

State of Florida



Public Service Commission

CAPITAL CIRCLE OFFICE CENTER • 2540 SHUMARD OAK BOULEVARD
TALLAHASSEE, FLORIDA 32399-0850

-M-E-M-O-R-A-N-D-U-M-

DATE: June 19, 2014
TO: Carlotta S. Stauffer, Commission Clerk, Office of Commission Clerk
FROM: Penelope D. Buys, Engineering Specialist III, Division of Engineering *PDB*
RE: Docket No. 130211-WS - Application for staff-assisted rate case in Polk County by
S. V. Utilities, Ltd.

The attached document was received via email on June 12, 2014. Please incorporate the documents into the docket file.

Penny Buys

From: Kelly Thompson
Sent: Thursday, June 12, 2014 11:21 AM
To: Patti Daniel; Jim Dean; Shannon Hudson; Penny Buys; Pete Lester; Laura King
Subject: FW: Docket No. 130211-WS; S.V. Utilities
Attachments: FRWA Memo (Water Audit).pdf; FRWA Water Audit.pdf

fyi

From: Martin S. Friedman [<mailto:mfriedman@ffllegal.com>]
Sent: Thursday, June 12, 2014 11:03 AM
To: Kelly Thompson
Cc: Steve Reilly; Brian Altman
Subject: Docket No. 130211-WS; S.V. Utilities

Kelly,

Pursuant to the Utility's agreement at the April 10, 2014 Agenda Conference, attached is the Florida Rural Water Association's Water Audit. Please do not hesitate to contact me should you have any questions.

Regards, Marty

MARTIN S. FRIEDMAN
Attorney

NOTE: My firm name and e-mail have changed effective February 1, 2014. Please update your records.



FRIEDMAN, FRIEDMAN & LONG, P.A.
ATTORNEYS & COUNSELORS

FRIEDMAN, FRIEDMAN & LONG, P.A.
Attorneys at Law
766 North Sun Drive, Suite 4030
Lake Mary, FL 32746
T: 407.830.6331
F: 407.878.2178
mfriedman@ffllegal.com
www.friedmanfriedmanandlong.com

Notice: This email message, and any attachments hereto, contains confidential information that is legally privileged. If you are not the intended recipient, you must not review, transmit, convert to hard copy, copy, use or disseminate this email or any attachments to it. If you have received this email in error, please notify us immediately by return mail or by telephone at (407) 830-6331 and delete the original and all copies of this transmission, including any attachments. Thank you.

FLORIDA RURAL WATER ASSOCIATION

2970 WELLINGTON CIRCLE • TALLAHASSEE, FL 32309-7813
(850) 668-2746

BOARD of DIRECTORS

WILLIAM G. GRUBBS
Quincy
President

ROBERT MUNRO
Orlando
Vice President

BRUCE MORRISON
Destin
Secretary/Treasurer

PAUL BRAYTON
Harbour Heights
National Director

MICHAEL MCKINNEY
Perry

DARRELL POLK
Boca Grande

SCOTT KELLY
Jacksonville

EXECUTIVE
DIRECTOR

GARY WILLIAMS
Tallahassee

MEMORANDUM

TO FRWA Water Utility Member

FROM Gary Williams, Executive Director 

SUBJECT FRWA Member Services

The Florida Rural Water Association performs member services, as meter testing, ground penetrating radar locates, and many other on-site technical assistance activities for you at no charge.

We are sending this memo to you to inform you of a recent visit and service at your system. Please find attached a report of this effort.

This service was performed at your system at no charge from FRWA and you should not be charged by other agents, vendors, or companies for this service. If other agents, vendors, or companies were on-hand, requested by you or approved by you to oversee or be available for this effort and you approved expenses for that availability from them that is between you and them; but any charge should not include expenses for time of the FRWA service. That is a membership savings directly to you.

If FRWA can help your utility in anyway, please do not hesitate to contact us directly.



EMAIL
frwa@frwa.net

WEBSITE
www.frwa.net

FLOW METER ACCURACY RECORD
FLORIDA RURAL WATER ASSOCIATION
2970 WELLINGTON CR. W. STE. 101
TALLAHASSEE, FLORIDA 32308

SYSTEM NAME: Swiss Village MHP
SYSTEM ADDRESS: 500 S. Florida Ave Suite 700 County: Polk
Lakeland Fl. 33801

SITE CONTACT/PHONE Brain Altman Phone: 863-647-1581

PWS. ID # 6532715 LOCATION: Water Plant

Test performed @ 267 - 259 GPM PUMP INFO: Well # 1 Meter

METER MODEL: Water Specialties SERIAL NUMBER ON METER: 970968-6

Pipe info@ teat site: material 6" Steel Pipe Sch 80

DISCHARGE PIPE DIAMETER: od / wt OD 6.625 / WT 0.432

Transducer Spacing 4.547 inches

Transducer distance from meter upstream/downstream 1' - 1'

METHOD OR EQUIPMENT USED FOR TEST: Fuji

DATE OF THIS METER TEST: 5/5/2014

INITIAL METER READING AT START OF TEST: 406725000

FINAL METER READING AT END OF TEST: 406726000 Total Gals. 1000

INITIAL READING ON CALIBRATED TEST METER: _____

FINAL READING ON CALIBRATED TEST METER: 886 Total Gals. 886

AVERAGE % OF ERROR BETWEEN FLOWMETER TESTED AND CALIBRATED TEST METER: 12.9 % Faster

COMMENTS: Meters need to be repaired or replaced if the meter is 10 % + or - between flowmeter teasted and Calibrated test mater.

NAME OF PERSON COMPLETING TEST/ FORM: Moises Villalpando

COMPANY NAME: FLORIDA RURAL WATER ASSOCIATION

DAYTIME TELEPHONE: (850)668-2746

SIGNATURE: Moises Villalpando

DATE: 5/5/2014

Swiss Village MHP

Residential Flow Meter Accuracy Report, 21 Water Meters Checked.

# of Meters	Lot #	Average % of Error on Each Water Meter Tested using a Precision 5.00 % gallon jug
1	Lot # 27	5.02 % Slower
2	Lot # 1	5.05 % Slower
3	Lot # 75	Over Flow jug / Meter Ran Slow
4	Lot # 57	Over Flow jug / Meter Ran Slow
5	Lot # 121	Over Reading Scale / Slow
6	Lot # 103	Meter not working
7	Lot # 163	Meter not working
8	Lot # 170	Meter not working
9	Lot # 154	Over Flow jug / Meter Ran Slow
10	Lot # 199	Meter not working
11	Lot # 137	5.03 % Slower
12	Lot # 194	Over Flow jug / Meter Ran Slow
13	Lot # 218	Over Flow jug / Meter Ran Slow
14	Lot # 219	5.05 % Slower
15	Lot # 510	Meter not working
16	Lot # 512	5.05 % Slower
17	Lot # 525	Over Flow jug / Meter Ran Slow
18	Lot # 658	Over Flow jug / Meter Ran Slow
19	Lot # 535	Over Reading Scale / Slow
20	Lot # 533	5.00 % Accurate
21	Lot # 340	Over Reading Scale / Slow

Name of person completed tests : Moises Villalpando

Company name : Florida Rural Water Association

Telephone number : # 863-801-3700

Date : 5-5-2014

Present at meter testing was Brian Altman and Jerry Coryell
All water meters were picked randomly at each residential site.

FLORIDA RURAL WATER ASSOCIATION

2970 WELLINGTON CIRCLE • TALLAHASSEE, FL 32309-7813
(850) 668-2746

June 6, 2014

BOARD of DIRECTORS

WILLIAM G. GRUBBS
Quincy
President

ROBERT MUNRO
Orlando
Vice President

BRUCE MORRISON
Destin
Secretary/Treasurer

PAUL BRAYTON
Harbour Heights
National Director

MICHAEL MCKINNEY
Perry

DARRELL POLK
Boca Grande

SCOTT KELLY
Jacksonville

EXECUTIVE
DIRECTOR

GARY WILLIAMS
Tallahassee

Mr. Brian Altman
SV Utilities Polk CHCIII
PO Box 5252 Old Lucerne Park Rd.
Lakeland FL 33807
Phone: (863) 647-1581
Email: baltman@centurycompanies.net

Re: Water Audit Report

Dear Mr. Altman:

Florida Rural Water Association is pleased to assist SV Utilities Polk CHCIII with this water loss audit report as a membership service. We'd like to thank staff member Jerry Coryell that were instrumental in assisting us with this effort.

FRWA estimated that over 11 million gallons of unmetered water is being used by your customers because of stopped or slow meters. This accounts for 23.5% of the water delivered not being metered or charged – this is about \$14,700 in lost revenues that could sustain your system. The aggregated water loss for your system is around 20%, which much higher than normal/average system losses.

During our field tests Moises Villalpando, FRWA Water Circuit Rider, found 7 out of 31 randomly tested meters registering no flow. The remaining 24 meters accurately reflected flows. If SV Utilities replaced these defective meters the water loss could be lowered to around 3%.

This report contains several important recommendations that we suggest you implement immediately to reduce water loss, use this valuable resource wisely, and increase revenues and service to your valued customers.

FRWA is dedicated to helping water and wastewater systems provide Floridians with an ample affordable supply of high quality water, while protecting natural systems. Please feel free to contact me if you have any further questions.

Sincerely,



Tom Gustafson
FRWA Financial / Management Circuit



EMAIL
frwa@frwa.net

WEBSITE
www.frwa.net

FLORIDA RURAL WATER ASSOCIATION

2970 WELLINGTON CIRCLE • TALLAHASSEE, FL 32309-7813
(850) 668-2746

WATER CONSERVATION AUDIT

S. V. Utilities, LTD

A. General:

Florida Rural Water Association was requested to perform a water audit for the S.V. Utilities, LTD's water system. A water audit consists of a systematic analysis of how and where water is used. The audit identifies the various ways that water may be lost before delivery to the customer, such as leaks, improper meter registration, and unauthorized uses. Identification of these water losses results in improved efficiency, cost savings and opportunities for water conservation for the water utility.

The S.V. Utilities, LTD Water Department provides potable water from two well sites to the residents of S.V. Utility. The utility's water treatment plant is currently designed to pump 288,000 gallons per day (gpd) utilizing two (2) hydropneumatic storage tanks with a total capacity of 16,000 gallons. Water is pumped to S.V. Utilities water customers using two wells that flow directly into the storage tank after it has been disinfected using liquid chlorine. The water is disinfected and pumped into the hydropneumatic tanks, which pressurizes the distribution system

The table below shows the results of the water audit performed by Florida Rural Water Association in April of 2014. Revenue and water rate information was used to identify the value of the water losses identified in the Florida Rural Water Association water audit. FRWA found over 11 million gallons of unmetered water being used by your customers because of stopped or slow meters. This accounts for 23.5% of the water delivered not being metered or charged – this directly affects revenues

that could sustain your system. The estimated unaccounted for water provided by the Utilities each year has a value of over \$10,050.

The aggregated water loss for your system is around 20%, which much higher than normal/average system losses.

During our field tests Moises Villalpando, FRWA Water Circuit Rider, found 7 out of 31 randomly tested meters registering no flow. The remaining 24 meters accurately reflected flows. If SV Utilities replaced these defective meters the water loss could be lowered to around 3%.

Table 1 ~ Water Audit Findings
Results of FRWA Water Audit and Value of Unaccounted
For Water S.V. Utilities, LTD Florida, for year 2013-2014

Line	Category	Amounts / Totals
A	Treated & Metered Water Produced (annual adjusted total)	66,611,132 gallons
B	Water Sold to Customers (annual unadjusted total)	47,732,130 gallons
C	Unmetered Water Used by Customers ~ 23.48% (estimated annual total)	11,209,352 gallons
D	Total Water Used by Customers – metered and unmetered: B + C (annual unadjusted total)	58,941,482 gallons
E	Gross Unaccounted for Water: A - D	7,669,650 gallons
F	Lost revenues from unmetered water used by customers: C x \$1.31 cost per thousand gallons*	\$14,700
G	Lost revenues from gross unaccounted for water: E x \$1.31 cost per thousand gallons*	\$10,050

Note: Costs determined by using lower tier rate of \$1.31, over 8,000 gallons price increases to \$2.09

B. Review Worksheet:

The water audit methodology used by FRWA complies with the recommended methods published by the American Water Works Association (AWWA) and has been used successfully in the past to improve the efficiency of water systems throughout Florida.

The **Water System Audit Review Work Sheet** is attached. This sheet shows the calculations and numbers used within the audit to calculate the water loss. The **Total Water Supplied** (line 1c) is calculated from the monthly pumping records submitted by the system. A “**adjustment factor**” is then used after each of the well meters and finished (treated) water meters are checked for accuracy by FRWA, using a calibrated ultrasonic flow meter tester. For example, if a well meter indicates that 1,000 gallons have been pumped, but accuracy testing shows that only 900 gallons have actually been pumped, then that 10 percent overage error will be accounted for by the adjustment factor. The correction factor percentage is listed as the **Source Meter Error** (line 2a) and is then used to correct the **Total Water Supplied** to arrive at **Adjusted Total Water Supply** (line 2d).

Total Other (wholesale) Metered Water Use (line 4d) are calculated from the monthly sales and usage records that were provided by the S.V. Utilities, LTD.

To determine the actual amount of water used by S.V. Utility water customers, we needed to identify the accuracy of the residential water meters. Since testing all 729 residential meters would be extremely time consuming, we tested a **representative sample** of 5 percent, or thirty-one meters. The

tests are performed without interrupting service and with the customer's consent, while using only five gallons for the test. The percent of accuracy for all meters we tested is again used to develop a system wide "adjustment factor", in the same manner as discussed above regarding well meters. As we know, most meters fail to account for all of the water used by customers because with age comes wear in the meter mechanism. Older meters tend to under-register the water that they flow. This may be positive for the customer, but it can be very costly for the utility.

This "correction factor" accounting for the "less than accurate" meters is then entered in the spreadsheet under **Total Sales Meter & System Meter Errors** (line 5b). The total amount of metered water including the "correction factor" is then added to **Corrected Total Metered Water Use** (line 6). At this point, we have accounted for the meter error and can subtract water sold from water pumped to arrive at the **Corrected Total Unaccounted For Water** (line 7).

Through discussions and interviews with system employees and the water treatment plant operator, we then identify non-metered water use that is legitimate, or **Authorized Unmetered Water Uses** (line 8). These authorized uses are listed on the worksheet and include firefighting training and water leaks and main repairs. This total is then subtracted from the **Total Unaccounted for Water** (line 10). Any other **Identified Water Losses** will be noted under section 11.

Finally, we can note the **Potential Water System Leakage** (line 13), and divide that number by the **Adjusted Total Water Supply** to give us an **Estimated Percentage Water Loss** (line 13).

The AWWA has determined that efficient water systems operating under normal conditions will

have an Estimated Percentage Water Loss of 10% or less. When Estimated Percentage Water Loss exceeds 10%, it is considered to be unacceptable, and it is likely that some pipelines have developed leaks and further leak investigation is necessary to recover the lost water.

C. Conclusions and Recommendations:

This water audit has been compiled using the best available flow and billing data that we could access at the time of this report. It was noted that a high percentage of meters had failed, FRWA cannot be responsible for the accuracy of the data provided to us, but we believe that our findings should reflect the estimated water loss if that data is accurate. Short-term improvement recommendations may need to be revisited in 12 months and replaced/updated with longer-term recommendations and plans. Following are the recommendations that FRWA suggests be employed to reduce water loss to more acceptable levels, and we also believe that implementation of these recommendations will assist the S.V. Utilities, LTD in its efforts to continue down the path of maintaining a successful utility:

- A. A full leak detection effort would be cost justifiable and would yield a significant reduction in lost water and operating expenses.
- B. The Well #1 meter was shown to be 12.9% slow. All master meters are required by state law to be plus or minus 5% accurate. It is recommended that Well #1 meter be replaced or repaired to insure proper operations.
- C. An aggressive meter testing and meter replacement program should be started or expanded. A random sampling of residential meters found meters not working or recording at all and only a 76.52% efficiency average for all meters tested. Also, all meters over ten years old should be designated for replacement. The stopped meters (system cash registers) ran very slowly and cost the utility monthly income prior to stopping.
- D. Water system employees and Fire Department personnel should be encouraged to record water system usages, such as main flushing, fire fighting, fire department training, street cleaning, etc. A system use form could be developed to encourage and record use.

- E. All connections on the water system should be metered even if the system decides not to charge for usage. The system will not bill itself for certain system usage, but it needs to know the amount of water used regardless.
- F. All metered connections should be read each month and recorded.
- G. Use of water from the public water system for storm drain and sewer cleaning should be discouraged. Not only is this an unmetered use, but a potential cross connection.
- H. Employees and customers should be encouraged to keep their eyes open to possible theft of water through hydrant usage, illegal connections and taps. Once people are caught they should be prosecuted to show the system's position on theft and set an example.
- I. A water loss reduction effort to reduce the water loss percentage below 10 % should include leak detection effort and meter repair and replacement. Some residential meters were very slow or inaccurate. This is a significant revenue loss to the water system
- J. A system form should be developed to record repaired system leaks, storm drain flushing, and sewer cleaning. Some of the above will need to be estimated at the time of usage.
- K. There are numerous customer complaints on possible direct connections to irrigation that are not metered? These should be investigated on a home-by-home basis to insure all home irrigation is metered. Also proper metering of the swimming pools is necessary to insure all water is being accounted for.

It was a pleasure working with your staff on this water audit project.

Appendix (Suggested Reporting Forms)

- A. System Leak Report Forms**

- B. Fire Hydrant Repair Report**

- C. Meter Inventory Report**

System Leak Report (Specific Incident and Location)

Leaks and Water Losses for Water System Maintenance Activities

Licensed Operator Initials: _____ License #: _____

Pipeline Leak

Date Reported: _____

Date of Repair: _____

Est. Duration of Leak: _____

Pipeline Reference: _____

Leak Location: _____

Type of Leak

- Blown Section
- Perforation
- Circumferential Failure
- Longitudinal Split
- Joint Leak
- Fitting Failure
- Other

Estimated Water Loss: _____ Gallons: _____

- Measured Flow using Records
- Estimated Using Observed Condition
- Other _____

Identify How Water Loss Estimate was Made:

Have Repairs been Made in Same Area? Yes No Unsure

Method Used to Repair Pipeline: Repair Clamp Pipe and Clamp Other

Service Line Leak or Leak at Meter

Date Reported: _____

Date of Repair: _____

Est. Duration of Leak: _____

Address: _____

Repeat Visit: Yes No

Estimated Water Loss: _____ Gallons _____

Type of Leak

- Measured Flow using Records
- Estimated Using Observed Condition
- Other _____

- Service Lateral Break
- Service Lateral Pulled
- Curb Stop
- Meter Valve
- Run Over by Vehicle
- Fitting Failure Other

o Repair to Fire Hydrant

Fire Hydrant No. or Location: _____

Estimated Water Loss: _____ Gallons _____

- o Measured Flow using Records
- o Estimated Using Observed Condition
- o Other _____

Date Reported: _____

Date of Repair: _____

Est. Duration of Leak:

Type of Leak

- o Leaking at Shutoff Valve
- o Leaking at Weep Hole
- o Other

Meter Inventory for Billed Water Consumption

General Information for Meters Used for Billing

Date: _____

Billing Meter by Customer Category:

Residential _____% Industrial _____%
 Commercial _____% Public _____% Other _____%

What percentage of your system is metered? _____%

How often are meters read? _____

Water System Meter Testing and Replacement Program

Check the items regularly performed:

- Repairs Calibration Testing Check for Tampering Replacement
- Other

How many meters are recalibrated and/or replaced each year? _____

Do you differentiate recalibration based on size or consumption?

Yes No

How often are large user (2" or larger) meters tested or calibrated?
 _____ yrs

Describe your Calibration and Replacement Program:

Do you sell Wholesale Water? Yes No If Yes how many connections? _____

How often are master meters calibrated: _____

Do you budget for Meter calibration, repair and replacement?

Yes No

Inventory of Meters by Age and Manufacturer

Meter Group	1	2	3	4	5
Manufacturer					
Approx Age					
Meter Identifier					
Approx % in					

Water Audit Worksheet

19.8% Estimated Water Loss

FRWA Member:

S.V. Utilites

Address: 500 S. Florida Avenue, Suite 700
Lakeland, Florida 33801

Telephone: 863.647.1581

Fax: 863.647.3992

Contact: Brian Altman

E-mail: baltman@centurycompanies.net

Population: 1,410

Connections: 729

PWS: 6532715

County: Polk

Date:

June 6, 2014



Prepared by: **Tom Gustafson**

Florida Rural Water Association

2970 Wellington Circle West, Suite 101

Tallahassee, Florida 32309-6885

Phone: 850-668-2746

Fax: 850-893-4581



Florida Rural Water Association

Member: S.V. Utilites
 Contact: Brian Altman
 City: Lakeland, Florida 33801
 By: Tom Gustafson

Date: 6-Jun-14
 Conn: 729
 PWS: 6532715
 County: Polk

WATER SYSTEM REVIEW WORKSHEET

Before individual water meter adjustments

Water Volume (Gallons)

Line	Item & Description	SubTotal	Total Cumulative
1	Raw Total Water Supply to the Distribution System:		
a.	Total from Plant Master Meters:	71,014,000 gal	
b.	Total Purchased Water:	0 gal	
c.	Total Water Supplied (add 1a+1b):		<u>71,014,000 gal</u>
2	Adjustments to Total Water Supply:		
a.	Source Meter Error (+ or -):	-4,402,868 gal	6.2% fast
b.	Change in Reservoir and Tank Storage:	0 gal	
c.	Other Contribution or Losses (+ or -):	0 gal	
d.	Total Adjustments (add 2a+2b+2c):		<u>-4,402,868 gal</u>
3	ADJUSTED TOTAL Water Supply (add 1c+2d):		<u><u>66,611,132 gal</u></u>
4	Raw Total Metered Water Use/Sales:		
a.	Total Residential Metered Water Use:	47,732,130 gal	
b.	Total Commercial Metered Water Use:	0 gal	
c.	Total Institutional Metered Water Use:	0 gal	
d.	Total Other (wholesale) Metered Water Use:	0 gal	
e.	Total Metered Water Use (add 4a+4b+4c+4d):		<u>47,732,130 gal</u>
5	Adjustments to Total Metered Water Use:		
a.	Adjustments Due to Meter Reading lag (±):	0 gal	
b.	Total Sales Meter & System Meter Errors (±):	0 gal	23.48% slow
c.	Total Adjusted Metered Water Use (add 5a+5b):		<u>0 gal</u>
6	CORRECTED TOTAL Metered Water Use (add 4e+5c):		<u><u>47,732,130 gal</u></u>
7	CORRECTED TOTAL UNACCOUNTED-FOR WATER (Subtract line 6 from		<u><u>18,879,002 gal</u></u>



Florida Rural Water Association

Member: S.V. Utilites
 Contact: Brian Altman
 City: Lakeland, Florida 33801
 By: Tom Gustafson

Date: 6-Jun-14
 Conn: 729
 PWS: 6532715
 County: Polk

8 Authorized unmetered water uses:

a.	Firefighting & Training:	<u>166,000 gal</u>	<i>FH flow records</i>
b.	Main Flushings:	<u>365,000 gal</u>	<i>staff records</i>
c.	Storm Drain Flushing:	<u>25,000 gal</u>	<i>staff records</i>
d.	Sewer Cleaning	<u>0 gal</u>	<i>none</i>
e.	Street Cleanings:	<u>0 gal</u>	<i>N/A</i>
f.	Water Company Use (domestic):	<u>0 gal</u>	<i>N/A</i>
g.	Bulk Water Sales:	<u>0 gal</u>	<i>N/A</i>
h.	Tank Drainings:	<u>0 gal</u>	<i>none</i>
i.	Schools:	<u>0 gal</u>	<i>N/A</i>
j.	Landscaping In Large Public Areas	<u>0 gal</u>	<i>all metered</i>
	1. Parks:	<u>0 gal</u>	<i>all metered</i>
	2. Golf Courses:	<u>0 gal</u>	<i>N/A</i>
	3. Cemeteries:	<u>0 gal</u>	<i>N/A</i>
	4. Playgrounds:	<u>0 gal</u>	<i>all metered</i>
	5. Highway Median Strips::	<u>0 gal</u>	<i>N/A</i>
	6. Other Landscaping:	<u>0 gal</u>	<i>all metered</i>
k.	Decorative Water Facilities:	<u>0 gal</u>	<i>all metered</i>
l.	Swimming Pools:	<u>0 gal</u>	<i>all metered</i>
m.	Construction Sites:	<u>0 gal</u>	<i>N/A</i>
n.	Water Quality & Other Testing:	<u>0 gal</u>	<i>all metered</i>
o.	Plant Uses:	<u>0 gal</u>	<i>all metered</i>
	1. Chemical Mix & Application:	<u>0 gal</u>	<i>all metered</i>
	2. Filter Wash Water:	<u>0 gal</u>	<i>N/A</i>
	3. Filter Surface Wash:	<u>0 gal</u>	<i>N/A</i>
	4. Pump Priming:	<u>0 gal</u>	<i>N/A</i>
	5. Pump Bearing Lubrication:	<u>0 gal</u>	<i>N/A</i>
	6. Laboratory Use:	<u>0 gal</u>	<i>all metered</i>
	7. Other Misc. Plant Use:	<u>0 gal</u>	<i>all metered</i>
p.	Other Unmetered Leaks:	<u>0 gal</u>	<i>none known</i>
q.	Repaired System Leaks:	<u>2,287,500 gal</u>	<i>Estimated & adjusted</i>

9 TOTAL Authorized Unmetered Water (add lines 8a through 8q) **2,843,500 gal**

10 TOTAL Unaccounted-for Water (subtract line 9 from line 7): **16,035,502 gal**



Florida Rural Water Association

Member: S.V. Utilites
 Contact: Brian Altman
 City: Lakeland, Florida 33801
 By: Tom Gustafson

Date: 6-Jun-14
 Conn: 729
 PWS: 6532715
 County: Polk

11 IDENTIFIED WATER LOSSES

a.	Well Meter Inaccuracies:	<u>0 gal</u>	<i>included in item 5</i>
b.	Loss due to Meter Inaccuracies:	<u>0 gal</u>	<i>included in item 5</i>
c.	Malfunctioning Distribution System Controls:	<u>0 gal</u>	<i>none</i>
d.	Reservoir Seepage & Leakage:	<u>0 gal</u>	<i>N/A</i>
e.	Evaporation:	<u>0 gal</u>	<i>N/A</i>
f.	Reservoir Overflow:	<u>0 gal</u>	<i>N/A</i>
g.	Identified Leakage:	<u>0 gal</u>	<i>included in item 8q</i>
h.	Bleeders & Blow-offs:	<u>0 gal</u>	<i>none known</i>
i.	Emergency Meter Removal:	<u>0 gal</u>	<i>none</i>
j.	Thefts:	<u>0 gal</u>	<i>none known</i>

12 **TOTAL Identified Water Losses (add lines 10 + 11a through 11j):** 2,843,500 gal

13 **Potential Water System Leakage :** 13,192,002 gal

Estimated Percentage Water Loss: **19.80%**

14 **Recoverable Leakage (multiply line 13 by 0.75)** 9,894,002 gal



Florida Rural Water Association

Member: S.V. Utilites
 Contact: Brian Altman
 City: Lakeland, Florida 33801
 By: Tom Gustafson

Date: 6-Jun-14
 Conn: 729
 PWS: 6532715
 County: Polk

WATER SYSTEM REVIEW WORKSHEET AFTER individual water meter adjustments

Water Volume (Gallons)

Line	Item & Description	SubTotal	Total Cumulative
1	Raw Total Water Supply to the Distribution System:		
a.	Total from Plant Master Meters:	<u>71,014,000 gal</u>	
b.	Total Purchased Water:	<u>0 gal</u>	
c.	Total Water Supplied (add 1a+1b):		<u>71,014,000 gal</u>
2	Adjustments to Total Water Supply:		
a.	Source Meter Error (+ or -):	<u>-4,402,868 gal</u>	6.2% fast
b.	Change in Reservoir and Tank Storage:	<u>0 gal</u>	
c.	Other Contribution or Losses (+ or -):	<u>0 gal</u>	
d.	Total Adjustments (add 2a+2b+2c):		<u>-4,402,868 gal</u>
3	ADJUSTED TOTAL Water Supply (add 1c+2d):		<u><u>66,611,132 gal</u></u>
4	Raw Total Metered Water Use/Sales:		
a.	Total Residential Metered Water Use:	<u>47,732,130 gal</u>	
b.	Total Commercial Metered Water Use:	<u>0 gal</u>	
c.	Total Institutional Metered Water Use:	<u>0 gal</u>	
d.	Total Other (wholesale) Metered Water Use:	<u>0 gal</u>	
e.	Total Metered Water Use (add 4a+4b+4c+4d):		<u>47,732,130 gal</u>
5	Adjustments to Total Metered Water Use:		
a.	Adjustments Due to Meter Reading lag (+):	<u>0 gal</u>	
b.	Total Sales Meter & System Meter Errors (±):	<u>11,209,352 gal</u>	23.48% slow
c.	Total Adjusted Metered Water Use (add 5a+5b):		<u>11,209,352 gal</u>
6	CORRECTED TOTAL Metered Water Use (add 4e+5c):		<u><u>58,941,482 gal</u></u>
7	CORRECTED TOTAL UNACCOUNTED-FOR WATER (Subtract line 6 from		<u><u>7,669,650 gal</u></u>



Florida Rural Water Association

Member: S.V. Utilites
 Contact: Brian Altman
 City: Lakeland, Florida 33801
 By: Tom Gustafson

Date: 6-Jun-14
 Conn: 729
 PWS: 6532715
 County: Polk

8 Authorized unmetered water uses:

a.	Firefighting & Training:	166,000 gal	<i>FH flow records</i>
b.	Main Flushings:	365,000 gal	<i>staff records</i>
c.	Storm Drain Flushing:	25,000 gal	<i>staff records</i>
d.	Sewer Cleaning	0 gal	<i>none</i>
e.	Street Cleanings:	0 gal	<i>N/A</i>
f.	Water Company Use (domestic):	0 gal	<i>N/A</i>
g.	Bulk Water Sales:	0 gal	<i>N/A</i>
h.	Tank Drainings:	0 gal	<i>none</i>
i.	Schools:	0 gal	<i>N/A</i>
j.	Landscaping In Large Public Areas	0 gal	<i>all metered</i>
	1. Parks:	0 gal	<i>all metered</i>
	2. Golf Courses:	0 gal	<i>N/A</i>
	3. Cemeteries:	0 gal	<i>N/A</i>
	4. Playgrounds:	0 gal	<i>all metered</i>
	5. Highway Median Strips::	0 gal	<i>N/A</i>
	6. Other Landscaping:	0 gal	<i>all metered</i>
k.	Decorative Water Facilities:	0 gal	<i>all metered</i>
l.	Swimming Pools:	0 gal	<i>all metered</i>
m.	Construction Sites:	0 gal	<i>N/A</i>
n.	Water Quality & Other Testing:	0 gal	<i>all metered</i>
o.	Plant Uses:	0 gal	<i>all metered</i>
	1. Chemical Mix & Application:	0 gal	<i>all metered</i>
	2. Filter Wash Water:	0 gal	<i>N/A</i>
	3. Filter Surface Wash:	0 gal	<i>N/A</i>
	4. Pump Priming:	0 gal	<i>N/A</i>
	5. Pump Bearing Lubrication:	0 gal	<i>N/A</i>
	6. Laboratory Use:	0 gal	<i>all metered</i>
	7. Other Misc. Plant Use:	0 gal	<i>all metered</i>
p.	Other Unmetered Leaks:	0 gal	<i>none known</i>
q.	Repaired System Leaks:	2,287,500 gal	<i>Estimated & adjusted</i>

9 TOTAL Authorized Unmetered Water (add lines 8a through 8q) **2,843,500 gal**

10 TOTAL Unaccounted-for Water (subtract line 9 from line 7): **4,826,150 gal**



Florida Rural Water Association

Member: S.V. Utilites
 Contact: Brian Altman
 City: Lakeland, Florida 33801
 By: Tom Gustafson

Date: 6-Jun-14
 Conn: 729
 PWS: 6532715
 County: Polk

11 IDENTIFIED WATER LOSSES

a.	Well Meter Inaccuracies:	<u>0 gal</u>	<i>included in item 5</i>
b.	Loss due to Meter Inaccuracies:	<u>0 gal</u>	<i>included in item 5</i>
c.	Malfunctioning Distribution System Controls:	<u>0 gal</u>	<i>none</i>
d.	Reservoir Seepage & Leakage:	<u>0 gal</u>	<i>N/A</i>
e.	Evaporation:	<u>0 gal</u>	<i>N/A</i>
f.	Reservoir Overflow:	<u>0 gal</u>	<i>N/A</i>
g.	Identified Leakage:	<u>0 gal</u>	<i>included in item 8q</i>
h.	Bleeders & Blow-offs:	<u>0 gal</u>	<i>none known</i>
i.	Emergency Meter Removal:	<u>0 gal</u>	<i>none</i>
j.	Thefts:	<u>0 gal</u>	<i>none known</i>

12 **TOTAL Identified Water Losses (add lines 10 + 11a through 11j):** 2,843,500 gal

13 **Potential Water System Leakage :** 1,982,650 gal

Estimated Percentage Water Loss: **2.98%**

14 **Recoverable Leakage (multiply line 13 by 0.75)** 1,486,988 gal