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BEFORE THE ARIZONA CORPORATI

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COMMISSIONERS
MARC SPITZER- Chairman
WILLIAM A. MUNDELL
JEFF HATCH-MILLER
MIKE GLEASON
KRISTIN K. MAYES

IN THE MATTER OF THE APPLICATION OF) DOCKET NO. W-01583A-04-0178
LAS QUINTAS SERENAS WATER COMPANY)
FOR AN INCREASE IN ITS WATER RATES)
FOR CUSTOMERS WITHIN PIMA COUNTY,)
ARIZONA.)
)
)
)
)

Staff of the Arizona Corporation Commission hereby files the Direct Testimony of Elena Zestrijan, Alejandro Ramirez, of the Utilities Division and Dorothy Hains, of the Engineering Division, in the above-referenced matter.

RESPECTFULLY SUBMITTED this 20th day of August, 2004.

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Phoenix, Arizona 85007

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General Manager/Operator
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Arizona Corporation Commission

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**DIRECT
TESTIMONY
OF
ELENA ZESTRIJAN
ALEJANDRO RAMIREZ
DOROTHY HAINS
DOCKET NO. W-01583A-04-0178**

**IN THE MATTER OF THE APPLICATION OF
LAS QUINTAS SERENAS WATER COMPANY
FOR AN INCREASE IN ITS WATER RATES
FOR CUSTOMERS WITHIN PIMA COUNTY, ARIZONA**

AUGUST 20, 2004

ZESTRIJAN

BEFORE THE ARIZONA CORPORATION COMMISSION

MARC SPITZER
Chairman
WILLIAM A. MUNDELL
Commissioner
JEFF HATCH-MILLER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER COMPANY)
FOR AN INCREASE IN ITS WATER RATES)
FOR CUSTOMERS WITHIN PIMA COUNTY,)
ARIZONA)
_____)

DOCKET NO. W-01583A-04-0178

DIRECT
TESTIMONY
OF
ELENA ZESTRIJAN
PUBLIC UTILITIES ANALYST III
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

AUGUST 20, 2004

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**EXECUTIVE SUMMARY
LAS QUINTAS SERENAS WATER COMPANY
DOCKET NO. W-01583A-04-0178**

Las Quintas Serenas Water Company ("LQS" or "Company") is an Arizona public service corporation engaged in providing water utility services in a portion of southern Pima County, Arizona, pursuant to certificates of convenience and necessity granted by the Arizona Corporation Commission to LQS and its predecessors. At the present time, LQS provides utility service to approximately 905 customers within its certificated area located in the vicinity of Green Valley, south of Tucson, Arizona. LQS's previous rate case was based on a test year ended June 30, 1984.

The Company requested an increase in revenues of \$88,993, or 30.97 percent, on an original cost rate base ("OCRB") of \$198,058, for an overall rate of return of 30.00 percent. This would increase the typical residential bill having a median usage of 8,831 gallons from \$19.29 to \$24.51, for an increase of \$5.22 or 27.06 percent

Staff proposes no change in revenue, on an OCRB of \$161,341 for an 8.47 percent rate of return. Due to the Staff's recommended three tier rates, the typical residential bill having a median usage of 8,831 gallons will decrease from \$19.29 to \$18.41, for a decrease of \$.88 or 4.56 percent.

1 **INTRODUCTION**

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

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

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

7 A. I am employed by the Utilities Division of the Arizona Corporation Commission
8 ("Commission" or "ACC") as a Public Utilities Analyst III.

9
10 **Q. Please describe your work experience.**

11 A. I completed my education and began my accounting career in 1968, in Melbourne,
12 Australia. In 1978 I was hired by the Phoenix Newspapers, Inc. in the capacity of
13 Budget/Financial Analyst until March of 2000. My responsibilities included coordination
14 of annual operating budgets/forecasts, capital expenditures, quarterly
15 projections/revisions, monthly budget/history variance commentary/analysis, quarterly
16 Board of Director's schedules. I also participated in the implementation of two budget
17 systems.

18
19 On September 18, 2000, I joined the Financial Regulatory Analysis Section within the
20 Utilities Division ("Staff") of the Commission. My duties include review and analysis of
21 financial records and other documents of regulated utilities for accuracy, consistency,
22 completeness, and reasonableness. I also prepare work papers and schedules supporting
23 expert testimony and Staff reports in connection with utility applications for changes in
24 rates.

25
26
27

1 **PURPOSE OF TESTIMONY**

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

3 A. The purpose of my testimony in this proceeding is to present Staff's analysis and
4 recommendations concerning the original cost rate base ("OCRB"), revenue requirement,
5 and the rate design regarding the Las Quintas Serenas Water Company ("LQS" or
6 "Company") rate increase application received on March 9, 2004.

7
8 **BACKGROUND**

9 **Q. Please provide a brief description of LQS and the service it provides.**

10 A. LQS is an Arizona public service corporation, serving approximately 905 customers in a
11 portion of southern Pima County, Arizona.

12
13 LQS's current rates were approved in Decision No. 54760, dated November 13, 1985, and
14 went into effect on December 1, 1985. LQS is using a test year ending September 30,
15 2003 in this proceeding.

16
17 **SUMMARY OF TESTIMONY AND RECOMMENDATIONS**

18 **Q. Please summarize the Company's and Staff's proposals.**

19 A. The Company's rate application requests an increase in total revenues of \$88,993 from the
20 test year adjusted amount of \$287,332 or a 30.97 percent increase over its test year
21 revenue as shown in Schedule ENZ-1.

22
23 Staff is recommending no change in revenue from the test year adjusted amount of
24 \$287,332.

25
26 The Company proposed a rate of return of 30 percent on an OCRB of 198,058.

1 Staff recommends a rate of return of 8.47 percent on Staff's recommended OCRB of
2 \$161,341.

3

4 **Q. What is the basis of Staff's recommendations?**

5 A. Staff performed a regulatory audit of the Company's books and records to determine
6 whether sufficient evidence exists to support the Company's request for an increase in its
7 rates and charges. The regulatory audit consisted of examining and testing the Company's
8 accounting ledgers and reports, checking the accumulation of amounts in the records,
9 tracing recorded amounts to source documents, verifying the correct application of data
10 with applicable standards of third parties, and verifying whether the accounting principles
11 applied are in accordance with the Commission-authorized National Association of
12 Regulatory Utility Commissioners ("NARUC") Uniform System of Accounts ("USOA").
13 In preparing its case, Staff visited the office of Dale R. Calvert, Certified Public
14 Accountants, whose office is providing accounting services to LQS, to conduct an audit.
15 Staff also reviewed previous rate and other Commission Decisions applicable to this
16 Company. Staff held discussions with Company representatives and composed a number
17 of written requests for data.

18

19 **Q. What test year was used by the Company in this filing?**

20 A. LQS Water Company used a historical test year covering the twelve months ending
21 September 30, 2003.

22

23 **Q. Did Staff accept the test year as filed by the Company?**

24 A. Yes. The September 30, 2003, test year selected was a 12-month period which was recent
25 enough for purposes of preparing the rate case filing. The Company chose not to include
26 pro forma plant or revenue, but included expense adjustments. Staff evaluated and either
27 accepted or removed Company's adjustments.

1 **ORIGINAL COST RATE BASE**

2 **Q. Has Staff prepared a schedule detailing the Company's proposed OCRB and Staff's**
3 **recommended OCRB?**

4 A. Yes. Schedule ENZ-3 shows the Company's proposed OCRB and Staff's recommended
5 OCRB.

6
7 **Q. Is Staff recommending any changes to the Company's proposed OCRB?**

8 A. Yes. The Company proposed an OCRB of \$198,058. Staff recommends an OCRB of
9 \$161,341, or a reduction of \$36,717.

10
11 **Q Did the Company prepare a schedule of Reconstruction Cost New Less Depreciation**
12 **Rate Base ("RCND")?**

13 A. Yes. The Company did file RCND schedules, but withdrew them at a later date.
14 Consequently, OCRB is the same as fair value rate base ("FVRB") in this case.

15
16 **PLANT IN SERVICE**

17 **Q. Please outline your adjustments to Plant in Service.**

18 A. Staff's adjustments to plant in service resulted in a decrease of \$942, as shown on
19 Schedule ENZ-3.

20
21 **Q. Please explain Staff's adjustment to plant in service.**

22 A. The adjustment to reduce plant in service by \$942 represents the total of numerous errors
23 in various additions and deletions occurring over the last twenty years, since the
24 Company's prior rate case.

1 **ACCUMULATED DEPRECIATION**

2 **Q. Please explain Staff's adjustment to accumulated depreciation.**

3 A. Staff recommends accumulated depreciation of \$688,486, a \$2,935 increase to the
4 Company-proposed amount of \$685,551, as shown on Schedule ENZ -3.

5
6 Staff calculated accumulated depreciation by adding depreciation expense for the
7 intervening years to the Commission-approved balance of June 30, 1984, which was the
8 test year in the prior rate case. Staff's accumulated depreciation calculation resulted in an
9 increase to accumulated depreciation of \$2,935.

10
11 **METER ADVANCES**

12 **Q. Please explain Staff's adjustment to meter advances.**

13 A. Staff's adjustment of \$31,649, is to record meter advances not included in the Company's
14 application. This amount was reflected in the Company's books and records.

15
16 **DEFERRED INCOME TAX CREDITS**

17 **Q. Please explain Staff's adjustment to deferred income tax credits.**

18 A. The Company did not report any deferred income tax in its application but its balance
19 sheet reflected deferred credits in excess of \$55,000. After discussion with the
20 Company's accountant, the deferred credit was revised to \$1,191. This item is included
21 by Staff as a reduction to rate base because \$1,191 represents taxes paid by ratepayers but
22 not yet paid by the Company.

23
24 **OPERATING REVENUE**

25 **Q. Did Staff prepare a schedule showing the Company's proposed test year revenue and**
26 **Staff's recommended test year revenues?**

27 A. Yes. This information is found on Schedule ENZ-9.

1 **Q. Has Staff recommended any changes to the Company's test year operating revenue?**

2 A. No. Staff concurs with the Company's revenue as filed.
3

4 **OPERATING EXPENSES**

5 **Q. What is the Company's proposed operating expenses and Staff recommended**
6 **operating expenses?**

7 A. This information is found on Schedule ENZ-9. The Company claimed expenses of
8 \$294,310. Staff is recommending operating expenses of \$273,673, or a \$20,637 decrease.
9 Staff's recommended change is detailed below.
10

11 **Q. Please discuss Staff's \$2,065 adjustment to Salaries and Wages.**

12 A. Staff's disallowance of \$2,065 in salaries and wages is based on information received
13 from the Company's Board of Director's minutes, which approved hourly rates and Staff's
14 review of actual time sheets. Staff's calculation was strictly based on the hourly rate and
15 time sheets provided by the Company. Staff accepted Company's annualized salaries for
16 six months of the test year in the amount of \$1,362.
17

18 **Q. Please explain Staff's \$9,931 adjustment to Repairs and Supplies.**

19 A. Staff reduced repairs and maintenance expense, a one-time cleaning around the wells by
20 \$9,931. This expense is extraordinary and will not be repeated in the foreseeable future.
21

22 **Q Please explain Staff's \$752 adjustment to Water Testing Expense.**

23 A Staff reduced water testing expense by \$752 to reflect Staff Engineer's recommendation.
24
25
26

27 **Q Please explains Staff's \$4,000 adjustment to Rate Case Expense.**

1 A LQS's application included a pro forma rate case expense in the amount of \$6,000. Staff
2 normalized the \$6,000 over three years to allow the Company to recover incurred
3 expenses over a traditional period.

4
5 **Q Please explain Staff's \$2,789 adjustment to Transportation Expense.**

6 A Staff reduced transportation expense by \$2,789, to disallow a mileage reimbursement to
7 Ms. Janice Gay a non-employee of LQS. The Company owns two trucks and the gas and
8 maintenance expense is already included in the transportation expense category. A
9 Company employee's mileage reimbursement was accepted by Staff. LQS has three
10 employees, two part-time and one full-time, therefore the use of a fourth vehicle was not
11 necessary and is not in the interest of the ratepayers.

12
13 **Q Please explain Staff's \$673 adjustment to Miscellaneous Expense.**

14 A Staff reduced miscellaneous expense for the long distance telephone charges. As a result
15 of Staff's audit findings that some out of state long distance telephone numbers appeared
16 on the telephone bill multiple times. LQS is engaged in serving local customers, and did
17 not confirm its need for long distance calls.

18
19 **Q. Please explain Staff's adjustment to decrease Depreciation Expense.**

20 A. Staff calculated depreciation expense on a going-forward basis using the recommended
21 depreciation rates as shown in Section J of the Engineering Report. This resulted in a
22 decrease in depreciation expense of \$5,082.

23
24 **Q. Please explain Staff's adjustment to Property Taxes.**

25 A. Staff's adjustment in the amount of \$1 increased property taxes, as a result of Staff's use
26 of Arizona Department of Revenue methodology and rates for property tax calculation.

27 **Q. Please explain Staff's adjustment to Federal and State Income Tax Expense.**

- 1 A. Adjustment in the amount of \$4,654 increases federal and state income tax due to Staff
2 audit findings increasing operating income in the test year.

3

4 **REVENUE REQUIREMENT**

- 5 **Q. What is the Company's proposed revenue requirement and Staff's recommended**
6 **revenue requirement?**

- 7 A. The Company's proposed rates produce operating revenues of \$376,325 and operating
8 income of \$59,417 or a 30.00 percent rate of return on an OCRB of \$198,058.

9

10 Staff's recommended rates result in operating revenues of \$287,332 and operating income
11 of \$13,659 for an 8.47 percent rate of return on an OCRB of \$161,341.

12

- 13 **Q. Did Staff prepare a schedule summarizing its recommended revenue requirement?**

- 14 A. Yes. Please refer to Schedule ENZ-1

15

16 **RATE DESIGN**

- 17 **Q. Please explain Staff's proposed rate design.**

- 18 A. Staff's proposed rates produce a revenue level of \$287,332. This represents no change
19 from adjusted test year revenues of \$287,332. However, due to Staff's recommended
20 three tier rates for the residential consumers, the typical residential bill having a median
21 usage of 8,831 gallons will decrease from \$19.29 to \$18.41 for a decrease of \$.88, or 4.56
22 percent.

23

24 The present rate design consists of a single tier commodity rate and the Company's
25 proposed rates consist of two tiers for all classes of customers.

26

1 The residential customer class consumed 87 percent of the total water sold. Consequently,
2 Staff recommended a three-tier rate structure that was designed for the usage of residential
3 customers and a two-tier rate structure that was designed for the usage of commercial
4 customers. This is compatible with water conservation efforts.

5
6 The first tier break at 4,000 gallons applies to 100 percent of the residential customers.
7 The second tier break at 23,000 gallons applies to 71 percent of the residential customers.
8 The third tier break is in excess of 23,000 gallons and applies to 12 percent of the
9 residential customers.

10

11 **ARSENIC REMOVAL**

12 **Q. Does the Company have an arsenic problem?**

13 A. Yes. The Company hopes to solve it by blending. Staff also offered analysis if blending
14 is not viable. Staff estimated arsenic removal equipment cost amounting to approximately
15 \$215,000 (see Engineering Report).

16

17 **Q. Has Staff proposed any financing mechanism for the possibility the Company might**
18 **have to expend \$215,000?**

19 A. No, Staff has confirmed that the Company has liquid assets in excess of \$200,000 that is
20 ear-marked for arsenic treatment.

21

22 **STAFF RECOMMENDATIONS**

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

24 A. Staff recommends approval of its rates and charges as depicted on Schedule ENZ - 9.

25

26 Staff further recommends an 8.47 percent rate of return on Staff's recommended OCRB of
27 \$161,341.

1 Staff further recommends that LQS be ordered to use the depreciation rates as shown in
2 Exhibit 6 of the Engineering Report.

3
4 LQS has submitted a curtailment tariff. Staff has reviewed the Company's proposed
5 curtailment tariff and has determined that it is consistent with the model curtailment tariff
6 template which has been approved by the Arizona Corporation Commission for use by
7 water utilities. Therefore, Staff recommends that the proposed curtailment tariff filed by
8 LQS be approved.

9
10 Staff further recommends that LQS submit its detailed arsenic removal plan to the
11 Director of the Utilities Division by December 2004 (see Engineering Report, Section L).

12
13 Staff further recommends a provision be included in the Company's tariff to allow for the
14 flow-through of all appropriate state and local taxes as provided for in Arizona
15 Administrative Code Rule 14-2-409(D)(5).

16
17 **Q. Does this conclude your direct testimony?**

18 **A.** Yes, it does.

REVENUE REQUIREMENT

LINE NO.	DESCRIPTION	[A] COMPANY ORIGINAL COST	[B] STAFF ORIGINAL COST
1	Adjusted Rate Base	\$ 198,058	\$ 161,341
2	Adjusted Operating Income (Loss)	\$ (6,978)	\$ 13,659
3	Current Rate of Return (L2 / L1)	-3.52%	8.47%
4	Required Rate of Return	30.00%	8.47%
5	Required Operating Income (L4 * L1)	\$ 59,417	\$ 13,659
6	Operating Income Deficiency (L5 - L2)	\$ 66,395	\$ 0
7	Gross Revenue Conversion Factor	1.32940	1.26459
8	Increase In Gross Revenue (L7 * L6) Note A	\$ 88,993	\$ 0
9	Adjusted Test Year Revenue	\$ 287,332	\$ 287,332
10	Proposed Annual Revenue (L8 + L9) Note B	\$ 376,325	\$ 287,332
11	Required Increase in Revenue (%) (L8/L9) Note C	30.97%	0.00%
A	Company's application indicates Based on Staff's formula, correct figure is increase In Gross Revenue (L7 * L6)	\$ 88,993 \$ 88,266	
B	Company's application Based on Staff's formula, correct figure is Proposed Annual Revenue (L8 + L9)	\$ 376,325 \$ 375,598	
C	Company's application Based on Staff's formula, correct percent is Required Increase in Revenue (%) (L8/L9)	30.72%	

Staff used Company's application amounts but also reflects actual amounts in NOTES so that actual results can be seen.

GROSS REVENUE CONVERSION FACTOR

Line
No.

Calculation of Gross Revenue Conversion Factor:

1 Recommended Revenue Increase:		
2 Billings		1.000000
3 Combined Federal and State Income Tax Rate	20.92280%	
4 Uncollectible Rate After Income Taxes	0.00000%	
5 Total Tax Rate		<u>20.92280%</u>
6 Gross Revenue Conversion Factor		<u><u>1.264587</u></u>

Calculation of Effective Income Tax Rate:

7 Operating Income Before Taxes (Arizona Taxable Income)	100.00000%
8 Arizona State Income Tax Rate	<u>6.96800%</u>
9 Federal Taxable Income (L7 - L8)	93.03200%
10 Applicable Federal Income Tax Rate (Line 36)	<u>15.00000%</u>
11 Effective Federal Income Tax Rate (L9 x L10)	<u>13.95480%</u>
12 Combined Federal and State Income Tax Rate (L8 +L11)	<u><u>20.92280%</u></u>

Calculation of Uncollectible Rate After Income Taxes:

13 Uncollectible Rate		0.00000%
14 Combined Federal and State Income Tax Rate	20.92280%	
15 1 minus Combined Federal and State Income Tax Rate		<u>79.07720%</u>
16 Uncollectible Rate After Income Taxes		<u><u>0.00000%</u></u>

Revenue Reconciliation:

17 Recommended Increase in Revenue (from ENZ-1, L8)	\$ 0	
18 Uncollectible Rate	0.000000%	
19 Required Increase in Revenue to Provide for Uncollectibles		\$ -
20 Recommended Increase in Revenue (from ENZ-1,L8)	\$ 0	
21 Required Increase in Revenue to Provide for Uncollectibles	-	
22 Incremental Taxable Income	\$ 0	
23 Combined Federal and State Income Tax Rate	<u>20.92280%</u>	
24 Required Increase in Revenue to Provide for Income Taxes		0
25 Required Operating Income	\$ 13,659	
26 Adjusted Test Year Operating Income (Loss)	<u>13,659</u>	
27 Required Increase in Operating Income		0
28 Total Required Increase/Decrease In Revenue		<u><u>\$ 0</u></u>

Calculation of Income Tax:

	Test Year	STAFF Recommended	
29 Revenue	\$ 287,332	\$ 287,332	
30 Less: Operating Expenses Excluding Income Taxes	\$ 270,059	\$ 270,059	
31 Less: Synchronized Interest	\$ -	\$ -	
32 Arizona Taxable Income	\$ 17,273	\$ 17,273	
33 Arizona State Income Tax Rate	6.968%	6.968%	
34 Arizona Income Tax	\$ 1,204	\$ 1,204	
35 Federal Taxable Income	\$ 16,069	\$ 16,070	
36 Federal Income Tax @ 15%	\$ 2,410	\$ 2,410	
37 Combined Federal and State Income Tax	<u>\$ 3,614</u>	<u>\$ 3,614</u>	
		\$ 0	

Calculation of Interest Synchronization:

38 Rate Base	\$ 161,341
39 Weighted Average Cost of Debt	<u>0.000%</u>
40 Synchronized Interest	<u>\$ -</u>

RATE BASE - ORIGINAL COST

LINE NO.	(A) COMPANY AS FILED	(B) STAFF ADJUSTMENTS	(C) STAFF AS ADJUSTED
1	Plant in Service	\$ 1,461,863	\$ 1,460,921
2	Less: Accumulated Depreciation	(685,551)	(688,486)
4	Net Plant in Service	<u>\$ 776,312</u>	<u>\$ 772,435</u>
<u>LESS:</u>			
5	Advances in Aid of Construction (AIAC)	(508,411)	(508,411)
6	Contributions in Aid of Construction (CIAC)	\$ (104,829)	\$ (104,829)
7	Less: Accumulated Amortization	34,986	34,986
8	Net CIAC	<u>(69,843)</u>	<u>(69,843)</u>
9	Total Advances and Contributions	(578,254)	(578,254)
10	Customer Deposits	-	-
11	Meter Advances	-	(31,649)
12	Deferred Income Tax Credits	-	(1,191)
<u>ADD:</u>			
13	Working Capital	-	-
14	Other Additions	-	-
15	Total Rate Base	<u>\$ 198,058</u>	<u>\$ 161,341</u>

as Quintas Serenas Water Company
 Docket No. W-01583A-04-0178
 Test Year Ended September 30, 2003

SUMMARY OF RATE BASE ADJUSTMENTS

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJ No.1	[C] ADJ No.2	[D] ADJ No.3	[E] ADJ No.4	[N] ADJ No.	[O] STAFF ADJUSTED
<u>PLANT IN SERVICE:</u>								
1	Organization	\$ -	\$ -	\$ -	\$ -	\$ -	-	\$ -
2	Land and Land Rights	5,217	-	-	-	-	-	5,217
3	Structures and Improvements	6,599	-	-	-	-	-	6,599
4	Wells and Structures	259,402	-	-	-	-	-	259,402
5	Pumping Equipment	154,555	-	-	-	-	-	154,555
6	Water Treatment Equipment	-	-	-	-	-	-	-
7	Distribution Reservoirs and Standpipes	82,215	-	-	-	-	-	82,215
8	Transmission and Distribution Mains	822,434	-	-	-	-	-	822,434
9	Services	2,427	(942)	-	-	-	-	1,485
10	Meter and Meter Installations	99,647	-	-	-	-	-	99,647
11	Office Furniture and Equipment	13,424	-	-	-	-	-	13,424
12	Transportation Equipment	9,000	-	-	-	-	-	9,000
13	Miscellaneous Equipment	6,943	-	-	-	-	-	6,943
31	Total Plant in Service - Actual	1,461,863	(942)	-	-	-	-	1,460,921
35	Less: Accumulated Depreciation - Actual	\$ (685,551)	-	(2,935)	-	-	-	(688,486)
41	Net Plant in Service	\$ 776,312	(942)	(2,935)	-	-	-	\$ 772,435
<u>LESS:</u>								
42	Advances in Aid of Construction (AIAC)	\$ (508,411)	-	-	-	-	-	(508,411)
43	Contributions in Aid of Construction (CIAC)	(104,829)	-	-	-	-	-	(104,829)
44	Less: Accumulated Amortization	34,986	-	-	-	-	-	34,986
45	Net CIAC (L25 - L26)	(69,843)	-	-	-	-	-	(69,843)
46	Total Advances and Contributions	(578,254)	-	-	-	-	-	(578,254)
47	Customer Deposits	-	-	-	-	-	-	-
48	Meter Advances	-	-	(31,649)	-	-	-	(31,649)
49	Deferred Tax Credits	-	-	-	(1,191)	-	-	(1,191)
<u>ADD:</u>								
50	Working Capital Allowance	-	-	-	-	-	-	-
56	Deferred Debits	-	-	-	-	-	-	-
57	Other Additions	-	-	-	-	-	-	-
58	Total Rate Base	\$ 198,058	(942)	(2,935)	(31,649)	(1,191)	-	\$ 161,341

Las Quintas Serenas Water Company
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Test Year Ended September 30, 2003

Schedule ENZ-5

RATE BASE ADJUSTMENT NO. 1 - PLANT IN SERVICE

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Actual Test Year Plant	\$ 1,461,863	\$ (942)	\$ 1,460,921

References:

Column: [A] Company Schedule B-2
Column: [B] Testimony ENZ
Column: [C] Column [A] plus column [B]

Las Quintas Serenas Water Company
Docket No. W-01583A-04-0178
Test Year Ended September 30, 2003

Schedule ENZ-6

RATE BASE ADJUSTMENT NO. 2 - ACCUMULATED DEPRECIATION

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Accumulated Depreciation, Actual	\$ (685,551)	\$ (2,935)	\$ (688,486)

References:

- Column [A]: Company Schedule E-5
- Column [B]: Testimony ENZ
- Column [C]: Column [A] plus column [B]

Las Quintas Serenas Water Company
Docket No. W-01583A-04-0178
Test Year Ended September 30, 2003

Schedule ENZ- 7

RATE BASE ADJUSTMENT NO. 3 - METER ADVANCES

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Meter Advances	\$ -	\$ (31,649)	\$ (31,649)

References:

- Column [A]: Company Schedule B-5
- Column [B]: Testimony ENZ
- Column [C]: Column [A] plus column [B]

Las Quintas Serenas Water Company
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Schedule ENZ- 8

RATE BASE ADJUSTMENT NO. 4 - DEFERRED INCOME TAX CREDITS

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENTS	STAFF AS ADJUSTED
1	Deferred Income Tax Credits	\$ -	\$ (1,191)	\$ (1,191)

References:

Column [A]: Company Schedule B-5
Column [B]: Testimony ENZ
Column [C]: Column [A] plus column [B]

OPERATING INCOME - TEST YEAR AND STAFF PROPOSED

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF TEST YEAR ADJUSTMENTS	[C] STAFF TEST YEAR AS ADJUSTED	[D] STAFF PROPOSED CHANGES	[E] STAFF RECOMMENDED
REVENUES:						
1	Total Operating Revenues	\$ 287,332	\$ -	\$ 287,332	\$ 0	\$ 287,332
EXPENSES:						
2	Salaries and Wages	111,468	(2,065)	109,403	-	109,403
3	Purchased Power	30,902	-	30,902	-	30,902
4	Repairs and Supplies	17,851	(9,931)	7,920	-	7,920
5	Water Testing	4,804	(752)	4,052	-	4,052
6	Office Supplies and Expense	7,295	-	7,295	-	7,295
7	Contractual Services	11,177	-	11,177	-	11,177
8	Rate Case Expense	6,000	(4,000)	2,000	-	2,000
9	Rent	5,245	-	5,245	-	5,245
10	Transportation Expenses	5,862	(2,789)	3,073	-	3,073
11	Insurance	9,762	-	9,762	-	9,762
12	Miscellaneous Expense	7,275	(673)	6,602	-	6,602
13	Taxes Other than Property and Income	9,352	-	9,352	-	9,352
14	Administrative Expenses	-	-	-	-	-
	Total Operation and Maintenance	226,993	(20,210)	206,783	-	206,783
15	Depreciation and Amortization	52,949	(5,082)	47,867	-	47,867
16	Ad Valorem (Property)	19,568	1	19,569	-	19,569
	Taxes:					
17	Federal & State Income Tax	(1,040)	4,654	3,614	0	3,614
18	Other	(4,160)	-	(4,160)	-	(4,160)
19	Total Operating Expenses	\$ 294,310	\$ (20,637)	\$ 273,673	\$ 0	\$ 273,673
20	Operating Income (Loss)	\$ (6,978)	\$ 20,637	\$ 13,659	\$ 0	\$ 13,659

Las Quintas Serenas Water Company
 Docket No. W-01583A-04-0178
 Test Year Ended September 30, 2003

SUMMARY OF OPERATING INCOME ADJUSTMENTS - TEST YEAR

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJ #1	[C] ADJ #2	[D] ADJ #3	[J] ADJ #4	[E] ADJ #5	[F] ADJ #6	[G] ADJ #7	[H] ADJ #8	[I] ADJ #9	[K] ADJ #10	[L] STAFF ADJUSTED
REVENUES:													
1	Metered Water Revenue	284,549											
2	Other Water Revenue	2,783											
3	Total Operating Revenues	\$ 287,332											\$ 287,332
EXPENSES:													
4	Salaries and Wages	111,468	(2,065)										109,403
5	Purchased Power	30,902											30,902
6	Repairs and Supplies	17,851		(9,931)									7,920
7	Water Testing	4,804			(752)								4,052
8	Office Supplies and Expense	7,295											7,295
9	Contractual Services	11,177											11,177
10	Rate Case Expense	6,000				(4,000)							2,000
11	Rent	5,245											5,245
12	Transportation Expense	5,862					(2,789)						3,073
13	Insurance	9,762											9,762
14	Miscellaneous Expense	7,275						(673)					6,602
15	Taxes Other than Property and Income	9,352											9,352
16	Administrative Expenses		(2,065)	(9,931)	(752)	(4,000)	(2,789)	(673)					206,783
17	Total Operation and Maintenance	226,993							(5,082)				47,867
18	Depreciation and Amortization	52,949											19,569
19	Ad Valorem (Property)	19,568											
20	Taxes												
20	Federal & State Income Tax	(1,040)									4,654		3,614
21	Other (Deferred Income Tax)	(4,160)											(4,160)
22	Total Operating Expenses	\$ 294,310	\$ (2,065)	\$ (9,931)	\$ (752)	\$ (4,000)	\$ (2,789)	\$ (673)	\$ (5,082)	\$ 1	\$ 4,654	\$ -	\$ 273,673
23	Operating Income (Loss)	\$ (6,978)	\$ 2,065	\$ 9,931	\$ 752	\$ 4,000	\$ 2,789	\$ 673	\$ 5,082	\$ (1)	\$ (4,654)	\$ -	\$ 13,659

OPERATING INCOME ADJUSTMENT NO 1 - SALARIES EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	Salaries	\$ 111,468	\$ (2,065)	\$ 109,403
	Total	\$ 111,468	\$ (2,065)	\$ 109,403

Steve Gay's earnings based on company provided information:

Number of hours worked	2,458	
Board of directors minutes, per hour earnings	26.20	
Hours worked earnings for the test year		64,400
Bonus approved by the board		5,500
Total earnings		<u>69,900</u>

Kathleen Conger' earnings

Number of hours worked	1,659	
Board of directors minutes, per hour earnings	15.43	
Hours worked earnings for the test year		25,598
Bonus approved by the board		1,650
Total earnings		<u>27,248</u>

Charles Grife's earnings

Number of hours worked	691	
Board of directors minutes, per hour earnings	15.04	
Hours worked earnings for the test year		10,393
Bonus approved by the board		500
Total earnings		<u>10,893</u>

Test year 3% increase - annualization

1,362

Total Earnings for the test year

109,403

References:

Column [A]: Company Schedule C-1

Column [B]: Testimony ENZ

Column [C]: Column [A] plus column [B]

Staff's adjustment

(2,065)

Las Quintas Serenas Water Company
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Test Year Ended September 30, 2003

Schedule ENZ- 12

OPERATING INCOME ADJUSTMENT NO 2 - REPAIRS AND SUPPLIES EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	Repairs and Supplies	17,851	\$ (9,931)	7,920
	Total	<u>\$ 17,851</u>	<u>\$ (9,931)</u>	<u>\$ 7,920</u>

References:

- Column [A]: Company Schedule C-1
- Column [B]: Testimony ENZ
- Column [C]: Column [A] plus column [B]

Las Quintas Serenas Water Company
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Schedule ENZ- 13

OPERATING INCOME ADJUSTMENT NO 3 - TRANSPORTATION EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	Vehicle Expense - Janice Gay	5,862	(2,789)	3,073
	Total	<u>\$ 5,862</u>	<u>\$ (2,789)</u>	<u>\$ 3,073</u>

References:

Column [A]: Company Schedule C-1
Column [B]: Testimony ENZ
Column [C]: Column [A] plus column [B]

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Schedule ENZ- 14

OPERATING INCOME ADJUSTMENT NO. 4 - MISCELLANEOUS EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	Miscellaneous	7,275	(673)	6,602
	Total	<u>\$ 7,275</u>	<u>\$ (673)</u>	<u>\$ 6,602</u>

References:

Column [A]: Company Schedule C-1
Column [B]: Testimony ENZ
Column [C]: Column [A] plus column [B]

1 Miscellaneous Expense: Adjustment made to the phone bills.
Staff disallowed long distance/out of state calls

Las Quintas Serenas Water Company
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Schedule ENZ- 15

OPERATING INCOME ADJUSTMENT NO. 5 - WATER TESTING EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJUSTMENT	[C] STAFF AS ADJUSTED
1	Water Testing Cost	\$ 4,804	\$ (752)	\$ 4,052

References:

- Column [A]: Company Schedule C-1
- Column [B]: Testimony ENZ
- Column [C]: Column [A] plus column [B]

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Schedule ENZ- 16

OPERATING INCOME ADJUSTMENT NO. 6 - RATE CASE EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] ADJUSTMENT	[C] STAFF AS ADJUSTED
1	Annual Rate Case Expense	\$ 6,000	\$ -	\$ 6,000
2	Number of Years Normalized	1		3
3	Annual Rate Case Expense	\$ 6,000	\$ (4,000)	\$ 2,000

References:

Column [A]: Company Schedule C-1
Column [B]: Testimony ENZ
Column [C]: Column [A] plus column [B]

Las Quintas Serenas Water Company
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Schedule ENZ-17

OPERATING INCOME ADJUSTMENT NO. 7 - DEPRECIATION EXPENSE

LINE NO.	DESCRIPTION	[A]	[B]	[C]
		COMPANY AS FILED	STAFF ADJUSTMENT	STAFF AS ADJUSTED
1	Depreciation Expense	\$ 52,949	\$ 159	\$ 53,108
2	CIAC Amortization	-	(5,241)	(5,241)
		<u>\$ 52,949</u>	<u>\$ (5,082)</u>	<u>\$ 47,867</u>

References:

- Column [A]: Company Schedule C-1
- Column [B]: Testimony ENZ
- Column [C]: Column [A] plus column [B]

OPERATING INCOME ADJUSTMENT NO. 8 - PROPERTY TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTMENT
1	2001 Annual Gross Revenues			\$ 245,202
2	2002 Annual Gross Revenues			\$ 289,174
3	2003 Annual Gross Revenues			\$ 287,332
4	Plus Staff's Recommended Increase			\$ -
5	Subtotal (Lines 1 + 2 + 3 + 4)			\$ 821,798
6	Three Year Average Calculation			3
7	Three Year Average (Line 5 / Line 6)			\$ 273,933
8	Department of Revenue Multiplier			2
9	Revenue Base Value (Line 7 x Line 8)			\$ 547,865
10	Plus: 10% of 2001 CWIP			\$ -
11	Less: Net Book Value of Leased Vehicles			\$ -
12	Full Cash Value (Line 9 + Line 10 - Line 11)			\$ 547,865
13	Assessment Ratio			0.25
14	Assessed Value (Line 12 x Line 13)			\$ 136,966
15	Composite Property Tax Rate			0.142877
16	Staff Proposed Property Tax Expense (Line 14 x Line 15)	\$ 19,568	\$ 1	\$ 19,569

References:

- Column [A]: Company Schedule C-1
- Column [B]: Testimony ENZ
- Column [C]: Column [A] plus column [B]

Las Quintas Serenas Water Company
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Schedule ENZ- 19

OPERATING INCOME ADJUSTMENT NO. 9 - INCOME TAX EXPENSE

LINE NO.	DESCRIPTION	[A] COMPANY AS FILED	[B] STAFF ADJUSTMENT	[C] STAFF AS ADJUSTED
1	Federal Income Taxes	\$ (697)	\$ 3,107	\$ 2,410
2	State Income Taxes	(343)	\$ 1,547	1,204
3	Total Income Taxes	<u>\$ (1,040)</u>	<u>\$ 4,654</u>	<u>\$ 3,614</u>

References:

Column [A]: Company Schedule C-1

Column [B]: Testimony ENZ

Column [C]: Column [A] plus column [B]

RATE DESIGN

Minimum Monthly Usage Charge			
Present Rates	---Proposed Rates---		
	Company	Staff	

Monthly Usage Charge:

5/8" x 3/4" Meter	\$ 10.00	\$ 12.50	\$ 9.05
1" Meter	\$ 10.00	\$ 12.50	\$ 22.50
1 1/2" Meter	\$ 10.00	\$ 25.00	\$ 53.00
2" Meter	\$ 10.00	\$ 50.00	\$ 66.00
2 1/2" Meter	\$ -	\$ 100.00	\$ 90.00
3" Meter	\$ -	\$ 150.00	\$ 125.00
4" Meter	\$ 250.00	\$ 250.00	\$ 225.00
5" Meter	\$ -	\$ 300.00	\$ 275.00
6" Meter	\$ -	\$ 400.00	\$ 350.00
Standpipe	\$ 10.00	\$ 12.50	\$ 9.05

Gallons Included In Minimum Charge:

5/8" x 3/4" Meter	2,000	0	0
1" Meter	2,000	0	0
2" Meter	2,000	0	0
2 1/2" Meter	N/A	0	0
3" Meter	N/A	0	0
4" Meter	50,000	0	0
5" Meter	N/A	0	0
6" Meter	N/A	0	0
Standpipe	2,000	0	0

RATE DESIGN

Present Rates	---Proposed Rates---	
	Company	Staff

Commodity Rates :

5/8" x 3/4" Meter

Per 1,000 Gallons	0 to 20,000 Gallons	\$	1.36	\$	1.36	N/A
Per 1,000 Gallons	0 to 4,000 Gallons	\$	1.36	\$	1.36	\$ 0.95
Per 1,000 Gallons	Over 20,000 Gallons	\$	1.36	\$	2.05	N/A
Per 1,000 Gallons	4,001 to 23,000 Gallons	\$	1.36	\$	2.05	\$ 1.15
Per 1,000 Gallons	Over 23,000 Gallons	\$	1.36	\$	2.05	\$ 1.35

Commodity Rates :

1" Meter

Per 1,000 Gallons	0 to 20,000 Gallons	\$	1.36	\$	1.36	N/A
Per 1,000 Gallons	0 to 40,000 Gallons	\$	1.36	N/A	\$	1.15
Per 1,000 Gallons	Over 20,000 Gallons	\$	1.36	\$	2.05	N/A
Per 1,000 Gallons	Over 40,000 Gallons	\$	1.36	\$	2.05	\$ 1.35

Commodity Rates :

1 1/2" Meter

Per 1,000 Gallons	0 to 20,000 Gallons	\$	1.36	\$	1.36	N/A
Per 1,000 Gallons	0 to 100,000 Gallons	\$	1.36	N/A	\$	1.15
Per 1,000 Gallons	Over 20,000 Gallons	\$	1.36	\$	2.05	N/A
Per 1,000 Gallons	Over 100,000 Gallons	\$	1.36	N/A	\$	1.35

Commodity Rates :

2" Meter

Per 1,000 Gallons	0 to 20,000 Gallons	\$	1.36	\$	1.36	N/A
Per 1,000 Gallons	0 to 150,000 Gallons	\$	1.36	N/A	\$	1.15
Per 1,000 Gallons	Over 20,000 Gallons	\$	1.36	\$	2.05	N/A
Per 1,000 Gallons	Over 150,000 Gallons	\$	1.36	N/A	\$	1.35

Commodity Rates :

4" Meter

Per 1,000 Gallons	0 to 20,000 Gallons	\$	1.36	\$	1.36	N/A
Per 1,000 Gallons	0 to 400,000 Gallons	\$	1.36	N/A	\$	1.15
Per 1,000 Gallons	Over 20,000 Gallons	\$	1.36	\$	2.05	N/A
Per 1,000 Gallons	Over 400,000 Gallons	\$	1.36	N/A	\$	1.35

Commodity Rates :

Standpipe

Per 1,000 Gallons	0 to 20,000 Gallons	\$	1.36	\$	1.36	N/A
Per 1,000 Gallons	0 to 4,000 Gallons	\$	1.36	\$	1.36	\$ 0.95
Per 1,000 Gallons	Over 20,000 Gallons	\$	1.36	\$	2.05	N/A
Per 1,000 Gallons	4,001 to 23,000 Gallons	\$	1.36	\$	2.05	\$ 1.15
Per 1,000 Gallons	Over 23,000 Gallons	\$	1.36	\$	2.05	\$ 1.35

RATE DESIGN

Service Line and Meter Installation Charge:

	Present Rates	---Proposed Rates---	
		Company	Staff
5/8" x 3/4" Meter	\$ 150.00	\$ 150.00	\$ 150.00
1" Meter	\$ 225.00	\$ 225.00	\$ 225.00
1 1/2" Meter	\$ 350.00	\$ 475.00	\$ 475.00
2" Meter	\$ 500.00	\$ 625.00	\$ 625.00
3" Meter	N/A	\$ 850.00	\$ 850.00
4" Meter	\$ 2,200.00	\$ 1,800.00	\$ 1,800.00
6" Meter	N/A	\$ 3,000.00	\$ 3,000.00

Standpipe Charges

Original Key Deposit (1 Gate Key/ 1 Account Key)	\$ 25.00	\$ 40.00	\$ 30.00
Additional Set	\$ 5.00	\$ 10.00	\$ 5.00

Service Charges:

Establishment	\$ 10.00	\$ 20.00	\$ 15.00
Establishment Fee (After hours)	\$ 15.00	\$ 30.00	\$ 20.00
Re-Establishment Fee (Within 12 Months)	\$ 7.28	\$ -	(a)
Meter Testing by Customer Request	\$ 15.00	\$ 25.00	\$ 20.00
Meter Re-Read by Customer Request	\$ 10.00	\$ 15.00	\$ 15.00
NSF Check Fee	\$ 10.00	\$ 15.00	\$ 10.00
Reconnect Fee	\$ 10.00	\$ 20.00	\$ 10.00
Reconnect Fee (After Hours/Customer Request)	\$ -	\$ 30.00	\$ 15.00
Off Site Facilities Hook-Up Fees	\$ 250.00	\$ 500.00	\$ 250.00
Guarantee Deposit	(b)	(b)	(b)
Late Payment Fee	N/A	(c)	(c)

(a) Number of months off system X minimum monthly charge

(b) Per Commission Rule A.A.C. R14-2-403B

(c) 1.5 percent per Commission Rule.B25

TYPICAL BILL ANALYSIS

General Service 5/8 x 3/4 - Inch Meter

Average Number of Customers: 688

<u>Company Proposed</u>	<u>Gallons</u>	<u>Present Rates</u>	<u>Proposed Rates</u>	<u>Dollar Increase</u>	<u>Percent Increase</u>
Average Usage	12,172	\$23.83	\$29.05	\$5.22	21.9%
Median Usage	8,831	\$19.29	\$24.51	\$5.22	27.1%
<u>Staff Proposed</u>					
Average Usage	12,172	\$23.83	\$22.25	(\$1.58)	-6.6%
Median Usage	8,831	\$19.29	\$18.41	(\$0.88)	-4.6%

Present & Proposed Rates (Without Taxes)
General Service 5/8 x 3/4 - Inch Meter

<u>Gallons Consumption</u>	<u>Present Rates</u>	<u>Company Proposed Rates</u>	<u>% Increase</u>	<u>Staff Proposed Rates</u>	<u>% Increase</u>
0	\$10.00	\$12.50	25.0%	\$9.05	-9.5%
1,000	10.00	13.86	38.6%	10.00	0.0%
2,000	10.00	15.22	52.2%	10.95	9.5%
3,000	11.36	16.58	46.0%	11.90	4.8%
4,000	12.72	17.94	41.0%	12.85	1.0%
5,000	14.08	19.30	37.1%	14.00	-0.6%
6,000	15.44	20.66	33.8%	15.15	-1.9%
7,000	16.80	22.02	31.1%	16.30	-3.0%
8,000	18.16	23.38	28.7%	17.45	-3.9%
9,000	19.52	24.74	26.7%	18.60	-4.7%
10,000	20.88	26.10	25.0%	19.75	-5.4%
15,000	27.68	32.90	18.9%	25.50	-7.9%
20,000	34.48	39.70	15.1%	31.25	-9.4%
25,000	41.28	49.95	21.0%	37.40	-9.4%
50,000	75.28	101.20	34.4%	71.15	-5.5%
75,000	109.28	152.45	39.5%	104.90	-4.0%
100,000	143.28	203.70	42.2%	138.65	-3.2%
125,000	177.28	254.95	43.8%	172.40	-2.8%
150,000	211.28	306.20	44.9%	206.15	-2.4%
175,000	245.28	357.45	45.7%	239.90	-2.2%
200,000	279.28	408.70	46.3%	273.65	-2.0%

RAMIREZ

BEFORE THE ARIZONA CORPORATION COMMISSION

MARC SPITZER
Chairman
WILLIAM A. MUNDELL
Commissioner
JEFF HATCH-MILLER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER COMPANY)
FOR AN INCREASE IN ITS WATER RATES)
FOR CUSTOMERS WITHIN PIMA COUNTY,)
ARIZONA)
_____)

DOCKET NO. W-01583A-04-0178

DIRECT
TESTIMONY
OF
ALEJANDRO RAMIREZ
PUBLIC UTILITIES ANALYST I
UTILITIES DIVISION
ARIZONA CORPORATION COMMISSION

AUGUST 20, 2004

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SCHEDULES

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EXECUTIVE SUMMARY

The direct testimony of Staff witness Alejandro Ramirez addresses the following issues:

Capital Structure – Staff recommends the Commission adopt Las Quintas Serenas’ actual capital structure consisting of 100 percent equity.

Cost of Equity – Staff recommends the Commission adopt an 8.5 percent return on equity (“ROE”). Staff estimated an 8.1 percent ROE for the Applicant based on cost of equity estimates ranging from 7.5 percent (CAPM) to 8.7 percent (DCF). An 8.1 percent ROE would result in a \$764 reduction in the revenue requirement. Since a \$764 impact to the revenue requirement is de minimis, Staff recommends an 8.5 percent ROE to provide no change in the revenue requirement. An 8.5 percent ROE is consistent with Staff’s 7.5 percent to 8.7 percent cost of equity estimate range.

Overall Rate of Return - Staff recommends the Commission adopt an overall rate of return (“ROR”) of 8.5 percent.

1 **INTRODUCTION**

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

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

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

8 A. In my position as a Public Utilities Analyst, I perform studies to estimate the cost of
9 capital component of revenue requirement in rate proceedings. I also perform other
10 financial analyses.

11
12 **Q. Please describe your educational background and professional experience.**

13 A. In 2002, I graduated summa cum laude from Arizona State University, receiving a
14 Bachelor of Science degree in Global Business with a specialization in finance. While
15 attending Arizona State University, I successfully completed the Barrett Honors College
16 curriculum. My course of studies included classes in corporate and international finance,
17 investments, accounting, statistics, and economics. I began employment as a Staff Public
18 Utilities Analyst in 2003. Since that time, I have provided recommendations to the
19 Commission on financings and prepared various studies in the field of cost of capital and
20 econometrics. I have also attended seminars related to general regulatory and business
21 issues.

22
23
24
25

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

2 A. I provide Staff's recommended rate of return in this case. I discuss the appropriate rate of
3 return ("ROR") for establishing the revenue requirement for Las Quintas Serenas Water
4 Company ("Las Quintas Serenas" or "Applicant").
5

6 **SUMMARY OF TESTIMONY AND RECOMMENDATIONS**

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

8 A. Staff's cost of capital testimony is organized in five sections. Section I presents Staff's
9 recommended capital structure. Section II discusses the concepts of risk and expected
10 returns, and presents the methods employed to estimate those returns. Section III presents
11 the findings of Staff's cost of equity capital analysis which relies in the discounted cash
12 flow ("DCF") model and the capital asset pricing model ("CAPM"). Section IV discusses
13 Staff's final cost of equity estimates for the Applicant. Section V presents Staff's ROR
14 recommendation for Las Quintas Serenas.
15

16 **Q. Have you prepared any exhibits to your testimony?**

17 A. Yes. I prepared eight schedules (AXR-1 to AXR-8) that support Staff's cost of capital
18 analysis.
19

20 **Q. What is Staff's recommended rate of return for Las Quintas Serenas?**

21 A. Staff recommends an 8.5 percent ROR, which is based on cost of equity estimates that
22 range from 7.5 percent to 8.7 percent. This rate is calculated on Schedule AXR-1.
23
24
25

1 **I. LAS QUINTAS SERENAS' CAPITAL STRUCTURE**

2 **Q. What capital structure does the Company propose?**

3 A. The Company proposes its actual capital structure which consists of 100 percent equity.
4

5 **Q. Does Staff agree with the Company's proposed capital structure?**

6 A. Yes.
7

8 **II. RISK AND RETURN ON EQUITY**

9 **Capital Costs in General**

10 **Q. What has been the general trend of capital costs in recent years?**

11 A. Interest rates have decreased in recent years. Chart 1 graphs intermediate U.S. treasury
12 rates from January 1999 to April 2004:

13 **Chart 1: Average Yield on 5-, 7-, 10-Year Treasuries**



19 Source: Federal Reserve

20 **Q. What do interest rates imply for equity costs?**

21 A. The capital asset pricing model ("CAPM") suggests that the cost of equity moves in the
22 same direction as interest rates.
23

24

1 **Q. What has been the long-term trend in interest rates and what does it suggest for**
2 **capital costs?**

3 Chart 2 shows that interest rates have declined in the past twenty years and are currently at
4 levels comparable to the 1950's and 1960's. Chart 2 suggests that capital costs, including
5 the cost of equity, have recently been lower than what they have been in decades.

6
7 **Chart 2: History of 5- and 10-Year Treasury Yields**



8
9
10
11 Source: Federal Reserve

12
13 **Q. What have historical returns been for average risk securities?**

14 A. Jeremy Siegel, a Wharton School finance professor, found that the average arithmetic and
15 compound annual returns on U.S. equities have been 9.7 percent and 8.3 percent,
16 respectively, using 199 years of data through 2001.¹

17
18 **Q. Do the returns presented in Professor Siegel's study represent the cost of equity for**
19 **those years?**

20 A. No. The cost of equity represents investors' expected returns. The returns presented by
21 Professor Siegel are actual returns and not expected returns. However, an allowed ROE at

¹ Siegel, Jeremy J. *Stocks for the Long Run*, third edition. McGraw-Hill, New York. 2002. p.13.

1 or above 10.0 percent clearly exceeds the arithmetic and compound average historical
2 return on U.S. equities for the period studied by Professor Siegel.

3
4 **Q. What information is available to provide insight into the relationship between the**
5 **required return on equity for a regulated water utility and the average return on the**
6 **market?**

7 A. The average beta (0.63)² for a water utility is lower than the theoretical average beta for all
8 stocks (1.0). This implies that the required return on equity for a regulated water utility is
9 below the average required return on the market.

10
11 **Capital Structure and Risk**

12 **Q. Please define risk.**

13 A. Risk can be defined as the level of uncertainty which is inherent in a financial
14 opportunity³. Risk is usually separated into two categories: market risk (also known as
15 systematic risk) and nonmarket risk (also known as unique risk).

16
17 **Q. Could you please differentiate market risk and nonmarket risk?**

18 A. Market risk is defined as the sensitivity of an investment's return to market returns.
19 Market risk affects all stocks and is related to economy-wide perils which threaten all
20 businesses such as inflation, interest rates, and general business cycles. While each of
21 these perils affects all stocks, the impact on each company is not necessarily the same.
22 Market risk is nondiversifiable. Market risk is the only type of risk that affects the cost of
23 equity. Market risk is measured by beta. Beta reflects both the business risk and the
24 financial risk of a firm.

² See Schedule AXR-5

³ Jacob, Nancy, Pettit, Richardson R. *Investments*, second edition. Irwin, Homewood. 1988. p.34.

1 Nonmarket risk, also known as unique risk, is usually uncorrelated across firms in the
2 economy. Unique risk is related to an individual project or company. Investors eliminate
3 this risk by holding a diversified portfolio. Unique risk is not measured by beta, nor does it
4 affect the cost of equity because these firm-specific risks can be eliminated through
5 shareholder diversification. Diversifiable risks are reflected in estimates of expected future
6 cash-flows, not in the cost of equity.

7
8 Investors who hold diversified portfolios do not require additional return for unique risk;
9 therefore, it does not affect the cost of capital. Because investors who choose to be less
10 than fully diversified must compete in the market with fully diversified investors, the
11 former cannot expect to be compensated for unique risk.

12
13 **Q. Do both business and financial risk affect the cost of equity?**

14 **A.** Yes, they do.

15
16 **Q. How are business risk and financial risk defined?**

17 **A.** Business risk is that risk which is associated with the fluctuation in earnings due to the
18 basic nature of a firm's business. Financial risk is that risk which affects shareholders due
19 to a firm's reliance on debt financing.

20
21 **Q. What is the relationship between the capital structure and financial risk?**

22 **A.** A greater percentage of debt in a capital structure results in a higher level of financial risk.
23
24

1 **Q. How does Las Quintas Serenas' capital structure compare to capital structures of**
2 **publicly traded water utilities?**

3 A. Las Quintas Serenas' capital structure is composed of 100 percent equity. The Applicant's
4 shareholders do not bear any financial risk due to the lack of leverage in Las Quintas
5 Serenas' capital structure. Schedule AXR-2 shows the capital structures of six publicly
6 traded water companies ("sample water companies") as of 2003, as well as Las Quintas
7 Serenas' capital structure. As of December 2003, the sample water utilities were
8 capitalized with approximately 49.7 percent debt and 50.3 percent equity, while Las
9 Quintas Serenas capital structure consists of 100 percent equity.

10
11 **Fair and Reasonable Return on Equity**

12 **Q. Define the term "cost of equity."**

13 A. The cost of equity to a firm is the rate of return investors expect to earn on their equity
14 investment in that firm given its risk. The cost of equity is equally defined as the rate of
15 return the investor expects to earn on other investments of similar risk.

16
17 **Methods Employed to Estimate the Return on Equity**

18 **Q. What models did Staff use to estimate Las Quintas Serenas' cost of equity?**

19 A. Staff used two market-based models: the discounted cash flow ("DCF") model and the
20 capital asset pricing model ("CAPM") to estimate Las Quintas Serenas' cost of equity.
21 Staff chose to use market-based models because the cost of equity is determined by the
22 market.

23
24
25

1 **Q. Explain why Staff chose the DCF and CAPM market-based models?**

2 A. Staff chose to use the DCF and CAPM models because they are widely recognized and
3 used in Finance. Further explanation of those models is provided later in Staff's testimony.
4

5 **Q. Did Staff apply the DCF model and the CAPM to Las Quintas Serenas directly?**

6 A. No, Staff did not apply the models directly to Las Quintas Serenas for two reasons. First,
7 Las Quintas Serenas does not have publicly traded stock; therefore, the required
8 information to apply the market-base models is unavailable. Second, any estimate of the
9 cost of equity for a single company stock would inevitably contain a high degree of
10 random fluctuations and thus be subject to considerable error. Using samples of similar
11 companies to estimate the cost of equity gives a more reliable estimate. Accordingly, Staff
12 applied the DCF and CAPM models to a sample of water utilities to estimate Las Quintas
13 Serenas' cost of equity.
14

15 **Q. What companies did Staff select as proxies or comparables for Las Quintas Serenas?**

16 A. Staff selected six publicly traded water utilities shown on Schedule AXR-2. These
17 companies represent the water utilities that are currently analyzed by *The Value Line*
18 *Investment Survey Small and Mid Cap Edition* ("Value Line Small Cap") and *The Value*
19 *Line Investment Survey* ("Value Line") that have a significant amount of revenues derived
20 from regulated operations.
21
22
23

1 **Discounted Cash Flow Model Analysis**

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

4 A. The DCF method of estimating the cost of capital is based on the theory that the present
5 value of a stock (current market price) is calculated the same way as it is for the present
6 value of any other asset. In other words, the current market price of a stock (asset) is equal
7 to the present value of all expected future dividends (cash flows). Through a mathematical
8 formula, the discount rate, or cost of capital, can be estimated from the expected dividend,
9 the market price, and a dividend growth rate. The formula is then applied to each company
10 included in the sample that exhibits similar risk to the company whose cost of equity is
11 being estimated. The results are averaged to arrive to the estimate of the cost of equity.

12
13 **Q. How did the DCF model become a recognized method for estimating the cost of**
14 **equity capital for a public utility?**

15 A. In the 1960s, Professor Myron Gordon pioneered the use of the DCF method to estimate
16 the cost of capital for a public utility. This model has become widely used due to its
17 theoretical merit and its simplicity. In 1998, Professor Gordon discussed the simplicity of
18 his model when he gave the Keynote Address at the 30th Financial Analyst Forum of the
19 Society of Utility and Regulatory Financial Analysts:

20
21 On its simplicity, the model made it extremely difficult, if not
22 impossible, for a banker from Goldman Sachs or some other Wall
23 Street firm, or for a finance professor from a prestige university to
24 use the authority of his/her position to make extravagant claims
25 before a regulatory agency. An independent expert or a member of
26 a commission staff with far less impressive credentials could

1 politely, firmly and effectively deflate any bombast in their
2 testimony.⁴

3
4 **Q. How did Staff apply the DCF Model?**

5 A. Staff applied two different versions of the DCF model. The first version of the DCF used
6 by Staff is the constant-growth DCF Model. The second version is a multi-stage or non-
7 constant growth DCF. The constant-growth DCF Model assumes that a company will
8 grow at the same rate indefinitely. The main assumption and advantage in the non-
9 constant growth DCF model is that it does not assume that dividends grow at a constant
10 rate over time.

11 *The Constant-Growth DCF*

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

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

Equation 1:

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

where: K = the cost of equity
 D₁ = the expected annual dividend
 P₀ = the current stock price
 g = the expected infinite annual growth rate of dividends

14 Equation 1 assumes that the company has a constant retention rate and that its earnings are
15 expected to grow at a constant rate. Therefore, if a stock has a current market price of \$10
16 per share, an expected annual dividend of \$.25 per share, and if its dividends were
17 expected to grow 5 percent per year, then the cost of equity to the company would be 7.5
18 percent (the 2.5 percent dividend yield plus the growth rate of 5.0 percent per year).

⁴ Gordon, M. J. Keynote Address at the 30th Financial Forum of the Society of Utility and Regulatory Financial Analysts. May 8, 1998. Transparency 2.

1 **Q. How did Staff calculate the dividend yield component (D_1/P_0) of the constant-growth**
2 **DCF formula?**

3 A. Staff calculated the yield component of the DCF formula by dividing the expected annual
4 dividend by the spot stock price after the close of the market on July 7th, 2004, as reported
5 by *Yahoo Finance*.

6
7 Staff used the current market stock price (spot stock price) rather than an average to be
8 consistent with finance theory. According to the efficient market hypothesis (“EMH”), the
9 current stock price includes investors’ expectations of future returns and it is the best
10 indicator of those expectations.

11
12 **Q. How did Staff estimate the dividend growth (g) component of the DCF model?**

13 A. As shown in Equation 1, the DCF model is predicated on dividend growth. Therefore,
14 Staff used a combination of historical and projected dividend-per-share (“DPS”) growth
15 provided by *Value Line*. Staff also examined historical and projected growth in earnings-
16 per-share (“EPS”) and intrinsic growth to estimate the dividend growth rate.

17
18 **Q. How did Staff estimate historical DPS growth?**

19 A. Staff estimated historical DPS growth by calculating the average rate of growth in DPS of
20 the sample water companies from 1993 to 2003. The results of the analysis are shown on
21 Schedule AXR-3. Staff’s analysis indicates an average historical DPS growth rate of 2.6
22 percent for the sample water utilities.

23
24
25

1 **Q. What DPS growth rate does *Value Line* project for the sample water utilities?**

2 A. *Value Line* projects a 3.3 percent DPS growth rate for the sample water utilities, also
3 shown in Schedule AXR-3.

4

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

7 A. Staff examined EPS growth to estimate the dividend growth component of the constant-
8 growth DCF model because dividends and earnings are not independent. It is unreasonable
9 to assume investors expect long-term dividend growth to exceed long-term earnings
10 growth because it would lead to payout ratios in excess of 100 percent, which are not
11 sustainable. Therefore, Staff considered historical and projected EPS growth when
12 estimating expected dividend growth.

13

14 **Q. What is Staff's historical EPS growth rate?**

15 A. Schedule AXR-3 shows Staff's historical average rate of growth in EPS for the sample
16 water utilities. Staff's average historical EPS growth rate is 1.7 percent for the period
17 1993 to 2003.

18

19 **Q. What EPS growth rate does *Value Line* project?**

20 A. *Value Line's* projected EPS growth rate is 14.3 percent for the sample water utilities, as
21 shown in Schedule AXR-3. Analysts' projections of the future earnings are usually high⁵
22 and vary widely.

⁵ See Seigel, Jeremy J. Stocks for the Long Run. 2002. McGraw-Hill. New York. p. 100. Malkiel, Burton G. A Random Walk Down Wall Street. 1999. W.W. Norton & Co. New York. p. 169. Dreman, David. Contrarian Investment Strategies: The Next Generation. 1998. Simon & Schuster. New York. pp. 97-98. Testimony of Professors Myron J. Gordon and Lawrence I. Gould, consultant to the Trial Staff (Common Carrier Bureau), FCC Docket 79-63, p. 95.

1 **Q. How was Staff's intrinsic growth rate calculated?**

2 A. Staff's intrinsic growth rate was calculated by adding the retention growth rate term (br) to
3 the stock financing growth rate term (vs).

4
5 **Q. What is retention growth?**

6 A. Retention growth is the product of the retention ratio and the book/accounting return on
7 equity. This concept is based on the theory that dividend growth will not be achieved
8 unless the company retains some of its earnings. Retention growth is a component of
9 Staff's intrinsic growth calculation.

10

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

12 A. The retention growth rate formula is:

13

Equation 2 :

$$g = br$$

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

14

15

16

17

18

19

20

1 **Q. What historical retention (br) growth rate did Staff calculate for the sample water**
2 **utilities?**

3 A. Staff calculated a historical average retention (br) growth of 3.1 percent for the sample
4 water utilities, as it is shown on Schedule AXR-4. This rate was calculated by averaging
5 the retention growth rate for the years 1994 through 2003.

6
7 **Q. Does *Value Line* project retention growth?**

8 A. Yes, it does. *Value Line* projects an average retention growth rate of 4.3 percent for the
9 period 2007-2009 for the sample water utilities, as shown on Schedule AXR-4.

10

11 **Q. Under what circumstances is the br growth rate method a reasonable estimate of**
12 **future dividend growth?**

13 A. The br growth rate is a reasonable estimate of future dividend growth when the retention
14 ratio is fairly constant and the company's market price to book value ("market-to-book
15 ratio") is expected to be 1.0. The average retention ratio has been fairly constant over the
16 past several years. However, the market to book ratio for the sample water utilities is
17 higher than 1.0 (As shown is Schedule AXR-5, it is 2.1). Staff assumes that investors
18 expect the market-to-book ratio to remain above 1.0.

19

20 **Q. What is the financial implication of a market-to-book ratio greater than 1.0?**

21 A. The financial implication of a market-to-book ratio greater than 1.0 is that investors expect
22 the company to earn an accounting/book return on its equity higher than its cost of equity.

23

24

1 **Q. How has Staff accounted for the assumption that investors expect the average**
2 **market-to-book ratio of the sample water utilities to remain above 1.0?**

3 A. Staff added a second growth term to the br growth rate to account for the assumption that
4 investors expect the average market-to-book ratio of the sample water utilities to remain
5 above 1.0.

6
7 **Q. What is the second growth term Staff used to account for the assumption that**
8 **investors expect the average market-to-book ratio of the sample water utilities to**
9 **remain above 1.0?**

10 A. The second growth term used, referred to by Staff as the stock financing growth term
11 (“vs”), is the product of the variable v times the variable s. The vs growth term, derived by
12 Myron Gordon in his book, *The Cost of Capital to a Public Utility*⁶, represents the growth
13 in the company’s dividends due to the sale of stock. The variable v represents the fraction
14 of the funds raised from the sale of stock that accrues to existing shareholders, and s
15 represents the funds raised from the sale of stock as a fraction of the existing common
16 equity.

17
18
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24

⁶ Gordon, Myron J. *The Cost of Capital to a Public Utility*. MSU Public Utilities Studies, Michigan, 1974. pp 31-35.

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

2 A. Variable v is calculated as follows:

3

4

Equation 3:

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

5

6

For example, let's assume that a share of stock has a \$20 book value and is selling for \$25.

7

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

$$v = 1 - \left(\frac{20}{25} \right)$$

8

In this example, v would be equal to 0.20. Staff found that the average v for the sample water utilities is 0.50.

9

10

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

12 A. Variable s is calculated as follows:

13

Equation 4:

14

15

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

16

17

18

19

20

1 For example, assume that a company has \$100 in existing equity, and it sells \$10 of stock.
2 Then, to find the value of s , the formula is applied:

$$s = \left(\frac{10}{100} \right)$$

3 In this example, s would be equal to 10.0 percent. Staff found the average s for the sample
4 water utilities to be 3.7 percent.

5

6 **Q. How does the vs term work?**

7 A. If investors expect a company to earn an accounting/book return on its equity equal to the
8 cost of equity, then the market-to-book ratio will equal 1.0. If the market-to-book ratio is
9 equal to 1.0, the term v will be equal zero (0.0), and consequently, vs will be zero (0.0).
10 When the market-to-book ratio equals 1.0, no funds raised from sale of stock will accrue
11 to existing stock holders, and the dividend growth will depend on the br term.

12

13 On the other hand, if investors expect the company to earn an accounting/book return on
14 its equity that is higher than the cost of equity, the market-to-book ratio will be higher than
15 1.0. The term v will be positive, and consequently, vs will be different from zero. When
16 new shares are issued and sold, the book value per share of outstanding stock is less than
17 the contribution per share of the new stockholders. This excess per share contribution over
18 the book value per share will accrue to existing stockholders in the form of a higher book
19 value. The resulting higher book value leads to a higher expected earnings and dividends.

20

21 The average market-to-book value of the sample water utilities is 2.1. Accordingly, Staff
22 added the vs term to the br growth rate to calculate the intrinsic dividend growth ($g = br +$

1 vs) term of the DCF. The vs term of each of the companies comprised in the sample water
2 utilities is show in Schedule AXR-4.

3
4 **Q. Should utilities' market-to-book ratios fall to 1.0 if their authorized ROEs are set**
5 **equal to their costs of equity?**

6 A. Yes. In theory, if a utility's authorized ROE is set equal to its cost of equity, the utility's
7 market-to-book ratio should decline to 1.0. This would imply that in the long-run, the term
8 vs is unnecessary. However, in reality, rate orders might not force the market-to-book
9 ratios to 1.0 for a variety of reasons. For example, the company might have sources of
10 income that are not regulated, and regulatory commissions do not issue orders
11 simultaneously for utilities that operate in different jurisdictions. Staff's inclusion of the vs
12 term in its constant-growth DCF analysis might result in an over estimate of its intrinsic
13 dividend growth rate and the resulting DCF estimate. Staff's DCF estimates are too high if
14 investors expect the average market-to-book ratio of the sample water utilities' to fall to
15 1.0 due to falling authorized ROEs.

16
17 **Q. What is Staff's intrinsic growth rate?**

18 A. Staff estimated an intrinsic growth rate of 5.1 percent when using historical retention
19 growth and an intrinsic growth rate of 7.0 percent when using retention growth projected
20 by *Value Line*. Schedule AXR-4 presents Staff's estimates of intrinsic growth rate.

21
22 **Q. What is Staff's expected infinite annual growth rate in dividends?**

23 A. Staff calculated the expected infinite annual growth rate in dividends by averaging
24 historical and projected growth rate in dividends per share ("DPS"), earnings per share

1 ("EPS"), and intrinsic growth. Schedule AXR-6 presents the calculation of the expected
2 infinite annual growth rate in dividends. Staff's estimate is 5.7 percent.
3

4 *The Multi-Stage DCF*

5 **Q. Why did Staff implement the multi-stage DCF model to estimate Las Quintas
6 Serenas cost of equity?**

7 A. Staff implemented the multi-stage DCF model to account for the assumption that
8 dividends may not grow at a constant rate. Staff's multi-stage DCF model incorporates
9 two growth rates: a near term growth rate and a long-term growth rate.

10
11 **Q. What is the multi-stage DCF formula?**

12 A. The multi-stage DCF formula is shown in the following equation:
13

Equation 5 :

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

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

1 As mentioned above, Staff incorporated two growth rates. This assumes that investors
2 expect dividends to grow at a certain rate in the near-term ("Stage -1 growth"), and then to
3 grow at another rate in the long-term ("Stage-2 growth").
4

5 **Q. How did Staff implement the multi-stage DCF model?**

6 A. Staff found the cost of equity by first forecasting a stream of dividends, and then finding
7 that rate (cost of equity) which equates the present value of the stream of dividends to the
8 current stock price for each of the sample water utilities, consistent with Equation 5. The
9 stream of forecasted dividends grows at two different rates (near-term growth and long-
10 term growth).
11

12 **Q. How did Staff calculate stage-1 growth?**

13 A. Staff forecasted four years of dividends for each of the sample water utilities using
14 expected dividends over the next twelve months for the first year and *Value Line's*
15 projected DPS growth rate for the subsequent years.
16

17 **Q. How did Staff estimate stage-2 growth?**

18 A. Staff used the rate of growth in gross domestic product ("GDP") from 1929 to 2003. This
19 historical growth is appropriate because it assumes that the water utility industry is
20 expected to grow neither faster, nor slower, than the overall economy.
21

22 **Q. What is the historical growth in GDP that Staff used to estimate stage-2 growth?**

23 A. The historical growth in GDP that Staff used to estimate stage-2 growth is 6.5 percent
24 (1929-2003).

1 **Capital Asset Pricing Model**

2 **Q. Please describe the capital asset pricing model.**

3 A. The CAPM is the best known model of risk and return. In 1990, Professors Harry
4 Markowitz, William Sharpe, and Merton Miller earned the Nobel Prize in Economic
5 Sciences for their contribution to the development of the CAPM. This model is concerned
6 with the determination of the prices of capital assets in a competitive market. The CAPM
7 assumes that investors are risk averse - they require a greater return for bearing greater
8 risk. The model also assumes that investors diversify because it allows them to reduce
9 their level of risk exposure for a given level of expected return.⁷ Mathematically
10 represented, the expected return on a risky asset is equal to the prevailing risk-free interest
11 rate plus the market risk premium which is adjusted for the riskiness of the investment
12 relative to the market.

13
14 **Q. What is the CAPM formula?**

15 A. The CAPM formula is shown in the following equation:

Equation 6 :

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

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

⁷ The CAPM also assumes the following: 1. Single holding period 2. Perfect and competitive securities market 3. No transaction costs 4. No restrictions on short selling or borrowing 5. The existence of a risk-free rate 6. Homogeneous expectations.

1 **Q. What does the beta measure?**

2 A. Beta measures the systematic risk of a company. As stated previously, systematic risk is
3 the only form of risk that is relevant when estimating a company's required return because
4 it is the only risk that cannot be eliminated through diversification. The market's beta is
5 1.0; therefore, a security with a beta higher than 1.0 is riskier than the market, and a
6 security with a beta lower than 1.0 is less risky than the market.

7
8 **Q. How was the CAPM implemented to estimate Las Quintas Serenas' cost of equity?**

9 A. Staff implemented the CAPM on the same sample water utilities used in Staff's DCF
10 analysis.

11
12 **Q. What risk-free rate of interest did Staff estimate?**

13 A. Staff calculated an estimate of the risk-free rate of interest by averaging intermediate-term
14 U.S. Treasury securities' spot rates published in *The Wall Street Journal*. Staff used
15 published spot rates which are determined by the capital markets because they are
16 verifiable, objective and readily available. Staff averaged the yields-to-maturity of three
17 intermediate-term⁸ (five-, seven, and ten-year) U.S. Treasury securities published in the
18 July 7, 2004, edition of *The Wall Street Journal*. Staff estimated the risk-free rate to be 4.0
19 percent.⁹

20

⁸ The use of intermediate-term securities is based on the theoretical specification that the time to maturity approximates the investor's holding period, and assumes that most investors consider the intermediate time frame (5-10 years) a more appropriate investment horizon. See Reilly, Frank K., and Keith C. Brown. *Investment Analysis and Portfolio Management*. 2003. South-Western. Mason, OH. p. 439.

⁹ Average yield on 5-, 7-, and 10-year Treasury notes according to the July 7th, 2004, edition of *The Wall Street Journal*: 3.63%, 4.03%, and 4.48%, respectively.

1

2 **Q. What beta (β) did Staff use?**

3 A. Staff estimated Las Quintas Serenas' beta (β) to be 0.63. Staff averaged the *Value Line*
4 *betas* of the sample water utilities, and used this average as a proxy for Las Quintas
5 Serenas' beta. Schedule AXR-5 shows the *Value Line* betas for each of the sample water
6 utilities.

7

8 **Q. Could you please describe the expected market risk premium ($R_m - R_f$)?**

9 A. The expected market risk premium is the additional amount of return over the risk-free
10 rate that investors expect to receive from investing in the market (or an average-risk
11 security). Staff used two approaches to calculate the market risk premium: the historical
12 market risk premium approach and the current market risk premium approach.

13

14 **Q. Could you describe the historical market risk premium estimate approach?**

15 A. In this approach, Staff assumed that if one consistently uses the long-run average market
16 risk premium to estimate the expected market risk premium, one should, on average, be
17 correct. In this approach Staff assumed that the average historical market risk premium
18 estimate is a reasonable estimate of the expected market risk premium.

19

20 For the market risk premium estimate, Staff used the intermediate-horizon equity risk
21 premium published in the Ibbotson Associates' *Stocks, Bonds, Bills, and Inflation 2003*
22 *Yearbook* for the period 1926-2002. Ibbotson Associates calculated the historical risk
23 premium by averaging the historical arithmetic differences between the S&P 500 and the
24 intermediate-term government bond income returns. Staff's historical market risk
25 premium estimate is 7.4 percent.

1 **Q. Could you describe the current market risk premium estimate approach?**

2 A. In this approach, Staff found a DCF-derived ROE using the expected dividend yield (over
3 the next twelve months) and growth that *Value Line* projects on all dividend-paying stocks
4 under its review (July 2, 2004). Given the DCF-derived ROE, the market's average beta of
5 1.0 and the current long-term risk-free rate, Staff implemented the CAPM to find the
6 implied current market risk premium.

7
8 According to the July 2, 2004, edition of *Value Line*, the expected dividend yield is 1.6
9 percent and the expected annual growth in share price is 9.73 percent.¹⁰ Therefore, the
10 constant-growth DCF estimate of the cost of equity to all dividend-paying stocks followed
11 by *Value Line* is 11.33 percent (9.73percent +1.6 percent). The current market risk
12 premium implied by the CAPM equation using the yield on the 30-year Treasury note
13 (5.22 percent) is 6.1 percent.¹¹

14
15 **Q. What is Staff's expected market risk premium estimate?**

16 A. Staff's market risk premium estimate is 6.1 percent to 7.4 percent.
17
18
19
20
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¹⁰ 3 to 5 year price appreciation potential is 45%. $1.45^{1/4} - 1 = 9.73\%$

¹¹ $11.33\% = 5.22\% + (1) (6.11\%)$

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**III. FINDINGS OF STAFF'S COST OF EQUITY CAPITAL ANALYSIS FOR THE
SAMPLE WATER UTILITIES**

Q. What is the result of Staff's constant-growth DCF analysis?

A. Schedule AXR-8 shows the result of Staff's constant-growth DCF Analysis. The result of Staff's constant-growth DCF analysis is as follows:

$$k = 3.5\% + 5.7\%$$

$$k = 9.2\%$$

Staff's constant-growth DCF estimate of the cost of equity to the sample water utilities is 9.2 percent.

Q. What is the result of Staff's multi-stage DCF analysis?

A. Schedule AXR-7 shows the result of Staff's multi-stage DCF Analysis. The result of Staff's multi-stage DCF analysis is:

Company	Equity Cost Estimate (k)
American States Water	10.1%
California Water	10.1%
Aqua America	9.1%
Connecticut Water	9.8%
Middlesex Water	9.8%
SJW Corp	9.3%
Average	9.7%

Staff's multi-stage DCF estimate of the cost of equity to the sample water utilities is 9.7 percent.

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Q. What is the result of Staff's CAPM analysis using the historical market risk premium estimate?

A. Schedule AXR-8 shows the result of Staff's CAPM analysis using the historical risk premium estimate. The result is as follows:

$$k = 4.0\% + 0.63*(7.4\%)$$

$$k = 8.7\%$$

Staff's CAPM estimate (using the historical market risk premium) of the cost of equity to the sample water utilities is 8.7 percent.

Q. What is the result of Staff's CAPM analysis using the current market risk premium estimate?

A. Schedule AXR-8 shows the result of Staff's CAPM Analysis using the historical risk premium estimate. The result is:

$$k = 4.0\% + 0.63*(6.1\%)$$

$$k = 7.8\%$$

Staff's CAPM estimate (using the current market risk premium) of the cost of equity to the sample water utilities is 7.8 percent.

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Q. Please summarize the results of Staff's cost of equity analysis.

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

Table 1

Method	Estimate
Average DCF Estimate	9.5%
Average CAPM Estimate	8.3%
Overall Average	8.9%

Staff's average estimate of the cost of equity to the sample water utilities is 8.9 percent.

IV. FINAL COST OF EQUITY ESTIMATES FOR LAS QUINTAS SERENAS

Q. Does Las Quintas Serenas' cost of equity depend on its capital structure?

A. Yes, it does. As a company increases its leverage (debt), its cost of equity increases. The average capital structure for the water sample utilities is composed of 50.3 percent equity and 49.7 percent debt as shown on Schedule AXR-2. As mentioned previously, Las Quintas Serenas' capital structure is composed of 100 percent equity; therefore, its stockholders do not bear any financial risk, and its cost of equity is lower than that of the water sample utilities.

Q. Did Staff calculate the effect of Las Quintas Serenas' capital structure on its cost of equity?

A. Yes. Staff relied on the methodology developed by Professor Robert Hamada of the University of Chicago, which incorporates capital structure theory with the CAPM, to estimate the effect of Las Quintas Serenas' capital structure on its cost of equity. Staff calculated a financial risk adjustment for Las Quintas Serenas of negative 80 basis points.

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After applying the financial risk adjuster to Staff's average estimate of the cost of equity to the sample water utilities, Staff estimated an 8.1 percent cost of equity for Las Quintas Serenas.

The calculation is as follows:

Equation 7:

Adjusted ROE = Overall average estimated ROE + Financial risk adj.

Adjusted ROE for Las Quintas Serenas = 8.9% + (-0.8%)

Adjusted ROE for Las Quintas Serenas = 8.1%

Q. What is Staff's ROE recommendation for Las Quintas Serenas?

A. Staff estimated an 8.1 percent ROE for the Applicant based on cost of equity estimates ranging from 7.5 percent (CAPM) to 8.7 percent (DCF). An 8.1 percent ROE would result in a \$764 reduction in the revenue requirement. Since a \$764 impact to the revenue requirement is de minimis, Staff recommends an 8.5 percent ROE to provide no change in the revenue requirement. An 8.5 percent ROE is consistent with Staff's 7.5 percent to 8.7 percent cost of equity estimate range.

V. RATE OF RETURN RECOMMENDATION

Q. What is Staff's overall rate of return recommendation for Las Quintas Serenas?

A. Staff recommends a ROR of 8.5 percent for Las Quintas Serenas, as shown in Schedule AXR-1 and the following table:

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Table 2

	Weight	Cost	Weighted Cost
Long-term Debt	0.0%	0.0%	0.0%
Common Equity	100.0%	8.5%	<u>8.5%</u>
Cost of Capital/ROR			8.5%

CONCLUSION

Q. Please summarize Staff's recommendations.

A. Staff recommends that the Commission adopt an overall rate of return of 8.5 percent. Staff's recommendation is based on a 100 percent equity capital structure and an 8.5 percent return on equity.

Q. Does this conclude your direct testimony?

A. Yes, it does.

Las Quintas Serenas Water Company
Capital Structure
And Weighted Cost of Capital

[A]	[B]	[C]	[D]
<u>Line No</u>	<u>Description</u>	<u>Weight (%)</u>	<u>Cost</u>
1	Long-term Debt	0.0%	0.00%
2	Common Equity	100.0%	8.5%
3	Weighted Average Cost of Capital/ROR		8.5%

Las Quintas Serenas Water Company
Average Capital Structure of Sample Water Utilities

[A]		[B]	[C]	[D]
Line No	<u>Company</u>	Long-Term Debt	Common Equity	Total
1	American States Water	52.0%	48.0%	100.0%
2	California Water	50.6%	49.4%	100.0%
3	Aqua America	51.4%	48.6%	100.0%
4	Connecticut Water	43.7%	56.3%	100.0%
5	Middlesex Water	55.0%	45.0%	100.0%
6	SJW Corp	<u>45.6%</u>	<u>54.4%</u>	<u>100.0%</u>
7				
8	Average Sample Water Utilities	49.7%	50.3%	100.0%
9				
10	Las Quintas Serenas Water Company	0.0%	100.0%	100.0%

Source: Value Line, Las Quintas Serenas' application

Las Quintas Serenas Water Company
Growth in Earnings and Dividends
Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
Line No	Dividends Per Share 1993 to 2003 <u>DPS</u>	Dividends Per Share Projected <u>DPS</u>	Earnings Per Share 1993 to 2003 <u>EPS</u>	Earnings Per Share Projected <u>EPS</u>
1	American States Water 1.1%	1.8%	-3.5%	20.7%
2	California Water 1.6%	1.0%	-1.1%	11.7%
3	Aqua America 5.5%	7.2%	8.7%	10.5%
4	Connecticut Water 1.3%	No Projection	2.6%	No Projection
5	Middlesex Water 2.5%	No Projection	-0.9%	No Projection
6	SJW Corp <u>3.6%</u>	<u>No Projection</u>	<u>4.2%</u>	<u>No Projection</u>
7				
8	Average Sample Water Utilities 2.6%	3.3%	1.7%	14.3%

Source: Value Line

Las Quintas Serenas Water Company
 Intrinsic Growth
 Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	
Line No.	Company	Retention Growth 1994 to 2003 br	Retention Growth Projected br	Stock Financing Growth vs	[B] + [D] Intrinsic Growth 1994 to 2003 br + vs	[C] + [D] Intrinsic Growth Projected br + vs
1	American States Water	2.5%	3.0%	0.9%	3.4%	3.9%
2	California Water	2.5%	4.5%	0.9%	3.4%	5.4%
3	Aqua America	4.0%	5.5%	6.1%	10.1%	11.6%
4	Connecticut Water	3.0%	No Projection	0.6%	3.5%	No Projection
5	Middlesex Water	1.7%	No Projection	3.6%	5.3%	No Projection
6	SJW Corp	4.8%	No Projection	0.0%	4.8%	No Projection
7						
8	Average Sample Water Utilities	3.1%	4.3%	2.0%	5.1%	7.0%

Source: Value Line, MSN Money

Las Quintas Serenas Water Company
Selected Financial Data of Sample Water Utilities

[A]	[B]	[C]	[D]	[E]	[F]	[G]	
Line No	Company	Symbol	Spot Price 7/7/04	Book Value 7/7/04	Mkt To Book	Value Line Beta β	Raw Beta β_{raw}
1	American States Water	AWR	22.31	14.76	1.5	0.65	0.45
2	California Water	CWT	27.43	18.91	1.5	0.65	0.45
3	Aqua America	WTR	19.83	7.52	2.6	0.75	0.60
4	Connecticut Water	CTWS	24.65	10.55	2.3	0.60	0.37
5	Middlesex Water	MSEX	19.05	7.42	2.6	0.60	0.37
6	SJW Corp	SJW	34.02	18.00	1.9	0.55	0.30
7							
8	Average				2.1	0.63	0.42

Source: Yahoo Finance, Value Line

Las Quintas Serenas Water Company
Calculation of Expected Infinite Annual Growth in Dividends
Sample Water Utilities

[A] Line No	[B] Description	g
1	DPS Growth - Historical	2.6%
2	DPS Growth - Projected	3.3%
3	EPS Growth - Historical	1.7%
4	EPS Growth - Projected	14.3%
5	Intrinsic Growth - Historical	5.1%
6	<u>Intrinsic Growth - Projected</u>	<u>7.0%</u>
7		
8	Average	5.7%

Supporting Schedules: Schedule AXR-3 and Schedule AXR-4

Las Quintas Serenas Water Company
 Multi-Stage DCF Estimates
 Sample Water Utilities

[A] Line No	[B] Company	[C] Current Mkt. Price (P ₀)	[D] Projected Dividends ¹ (stage 1 growth) (D _t)				[E] d ₁	[F] d ₂	[G] d ₃	[H] d ₄	[I] Stage 2 growth ² (g _n)	[J] Equity Cost Estimate (K)
1	American States Water	22.3	0.89	0.91	0.93	0.95				6.5%	10.1%	
2	California Water	27.4	1.13	1.15	1.16	1.18				6.5%	10.1%	
3	Aqua America	19.8	0.50	0.54	0.57	0.61				6.5%	9.1%	
4	Connecticut Water	24.7	0.87	0.90	0.93	0.96				6.5%	9.8%	
5	Middlesex Water	19.1	0.68	0.70	0.73	0.75				6.5%	9.8%	
6	SJW Corp	34.0	1.03	1.07	1.11	1.15				6.5%	9.3%	

Average **9.7%**

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

- Where : P₀ = 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 d_t = "Est'd Div'd next 12 mos." 07/02/2004, Value Line Summary & Index.
 2 Average annual growth in GDP 1929 - 2003 in current dollars. <http://www.bea.doc.gov/>

Las Quintas Serenas Water Company
 Final Cost of Equity Estimates
 Sample Water Utilities

[A]	[B]	[C]	[D]	[E]
Line No	<u>DCF Method</u>	D_t/P_t	+	k
1	Constant Growth DCF Estimate	3.5%	+	9.2%
2	Multi-Stage DCF Estimate			9.7%
3	Average of DCF Estimates			9.5%
4				
5	<u>CAPM Method</u>	β	x	k
6	Historical Market Risk Premium	0.63	x	8.7%
7	Current Market Risk Premium	0.63	x	7.8%
8	Average of CAPM Estimates			8.3%
9				
10			Average	8.9%
11				

Source: The Wall Street Journal, Value Line, Ibbotson Associates S&P 500 Yearbook
 Supporting Schedules: Schedule AXR-7

HAINS

BEFORE THE ARIZONA CORPORATION COMMISSION

MARC SPITZER
Chairman
WILLIAM A. MUNDELL
Commissioner
JEFF HATCH-MILLER
Commissioner
MIKE GLEASON
Commissioner
KRISTIN K. MAYES
Commissioner

IN THE MATTER OF THE APPLICATION OF)
LAS QUINTAS SERENAS WATER COMPANY)
FOR AN INCREASE IN ITS WATER RATES)
FOR CUSTOMERS WITHIN PIMA COUNTY,)
ARIZONA)
_____)

DOCKET NO. W-01583A-04-0178

DIRECT TESTIMONY
OF
DOROTHY HAINS
UTILITIES ENGINEER
UTILITIES DIVISION

AUGUST 20, 2004



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CONCLUSIONS AND RECOMMENDATIONS	3

SCHEDULES

Engineering Report for Las Quintas Serenas Water Company	EXHIBIT-1
--	-----------

1 **INTRODUCTION**

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

3 A. My name is Dorothy Hains. 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" "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 January 1998.

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

14 A. My main responsibilities are to inspect, investigate and evaluate water and wastewater
15 systems. This includes obtaining data, preparing reconstruction cost new and/or original
16 cost studies, cost of service studies and investigative reports, interpreting rules and
17 regulations, and to suggest corrective action and provide technical recommendations on
18 water and wastewater system deficiencies. I also provide written and oral testimony in
19 rate cases and other cases before the Commission.

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

22 A. I have analyzed approximately 78 companies covering these various responsibilities for
23 Utilities Division Staff ("Staff").

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

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

27

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

2 A. I graduated from Alabama University in Birmingham in 1987 with a Bachelor of Science
3 degree in Civil Engineering.

4
5 **Q. Briefly describe your pertinent work experience.**

6 A. Before my employment with the Commission, I was an Environmental Engineer for the
7 Arizona Department of Environmental Quality, for ten years. Prior to that time, I was an
8 Engineering Technician with C. F. Hains, Hydrology in Northport, Alabama for
9 approximately five years.

10
11 **Q. Please state your professional membership, registrations, and licenses.**

12 A. I am a member of the American Society of Civil Engineering ("ASCE") and American
13 Water Works Association ("AWWA"). I am a registered Civil Engineer in Arizona.

14
15 **PURPOSE OF TESTIMONY**

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

17 A. My assignment was to provide Staff's engineering evaluation of the Las Quintas Serenas
18 Water Company ("Las Quintas Serenas" or "Company").

19
20 **Q. What is the purpose of your testimony in this proceeding?**

21 A. To present the findings of Staff's engineering evaluation of Las Quintas Serenas'
22 operation. Those findings are contained in the Engineering Report that I have prepared
23 for this proceeding. This report is included as Exhibit-1, in this pre-filed testimony.

24

25

1 **ENGINEERING REPORT**

2 **Q. Would you briefly describe what was involved in preparing the Engineering Report**
3 **for the water operations in this rate proceeding?**

4 A. After reviewing Las Quintas Serenas' rate application, I physically inspected the water
5 system to evaluate its operations and to determine which plant items were or were not
6 used and useful. I contacted the Arizona Department of Environmental Quality
7 ("ADEQ") to determine if the system was in compliance with ADEQ requirements. I
8 obtained information from Las Quintas Serenas regarding water testing and water usage
9 and analyzed that information. Based on this data, I made my evaluations and prepared
10 the Engineering Report attached as Exhibit 1.

11
12 **Q. Please describe the information contained in Exhibit 1.**

13 A. Exhibit 1 is the Engineering Report for Las Quintas Serenas' operation, this Report is
14 divided into three general sections: 1) *Executive Summary*; 2) *Engineering Report*
15 *Discussion*, and 3) *Engineering Report Exhibits*. The *Discussions* section can be further
16 divided into twelve subsections: A) Purpose of Report; B) Location of System; C)
17 Description of System; D) Arsenic; E) Water Usage; F) Growth Projection; G) ADEQ
18 Compliance; H) Arizona Department of Water Resources ("ADWR") Compliance; I)
19 Arizona Corporation Commission ("ACC") Compliance; J) Water Testing Expenses; K)
20 Depreciation Rates; and L) Other Issues. These subsections provide information about
21 the Las Quintas Serenas water system.

22
23 **CONCLUSIONS AND RECOMMENDATIONS**

24 **Q. What are Staff's conclusions and recommendations regarding Las Quintas Serenas'**
25 **operation?**

26 A. Based upon Staff's engineering evaluation of Las Quintas Serenas' operation, Staff
27 concludes the following about the Company:

1 1) According to the Utilities Division Compliance Section, the Company has no
2 outstanding ACC compliance issues;

3
4 2) The Company is in the ADWR Tucson Active Management Area and is in
5 compliance with ADWR monitoring and reporting requirements.

6
7 3) ADEQ has determined that Las Quintas Serenas is currently delivering water that
8 meets water quality standards required by Arizona Administrative Code, Title 18,
9 Chapter 4.

10
11 4) Staff calculated a non-account water loss of 3.69 percent, which is within
12 acceptable limits.

13
14 5) Staff has calculated a preliminary estimate of arsenic removal costs for Las Quintas
15 Serenas system using the ADEQ Arsenic Master Plan ("AMP") in case the
16 Company's blending plan is not acceptable to ADEQ. Staff's estimate includes
17 \$186,992 in capital cost, \$124,122 for annual O&M cost and \$28,049 in engineering
18 cost.

19
20 Staff's recommends the following eight provisions be part of any Commission order on
21 this application:

22 1) That the Company use depreciation rates approved by the National Association of
23 Regulatory Utility Commissioners ("NARUC") category, as delineated in Exhibit 6 in the
24 future.

25
26 2) That the Company submit its detailed arsenic removal plan to ADEQ or the Pima
27 County Department of Environmental Quality ("PCDEQ") by December 31, 2004, for
28 review and approval. A copy of this plan shall also be submitted to the Director of the
29 Utilities Division by December 31, 2004.

1

2

3) That the Company's proposed service line and meter installation charges be accepted.

3

4

5

4) That the hook-up fee approved in Decision No. 58839 be continued.

6

7

5) That the proposed curtailment tariff filed by Las Quintas Serenas be approved. Staff further recommends that the Company docket the approved curtailment tariff within thirty days of the effective date of the final Decision and Order in this matter.

8

9

10

11

6) That the plant-in-service reclassifications listed in Table 11 in the Engineering Report be used.

12

13

14

7) That the adjusted Plant-in-Service amounts listed in Table 12 in the Engineering Report be used for purposes of establishing rates in the subject application.

15

16

17

8) That the annual water testing expenses be adjusted to \$4,052.

18

19

Q. Does this conclude your pre-filed testimony?

20

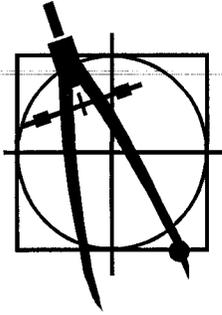
A. Yes, it does.

EXHIBIT 1

ENGINEERING REPORT FOR LAS QUINTAS SERENAS WATER COMPANY

BY DOROTHY HAINS

AUGUST 20, 2004



**Engineering Report
For Las Quintas Serenas Water Company
By Dorothy Hains
Docket No. W-01583A-04-0178
(Rate Application)
August 20, 2004**

EXECUTIVE SUMMARY

Recommendations:

1. Staff recommends that the Company submit its detailed arsenic removal plan to Arizona Department of Environmental Quality ("ADEQ") or Pima County Department of Environmental Quality ("PCDEQ") by December 31, 2004, for review and approval. A copy of this plan shall also be submitted to the Director of the Utilities Division by December 31, 2004. (See §D of report for a discussion and a tabulation of the recommended rates.)
2. Staff recommends that the Company use depreciation rates approved by the National Association of Regulatory Utility Commissioners ("NARUC") category, as delineated in Exhibit 6 in the future. (See §K and Exhibit 6 for a discussion and a tabulation of the recommended rates.)
3. Staff recommends accepting the Company's proposed service line and meter installation charges. (See §L of report for discussion and details.)
4. Staff recommends that the hook-up fee, which was approved in Decision No. 58839, be continued. (See §L of report for discussion and details.)
5. Staff recommends that the proposed curtailment tariff filed by Las Quintas Serenas be approved. Staff further recommends that the Company file this approved curtailment tariff within thirty days of the effective date of the final Decision and Order in this matter. (See §L of report for discussion and details.)
6. Staff recommends that plant-in-service reclassifications listed in Table 11 in the Engineering Report be used. (See §L of report for discussion and details.)
7. Staff recommends that the adjusted Plant-in-Service amounts listed in Table 12 in the Engineering Report be used for purposes of establishing rates in the subject application. (See §L of report for discussion and details.)

8. Water testing expenses are based upon participation in the ADEQ Monitoring Assistance Program ("MAP"). Annual testing expenses should be adjusted to \$4,052. (See §J and Table 9 for discussion and details.)

Conclusions:

1. According to the Utilities Division Compliance Section, the Company has no outstanding ACC compliance issues.
2. The Company is in the Arizona Department of Water Resources ("ADWR") Tucson Active Management Area and is in compliance with ADWR monitoring and reporting requirements.
3. ADEQ has determined that Las Quintas Serenas Water Co. is currently delivering water that meets water quality standards required by Arizona Administrative Code, Title 18, Chapter 4.
4. Staff calculated a non-account water loss of 3.69 percent which is within acceptable limits. (See §E of report for discussion and details.)
5. Using the ADEQ Arsenic Master Plan ("AMP"), Staff has calculated a preliminary estimate of arsenic removal costs for Las Quintas Serenas system. Staff's estimate includes \$186,992 in capital cost, \$124,122 for annual O&M cost and \$28,049 in engineering cost. Staff's estimate assumes (1) arsenic removal will be required for new Well Number 7 only and treatment will occur at the well head, (2) arsenic will be removed to meet 8 micrograms per liter (" $\mu\text{g/l}$ ") or parts per billion ("ppb") by Single Column Fe-AA (iron-modified active alumina) Treatment, (3) engineering cost will equal 15 percent of the capital cost and (4) the Company will implement the lowest cost option. These costs were calculated to demonstrate what costs the Company may incur for arsenic treatment if its blending plan is not accepted by ADEQ. (See §L and Attachment 2 for discussion and details.)

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**ENGINEERING REPORT
FOR
LAS QUINTAS SERENAS WATER COMPANY, INC.
DOCKET NO. W-01583A-04-0178 (RATES)**

A. PURPOSE OF REPORT

This report was prepared in response to the application for a rate increase by Las Quintas Serenas Water Company. ("Las Quintas Serenas" or "Company"). An inspection and evaluation of the Company's water system was conducted by Dorothy Hains, Utilities Engineer, in the accompaniment of Steve Gay, the Company's water system Operator and Manager on April 28, 2004.

B. LOCATION OF SYSTEM

The Company serves an area which is approximately 20 miles southwest of the City of Tucson in Pima County near the Town of Green Valley. Exhibit 1 shows the approximate two and one-half square miles of its certificated area, and Exhibit 2 shows the location of the Company within Pima County.

C. DESCRIPTION OF SYSTEM

I. System Description

The Company owns and operates a water system that consists of three wells, two storage tanks and a distribution system to serve 904 metered customers. This number includes customers who use the Company's standpipe service. The Company has developed a method to track each standpipe user and has determined that it has more customers using the standpipe service than regular metered customers. The standpipe service site is equipped with two 5,000 gallon pressure tanks. Well sites 5 and 6 are each equipped with a tool shed/maintenance building. The building at Well site 6 was installed in 2002. Exhibit 3 is a schematic drawing of the water system. A detailed listing of the Company's water system facilities is as follows:

Table 1. Active Well Data

Well Name	ADWR ID No.	Pump HP	Yield (in GPM)	Casing Size (in inch) & Depth (in ft)	(Meter Size inch)	Year drilled
Well #5	55-608531	40	200	10" x 805'	4	1976
Well #6	55-608530	75	350 (electric pump) 450 (gas pump)	12"x837'	6	1971
Well #7	55-566940	150	650 (55 Hz) 850 (59 Hz)	12"x910'	8	1998
		TOTAL:	1,200 - 1,500			

Table 2. Abandoned Well Data

Well Name	ADWR ID No.	Location	Year drilled	Year abandoned
Well #1	55-806902	Lot #17095 La Canada Dr	1957 (est)	1994
Well #4	N/A	Lot #1203 Camino De Las Quintas	1967 (est)	1994

Table 3. Storage Tanks

Capacity (Gallons)	Quantity	Location
30,000	1	On the berm of a tailing pond, near Camino Antigua Rd
60,000	1	On the berm of a tailing pond, near Camino Antigua Rd
Totals: 90,000 gallons		

Table 4. Pressure Tanks

Capacity (Gallons)	Quantity
3,000	1
5,000*	5
Totals: 28,000 gallons	

Note: (1) No booster pumps are equipped with those pressure tanks.
(2) * means this pressure tank is not functioning as a pressure tank; it is functioning as if it were a "storage tank".

Table 5. Distribution Mains

Diameter (inches)	Material	Length (feet)
2	copper	250
2	polyvinyl chloride ("PVC")	1,550
3	Transite	240
4	Transite	19,840
4	PVC	4,509
6	Transite)	37,793
6	PVC	17,510
8	Transite	2,760
8	PVC	1,468
10	Transite	420
12	Transite	1,340
12	PVC	1,950

Table 6. Meters

Size (inches)	Quantity
5/8 x 3/4	700
3/4	1
1	36
1½	6
2	4
4 (Comp)	1
Total	748

The Company delivers the water by gravity feed through its distribution system.

II. System Analysis

The system has adequate production and storage capacity to support the existing customer base (including standpipe customers).

D. ARSENIC

The U.S. Environmental Protection Agency (“EPA”) has reduced the arsenic maximum contaminant level (“MCL”) in drinking water from 50 micrograms per liter (“µg/l”) or parts per billion (“ppb”) to 10 µg/l. The date for compliance with the new MCL is January 23, 2006. The most recent lab analysis provided by the Company indicates that the arsenic level in Well Number 7 is 12 µg/l which is above the new arsenic MCL. Arsenic levels in Wells 5 and 6 are below the new arsenic standard. The Company’s water system operator (Mr. Gay) indicated that the Company would use “blending” to reduce arsenic concentrations in the system; however the Company’s blending plan has not been submitted to ADEQ or Pima County Department of Environmental Quality (“PCDEQ”) for review and approval. Therefore, Staff recommends that the Company submit its detailed arsenic removal plan to ADEQ or PCDEQ by December 31, 2004, for review and approval. A copy of this plan shall also be submitted to the Director of the Utilities Division by December 31, 2004. (See Section L and Attachment 2 for further discussion of the Arsenic issue.)

E. WATER USAGE

Table 6 summarizes water usage in the Company’s CC&N area. Attached as Exhibit 4, is a graph that shows water consumption data in gallons per day per connection for the period of February 2003 through February 2004.

Table 7. Water Usage

Month	Number of Customers (including standpipe customers)	Water Sold (gallons)	Water pumped (gallons)	Water purchased (gallons)	Daily Average (gal/day/customer)
Feb 03	867	10,863,800	11,407,000	0	448
Mar 03	885	7,445,800	7,817,800	0	271

Apr 03	878	9,887,200	10,351,800	0	375
May 03	876	11,239,000	11,811,000	0	414
Jun 03	885	18,831,900	19,773,500	0	709
Jul 03	891	20,118,100	21,124,000	0	728
Aug 03	901	16,358,100	17,176,000	0	586
Sep 03	897	12,510,000	13,131,500	0	465
Oct 03	895	12,713,700	12,714,400	0	458
Nov 03	898	12,531,400	12,782,000	0	465
Dec 03	904	88,399,900	8,840,900	0	315
Jan 04	909	10,419,500	10,643,700	0	370
Feb 04	915	8,028,400	9,425,600	0	313
Total		159,786,800	166,999,200	0	
Average					455

I. Water Sold

Based on information provided by the Company, during this period, the Company experienced a daily average use of 455 gallons per day (“gpd”) per customer, a high use of 728 gpd per customer and a low use of 271 gpd per customer. The highest total monthly use occurred in July, when 20,118,100 gallons were sold to 891 customers. The lowest total monthly use occurred in March, when 7,445,800 gallons were sold to 885 customers.

II. Non-account Water

Non-account water should be not more than 10 percent. It is important to be able to reconcile the difference between water sold and the water produced by the source. A water balance will allow a water company to identify water and revenue losses due to leakage, theft, and flushing. Non-account water for Las Quintas Serenas was calculated to be 3.69 percent for the period of February 2003 through January 2004 which is within an acceptable limit.

F. **GROWTH PROJECTION**

Exhibit 5 details total actual and projected growth for the system using linear regression analysis. The number of service connections was obtained from annual reports submitted to the Commission. Based on the service meter data contained in these reports, the number of customers increased from 542 at the end of 1995 to 904 by the end of 2003, with an average growth rate of 52 customers per year. Based on the linear regression analysis, the Company could have over 1,200 customers by the end of 2008. The following table summarizes actual and projected growth in the Company’s existing certificated service area.

Table 8. Actual and Projected Growth

Year	Nos. of Customers	
1995	524	Reported
1996	595	Reported
1997	601	Reported
1998	643	Reported
1999	683	Reported
2000	813	Reported

2001	917	Reported
2002	890	Reported
2003	904	Reported
2004	993	Estimated
2005	1,046	Estimated
2006	1,098	Estimated
2007	1,150	Estimated
2008	1,202	Estimated

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

Staff received a compliance status report from ADEQ dated March 17, 2004, in which ADEQ stated that it has determined that the Company is currently delivering water that meets the water quality standards required by Arizona Administrative Code, Title 18, Chapter 4.

H. ARIZONA DEPARTMENT OF WATER RESOURCES (“ADWR”) COMPLIANCE

Las Quintas Serenas is in the ADWR Tucson Active Management Area. The Company is in compliance with ADWR’s monitoring and reporting requirements.

I. ARIZONA CORPORATION COMMISSION (“ACC”) COMPLIANCE

According to the Utilities Division Compliance Section, the Company has no outstanding ACC compliance issues.

J. WATER TESTING EXPENSES

Las Quintas Serenas is subject to mandatory participation in the ADEQ Monitoring Assistance Program (“MAP”). Staff calculated the testing costs based on the following assumptions:

1. MAP will do baseline testing on everything except copper, lead, nitrates, and bacteria.
2. ADEQ testing is performed in 3-year-compliance cycles. Therefore, monitoring costs are estimated for a 3-year-compliance period and then presented as a pro forma expense on an annualized basis.
3. MAP fees were calculated from the ADEQ MAP rules.
4. All monitoring expenses are based on Staff’s best knowledge of lab costs and methodology and two points of entry.

5. The estimated water testing expenses represent a minimum cost based on no "hits" other than lead and copper, and assume compositing of well samples. If any constituents were found, then the testing costs would dramatically increase.

Table 8 shows the estimated annual monitoring expense, assuming participation in the MAP program. Water testing expenses should be adjusted to the annual expense amount shown in Table 8, which is \$ 4,052.

Table 9 Water Testing Cost

Monitoring – 3 wells (Tests per 3 years, unless noted.)	Cost per test	No. of tests per 3 years	Total 3 year cost	Annual Cost
Bacteriological – monthly	\$15	108	\$1,620	\$540
Inorganics (& secondary)	\$240	9	\$2,160	\$720
Radiochemical – (1/ 4 yr)	\$55			MAP
IOC's, SOC's, VOC's				MAP
Nitrites	\$15			MAP
Nitrates – annual	\$25	9	\$225	\$75
Asbestos – per 9 years	\$180			MAP
Lead & Copper – annual	\$25	60	\$1,500	\$500
MAP fees (annual)				\$2,216.50
Total				\$4,052

K. DEPRECIATION RATES

Staff has developed typical and customary depreciation rates within the range of anticipated equipment life. These rates are presented in Exhibit 6, and should be used to calculate the annual depreciation expense for the Company in this application. It is recommended that the Company use depreciation rates approved by the National Association of Regulatory Utility Commissioners ("NARUC") category, as delineated in Exhibit 6 in the future.

L. OTHER ISSUES

I. Service Line and Meter Installation Charges

The Company is proposing to establish meter and service line installation charges. These charges will be refundable advances and the Company's proposed charges are within Staff's experience of what are reasonable and customary charges. Therefore, Staff accepts the Company's proposed meter and service line installation charges.

Table 10. Service Line and Meter Installation Charges

Meter Size	Current Charges	Proposed Charges	Staff Recommendation
5/8 x3/4-inch	N/A	\$368	\$368
3/4-inch	N/A	\$368	\$368
1-inch	N/A	\$393	\$393
1-1/2-inch	N/A	\$693	\$693
2-inch	N/A	\$827	\$827
3-inch	N/A	\$2,061	\$2,061
4-inch	N/A	\$2,909	\$2,909
6-inch	N/A	\$3,670	\$3,670

II. Hook-up Fees

In 1994, the Company filed a hook-up fee tariff that was approved in Decision No. 58839 (the Commissioners approved a hook-up fee amount of \$250 per new connection.) As part of the subject application, the Company has requested that the hook-up fee be increased to \$500 per connection. According to the Company, this increase is needed to fund the purchase and installation of two new storage tanks with a total storage capacity of 650,000 gallons (a 400,000-gallon increase in new storage capacity over the Company's original plan)¹. Staff requested, but did not receive any information from the Company that supports the need for the significant increase in storage capacity. Using the growth estimates provided by the Company and 2003 cost data, Staff's calculations show that the approved hook-up fee amount of \$250 per new connection should be sufficient to fund the purchase and installation of two new 100,000-gallon storage tanks as originally planned. The company has not provided sufficient justification to support the proposed increase in the hook-up fee. Therefore, Staff recommends that the hookup fee, which was approved in Decision No. 58839, be continued.

III. Curtailement Tariff

The Company submitted a proposed curtailment tariff as part of the subject application². Staff has reviewed the Company's proposed curtailment tariff and has determined that it is consistent with the model curtailment tariff template that has been approved by the Arizona Corporation Commission for use by other water utilities. Therefore, Staff recommends that the proposed curtailment tariff filed by Las Quintas Serenas be approved. Staff further recommends that the Company file the approved curtailment tariff within thirty days of the effective date of the final Decision and Order in this matter.

¹ Referred to the Company response to staff's data request dated June 9, 2004.

² The Company submitted its proposed curtailment tariff in a supplemental filing dated April 29, 2004.

IV. Reproduction Cost New ("RCN") Study & Adjusted Plant-in-Service

The Company withdrew its RCN Study that was submitted with the subject application³. Staff does not object to this withdrawal. Staff recommends the following plant-in-service reclassifications:

Table 11. Plant-in-Service Account Reclassification

Acct. used	Co.	description	Asset Ref	Yr acquitted	Original cost	Staff recommended acct
307		Pump overhaul	W&S-4	3-31-1996	9,166	311
307		Natural Gas Well Engine	W&S-5	7-31-1996	10,090	311
307		Natural Gas Engine	W&S-6	4-01-1997	9,992	311
307		Pressure Tanks	W&S-7	9-15-1998	3,050	330
307		Standpipe	W&S-10	4-7-1999	1,024	330
307		Move pressure tanks	W&S-11	5-21-1999	419	330
307		Sand blasting tanks	W&S-12	9-17-1999	8,480	330
103		#6 Storage and booster	OSE&P-1	2-26-1995	3,090	330
103		Hydrogeological Services	OSE&P-2	8-31-1997	772	307
103		Off-site engineering #7	OSE&P-3	1-1-1996	35,787	307
103		Off-site engineering #7	OSE&P-4	9-30-1998	118	307
103.1		#6 Storage and booster	OSW&S-1	5-22-1995	1,400	330
103.1		Motor Replacement #7	OSW&S-2	8-22-2000	5,000	311
103.1		Off-site improvement #7	OSW&S-3	3-31-1998	124,353	307
311		#5 Well repair	EP&E-14	2-7-2002	10,379	307
311		#7 Well upgrade	EP&E-15	6-5-2002	68,950	307
311		#6 Well Gear Drive	EP&E-17	7-22-2002	5790	307

Based on the recommended reclassifications listed above, Staff recommends that the adjusted Plant-in-Service amounts listed below be used for purposes of establishing rates in the subject application.

³ See letter dated June 24, 2004 to Elena Zestrijan.

Table 12. Adjusted Plant-in-Service

Acct #	Description	2004 Co. Filing (\$)	Previous Staff Report (-84) in \$	Additions & Deletions (\$)	Staff's Total Plant
303	Land & Land Right	5,217	217		217
304	Structures & Improvement <u>Well #5</u> Fencing (-02) <u>Well #6</u> Tool shade (-03) Water stand (-03)	6,599	0	1,074 2,105 3,420	6,599
307	Wells & Springs <u>Well #1</u> -94 (retired) <u>Well #4</u> -94 (retired) <u>Well #5</u> -94 -99 -02 <u>Well #6</u> -95 -96 -99 -02 <u>Well #7</u> -97 -98 -02	259,402	14,253	(0) (3,842) 24,369 946 10,379 191 15,324 2,999 5,790 772 160,258 68,950	300,389
311	Pumping Equip -87 -88 -89 -90 -96 -97 -00 -01 -03	154,555	17,321	126 1,277 1,150 581 19,256 9,992 16,855 28,235 8,891	103,684
320	Water Treatment Equip -85	0	0	830	830
330	Dist Reservoir & Standpipe -87 -88 -89 -90 -91 -95 -96 -97 -98 -99 -00 -01	82,215	25,434	72 746 1,257 16,932 8,821 1,225 465 8,682 10,795 12,875 4,024 2,165	94,798

	-03			1,305	
331	Trans & Dist Mains	822,434	184,375		820,492
	-85			6,510	
	-86			2,621	
	-88			11,707	
	-89			36,495	
	-90			2,845	
	-91			51,425	
	-93			75,046	
	-94			44,252	
	-95			29,275	
	-96			63,027	
	-97			19,223	
	-98			41,703	
	-99			48,670	
	-00			90,450	
	-01			112,868	
333	Services	2,427	0		2,427
	-01-			2,427	
334	Meters	99,647	39,940		100,611
	-87			566	
	-89			2,855	
	-90			3,683	
	-92			1,589	
	-93			2,656	
	-94			2,652	
	-95			9,147	
	-96			691	
	-97			4,425	
	-98			6,443	
	-99			15,659	
	-00			1,694	
	-01			1,205	
	-02			1,743	
	-03			5,663	
336	Backflow Preventors	1,137			1,137
	-98			1,137	
340	Office Furniture & Equip	13,424	0		11,888
	-89			151	
	-91			1,021	
	-93			1,832	
	-94			148	
	-95			245	
	-96			3,077	
	-97			908	
	-98			3,210	
	-99			2,157	
	-01			364	
	-03			607	
341	Transportation	9,000	0		9,000
	-93			4,000	
	-03			5,000	
345	Power tools	0	0		2,592
	-00			2,592	
348	Other tangible plant	6,943	0		4,424
	-87			290	

	-88			243	
	-89			423	
	-90			341	
	-94			1,515	
	-97			875	
	-99			737	
	Total	1,461,863	281,540	1,179,380	1,460,920

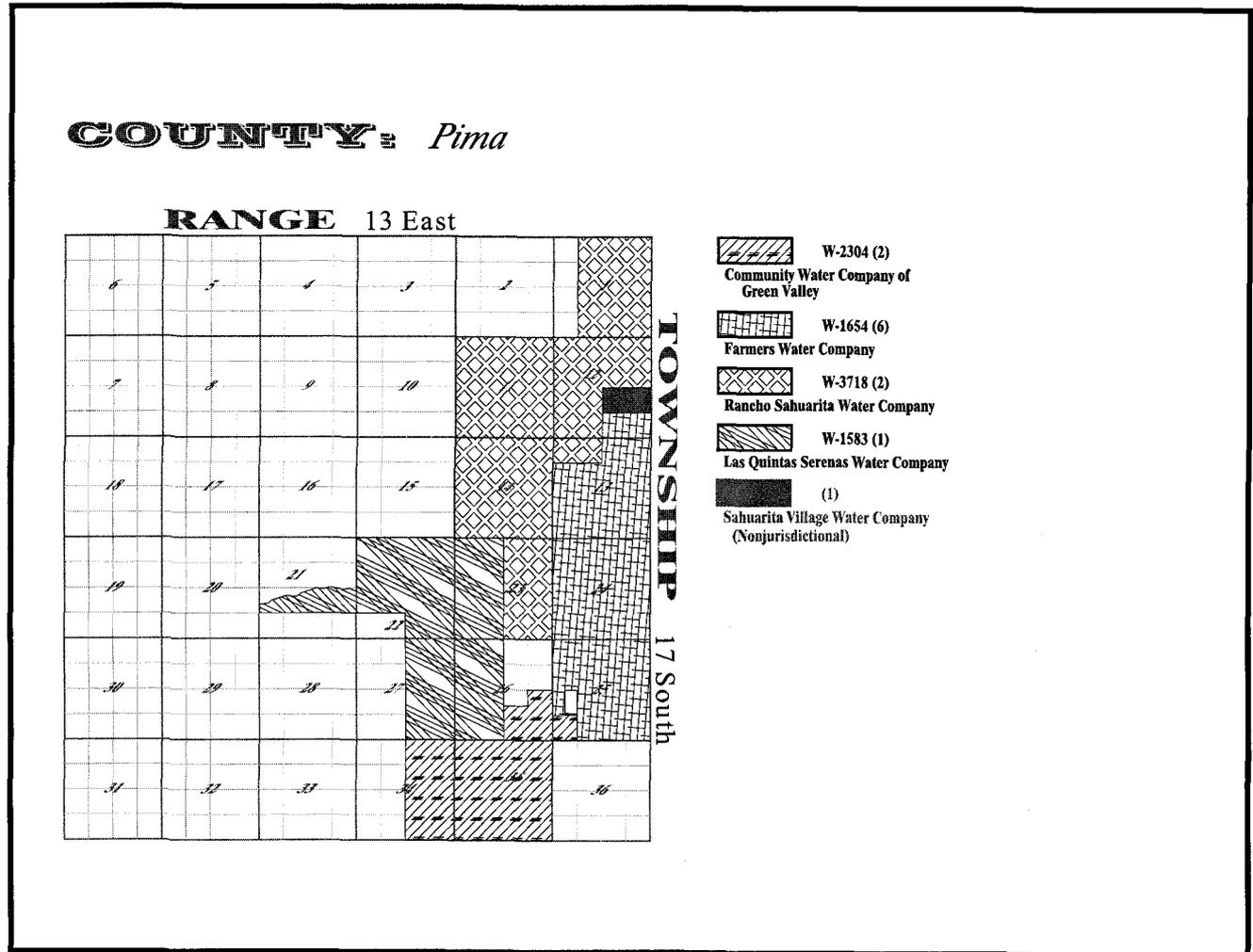
IV. Staff's Estimate of Arsenic Removal Costs

The most recent lab analysis by the Company indicated that the arsenic level in Well 7 is 12 $\mu\text{g}/\text{l}$ which is above the new arsenic MCL. The Company plans an arsenic removal technique by a "blending" mechanism. For the planning purpose if "blending" technique fails, Staff has calculated a preliminary estimate of arsenic removal costs for Las Quintas Serenas based on the ADEQ Arsenic Master Plan (AMP). Staff's estimate includes \$186,992 in capital cost, \$124,122 for annual O&M cost and \$28,049 in engineering cost. Staff's estimate assumes (1) arsenic removal will be required for Well Number 7 only and treatment will occur at the well head, (2) arsenic will be removed to meet 5 $\mu\text{g}/\text{l}$ by Single Column Fe-AA (iron-modified active alumina) Treatment, (3) engineering cost will equal 15 percent of the capital cost and (4) the Company will implement the lowest cost option.

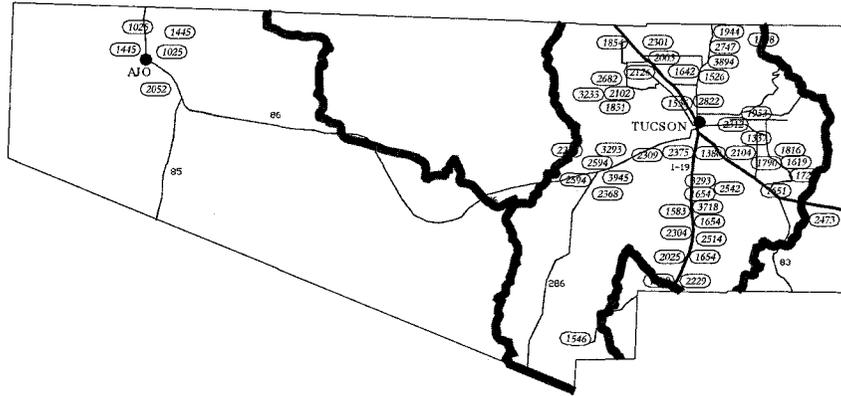
Staff's estimate of the cost to remove arsenic from Well 7 is consistent with ADEQ's AMP. (See Attachment 2 for further discussion of the AMP and Staff's cost estimate.)

EXHIBIT 1

Las Quintas Serenas' Certificate Service Area



P I M A C O U N T Y



- | | | | |
|------|---|------|---|
| 1025 | AJO IMPROVEMENT COMPANY | 1408 | MT. LEMMON COOPERATIVE WATER COMPANY, INC. |
| 2473 | ANDERSON WATER COMPANY, INC. | 2514 | QUAIL CREEK WATER COMPANY, INC. |
| 3233 | ANWAY MANVILLE L.L.C. WATER COMPANY | 2102 | RANCHO DEL CONEJO WATER COMMUNITY COOPERATIVE |
| 1546 | ARIVACA TOWNSITE COOPERATIVE WATER COMPANY | 3718 | RANCHO SAHUARITA WATER COMPANY |
| 1445 | ARIZONA WATER COMPANY (AJO HEIGHTS) | 1380 | RAY WATER COMPANY |
| 2126 | AVRA WATER COOPERATIVE, INC. | 2003 | RILLITO WATER USERS |
| 2304 | COMMUNITY WATER COMPANY OF GREEN VALLEY | 1619 | RINCON CREEK WATER COMPANY |
| 1642 | DESPOBLADO WATER COMPANY | 1337 | RINCON RANCH ESTATES WATER COMPANY, INC. |
| 2309 | DIABLO VILLAGE WATER COMPANY | 1723 | RINCON WATER COMPANY |
| 1654 | FARMERS WATER COMPANY | 1790 | SAGUARO WATER COMPANY |
| 3945 | FRANCESCA WATER COMPANY, INC. | 1831 | SANDARIO WATER COMPANY |
| 2025 | GREEN VALLEY WATER COMPANY | 2822 | SLEEPY HOLLOW MOBILE HOME ESTATES |
| 2312 | HALCYON ACRES ANNEX # 2 WATER COMPANY, INC. | 1816 | SPANISH TRAIL WATER COMPANY |
| 1953 | HALCYON ACRES WATER USERS ASSOCIATION | 3894 | STEAM PUMP INVESTORS, L.L.C. |
| 2542 | LA CASITA WATER COMPANY, INC. | 3293 | THIM UTILITY COMPANY |
| 1944 | LAGO DEL ORO WATER COMPANY | 2594 | THIM WATER CORPORATION |
| 1809 | LAKEWOOD WATER COMPANY | 2682 | TIERRA LINDA HOMEOWNERS ASSOCIATION, INC. |
| 1583 | LAS QUINTAS SERENAS WATER COMPANY | 2301 | TORTOLITA WATER COMPANY, INC. |
| 1536 | LAZY C WATER SERVICE | 1651 | VAIL WATER COMPANY |
| 2747 | LOS CERROS WATER COMPANY, INC. | 2229 | VIVA DEVELOPMENT CORPORATION |
| 1854 | LYN-LEE WATER COMPANY | 2104 | VOYAGER WATER COMPANY |
| 1526 | MESALAND WATER COMPANY, INC. | 2052 | WHY UTILITY COMPANY |
| 2375 | MIDVALE FARMS WATER COMPANY | 2221 | WORDEN WATER COMPANY |
| 2368 | MIRABELL WATER COMPANY, INC. | | |

EXHIBIT 3.
SYSTEMATIC DRAWING

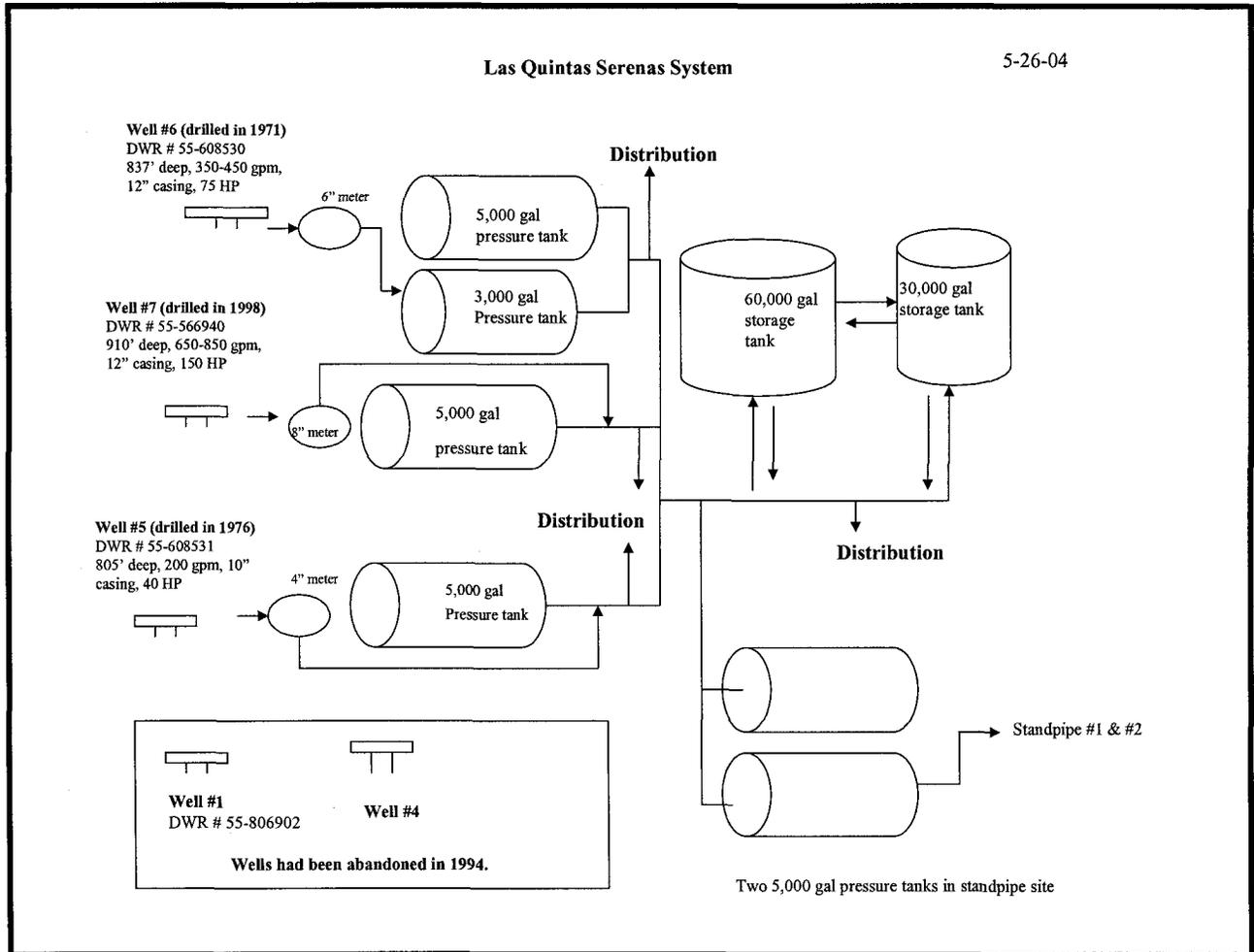


EXHIBIT 4

WATER USAGE ON THE LAS QUINTAS SERENAS WATER COMPANY SERVICE
AREA

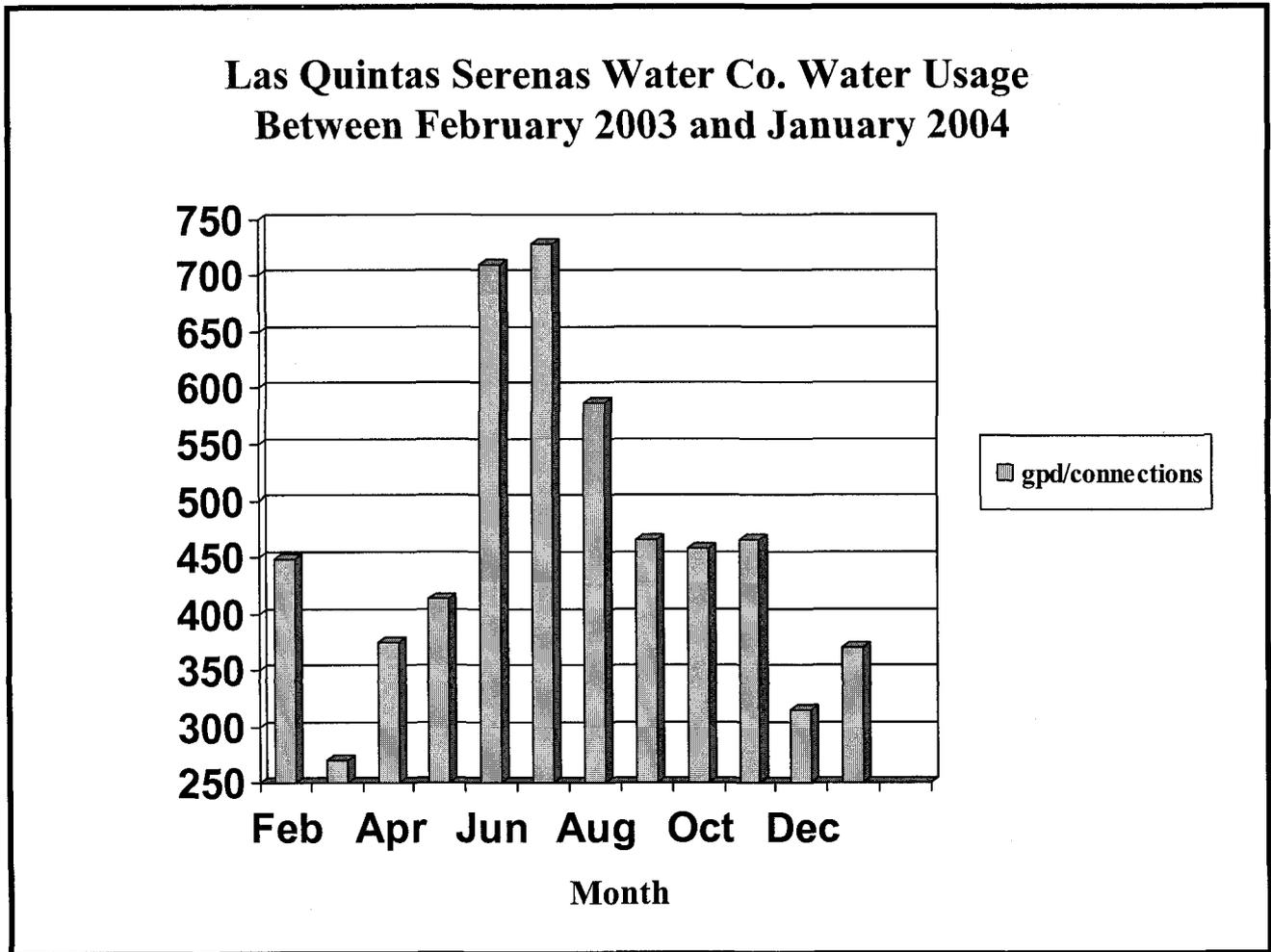


EXHIBIT 5

**ACTUAL AND PROJECTED GROWTH IN LAS QUINTAS SERENAS WATER
COMPANY SERVICE AREA**

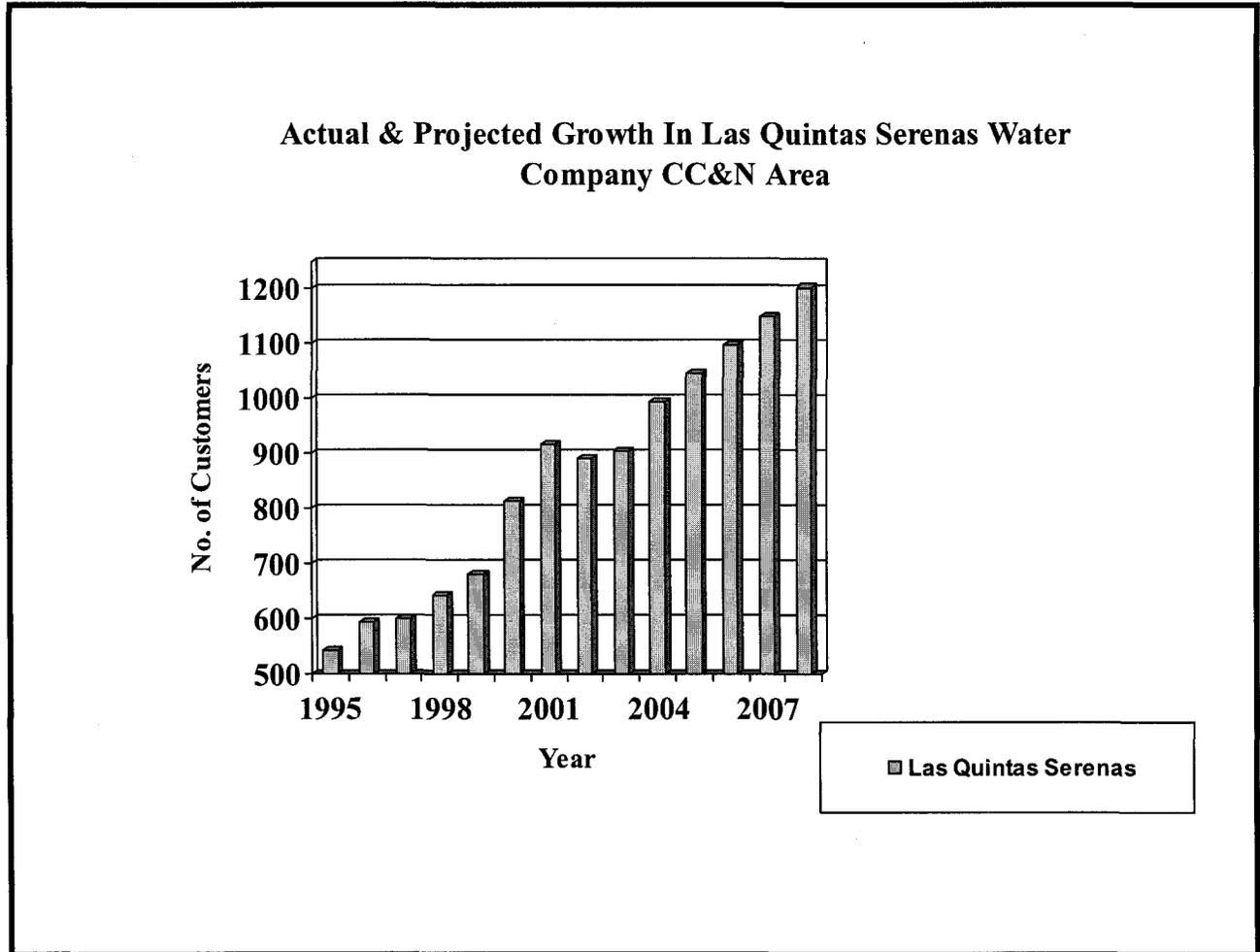


Exhibit 6

Water Depreciation Rates

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

MEMORANDUM

DATE: July 22, 2004

FROM: Dorothy Hains, Utilities Engineer

RE: Las Quintas Serenas Water Company – Arsenic Treatment Cost
Docket No. W-1004B-03-0722 (Rates)

Introduction

Las Quintas Serenas Water Company (“Company”) serves an area near the Town of Green Valley in Pima County. The most recent lab analysis by the Company indicated that the arsenic level in Well Number 7 is 12 micrograms per liter (“ $\mu\text{g}/\text{l}$ ”) or parts per billion (“ppb”) which is above the new arsenic maximum contaminant level (“MCL”). The Company did not file an arsenic treatment plan with the Commission in connection with the pending rate case. Using the ADEQ Arsenic Master Plan (“AMP”), Staff has calculated a preliminary estimate of arsenic removal costs for the Company’s system.

ADEQ Arsenic Master Plan

ADEQ initiated the Arsenic AMP in early 2002 to assist water systems in Arizona that are affected by the new arsenic rule. To assist these affected small water systems, compliance options were developed to categorize systems serving less than 10,000 persons and develop costs for funding arsenic mitigation projects for the systems. The focus of the AMP is on small groundwater systems serving fewer than 10,000 persons, although the report should also prove useful for larger groundwater systems.

Treatment Alternatives and Cost Models

The AMP report provides detailed discussion of the potential arsenic removal technologies for small water systems and the associated costs. Iron-modified activated alumina (Fe-AA), granular iron media such as granular ferric hydroxide (GFH) or Sorb-33, coagulation with granular media filtration and point-of-use (“POU”) devices (reverse osmosis and adsorption media) were determined as the feasible treatment options. Detailed information on site plans and schematics, and design criteria for each treatment alternative, were presented in the report. Cost models were developed for varying configuration options and media types, using Arizona specific cost factor models. Based on the cost models, capital and operation & maintenance (“O&M”) costs were estimated for each category of system based on its flow capacity.

Cost Evaluation

Capital and O&M costs were developed on a statewide basis for each of the feasible treatment alternatives. From these treatment alternatives, the two lowest cost options, from an annualized treatment cost perspective were selected (annualized cost is equal to capital cost amortized over 20 years at a 6 percent interest rate plus annual O&M cost.). A list of the two lowest cost options for each of the 473 impacted point-of-entries ("POEs") was presented in the report. The AMP recommends the use of the two lowest cost options for each POE as arsenic mitigation strategies.

The cost estimates do not include the engineering fees for design for these facilities. According to the AMP, a 30 percent factor should be used to estimate the engineering fee.

Estimated Arsenic Capital and O&M Costs

The AMP selected a treatment method and listed capital and O&M costs as follows:

<u>System No.</u>	<u>System Name</u>	<u>AMP Selected Alternative</u>	<u>Capital Cost</u>	<u>Annual O&M Cost</u>
10-064 (Well #7)	Las Quintas Serenas	1b	\$384,944	\$32,033

Using the AMP and applying updated system information, evaluating the latest lab results regarding arsenic concentration, using current system well production (in gpm), and the current number of service connections, Staff estimated capital and O&M arsenic treatment costs for Well 7 as follows:

<u>System No.</u>	<u>System Name</u>	<u>AMP Selected Treatment</u>	<u>Capital Cost</u>	<u>Annual O&M Cost</u>
10-064 (Well #7)	◆Las Quintas Serenas	1b	\$186,992	\$124,122

Engineering at 15%: \$28,049 (Staff believes 15% is reasonable.)

Staff Total: \$215,041

Using AMP and updated system information, Staff's estimated total arsenic treatment capital cost for Well 7 is \$215,041.

Conclusion and Recommendation

The most recent lab analysis by the Company indicated that the arsenic level in Well 7 is 12 $\mu\text{g}/\text{l}$ which is above the new arsenic MCL. Using the AMP, Staff has calculated a preliminary estimate of arsenic removal costs for Well 7 (a more accurate arsenic treatment cost will be determined once the final engineering design work has been completed). Staff's estimate includes \$186,992 in capital cost, \$124,122 for annual O&M cost (excluding the cost of engineering) and \$28,049 in engineering cost. Staff's estimate assumes (1) arsenic removal will be required for Well 7 only and treatment will occur at the well head, (2) arsenic will be removed to meet 8 $\mu\text{g}/\text{l}$ by Single Column Fe-AA (iron-modified active alumina) Treatment, (3) engineering cost will equal 15 percent of the capital cost and (4) the Company will implement the lowest cost option.