

ORIGINAL



0000170108

MEMORANDUM

RECEIVED  
AZ CORP COMMISSION  
DOCKET CONTROL

TO: Docket Control

FROM: Thomas M. Broderick  
Director  
Utilities Division

*h = Mark*

2016 MAY 4 PM 3 50

DATE: May 4, 2016

RE: STAFF REPORT IN THE MATTER OF THE APPLICATION OF HYDRO-RESOURCES, INC. FOR A RATE INCREASE (DOCKET NO. W-20770A-16-0020)

Attached is the Staff Report in the matter of Hydro-Resources, Inc. for a rate increase. Staff recommends approval of the rate application using Staff's recommended rates and charges.

TMB:PNT:nr/RRM

Originator: Phan Tsan

Arizona Corporation Commission  
DOCKETED

MAY 04 2016

DOCKETED BY *PC*

Service List for: Hydro-Resources, Inc.  
Docket No. W-20770A-16-0020

Rodney Ott  
Quarles & Brady, LLP  
Two North Central Avenue  
One Renaissance Square  
Phoenix, Arizona 85004

Mr. John W. Rueter  
President, Hydro-Resources, Inc.,  
Post Office Box 3246  
549 Camper Village,  
Grand Canyon, AZ 86023

Mr. Thomas J. Bourassa, CPA  
Rate Consultant, Hydro-Resources, Inc.  
139 W Wood Drive  
Phoenix, AZ 85029

Mr. Thomas M. Broderick  
Director, Utilities Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Ms. Janice M. Alward  
Chief, Legal Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

Mr. Dwight Nodes  
Chief Administrative Law Judge, Hearing Division  
Arizona Corporation Commission  
1200 West Washington Street  
Phoenix, Arizona 85007

**STAFF REPORT  
UTILITIES DIVISION  
ARIZONA CORPORATION COMMISSION**

**HYDRO-RESOURCES, INC.  
DOCKET NO. W-20770A-16-0020**

**APPLICATION FOR A RATE INCREASE**

**MAY 4, 2016**

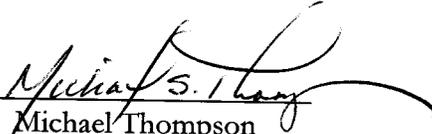
## STAFF ACKNOWLEDGMENT

The Staff Report for Hydro-Resources, Inc., Docket No. W-20770A-16-0020, was the responsibility of the Staff members listed below. Phan Tsan was responsible for the review and analysis of the Company's application, recommended revenue requirement, rate base and rate design. Michael Thompson was responsible for the engineering and technical analysis. Deborah Reagan was responsible for reviewing the Commission's records on the Company, determining compliance with Commission policies/rules and reviewing customer complaints filed with the Commission.



---

Phan Tsan  
Public Utilities Analyst



---

Michael Thompson  
Utilities Engineer



---

Deb Reagan  
Public Utilities Consumer Analyst

**EXECUTIVE SUMMARY  
HYDRO-RESOURCES, INC.  
DOCKET NO.W-20770A-16-0020**

Hydro-Resources, Inc. (“Hydro” or “Company”) is a Class D water utility located in the City of Tusayan, Arizona, an area just south of the Grand Canyon National Park’s south rim entrance in Coconino County, Arizona. Hydro provides potable water service to approximately 98 metered connections in its certificated area. Hydro was granted a Certificate of Convenience and Necessity (“CC&N”) pursuant to Decision No.74742, on September 15, 2014. Decision No. 74742, also approved Hydro’s current rates. The Decision ordered the Company to file a rate application within 120 days after the one year anniversary of the Decision date. On January 20, 2016, the Company filed an application for a permanent rate adjustment, using a test year ended September 30, 2015.

The Company proposed a \$102,677 or 13.40 percent decrease from the test year revenue of \$766,406 to \$663,729<sup>1</sup>. The Company proposed revenue would result in an operating income of \$118,004 for a 12.00 percent rate of return. The Company has proposed an original cost rate base (“OCRB”) of \$983,376. The Company’s proposed rates would increase the typical 5/8 x 3/4-inch meter residential bill, with a median usage of 2,167 gallons, from \$53.08 to \$77.79; an increase of \$24.71 or 46.55 percent<sup>2</sup>. The Company’s proposed rates actually produce operating revenue of \$691,989 based on Staff’s bill analysis, which is \$28,260 more than its proposed revenue requirement for operating revenue.

Staff recommends a \$102,677 or 13.40 percent decrease from the test year revenue of \$766,406 to \$663,729, the same annual revenue proposed by the Company. Staff’s recommended revenue would result in an operating income of \$140,120 for a 14.37 percent rate of return. Staff recommended an OCRB of \$975,073. Staff’s recommended rates would increase the typical 5/8 x 3/4-inch meter residential bill, with a median usage of 2,167 gallons from \$53.08 to \$69.00, an increase of \$15.92 or 29.99 percent.<sup>2</sup>

Staff recommends

- Approval of the Staff recommended rates and charges as shown on Schedule PNT-4.
- That the Company file with Docket Control, as a compliance item in this Docket, a schedule of its approved rates and charges within 30 days after the Decision in this matter is issued.
- That the Company be ordered to keep invoices for plant assets purchased in the future.
- The annual water testing expenses of \$1,864 be used for purposes of this proceeding.

---

<sup>1</sup> Staff would note that both the Company and Staff are recommending decreases in the Company’s annual revenue requirement but the docket caption refers to the filing as a “rate increase” so that wording is used throughout this Staff report when referring this filed request.

<sup>2</sup> Staff notes that the current initial rate design does not include a monthly minimum charges but was structured around a flat rate of \$24.50 per 1,000 gallons of usage for all usage results in a proposed and recommended revenue decrease but a proposed and recommended increase in rates, as shown on Schedule PNT-4 and PNT-5. As a result, the new rate design which does include a monthly minimum results in an increase to some customers even though the Company overall revenue requirement is lower.

- That Hydro file with Docket Control, as compliance item in this docket and within 12 months of the effective date of a decision in this proceeding, a report acknowledging that the automatic fire pump control system has been completed.
- That Hydro begin tracking, quantifying, and recording all consumed water associated with Unbilled Authorized Consumption for removal from the water loss calculation.
- That Hydro monitor its water system for a 12-month period to prepare a water loss report. Hydro should account for its Unbilled Authorized Consumption (gallons) and remove that quantity from the water loss calculation. If the reported water loss remains above 10 percent, Hydro shall submit a water loss reduction report containing a detailed analysis and plan to reduce its water loss to 10 percent or less. If Hydro believes it is not cost effective to reduce water loss to 10 percent or less, it shall submit a detailed cost benefit analysis to support its opinion. In no case shall Hydro continue to allow water loss to be greater than 15 percent. The water loss reduction report or the detailed cost benefit analysis, whichever is submitted, shall be docketed as a compliance item within 18 months from the effective date of an order issued in this proceeding.
- That Hydro use the Staff recommended depreciation rates listed in Table G.
- Approval of Hydro's proposed installation charges included in Table H.
- The service line and meter installation charges listed under "Staff's Recommendations" in Table H be adopted.

**TABLE OF CONTENTS**

	<b><u>PAGE</u></b>
<b>FACT SHEET</b> .....	1
<b>SUMMARY OF RATE FILING</b> .....	3
<b>BACKGROUND</b> .....	3
<b>CONSUMER SERVICES</b> .....	3
<b>COMPLIANCE</b> .....	4
<b>ENGINEERING ANALYSIS</b> .....	4
<b>RATE BASE</b> .....	4
<i>Plant In Service</i> .....	4
<i>Other Rate Base Items</i> .....	6
<b>OPERATING INCOME STATEMENT</b> .....	6
<i>Operating Revenue</i> .....	6
<i>Operating Expenses</i> .....	6
<b>REVENUE REQUIREMENT</b> .....	7
<b>RATE DESIGN</b> .....	7
<b>MISCELLANEOUS SERVICE CHARGES</b> .....	7
<b>SERVICE LINE AND METER INSTALLATION CHARGES</b> .....	8
<b>STAFF RECOMMENDATIONS</b> .....	8

**SCHEDULES**

Summary of Filing.....	Schedule PNT-1
Rate Base.....	Schedule PNT-2
Statement of Operating Income.....	Schedule PNT-3
Rate Design .....	Schedule PNT-4
Typical Bill Analysis .....	Schedule PNT-5
Cash Flow Analysis .....	Schedule PNT-6

**ATTACHMENTS**

Engineering Report.....	Attachment A
-------------------------	--------------

**FACT SHEET**

**Type of Ownership:** Arizona "S" Corporation

**Location:** City of Tusayan, Arizona.

**Rates:** On January 20, 2016, the Company filed an application for a permanent rate adjustment. The application became sufficient on February 19, 2016.

**Current Rates:** Decision No. 74742, dated September 15, 2014.

**Current Test Year Ended:** September 30, 2015.

<b>Based on Residential 5/8 x 3/4-inch meter</b>	<b>Company Current <u>Rates</u></b>	<b>Company Proposed <u>Rates</u></b>	<b>Staff Recommended <u>Rates</u></b>
Monthly Minimum Charge	\$0.00	\$54.50	43.00
Gallons in minimum	0	0	0
Per 1,000 gallons			
All gallons	\$24.50	N/A	N/A
Tier One from 1 gallon to 3,000 gallons	N/A	\$10.75	\$12.00
Tier Two from 3,001 gallons to 7,500 gallons	N/A	\$13.05	\$13.66
Tier Three all gallons over 7,500	N/A	\$15.35	\$17.00
Typical residential bill (Based on median usage of 2,167 gallons)	\$53.08	\$77.79	\$69.00

**Customers:**

Number of metered customers in the current test year: 98

Current test year customers by meter size:

5/8 x 3/4-inch	44
3/4 inch	21
1-inch	2
1-1/2 inch	2
2-inch	23
3-inch	5
4 inch	1

**Complaints:**

A review of Consumer Service records reveals no complaints and/or opinions have been filed against the Company.

**Notifications:**

Company mailed Customer Notification on January 26, 2016. The Affidavit of Mailing was docketed on April 5, 2016.

## SUMMARY OF RATE FILING

On January 20, 2016, the Company filed an application for a permanent rate increase. On February 19, 2016, the rate application was deemed sufficient by Staff.

The test year results as adjusted by Staff for Hydro show total operating revenue of \$766,406, an operating income of \$213,125, for 21.86 rate of return, as shown on Schedule PNT-1. The original cost rate base ("OCRB") as adjusted by Staff is \$975,073.

The Company proposed a \$102,677 or 13.40 percent decrease from the test year revenue of \$766,406 to \$663,729.<sup>3</sup> The Company's proposed revenue would result in an operating income of \$118,004 for a 12.00 percent rate of return and an operating margin of 17.78 percent. The Company has proposed an OCRB of \$983,376. The Company's proposed rates would increase the typical 5/8 x 3/4-inch meter residential bill, with a median usage of 2,167 gallons, from \$53.08 to \$77.79; an increase of \$24.71 or 46.55 percent.<sup>4</sup> The Company's proposed rates actually produce operating revenue of \$691,989 based on Staff's bill analysis, which is \$28,260 more than its proposed revenue requirement for operating revenue.

Staff recommends a \$102,677 or 13.40 percent decrease from the Staff adjusted test year revenue of \$766,406 to \$663,729, the same annual revenue proposed by the Company. Staff's recommended revenue would result in an operating income of \$140,120 for a 14.37 percent rate of return and an operating margin of 21.11 percent. Staff recommended an OCRB of \$975,073. Staff's recommended rates would increase the typical 5/8 x 3/4-inch meter residential bill, with a median usage of 2,167 gallons from \$53.08 to \$69.00, an increase of \$15.92 or 29.99 percent.<sup>4</sup>

## BACKGROUND

Hydro is a Class D water utility located in the City of Tusayan, Arizona, an area just south of the Grand Canyon National Park's south rim entrance in Coconino County, Arizona. Hydro provides potable water service to approximately 98 metered connections in its certificated area. Hydro was granted a Certificate of Convenience and Necessity ("CC&N") pursuant to Decision No.74742, on September 15, 2014

## CONSUMER SERVICES

A review of Consumer Service records reveals no complaints and/or opinions have been filed against the Company.

---

<sup>3</sup> Staff would note that both the Company and Staff are recommending decreases in the Company's annual revenue requirement but the docket caption refers to the filing as a "rate increase" so that wording is used throughout this Staff report when referring this filed request.

<sup>4</sup> Staff notes that the current initial rate design does not include a monthly minimum charges but was structured around a flat rate of \$24.50 per 1,000 gallons of usage for all usage results in a proposed and recommended revenue decrease but a proposed and recommended increase in rates, as shown on Schedule PNT-4 and PNT-5. As a result, the new rate design which does include a monthly minimum results in an increase to some customers even though the Company overall revenue requirement is lower.

## COMPLIANCE

A check of the Utilities Compliance Database indicates that there are no delinquencies for Hydro at this time. Therefore, Hydro is currently "in Compliance" with the Utilities Compliance Database.

## ENGINEERING ANALYSIS

The water system was visited on March 2, 2016, by Staff Utilities Engineer, Michael Thompson in the accompaniment of Mr. John Rueter of the Company. A complete discussion of Staff's technical findings and recommendations along with a complete description of the Company's water system is provided in the attached Engineering Report.

## RATE BASE

Staff's adjustments decreased the Company's proposed rate base by \$8,303 from \$983,376 to \$975,073, as shown on Schedule PNT-2, page 1. Details of Staff's adjustments are discussed below.

### *Plant in Service*

Adjustment "A" decreases plant in service by \$61,501 from \$1,698,146 to \$1,636,645, as shown on Schedule PNT-2, pages 1 and 2. The Company was only able to provide invoices to support approximately 22 percent of total plant in service. Staff Engineer was able to verify the plant and concluded that the cost was reasonable. However, Staff found that some plant was misclassified and some were no longer in service. Therefore, Staff made adjustments to plant to reclassify some plant and removed some that were abandoned or no longer in service. Adjustment A consists of the following:

Structures and Improvements- Adjustment "a" increases Structures and Improvements account by \$725, from \$22,696 to \$23,421 as shown on Schedule PNT-2, page 2. Staff's adjusted amount reflects the reclassification of \$3,950 to Account 331-Transmission and Distribution Mains, and the reclassification of \$4,675 from Account 311-Pumping Equipment.

Wells and Springs- Adjustment "b" decreases Wells and Springs account by \$196,165, from \$733,502 to \$537,337 as shown on Schedule PNT-2, page 2. Staff's adjusted amount reflects the reclassification of \$240,670 to Account 331-Transmission and Distribution Mains, \$42,838 from Account 331, and \$1,667 from Account 341-Transportation Equipment.

Electric Pumping Equipment- Adjustment "c" decreases Electric Pumping Equipment account by \$4,675, from \$144,879 to \$140,204 as shown on Schedule PNT-2, page 2. Staff's adjusted amount reflects the reclassification of \$4,675 to Account 304- Structures and Improvements.

Distribution Reservoirs & Standpipes- Adjustment "d" decreases Distribution Reservoirs & Standpipes account by \$64,341, from \$64,341 to \$0 as shown on Schedule PNT-2, Page 2. Staff's

adjusted amount reflects the reclassification of \$22,341 to Account 330.1- Storage Tank, and removal of \$42,000 as the tank was removed and abandoned.

Storage Tank – Adjustment “e” increases Storage Tank by \$36,541 from \$0 to \$36,541 as shown on Schedule PNT-2, Page 2. Staff’s adjusted amount reflects the reclassification of \$22,341 from Account 330. - Distribution Reservoirs & Standpipes, and \$14,200 from Account 339-Other Plant and Miscellaneous Equipment.

Transmission & Distribution Mains Adjustment “f” increases Transmission & Distribution Mains account by \$206,666, from \$149,052 to \$355,718 as shown on Schedule PNT-2, Page 2. Staff’s adjusted amount reflects the reclassification of \$240,670 from Account 307. – Wells and Springs, \$3,950 from Account 304-Structures and Improvements, \$4,884 from Account 347-Miscellaneous Equipment, and \$42,838 to Account 307-Wells and Springs.

Other Plant and Miscellaneous Equipment – Adjustment “g” decreases Other Plant and Miscellaneous Equipment account by \$14,200, from \$62,923 to \$48,723 as shown on Schedule PNT-2 page 2. Staff’s adjusted amount reflects the reclassification of \$14,200 to Account 330.1- Storage Tank.

Office Furniture & Fixtures – Adjustment “h” decreases Office Furniture & Fixtures account by \$1,493, from \$2,017 to \$524 as shown on Schedule PNT-2 page 2. Staff’s adjusted amount reflects the reclassification of \$1,493 to Account 340.1- Computers and Software.

Computer & Software- Adjustment “i” increases Computer & Software account by \$1,493, from \$0 to \$1,493 as shown on Schedule PNT-2, Page 2. Staff’s adjusted amount reflects the reclassification of \$1,493 from Account 340- Office Furniture & Fixtures.

Transportation Equipment- Adjustment “j” decreases Transportation Equipment account by \$83, from \$34,567 to \$34,484 as shown on Schedule PNT-2, Page 2. Staff’s adjusted amount reflects the reclassification of \$1,584 from Account 343- Tools, shop and Garage Equipment and \$1,667 to Account. 307-Wells and Springs.

Tools, Shop and Garage Equipment – Adjustment “k” increases Tools, Shop and Garage Equipment account by \$1,367, from \$11,569 to \$12,936 as shown on Schedule PNT-2, page 2. Staff’s adjusted amount reflects the reclassification of \$2,952 from Account 347- Miscellaneous Equipment and \$1,584 to Account. 341-Transportation Equipment.

Power Operated Equipment – Adjustment “l” decreases Power Operated Equipment account by \$17,427, from \$58,037 to \$40,610 as shown on Schedule PNT-2, page 2. Staff’s adjusted amount reflects the removal of \$17,427 for a backhoe that is no longer used and useful.

Communication Equipment – Adjustment “m” decreases Communication Equipment account by \$2,074, from \$2,074 to \$0 as shown on Schedule PNT-2, page 2. Staff’s adjusted amount reflects the removal of \$2,074 of work to protect the Squire Inn Well pump and motor which is not owned by Hydro.

Miscellaneous Equipment – Adjustment “n” decreases Power Operated Equipment account by \$7,836, from \$7,836 to \$0 as shown on Schedule PNT-2, page 2. Staff’s adjusted amount reflects the reclassification of \$4,884 to Account 331- Transmission & Distribution Mains and \$2,952 to Account 343- Tools, Shop and Garage Equipment.

*Other Rate Base Items*

Accumulated Depreciation

Adjustment “B” decreases accumulated depreciation by \$61,808 from \$767,752 to \$705,944, as shown on Schedule PNT-2, pages 1 and 3. Staff’s adjusted amount reflects Staff adjustments made to plant in service account balances.

Working Capital

Adjustment “C” decreases Working Capital by \$8,609 from \$52,982 to \$44,373 as shown on schedule PNT-2, pages 1 and 4. This adjustment reflect Staff’s calculation of cash working capital based on Staff’s recommendations for Purchased Power and Operation and Maintenance expense. Staff used the formula method for this determination.

**OPERATING INCOME STATEMENT**

*Operating Revenue*

Staff made no adjustment to Operating Revenue.

*Operating Expenses*

Staff’s adjustments to operating expenses resulted in a net decrease of \$10,301, from \$563,582 to \$553,281, as shown on Schedule PNT-3, page 1. Details of Staff’s adjustments are presented below.

Salaries and Wages - Adjustment “1” decreases salaries and wages expense by \$20,000, from \$136,148 to \$116,148, as shown on Schedule PNT-3, pages 1 and 2. For rate making purposes, Staff removed the \$20,000 bonus paid to the Company’s President. Paying bonus each year is optional and, therefore, should be not be recovered through rates. This adjustment also decreases Taxes other than income expense by \$1,530 to remove the Social Security and Medicare Tax associated with the \$20,000 bonus.

Water Testing - Adjustment “2” decreases water testing expense by \$3,141, from \$5,005 to \$1,864, as shown on Schedule PNT-3, pages 1 and 2. This adjustment reflects the annual water testing costs determined in the attached Engineering Report.

Depreciation Expense – Adjustment “3” decreases depreciation expense by \$4,136, from \$43,486 to \$39,350, as shown on Schedule PNT-3, pages 1, 2, and 3. Staff’s depreciation expense reflects application of Staff’s recommended depreciation rates to Staff’s recommended plant balances.

Income Tax Expense – Adjustment “4” increases income tax expense by \$18,506, from \$39,231 to \$57,737 as shown on Schedule PNT-3, pages 1, 2 and 5. This adjustment reflects Staff’s calculation of income taxes based on Staff’s adjustments to operating revenue and expenses.

## **REVENUE REQUIREMENT**

Staff recommends the same revenue, \$663,389, proposed by the Company, as shown on Schedule PNT-1. Staff’s recommended revenue would produce an operating income of \$140,120 for a 14.37 percent rate of return on Staff’s recommended OCRB of \$975,073. Staff’s recommended rates and charges would yield a cash flow of \$179,470 and an operating margin of 21.11 percent. For this filing only, Staff recommends the same revenue requirement as proposed by the Company because the Company is requesting a revenue decrease.

Staff’s recommended total revenue requirement of \$663,729 provides the Company with sufficient cash flow to pay operating expenses and contingencies.

## **RATE DESIGN**

Schedule PNT-4, pages 1 and 2 presents a complete list of the Company’s present, proposed, and Staff’s recommended rates and charges. Staff notes that the current initial rate design does not include a monthly minimum charges but was structured around a flat rate of \$24.50 per 1,000 gallons of usage for all usage results in a proposed and recommended revenue decrease but a proposed and recommended increase in rates, as shown on Schedule PNT-4 and PNT-5. As a result, the new rate design which does include a monthly minimum results in an increase to some customers even though the Company overall revenue requirement is lower.

The Company’s proposed rates would increase the typical residential 5/8 x 3/4-inch meter bill with a median usage of 2,167 gallons from \$53.08 to \$77.79, for an increase of \$24.71, or 46.55 percent.

Staff’s recommended rates would increase the typical residential 5/8 x 3/4-inch meter bill with a median usage of 2,167 gallons from \$53.08 to \$69.00, for an increase of \$15.92, or 29.99 percent. Under Staff’s recommended rates, approximately 32.15 percent is coming from monthly minimum and 68.85 percent is from commodity charges. Comparing to the Company’s current rates that 100.00 percent are from commodity rates, Staff believes that Staff’s recommended rate structure should support rate change gradualism.

## **MISCELLANEOUS SERVICE CHARGES**

NSF Check – The Company proposed to decrease NSF Check charge from \$25 to \$20. Staff concurs with Company’s proposed charge.

Moving Customer Meter (Customer Request) – The Company’s Amended Proposed Charges docketed April 6, 2016, indicates No Tariff (“NT”) and proposed a rate of “cost”. However, the Company has an approved rate of “cost” per Decision No. 74742. Staff agrees with the rate of “cost”.

After Hours Service Charge – The Company’s Amended Proposed Charges docketed April 6, 2016, indicates NT for after-hours service charge and proposed a rate of \$35. However, the Company has an approved rate of \$35 per Decision No. 74742. Staff agrees with the rate of \$35.

## **SERVICE LINE AND METER INSTALLATION CHARGES**

The Company proposed changes to its current service line and meter installation charges. For all service line installation and meter charges, Hydro is requesting the charges be “At Cost”. Staff concurs with Hydro’s proposed installation charges, as shown on Schedule H of Engineer’s Report.

## **STAFF RECOMMENDATIONS**

Staff recommends:

- Approval of the Staff recommended rates and charges as shown on Schedule PNT-4.
- That the Company file with Docket Control, as a compliance item in this Docket, a schedule of its approved rates and charges within 30 days after the Decision in this matter is issued.
- That the Company be ordered to keep invoices for plant assets purchased in the future.
- The annual water testing expenses of \$1,864 be used for purposes of this proceeding.
- That Hydro file with Docket Control, as compliance item in this docket and within 12 months of the effective date of a decision in this proceeding, a report acknowledging that the automatic fire pump control system has been completed.
- That Hydro begin tracking, quantifying, and recording all consumed water associated with Unbilled Authorized Consumption for removal from the water loss calculation.
- That Hydro monitor its water system for a 12-month period to prepare a water loss report. Hydro should account for its Unbilled Authorized Consumption (gallons) and remove that quantity from the water loss calculation. If the reported water loss remains above 10 percent, Hydro shall submit a water loss reduction report containing a detailed analysis and plan to reduce its water loss to 10 percent or less. If Hydro believes it is not cost effective to reduce water loss to 10 percent or less, it shall submit a detailed cost benefit analysis to support its opinion. In no case shall Hydro continue to allow water loss to be greater than 15 percent. The water loss reduction report or the detailed cost benefit analysis, whichever is submitted, shall be docketed as a compliance item within 18 months from the effective date of an order issued in this proceeding.
- That Hydro use the Staff recommended depreciation rates listed in Table G.

- Approval of Hydro's proposed installation charges included in Table H.
- The service line and meter installation charges listed under "Staff's Recommendations" in Table H be adopted.

<b>SUMMARY OF OPERATING INCOME</b>			
<b>ADJUSTED TEST YEAR AND STAFF RECOMMENDED</b>			

	-- Present Rates --		Company Proposed as Filed	Staff Recommended
	Company as Filed	Staff as Adjusted		
<b>Revenues:</b>				
Metered Water Revenue	\$ 736,406	\$ 736,406	\$ 633,729	\$ 633,729
Unmetered Water Revenue	-	-	-	-
Other Water Revenues	30,000	30,000	30,000	30,000
<b>Total Operating Revenue</b>	<b>\$ 766,406</b>	<b>\$ 766,406</b>	<b>\$ 663,729</b>	<b>\$ 663,729</b>
<b>Operating Expenses:</b>				
Operation and Maintenance	\$ 438,092	\$ 414,951	\$ 438,092	\$ 414,951
Depreciation	43,486	39,350	43,486	39,350
Property & Other Taxes	42,773	41,243	41,322	39,936
Income Tax	39,231	57,737	22,825	29,372
<b>Total Operating Expense</b>	<b>\$ 563,582</b>	<b>\$ 553,281</b>	<b>\$ 545,725</b>	<b>\$ 523,609</b>
<b>Operating Income/(Loss)</b>	<b>\$ 202,824</b>	<b>\$ 213,125</b>	<b>\$ 118,004</b>	<b>\$ 140,120</b>
Rate Base O.C.L.D.	\$ 983,376	\$ 975,073	\$ 983,376	\$ 975,073
Rate of Return - O.C.L.D.	20.63%	21.86%	12.00%	14.37%
Operating Margin	26.46%	27.81%	17.78%	21.11%
Cash Flow	\$ 246,310	\$ 252,475	\$ 161,490	\$ 179,470

**ORIGINAL COST RATE BASE/FAIR VALUE**

	----- Original Cost -----		
	Company	Adjustment	Staff
Plant in Service	\$ 1,698,146	\$ (61,501) A	\$ 1,636,645
Less:			-
Accum. Depreciation	767,752	(61,808) B	705,944
<b>Net Plant</b>	<b>\$ 930,394</b>	<b>\$ 307</b>	<b>\$ 930,701</b>
Less:			
Plant Advances	-	-	-
Service Line and Meter Advances ("Meter Deposit")	-	-	-
<b>Total Advances</b>	<b>-</b>	<b>-</b>	<b>-</b>
Contributions Gross	-	-	-
Less:			
Amortization of CIAC	-	-	-
<b>Net CIAC</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Total Deductions</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>
Plus:			
1/24 Purchased Power and Water	4,303	-	4,303
1/8 Operation & Maint.	48,679	(8,609)	40,070
<b>Total Additions</b>	<b>\$ 52,982</b>	<b>\$ (8,609) C</b>	<b>\$ 44,373</b>
<b>Rate Base</b>	<b>\$ 983,376</b>	<b>\$ (8,303)</b>	<b>\$ 975,073</b>

*Explanation of Adjustment:*

- A See Schedule PNT-2, page 2 of 4 Plant Adjustments
- B See Schedule PNT-2, page 3 of 4 Accumulated Depreciation Adjustments
- C See Schedule PNT-2, page 4 of 4 Staff Rate Base Adjustments

**PLANT ADJUSTMENT**

	Company Exhibit	Adjustment	Staff Adjusted
301 Organization Costs	\$ 258,392	\$ -	\$ 258,392
302 Franchise Costs	-	-	-
303 Land & Land Rights	136,769	-	136,769
304 Structures & Improvements	22,696	725 a	23,421
307 Wells & Springs	733,502	(196,165) b	537,337
311 Electric Pumping Equipment	144,879	(4,675) c	140,204
320 Water Treatment Equipment	-	-	-
320.1 Water Treatment Plants	-	-	-
320.2 Solutions & Feeders	-	-	-
320.3 Arsenic Remediation Plant	-	-	-
330 Distribution Reservoirs & Standpipes	64,341	(64,341) d	-
330.1 Storage Tank	-	36,541 e	36,541
330.2 Pressure Tanks	-	-	-
331 Transmission & Distribution Mains	149,052	206,666 f	355,718
333 Services	-	-	-
334 Meters & Meter Installations	9,493	-	9,493
335 Hydrants	-	-	-
336 Backflow Prevention Devices	-	-	-
339 Other Plant & Misc. Equip.	62,923	(14,200) g	48,723
340 Office Furniture & Fixtures	2,017	(1,493) h	524
340.1 Computer & Software	-	1,493 i	1,493
341 Transportation Equipment	34,567	(83) j	34,484
342 Store Equipment	-	-	-
343 Tools & Work Equipment	11,569	1,367 k	12,936
344 Laboratory Equipment	-	-	-
345 Power Operated Equipment	58,037	(17,427) l	40,610
346 Communications Equipment	2,074	(2,074) m	-
347 Miscellaneous Equipment	7,836	(7,836) n	-
348 Other Tangibles	-	-	-
Rounding	(1)	1	-
<b>TOTALS</b>	<b>\$ 1,698,146</b>	<b>\$ (61,501) A</b>	<b>\$ 1,636,645</b>

*Explanation of Adjustment:*

To reflect reclassification of plant and removal of plant that is no longer used or abandoned.

**ACCUMULATED DEPRECIATION ADJUSTMENT**

	<u>Amount</u>
B- Accumulated Depreciation - Per Company	\$ 767,752
Accumulated Depreciation - Per Staff	705,944
<b>Total Adjustment</b>	<b>\$ (61,808)</b>

To reflect Staff adjustments made to plant in service balance

ACCUMULATED DEPRECIATION			
<u>Description</u>	<u>Company</u>	<u>Staff</u>	<u>Staff</u>
	<u>Application</u>	<u>Adjustment</u>	<u>Calculated</u>
301 Organization Costs	\$ -	\$ -	\$ -
302 Franchise Costs	-	-	-
303 Land & Land Rights	-	-	-
304 Structures & Improvements	2,101	(277)	1,824
307 Wells & Springs	578,583	(80,345)	498,238
311 Electric Pumping Equipment	15,837	(544)	15,293
320 Water Treatment Equipment	-	-	-
320.1 Water Treatment Plants	-	-	-
320.2 Solutions & Feeders	-	-	-
320.3 Arsenic Remediation Plant	-	-	-
330 Distribution Reservoirs & Standpipes	43,129	(43,129)	-
330.1 Storage Tank	-	15,195	15,195
330.2 Pressure Tanks	-	-	-
331 Transmission & Distribution Mains	25,306	81,645	106,951
333 Services	-	-	-
334 Meters & Meter Installations	375	(108)	267
335 Hydrants	-	-	-
336 Backflow Prevention Devices	-	-	-
339 Other Plant & Misc. Equip.	45,009	(14,200)	30,809
340 Office Furniture & Fixtures	1,597	(13)	1,584
340.1 Computer & Software	-	-	-
341 Transportation Equipment	27,790	813	28,603
342 Store Equipment	-	-	-
343 Tools & Work Equipment	7,204	(1,543)	5,661
344 Laboratory Equipment	-	-	-
345 Power Operated Equipment	19,446	(17,927)	1,519
346 Communications Equipment	959	(959)	-
347 Miscellaneous Equipment	416	(416)	-
348 Other Tangibles	-	-	-
<b>TOTALS</b>	<b>\$ 767,752</b>	<b>\$ (61,808)</b>	<b>\$ 705,944</b>

<b>STAFF RATE BASE ADJUSTMENTS</b>
------------------------------------

C- WORKING CAPITAL (1/24 purchased power and 1/8 operation & Maint exp. Portion of cash working capital formula method)- Per company	\$ 52,982
Per Staff	<u>44,373</u> \$ <u>(8,609)</u>

To reflect Staff's calculation of cash working capital based on Staff's  
recommendations for purchased power and operation and maintenance expense

**STATEMENT OF TEST YEAR OPERATING INCOME**

	Company Exhibit	Staff Adjustments	Staff Adjusted	Recommended Increase	Staff Recommended
<b>Revenues:</b>					
461 Metered Water Revenue	\$ 736,406	\$ -	\$ 736,406	\$ (102,677)	\$ 633,729
460 Unmetered Water Revenue			-		-
474 Other Water Revenues	30,000	-	30,000	-	30,000
<b>Total Operating Revenue</b>	<b>\$ 766,406</b>	<b>\$ -</b>	<b>\$ 766,406</b>	<b>\$ (102,677)</b>	<b>\$ 663,729</b>
<b>Operating Expenses:</b>					
601 Salaries and Wages	\$ 136,148	\$ (20,000) 1	\$ 116,148	\$ -	\$ 116,148
610 Purchased Water	45,659	-	45,659	-	45,659
615 Purchased Power	57,632	-	57,632	-	57,632
618 Chemicals	-	-	-	-	-
620 Repairs and Maintenance	24,186	-	24,186	-	24,186
621 Office Supplies & Expense	-	-	-	-	-
632 Accounting	19,725	-	19,725	-	19,725
633 Legal	34,777	-	34,777	-	34,777
634 Other Contractual Services	18,367	-	18,367	-	18,367
635 Water Testing	5,005	(3,141) 2	1,864	-	1,864
636 Professional Service	1,962	-	1,962	-	1,962
641 Rents	23,850	-	23,850	-	23,850
650 Transportation Expenses	15,757	-	15,757	-	15,757
657 Insurance - General Liability	25,436	-	25,436	-	25,436
659 Insurance - Health and Life	15,039	-	15,039	-	15,039
666 Regulatory Commission Expense - Rate Case	6,667	-	6,667	-	6,667
667 Licenses/Fee/Permit	2,809	-	2,809	-	2,809
675 Miscellaneous Expense	5,073	-	5,073	-	5,073
403 Depreciation Expense	43,486	(4,136) 3	39,350	-	39,350
408 Taxes Other Than Income	10,428	(1,530) 1	8,898	-	8,898
408.11 Property Taxes	32,345	-	32,345	(1,307)	31,038
409 Income Tax	39,231	18,506 4	57,737	(28,365)	29,372
<b>Total Operating Expenses</b>	<b>\$ 563,582</b>	<b>\$ (10,301)</b>	<b>\$ 553,281</b>	<b>\$ (29,672)</b>	<b>\$ 523,609</b>
<b>OPERATING INCOME/(LOSS)</b>	<b>\$ 202,824</b>	<b>\$ 10,301</b>	<b>\$ 213,125</b>	<b>\$ (73,005)</b>	<b>\$ 140,120</b>
<b>Other Income/(Expense):</b>					
419 Interest and Dividend Income	\$ 63	\$ -	\$ 63	\$ -	\$ 63
421 Non-Utility Income	754	-	754	-	754
427 Interest Expense	290	-	290	-	290
426 Miscellaneous Non-Utility Expense	-	-	-	-	-
<b>Total Other Income/(Expense)</b>	<b>\$ 1,107</b>	<b>\$ -</b>	<b>\$ 1,107</b>	<b>\$ -</b>	<b>\$ 1,107</b>
<b>NET INCOME/(LOSS)</b>	<b>\$ 203,931</b>	<b>\$ 10,301</b>	<b>\$ 214,232</b>	<b>\$ (73,005)</b>	<b>\$ 141,227</b>

**STAFF ADJUSTMENTS**

1	SALARIES AND WAGES-Per Company	\$	136,148	
	Per Staff		116,148	\$ (20,000)
	To remove bonuses paid to the Company's President			
	TAXES OTHER THAN INCOME - Per Company	\$	10,428	
	Per Staff		8,898	\$ (1,530)
	To remove Social Security and Medicare taxes associated with the \$20,000 bonus.			
	Bonus		20,000	
	Tax rate		7.65%	
			1,530	
2 -	WATER TESTING-per Company	\$	5,005	
	Per Staff		1,864	\$ (3,141)
	To reflect Staff Engineering adjusted water testing expense.			
3 -	DEPRECIATION - Per Company	\$	43,486	
	Per Staff		39,350	\$ (4,136)
	To reflect application of Staff's recommended depreciation rates to Staff's recommended plant balances.			
4 -	INCOME TAX - Per Company	\$	39,231	
	Per Staff		57,737	\$ 18,506

To reflect Staff's calculation of income tax expense.  
(Schedule PNT-3, Page 5 of 5)

**OPERATING INCOME ADJUSTMENT No. 3 - DEPRECIATION EXPENSE**

LINE NO.	ACCT NO.	DESCRIPTION	UTILITY PLANT IN SERVICE BALANCES	FULLY/ NON-DEPRECIABLE PLANT BALANCES	DEPRECIABLE PLANT IN SERVICE	DEPREC. RATE	DEPRECIATION EXPENSE
1	301	Organization Costs	\$ 258,392	\$ (258,392)	\$ -	0.00%	\$ -
2	302	Franchise Costs	-	-	-	0.00%	-
3	303	Land & Land Rights	136,769	(136,769)	-	0.00%	-
4	304	Structures & Improvements	23,421	-	23,421	3.33%	780
5	307	Wells & Springs	537,337	(455,467)	81,870	3.33%	2,726
6	311	Electric Pumping Equipment	140,204	(4,999)	135,205	12.50%	16,901
7	320	Water Treatment Equipment	-	-	-	-	-
8	320.1	Water Treatment Plants	-	-	-	3.33%	-
9	320.2	Solutions & Feeders	-	-	-	20.00%	-
10	330	Distribution Reservoirs & Standpipes	-	-	-	-	-
11	330.1	Storage Tank	36,541	(14,200)	22,341	2.22%	496
12	330.2	Pressure Tanks	-	-	-	5.00%	-
13	331	Transmission & Distribution Mains	355,718	-	355,718	2.00%	7,114
14	333	Services	-	-	-	3.33%	-
15	334	Meters & Meter Installations	9,493	-	9,493	8.33%	791
16	335	Hydrants	-	-	-	2.00%	-
17	336	Backflow Prevention Devices	-	-	-	6.67%	-
18	339	Other Plant & Misc. Equip.	48,723	-	48,723	6.67%	3,250
19	340	Office Furniture & Fixtures	524	-	524	6.67%	35
20	340.1	Computer & Software	1,493	(1,493)	-	20.00%	-
21	341	Transportation Equipment	34,484	(11,584)	22,900	20.00%	4,580
22	342	Store Equipment	-	-	-	4.00%	-
23	343	Tools & Work Equipment	12,936	-	12,936	5.00%	647
24	344	Laboratory Equipment	-	-	-	10.00%	-
25	345	Power Operated Equipment	40,610	-	40,610	5.00%	2,031
26	346	Communications Equipment	-	-	-	10.00%	-
27	347	Miscellaneous Equipment	-	-	-	10.00%	-
28	348	Other Tangibles	-	-	-	10.00%	-
29							
30		Total	<u>\$ 1,636,645</u>	<u>\$ (882,904)</u>	<u>\$ 753,741</u>		<u>\$ 39,350</u>
31							
32		Less: Amortization of Contributions			\$ -	2.40%	\$ -
33							
34		Staff Recommended Depreciation Expense					\$ 39,350
35		Company Proposed Depreciation Expense					<u>43,486</u>
36		Increase/(Decrease) to Depreciation Expense					<u><u>\$ (4,136)</u></u>

**PROPERTY TAXES CACULATION**

LINE NO.	DESCRIPTION	[A] STAFF AS ADJUSTED	[B] STAFF RECOMMENDED
1	Staff Adjusted Test Year Revenues	\$ 766,406	\$ 766,406
2	Weight Factor	2	2
3	Subtotal (Line 1 * Line 2)	\$ 1,532,812	\$ 1,532,812
4	Staff Recommended Revenue	\$ 766,406	\$ 663,729
5	Subtotal (Line 3 + Line 4)	\$ 2,299,218	\$ 2,196,541
6	Number of Years	3	3
7	Three Year Average (Line 5 / Line 6)	\$ 766,406	\$ 732,180
8	Department of Revenue Multiplier	2	2
9	Revenue Base Value (Line 7 * Line 8)	\$ 1,532,812	\$ 1,464,361
10	Plus: 10% of CWIP	-	-
11	Less: Net Book Value of Licensed Vehicles	6,777	-
12	Full Cash Value (Line 9 + Line 10 - Line 11)	\$ 1,526,035	\$ 1,464,361
13	Assessment Ratio	18.00%	18.00%
14	Assessment Value (Line 12 * Line 13)	\$ 274,686	\$ 263,585
15	Composite Property Tax Rate - Obtained from ADOR	11.77530%	11.77530%
16	Staff Test Year Adjusted Property Tax Expense (Line 14 * Line 15)	\$ 32,345	
17	Company Proposed Property Tax	32,345	
18	Staff Test Year Adjustment (Line 16 - Line 17)	\$ 0	
19	Property Tax - Staff Recommended Revenue (Line 14 * Line 15)		\$ 31,038
20	Staff Test Year Adjusted Property Tax Expense (Line 16)		32,345
21	Increase in Property Tax Due to Increase in Revenue Requirement		\$ (1,307)
22			
23	Increase in Property Tax Due to Increase in Revenue Requirement (Line 21)		\$ (1,307)
24	Increase in Revenue Requirement		\$ (102,677)
25	Increase in Property Tax Per Dollar Increase in Revenue (Line 22 / Line 24)		<b>1.273139%</b>

**OPERATING INCOME ADJUSTMENT No. 4 - INCOME TAXES**

Line No.	Description	Test Year		Staff Recommended	
1	<i>Calculation of Income Tax:</i>				
2	Revenue	\$ 766,406		\$ 663,729	
3	Less: Operating Expenses (Excluding Income Taxes)	495,544		494,237	
4	Less: Synchronized Interest				
5	Taxable Income	\$ 270,862		\$ 169,492	
6					
		Owner No.1	Owner No.2	Owner No.1	Owner No.2
		(50% ownership)	(50% ownership)	(50% ownership)	(50% ownership)
7					
8	Arizona Taxable Income (Married Filing Jointly)	\$ 135,431	\$ 135,431	\$ 84,746	\$ 84,746
9	<u>Over</u> <u>But not Over</u> <u>Amount plus</u> %				
10	-                      20,000                      -                      2.59%	\$ -	\$ -	\$ -	\$ -
11	20,000                      50,000                      (58)                      2.88%	-	-	-	-
12	50,000                      100,000                      (298)                      3.36%	-	-	2,549	2,549
13	100,000                      300,000                      (1,178)                      4.24%	4,564	4,564	-	-
14	300,000                      999,999,999                      (2,078)                      4.54%	-	-	-	-
15	Arizona Income Tax	\$ 4,564	\$ 4,564	\$ 2,549	\$ 2,549
16					
17	Federal Taxable Income (Married Filing Jointly)	\$ 130,867	\$ 130,867	\$ 82,197	\$ 82,197
18	<u>Over</u> <u>But not Over</u> <u>Amount plus</u> %				
19	-                      18,450                      -                      10.00%	-	-	-	-
20	18,450                      74,900                      1,845                      15.00%	-	-	-	-
21	74,900                      151,200                      10,313                      25.00%	24,304	24,304	12,137	12,137
22	151,200                      230,450                      29,388                      28.00%	-	-	-	-
23	230,450                      411,500                      51,578                      33.00%	-	-	-	-
24	411,500                      464,850                      111,324                      35.00%	-	-	-	-
25	464,850                      999,999,999                      129,997                      39.60%	-	-	-	-
26	Federal Income Tax	\$ 24,304	\$ 24,304	\$ 12,137	\$ 12,137
27					
28	Combined Federal and State Income Tax	\$ 28,868	\$ 28,868	\$ 14,686	\$ 14,686
29					
30	Applicable Arizona State Tax	3.37%	3.37%	3.01%	3.01%
31	Applicable Federal Income Tax	18.57%	18.57%	14.77%	14.77%
32	Combined Federal and State Tax Rate	21.94%	21.94%	17.77%	17.77%
33					
34	Average Arizona State Income Tax	3.37%		3.01%	
35	Average Federal Income Tax	18.57%		14.77%	

**RATE DESIGN**

<u>Monthly Usage Charge</u>	<u>Present Rates</u>	<u>Company Proposed Rates</u>	<u>Staff Recommended Rates</u>
5/8"x 3/4" Meter	\$0.00	\$54.50	\$43.00
3/4" Meter	\$0.00	\$81.75	\$64.50
1" Meter	\$0.00	\$136.25	\$107.50
1½" Meter	\$0.00	\$272.50	\$215.00
2" Meter	\$0.00	\$436.00	\$344.00
3" Meter	\$0.00	\$872.00	\$688.00
4" Meter	\$0.00	\$1,362.00	\$1,075.00
6" Meter	\$0.00	\$2,725.00	\$2,150.00
8" Meter	\$0.00	4,360.00	\$3,440.00
10" Meter	\$0.00	6,267.50	\$4,945.00
12" Meter	\$0.00	11,717.50	\$9,245.00
<b><u>Commodity Rates (Per 1,000)</u></b>			
All meters- all gallons	\$24.50	N/A	N/A
<b><u>5/8 x 3/4" Meter- Residential and Commercial</u></b>			
First 3,000 Gallons	N/A	\$10.75	\$12.00
From 3,001 to 7,500 Gallons	N/A	\$13.05	\$13.66
Over 7,500 Gallons	N/A	\$15.35	\$17.00
<b><u>3/4" Meter- Residential</u></b>			
First 4,500 Gallons	N/A	\$10.75	\$12.00
From 4,501 to 11,250 Gallons	N/A	\$13.05	\$13.66
Over 11,250 Gallons	N/A	\$15.35	\$17.00
<b><u>3/4" Meter- Commercial</u></b>			
First 4,500 Gallons	N/A	\$10.75	N/A
From 4,501 to 7,500 Gallons	N/A	\$13.05	N/A
Over 7,500 Gallons	N/A	\$15.35	N/A
First 4,500 Gallons	N/A	N/A	\$12.00
From 4,501 to 11,250 Gallons	N/A	N/A	\$13.66
Over 11,250 Gallons	N/A	N/A	\$17.00
<b><u>1" Meter - Residential and Commercial</u></b>			
First 18,750 Gallons	N/A	\$13.05	\$13.66
Over 18,750 Gallons	N/A	\$15.35	\$17.00
<b><u>1½" Meter-Residential and Commercial</u></b>			
First 62,500 Gallons	N/A	\$13.05	\$13.66
Over 62,500 Gallons	N/A	\$15.35	\$17.00
<b><u>2" Meter -Residential and Commercial</u></b>			
First 100,00 Gallons	N/A	\$13.05	\$13.66
Over 100,000 Gallons	N/A	\$15.35	\$17.00
<b><u>3" Meter-Residential and Commercial</u></b>			
First 200,000 Gallons	N/A	\$13.05	\$13.66
Over 200,000 Gallons	N/A	\$15.35	\$17.00
<b><u>4" Meter-Residential and Commercial</u></b>			
First 312,500 Gallons	N/A	\$13.05	\$13.66
Over 312,500 Gallons	N/A	\$15.35	\$17.00
<b><u>6" Meter-Residential and Commercial</u></b>			
First 625,000 Gallons	N/A	\$13.05	\$13.66
Over 625,000 Gallons	N/A	\$15.35	\$17.00
<b><u>8" Meter-Residential and Commercial</u></b>			
First 1,000,000 Gallons	N/A	\$13.05	\$13.66
Over 1,000,000 Gallons	N/A	\$15.35	\$17.00
<b><u>10" Meter-Residential and Commercial</u></b>			
First 1,437,500 Gallons	N/A	\$13.05	\$13.66
Over 1,437,500 Gallons	N/A	\$15.35	\$17.00
<b><u>12" Meter-Residential and Commercial</u></b>			
First 2,687,500 Gallons	N/A	\$13.05	\$13.66
Over 2,687,500 Gallons	N/A	\$15.35	\$17.00

**RATE DESIGN (cont.)**

**Service Line and Meter Installation Charges**

Meter Sizes	Current			Company's proposed			Staff's recommended		
	Service Line Charge	Meter Charge	Total Charge	Service Line Charge	Meter Charge	Total Charge	Service Line Charge	Meter Charge	Total Charge
5/8"x 3/4" Meter	385.00	135.00	520.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
3/4" Meter	415.00	205.00	620.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
1" Meter	465.00	265.00	730.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
1 1/2" Meter	520.00	475.00	995.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
2" Meter Turbo	800.00	995.00	1,795.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
2" Meter Compound	800.00	1,840.00	2,640.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
3" Meter Turbo	1,015.00	1,620.00	2,635.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
3" Meter Compound	1,135.00	2,495.00	3,630.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
4" Meter Turbo	1,430.00	2,570.00	4,000.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
4" Meter Compound	1,610.00	3,545.00	5,155.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
6" Meter Turbo	2,150.00	4,925.00	7,075.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
6" Meter Compound	2,270.00	6,820.00	9,090.00	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
8" Meter Compound	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost

**Service Charges**

	<u>Current</u>	<u>Company Proposed</u>	<u>Staff Recommended</u>
Establishment	\$25.00	\$25.00	\$25.00
Meter Test ( If correct)	\$40.00	\$40.00	\$40.00
Meter RE-read ( if correct)	\$15.00	\$15.00	\$15.00
Deposit	(a)	(a)	(a)
Deposit Interest	(a)	(a)	(a)
Re-establishment (Within 12 months)	(b)	(b)	(b)
Reconnection-Deliquent	\$25.00	\$25.00	\$25.00
NSF Check	\$25.00	\$20.00	\$20.00
Deferred Payment - Per month( c)	1.5%	1.50%	1.50%
Late Payment Penalty(d)	1.5%	1.50%	1.50%
Moving Customer Meer ( Customer Request)	NT	cost	cost
After Hours Service Charge ( e )	NT	\$35.00	\$35.00
Main Extension	Cost(f)	Cost(f)	Cost(f)

(a) Per Commission Rules (R14-2-403.B)

(b) Months off system times the minimum (R14-2-403.D)

(c) Per Commission Rules (R14-2-405)

(d) Per Commission Rule R12-2-409.C.1

(e) Applies to all services performed after hours and at customer request

(f) Cost to include parts, labor, overhead, and all application taxes, including income tax.

In addition to the collection of its regular rates and charges, the Company shall collect from its customers their proportionate share of any pavillage, sale or use tax in accordance with R14-2-409.D.5

**TYPICAL BILL ANALYSIS**

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

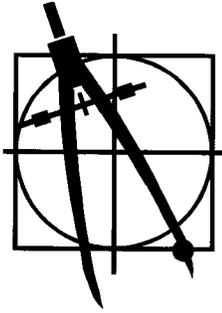
Company Proposed	Gallons	Present Rates	Proposed Rates	Dollar Increase	Percent Increase
Average Usage	2,638	\$ 64.62	\$ 82.85	\$ 18.23	28.21%
Median Usage	2,167	\$ 53.08	\$ 77.79	\$ 24.71	46.55%
Staff Recommend	Gallons	Present Rates	Recommended Rates	Dollar Increase	Percent Increase
Average Usage	2,638	\$ 64.62	\$ 74.65	\$ 10.03	15.52%
Median Usage	2,167	\$ 53.08	\$ 69.00	\$ 15.92	29.99%

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

Gallons Consumption	Present Rates	Company Proposed Rates	% Increase	Staff Recommended Rates	% Increase
0	\$ -	\$ 54.50	N/A	\$ 43.00	N/A
1,000	24.50	65.25	166.33%	55.00	124.5%
2,000	49.00	76.00	55.10%	67.00	36.7%
3,000	73.50	86.75	18.03%	79.00	7.5%
4,000	98.00	99.80	1.84%	92.65	-5.5%
5,000	122.50	112.85	-7.88%	106.30	-13.2%
6,000	147.00	125.90	-14.35%	119.95	-18.4%
7,000	171.50	138.95	-18.98%	133.60	-22.1%
8,000	196.00	146.63	-25.19%	142.10	-27.5%
9,000	220.50	161.98	-26.54%	159.10	-27.8%
10,000	245.00	177.33	-27.62%	176.10	-28.1%
15,000	367.50	254.08	-30.86%	261.10	-29.0%
20,000	490.00	330.83	-32.48%	346.10	-29.4%
25,000	612.50	407.58	-33.46%	431.10	-29.6%
50,000	1,225.00	791.33	-35.40%	856.10	-30.1%
75,000	1,837.50	1,175.08	-36.05%	1,281.10	-30.3%
100,000	2,450.00	1,558.83	-36.37%	1,706.10	-30.4%

<b>Cash Flow Analysis</b>
---------------------------

Line No.		<i>Company As Filed</i>	<i>Company Proposed</i>	<i>Staff Adjusted</i>	<i>Staff Recommended</i>
1	Operating Revenue:	\$ 766,406	\$ 663,729	\$ 766,406	\$ 663,729
2	Operating Expenses:				
3	Operation and Maintenance	\$ 438,092	\$ 438,092	\$ 414,951	\$ 414,951
4	Depreciation	43,486	43,486	39,350	39,350
5	Property & Other Taxes	42,773	41,322	41,243	39,936
6	Income Tax	39,231	22,825	57,737	29,372
7	Total Operating Expense	<u>563,582</u>	<u>\$ 545,725</u>	<u>\$ 553,281</u>	<u>\$ 523,609</u>
8					
9	Operating Income	\$202,824	\$ 118,004	\$ 213,125	\$ 140,120
10					
11	Interest Expense	\$ -	\$ -	\$ -	\$ -
12					
13	Principal Repayment	\$ -	\$ -	\$ -	\$ -
14					
15	Cash Flow : (L9+L4-L11-L13)	\$ 246,310	\$ 161,490	\$ 252,475	\$ 179,470



**ENGINEERING REPORT FOR  
Hydro-Resources, Inc.  
Docket No. W-20770A-16-0020 (Rates)**

**By Michael Thompson, P. E.**

**March 30, 2016**

**EXECUTIVE SUMMARY**

**CONCLUSIONS**

1. The Arizona Corporation Commission (“ACC” or “Commission”) Utilities Division Staff (“Utilities Staff” or “Staff”) concludes that the Hydro-Resources, Inc. (“Hydro” or “Company”) water system has adequate production and storage capacity to serve the present customer base and any reasonable growth.
2. Hydro does not expect an increase in customer growth within the next five (5) years (2016 – 2020).
3. Hydro’s Certificate of Convenience and Necessity (“CC&N”), granted in Decision No. 74742, covers an area totaling approximately 1.59 square-miles (1,018 acres).
4. ADEQ regulates the Hydro water system under ADEQ Public Water System Identification (“PWS ID”) No. 04-03-312. On April 7, 2015, ADEQ inspected the water system. According to the inspection report, no major deficiencies were found in the operation, maintenance, or certified operator status of the water system.
5. The Arizona Department of Environmental Quality (“ADEQ”) Drinking Water Compliance Status Report (“CSR”), dated March 10, 2016, indicates that the Hydro water system is currently delivering water that meets water quality standards required by 40 CFR 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code (“A.A.C.”), Title 18, Chapter 4.
6. The Hydro service area is not located within an Active Management Area (“AMA”).
7. According to the ADWR water provider compliance report, dated February 10, 2016, the Hydro is in compliance with its requirements governing water providers and/or community water systems.
8. Hydro’s water system water loss during the test year was approximately 11.58 percent, which is not within the acceptable limits.

9. According to the Commission's Utilities Division Compliance Section database, Hydro's water system currently has no delinquent Commission compliance items.
10. Hydro has approved Cross-Connection/Backflow Prevention and Curtailment Tariffs on file with the Commission.
11. Liberty Bella Vista has three (3) Best Management Practice ("BMP") Tariffs on file with the Commission. The three (3) BMP's were approved per Decision No. 74742, September 15, 2014.

## **RECOMMENDATIONS**

1. Staff recommends the annual water testing expenses of \$1,864 be used for purposes of this proceeding.
2. Staff further recommends that Hydro file with Docket Control, as compliance item in this docket and within 12 months of the effective date of a decision in this proceeding, a report acknowledging that the automatic fire pump control system has been completed.
3. Staff further recommends that Hydro begin tracking, quantifying, and recording all consumed water associated with Unbilled Authorized Consumption for removal from the water loss calculation.
4. Staff further recommends that Hydro monitor its water system for a 12-month period to prepare a water loss report. Hydro should account for its Unbilled Authorized Consumption (gallons) and remove that quantity from the water loss calculation. If the reported water loss remains above 10 percent, Hydro shall submit a water loss reduction report containing a detailed analysis and plan to reduce its water loss to 10 percent or less. If Hydro believes it is not cost effective to reduce water loss to 10 percent or less, it shall submit a detailed cost benefit analysis to support its opinion. In no case shall Hydro continue to allow water loss to be greater than 15 percent. The water loss reduction report or the detailed cost benefit analysis, whichever is submitted, shall be docketed as a compliance item within 18 months from the effective date of an order issued in this proceeding.
5. Staff further recommends that Hydro use the Staff recommended depreciation rates listed in Table G.
6. Staff further recommends approval of Hydro's proposed service line and meter installation charges included in Table H.
7. Staff further recommends the service line and meter installation charges listed under "Staff's Recommendations" in Table H be adopted.

# TABLE OF CONTENTS

	<u>PAGE</u>
<b>A. INTRODUCTION AND LOCATION OF COMPANY .....</b>	<b>4</b>
<b>B. DESCRIPTION OF THE WATER SYSTEM .....</b>	<b>4</b>
<b>C. WATER USE.....</b>	<b>6</b>
1. <i>WATER SOLD</i> .....	6
2. <i>NON-REVENUE WATER</i> .....	7
3. <i>WATER SYSTEM ANALYSIS</i> .....	8
<b>D. GROWTH .....</b>	<b>8</b>
<b>E. ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY (“ADEQ”) COMPLIANCE.....</b>	<b>9</b>
1. <i>COMPLIANCE STATUS</i> .....	9
2. <i>WATER MONITORING AND TESTING EXPENSES</i> .....	9
<b>F. ARIZONA DEPARTMENT OF WATER RESOURCES (“ADWR”) COMPLIANCE .....</b>	<b>10</b>
<b>G. ARIZONA CORPORATION COMMISSION COMPLIANCE.....</b>	<b>10</b>
<b>H. DEPRECIATION RATES .....</b>	<b>10</b>
<b>I. OTHER ISSUES .....</b>	<b>11</b>
1. <i>SERVICE LINE AND METER INSTALLATION CHARGES</i> .....	11
2. <i>CURTAILMENT TARIFF</i> .....	12
3. <i>CROSS-CONNECTION/BACKFLOW PREVENTION TARIFF</i> .....	12
4. <i>BEST MANAGEMENT PRACTICES (“BMP”) TARIFF</i> .....	12
6. <i>FIRE PUMP ENGINEERING REVIEW</i> .....	12

## FIGURES

	<u>PAGE</u>
<b>FIGURE 1. COCONINO COUNTY MAP.....</b>	<b>14</b>
<b>FIGURE 2. HYDRO-RESOURCES WATER SYSTEM CERTIFIED AREA .....</b>	<b>15</b>
<b>FIGURE 3. HYDRO-RESOURCES – CITY WATER SYSTEM .....</b>	<b>16</b>
<b>FIGURE 4. TUSAYAN MAP WITH HYDRO-RESOURCES PLANT LOCATIONS .....</b>	<b>17</b>
<b>FIGURE 5. HYDRO-RESOURCES – TUSAYAN WELL SITE NO. 2.....</b>	<b>18</b>
<b>FIGURE 6. HYDRO-RESOURCES – SQUIRE WELL SITE NO. 1 .....</b>	<b>19</b>
<b>FIGURE 7. HYDRO-RESOURCES – STORAGE TANK &amp; FIRE PUMP SITE .....</b>	<b>20</b>
<b>FIGURE 8. HYDRO-RESOURCES – WATER CONSUMPTION.....</b>	<b>21</b>

## A. INTRODUCTION, LOCATION, AND HISTORY OF COMPANY

### *Rate Application*

On January 21, 2016, Hydro-Resources, Inc. (“Hydro” or “Company”) filed an application with the Arizona Corporation Commission (“ACC” or “Commission”) for approval of a rate increase, with a test year ending September 30, 2015, in Docket No. W-20770A-16-0020. Hydro’s current rates were approved in Commission Decision No. 74742, dated September 15, 2014.

### *Location of Company*

Hydro is a Class D public utility water company that provides service to approximately 98 metered connections.<sup>1</sup> The Hydro water system shown in Figure 1, located in the figure section of this report, is a groundwater-based system serving the City of Tusayan, Arizona and the Grand Canyon National Park Airport. Tusayan is located on State Highway 64 approximately 80 miles north of Flagstaff, Arizona and approximately 7 miles south of Grand Canyon National Park in Cochise County, Arizona.

### *Certificate of Convenience and Necessity (“CC&N”)*

In Decision No. 74742, dated September 15, 2014, Hydro was granted a CC&N to provide water utility service within the borders of the Town of Tusayan and the Grand Canyon National Park Airport, in Coconino County, Arizona. The service area bounded by its CC&N, which covers approximately 1,018 acres (1.59 square miles), is shown in Figure 2.

## B. DESCRIPTION OF THE WATER SYSTEM<sup>2</sup>

Hydro was visited on March 2, 2016, by Staff Utilities Engineer, Michael Thompson. During the field inspection, Mr. Thompson was accompanied by Company representative Mr. John Rueter (President).<sup>3</sup>

The Hydro water system consists of two (2) groundwater wells (Tusayan Well No. 2 & Squire Well No. 1), one (1) standpipe, two (2) storage tanks (500,000 gallons & 3,000,000 gallons), a 250 horsepower (“hp”) diesel powered fire pump and pump house, 12,933 linear feet (“lf”) of water distribution main, and five (5) fire hydrants.

---

<sup>1</sup> Per water use data submitted with the application.

<sup>2</sup> The description of the water systems is based on one, or a combination of, the following sources: 1) Company’s Application, 2) Information contained in the Company’s Response to Staff Data Requests and, 3) Information collected during Staff’s site visit.

<sup>3</sup> Mr. Rueter is certified with the Arizona Department of Environmental Quality (“ADEQ”) as a Grade 4 Water Distribution System Operator, a Grade 3 Water Treatment Plant Operator, a Grade 4 Wastewater Collection System Operator, and a Grade 4 Wastewater Treatment Plant Operator. Mr. Rueter’s ADEQ Operator Identification No. is OP009562, with an expiration date of April 30, 2017.

Tusayan Well No. 2, owned by Hydro, was drilled in 1994 and yields approximately 58 gallons per minute (“gpm”) or 83,520 gallons per day (“gpd”). The well is located on the west side of Tusayan directly behind the Canyon Plaza Resort. Hydro also receives water from an additional groundwater well, owned by Squire Motor Inns, Inc. (“Squire”), identified as Squire Well No. 1. Drilled in 1989 and yielding approximately 60 gpm or 86,400 gpd, Squire Well No. 1 is located on the west side of Tusayan directly behind the Grand Canyon Squire Inn. Both wells are deep wells with the water table located at approximately 2,700 to 3,100 feet (“ft”) below ground level (“bgl”).

In addition to the 525,000 gallon storage tank, owned by Hydro, Hydro also utilizes approximately 2.0 million gallons of storage capacity from a 3.0 million gallon storage tank owned by Squire. The Hydro and Squire tanks are located at the same tank site, which is leased by Squire from the United States Forest Service (“USFS”). The combined storage capacity, of the Hydro and Squire tanks, is equivalent to approximately 3,500,000 gallons. The tank site is located approximately 0.2 miles southeast of Tusayan at an elevation of 6,670 feet (“ft”), which is approximately 130 ft higher in elevation than Tusayan. The higher elevation allows water to flow, via gravity, from the storage tanks to the distribution system. Subsequently, booster pumps are not needed to boost system pressure. However, a diesel powered fire booster pump, located at the tank site, is available should the need for additional water pressure arise (i.e. increased customer demand or fire flow).

The Hydro distribution system consists of an assortment of 2-inch, 4-inch, 6-inch, and 8-inch schedule 40 and poly vinyl chloride (“PVC”) water mains. The piping was installed between 1984 and 2014. Hydro also owns and maintains six (6) fire hydrants in Tusayan.

Hydro’s standpipe is located at Tusayan Well No. 2. Currently, Hydro serves only one (1) customer from the standpipe.

A diesel powered fire booster pump, owned and operated by Hydro, is located at the tank site. The fire pump, built and installed in 1997, provides 2,500 gpm with a discharge pressure of 80 pounds per square inch (“psi”). When required, the fire pump provides additional water pressure and fire flow should the distribution system pressure and flow, normally provided through gravity drainage of the storage tanks, become insufficient to fight a fire.

**Table A. Hydro Water System Active Wells**

Well ID	ADWR Well ID	Pump (hp)	Pump Yield (gpm)	Pump Yield (gpd)	Casing Depth (feet)	Casing Diameter (inches)	Meter Size (inches)	Year Drilled
(S) Tusayan Well No. 2	55-542928	100	58	83,520	2,700	8 5/8	3	1994
(S) Squire Well No. 1	55-523284	75	60	86,400	3,100	12/8	2	1989
<b>Total</b>			<b>118</b>	<b>169,920</b>				

(S) Indicates Submersible Well, and (gpd) Indicates gallons per day

Table B. Hydro Water System Storage Tanks		
Storage Tank	Storage Tanks	
	Quantity	Gallons
Hydro-Resources	1	500,000
Squire Tank (Owned by Squire)	1	3,000,000 (2,000,000 Available for Use)
<b>Total</b>	<b>2</b>	<b>3,500,000 (2,500,000 Available for Use)</b>

Table C. Hydro Water System Booster Pump Stations								
Booster Pumps		Fire Hydrants		Water Mains			Meters	
hp	Quantity	Type	Quantity	Size (inches)	Material	Length (feet)	Size (Inches)	Quantity
250	1	Standard	5	2	PVC	3,026	5/8 x 3/4	45
				4	PVC	430	3/4	19
				6	PVC	3,373	1	3
				8	PVC	6,104	1 1/2	2
							2	22
							Compound 3	3
							Compound 4	1
<b>Total</b>	<b>1</b>		<b>5</b>			<b>12,933</b>		<b>95</b>

Table D. Hydro Treatment Equipment & Structures		
Treatment Equipment		Structures
Equipment	Quantity	
Chlorine Pumps	4	Well House, Chain Link Fence, & Control Panel Shed at Tusayan Well Site
Chlorine Tanks	2	Fire Booster Pump w/Shed at Storage Tank Site
		Chain Link Fence at Storage Tank Site
		By-Pass Valve Shed at Storage Tank Site

### C. WATER USE

#### 1) *Water Sold – Hydro Water System*

The average daily water consumption (gallons used) per connection that Hydro water system experienced each month during the test year is indicated in Table E and graphically illustrated in Figure 8. Customer consumption included an average daily high water usage of 1,218 gallons per day (“gpd”) per connection (100 connections) in July 2015, and an average daily low water usage of 557 gpd per connection (100 connections) in December 2014. The average daily water usage during the twelve-month period was 825 gpd per connection. Hydro reported that its water system recorded 30,823,000

gallons of water produced, 3,167,000 gallons of water purchased, 33,990,000 gallons of water sold, and 98,650,553 gallons of water unaccounted for during the test year.

Currently, the Hydro water system has approximately 100 connections which consist primarily of large commercial businesses (Hotels & Airport), a number of smaller retail businesses, and residential customers. The businesses mainly serve tourists visiting the Grand Canyon Park. According to Grand Canyon Park statistics, approximately 5.52 million people visited the Park in 2015 of which a significant number of them stayed in Tusayan. At first glance the daily water usage appears to be excessive. However, when the tourists that visit the Grand Canyon Park and stay in Tusayan are factored in, the daily usage becomes reasonable.

**Table E. Hydro-Resources Water Consumption & Water Loss Summary**

Date	Active Meters	Water Produced (Gallons)	Water Purchased (Gallons)	Water Produced & Purchased (Gallons)	Water Sold (Gallons)	Non-Revenue Water (Gallons)	Water Consumed per Day (Gallons)	Water Consumed per Day per Connection (Gallons)	Water Loss (%)
Oct-14	100	2,496,000	180,000	2,676,000	2,633,000	43,000	84,935	849	1.61
Nov-14	100	2,528,000	0	2,528,000	1,895,000	633,000	67,679	677	25.04
Dec-14	100	2,716,000	0	2,716,000	1,728,000	988,000	55,742	557	36.38
Jan-15	100	2,546,000	0	2,546,000	2,129,000	417,000	70,967	710	16.38
Feb-15	100	2,718,000	0	2,718,000	1,891,000	827,000	61,000	610	30.43
Mar-15	98	2,481,000	0	2,481,000	2,479,000	2,000	82,633	843	0.08
Apr-15	100	2,473,000	248,000	2,721,000	2,717,000	4,000	87,645	876	0.15
May-15	100	2,010,000	625,000	2,635,000	2,632,000	3,000	84,903	849	0.11
Jun-15	100	2,652,000	529,000	3,181,000	2,793,000	388,000	93,100	931	12.20
Jul-15	100	3,129,000	650,000	3,779,000	3,776,000	3,000	121,806	1,218	0.08
Aug-15	100	2,408,000	589,000	2,997,000	2,903,000	94,000	96,767	968	3.14
Sep-15	98	2,666,000	346,000	3,012,000	2,478,000	534,000	79,935	816	17.73
<b>Total</b>		<b>30,823,000</b>	<b>3,167,000</b>	<b>33,990,000</b>	<b>30,054,000</b>	<b>3,936,000</b>	<b>82,259*</b>	<b>825*</b>	<b>11.58*</b>

Note: \* Asterisk indicates the value is an average

2) *Non-Revenue Water*<sup>4</sup>

The American Water Works Association (“AWWA”) no longer uses the term Unaccounted for Water. The term has been abandoned by the AWWA primarily because it has been deemed imprecise, inconsistent, and an unreliable performance measure. Instead, the AWWA employs the term Non-Revenue water. The term Non-Revenue water is defined to reflect the distributed volume of water that is not reflected in customer billings. Non-Revenue water (the difference between the gallons of water produced and sold) is specifically defined as the sum of Unbilled Authorized Consumption (water

<sup>4</sup> International Water Association (“IWA”)/AWWA Water Audit Method – Copyright 2012 AWWA, Water Loss Control Terms Defined – Copyright 2012 AWWA, and Water Audits & Loss Control Programs – AWWA M36 Manual.

for firefighting, flushing, etc.) plus Water Loss. Water Loss is defined as the sum of Apparent Losses (customer & company meter inaccuracies, unauthorized consumption or theft, and systematic data handling errors), plus Real Losses (system leakage and storage tank overflows).

Water Loss should be 10 percent or less and never more than 15 percent. It is important to be able to reconcile the difference between water sold and water produced by the source. A water balance/audit will allow a water company to identify water and revenue losses due to system leakage, storage tank overflows, meter inaccuracies, data handling errors, and any non-metered water use such as theft and flushing.

Hydro's Water Loss percentages include the total gallons of Non-Revenue water in its calculation. In other words, Unbilled Authorized Consumption (flushing, firefighting, etc.) gallons are included in the Water Loss percentages. Accounting for and removing Unbilled Authorized Consumption gallons from the water loss calculation would provide a more accurate account of water system water loss. For this reason, Staff recommends that Hydro begin tracking, quantifying, and recording all consumed water associated with Unbilled Authorized Consumption for removal from the water loss calculation.

As indicated in Table E, the Hydro water system had 3,936,000 gallons of Non-Revenue water during the test year ending December, 2014. As a result, the water system water loss was approximately 11.58 percent which is not within the acceptable limits. Staff recommends that Hydro monitor its water system for a 12-month period to prepare a water loss report. Hydro should account for its Unbilled Authorized Consumption (gallons) and remove that quantity from the water loss calculation. If the reported water loss remains above 10 percent, Hydro shall submit a water loss reduction report containing a detailed analysis and plan to reduce its water loss to 10 percent or less. If Hydro believes it is not cost effective to reduce water loss to 10 percent or less, it shall submit a detailed cost benefit analysis to support its opinion. In no case shall Hydro continue to allow water loss to be greater than 15 percent. The water loss reduction report or the detailed cost benefit analysis, whichever is submitted, shall be docketed as a compliance item within 18 months from the effective date of an order issued in this proceeding.

### 3) *Water System Analysis*

During the peak month, July 2015, the Hydro water system was serving 100 connections when Hydro-Resources reported 3,776,000 gallons of water sold. Average daily demand for the month of July 2015 was determined to be 121,806 gpd, while average daily demand per connection was determined to be 1,218 gpd. Staff concludes that the water system has adequate production and storage capacity to serve the present customer base and any reasonable growth.

## **D. GROWTH**

The historical growth rate has been flat for the past several years. Currently, Hydro customers consist primarily of large commercial businesses (Hotels & Airport), a number of smaller retail businesses, and residential customers. In its application, Hydro indicated that it does not anticipate any

growth in the number of customers within the next two (2) years. However, Mr. Rueter has indicated that additional growth could possibly occur in the future, but is very uncertain. Additionally, since Tusayan is landlocked, surrounded by U. S. Forest Service land and the Grand Canyon National Park, any growth in Tusayan would be limited. Therefore, Hydro does not expect an increase in customer growth within the next five (5) years (2016 – 2020).

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

### *1) Compliance Status*

ADEQ regulates the Hydro water system under ADEQ Public Water System Identification (“PWS ID”) No. 04-03-312. On April 7, 2015, ADEQ inspected the water system. According to the inspection report, no major deficiencies were found in the operation, maintenance, or certified operator status of the water system.

According to the ADEQ Drinking Water Compliance Status Report (“CSR”), dated March 10, 2016, the Hydro water system is currently delivering water that meets water quality standards required by 40 CFR 141 (National Primary Drinking Water Regulations) and Arizona Administrative Code, Title 18, Chapter 4.

### *2) Water Monitoring and Testing Expenses*

In addition to Total Coliform, Disinfectant-By-Products, and Lead & Copper testing, the Hydro water system is also subject to mandatory participation in the Monitoring Assistance Program (“MAP”).<sup>5</sup>

In its Income Statement, Account No. 635 (Water Testing), Hydro reported \$5,005 in water testing expenses for the test year. Upon reviewing the water testing invoices it was determined that approximately \$533 of those expenses were actually associated with the MAP expense for the Valle Airport Grand Canyon (PWS No. 04-03-084). Consequently, Hydro water testing expenses for the test year were actually \$4,472. Hydro’s test year costs were greater than the adjusted expenses primarily due to additional tests (Arsenic, Total Dissolved Solids, Hardness, Langlier, and extra TTHM’s & HAA5’s) that were performed during the test year that won’t be required in the future.

The annual monitoring and testing expenses that were reviewed, evaluated, and recalculated by Staff are represented in Table F. The total estimated annual water testing expenses for the water system is \$1,864. Staff recommends water testing expenses of \$1,864 be used for purposes of this proceeding.

---

<sup>5</sup> The MAP is mandatory for water systems which serve less than 10,000 persons (approximately 3,300 service connections).

<b>Water Test</b>	<b>Cost Per Test</b>	<b>Number of Tests</b>	<b>Annual Cost</b>
Total Coliform	\$20	2/Month	\$480
Lead & Copper	\$40	10/3 Years	\$133
Disinfection by Products TTHM's	\$100	2/Year	\$200
Disinfection by Products HAA5's	\$250	2/Year	\$500
MAP			\$551
<b>Total</b>			<b>\$1,864</b>

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

The Hydro service area is not located within an Active Management Area (“AMA”). According to the ADWR water provider compliance report, dated February 10, 2016, Hydro is in compliance with its requirements governing water providers and/or community water systems.

**G. ARIZONA CORPORATION COMMISSION COMPLIANCE**

A check of the Utilities Division Compliance Section database showed that Hydro water system has no delinquent Commission compliance items.<sup>6</sup>

**H. DEPRECIATION RATES**

Staff’s typical and customary depreciation rates, which vary by National Association of Regulatory Utility Commissioners (“NARUC”) plant categories, are illustrated in Table G. These rates represent typical and customary values within a range of anticipated equipment life. Staff recommends that Hydro-Resources use the depreciation rates listed under “Staff’s Recommended Rates” in Table G.

<b>NARUC Acct. No.</b>	<b>Depreciable Plant</b>	<b>Staff Recommended Rates</b>	
		<b>Service Life (Years)</b>	<b>Accrual Rate (%)</b>
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	12.50

<sup>6</sup> Per Compliance Section email dated February 16, 2016

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

## I. OTHER ISSUES

### 1) *Service Line and Meter Installation Charges*

Hydro has proposed changes to its existing service line and meter installation charges.<sup>7</sup> The installation charges, listed in Table H, are refundable advances. For all service line installation and meter charges, Hydro is requesting the charges be "At Cost". Staff recommends approval of Hydro proposed at cost installation charges as listed in Table H.

Meter Size	Hydro-Resources Current Charges			Hydro-Resources Proposed Charges			Staff's Recommendations		
	Service Line Charge	Meter Charge	Total Charge	Service Line Charge	Meter Charge	Total Charge	Service Line Charge	Meter Charge	Total Charge
5/8 x 3/4-inch	\$385	\$135	\$520	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost
3/4-inch	\$415	\$205	\$620	At Cost	At Cost	At Cost	At Cost	At Cost	At Cost

<sup>7</sup> Hydro-Resource's current charges were approved in Decision No. 74742, effective September 15, 2014.

1-inch	\$465	\$265	\$730	At Cost					
1-1/2-inch	\$520	\$475	\$995	At Cost					
2-inch Turbine	\$800	\$995	\$1,795	At Cost					
2-inch Compound	\$800	\$1,840	\$2,640	At Cost					
3-inch Turbine	\$1,015	\$1,620	\$2,635	At Cost					
3-inch Compound	\$1,135	\$2,495	\$3,630	At Cost					
4-inch Turbine	\$1,430	\$2,570	\$4,000	At Cost					
4-inch Compound	\$1,610	\$3,545	\$5,155	At Cost					
6-inch Turbine	\$2,150	\$4,925	\$7,075	At Cost					
6-inch Compound	\$2,270	\$6,820	\$9,090	At Cost					
8-inch & Larger	At Cost								

2) *Curtailment Tariff*

Hydro-Resources water system has an approved Curtailment Tariff on file with the Commission. The Curtailment Tariff was approved per Decision No. 74742, dated September 15, 2014.

3) *Cross-Connection/Backflow Prevention Tariff*

Hydro-Resources has an approved Cross-Connection/Backflow Prevention Tariff on file with the Commission, which became effective October 12, 2013.

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

Hydro-Resources has three (3) BMP Tariffs on file with the Commission. The three (3) BMP's were approved per Decision No. 74742, and became effective December 15, 2014.

5) *Fire Pump Engineering Review*

In Decision No. 74742, Hydro was ordered to conduct an engineering review to evaluate and determine the feasibility and cost for converting the fire pump from manual to automatic control. The engineering review was completed and Hydro is currently installing equipment, controls, and wiring to convert the fire pump from manual to automatic control. Staff recommends that Hydro file with Docket Control, as compliance item in this docket and within 12 months of the effective date of a decision in this proceeding, a report acknowledging that the automatic fire pump control system has been completed.

**FIGURES**

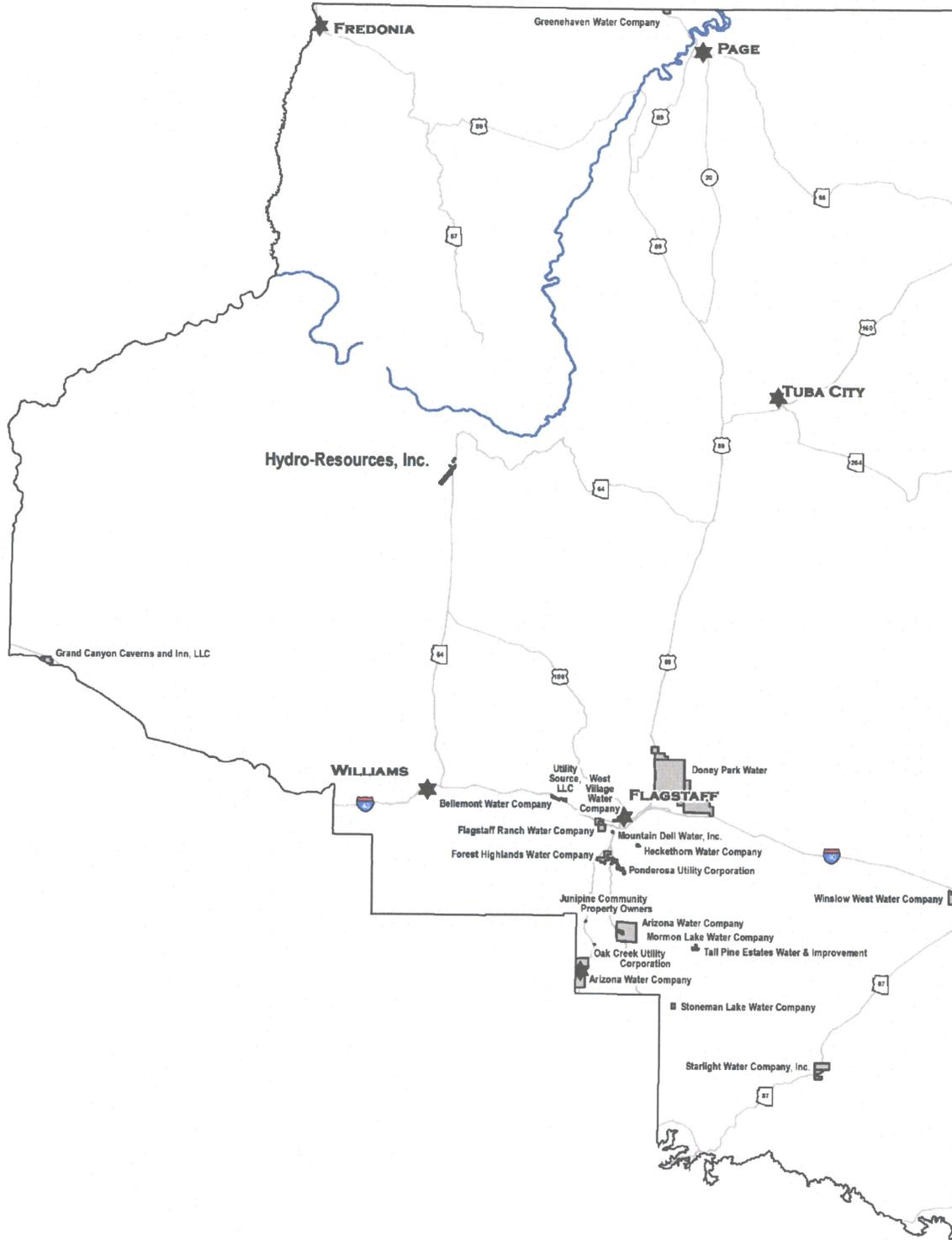


FIGURE 1 – COCONINO COUNTY MAP

# COCONINO COUNTY

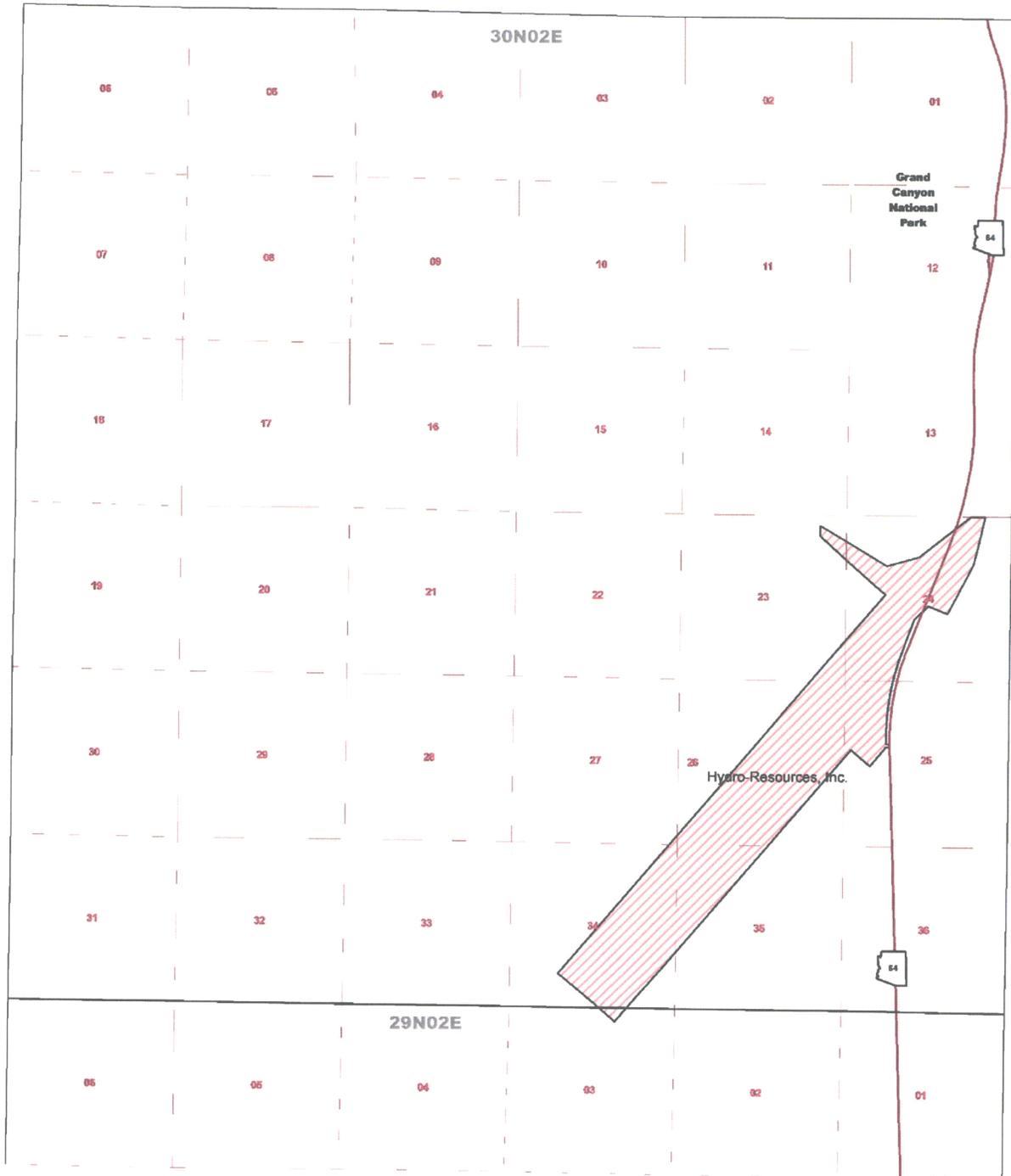
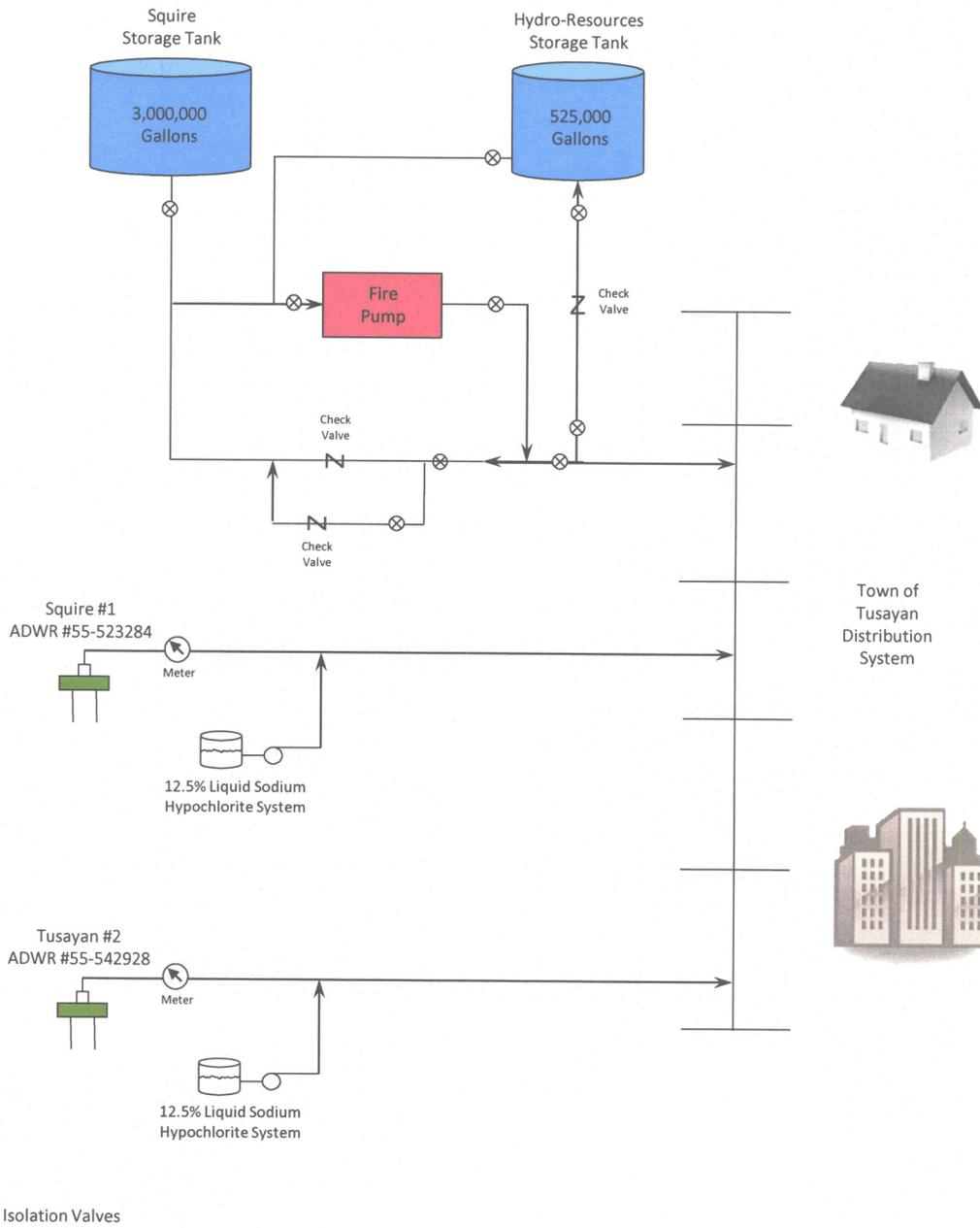


FIGURE 2 – HYDRO-RESOURCES CERTIFICATED AREA

**PROCESS SCHEMATIC – HYDRO-RESOURCES WATER COMPANY**  
**Public Water System No. 04-03-312**



**FIGURE 3 – HYDRO-RESOURCES WATER SYSTEM**

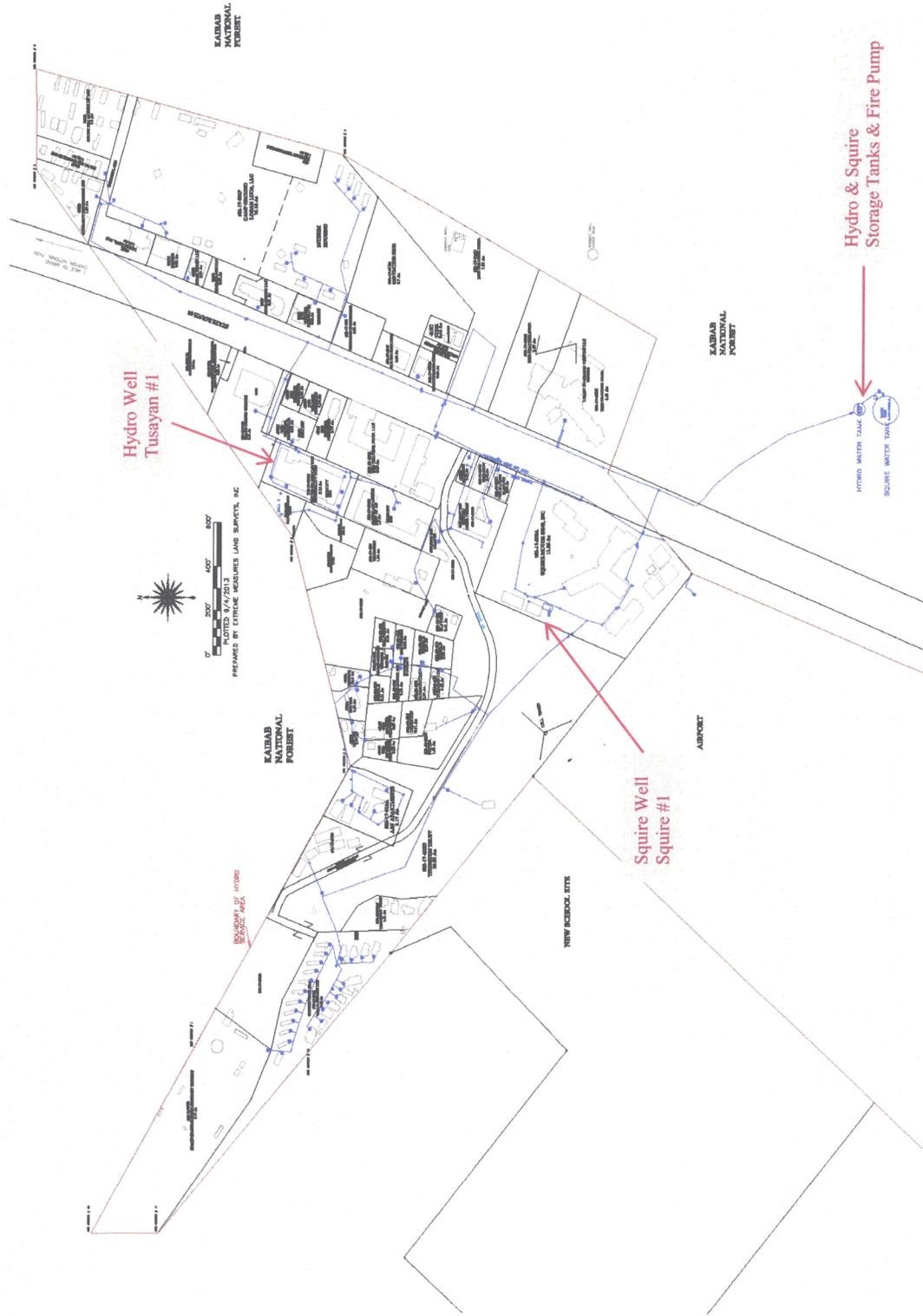
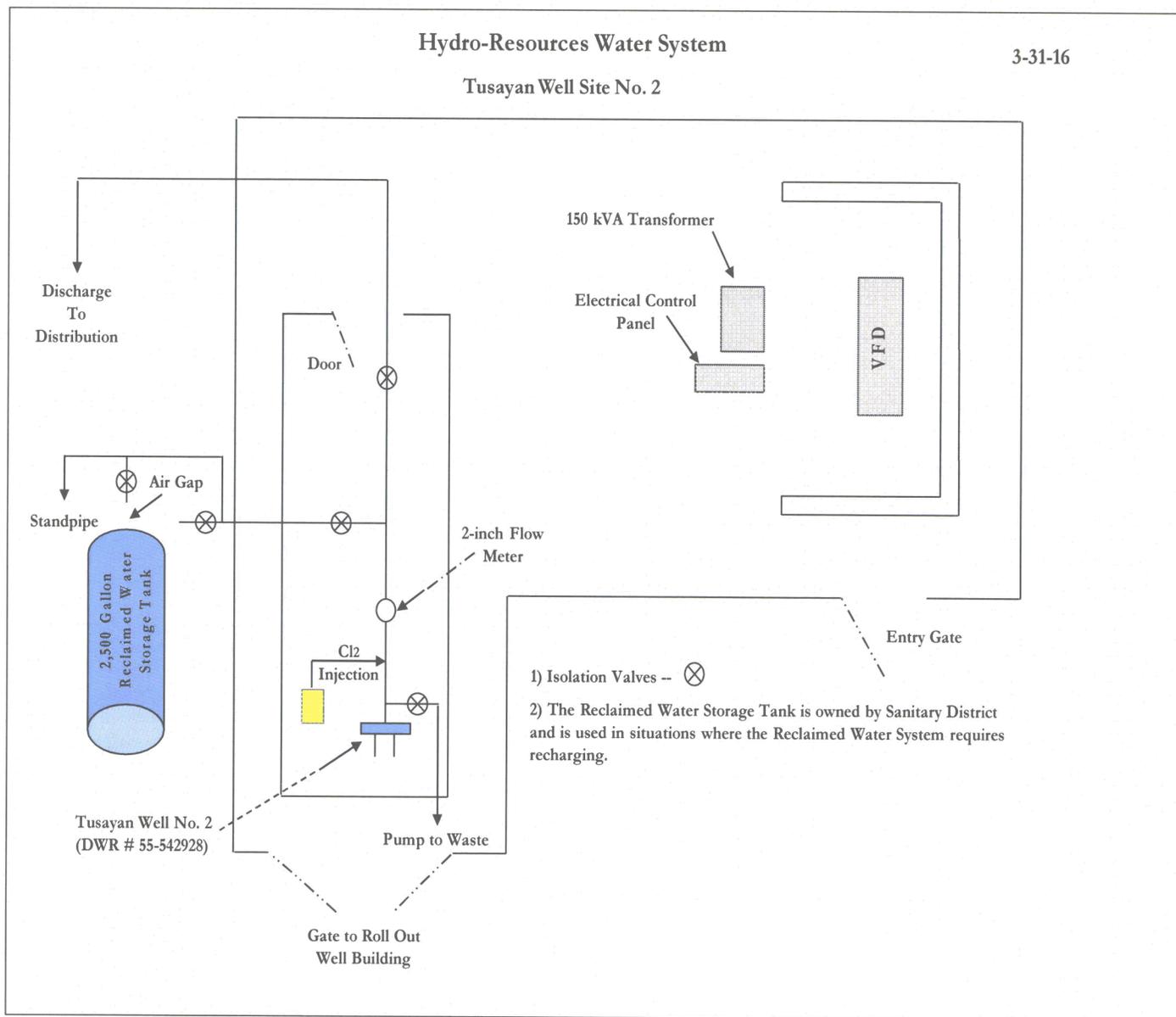
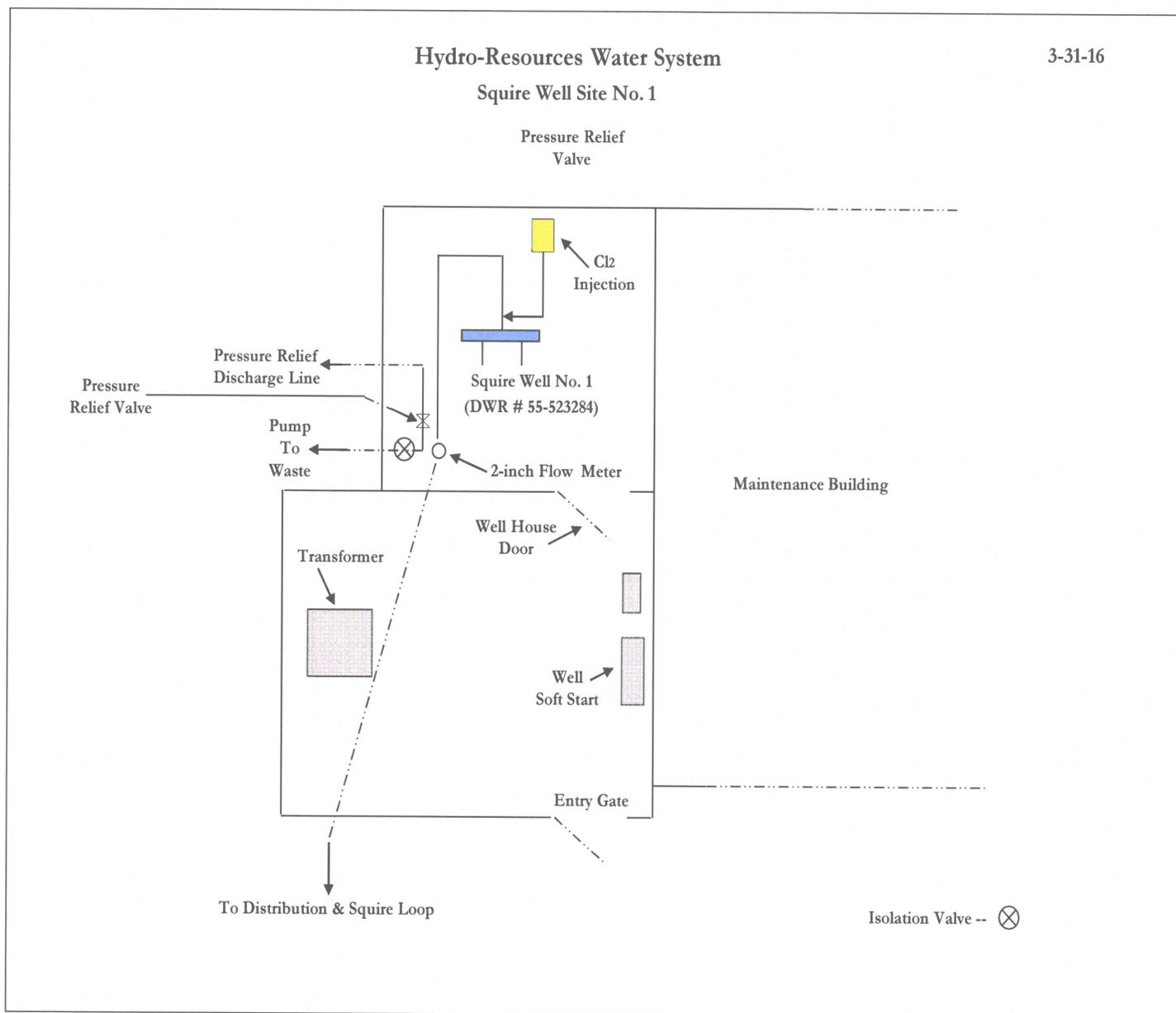


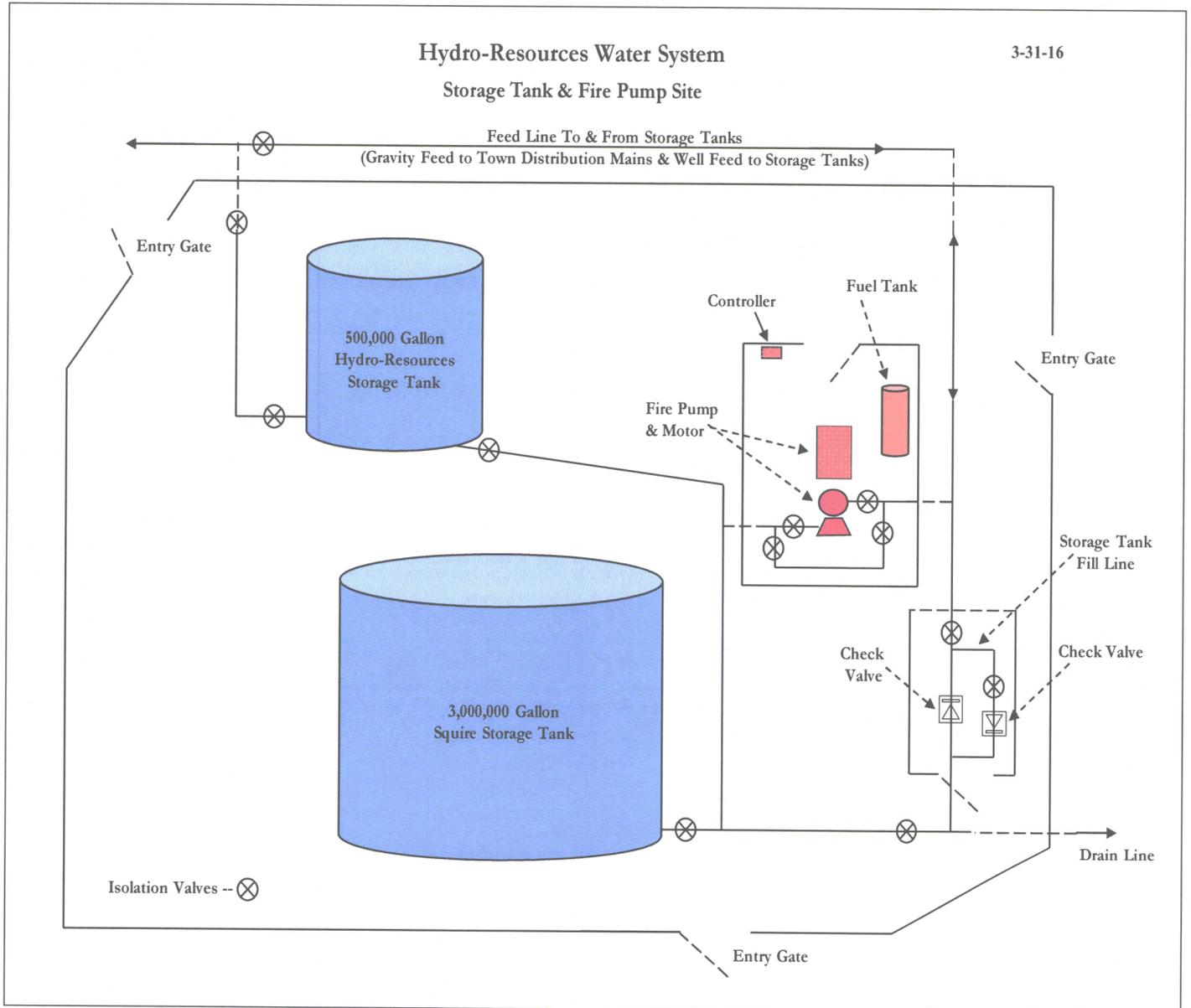
FIGURE 4 – MAP OF TUSAYAN WITH HYDRO-RESOURCES PLANT LOCATIONS



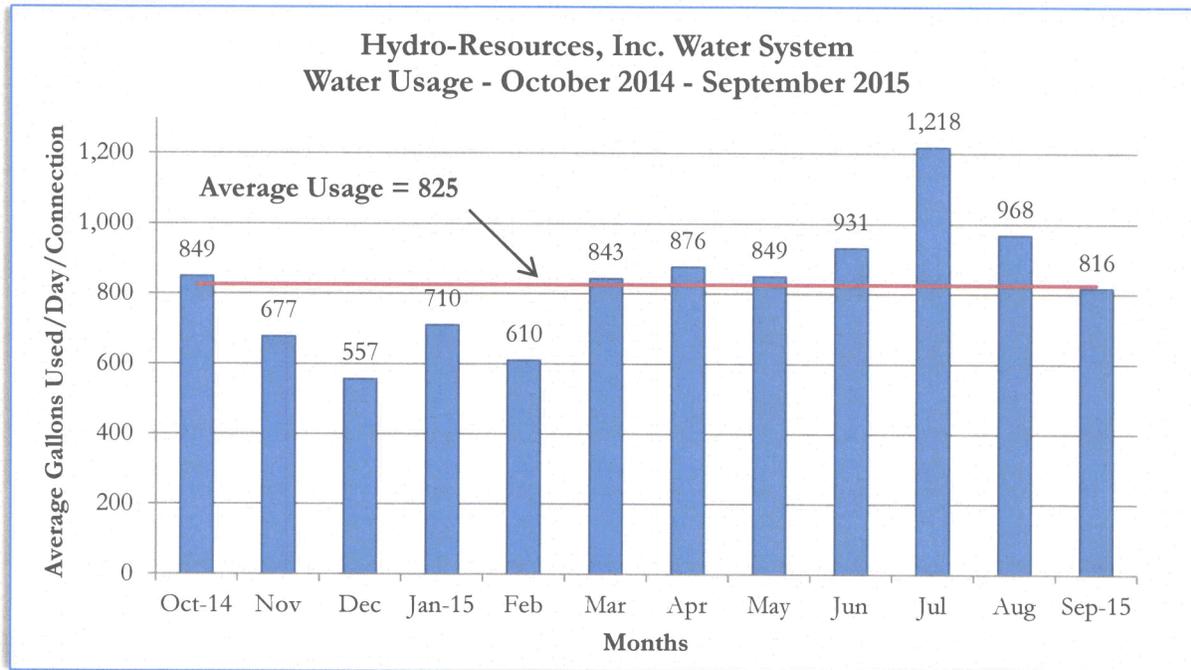
**FIGURE 5 – HYDRO-RESOURCES – TUSAYAN WELL SITE NO. 2**



**FIGURE 6 – HYDRO-RESOURCES SQUIRE WELL SITE NO. 1**



**FIGURE 7 – HYDRO-RESOURCES STORAGE TANK & FIRE PUMP SITE**



**FIGURE 9 – HYDRO-RESOURCES WATER CONSUMPTION**