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# **Water Facilities Upgrade Study Report**

**Volume II - Economic Analysis**

for

**Seven Springs Water System  
Pasco County, Florida**

Prepared for:

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## TABLE OF CONTENTS

Section No.	Schedule No.	Page(s)	Description
1		1-2	Introduction and Executive Summary
2			<b>Alternative One - Modify Existing Systems</b>
	1(A)	3	Additional Revenue Requirement
	2(A)	4	Present and Required Rates
	3(A)	5	Increased Operations & Maintenance Expense
	4(A)	6	Additional Depreciation
	5(A)	7	Total Estimated Capital Costs and Allocation of Contingencies, Engineering, and Permitting Costs
	6(A)	8	Estimated Additional Taxes Other than Income
	7(A)	9	Required Rate of Return
	8(A)	10	Average Cost of Capital
	9(A)	11	Additional Income Taxes
	10(A)	12-13	Annualized Revenue when Facilities are Placed in Service
3			<b>Alternative Two - Upgrade Wells &amp; Treatment Plant Facilities</b>
	1(B)	14	Additional Revenue Requirement
	2(B)	15	Present and Required Rates
	3(B)	16	Increased Operations & Maintenance Expense
	4(B)	17	Additional Depreciation
	5(B)	18	Total Estimated Capital Costs and Allocation of Contingencies, Engineering, and Permitting Costs
	6(B)	19	Estimated Additional Taxes Other than Income
	7(B)	20	Required Rate of Return
	9(B)	21	Additional Income Taxes
4			<b>Total Costs Incurred for Corrosion Control Program</b>
	1(C)	22-23	Summary of Engineering, Testing, Chemicals, and Internal Costs Incurred for Corrosion Control Program

# Section 1

Aloha Utilities, Inc.  
Volume II - Economic Analysis  
Water Facilities Upgrade Study Report  
Seven Springs Water System

Introduction

The analysis in this volume estimates the impact of the engineering cost estimates for the alternative Seven Springs Water System improvements on future revenues and rates.

This economic analysis is based on the cost data contained in Volume I and is presented in accordance with the requirements of Commission Order No. PSC-97-0280-FOF-WS.

The analysis covers Alternatives One (A) and (B) (Tray Aeration or Packed Tower Aeration on each well) and Alternative Two, the reconfiguration of the water treatment process into three centralized water treatment plants. Each alternative is more fully described in Volume I. All alternatives include the addition of two new wells to serve the Company's projected customers at the estimated completion date for each project alternative, September, 2000.

Finally, this volume contains a summary of the costs expended by Aloha through May, 1997, on its existing Corrosion Control Program for the Seven Springs Water System.

Aloha Utilities, Inc.  
 Volume II - Economic Analysis  
 Water Facilities Upgrade Study Report  
 Seven Springs Water System

Executive Summary

Presented below is a comparison of the results of the economic analysis for each alternative, extracted from the various sections of this report.

	Alternative One		Alternative Two
	(A)	(B)	
Estimated capital costs (1)	\$ 10,961,205	\$ 13,858,483	\$ 10,214,214
Total additional operating expenses	3,974,960	4,531,702	3,549,581
Required rate of return on capital costs	1,099,552	1,389,170	1,023,691
Total additional revenue required	5,313,625	6,199,866	4,788,766
Percentage increase to existing rates required	331%	387%	299%
Existing base rate, 3,000 gallons minimum	7.12	7.12	7.12
Required base rate, 3,000 gallons minimum	30.72	34.66	28.39
Existing gallonage charge per 1,000 gallons in excess of minimum	1.27	1.27	1.27
Required gallonage charge per 1,000 gallons in excess of minimum	\$ 5.48	\$ 6.18	\$ 5.06

(1) Estimated capital costs do not include any provision for AFUDC or interest during construction, which would be required if the Commission orders Aloha to proceed with one of the alternatives presented.

## **Section 2**

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Aloha Utilities, Inc.  
 Additional Revenue Required to Modify Existing Facilities  
 Seven Springs Water System

Line No.		Reference Schedule No.	Estimated Cost
1	(A) <u>Alternative One (A) - Tray Aeration on each well</u>		
2	Increased operation & maintenance expense	3(A)	\$ 3,041,826
3	Depreciation	4(A)	439,178
4	Taxes other than income taxes	6(A)	239,404
5	Income taxes	9(A)	<u>254,552</u>
6	Total estimated additional operating expenses		3,974,960
7	Additional required rate of return	7(A)	<u>1,099,552</u>
8	Total additional costs and rate of return		5,074,512
9	Divide by Regulatory Assessment Fees (RAF) Expansion Factor		<u>0.955</u>
10	Total additional revenue required		<u>\$ 5,313,625</u>
11	Divide by annualized revenue	10(A)	<u>\$ 1,603,086</u>
12	Percentage increase in revenue and rates required		<u>331.46%</u>
13	(B) <u>Alternative One (B) - Packed Tower Aeration on each well</u>		
14	Increased operation & maintenance expense	3(A)	\$ 3,342,426
15	Depreciation	4(A)	564,992
16	Taxes other than income taxes	6(A)	302,683
17	Income taxes	9(A)	<u>321,601</u>
18	Total estimated additional operating expenses		4,531,702
19	Additional required rate of return	7(A)	<u>1,389,170</u>
20	Total additional costs and rate of return		5,920,872
21	Divide by Regulatory Assessment Fees (RAF) Expansion Factor		<u>0.955</u>
22	Total additional revenue required		<u>\$ 6,199,866</u>
23	Divide by annualized revenue	10(A)	<u>\$ 1,603,086</u>
24	Percentage increase in revenue and rates required		<u>386.75%</u>

Schedule No. 1(A)

Aloha Utilities, Inc.  
 Schedule of Present and Required Rates to Modify Existing Facilities  
 Seven Springs Water System

Line No.		Present Rates	Required Rates
1	(A) <u>Alternative One (A) - Tray Aeration on each well</u>		
2	<u>(331.46% increase)</u>		
3	<u>Residential &amp; General Service</u>		
4	5/8" x 3/4" minimum 3,000 gallons	\$ 7.12	\$ 30.72
5	1" minimum 8,000 gallons	18.94	81.72
6	1 1/2" minimum 15,000 gallons	35.52	153.25
7	2" minimum 24,000 gallons	57.24	246.97
8	3" minimum 48,000 gallons	113.73	490.70
9	6" minimum 150,000 gallons	275.27	1,187.68
10	8" minimum 240,000 gallons	562.36	2,426.36
11	Gallonge charge per 1,000 gallons in		
12	excess of minimum	1.27	5.48
13	(B) <u>Alternative One (B) - Packed Tower Aeration on each well</u>		
14	<u>(386.75% increase)</u>		
15	5/8" x 3/4" minimum 3,000 gallons	\$ 7.12	34.66
16	1" minimum 8,000 gallons	18.94	92.19
17	1 1/2" minimum 15,000 gallons	35.52	172.89
18	2" minimum 24,000 gallons	57.24	278.62
19	3" minimum 48,000 gallons	113.73	553.58
20	6" minimum 150,000 gallons	275.27	1,339.88
21	8" minimum 240,000 gallons	562.36	2,737.29
22	Gallonge charge per 1,000 gallons in		
23	excess of minimum	1.27	6.18
24	Rates per Authority No. WS-96-0134, effective August 30, 1996.		

Aloha Utilities, Inc.  
 Increased Operation & Maintenance Expenses with  
 Modification of Existing Facilities  
 Seven Springs Water System

Line No.		<u>Estimated Engineering Estimate</u>	<u>Existing Expense</u>	<u>Estimated Additional Expense</u>
1	(A) <u>Alternative One (A) - Tray Aeration on each well</u>			
2	(Per Volume I, Section 8)			
3	Purchased power & chemicals - 10 wells total (1)	\$ 1,064,200	\$ (144,922)	\$ 919,278
4	Purchased power - transfer & high service pumps	128,333		128,333
5	Field O&M labor (2)	2,141,333	(220,118)	1,921,215
6	Field supervisor/operator	73,000		73,000
7	Total	<u>\$ 3,406,866</u>	<u>\$ (365,040)</u>	<u>\$ 3,041,826</u>
8	(B) <u>Alternative One (B) - Packed Tower Aeration on each well</u>			
9	(Per Volume I, Section 8)			
10	Purchased power & chemicals - 10 wells total (1)	\$ 1,364,800	\$ (144,922)	\$ 1,219,878
11	Purchased power - transfer & high service pumps	128,333		128,333
12	Field O&M labor (2)	2,141,333	(220,118)	1,921,215
13	Field supervisor/operator	73,000		73,000
14	Total	<u>\$ 3,707,466</u>	<u>\$ (365,040)</u>	<u>\$ 3,342,426</u>
15	(1) Eight existing wells, plus two new wells.			
16	(2) Includes payroll taxes, insurance, and employee benefits.			

Aloha Utilities, Inc.  
 Additional Depreciation on Modifications to Existing Facilities  
 Seven Springs Water System

Line No.		Schedule/ Volume Reference	Engineering Cost Estimate	Guideline Depreciation Rate	Estimated Annual Depreciation
1	(A) <u>Alternative One (A) - Tray Aeration on each well</u>				
2	Chemical storage & feed equipment	Volume I,	\$ 1,711,443	4.5%	\$ 77,015
3	Unit process equipment	Section 8,	1,573,503	4.5	70,808
4	Pump stations	Schedule	1,522,652	5.0	76,133
5	Ground storage tanks	No. 5(A)	1,770,508	2.7	47,804
6	Chlorination systems		294,360	10.0	29,436
7	High service pumping		1,147,123	5.0	57,356
8	Wells & pumps		459,308	3.3	15,157
9	Structures & Improvements - sitework,				
10	concrete, electrical		2,182,308	3.0	65,469
11	Land		300,000		
12	Total		<u>\$ 10,961,205</u>		<u>\$ 439,178</u>
13	(B) <u>Alternative One (B) - Packed Tower Aeration on each well</u>				
14	Chemical storage & feed equipment	Volume I,	\$ 1,697,442	4.5%	\$ 76,385
15	Unit process equipment	Section 8,	4,219,387	4.5	189,872
16	Pump stations	Schedule	1,510,215	5.0	75,510
17	Ground storage tanks	No. 5(A)	1,755,814	2.7	47,407
18	Chlorination systems		291,863	10.0	29,186
19	High service pumping		1,137,632	5.0	56,882
20	Wells & pumps		455,486	3.3	15,031
21	Structures & Improvements - sitework,				
22	concrete, electrical		2,490,644	3.0	74,719
23	Land		300,000		
24	Total		<u>\$ 13,858,483</u>		<u>\$ 564,992</u>

Schedule No. 4(A)

Aloha Utilities, Inc.  
Allocation of Contingencies and Engineering Costs to  
Estimated Costs of Modification to Existing Facilities  
Seven Springs Water System

Line No.		Engineering Cost Estimate	Prorata Percent	Allocated Construction Contingencies	Allocated Engineering & Permitting	Total Estimated Cost
1	(A) <u>Alternative One (A) - Tray Aeration on each well</u>					
2	(Estimated costs per Volume I, Section 8)					
3	Chemical storage & feed equipment	\$ 1,323,510	16.05%	\$ 198,479	\$ 189,454	\$ 1,711,443
4	Unit process equipment	1,216,750	14.76	182,526	174,227	1,573,503
5	Pump stations	1,177,500	14.28	176,591	168,561	1,522,652
6	Ground storage tanks	1,369,040	16.61	205,404	196,064	1,770,508
7	Chlorination systems	227,650	2.76	34,131	32,579	294,360
8	High service pumping	887,050	10.76	133,061	127,012	1,147,123
9	Two new wells & pumps	355,134	4.31	53,299	50,875	459,308
10	Structures & Improvements - sitework,					
11	concrete, electrical	1,687,542	20.47	253,138	241,628	2,182,308
12	Land	300,000	-			300,000
13	Total	<u>\$ 8,544,176</u>	<u>100.00%</u>	<u>\$ 1,236,629</u>	<u>\$ 1,180,400</u>	<u>\$ 10,961,205</u>
14	(B) <u>Alternative One (B) - Packed Tower Aeration on each well</u>					
15	(Estimated costs per Volume I, Section 8)					
16	Chemical storage & feed equipment	\$ 1,323,510	12.52%	\$ 198,539	\$ 175,393	\$ 1,697,442
17	Unit process equipment	3,289,935	31.12	493,492	435,960	4,219,387
18	Pump stations	1,177,500	11.14	176,655	156,060	1,510,215
19	Ground storage tanks	1,369,040	12.95	205,357	181,417	1,755,814
20	Chlorination systems	227,650	2.15	34,094	30,119	291,863
21	High service pumping	887,050	8.39	133,046	117,536	1,137,632
22	Two new wells & pumps	355,134	3.36	53,282	47,070	455,486
23	Structures & Improvements - sitework,					
24	concrete, electrical	1,941,993	18.37	291,306	257,345	2,490,644
25	Land	300,000	-			300,000
26	Total	<u>\$ 10,871,812</u>	<u>100.00%</u>	<u>\$ 1,585,771</u>	<u>\$ 1,400,900</u>	<u>\$ 13,858,483</u>

Aloha Utilities, Inc.  
Estimated Taxes Other than Income  
Associated with Modification of Existing Facilities  
Seven Springs Water System

<u>Line No.</u>		
1	(A) <u>Alternative One (A) - Tray Aeration on each well</u>	
2	Estimated cost of facilities (Schedule No. 5(A))	\$ 10,961,205
3	Current Pasco County millage rate	<u>0.021841</u>
4	Total increase in property taxes	<u>\$ 239,404</u>
5	(B) <u>Alternative One (B) - Packed Tower Aeration on each well</u>	
6	Estimated cost of facilities (Schedule No. 5(A))	\$ 13,858,483
7	Current Pasco County millage rate	<u>0.021841</u>
8	Total increase in property taxes	<u>\$ 302,683</u>

Schedule No. 6(A)

Aloha Utilities, Inc.  
 Additional Required Rate of Return on Modified Existing Facilities  
 Seven Springs Water System

Line No.		Reference Schedule No.	Alternative One (A)	Alternative One (B)
1	Estimated cost to modify existing facilities	5(A)	\$ 10,961,205	\$ 13,858,483
2	Less: Accumulated depreciation (1 year)	4(A)	<u>(439,178)</u>	<u>(564,992)</u>
3	Net additional investment to serve existing customers		10,522,027	13,293,491
4	Average cost of capital	8(A)	<u>10.45%</u>	<u>10.45%</u>
5	Additional rate of return required		<u>\$ 1,099,552</u>	<u>\$ 1,389,170</u>

Schedule No. 7(A)

Aloha Utilities, Inc.  
 Modifications to Existing and Upgraded Water Facilities  
 Average Cost of Capital - December 31, 1996  
 Seven Springs Water System

Line No.		Total Capital	Percent Ratio	Cost of Each Percent	Weighted Cost
1	Long-term debt	\$ 2,522,880	55.98%	11.00%	6.16%
2	Preferred stock	600,000	13.31	11.88	1.58%
3	Customer deposits	208,610	4.63	6.00	0.28%
4	Common equity	923,619	20.49	11.88	2.43%
5	Deferred income taxes	252,068	5.59	-	-
6	Total	<u>\$ 4,507,177</u>	<u>100.00%</u>		<u>10.45%</u>

Aloha Utilities, Inc.  
**Additional Income Taxes on Investment Required to Modify Existing Facilities  
 Seven Springs Water System**

Line No.		Reference Schedule No.	Alternative One (A)	Alternative One (B)
1	Net additional investment to serve existing customers	7(A)	\$ 10,522,027	\$ 13,293,491
2	Weighted cost of equity (1)	8(A)	<u>4.01%</u>	<u>4.01%</u>
3	Net income generated by additional investment		421,933	533,069
4	Divide by income tax expansion factor		<u>1.6033</u>	<u>1.6033</u>
5	Pre-tax income		676,485	854,670
6	Less: Net income per above		<u>(421,933)</u>	<u>(533,069)</u>
7	Additional income tax provision required		<u>\$ 254,552</u>	<u>\$ 321,601</u>
8	(1) Per Schedule No. 8(A):			
9	Weighted cost of preferred stock	1.58%		
10	Weighted cost of common equity	<u>2.43</u>		
11	Total weighted cost of equity		<u><u>4.01%</u></u>	

Schedule No. 9(A)

**Aloha Utilities, Inc.**  
**Annualized Revenue when Modified Existing Facilities are Placed in Service**  
**Seven Springs Water System**

<u>Line No.</u>			
1	Annualized revenue, year ended February 28, 1997 (page 2)		\$ 1,366,305
2	Growth factor for completion date		<u>1.1733</u>
3	Projected annualized revenue 9/2000		<u>\$ 1,603,086</u>
4	(1) Number of ERC's 12/31/95	8,083	
5	Number of ERC's 12/31/96	<u>8,474</u>	
6	Average annual increase	<u>391</u>	
7	Increase percent	4.84%	
8	Factor for completion date (A)	<u>3.58</u>	
9	Completion date growth factor	<u>.1733</u>	
10	(A) Number of months from 02/97 to estimated completion 09/2000		
11	Divided by 12 months (43/12 = 3.58)		

Aloha Utilities, Inc.  
 Schedule of Annualized Revenue  
 Seven Springs Water System  
 For the Year Ended February 28, 1997

Line No.		Number of Bills	Gallons Sold (000)	Existing Rates (1)	Annualized Revenue
1	<u>Residential - 5/8" x 3/4"</u>				
2	Base facility charges	94,402		\$ 7.12	\$ 672,142
3	Excess gallonage charges		477,018	1.27	605,813
4					<u>1,277,955</u>
5	<u>General Service</u>				
6	<u>5/8" x 3/4"</u>				
7	Minimum charges (3M)	1,097		7.12	7,811
8	Excess gallonage charges		8,774	1.27	11,143
9					<u>18,954</u>
10	<u>1"</u>				
11	Minimum charges (8M)	386		18.94	7,311
12	Excess gallonage charges		6,106	1.27	7,755
13					<u>15,066</u>
14	<u>1 1/2"</u>				
15	Minimum charges (15M)	144		35.52	5,115
16	Excess gallonage charges		1,957	1.27	2,485
17					<u>7,600</u>
18	<u>2"</u>				
19	Minimum charges (24M)	244		57.24	13,967
20	Excess gallonage charges		16,104	1.27	20,452
21					<u>34,419</u>
22	<u>3"</u>				
23	Minimum charges (48M)	8		113.73	910
24	Excess gallonage charges		296	1.27	376
25					<u>1,286</u>
26	<u>6"</u>				
27	Minimum charges (150M)	32		275.27	8,809
28	Excess gallonage charges		1,745	1.27	2,216
29					<u>11,025</u>
30	<b>Total</b>	<u>96,313</u>	<u>512,000</u>		<u>\$ 1,366,305</u>

# Section 3

Aloha Utilities, Inc.  
 Additional Revenue Required to Upgrade Facilities  
 Seven Springs Water System

Line No.		Reference Schedule No.	Estimated Cost
1	<u>Alternative Two - Upgrade Facilities (1)</u>		
2	Increased operation & maintenance expense	3(B)	\$ 2,671,372
3	Depreciation	4(B)	418,130
4	Taxes other than income taxes	6(B)	223,089
5	Income taxes	9(B)	<u>236,990</u>
6	Total estimated additional operating expenses		3,549,581
7	Additional required rate of return	7(B)	<u>1,023,691</u>
8	Total additional costs and rate of return		4,573,272
9	Divide by Regulatory Assessment Fees (RAF) Expansion Factor		<u>0.955</u>
10	Total additional revenue required		<u>\$ 4,788,766</u>
11	Divide by annualized revenue	10(A)	<u>\$ 1,603,086</u>
12	Percentage increase in revenue and rates required		<u>298.72%</u>

(1) Alternative Two consists of an upgrade to the existing Mitchell Road water treatment plant; construction of two new treatment plants, storage facilities, and upgrades of the existing eight wells and the addition of two new wells and improvements to the transmission system. See Volume I, Sections 7 and 9, for a complete analysis and description of this Alternative.

Aloha Utilities, Inc.  
 Schedule of Present and Proposed Rates to Upgrade Facilities  
 Seven Springs Water System

Line No.		Present Rates	Required Rates
1	<u>Alternative Two - Upgrade Facilities (298.72% increase)</u>		
2	<u>Residential &amp; General Service</u>		
3	5/8" x 3/4" minimum 3,000 gallons	\$ 7.12	\$ 28.39
4	1" minimum 8,000 gallons	18.94	75.52
5	1 1/2" minimum 15,000 gallons	35.52	141.63
6	2" minimum 24,000 gallons	57.24	228.23
7	3" minimum 48,000 gallons	113.73	453.46
8	6" minimum 150,000 gallons	275.27	1,097.56
9	8" minimum 240,000 gallons	562.36	2,242.24
10	Gallage charge per 1,000 gallons in		
11	excess of minimum	1.27	5.06

Aloha Utilities, Inc.  
 Increased Operation & Maintenance Expenses with  
 Upgrade of Facilities  
 Seven Springs Water System

Line No.		Estimated Engineering Estimate	Existing Expense	Estimated Additional Expense
1	<u>Alternative Two - Facilities Upgrade</u>			
2	(Per Volume I, Section 9)			
3	Purchased power & chemicals	\$ 2,092,990	Note (1)	\$ 2,092,990
4	Purchased power - transfer & high service pumps	105,000	-	105,000
5	Field O&M labor	657,000	\$ (220,118)	436,882
6	Field supervisor/operator	36,500		36,500
7	Total	<u>\$ 2,891,490</u>	<u>\$ (220,118)</u>	<u>\$ 2,671,372</u>

8 (1) No savings of existing purchased power costs for pumping equipment at existing wells is anticipated.

Aloha Utilities, Inc.  
 Additional Depreciation to Upgrade Facilities  
 Seven Springs Water System

Line No.		Schedule/ Volume Reference	Engineering Cost Estimate	Guideline Depreciation Rate	Estimated Annual Depreciation
1	<b>Alternative Two - Upgrade Facilities</b>				
2	Chemical storage & feed equipment	Volume I,	\$ 1,077,923	4.5%	\$ 48,507
3	Unit process equipment	Section 9,	2,489,662	4.5	112,035
4	Pump stations	Schedule	444,387	5.0	22,219
5	Storage tanks	No. 5(B)	748,017	2.7	20,196
6	Chlorination systems & scrubber		252,429	10.0	25,243
7	High service pumping equipment		802,654	5.0	40,133
8	Electric generators		220,632	5.0	11,032
9	Flow meters & recorders		68,740	5.0	3,437
10	Pressure relief valve assemblers		54,796	4.0	2,192
11	SCADA system (1)		148,043	16.7	24,723
12	Structures & Improvements		1,597,081	3.0	47,912
13	1998 well improvements		944,451	3.3	31,167
14	1998 transmission & distribution mains		1,275,399	2.3	29,334
15	Land		90,000	-	-
16	Total		<u>\$ 10,214,214</u>		<u>\$ 418,130</u>

17 (1) Supervisory Control & Data Acquisition Systems (SCADA) are computerized control systems which track each  
 18 element of the treatment plant process.

Aloha Utilities, Inc.  
Allocation of Contingencies and Engineering Costs to  
Estimated Cost to Upgrade Facilities - Alternative Two  
Seven Springs Water System

Line No.		Engineering Cost Estimate	Prorata Percent	Allocated Construction Contingencies	Allocated Engineering & Permitting	Total Estimated Cost
1	(A) <u>Alternative Two - 1998 Facilities Upgrade (1)</u>					
2	(Estimated costs per Volume I, Section 9)					
3	Chemical storage & feed equipment	\$ 805,410	10.65%	\$ 120,857	\$ 151,656	\$ 1,077,923
4	Unit process equipment	1,860,450	24.59	279,050	350,162	2,489,662
5	Pump stations	332,055	4.39	49,818	62,514	444,387
6	Storage tanks	558,920	7.39	83,863	105,234	748,017
7	Chlorination systems & scrubber	188,714	2.49	28,257	35,458	252,429
8	High service pumping equipment	599,740	7.93	89,991	112,923	802,654
9	Electric generator	164,850	2.18	24,739	31,043	220,632
10	Flow meters & recorders	51,339	.68	7,718	9,683	68,740
11	Pressure relief valve assemblies	40,977	.54	6,129	7,690	54,796
12	SCADA system	110,685	1.46	16,568	20,790	148,043
13	Structures & Improvements - concrete,					
14	buildings, yard piping, sitework, electrical	1,193,557	15.77	178,959	224,565	1,597,081
15	1998 well improvements	705,715	9.33	105,877	132,859	944,451
16	1998 transmission & distribution mains	952,990	12.60	142,986	179,423	1,275,399
17	Land	90,000	-			90,000
18	Total	<u>\$ 7,655,402</u>	<u>100.00%</u>	<u>\$ 1,134,812</u>	<u>\$ 1,424,000</u>	<u>\$ 10,214,214</u>
19	(1) The estimated costs for 2015, Water Main improvements, shown in Volume I, Section 9, are not included, since the source of additional water has					
20	not yet been defined. Such 2015 costs were presented in Volume I, Section 9, to show that even if such costs are considered, the total costs of					
21	Alternative Two are less than those of either Alternatives One (A) or One (B).					

Aloha Utilities, Inc.  
Estimated Taxes Other than Income Taxes  
Associated with Upgrade to Facilities  
Seven Springs Water System

<u>Line No.</u>		
1	<u>Alternative Two - Facilities Upgrade</u>	
2	Estimated cost of facilities (Schedule No. 5(B))	\$ 10,214,214
3	Current Pasco County millage rate	<u>0.021841</u>
4	Total increase in property taxes	<u>\$ 223,089</u>

Schedule No. 6(B)

Aloha Utilities, Inc.  
Additional Required Rate of Return on Upgraded Facilities  
Seven Springs Water System

<u>Line No.</u>		<u>Reference Schedule No.</u>	<u>Alternative Two Estimated Amount</u>
1	Estimated cost to upgrade facilities	5(B)	\$ 10,214,214
2	Less: Accumulated depreciation (1 year)	4(B)	<u>(418,130)</u>
3	Net additional investment to serve existing customers		9,796,084
4	Average cost of capital		<u>10.45%</u>
5	Additional rate of return required		<u>\$ 1,023,691</u>

Schedule No. 7(B)

Aloha Utilities, Inc.  
 Additional Income Taxes on Investment Required to Upgrade Facilities  
 Alternative Two  
 Seven Springs Water System

<u>Line No.</u>		<u>Reference Schedule No.</u>	<u>Alternative Two Estimated Expense</u>
1	Net additional investment to serve existing customers	7(B)	\$ 9,796,084
2	Weighted cost of equity	8(A), 9(A)	<u>4.01%</u>
3	Net income generated by additional investment		392,823
4	Divide by income tax expansion factor		<u>1.6033</u>
5	Pre-tax income		629,813
6	Less: Net income per above		<u>(392,823)</u>
7	Additional income tax provision required		<u>\$ 236,990</u>

Schedule 9(B)

# Section 4

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Aloha Utilities, Inc.  
 Summary of Engineering, Testing, Chemicals, and Internal Costs Incurred  
 Seven Springs Corrosion Control Program  
 Inception through May, 1997

Line No.	Invoice Date	Invoice Number	Vendor	Amount
1	<b>Engineering</b>			
2	03/20/95	0012	David Porter, P.E.	\$ 675
3	07/25/95	0037	David Porter, P.E.	113
4	08/28/95	0045	David Porter, P.E.	1,126
5	09/25/95	0054	David Porter, P.E.	1,200
6	10/28/95	0061	David Porter, P.E.	3,150
7	11/27/95	0066	David Porter, P.E.	2,905
8	12/26/95	0070	David Porter, P.E.	525
9	01/29/96	0078	David Porter, P.E.	1,983
10	02/26/96	0083	David Porter, P.E.	638
11	03/31/96	0092	David Porter, P.E.	150
12	05/01/96	0097	David Porter, P.E.	770
13	05/29/96	0106	David Porter, P.E.	1,136
14	06/28/96	0115	David Porter, P.E.	188
15	08/05/96	0123	David Porter, P.E.	150
16	08/30/96	0132	David Porter, P.E.	525
17	11/01/96	0142	David Porter, P.E.	1,251
18	12/03/96	0148	David Porter, P.E.	600
19	12/29/96	0153	David Porter, P.E.	1,398
20	02/02/97	0160	David Porter, P.E.	1,590
21	03/01/97	0165	David Porter, P.E.	1,585
22	03/29/97	0174	David Porter, P.E.	263
23	05/01/97	0183	David Porter, P.E.	712
24	<b>Total Engineering</b>			<b>22,633</b>
25	<b>Testing</b>			
26	08/18/93	86719	Haines Testing Lab., Inc.	90
27	08/18/93	86655	Haines Testing Lab., Inc.	630
28	09/03/93	86757	Haines Testing Lab., Inc.	146
29	09/08/93	86906	Haines Testing Lab., Inc.	20
30	09/21/93	86995	Haines Testing Lab., Inc.	20
31	09/23/93	87017	Haines Testing Lab., Inc.	20
32	10/06/93	87115	Haines Testing Lab., Inc.	20
33	10/22/93	87348	Haines Testing Lab., Inc.	147
34	06/01/93	920234	Genesis Group, Inc. SE	3,002
35	06/25/93	930295	Genesis Group, Inc. SE	668
36	08/06/93	930351	Genesis Group, Inc. SE	473
37	08/20/93	930365	Genesis Group, Inc. SE	2,268
38	<b>Total Testing</b>			<b>7,504</b>

Aloha Utilities, Inc.  
 Summary of Engineering, Testing, Chemicals, and Internal Costs Incurred  
 Seven Springs Corrosion Control Program  
 Inception through May, 1997

Line No.	Invoice Date	Invoice Number	Vendor	Amount
1	<u>Chemicals</u>			
2	03/13/96	248	Met Pro Corporation	\$ 5,454
3	06/26/96	288	Met Pro Corporation	1,515
4	07/11/96	102941	Met Pro Corporation	91
5	08/07/96	3062	Met Pro Corporation	3,212
6	08/29/96	3176	Met Pro Corporation	3,212
7	10/01/96	3324	Met Pro Corporation	3,212
8	10/28/96	345	Met Pro Corporation	3,212
9	11/22/96	355	Met Pro Corporation	3,030
10	12/20/96	366	Met Pro Corporation	3,030
11	01/16/97	3735	Met Pro Corporation	3,030
12	02/19/97	3859	Met Pro Corporation	3,030
13	03/12/97	3905	Met Pro Corporation	3,030
14	04/08/97	4021	Met Pro Corporation	3,030
15	Total Chemicals			<u>38,088</u>
16	<u>Internal Costs</u>			
17			Postage - DEP	8
18			Postage - Homeowners	7
19	05/31/96	1205205	St. Petersburg Times	103
20	06/02/96		Tampa Tribune	192
21	04/24/97	4205	Great American Emp. Svc.	188
22	04/17/97	4158	Great American Emp. Svc.	73
23	Total Internal Costs			<u>571</u>
24	Total Costs Incurred			<u>\$ 68,796</u>