.4	0.75	0.60
Middlesex Water	MSEX	20.28	12.11	1.7	0.70	0.52
SJW Corp	SJW	28.89	15.35	1.9	0.85	0.75
York Water	YORW	20.98	8.25	2.5	0.70	0.52
Average				2.3	0.71	0.53

[C]: Msn Money

[D]: Value Line

[E]: [C] / [D]

[F]: Value Line

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

Lago Del Oro Water Company Cost of Capital Calculation
 Calculation of Expected Infinite Annual Growth in Dividends
 Sample Water Utilities

[A]	[B]
<u>Description</u>	<u>g</u>
DPS Growth - Historical ¹	3.6%
DPS Growth - Projected ¹	5.5%
EPS Growth - Historical ¹	5.1%
EPS Growth - Projected ¹	5.6%
Sustainable Growth - Historical ²	5.1%
<u>Sustainable Growth - Projected²</u>	<u>6.2%</u>
Average	5.2%

¹ Schedule JAC-5

² Schedule JAC-6

Lago Del Oro Water Company Cost of Capital Calculation
 Multi-Stage DCF Estimates
 Sample Water Utilities

[A] Company	[B] Current Mkt. Price (P_0) ¹ 12/18/2013	[C] Projected Dividends ² (Stage 1 growth)	[D] (D_t)	[E] d ₁	[F] d ₂	[G] d ₃	[H] d ₄	[I] Stage 2 growth ³ (g_n)	[J] Equity Cost Estimate (K) ⁴
American States Water	28.6	0.76	0.80	0.84	0.89	6.5%	9.1%		
California Water	22.4	0.65	0.68	0.71	0.75	6.5%	9.3%		
Aqua America	23.8	0.59	0.62	0.66	0.69	6.5%	8.9%		
Connecticut Water	34.3	1.01	1.07	1.12	1.18	6.5%	9.4%		
Middlesex Water	20.3	0.79	0.83	0.87	0.92	6.5%	10.3%		
SJW Corp	28.9	0.73	0.77	0.81	0.85	6.5%	9.0%		
York Water	21.0	0.58	0.61	0.64	0.68	6.5%	9.2%		

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

Average 9.3%

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

1 [B] see Schedule JAC-7

2 Derived from Value Line Information

3 Average annual growth in GDP 1929 - 2012 in current dollars.

4 Internal Rate of Return of Projected Dividends