ANDERSON REGIONAL
JOINT WATER SYSTEM

998 Hunters Trail Anderson, SC 29625 Phone: 864-332-6534 Fax: 864-224-6116

BOARD AGENDA

Board of Commissioners
March 2022

I. Minutes February 16, 2022

II. Informational Reports

1. Executive Committee Meeting Summary
2. Finance and Administration Report
3. Operations Report
4. Sustainability Report
5. Engineering Report

Future planned Board meeting dates are:

- April 27, 2022
- June 22, 2022
- August 24, 2022

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MINUTES OF THE ANDERSON REGIONAL JOINT WATER SYSTEM February 16, 2022

LET THE MINUTES SHOW THAT THE MEDIA WERE NOTIFIED OF THIS MEETING IN ACCORDANCE WITH THE SOUTH CAROLINA FREEDOM OF INFORMATION ACT.

A QUORUM OF THE BOARD IS PRESENT.

COMMISSIONERS PRESENT: Benjie McGill, City of Clemson; Patrick Jackson, Starr-Iva; Dyke Spencer, Powdersville; David Rogers, Town of Williamston; Chuck Cortez, Big Creek-Hammond; Douglas Locke, Broadway; Tracy Durham, Sandy Springs; Scott Banks, City of Anderson; Dennis Chastain, Homeland Park; Mitch Ellenburg, Belton-Honea Path; Phillip Mishoe, Town of Central

ABSENT: Dwight Edwards, West Anderson; Evan Link, Town of Pendleton; Edgar Scott, Sandy Springs

OTHERS PRESENT: Scott Willett, ARJWS; Jeff Caldwell, ARJWS; Lisa Evatt, ARJWS; Kendall Cleary, AJRWS; Christopher Weber, ARJWS; Jodi Logan, ARJWS; Robin Gore, Powdersville Water; Gordon Brush, Powdersville Water

Chairman Dyke Spencer called the Board meeting of Anderson Regional Joint Water System to order at 12:00 p.m. on February 16, 2022.

Chairman Dyke Spencer asked for any Commissioner comments. Mr. Spencer welcomed Tracy Durham with Sandy Springs Water and Dennis Chastain with Homeland Park Water to the Board. Mr. Spencer introduced Mr. Brushs' successor, Mrs. Gore, to the Board. Mrs. Gore will resume the role as Director of Finance and Administration when Mr. Brush retires next month.

There were no public comments.

Mr. Cortez made a motion to approve the December 14, 2021 minutes and Mr. Mishoe seconded. Motion carried.

I. Consent Calendar (Old Business)

None

II. Items requiring immediate action

1. Approve Flow-Based Voting Recalculation for CY2022

Mrs. Cleary recommended the approval of the member agency flow-based vote allocation based on 2021 water deliveries to all member agencies except Clemson University. Mrs. Cleary reminded the Board that each Commissioner shall have one vote for each unit of flow measured by the immediate prior year's water purchase. The new vote totals will be effective with votes taken after March 1, 2022. Mr. McGill made a motion to approve the flow-based vote recalculation. Mr. Rogers seconded. The motion was unanimous.

III. Discussion (New Business).

1. Strategic Plan Update on Financial Viability

Mr. Caldwell gave a presentation on ARJWS Strategic Plan Update for February 2022. He outlined the Strategic Planning Cycle, Strategic Plan Critical Objectives, Strategic Plan Timeline, and Financial Viability KPIs. He discussed each briefly.

2. Resolution – Joint Operations and Maintenance Support Program

Mr. Caldwell recommended the approval of The Adoption Of A Joint Operations and Maintenance Support Program Among The Members Of Anderson Regional Joint Water System. Recognizing that emergencies may require assistance in the form of personnel, equipment, and supplies from outside the area of impact, members endeavor to coordinate response activities and share resources during emergencies. This program sets forth the procedures and standards for the administration of the Program. Mr. Cortez asked if ARJWS would be administering the program. Mr. Spencer stated the program is a form of mutual aid, not an agreement. Mr. Spencer stated he would like to take the resolution back to the Executive committee for further discussion. No action taken.

3. Executive Director's Report (Oral)

Mr. Willett gave an update on the Reallocation Study of Lake Hartwell. ARJWS has proposed legislation S1010 and H4778 to require return flow credits for all Army Corps of Engineers' reservoirs. Mr. Willett expects both bills to be signed by Governor McMaster by end of the month.

IV. Informational Reports

1. Finance and Administration Report
2. Operations Report
3. Engineering Report
4. Executive Committee Meeting Summary
5. Sustainability Report
6. Staff Member Focus
7. ARJWS Water Age Study
8. UCMR5 Guidance Summary

These reports are for information and for each Member to review as written. A copy of each report is attached to the file copy of these minutes.

V. Closed Executive Session

1. Personnel: Annual Executive Director's Performance Review

As stated by Chairman Dyke Spencer:
A CLOSED EXECUTIVE SESSION HAS BEEN REQUESTED PURSUANT TO THE SC FREEDOM OF INFORMATION ACT SECTION 30-4-70(a)(1) FOR THE DISCUSSION OF EMPLOYMENT, APPOINTMENT, COMPENSATION, PROMOTION, DEMOTION, DISCIPLINE OR RELEASE OF AN EMPLOYEE REGULATED BY A PUBLIC BODY.

A motion was made by Mr. Mishoe to enter a closed executive session at 12:55 p.m. and seconded by Mr. Jackson.

As stated by Chairman Dyke Spencer:
At 1:15 p.m. the Board returned from Closed Executive Session and per the SC Freedom Act, a motion was made by Mr. Jackson to accept the recommendations taken for the Executive Director Performance Appraisal and was seconded by Mr. Locke. The motion was unanimous.

V. Adjournment

With no further business, Mr. Locke made a motion to adjourn at 1:17 p.m. and Mr. Mishoe seconded. Motion carried.

Respectfully submitted,

Phillip Mishoe
Secretary/Treasurer

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COMMITTEE SUMMARY

Executive Committee

March 7, 2022

11:30 am

I. Discussion Summary

1. Joint Resources Program Resolution

An amended draft resolution was provided outlining ARJWS's commitment to a local emergency assistance program. This item is planned for discussion at the April board meeting.

2. Budget Drivers

General discussion based on preliminary items driving our work toward a draft budget. The major budget drivers include Chemicals, Health Insurance, Wages, Depreciation, Planned Capital and Unplanned Capital.

3. Continuous Improvement

Discussion included items related to the following:

- Area-wide Optimization Program (AWOP)
- Completed FY22 Capital Projects
- Chemical Analysis and Optimization
- RIA Grant Application

4. Legislative Update

Mr. Willett provided an update on the proposed legislation S1010 and H4778 to require return flow credits for all Army Corps of Engineers' reservoirs. The legislation has been approved by both branches. Additional discussion regarding PFA's and Lead legislation.

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BOARD MEMORANDUM

March 8, 2022

Subject

Finance and Administration Report

Discussion

Billing

Meters were read on February 28th, 2022, with usage down 3.76% from last month (for the same number of days) and up 5.94% from last year (for the same number of days).

AGENCY	PREV.YR SAME MONTH	LAST MONTH	CURRENT
# of Billing Days	**29**	**29**	**32**
Anderson	110,777,117	114,871,043	125,220,432
Big Creek	22,200,000	23,400,000	24,700,000
Broadway	19,640,872	20,851,655	20,583,816
Clemson	53,960,706	57,572,521	63,257,117
Clemson University	22,170,127	24,269,097	33,472,788
Hammond	46,960,551	56,776,449	53,039,456
Homeland Park	19,460,448	17,058,575	19,599,597
Pendleton	8,863,319	10,643,623	11,410,029
Powdersville	2,394,808	3,996,702	5,096,836
Sandy Springs	47,568,532	74,415,117	61,833,416
Starr-Iva	26,986,260	28,524,410	33,878,799
West Anderson	36,546,848	30,067,272	37,212,975
Williamston	13,822,908	12,360,964	14,927,995
TOTAL	**431,352,496**	**474,807,428**	**504,233,256**

Finance/Budget Summary

For the month ending February 28, 2022, ARJWS is slightly over budget in revenue collections primarily due to the unbudgeted collection of $40,000 from Pioneer Water for water rights. This is an annual collection that should end with the adoption of the new allocation from the Corps.

For expenses, the ideal percentage column reflects that not all expenses are linear over 12 months. Expenses such as chemicals and power are seasonal based on water produced. ARJWS is trending appropriately for all expense categories except for chemicals and maintenance. These categories are over budget due to using bulk sodium hypochlorite for disinfection rather than onsite generation and one-time maintenance projects. See the Profit & Loss report for additional information.

Safety Training

February
Subject: **Rigging Safety**
Training Date: **February 28, 2022**

March
Subject: **Electrical Safety/Arc Flash**
Training Date: **March 24, 2022**

Prepared by: Kendall Cleary, Accounting Manager
Approved by: Jeff Caldwell, Deputy Director

Attachments: Profit & Loss Summary – Budget, Actual and Forecast

ANDERSON REGIONAL
JOINT WATER SYSTEM

Profit & Loss
For the Month ending February 28, 2022

	Annual Budget	YTD Budget (7 months)	YTD Actual	8+4 Year End Projection	Ideal Percentage	% of Budget Used	YTD Variance	
Operating Revenue								
Operations and Maintenance	5,363,635	3,575,757	3,577,291	5,365,169	67%	67%	1,534	
Capital Charges	5,221,245	3,480,830	3,480,830	5,221,245	67%	67%	-	
Renewal and Replacement								
Water System	1,498,635	999,090	1,002,174	1,501,719	67%	67%	3,084	
Pump Station	67,738	45,159	46,565	69,145	67%	69%	1,407	
Miscellaneous	51,105	34,070	79,483	96,518	67%	156%	45,413	A
Total Operating Revenue	12,202,358	8,134,905	8,186,343	12,253,796				
Operating Expenses								
Salaries and Wages	1,650,100	1,100,067	1,006,067	1,556,101	67%	61%	(93,999)	
Payroll Taxes and Employee Benefits	645,700	430,467	435,316	650,549	67%	67%	4,849	
Operations and Maintenance								
Administrative Expenses	417,435	278,290	179,896	319,041	67%	43%	(98,394)	
Operations Expenses								
Lab Supplies/Uniforms/Safety Equipment	136,700	91,133	63,380	108,947	67%	46%	(27,753)	
Chemicals	572,000	381,333	523,921	714,588	67%	92%	142,588	B
Sludge and Chemical Disposal	150,000	100,000	249,163	250,000	100%	166%	149,163	C
Utilities and Security	1,105,600	737,067	660,591	1,029,124	67%	60%	(76,476)	
Maintenance Expenses	299,200	199,467	287,841	387,574	67%	96%	88,374	D
Professional Fees	110,000	73,333	44,112	80,779	67%	40%	(29,221)	
Insurance	94,900	63,267	12,528	94,900	10%	13%	(50,739)	
Debt Expenses	5,221,245	3,480,830	3,482,536	5,221,245	67%	67%	1,706	
Source Water Protection	51,000	34,000	1,885	18,885	67%	4%	(32,115)	
Miscellaneous Expenses	131,000	87,333	96,060	139,726	67%	73%	8,726	
Total operating expenses before depreciati	10,584,880	7,056,587	7,043,296	10,571,458				
Net operating income	1,617,478	1,078,319	1,143,047	1,682,338				
Raw Water								
Raw Water Income	58,223	38,815	161,481	180,889				
Raw Water O&M Expenses	-	-	195,451	195,451				
Raw Water Operating Income	58,223	38,815	(33,970)	(14,562)	67%	-58%	(72,785)	E
Non-Budget Impacting Items								
Junior Lien Bond Payments	246,090	164,060	152,000	246,090	67%	62%	(12,060)	
Alum Tanks Replacement	136,350	90,900	101,713	136,350	100%	75%	10,813	
PLC Upgrade Projects	214,200	142,800	172,319	214,200	67%	80%	29,519	
Transfer Pump #6	42,000	28,000	47,928	47,928	100%	114%	19,928	
Clarifier 2 Flocc Drive	-	-	68,207	68,207	0%	100%	68,207	
	596,640	397,760	426,032	596,640				

	Cash Balances	Days Cash on Hand
Operating Cash	1,721,000	59
Capital Project Fund	2,485,048	
System R&R Fund (Restricted)	1,151,835	
Pumped R&R Fund (Restricted)	468,016	
Raw Water O&M	140,791	
Raw Water R&R	207,853	
	6,174,543	

A: Over budget due to the annual Pioneer payment of $40,000 and a termination balance returned from the refunding of Series 2011A.

B: Over budget due to using bulk sodium hypochlorite for disinfection.

C: Over budget due to increasing the sludge buget by $80,000 to remove additional sludge and mitigate mobilization costs.

D: Over budget primarily due to the Ozone generator repair of $61,000 and the repair of a MIOX pump for $27,000.

E: Expenses for the year exceed revenues collected due to the repair of SAWS pump #4 for $64,000.

SYSTEMS REPAIR & REPLACEMENT ACCOUNT

February 28, 2022

DATE	TRANSACTION MEMO	CREDIT	DEBIT	BALANCE
02/01/2022	Balance Forward LGIP Investment			$1,026,689.65
02/28/2022	System Transfer for January 2022 Billing	$125,014.28		$1,151,703.93
02/28/2022	Interest Earned February 2022	$130.90		$1,151,834.83
02/28/2022	Ending Balance LGIP			**$1,151,834.83**

PUMPED REPAIR & REPLACEMENT ACCOUNT

February 28, 2022

DATE	TRANSACTION MEMO	CREDIT	DEBIT	BALANCE
02/01/2022	Balance Forward LGIP Investment			$462,312.33
02/28/2022	System Transfer for January 2022 Billing	$5,644.84		$467,957.17
02/28/2022	Interest Earned February 2022	$58.80		$468,015.97
02/28/2022	Ending Balance LGIP			**$468,015.97**

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BOARD MEMORANDUM

March 2, 2022

Subject
Operations and Maintenance Report

Discussion

Operations

As of March 2, 2022, Lake Hartwell's surface elevation was 659.70 ft, 0.30 ft. below full pool. Raw water is being drawn from the top gate of the intake structure. Water temperature at the top gate is 56°F. The Joint Water System reached 100% of settled water turbidity goals for the month of February. Raw water pH levels are relatively constant. Settled and Finished water pH levels are normal. The maximum day for February water production was 38.8% of Finished water capacity.

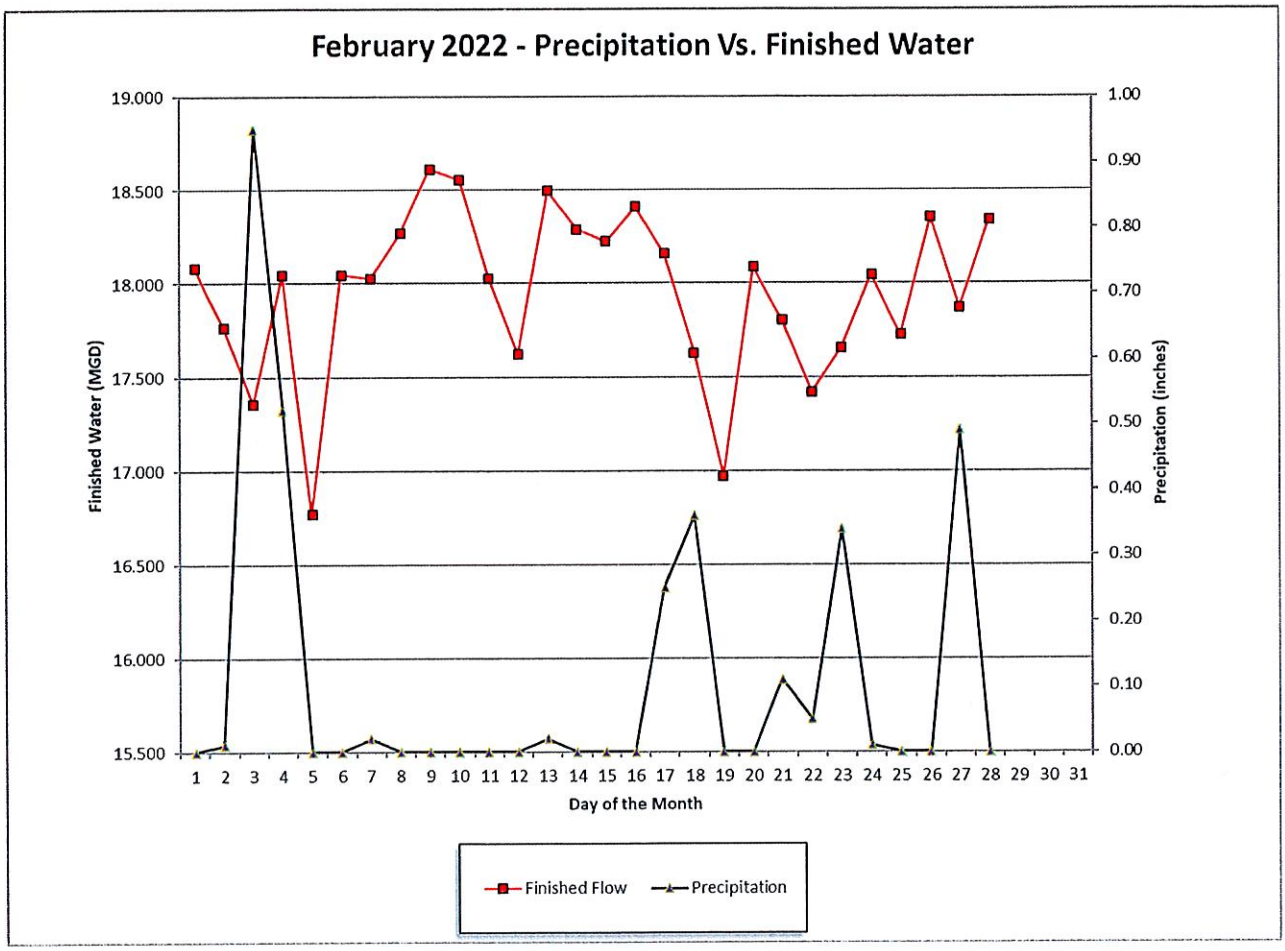
Operations and Maintenance Highlights

- The old alum tank was decommissioned, and two new alum tanks were installed
- Transfer pump #6 was removed and replaced
- Clarifier #2 was repaired and placed back into service
- Repairs made to THM analyzer
- Chemical vendor onsite to evaluate alternative coagulants

In addition to water quality sampling for the Lake Hartwell Water Treatment Plant, Joint Water System staff processed 185 Total Coliform distribution samples for local entities during the month of February.

Water Quality Data

	Raw	Settled	Finished
pH	6.95	7.05	7.13
Turbidity (NTU) Range	1.10 to 2.90	0.42 to 0.91	0.03-0.05
Turbidity (NTU) Average	1.91	0.61	0.03
Turbidity (NTU) Exceedance	-	0%	0%
Total Organic Carbon	1.37	-	1.05
Fluoride Average (ppm)	-	-	0.55
Phosphate Average (ppm)	-	-	1.20
Residual Disinfectant (ppm)	-	-	1.79
TTHM (DBP)	-	-	ppb
Methylisoborneol (MIB)	<1.0 NG/L	-	<1.0 NG/L
Geosmin	1.8 NG/L	-	<1.0 NG/L



Weather Data

	Minimum	Maximum	Total
Rainfall	0.00 in.	0.95 in.	3.13 in.
Temperature	28.3° F	76.4° F	N/A
Humidity	21%	100%	N/A

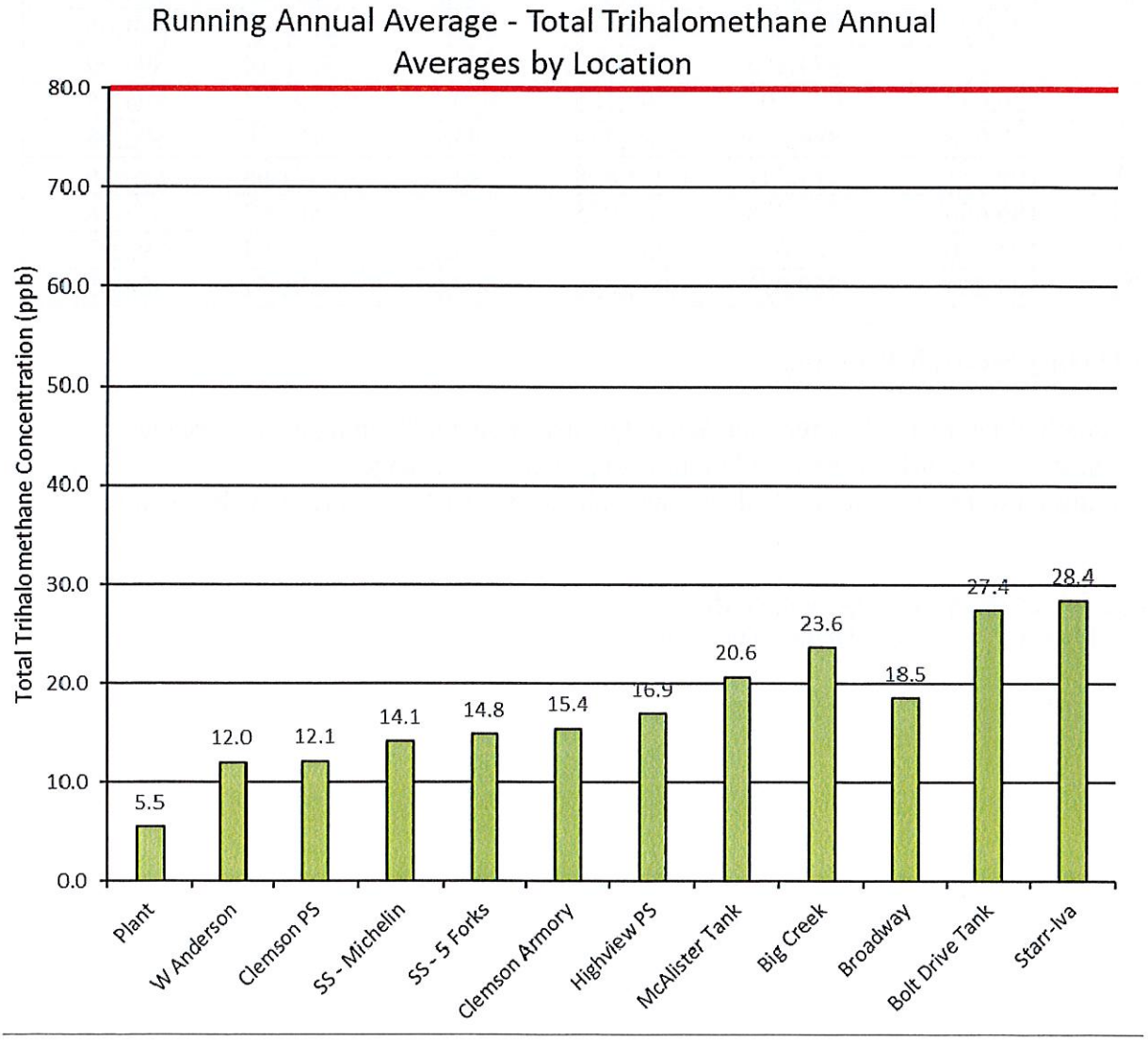
Water Production Data

	Average	Minimum	Maximum	Total
Raw Water	17,460,000	15,253,000	19,733,000	488,880,000
Finished Water	17,952,000	16,768,000	18,612,000	502,652,000
Finished Max Capacity	37.4%	34.9%	38.8%	37.5%

Total Trihalomethane Discussion

Trihalomethanes (THMs) are one type of disinfection byproduct that can form during the treatment process and within the distribution system. THM concentrations vary primarily as a function of total organic carbon (TOC), temperature, disinfectant type, and residence time. THMs can have adverse health effects at high concentrations, and the EPA has established compliance criteria for these compounds in aggregate, termed Total Trihalomethanes (TTHMs). These criteria are established in Stage 2 of the Disinfection Byproduct Rule, which has a numerical MCL of 80 micrograms per liter (or parts per billion, ppb) based on a Locational Running Annual Average. ARJWS Operations Staff collects monthly, one-time samples, as a spot check for TTHM formation in the transmission system. The running annual averages of those results are shown in the figure below. ***Note, the THM analyzer was out for repair during the month of February.***

Disinfection Byproduct Analysis Report



Monthly Power Consumption Update

For the month of February, ARJWS treated 502,652,000 gallons of water at a power cost of $95.57 per million gallons produced. The 12 month Running Annual Average is currently at $94.65.

Monthly Power Consumption Data

Month	On Peak kW	Off Peak kW	Total kW	Finished Water MG	$/ MG	12 month Average
Feb – 21	194,400	871,200	1,065,600	530.6	$92.36	$96.48
Mar – 21	168,000	787,200	955,200	559.9	$75.67	$94.39
Apr – 21	194,337	880,130	1,074,467	571.7	$89.46	$94.23
May – 21	215,996	909,415	1,125,411	662.4	$74.97	$92.58
Jun – 21	218,574	1,098,505	1,317,079	667.4	$94.20	$94.16
Jul – 21	271,224	947,223	1,218,447	649.6	$122.47	$94.06
Aug - 21	281,251	974,455	1,255,706	666.0	$116.14	$94.99
Sep - 21	236,672	1,031,508	1,268,180	620.1	$104.64	$94.15
Oct - 21	228,046	894,233	1,122,279	593.7	$96.90	$92.95
Nov – 21	199,551	874,347	1,073,898	544.6	$91.66	$93.16
Dec - 21	186,656	794,378	981,035	534.3	$87.42	$93.38
Jan - 22	198,616	786,624	985,240	558.2	$88.94	$93.97
Feb - 22	184,554	859,075	1,043,630	502.6	$95.57	$94.65

Water Quality Strategic Planning

For the month of February, the following Water Quality Strategic Planning goals were met:

- Finished water pH was held within the designated 7.0-7.2 range.
- Finished water chlorine residual was maintained above a 1.2 ppm leaving the facility.

Prepared by: Chris Weber, Operations Manager
Approved by: Jeff Caldwell, Deputy Director

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BOARD MEMORANDUM

March 15, 2022

Subject
Sustainability Report

Asset Management

ARJWS is tracking maintenance tasks of all assets. **Preventative Maintenance tasks (PMs) are performed on every asset on a weekly, monthly, quarterly, bi-annually, or annual basis. Work Orders consist of installations or repairs required on an asset that are separate from the PM schedule.** The current target is 400 completed tasks for the month.

PMs Completed	262
PMs Deferred	149
Work Orders Open	42
Work Orders Completed	10
Hours Documented	In process
Cross-Training Hours	In process

The effectiveness of the asset management program on ARJWS's ability to deliver the highest quality drinking water can be measured by treatment reliability. A decrease of reliability is defined by a capacity reduction for 72 hours or more. The table below shows overall reliability for the month of February.

Plant Rated Capacity	42.00 MGD		
Reliable Capacity (February)	30.24 MGD	**% of rated capacity**	72.00%
3-year Max Day (same month) + 10%	22.88 MGD	**Reliability**	132.17%
3-year Max Day (Next 90 days) + 10%	28.83 MGD	**Reliability**	104.89%

For February 2022, the limiting treatment component was the transfer pump station. Currently pumps #2 and #6 are out of service. Pump #2 is believed to be a lower bearing issue. New pump #6 was placed into operation on March 8th.

Brand

ARJWS uses many different platforms in order to engage with the public to bring awareness to the system as well as educate and inform about relevant topics of interest to water supply, water treatment, regulatory issues, etc.

Platform	Twitter	Facebook	Instagram	Website	Events	Tours	Total
Reach	2,128	2,638	413	708	45	23	5,955
Engagement	3.36%	9.67%	17.26%				

Reach is the total amount of people impacted on each platform.
Engagement is the percentage of people reached who interacted with the content published (likes, shares, comments, website visits, etc.)

Communication and Partnership

ARJWS's goal is to strengthen regional presence, cooperation, and communication among ARJWS and communities.

1. Upstate Forever Three and Twenty Watershed Plan
    a. 11 septic tank repairs/replacements completed, including 4 on the lakefront.
    b. 1 conservation easement closed.
2. Anderson Soil & Water Conservation District
    a. 4th annual Barrels & Beer scheduled for May 21st at 11am.
    b. Magnetic South Brewery in downtown Anderson.
3. Anderson Area Chamber Water Resources Committee
    a. Dr. Ladner from Clemson spoke on PFAs.
4. Lake Hartwell Partners for Clean Water
    a. Upstate Forever creating watershed plan for Twelve Mile Creek watershed.
    b. Hosting next meeting at the water plant on April 12th at 8:30am.

Source Water Protection

The ARJWS has adopted the four creeks upstream of our intake and sample each once per month. These creeks account for approximately 80% of our source water supply.

	E. Coli (cfu/100 mL)	Dissolved Oxygen (ppm)
Hembree Creek	200	8.5
Hurricane Creek	133	8.3
Town Creek	67	9.2
Six and Twenty Creek	33	7.9

Prepared by: Trey Burns, Sustainability Manager
Approved by: Jeff Caldwell, Deputy Director

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BOARD MEMORANDUM

March 15, 2022

Subject

Engineering Report

Discussion

Alum Bulk Storage Tanks Improvements

This project will demo the existing Alum tank and add two (2) new 10,000 tanks. Tank installation was completed on February 24th. Following satisfactory hydrostatic testing, ARJWS requested a Permit to Operate from SCDHEC. Regulatory inspection is scheduled for March 16th.

Disinfection

In February, ARJWS was able to use on-site generation to meet 100% of the disinfection needs. On-site generation continues to be the most cost effective approach to meeting the system's disinfection needs. Therefore, our current plans are to operate with on-site generation until demands outpace production which is expected to begin in April.

PLC Upgrades

MR Systems installed the upgrade for the RTU-2 panel as well as panels for filters 2, 9, and 10. This project was completed in February.

Transfer Pump Replacement Project

Transfer Pump #6 had serious capacity and vibration issues and was evaluated for rebuild or replacement. The rebuild cost was quoted at approximately $36,000 and the cost of a new pump was $42,000. Based on the rebuild cost at over 85% of a new pump, ARJWS selected to purchase a new pump. The pump was ordered in July 2021 and was delivered and installed in February 2022. ARJWS staff removed the existing pump and installed the new pump. The new pump has been placed into operation. After removal, the existing pump was inspected and was determined to have an obstruction in the impeller. Therefore, this pump could possibly be available as a spare or installed as pump #7.

Prepared by: Jeff Caldwell, Deputy Director
Approved by: Scott Willett, Executive Director